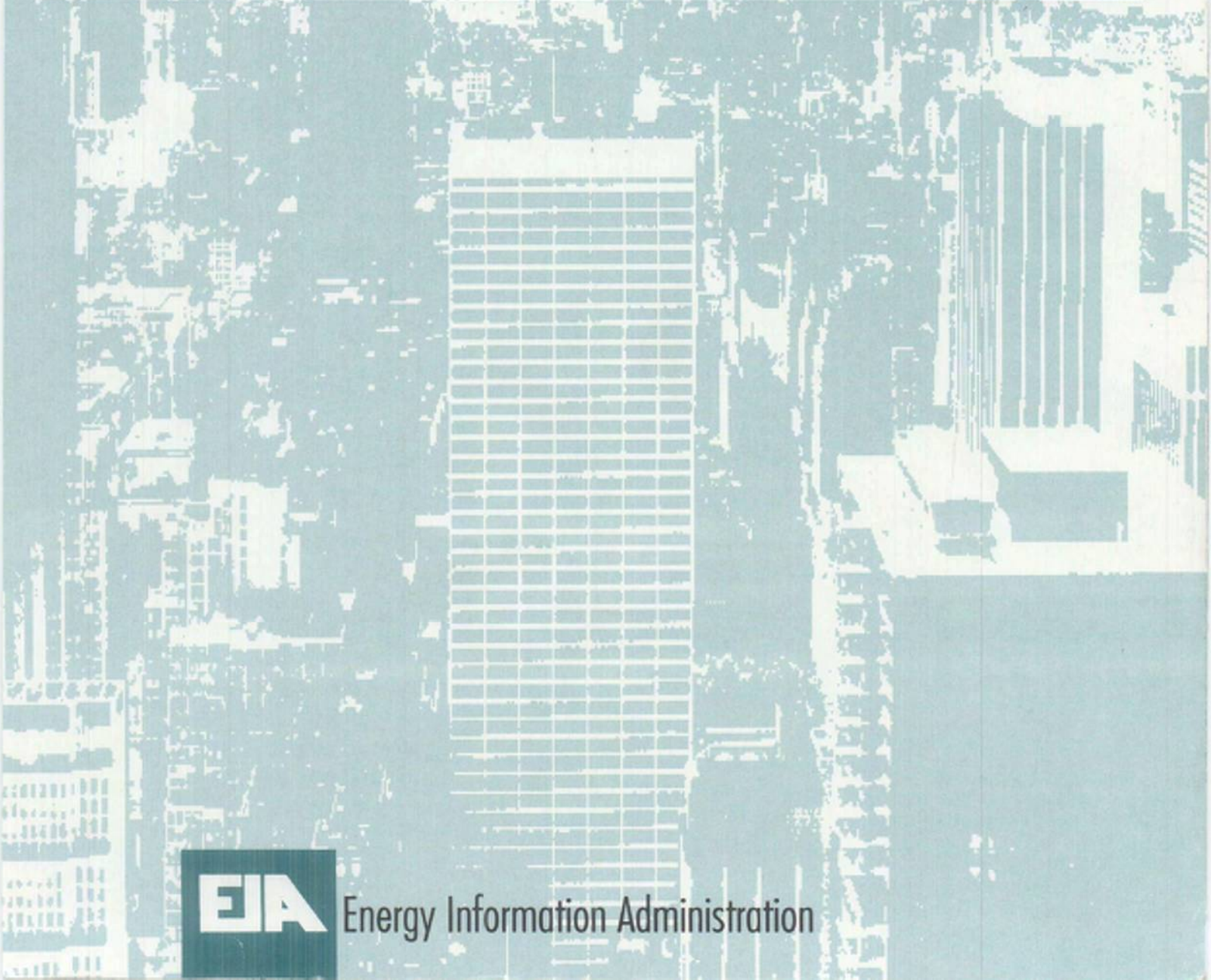
DOE/EIA-0246(92)

Commercial Buildings Characteristics 1992

Commercial Buildings Energy Consumption Survey

APRIL 1994



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Cover photo:

The skyline of New York City displays a collage of various types of buildings--many of which are represented in the 1992 Commercial Buildings Energy Consumption Survey sample.

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Executive Summary

Commercial Buildings Characteristics 1992 presents statistics about the number, type, and size of commercial buildings in the United States as well as their energy-related characteristics. These data are collected in the Commercial Buildings Energy Consumption Survey (CBECS), a national survey of buildings in the commercial sector. The 1992 CBECS is the fifth in a series conducted since 1979 by the Energy Information Administration. Approximately 6,600 commercial buildings were surveyed, representing the characteristics and energy consumption of 4.8 million commercial buildings and 67.9 billion square feet of commercial floorspace nationwide. Overall, the amount of commercial floorspace in the United States increased an average of 2.4 percent annually between 1989 and 1992, while the number of commercial buildings increased an average of 2.0 percent annually.

Key Findings

- **Energy Conservation:** Overall, a building's size, as measured by floorspace, was the overwhelming determinant in whether it practiced energy management or had some type of conservation feature related to the building shell, the heating, ventilation, and air-conditioning (HVAC) system or the lighting system. Larger buildings were more likely to have either conservation features or practice energy management or both.

  Building age was important for specific types of energy conservation such as the use of energy management and control systems (EMCS) or lighting features; newer buildings were more likely to have taken these measures. Building age, however, was less relevant for conservation efforts related to the building shell, such as insulation and window treatments, since older buildings can be retrofitted with these features relatively easily.

- **Demand-Side Management (DSM):** Knowledge of utility-sponsored DSM programs appears to be a key factor in whether a building participates in a program. While only 13 percent of the CBECS respondents reported an awareness of utility-sponsored DSM programs, approximately one-third of those who were aware took part in them. However, it should be noted that only 7 percent of all buildings participated in a DSM program. This suggests that there is a large potential for energy savings in the commercial buildings sector through DSM programs.

- **New Office Buildings:** Newer office buildings took advantage of the more energy-efficient lighting and HVAC systems in their construction. Analysis of office buildings constructed after 1986 indicates that these buildings were three times more likely to use compact fluorescent bulbs than office buildings constructed in 1986 or earlier. Newer office buildings also reported the use of variable air-volume (VAV) systems on their heating or cooling units at five times the rate of older office buildings. There was no statistically significant difference between newer and older office buildings in the use of high-intensity discharge (HID) lights or in regularly scheduled HVAC maintenance and repair programs. Approximately 70 percent of all office buildings had regularly scheduled HVAC maintenance and repair programs.

- **Government-Owned Buildings:** The 1992 CBECS shows that Government-owned buildings were more likely to practice energy management than non-government-owned buildings. Approximately 59 percent of government-owned buildings utilized one or more of the following energy management practices: EMCS, DSM, energy audits, or building energy managers.

- **Main Heating Fuel:** As a main heating fuel, natural gas made inroads in newer buildings. The 1992 CBECS data show that the largest percentage of commercial floorspace in buildings constructed in the 1980's was primarily heated with electricity; however, the largest percentage of floorspace in buildings constructed between 1990 and 1992 was primarily heated with natural gas.

- **Energy-Using Equipment:** In 1992, more buildings reported the use of packaged cooling units and heat pumps, with a dramatic increase in the use of heat pumps in the West Census Region.

Table ES1 provides national and Census regional-level commercial building counts and square footage for the 1986, 1989, and 1992 CBECS.

Table ES1. Number and Square Footage of Commercial Buildings by Census Region, 1986, 1989, 1992

Census Regions	1986 CBECS	1989 CBECS	1992 CBECS
Number of Buildings (thousand)			
Total	**4,154**	**4,528**	**4,806**
Northeast	663	783	771
Midwest	1,096	1,046	1,202
South	1,570	1,847	1,963
West	825	851	870
Floorspace (million square feet)			
Total	**58,229**	**63,184**	**67,876**
Northeast	11,830	13,569	13,400
Midwest	16,034	15,955	17,280
South	19,427	22,040	24,577
West	10,937	11,620	12,619

Source: Energy Information Administration, Office of Energy Markets and End Use, 1986 1989, and 1992 Commercial Buildings Energy Consumption Surveys.

Introduction

Commercial Buildings Characteristics 1992 contains detailed tables of the physical and operating characteristics that affect energy use in the U.S. commercial building stock as of 1992. This report, the first of two publications based on data from the 1992 Commercial Buildings Energy Consumption Survey (CBECS), contains estimates of the number of buildings and square footage by various energy-related characteristics. Estimates of the actual energy consumption and expenditures for electricity, natural gas, fuel oil, and district heat will be reported separately in *Commercial Buildings Energy Consumption and Expenditures 1992* to be published at a later date. The CBECS is the only source of national-level data on both commercial building characteristics and related energy consumption and expenditures. Detailed analysis of 1992 commercial building characteristics, along with an analysis of the energy consumption and expenditures data, will be reported separately following the release of the *Commercial Buildings Energy Consumption and Expenditures 1992* report. A special report covering buildings in the 1980's will include additional analysis of 1992 commercial buildings characteristics.[1]

This report is prepared by the Energy End Use and Integrated Statistics Division, Office of Energy Markets and End Use, Energy Information Administration (EIA). The EIA is mandated by Congress to be the agency that collects, analyzes, and disseminates impartial, comprehensive data about energy including the volume consumed, its customers, and the purposes for which it is used. To comply with this Congressional mandate, the EIA collects energy data from a variety of supplier and consumer sources, in surveys covering a range of topics.[2]

Background

The CBECS provides basic national-level statistical information on the consumption of energy, expenditures for energy, and energy-related characteristics in commercial buildings. EIA conducts this national sample survey of commercial buildings and their energy suppliers on a triennial basis. Previous surveys were conducted in 1979, 1983, and 1986 under the name Nonresidential Buildings Energy Consumption Survey (NBECS). In 1989, the survey name was changed to Commercial Buildings Energy Consumption Survey (CBECS). For consistency, all the surveys will be referred to as CBECS in this report.

EIA also conducts energy consumption surveys in the residential, residential transportation, and manufacturing sectors. See Appendix I, "Related EIA Publications in Energy Consumption," for a listing of publications from the CBECS and from other EIA consumption surveys.

[1]The report, *Buildings and Energy in the 1980's*, is planned for early 1995.

[2]These surveys can be divided into two broad groups. The first group, supply surveys, are directed to the suppliers and marketers of specific energy sources, and measure the quantities of specific fuels produced and/or supplied to the market. The results of the supply surveys are combined and published in the *Monthly Energy Review* and other EIA publications. The second group, energy consumption surveys, gathers information directly from the end users of energy on the types of energy used, along with energy-related characteristics. The CBECS belongs to the consumption survey group because it collects information directly from the end user -- commercial buildings. Although there are some elements in common, the supply survey data and the consumption survey data collections have substantially different approaches, capabilities, and objectives. Care must be taken in comparing CBECS data in relation to supply survey data. For a summary of the differences in the commercial sector, see Energy Information Administration, *Energy Consumption by End-Use Sector, A Comparison of Measures by Consumption and Supply Surveys*, DOE/EIA-0533 (Washington, DC, April 1990) and Energy Information Administration, *Commercial Buildings Energy Consumption and Expenditures 1992* (forthcoming).

The data for the 1992 commercial building stock were collected on the 1992 CBECS Forms EIA-871A through G. The data included in this report are based on Form EIA-871A, the 1992 Building Questionnaire. Form EIA-871A was used to collect information on building characteristics during a personal interview with building managers, owners, or tenants. All data in this report are aggregated; individual building name and address information is confidential.

A longitudinal component was incorporated into the 1992 CBECS by revisiting many of the same buildings that were sampled for the 1986 CBECS. Longitudinal analysis of the 1986/1992 CBECS data will be conducted separately.

This report provides descriptions of the 1992 commercial building stock at the national and Census region levels in terms of the following characteristics:

- Building Size
- Principal Building Activity
- Building Structure
- Building Use
- Energy Sources and Energy End Uses
- Energy-Related Equipment
- Energy Conservation and Energy Management Features.

These data are published to provide meaningful, objective, and accurate energy information for a wide audience including Congress, Federal and State agencies, industry, and the general public.

The EIA gratefully acknowledges the cooperation of the respondents for providing the information used to produce the estimates in this report.

Organization of this Report

The section of the report, "At A Glance" provides several pages of text, graphs, and charts showing some of the more interesting survey results.

The appendices are provided for more statistically oriented readers, and readers who want to know the supporting detailed information on the survey. Information about the sample design and data collection procedures is provided in Appendix B, "How the Survey Was Conducted." Adjustments to collected data and factors affecting data quality are discussed in Appendix C, "Nonsampling and Sampling Errors." Appendix D, "Comparisons of CBECS, 1983 to 1992," provides a comparison of the type of data items that have been collected in each CBECS beginning with 1983. A detailed description of the principal building activities is contained in Appendix E, "Types of Buildings." Appendix F, "U.S. Climate Zones and Census Regions and Divisions Maps," contains maps showing the climate zones by which the data are reported and the Census regions and divisions used in this report. All estimates in this report are based on data collected on Form EIA-871A, "Building Questionnaire." This form is found in Appendix G, "Survey Forms." Appendix H provides metric conversion factors. A list of related energy-consumption publications in Appendix I, "Related EIA Publications on Energy Consumption," is for readers interested in earlier CBECS publications, or reports on energy consumption in the other sectors. A glossary of terms is also included to assist users in understanding the statistical and engineering terminology used in this publication.

Appendix A, "Detailed Tables," of this report provides extensive crosstabulations of commercial buildings' characteristics in the United States. The tables are divided into the following seven main categories:

Location - Includes Census region, Census division, metropolitan statistical area, and climate zone tables

Structure - Includes tables pertaining to building size, year constructed, number of floors, and building shell materials

Building Use - Includes tables relating to number of workers, operating hours, ownership and occupancy, vacancy rates, multibuilding facilities, and energy-related space functions

Energy Sources - Includes total energy sources, and energy sources used for heating, cooling, cooking, heating water, and other energy end uses

End-Use Percentages - Includes tables for percent of building space that is heated, cooled, and lit

Equipment - Includes tables relating to heating, cooling, refrigeration, water heating and lighting equipment and

Conservation Features - Includes tables on building shell conservation features, energy management practices, reduced equipment use in off hours, and participation in lighting and heating, ventilation, and air-conditioning (HVAC) related demand-side management (DSM) programs.

The organization of the detailed tables and the procedures for calculating Relative Standard Errors (RSE's) are explained in Appendix A. Also in Appendix A, a Quick-Reference Guide by topic is provided for the 70 detailed tables.

New or expanded tables include more detail on the following:

- Building shape
- Energy-related space functions
- Occupancy characteristics
- Energy-using equipment: refrigerators, freezers, water heaters, and personal computers or terminals
- Demand-Side Management programs
- Energy management features
- Lighting conservation features
- Characterization of multibuilding facilities such as school campuses and hospital complexes

All information in this report is based on the 1992 CBECS data, which can be reproduced using the 1992 CBECS Public-Use Data files.

Statistics Reported

Commercial Buildings

For purposes of the CBECS, a commercial building is a roofed and walled structure whose principal activity is nonresidential, nonagricultural, and nonindustrial. The CBECS population is restricted to buildings larger than 1,000 square feet (roughly twice the size of a two-car garage).

Principal Building Activity

The principal building activity is the activity that occupies the most floorspace in the building. Data were collected for 21 building types. Beginning with the 1992 CBECS, the building type "assembly" was divided into two separate categories, "public assembly" and "religious worship." Data for building types are provided separately in the detailed tables. However, in some instances, the CBECS sample was too small to permit reliable estimates for breakdowns within the 21 categories. Therefore, several types of building activities have been combined in most tables and figures. Inpatient and outpatient health care facilities have been combined into a single health care building type; refrigerated and nonrefrigerated warehouses form a single warehouse category. Skilled nursing buildings have been included in "lodging." The "other" category includes laboratory buildings, with the exception of those laboratory buildings used in academic or technical classroom instruction.

Energy Sources

The CBECS identifies all energy sources delivered into the building. For certain types of minor energy sources (most notably coal, and such renewable sources as wood, photovoltaic cells (PVC's), and solar thermal panels), there were too few buildings in the sample to permit separate reporting. Therefore, in most of the tables in this report, coal, wood, PVC's and solar thermal panels are grouped with "other" under the category "energy sources." District steam and district hot water are combined into "district heat."

Main and Secondary Fuels

Main and secondary space-heating fuels are distinguished in certain tables but are combined in other tables as "space heating." In previous surveys, very few buildings reported having a secondary water-heating fuel. In 1992, secondary water-heating fuel was not collected.

Number of Workers/Operating Hours

The 1992 CBECS obtained information on two very important contributing factors to energy consumption -- the number of occupants in the building, and the number of hours the building is in use. Specifically, the 1992 CBECS asked for the total number of workers across all shifts as well as the number of workers for the main shift. For comparability with the 1989 CBECS report, only the number of workers during the main shift are included in the 1992 CBECS report. Information was obtained about the regular operating hours and the additional ("shoulder") hours when most of the heating and/or cooling and lighting equipment were in use. Data about both the regular operating hours and the additional hours are included in the detailed tables.

Survey Estimates

The statistics published in this report are based on a random sample from the population of all commercial buildings in the United States as of fall 1992. As a result, all the numbers are estimates rather than exact measures for the population. As described in Appendix C, the accuracy of each estimate is indicated by the RSE. No estimates were published that were based on data from fewer than 20 sampled buildings or that had an RSE greater than 50 percent. With the exception of Table A1 estimates for median statistics, RSE's can be calculated for all the estimates in the detailed tables using row/column RSE factors.[3] Overall, the RSE's for the 1992 CBECS are comparable to those for the corresponding aggregates from the 1989 survey, indicating a continuing high accuracy of the survey estimates.

[3]See Appendix A "Detailed Tables" for information on how to use the Row/Column factors to calculate an approximate RSE.

HIGHLIGHTS ON COMMERCIAL BUILDINGS FROM THE 1992 CBECS

This section provides several short synopses of some interesting highlights from the 1992 CBECS. As a result of numerous requests from CBECS data users to expedite the release of the CBECS data, extensive analysis of the data was not conducted at this time.

The following are included in this section:

Where Commercial Buildings are Located is an overview of the number of commercial buildings and floorspace in the four Census regions and nine Census divisions.

Commercial Buildings in 1992 includes information about building size, vintage, and principal building activity.

Conservation and Energy Management describes the types of buildings most likely to report the use of energy conservation features or practice energy management. This section also includes brief descriptions of the types of buildings that participated in DSM programs and the types of energy management and conservation practices found in office buildings and government-owned buildings.

Energy Sources and End Uses briefly discusses primary space-heating trends and the use of renewables and special technology in commercial buildings.

End-Use Equipment includes information about the use of packaged cooling units, heat pumps, commercial lighting, water heating and refrigeration equipment.

Where Commercial Buildings Are Located

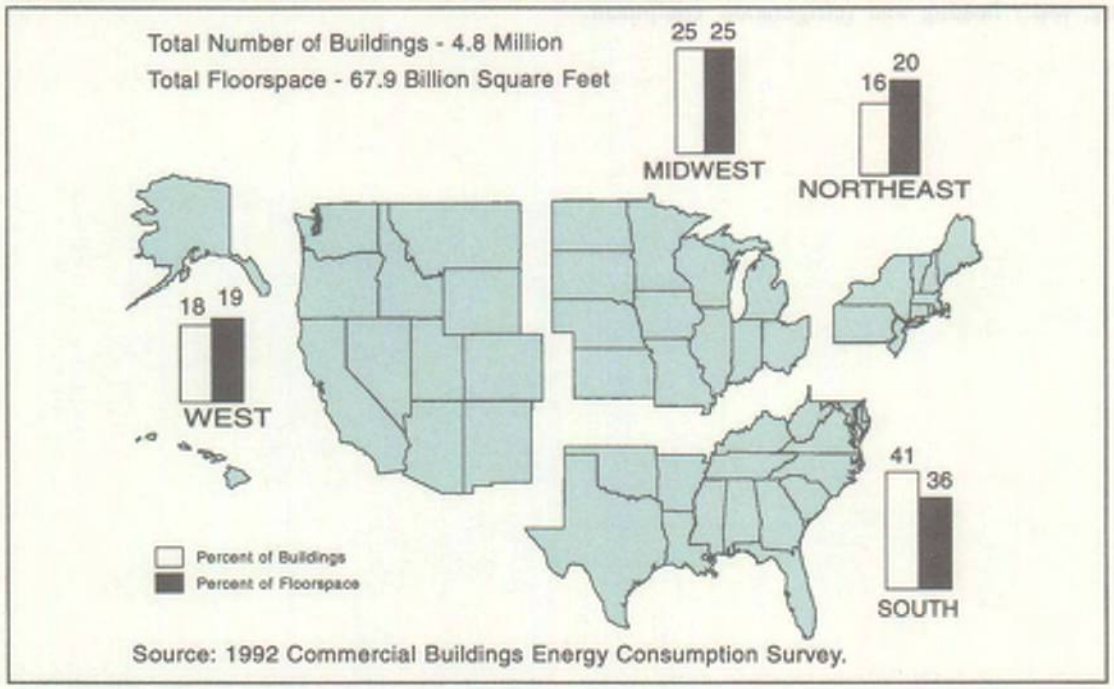
Geographic location affects energy-use patterns because of the regional variations in climate, building materials, and energy sources.[4] In 1992, there were 4.8 million commercial buildings in the United States with 67.9 billion square feet. The Northeast had the largest buildings and the South had the smallest buildings (Table 1). The South contained the largest proportion of both buildings (41 percent) and floorspace (36 percent). The Midwest had the second highest proportion of both buildings (25 percent) and floorspace (25 percent) (Figure 1).

Table 1. Number of Buildings and Floorspace by Census Regions and Divisions, 1992

Census Regions and Divisions	Number of Buildings (thousand)	Total Floorspace (million square feet)	Mean Floorspace per Building (thousand square feet)
Total	4,806	67,876	14.1
Northeast	771	13,400	17.4
New England	186	3,265	17.6
Middle Atlantic	585	10,135	17.3
Midwest	1,202	17,280	14.4
East North Central	749	10,712	14.3
West North Central	453	6,568	14.5
South	1,963	24,577	12.5
South Atlantic	755	10,586	14.0
East South Central	454	5,375	11.8
West South Central	754	8,616	11.4
West	871	12,619	14.5
Mountain	297	3,645	12.3
Pacific	574	8,974	15.6

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1992 Commercial Buildings Energy Consumption Survey.

Figure 1. Percent of Buildings and Floorspace by Census Region, 1992



Source: 1992 Commercial Buildings Energy Consumption Survey.

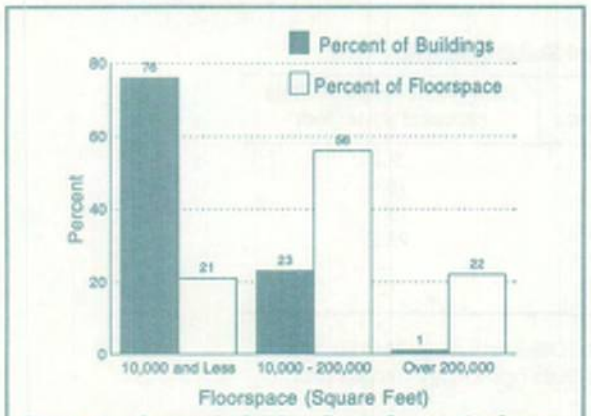
[4]Detailed information on the location of 1992 commercial buildings is found in Appendix A, "Detailed Tables," Tables A1 through A7.

Commercial Buildings in 1992

Commercial buildings, in general, are diverse structures with equally complex operations. To depict commercial building use, two measures are employed: building counts and floorspace. These two measures provide different views of commercial building use, which allow the analysis to focus on the characteristics of building use as they relate to either the commercial building stock or the amount of building floorspace.

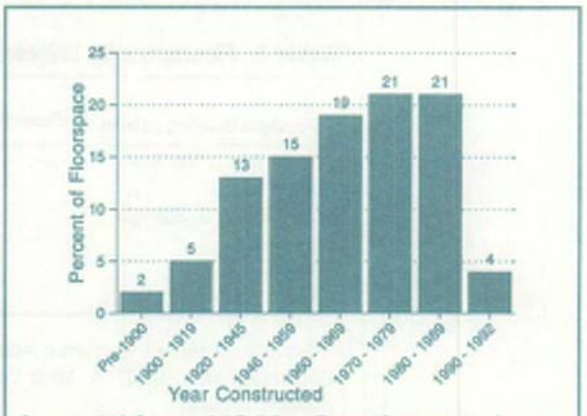
Energy use in commercial buildings is affected by the physical characteristics of the buildings, as well as the efficiency of the equipment and the occupants' energy-related behavior. Since 1979, the CBECS has consistently collected data about the size, vintage, and principal building activity. Figures 2 through 5 show the size, vintage, and principal building activity.[5]

Figure 2: Commercial Building Size, Percent of Buildings and Floorspace, 1992



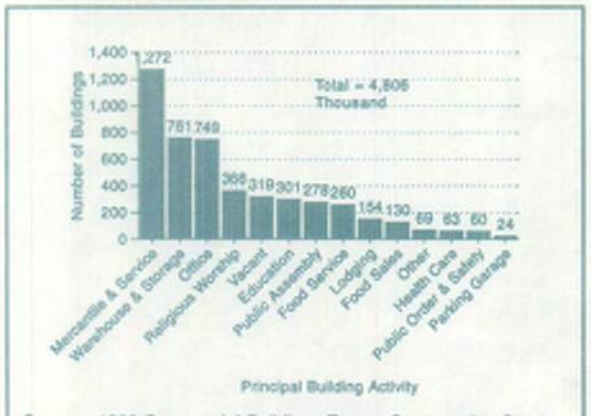
Source: 1992 Commercial Buildings Energy Consumption Survey.

Figure 3: Commercial Building Vintage, 1992



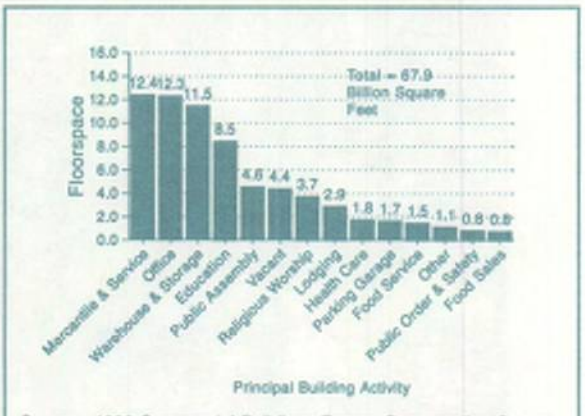
Source: 1992 Commercial Buildings Energy Consumption Survey.

Figure 4. Principal Building Activity, Number of Buildings, 1992



Source: 1992 Commercial Buildings Energy Consumption Survey.

Figure 5. Principal Building Activity, Floorspace, 1992



Source: 1992 Commercial Buildings Energy Consumption Survey.

[5]Detailed information on the structure of 1992 commercial buildings is found in Appendix A, "Detailed Tables," Tables A8 through A28.

Commercial Building Activity Accounts for 67.9 Billion Square Feet of Floorspace in 1992

In 1992, commercial buildings accounted for approximately 67.9 billion square feet of floorspace in 4.8 million buildings. Comparable figures for the 1989 CBECS were 63.2 billion square feet in 4.5 million buildings. This translates into an annualized increase between 1989 and 1992 of 2.0 percent in the number of buildings and 2.4 percent in commercial floorspace. The mercantile and service category showed the greatest number of buildings, with roughly 1.3 million buildings, or nearly 26 percent. In addition, mercantile and service buildings accounted for the most floorspace, representing 18.3 percent (12.4 billion square feet) of all commercial activity. Office buildings represented the second largest amount of floorspace, with over 12.3 billion square feet, or approximately 18.1 percent. Interestingly, office and mercantile and service buildings comprised nearly equal amounts of total floorspace, but the average floorspace per office building was over 40 percent higher than the average floorspace per mercantile and service building (Table 2). The percentage of buildings classified as vacant was relatively unchanged between the 1989 and 1992 CBECS data collection, accounting for 6.6 percent of all commercial buildings and similar floorspace coverage.[6]

Table 2. Floorspace by Selected Principal Building Activity, 1992

Principal Building Activity	Percent of Floorspace	Mean Floorspace per Building (thousand square feet)
Mercantile & Service	18.3	9.7
Office	18.1	16.4
Warehouse & Storage	16.9	15.1
Education	12.5	28.2
Other	34.2	--
Total	100.0	--

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1992 Commercial Buildings Energy Consumption Survey, Table A1.

Mercantile and service accounted for 18.3 percent of floorspace by selected building activity in commercial buildings during the 1992 CBECS.

[6]"Other" includes all buildings not identified as mercantile and service, office, warehouse and storage, or education.

Conservation and Energy Management

More than any other building characteristic, a building's size, measured in floorspace, appeared to be the overwhelming determinant in whether a building had conservation features or practiced energy management. In general, the larger the building, the more likely it was to have conservation features (Box 1) or to practice energy management (Box 2).[7]

Energy Conservation Features

Almost all of the respondents to the CBECS (91 percent of all buildings; 95 percent of the floorspace) reported the presence of an energy conservation feature related to either the building shell, heating, ventilation and air-conditioning (HVAC) systems, or lighting. Building shell conservation features were the most common type.

Although it may seem that new buildings would have been more likely than old buildings to have features related to building shell conservation, the presence of these features was not related to the age of the building. This lack of correlation is probably due to the fact that old buildings are often retrofitted with insulation, storm windows or other energy-saving measures related to the shell (Table A57).

Box 1. Energy Conservation Features

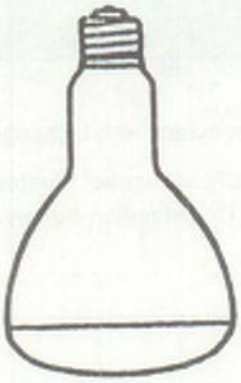
Building Shell Conservation Features
- Roof or Ceiling Insulation
- Wall Insulation
- Storm Windows or Multiple Glazing
- Tinted Glass
- Shadings or Awnings
- Windows Which Open and Close

HVAC Conservation Features
- Variable Air-Volume System
- Economizer Cycle
- Regular Maintenance of HVAC System

Lighting Conservation Features
- Specular Reflectors
- Daylighting Controls
- Occupancy Sensors
- Timed Clocks or Switches
- Dimmer Switches
- Other Lighting Conservation Equipment

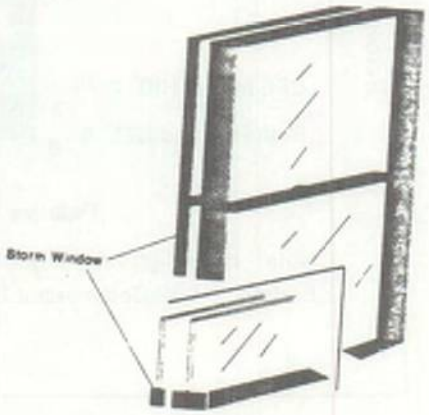
Reflector Lamps

Used for both indoor/ outdoor floodlighting



Used to minimize light loss in down light fixtures

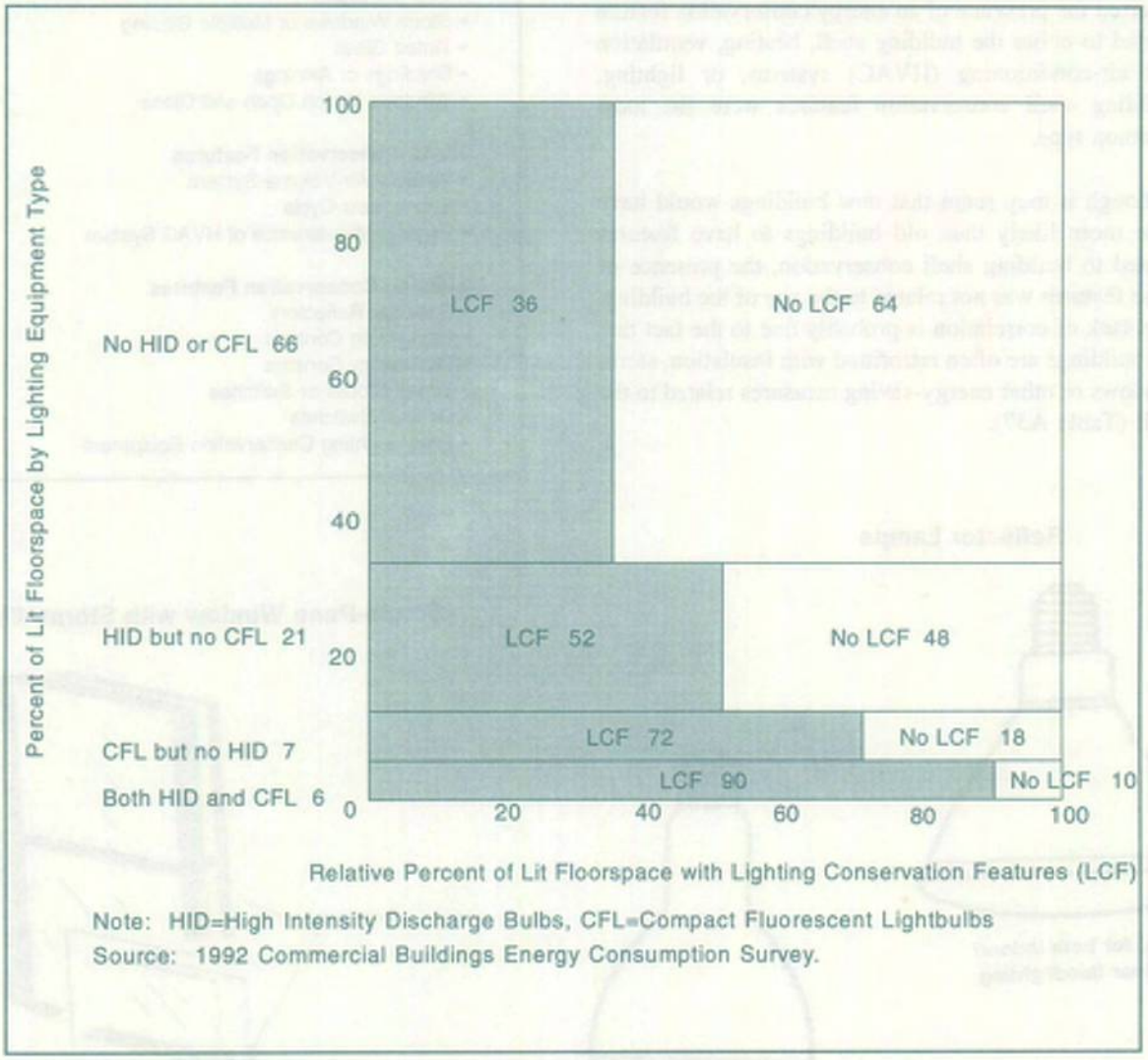
Single-Pane Window with Storm Window



[7]Detailed information on conservation and energy management practices in 1992 commercial buildings is found in Appendix A, "Detailed Tables," Tables A57 through A67.

HVAC and lighting conservation features were not equally prevalent across all types of buildings, but instead were related to the specific characteristics of the building. HVAC conservation features were more likely to be found in education, health care, lodging, office and public order and safety buildings, in part because these types of buildings tended to be larger. Lighting conservation features were more often found in recently constructed buildings and in buildings that used high-intensity discharge (HID) lighting or compact fluorescent lightbulbs (CFL). Only 6 percent of lit floorspace was in buildings that had both HID and compact fluorescent bulbs, but nearly all (90 percent) of these buildings had some lighting conservation feature. The majority of the total lit floorspace was in buildings with no HID or compact fluorescent lighting (66 percent); of these buildings, however, those with lighting conservation features comprised only 36 percent of the floorspace (Figure 6).

Figure 6. Presence of Lighting Conservation Features by Types of Lighting Equipment, 1992



Note: HID=High Intensity Discharge Bulbs, CFL=Compact Fluorescent Lightbulbs
Source: 1992 Commercial Buildings Energy Consumption Survey.

Energy Management Practices

Energy management practices were less common than energy conservation features. Buildings that practiced energy management made up only 41 percent of commercial floorspace.

Box 2. Energy Management Practices

- DSM program participation
- Energy audits performed
- Building energy managers employed
- Energy Management and Control System used

Energy Managment and Control System (EMCS): An EMCS is a computerized system used to manage a building's use of energy for HVAC, lighting, or other equipment. Unlike building shell conservation features, for which age was not a determining factor in the presence of the feature, EMCS's were more common in new construction. Buildings with an EMCS made up only 15 percent of the floorspace of buildings constructed before 1970. This figure increased to 24 percent of the floorspace for buildings built from 1970 to 1979 and to 30 percent for those built from 1980 to 1989. For buildings that were built between 1990 and 1992, the percent of floorspace in buildings with an EMCS was an impressive 49 percent (Table 3).

Table 3. Vintage of Buildings with Energy Management and Control Systems

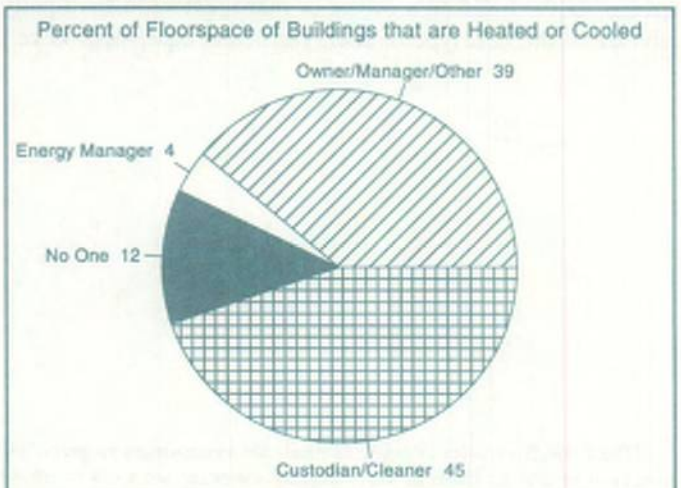
	All Buildings		Buildings with EMCS Control of Any System			
Year Built	Number of Buildings (thousand)	Floorspace (million square feet)	Number of Buildings (thousand)	Percent of Buildings	Floorspace (million square feet)	Percent of Floorspace
All Buildings	4,806	67,876	236	5	14,320	21
Before 1970	2,811	37,074	106	4	5,431	15
1970-79	982	14,014	52	5	3,313	24
1980-89	884	14,287	58	7	4,342	30
1990-92	128	2,502	19	15	1,236	49

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1992 Commercial Buildings Energy Consumption Survey.

Energy Audits: Buildings that had an energy audit performed since 1987 comprised only 22 percent of commercial floorspace. The older the building, the more likely it was to have had an energy audit. Additionally, energy audits were more likely to occur in buildings located in the Northeast, those which are government owned, and those which use district heat (Table A61).

Energy Managers: People who are responsible for the day-to-day operation and maintenance of the heating and/or cooling equipment, building energy managers, were employed in buildings comprising only 4 percent of heated or cooled commercial floorspace (7 percent of all commercial floorspace is not heated or cooled). These energy managers were most likely to be found in health care buildings; 12 percent of the floorspace in health care buildings was in ones with a building energy manager (Table A61). In most other commercial buildings, this responsibility was taken on by a custodian, cleaning contractor, owner, manager, or other, usually a tenant or an organizational volunteer (Figure 7).

Figure 7. Person Responsible for the Heating and/or Cooling Equipment, 1992

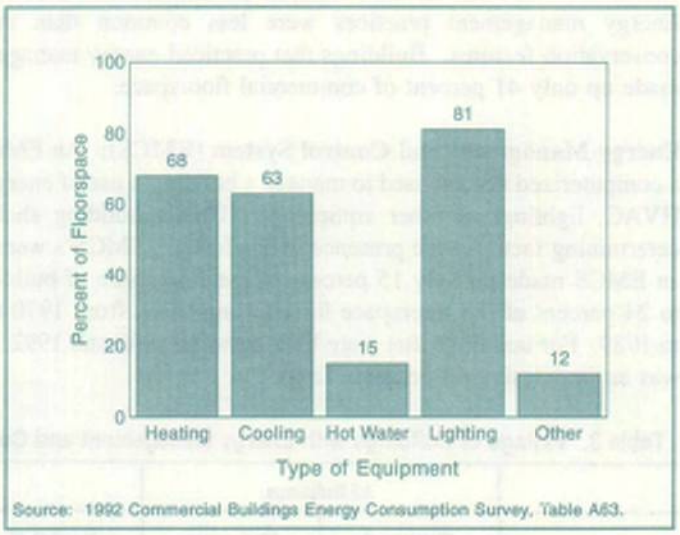


Source: 1992 Commercial Buildings Energy Consumption Survey.

Reduction in Equipment Use When Closed

Lighting was more likely to be reduced when a building was closed than were heating, cooling or water heating. Figure 8 shows the percentage of floorspace in buildings where equipment use was reduced during off hours, by the specific type of equipment (Table A63).

Figure 8. Types of Equipment that Were Used Less When the Building Was Closed, 1992



Source: 1992 Commercial Buildings Energy Consumption Survey, Table A63.

Demand-Side Management (DSM)

Only 7 percent of all buildings, 17 percent of the floorspace, participated in DSM programs in 1992 (Tables A60 and A61).[8] Specifically, 4 percent of all buildings were in programs sponsored by their electric or gas utility and 3 percent participated in in-house, third-party, or other-sponsored DSM programs.

Figure 9 displays the DSM participation rates for various types of buildings. For example, 31 percent of all the buildings over 200,000 square feet participated in DSM. The highest participation rates were in buildings that were: large (both in floorspace and in number of workers), used for education or health care, located in the Northeast, or government owned (Table A60).

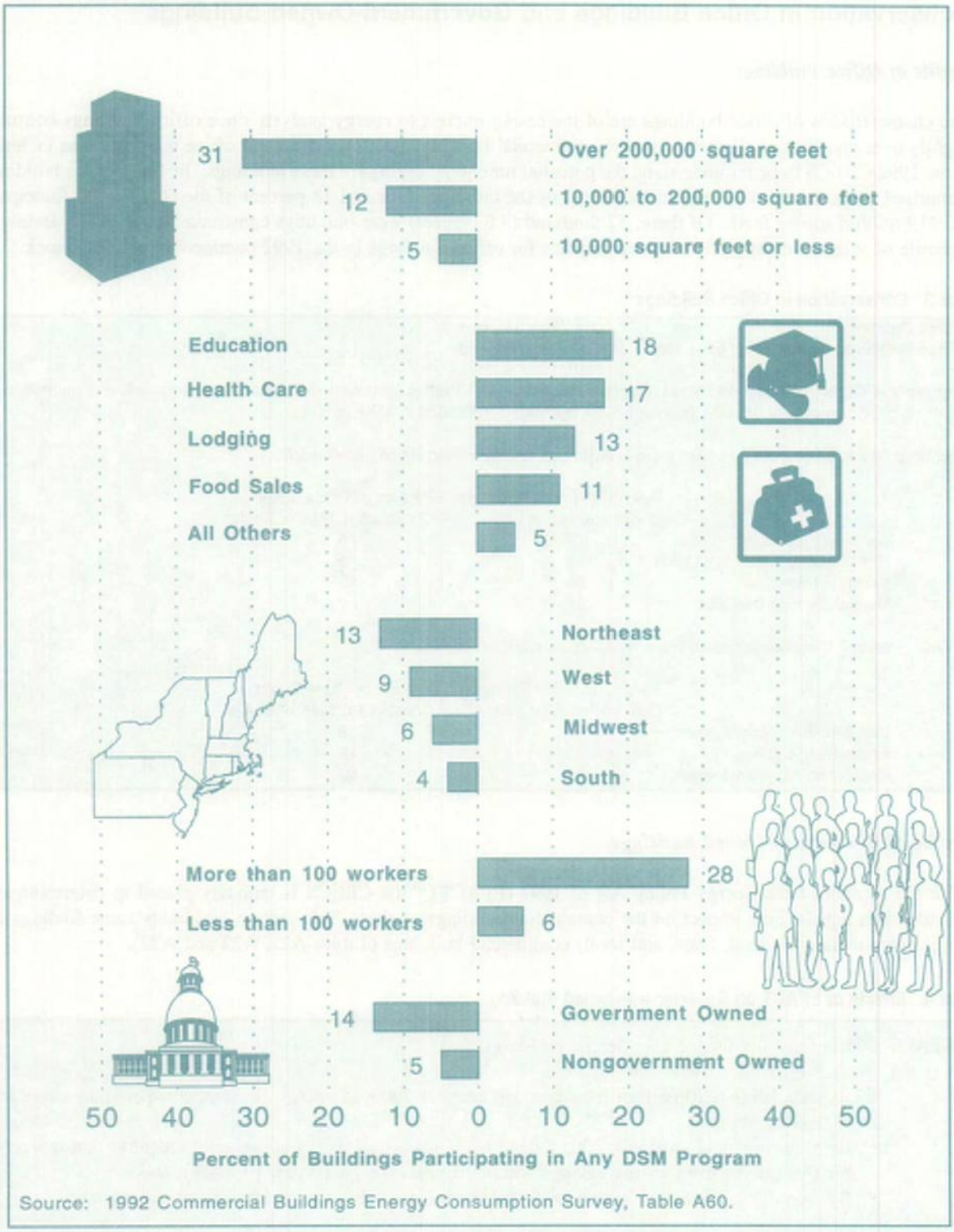
The 1990 Residential Energy Consumption Survey indicated that substantial energy savings could be found in the residential sector by targeting potential DSM participants.[9] Similarly, the 1992 CBECS data suggests that a large potential also exists in the commercial sector for DSM programs. While only 13 percent of the CBECS respondents were aware of DSM programs offered by their utility, of this group, 32 percent actually took part in a utility-sponsored DSM program.

Lighting DSM programs were more often utility-sponsored (65 percent of buildings participating in lighting programs were in ones sponsored by an electric or gas utility) rather than in-house, third party, or other-sponsored (39 percent). Conversely, HVAC programs were more often in-house, third party, or other-sponsored (60 percent) rather than utility-sponsored (42 percent). Some of these buildings had multiple programs or multiple sponsors. An in-house sponsor is the building's owner or management; a third-party sponsor is an energy service company (ESCO) that advises on the best type of energy-efficient equipment to be installed for a particular building.

[8]The CBECS includes in-house demand-side management programs and programs with a third party or other sponsor as well as utility-sponsored programs. Cases in which the respondent did not know whether the building participated in DSM programs were not imputed.

[9]For information about energy use in the residential sector, see *Household Energy Consumption and Expenditures 1990* DOE/EIA-0321(90), pp 37-47.

Figure 9. Types of Buildings Most Likely to Participate in DSM, 1992



Source: 1992 Commercial Buildings Energy Consumption Survey, Table A60.

Conservation in Office Buildings and Government-Owned Buildings

Profile of Office Buildings

The characteristics of office buildings are of increasing interest to energy analysts since office buildings consume slightly over one-fifth of all energy used in commercial buildings. An oversample of office buildings was included in the 1992 CBECS to better understand the potential for energy savings in these buildings. In 1992, office buildings comprised 16 percent (749 thousand buildings) of the building stock and 18 percent of the commercial floorspace (12,319 million square feet). Of these, 57 thousand (7.6 percent) were buildings constructed after 1986. Below is a profile of selected energy-related characteristics for office buildings in the 1992 commercial building stock.

Box 3. Conservation in Office Buildings

Office Buildings - **749 thousand**
Office Buildings Constructed after 1986 - **57 thousand**

Floorspace: Of the 57 thousand office buildings constructed after 1986, 47 percent were over 10,000 square feet compared to 24 percent of the 692 thousand office buildings constructed in 1986 or earlier.

Lighting: Newer office buildings were more likely to use energy-saving lighting equipment.

	Percent of Office Buildings Constructed after 1986	Percent of Office Buildings Constructed 1986 or Earlier
Compact Fluorescent Bulbs	19	6
High-Intensity Discharge Lights	11	5
Specular Reflectors	26	13
Manual Dimmer Switches	21	8

HVAC: Newer office buildings had more HVAC conservation features.

	Percent of Office Buildings Constructed After 1986	Percent of Office Buildings Constructed 1986 or Earlier
Variable Air-Volume System	40	8
Economizer Cycle	35	11
Regular HVAC Maintenance	74	69

Profile of Government-Owned Buildings

With the signing of the Energy Policy Act of 1992 (EPACT),[10] the CBECS is uniquely placed to determine and illustrate this legislation's impact on the commercial buildings market. This section highlights some findings for government-owned (Federal, State, and local) commercial buildings (Tables A21, A22 and A23).

Box 4. Effects of EPACT on Government-Owned Buildings

EPACT affects federally owned commercial buildings:

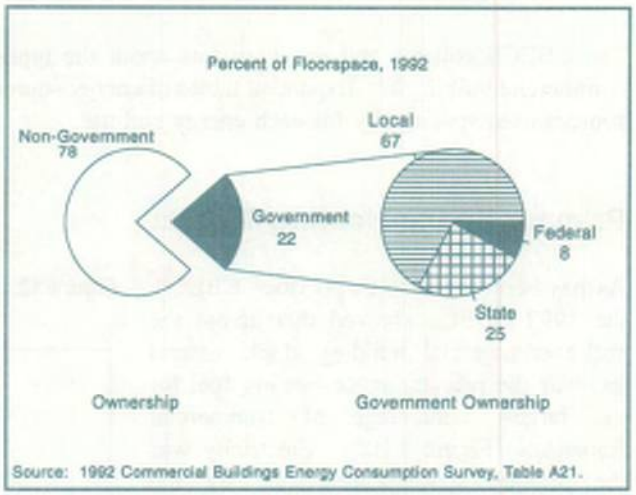
- By mandating a 20 percent reduction, by the year 2000, of energy consumption per square foot in federal buildings;
- By requiring that by the year 2005 federal buildings install energy conservation features that will pay for themselves from energy savings within 10 years (i.e., a 10-year payback); and,
- By introducing financial incentives to federal buildings for energy improvement programs.

EPACT also creates, for local-owned and State-owned commercial buildings, an Energy Incentive Fund which provides up to $1 million to States that demonstrate a commitment to improving the energy-efficiency of buildings.

[10]The Energy Policy Act of 1992, Title I - Energy Efficiency, Subtitle E - State and Local Assistance, Section 141 and Subtitle F - Federal Agency Energy Management, Section 152.

Government-owned buildings represented approximately 22 percent of the commercial floorspace in 1992, or 15.1 billion square feet in approximately 0.6 million government-owned buildings. Of these government-owned buildings, 8 percent of the floorspace was in buildings owned by the Federal government, 25 percent was in State-owned buildings, and 67 percent was in buildings owned by local governments (Figure 10). Education was the primary activity of government-owned buildings, representing 46 percent of all government buildings.

Figure 10. Ownership of Commercial Buildings, 1992

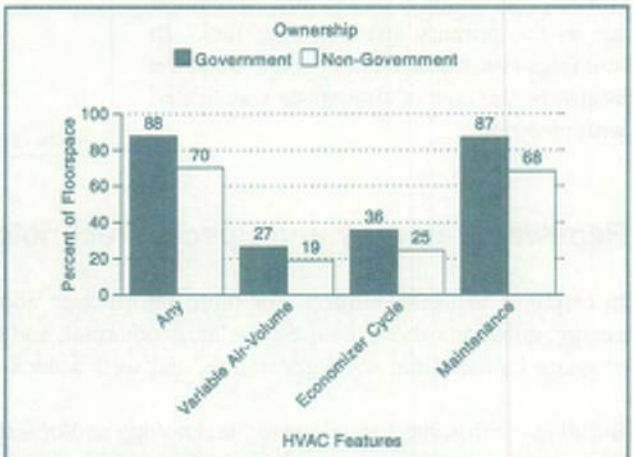


Source: 1992 Commercial Buildings Energy Consumption Survey, Table A21.

Government-Owned Buildings Take Advantage of Energy-Efficient Technologies and Energy Management Practices

Commercial buildings consume large amounts of energy for HVAC purposes.[11] In 1992, as measured in floorspace, approximately 88 percent of all government buildings contained HVAC conservation features compared to 70 percent of non government buildings (Figure 11).

Figure 11. HVAC Conservation Features by Building Ownership, 1992



Source: 1992 Commercial Buildings Energy Consumption Survey, Table 36.

In 1992, government-owned buildings indicated a higher usage of energy management practices than non-government buildings. The 1992 CBECS included four energy management practices: EMCS, DSM, energy audits, and building energy managers. According to the CBECS, in 59 percent of government-owned floorspace energy management practices were used, compared to 36 percent of non government-owned floorspace.[12] Of the 15.1 billion square feet of government-owned floorspace: EMCS controlled 32 percent; 28 percent of the floorspace showed DSM activity; and 30 percent indicated the performance of energy audits. Although 5 percent of government-owned floorspace had a building energy manager, there was not a statistically significant difference between government-owned and non government-owned buildings.

[11]End-use consumption estimates are not currently available. End-use intensities (EUI) will be published at a later date.

[12]Estimates of any energy management practices were calculated from public use diskettes of Commercial Buildings Energy Consumption Survey.

Energy Sources and Energy End Uses

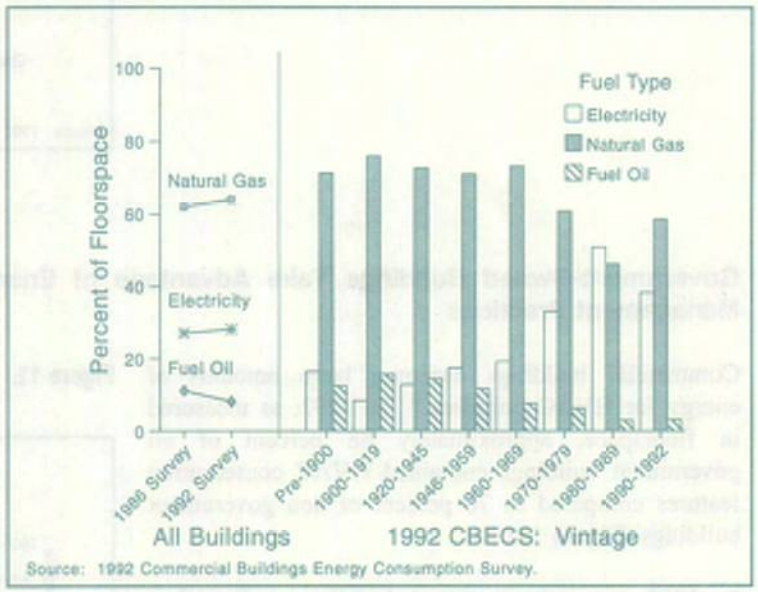
The CBECS collects and provides data about the types of energy sources and how each is ultimately used in commercial buildings.[13] Expanded tables of energy sources, Tables A69 and A70, provide information about energy sources used specifically for each energy end use.

Primary Space-Heating Trends

As has been the case in previous CBECS, the 1992 CBECS showed that across the entire commercial building stock, natural gas was the primary space-heating fuel for the largest percentage of commercial floorspace (Figure 12).[14] Electricity was the primary space-heating fuel for the second largest percentage of floorspace, and fuel oil accounted for the third largest percentage.

Figure 12 also shows the primary space-heating fuel distribution by building vintage. Data from buildings constructed in the 1980's show an interruption in the long-standing dominance of the use of natural gas as the primary space-heating fuel. In buildings constructed during the 1980's, the largest percentage of floorspace was heated with electricity.

Figure 12. Primary Space-Heating Fuel by Building Construction Year, 1986 and 1992



Source: 1992 Commercial Buildings Energy Consumption Survey.

Renewable Energy and Special Technology

In response to users' requests for more information about special energy technologies and the use of renewable energy, questions about the use of solar, geothermal, and thermal energy storage, along with questions about the use of waste incineration, wind generation, and well water for cooling, were added to the 1992 CBECS .[15]

Buildings with some special energy technology and/or a renewable energy source were found in each Census region. Wood was by far the most widely used renewable fuel; it was used in about 2.2 percent of commercial buildings. Buildings reporting wood as an energy source tended to be under 10,000 square feet and usually reported having one to four workers. These buildings also tended to be used for mercantile and service activities or as nonrefrigerated warehouses. Thirty-six percent of buildings that used wood were constructed between 1920 and 1945; over 60 percent of wood-using buildings were located in the Midwest or the South Regions.

[13]Detailed information on energy sources and end uses in 1992 commercial buildings is found in Appendix A, "Detailed Tables," Tables A29 through A46.

[14]The 1992 CBECS resampled buildings that were sampled in the 1986 CBECS. For further information, see Appendix B, "How the Survey Was Conducted."

[15]*Users-Needs Study for the 1992 Commercial Buildings Energy Consumption Survey*, DOE/EIA-0555(92)/4, Energy Information Administration (Washington, D.C.: Government Printing Office, September 1992).

The most widely reported special technologies were passive solar features, thermal energy storage (TES) or pump storage, and well water used for cooling. Buildings in the West Census Region reported using passive solar technologies and TES more frequently than buildings in the other regions. Buildings built between 1970 and 1986 were the most likely to use passive solar technology, while those built between 1920 and 1945 were most likely to use TES. Both of these construction periods accounted for high percentages of buildings using well water for cooling; 42 percent of all cases using well water for cooling were located in the South. In all regions, buildings that most frequently reported using any of these special technologies were office buildings, mercantile and service buildings, and education buildings.

Box 5. Special Energy-Related Technologies

Widely Reported:
- Passive Solar Features
- Thermal Energy Storage (TES)
- Well Water for Cooling

Reported:
- Photovoltaic Cells
- Solar Thermal Panels
- Geothermal Energy
- Waste Incineration
- Wind Generation

For certain renewable energy types and technologies, there were too few buildings in the sample to permit separate reporting or to be statistically significant. These technologies include: photovoltaic cells (PVC), solar thermal panels, geothermal energy, waste incineration, and wind generation.

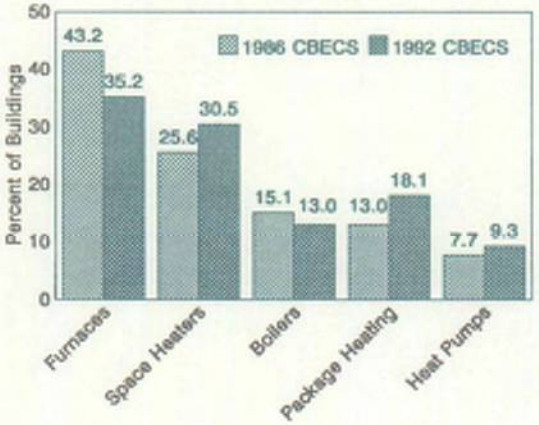
End-Use Equipment

A large portion of the energy used in commercial buildings is devoted to heating, cooling, ventilation, and lighting. The 1986 and 1992 CBECS included questions on the types of equipment that provide these energy services in order to provide a profile of the main energy using equipment in the U.S. commercial building stock. In addition, the 1992 CBECS included questions about commercial refrigeration equipment, water heating equipment, and the presence of personal computers and terminals.[16]

Increased Use of Packaged Cooling Units and Heat Pumps

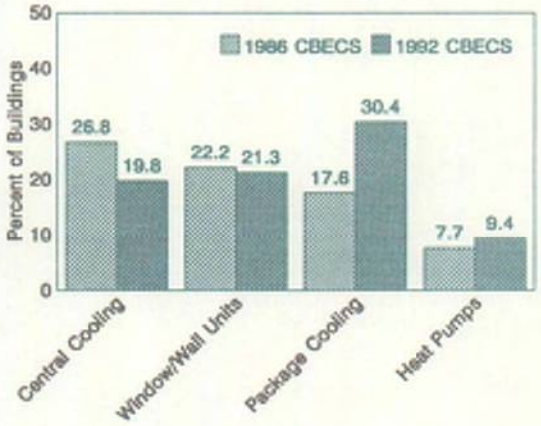
Among cooling equipment types, an increase in the percentage of buildings using packaged cooling systems represents the largest difference between the 1986 and 1992 CBECS.[17] Heat pumps also showed a slight increase, while all other types of cooling equipment showed a decline. The increase in heat pumps, however, may be overstated; the figures for 1986 include only air-source heat pumps, while the 1992 figures include both air- and water-source heat pumps (see Figures 13 and 14).

Figure 13. Percent of Buildings Using Heating Equipment in 1986 and 1992 CBECS



Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1986 and 1992 Commercial Buildings Energy Consumption Surveys.

Figure 14. Percent of Buildings Using Cooling Equipment in 1986 and 1992 CBECS



Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1986 and 1992 Commercial Buildings Energy Consumption Surveys.

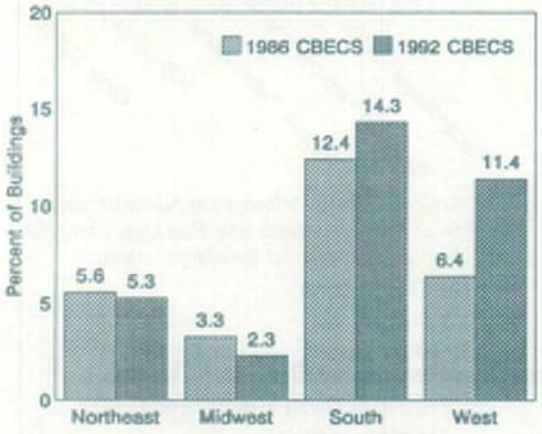
While the percentage of buildings using heat pumps had increased slightly nationwide between 1986 and 1992, there was, in fact, a quite dramatic increase in the West. This region, which already showed the second largest percentage of buildings using heat pumps in 1986, increased its lead over the Northeast and Midwest, where the percentages showed slight declines.

[16]Detailed information on end-use equipment in 1992 commercial buildings is found in Appendix A, "Detailed Tables," Tables A47 through A56.

[17]Because the 1986 CBECS questionnaire included a category of "Central Cooling," under which respondents could have mistakenly included packaged cooling units, it is possible that packaged cooling units are underrepresented in the 1986 data. However, the increase is of such a magnitude that it could not be accounted for simply by mistaken responses.

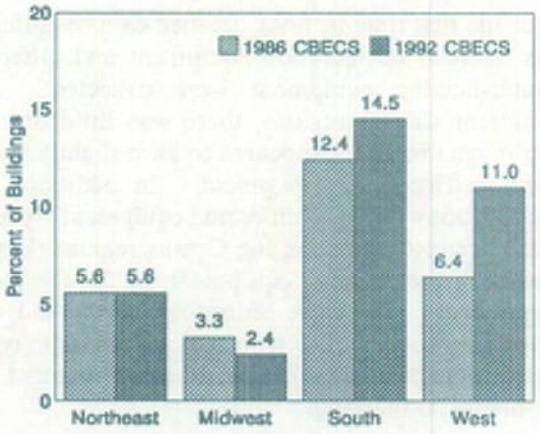
In 1992, unlike 1986, the respondents were given a chance to indicate whether their heat pump was used for heating or cooling or both. By definition, a heat pump can be used for both heating and cooling, but in most regions the use of heat pumps for cooling was higher than their use for heating (Figures 15 and 16). There are any number of reasons why an individual might decide to use a heat pump for heating only or cooling only, rather than both, and the most probable explanations vary by region. In the Northeast and the Midwest, the colder climate may lead a building manager to believe that a heat pump would not be adequate to heat their building, or would not be economical, causing him to use some other heating equipment. In the South, the warmer climate may make it unnecessary to heat a building at all, and a heat pump would be used only for cooling. Only in the West was the use of heat pumps for heating greater than the use of heat pumps for cooling. Presumably, the climate in some parts of this region is cool enough to require a moderate amount of heating in the winter, but no cooling in the summer.

Figure 15. Percent of Buildings Using Heat Pumps for Heating, by Region, 1986 and 1992 CBECS



Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1986 and 1992 Commercial Buildings Energy Consumption Surveys.

Figure 16. Percent of Buildings Using Heat Pumps for Cooling, by Region, 1986 and 1992 CBECS

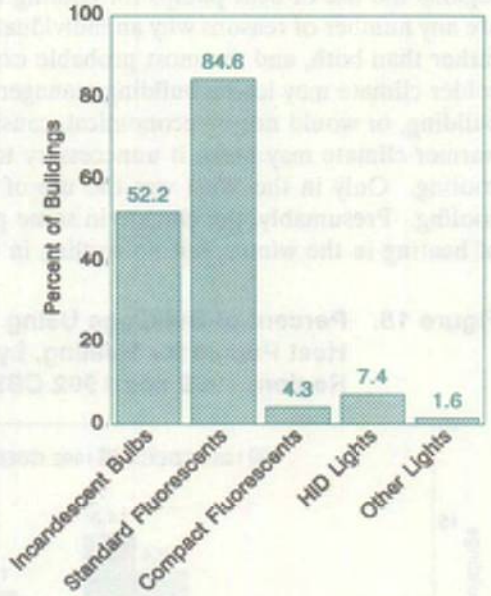


Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1986 and 1992 Commercial Buildings Energy Consumption Surveys.

Fluorescent Lamps Are the Predominant Commercial Lighting Source

The 1992 CBECS data reveal that fluorescent lamps were by far the most common lighting type in commercial buildings. These were followed by incandescent bulbs, with compact fluorescent lights and high-intensity discharge (HID) lights lagging far behind these two types. These data suggest that there is an unrealized potential for replacing incandescent bulbs with more energy-efficient equipment (Figure 17).

Figure 17. Percent of Buildings Using Lighting Equipment, 1992



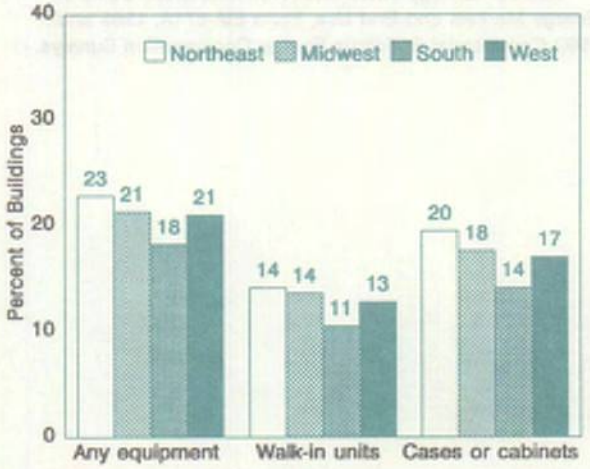
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1992 Commercial Buildings Energy Consumption Survey.

Use of Water-Heating and Refrigeration Equipment Largely Uniform Among Regions

For the first time in 1992, detailed data on different types of commercial refrigeration equipment and different types of water-heating equipment were collected. Among the different Census regions, there was little or no variation, although the South appeared to have slightly fewer buildings with refrigeration equipment. In addition, the relative proportions of the different equipment types remained almost constant among the Census regions (Figure 18). As for the water-heating equipment, by far the most common types were the single-centralized tank, and the distributed-residential type tank. No other types were represented in more than 2 percent of commercial buildings.

- A centralized tank with its own heat source was present in 36 percent of commercial buildings
- Residential-type water-heating tanks, distributed about the building, were present in 30 percent of commercial buildings
- Other types of water-heating equipment (e.g., those drawing heat from the space-heating equipment, or instantaneous point-of-use heaters) were each present in less than 2 percent of commercial buildings.

Figure 18. Percent of Buildings Using Refrigeration Equipment, by Region, 1992

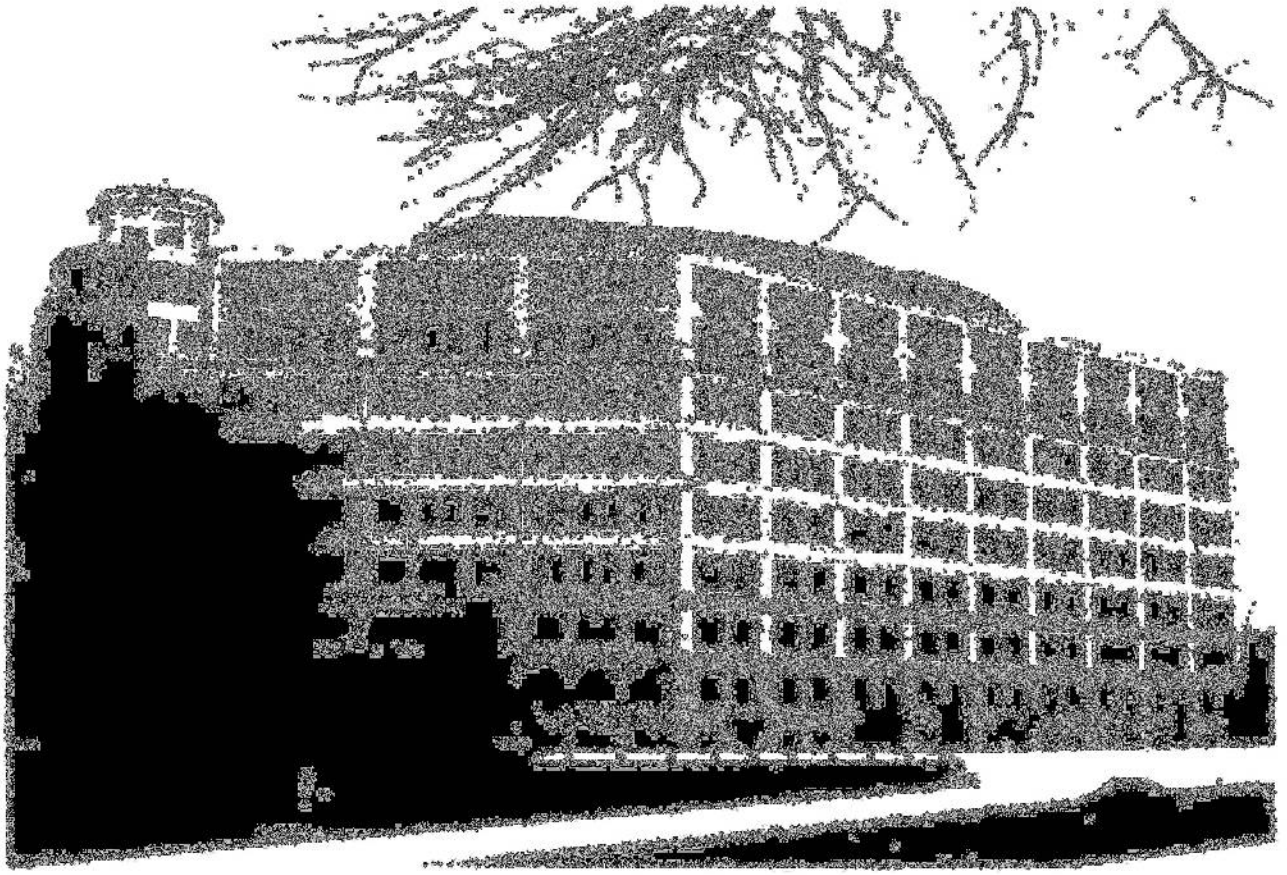


Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, 1992 Commercial Buildings Energy Consumption Survey.

There is little diversity in the types of water heating equipment used in commercial buildings, with the vast majority of buildings having one of only two types. This also applies to the other forms of energy-using equipment, with two or three types predominating among the various types of heating, cooling, and lighting equipment used in commercial buildings.

Appendix A

Detailed Tables



Office buildings refer to buildings used for general, professional, and administrative office space. In the 1992 CBECS, office buildings accounted for 18.1 percent of floorspace selected by principal building activity.

Appendix A

Detailed Tables

The following 70 tables in this appendix present extensive cross-tabulations of commercial buildings characteristics. These data are from the Buildings Characteristics Survey portion of the 1992 CBECS. The "Quick-Reference Guide," indicates the major topics of each table in this appendix. Directions for calculating an approximate relative standard error (RSE) for each estimate in the tables are presented in Figure A1, "Use of RSE Row and Column Factor." The Glossary contains the definitions of the terms used in the tables. See the preceding "At A Glance" section for highlights of the detailed tables.

Table Organization

Overall Organization

The detailed tables have been grouped together to make it easier to find related information. Table A1 summarizes the total number of buildings, square footage, and workers; the average and median square footage per building and per worker; the average and median operating hours; and the median age of the building. (Note: In the *Commercial Buildings Characteristics 1989* report, comparable average statistics were found in Tables 13, 28, 32, and 15, respectively.) Tables A2 through A28 contain characteristics related to the geographic location, building structure, and use. Tables A29 through A56 contain data about the energy sources, end uses and equipment found in the buildings. Tables A57 through A67 contain information about conservation measures and Demand-side Management (DSM) programs found in the buildings. Tables A68 through A70 are special tabulations of building characteristics that provide the most comprehensive breakdown of principal building activity and energy sources and end uses, respectively.

Generally, there are two tables for each topic, one giving the number of buildings in each crosstabulation cell, the other giving the floorspace in those buildings. For example, Table A4 for example, provides the number of buildings in the Census regions and divisions while Table A5 provides the floorspace for these same regions and divisions. For some smaller tables, the number of buildings and floorspace appear together in a single table.

Three tables provide percentage statistics: Table A3, "Census Region, Percent of Buildings and Floorspace," corresponds to the related Table A2, "Number of Buildings and Floorspace." Tables A30 and A32, "Energy Sources, Percent of Buildings" and "Energy Sources, Percent of Floorspace," correspond, respectively, to the related Tables A29 and A31, "Number of Buildings and Floorspace." The percentage tables express each cell total as a percentage of the row total.

Floorspace Totals

Two methods were used to calculate floorspace. In Method 1, the floorspace totals include all the floorspace in buildings where the indicated feature was present. Therefore, a particular building's floorspace was either entirely included or excluded from a particular table cell. This method was used for the majority of the detailed tables.

In a few of the detailed tables, a second method of calculating floorspace was used. In Method 2, floorspace was calculated as a fraction of the total floorspace. This apportioned floorspace was determined for each building by multiplying the building's floorspace by the fraction that had the indicated feature. For example, Table A44 shows the total floorspace for all buildings (Method 1) and the total heated floorspace in all buildings (Method 2). The statistics for the total heated floorspace were determined by multiplying the building's total floorspace by the fraction of floorspace that was heated.

Floorspace totals using Method 2 are given in one column of Table A24 for the floorspace which is vacant three or more months. Tables A44, A45, and A46 each have an apportioned total column, presenting, respectively, the floorspace heated, cooled, or lighted. All statistics in Table A56 are apportioned totals indicating the total floorspace lighted by each type of lighting equipment.

Analysis Categories

The following core set of analysis categories appear in the same order in all basic tables: floorspace, principal building activity, year constructed, Census region, energy sources, and energy end uses. Additional categories are included on the tables when they relate to specific overall topic areas. For example, principal facility activity would appear on the multibuilding facility Table A25. These additional categories are generally grouped into broad topics such as building structure, building use, energy sources and end use, equipment and distribution systems, and energy management practices, and conservation features. Table A1, the summary table, contains the core analysis categories as well as most of the additional categories.

There are two types of analysis categories, those that divide commercial buildings into exclusive, nonoverlapping categories and those that indicate nonexclusive, overlapping subsets. For example, "climate zone" is a set of exclusive categories; a given building belongs in only one of these. "Energy sources," on the other hand, is a set of nonexclusive categories; a given building may be included in more than one line under this category since the building may use more than one energy source. The phrase, "more than one may apply," indicates that the categories under this row header are overlapping. Both exclusive and overlapping categories may be nonexhaustive, that is, there may be some buildings that do not fall into any of the listed categories.

Quick-Reference Guide

The "Quick-Reference Guide," lists by broad class, the topic areas covered by the detailed tables and the table numbers for the different types of tables. To help the reader quickly find a particular table, the broad topic class is marked along the edge of each table page.

To find a particular two-way breakdown of interest, the tables featuring both topics should be consulted. For example, a breakdown by building size and climate zone is found in the climate zone table (Table A6), but not in the building size tables (Tables A8 and A9).

Electronic Data Sets

Tables A2, A29, A31, A33, A60, and A65 in this report are also available on diskette. The electronic files on the diskette are flat ASCII files and there is one file for each of these tables. The diskette containing the files also contains a READ.ME ASCII text file with a table of contents. In addition, CBECS microdata are available on Public-Use Diskettes either in ASCII or dBase format (for details on obtaining the diskettes, see Appendix B, "How the Survey Was Conducted," Public-Use Diskettes, and the inside back cover of this report).

Row and Column Factors

The tables in this report present estimates for commercial buildings in the United States. Since the estimates are based on the sample surveyed, they are subject to sampling error. To help the reader compute an approximate RSE for each of the estimates presented in the tables, the row and column factors are displayed on the top line and in the far-right column of each table, except for the median statistics in Table A1, "Summary Table of Average Square Feet, Hours of Operation and Age of Building."

The use of the row and column RSE factors is illustrated in Figure A1, using a sample table from a previous report. Using the row of the table labeled "Mercantile and Service" and the column labeled "Total Floorspace (million square feet)" gives an estimate of 12.805 billion square feet for the total commercial floorspace contained in Mercantile and Service buildings. The RSE row factor is $R_{\text{Mercantile and Service}} = 5.17$. The RSE column factor is $C_{\text{Total Floorspace}} = 1.096$. The approximate RSE for the estimate is, therefore, computed as

$$RSE_{\text{Mercantile and Service, Total Floorspace}}$$

$$= 5.17 \times 1.096 = 5.67 \text{ percent.}$$

The approximate standard error for the estimate is,

$$\text{Standard Error}_{\text{Mercantile and Service, Total Floorspace}}$$

$$= .0567 \times 12{,}805 = 726 \text{ million square feet.}$$

This value for the standard error can be used to construct confidence intervals and to perform hypothesis tests by standard statistical methods. However, because the generalized variance procedure gives only approximate RSE's, such confidence intervals and statistical tests must also be regarded as only approximate. For the example above, the RSE determined directly by the jackknife method is actually 6.7, not 5.7. For more details about the derivation of the row and column RSE factors, see Appendix C, "Nonsampling and Sampling Errors."

Figure A1. Use of RSE Row and Column Factors

Table 1. Principal Building Activity

Building Characteristics	Number of Buildings (thousand)	Number of Buildings (percent)	**Total Floorspace (million square feet)**	Total Floorspace (percent)	RSE Row Factor
RSE Column Factor:	0.975	0.879	**1.096**	1.064	
All Buildings	4,154	100.0	58,229	100.0	3.13
Principal Building Activity					
Assembly	575	13.8	7,339	12.6	6.22
Education	241	5.8	7,321	12.6	6.62
Food Sales	102	2.5	712	1.2	13.65
Food Service	201	4.8	1,281	2.2	8.48
Health Care (inpatient)	14	.3	1,757	3.0	20.29
Health Care (outpatient)	38	.9	350	.6	19.96
Laboratory	17	.4	283	.5	28.19
Lodging	123	3.0	2,179	3.7	10.11
Mercantile and Service	1,287	31.0	**12,805**	22.0	**5.17**
Office	614	14.8	9,546	16.4	5.76
Public Order and Safety	55	1.3	680	1.2	14.96
Skilled Nursing	13	.3	605	1.0	23.46
Warehouse (nonrefrigerated)	524	12.6	8,522	14.6	6.74
Warehouse (refrigerated)	25	.6	474	.8	24.12
Other	86	2.1	1,442	2.5	15.37
Vacant	238	5.7	2,931	5.0	8.94

Total Floorspace in buildings where the Principal Building Activity is
Mercantile and Service = 12,805 Million Square Feet
R(Mercantile and Service) = 5.17
C(Total Floorspace) = 1,096
Approximate RSE (Mercantile and Service, Total Floorspace)
= (5.17) * (1.096) = 5.67 percent
Approximate Standard Error (Mercantile and Service, Total Floorspace)
= (.0567) * (12,805) = 726 Million Square Feet
Approximate 2 Standard Errors (95 percent) Confidence Interval
= (1.96) * (726) = 1,423 Million Square Feet

Therefore, with 95 percent confidence, the total floorspace in mercantile and service buildings in 1989 was between 11,382 million and 14,228 million square feet (12,805 + 1,423).

Source: Energy Information Administration, Office of Energy Markets and End Use, the 1992 Commercial Buildings Energy Consumption Survey.

Quick-Reference Guide

Data Item/Category	Table Numbers	
	Number of Buildings	Floorspace
Location		
Census Region	A2 (A3 Percent)	A2 (A3 Percent)
Census Division	A4	A5
Climate Zone	A6	A6
Metropolitan Status	A7	A7
Structure		
Building Size	A8	A9
Year Constructed	A10	A11
Floors	A12	A12
Wall Materials	A13	A14
Roof Materials	A15	A16
Building Use		
Number of Workers	A17	A18
Weekly Operating Hours	A19	A20
Occupancy		
Government	A21	A21
Nongovernment	A22	A23
Percent Vacant	A24	A24
Multibuilding Facilities	A25	A25
Special Space Functions	A26	A27
Additional Operating Hours	A28	A28
Energy Sources and End Use		
Energy Sources Used	A29 (A30 Percent)	A31 (A32
Energy End Uses	A33	Percent)
End-Use Combinations	A34	A33
Space-Heating Energy Sources	A36	A35
Primary Space-Heating Fuel	A38	A37
Cooling Energy Sources	A40	A39
Water-Heating Energy Sources	A41	A40
Cooking Energy Sources	A43	A42
		A43
End-Use Percentage		
Percent Heated	A44	A44
Percent Cooled	A45	A45
Percent Lit	A46	A46
End-Use Equipment		
Heating	A47	A48
Cooling	A49	A50
Refrigeration	A51	A52
Water-Heating	A53	A54
Lighting	A55	A56
Conservation/Energy Management Features		
Energy Conservation Features	A57	A57
Building Shell	A58	A59
Energy Management	A60	A61
Reduction in Equipment Use	A62	A63
Lighting DSM Participation	A64	A65
HVAC DSM Participation	A66	A67
Special Tabulations		
Principal Building Activity	A68	A68
Energy Sources Used for Particular End-Use	A69	A70

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.1	1.2	1.5	1.0	--	1.3	--	0.4	--	--	
All Buildings	4,806	67,876	71,236	14.1	4.5	953	1,013	58	50	28.5	4.0
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	7,327	9,701	2.7	2.5	755	850	56	48	28.5	3.3
5,001 to 10,000	975	7,199	7,644	7.4	7.2	942	1,267	57	49	30.5	2.8
10,001 to 25,000	647	10,375	10,357	16.0	15.0	1,002	1,525	60	50	27.5	3.7
25,001 to 50,000	280	10,069	8,674	35.9	35.0	1,161	1,714	67	55	28.5	4.6
50,001 to 100,000	116	8,062	7,830	69.8	68.0	1,030	1,379	73	60	24.5	5.0
100,001 to 200,000	71	9,678	8,282	137.0	130.0	1,169	1,767	77	61	28.5	6.5
200,001 to 500,000	26	7,889	7,545	302.8	270.0	1,046	2,071	94	80	22.5	6.6
Over 500,000	9	7,278	11,203	770.5	600.0	Q	4,133	105	84	18.5	20.4
Principal Building Activity											
Education	301	8,470	6,872	28.2	9.0	1,232	960	49	45	28.5	5.3
Food Sales	130	757	842	5.8	2.6	899	1,000	108	105	23.5	10.7
Food Service	260	1,491	2,244	5.7	3.4	665	613	91	95	31.5	7.2
Health Care	63	1,763	3,385	27.9	4.3	521	500	69	50	26.5	10.0
Lodging	154	2,891	2,022	18.8	8.0	1,429	1,700	158	168	25.5	8.6
Mercantile and Service	1,272	12,402	15,979	9.7	4.0	776	1,077	62	54	28.5	9.0
Office	749	12,319	27,161	16.4	5.0	454	500	53	45	26.5	4.8
Parking Garage	24	1,652	215	69.9	6.0	7,668	3,000	83	52	21.5	25.7
Public Assembly	278	4,556	2,752	16.4	5.9	1,655	1,875	50	45	28.5	13.3
Public Order and Safety	60	820	801	13.7	5.0	1,023	1,050	123	168	23.5	17.6
Religious Worship	366	3,747	2,298	10.2	4.4	1,630	2,033	22	10	36.5	12.0
Warehouse and Storage	761	11,484	4,451	15.1	5.0	2,580	1,925	50	48	22.5	7.5
Other	69	1,130	1,232	16.4	4.0	918	1,273	75	56	23.5	18.3
Vacant	319	4,396	981	13.8	4.2	4,481	2,000	20	0	42.5	14.5
Year Constructed											
1899 or Before	169	1,721	1,531	10.2	5.5	1,124	1,350	50	45	104.5	10.6
1900 to 1919	255	3,608	3,004	14.1	5.0	1,201	1,325	51	45	83.5	10.7
1920 to 1945	724	8,712	6,597	12.0	4.2	1,321	1,200	52	48	60.5	7.5
1946 to 1959	880	10,421	9,114	11.8	4.2	1,143	1,000	54	48	40.5	6.1
1960 to 1969	783	12,612	17,873	16.1	4.5	706	1,000	64	51	28.5	3.7
1970 to 1979	982	14,014	14,400	14.3	4.5	973	1,000	60	50	17.5	5.2
1980 to 1989	884	14,287	15,987	16.2	4.8	894	943	64	52	7.5	6.6
1990 to 1992	128	2,502	2,731	19.6	4.8	916	1,138	62	52	1.5	10.6
Census Region											
Northeast	771	13,400	18,570	17.4	5.2	722	1,050	62	52	35.5	10.5
Midwest	1,202	17,280	14,872	14.4	4.5	1,162	1,225	54	49	32.5	5.5
South	1,963	24,577	23,220	12.5	4.0	1,058	1,013	56	48	24.5	5.4
West	870	12,619	14,574	14.5	5.0	866	800	65	52	25.5	6.6
Energy Sources (more than one may apply)											
Electricity	4,616	66,549	71,187	14.4	4.7	935	1,000	60	50	27.5	3.9
Natural Gas	2,665	45,097	51,322	16.9	5.1	879	1,000	63	51	31.5	4.7
Fuel Oil	559	13,218	18,068	23.7	5.0	732	1,200	58	50	35.5	6.5
District Heat	95	5,339	7,153	56.0	17.0	746	1,125	76	50	33.5	9.9
District Chilled Water	28	2,066	2,709	72.6	26.5	763	1,125	77	55	27.5	15.2
Propane	337	3,393	2,884	10.1	3.5	1,177	1,183	58	51	24.5	10.1
Any Other	163	1,551	1,320	9.5	3.6	1,175	1,600	59	48	30.5	13.9

See footnotes at end of table.

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992 (Continued)

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.1	1.2	1.5	1.0	--	1.3	--	0.4	--	--	
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	61,996	69,607	14.8	4.8	891	1,000	61	50	28.5	4.1
Air-Conditioned Buildings	3,502	57,041	66,909	16.3	5.0	853	950	63	51	27.5	4.2
Buildings with Water Heating	3,502	58,479	67,233	16.7	5.2	870	960	65	52	28.5	4.2
Buildings with Cooking	734	23,065	30,935	31.4	6.3	746	889	79	76	29.5	7.8
Buildings with Manufacturing	121	3,174	2,538	26.3	9.6	1,250	1,050	59	49	27.5	10.6
Climate Zone: 45-Year Average											
Fewer than 2,000 CDD and --											
More than 7,000 HDD	399	5,623	4,818	14.1	5.0	1,167	1,184	63	52	30.5	10.3
5,500-7,000 HDD	1,134	18,024	17,497	15.9	5.0	1,030	1,150	58	50	35.5	6.8
4,000-5,499 HDD	1,077	16,162	20,520	15.0	4.0	788	1,167	56	50	28.5	13.4
Fewer than 4,000 HDD	1,101	15,251	16,627	13.8	4.5	917	891	59	49	24.5	8.5
More than 2,000 CDD and --											
Fewer than 4,000 HDD	1,095	12,816	11,774	11.7	4.2	1,089	1,000	58	48	25.5	8.6
Predominant Exterior Wall Material											
Masonry	3,115	48,585	45,457	15.6	5.0	1,069	1,000	61	50	32.5	3.6
Siding or Shingles	764	3,873	4,305	5.1	2.9	900	1,000	54	48	32.5	5.8
Metal Panels	745	7,392	4,788	9.9	4.0	1,544	1,383	51	48	15.5	7.5
Concrete Panels	87	4,961	10,320	56.7	20.0	481	1,025	73	60	16.5	15.4
Window Glass	46	2,028	4,302	43.6	9.0	471	600	61	56	22.5	14.3
Other	47	1,037	2,064	22.1	4.8	502	750	52	50	20.5	16.1
Predominant Roof Material											
Built-Up	1,642	30,257	31,481	18.4	5.8	961	1,000	64	52	32.5	4.5
Shingles (Not Wood)	1,381	10,570	9,630	7.7	3.5	1,098	1,000	54	46	30.5	5.5
Metal Surfacing	1,037	9,019	6,541	8.7	4.0	1,379	1,250	51	49	16.5	5.9
Synthetic or Rubber	386	11,702	18,127	30.3	8.1	646	1,010	65	56	32.5	9.7
Slate or Tile	155	1,998	1,627	12.9	5.5	1,228	1,000	57	45	40.5	10.3
Concrete	37	2,544	1,676	68.4	12.5	1,518	1,130	77	60	20.5	21.2
Other	167	1,786	2,154	10.7	3.7	829	900	64	56	26.5	11.0
Floors											
One	3,007	25,424	21,565	8.5	3.5	1,179	1,000	57	50	23.5	4.6
Two	1,154	18,025	19,949	15.6	6.0	904	1,080	56	48	33.5	7.7
Three	446	9,877	9,592	22.2	8.6	1,030	1,222	65	52	59.5	5.8
Four to Nine	186	10,377	11,258	55.7	25.0	922	1,143	74	55	66.5	7.7
Ten or More	13	4,173	8,872	319.7	186.0	470	600	81	61	23.5	12.1
Percent Window Glass											
25 or Less	4,193	51,356	42,768	12.2	4.2	1,201	1,100	57	49	28.5	3.4
26 to 50	490	11,815	19,249	24.1	7.0	614	800	67	54	28.5	8.5
51 to 75	94	3,206	5,995	34.2	5.8	535	683	71	55	24.5	9.7
76 to 100	29	1,499	3,225	52.6	16.0	465	833	68	50	21.5	14.8
Building Shape											
Square	280	3,654	3,673	13.0	3.8	995	857	61	49	28.5	8.1
Rectangle	3,659	39,233	38,955	10.7	4.0	1,007	1,000	57	50	27.5	3.2
Rectangle or Square with Courtyard	48	1,372	1,539	28.8	10.0	892	1,167	65	58	24.5	14.8
Right Angle	333	6,071	5,723	18.2	6.8	1,061	1,167	61	50	32.5	7.7
Other	485	17,547	21,346	36.2	10.0	822	1,225	63	50	30.5	10.0

See footnotes at end of table.

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992 (Continued)

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.1	1.2	1.5	1.0	--	1.3	--	0.4	--	--	
Workers (main shift)											
Less than 5	2,718	17,944	4,736	6.6	3.0	3,789	1,700	54	50	30.5	5.8
5 to 9	895	7,524	5,758	8.4	4.8	1,307	720	61	51	25.5	4.5
10 to 19	561	8,077	7,148	14.4	8.0	1,130	641	63	50	25.5	5.6
20 to 49	405	10,556	11,777	26.1	16.3	896	567	69	53	26.5	4.7
50 to 99	130	7,763	8,375	59.7	38.5	927	650	67	50	23.5	7.0
100 to 249	64	7,378	9,318	114.6	79.0	792	617	82	65	18.5	6.9
250 or More	31	8,633	24,124	274.4	150.0	358	320	84	65	22.5	9.6
Weekly Operating Hours											
39 or Fewer	1,039	8,246	3,997	7.9	3.5	2,063	1,600	12	9	33.5	7.2
40 to 48	1,278	14,998	17,500	11.7	4.9	857	857	44	45	28.5	3.1
49 to 60	1,004	14,046	15,478	14.0	5.0	907	1,063	54	54	27.5	3.2
61 to 84	645	12,062	12,667	18.7	5.0	952	979	72	70	23.5	4.1
85 to 167	478	8,467	12,470	17.7	4.0	Q	1,000	105	102	27.5	7.5
Open Continuously	362	10,057	9,124	27.8	5.0	1,102	1,200	168	168	23.5	.1
Ownership and Occupancy											
Nongovernment Owned	4,206	52,752	52,310	12.5	4.3	1,008	1,025	58	50	28.5	3.3
Owner Occupied	3,192	38,403	39,329	12.0	4.2	976	1,050	60	50	27.5	3.2
Nonowner Occupied	817	12,273	12,810	15.0	4.8	958	978	61	52	26.5	6.6
Unoccupied	197	2,077	171	10.5	3.8	12,161	1,300	9	0	36.5	18.7
Government Owned	599	15,124	18,926	25.2	6.7	799	1,000	61	45	28.5	9.4
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	735	22,166	30,938	30.2	6.3	716	880	79	76	29.5	7.5
Computer Room	223	14,199	22,847	63.7	24.5	621	833	69	53	25.5	6.3
Rooms with Special Ventilation	236	8,042	9,190	34.0	8.4	875	1,000	73	56	23.5	6.4
Activities with Large Amounts of Hot Water	203	6,862	7,084	33.7	10.0	969	1,069	103	95	24.5	7.7
Space-Heating Energy Source (more than one may apply)											
Electricity	1,513	25,636	31,533	16.9	5.0	813	923	66	51	21.5	7.6
Natural Gas	2,405	38,524	42,893	16.0	5.0	898	1,000	60	50	32.5	5.1
Fuel Oil	479	7,334	8,226	15.3	4.8	892	1,208	53	49	37.5	7.9
District Heat	94	5,242	7,044	55.9	16.5	744	1,150	76	50	33.5	10.0
Propane	255	1,568	1,282	6.2	3.1	1,222	1,200	48	48	23.5	11.4
Wood	102	504	461	5.0	3.2	1,093	1,600	55	48	32.5	16.3
Any Other	39	661	368	16.9	3.6	1,796	2,000	51	48	20.5	25.6
Primary Space-Heating Energy Source											
Electricity	1,107	15,502	17,408	14.0	4.8	891	1,200	69	53	18.5	6.9
Natural Gas	2,276	35,161	39,268	15.5	5.0	895	875	60	50	32.5	5.4
Fuel Oil	394	4,415	4,960	11.2	4.5	890	1,000	50	48	38.5	9.7
District Heat	91	5,014	6,665	54.8	16.3	752	1,150	76	50	33.5	10.3
Propane	217	1,101	798	5.1	3.0	1,380	1,333	47	45	24.5	12.5
Wood	68	257	242	3.8	2.9	Q	1,425	46	48	32.5	17.2
Any Other	Q	546	267	Q	3.6	2,048	2,000	50	48	30.5	28.1

See footnotes at end of table.

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992 (Continued)

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.0	1.1	1.5	1.1	--	1.3	--	0.5	--	--	
Cooling Energy Sources (more than one may apply)											
Electricity	3,404	54,628	63,748	16.0	5.0	857	950	63	50	27.5	4.3
Natural Gas	106	1,906	2,430	17.9	5.6	784	800	65	56	27.5	10.5
District Chilled Water	28	2,066	2,709	72.6	26.5	763	1,125	77	55	27.5	15.2
Water-Heating Energy Sources (more than one may apply)											
Electricity	1,696	25,482	27,489	15.0	5.0	927	950	61	50	23.5	5.2
Natural Gas	1,647	29,962	34,853	18.2	5.6	860	963	67	54	32.5	6.0
Fuel Oil	126	2,470	3,032	19.7	6.4	815	1,125	60	54	45.5	12.8
District Heat	38	3,308	4,934	87.1	35.0	670	1,100	91	60	30.5	11.5
Propane	80	659	555	8.2	3.6	1,187	1,000	77	63	29.5	16.0
Cooking Energy Sources (more than one may apply)											
Electricity	356	12,183	18,405	34.2	6.2	662	933	80	77	25.5	11.9
Natural Gas	431	15,233	21,634	35.3	7.8	704	813	83	78	32.5	9.2
Propane	70	1,039	1,072	14.9	5.2	969	843	77	77	38.5	15.3
Percent of Floorspace Heated											
Not Heated	653	6,211	1,691	9.5	3.3	3,673	1,667	42	43	27.5	11.8
1 to 50	688	11,195	9,940	16.3	5.3	Q	1,850	56	49	32.5	9.5
51 to 99	618	10,211	11,922	16.5	5.5	856	1,000	64	54	31.5	5.6
100	2,846	40,260	47,682	14.1	4.5	844	877	61	50	27.5	3.5
Percent of Floorspace Cooled											
Not Cooled	1,304	10,835	4,327	8.3	3.5	2,504	1,538	46	45	31.5	6.6
1 to 50	1,176	21,715	13,207	18.5	6.4	1,644	1,383	60	52	32.5	4.2
51 to 99	658	13,872	23,943	21.1	6.0	579	840	68	54	29.5	7.7
100	1,668	21,454	29,759	12.9	4.0	721	733	63	50	23.5	5.0
Percent Lit when Open											
Not Lit	413	3,280	155	7.9	3.1	21,154	1,750	17	0	31.5	13.6
1 to 50	881	9,980	4,218	11.3	4.5	2,366	2,000	59	49	33.5	6.3
51 to 99	813	14,224	14,934	17.5	5.5	952	950	60	50	30.5	5.9
100	2,699	40,393	51,929	15.0	4.5	778	867	64	51	25.5	4.6
Percent Lit when Closed											
Not Lit	2,987	34,486	27,719	11.5	4.0	1,244	1,200	57	46	27.5	4.2
1 to 50	1,689	31,482	41,483	18.6	6.0	759	911	61	54	28.5	4.8
51 to 99	43	1,021	1,200	24.0	5.2	851	675	58	57	40.5	17.1
100	87	887	835	10.2	3.6	1,063	833	47	55	25.5	17.0
Heating Equipment (more than one may apply)											
Heat Pumps	449	8,269	9,484	18.4	6.0	872	900	65	50	15.5	7.1
Furnaces	1,692	16,909	19,794	10.0	4.0	854	1,000	57	49	32.5	7.6
Individual Space Heaters	1,464	22,380	24,549	15.3	4.8	912	1,225	61	50	28.5	7.5
District Heat	93	5,225	7,043	55.9	16.5	742	1,150	76	50	33.5	10.0
Boilers	624	20,664	22,422	33.1	10.0	922	1,160	66	54	37.5	5.4
Packaged Heating Units	870	16,000	22,847	18.4	6.0	700	800	66	54	21.5	8.5
Other	42	903	1,143	21.2	3.4	790	943	83	64	22.5	17.6

See footnotes at end of table.

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992 (Continued)

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.0	1.1	1.5	1.1	--	1.3	--	0.5	--	--	
Heating Distribution Equipment (more than one may apply)											
Radiators or Baseboards	473	13,263	13,548	28.0	9.6	979	1,300	65	52	45.5	5.7
Ducts for Heating	2,955	45,422	55,081	15.4	5.0	825	900	61	50	25.5	4.4
Heating Only	577	5,950	Q	10.3	3.7	Q	1,325	52	48	36.5	9.1
Heating and Cooling	2,378	39,472	46,568	16.6	5.4	848	833	63	50	23.5	3.4
Variable Air-Volume System Used	210	11,528	19,351	54.8	13.5	596	707	70	55	18.5	11.9
Fan Coil Units for Heating	99	5,474	6,129	55.5	20.0	893	1,267	73	54	35.5	8.9
Heating Only	78	3,569	3,417	45.7	15.5	1,044	1,400	68	53	38.5	11.6
Heating and Cooling	21	1,906	2,712	92.5	48.0	703	1,056	89	65	28.5	12.9
Individual Space Heaters	1,464	22,380	24,549	15.3	4.8	912	1,225	61	50	28.5	7.5
Other	181	3,310	3,213	18.3	4.8	1,030	1,060	67	52	36.5	10.1
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	9,021	9,734	11.0	4.2	927	900	57	49	29.5	5.7
Heat Pumps	454	8,406	9,559	18.5	6.0	879	875	65	50	15.5	6.9
Individual Air Conditioners	1,023	17,979	17,997	17.6	5.0	999	1,250	64	52	36.5	9.7
District Chilled Water	28	2,066	2,709	72.6	26.5	763	1,125	77	55	27.5	15.2
Central Chillers	142	12,991	18,483	91.5	39.0	703	863	73	55	27.5	7.6
Packaged Air-Conditioning Units	1,459	27,830	32,786	19.1	6.3	849	800	65	54	24.5	4.0
Swamp Coolers	179	2,085	3,033	11.7	4.2	687	975	65	51	30.5	14.8
Other	8	268	254	35.0	29.0	1,054	1,940	57	60	39.5	30.2
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	2,733	47,755	55,881	17.5	5.6	855	850	63	50	24.5	3.0
Cooling Only	355	8,283	9,312	23.3	6.6	889	1,000	63	50	32.5	7.0
Heating and Cooling	2,378	39,472	46,568	16.6	5.4	848	833	63	50	23.5	3.4
Variable Air-Volume System Used	221	12,430	17,840	56.2	15.0	697	670	71	58	18.5	7.6
Fan Coil Units for Cooling	56	3,875	4,926	69.5	21.5	787	925	74	57	31.5	11.5
Cooling Only	35	1,969	2,214	56.0	10.5	889	875	66	48	34.5	17.4
Heating and Cooling	21	1,906	2,712	92.5	48.0	703	1,056	89	65	28.5	12.9
Individual Air Conditioners	1,023	17,979	17,997	17.6	5.0	999	1,250	64	52	36.5	9.7
Other	111	2,919	3,591	26.2	5.9	813	1,050	71	55	27.5	12.9
Lighting Equipment Types (more than one may apply)											
Incandescent	2,509	39,221	46,381	15.6	4.8	846	1,071	63	50	32.5	4.9
Standard Fluorescent	4,065	62,074	69,543	15.3	5.0	893	1,000	62	50	27.5	3.9
Compact Fluorescent	206	8,336	16,556	40.4	8.5	503	1,000	78	60	24.5	12.6
High-Intensity Discharge	354	17,570	20,068	49.7	14.0	875	1,325	68	53	19.5	8.8
Other	78	1,612	1,949	20.6	6.0	827	750	61	50	16.5	15.0

See footnotes at end of table.

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992 (Continued)

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.0	1.1	1.5	1.1	--	1.3	--	0.5	--	--	
Water-Heating Equipment (more than one may apply)											
Centralized System	1,994	31,599	35,671	15.8	5.0	886	990	65	52	29.5	4.8
Self-Heating Tank	1,799	24,464	25,936	13.6	4.8	943	970	63	51	28.5	5.4
Heated by Space-Heating Equipment	103	3,722	4,871	36.2	7.5	764	963	67	52	35.5	12.4
Other	106	4,032	5,658	38.2	8.2	713	1,150	85	69	32.5	11.2
Distributed System	1,557	29,502	34,002	18.9	5.9	868	933	65	52	27.5	7.2
Residential-Type Storage Tank	1,489	25,809	26,162	17.3	5.8	986	933	64	52	27.5	4.9
Point-of-Use Heaters	56	3,367	Q	59.7	9.0	Q	1,043	76	55	15.5	22.0
Other	24	1,259	1,793	52.8	23.0	702	1,100	100	79	25.5	15.1
Personal Computers and/or Computer Terminals											
1 to 4	1,269	13,355	10,478	10.5	5.0	1,275	967	65	52	25.5	4.0
5 to 9	336	5,970	6,120	17.7	7.5	975	610	60	49	20.5	5.4
10 to 19	216	6,236	6,317	28.9	15.0	987	667	63	50	25.5	6.8
20 to 49	164	7,439	8,008	45.4	23.8	929	713	60	49	26.5	7.0
50 to 99	59	4,908	5,944	83.4	57.0	826	750	71	55	22.5	8.5
100 to 249	34	4,220	7,588	125.3	80.0	556	530	72	59	23.5	9.8
250 or More	19	5,569	16,609	293.7	186.0	335	368	83	66	14.5	14.5
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	3,343	50,311	58,933	15.0	4.8	854	1,000	61	50	24.5	4.3
Wall Insulation	2,320	33,240	38,937	14.3	4.6	854	938	61	50	20.5	3.8
Storm or Multiple Glazing	1,680	29,684	34,365	17.7	5.5	864	1,000	62	50	24.5	4.5
Tinted, Reflective or Shading Glass	1,068	25,396	36,671	23.8	6.8	693	840	63	50	22.5	6.9
Exterior or Interior Shading or Awnings	1,853	34,071	43,073	18.4	5.4	791	800	63	50	27.5	4.0
Windows that Open	2,119	28,937	30,613	13.7	4.6	945	1,100	56	48	33.5	6.4
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	250	13,970	23,262	56.0	13.5	601	750	69	55	20.5	10.3
Economizer Cycle	414	18,313	29,830	44.2	12.0	614	844	72	57	20.5	8.5
HVAC Maintenance	2,503	49,173	59,978	19.6	6.0	820	933	65	52	25.5	4.6
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	574	15,241	23,021	26.6	8.0	662	950	65	51	25.5	9.5
Natural Lighting Control Sensors	74	3,072	3,439	41.5	7.3	893	1,429	93	84	25.5	10.9
Occupancy Sensors	59	3,629	6,852	61.4	10.8	530	800	73	50	25.5	10.2
Time Clock	339	12,104	19,096	35.7	8.2	634	950	72	56	24.5	12.3
Manual Dimmer Switches	413	12,329	20,507	29.8	8.0	601	1,000	69	57	28.5	9.8
Other	78	2,596	3,599	33.2	12.0	721	1,000	69	54	23.5	11.4

See footnotes at end of table.

Table A1. Summary Table of Square Feet, Hours of Operation and Age of Building, 1992 (Continued)

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	Total Workers in All Buildings (thousand)	Mean Square Feet per Building (thousand)	Median Square Feet per Building (thousand)	Mean Square Feet per Worker	Median Square Feet per Worker	Mean Hours per Week	Median Hours per Week	Median Age of Buildings (years)	RSE Row Factor
RSE Column Factor:	1.0	1.1	1.5	1.1	--	1.3	--	0.5	--	--	
Off-Hour Equipment Reduction (more than one may apply)											
Heating	3,400	46,248	54,309	13.6	4.8	852	1,000	51	49	28.5	4.0
Cooling	2,872	42,768	51,968	14.9	5.0	823	929	53	49	28.5	4.3
Hot Water	578	9,966	11,822	17.2	5.6	843	1,000	51	48	30.5	5.3
Lighting	4,089	54,944	61,385	13.4	4.7	895	1,000	51	49	28.5	3.8
Other	547	7,996	9,843	14.6	4.8	812	833	58	50	23.5	7.9
Energy Management Practices (more than one may apply)											
Energy Management and Control System	236	14,320	20,784	60.7	18.5	689	848	68	52	21.5	7.1
Demand-Side Management Participation	315	11,310	19,265	35.9	9.0	587	1,000	70	55	26.5	9.6
Energy Audit	521	14,779	18,789	28.3	7.2	787	875	69	54	28.5	5.6
Building Energy Manager	49	2,311	3,547	46.8	8.1	651	983	69	50	28.5	15.8

-- = Data not applicable.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A2. Census Region, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	0.6	1.2	1.1	1.0	1.3	0.6	1.3	1.1	1.1	1.2	
All Buildings	4,806	771	1,202	1,963	870	67,876	13,400	17,280	24,577	12,619	6.3
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	383	676	1,171	451	7,327	1,074	1,889	3,155	1,208	9.7
5,001 to 10,000	975	180	241	370	184	7,199	1,337	1,763	2,723	1,376	7.7
10,001 to 25,000	647	109	163	239	136	10,375	1,663	2,689	3,782	2,241	8.5
25,001 to 50,000	280	54	66	106	56	10,069	1,976	2,353	3,696	2,043	10.3
50,001 to 100,000	116	25	29	41	20	8,062	1,752	2,097	2,842	1,371	11.4
100,001 to 200,000	71	12	15	26	18	9,678	1,598	2,048	3,720	2,311	14.0
200,001 to 500,000	26	5	10	6	5	7,889	1,696	2,839	1,968	1,386	15.2
Over 500,000	9	2	2	4	1	7,278	2,303	1,601	2,691	683	32.0
Principal Building Activity											
Education	301	38	46	112	104	8,470	1,968	2,386	2,620	1,496	12.7
Food Sales	130	Q	29	57	32	757	Q	182	245	209	23.9
Food Service	260	54	73	83	50	1,491	445	432	407	208	14.7
Health Care	63	12	14	15	23	1,763	386	487	597	292	22.1
Lodging	154	31	26	56	41	2,891	616	577	1,043	654	18.7
Mercantile and Service	1,272	246	329	510	187	12,402	2,798	3,156	4,233	2,214	10.7
Office	749	126	170	299	154	12,319	2,525	2,804	4,152	2,838	10.2
Parking Garage	24	5	11	2	5	1,652	Q	Q	Q	272	40.8
Public Assembly	278	40	76	120	43	4,556	777	861	2,269	649	17.9
Public Order and Safety	60	16	Q	24	Q	820	269	Q	238	Q	32.7
Religious Worship	366	30	86	194	56	3,747	452	1,137	1,366	792	18.3
Warehouse and Storage	761	109	233	316	103	11,484	1,763	3,108	4,964	1,649	14.6
Other	69	16	18	21	15	1,130	199	301	383	248	26.7
Vacant	319	36	80	153	50	4,396	708	1,043	1,604	1,041	17.5
Year Constructed											
1899 or Before	169	52	78	26	Q	1,721	676	720	167	Q	21.8
1900 to 1919	255	62	105	66	22	3,608	1,052	1,246	788	522	21.5
1920 to 1945	724	166	193	257	109	8,712	2,655	2,296	2,646	1,115	13.2
1946 to 1959	880	124	208	368	179	10,421	2,070	2,629	3,898	1,825	11.3
1960 to 1969	783	122	174	324	163	12,612	2,485	2,652	4,914	2,562	12.0
1970 to 1979	982	118	248	426	190	14,014	2,123	4,086	4,940	2,865	10.1
1980 to 1989	884	112	158	444	170	14,287	2,053	2,982	6,317	2,934	12.2
1990 to 1992	128	14	38	51	25	2,502	286	670	906	639	21.0
Energy Sources (more than one may apply)											
Electricity	4,616	755	1,139	1,876	845	66,549	13,235	16,914	23,985	12,415	6.3
Natural Gas	2,665	370	847	888	560	45,097	8,559	13,838	13,408	9,292	7.7
Fuel Oil	559	284	79	182	14	13,218	5,535	2,541	3,582	1,559	12.6
District Heat	95	23	24	28	21	5,339	1,560	1,884	983	912	18.1
District Chilled Water	28	2	7	10	9	2,066	302	684	659	421	28.3
Propane	337	71	80	153	Q	3,393	1,041	579	1,514	260	22.0
Any Other	163	33	46	62	23	1,551	444	254	446	407	23.9
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	694	1,047	1,687	750	61,996	12,858	16,303	21,659	11,176	6.4
Air-Conditioned Buildings	3,502	521	784	1,569	627	57,041	11,158	14,383	21,205	10,296	6.6
Buildings with Water Heating	3,502	625	906	1,307	664	58,479	12,410	15,460	19,592	11,017	6.5
Buildings with Cooking	734	142	201	257	134	23,065	5,740	5,800	7,768	3,757	9.5
Buildings with Manufacturing	121	26	38	37	19	3,174	756	895	1,039	484	21.7
Predominant Exterior Wall Material											
Masonry	3,115	503	759	1,261	592	48,585	9,981	12,914	17,174	8,517	7.1
Siding or Shingles	764	176	198	257	133	3,873	1,008	1,017	1,052	796	12.3
Metal Panels	745	68	215	372	90	7,392	930	1,774	3,900	789	15.2
Concrete Panels	87	6	12	36	34	4,961	1,003	741	1,461	1,755	22.2
Window Glass	46	12	Q	18	8	2,028	372	524	709	423	27.1
Other	47	6	9	19	13	1,037	106	310	281	Q	33.3

See footnotes at end of table.

Table A2. Census Region, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	0.6	1.2	1.1	1.0	1.3	0.6	1.3	1.1	1.1	1.2	
Predominant Roof Material											
Built-Up	1,642	226	346	665	405	30,257	4,889	6,375	11,653	7,341	8.6
Shingles (Not Wood)	1,381	278	369	532	202	10,570	2,434	3,213	3,168	1,755	9.7
Metal Surfacing	1,037	106	269	537	126	9,019	853	2,064	5,098	1,004	13.3
Synthetic or Rubber	386	100	152	98	35	11,702	3,757	4,318	2,615	1,012	11.1
Slate or Tile	155	40	23	45	47	1,998	526	385	577	511	20.4
Concrete	37	2	5	20	9	2,544	556	Q	917	506	35.0
Other	167	19	38	65	46	1,786	384	361	551	490	22.5
Floors											
One	3,007	329	634	1,456	588	25,424	2,834	5,146	12,892	4,552	10.1
Two	1,154	213	361	387	193	18,025	3,564	5,153	5,660	3,649	8.2
Three	446	153	158	84	51	9,877	2,807	3,042	2,255	1,772	11.7
Four to Nine	186	72	47	33	35	10,377	2,847	2,989	2,714	1,827	15.7
Ten or More	13	4	3	3	4	4,173	1,348	950	1,056	819	25.6
Percent Window Glass											
25 or Less	4,193	646	1,082	1,754	710	51,356	8,988	13,026	20,229	9,113	7.2
26 to 50	490	94	95	169	132	11,815	3,478	2,852	2,872	2,613	10.3
51 to 75	94	25	23	24	21	3,206	701	932	943	630	20.6
76 to 100	29	5	2	15	7	1,499	232	470	534	263	27.9
Workers (main shift)											
Less than 5	2,718	404	721	1,180	412	17,944	2,708	4,747	7,676	2,813	10.3
5 to 9	895	148	218	341	189	7,524	1,328	1,867	3,013	1,316	9.1
10 to 19	561	95	122	222	122	8,077	1,367	1,871	3,266	1,573	12.1
20 to 49	405	77	87	147	94	10,556	2,014	2,521	3,818	2,204	10.1
50 to 99	130	29	31	43	27	7,763	1,899	2,002	2,286	1,577	13.5
100 to 249	64	10	17	20	17	7,378	1,378	2,467	1,984	1,549	15.2
250 or More	31	7	6	9	9	8,633	2,707	1,805	2,535	1,586	15.2
Weekly Operating Hours											
39 or Fewer	1,039	123	314	486	116	8,246	1,400	2,454	3,278	1,114	12.3
40 to 48	1,278	191	294	541	252	14,998	2,272	3,446	6,543	2,738	9.3
49 to 60	1,004	184	231	395	193	14,046	2,622	3,474	5,002	2,948	8.7
61 to 84	645	129	170	220	127	12,062	2,578	3,212	3,795	2,477	10.3
85 to 167	478	83	127	167	101	8,467	2,486	2,217	1,938	1,826	12.8
Open Continuously	362	61	65	154	82	10,057	2,042	2,477	4,021	1,517	14.7
Percent Vacant for at Least Three Months											
1-50 Percent	362	86	87	114	76	12,420	3,021	3,501	3,609	2,289	11.7
51-99 Percent	97	8	24	47	18	2,263	508	441	792	521	25.3
100 Percent	398	44	101	177	76	4,109	752	946	1,377	1,034	15.8
None	3,948	633	990	1,625	700	49,085	9,120	12,392	18,799	8,775	6.9
Ownership and Occupancy											
Nongovernment Owned	4,206	683	1,070	1,729	725	52,752	9,978	13,127	19,480	10,167	6.4
Owner Occupied	3,192	552	844	1,267	529	38,403	7,311	10,421	13,503	7,168	6.4
Nonowner Occupied	817	112	173	361	171	12,273	2,350	2,211	5,177	2,534	13.2
Unoccupied	197	19	53	101	24	2,077	316	495	800	465	21.6
Government Owned	599	88	132	234	146	15,124	3,422	4,153	5,097	2,452	12.0
Number of Establishments											
One	3,886	617	977	1,605	687	47,997	8,913	12,266	18,409	8,409	7.5
2 to 5	517	104	134	171	107	7,882	1,809	1,831	2,396	1,845	12.7
6 to 10	89	16	16	31	26	2,562	432	563	877	689	19.7
11 to 20	49	6	9	21	14	2,039	355	519	821	345	28.1
More than 20	36	6	5	19	6	4,938	1,558	1,401	1,170	809	25.5
Currently Unoccupied	229	22	60	116	30	2,457	333	699	904	521	22.0

See footnotes at end of table.

Table A2. Census Region, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	0.6	1.2	1.1	1.0	1.3	0.6	1.3	1.1	1.1	1.2	
Percent of Floorspace Heated											
Not Heated	653	77	168	280	128	6,211	646	1,120	2,983	1,460	15.2
1 to 50	688	98	163	298	128	11,195	2,479	2,034	4,414	2,268	13.5
51 to 99	618	111	143	229	135	10,211	2,114	2,249	3,107	2,740	10.9
100	2,846	484	727	1,155	480	40,260	8,161	11,876	14,073	6,151	6.8
Percent of Floorspace Cooled											
Not Cooled	1,304	250	417	394	243	10,835	2,242	2,898	3,372	2,323	11.2
1 to 50	1,176	241	287	486	161	21,715	5,640	6,318	6,482	3,275	8.8
51 to 99	658	125	170	244	119	13,872	3,049	3,825	4,097	2,902	10.7
100	1,668	155	327	839	347	21,454	2,469	4,240	10,627	4,118	9.2
Percent Lit when Open											
Not Lit	413	46	138	178	51	3,280	454	1,031	1,193	601	19.2
1 to 50	881	170	245	344	123	9,980	1,763	2,771	3,759	1,688	11.0
51 to 99	813	171	210	283	148	14,224	3,098	3,914	4,613	2,599	11.2
100	2,699	384	609	1,158	549	40,393	8,085	9,565	15,013	7,731	7.3
Heating Equipment (more than one may apply)											
Heat Pumps	449	41	28	280	99	8,269	1,328	1,324	3,632	1,985	15.4
Furnaces	1,692	290	592	557	252	16,909	3,268	5,579	4,971	3,092	9.1
Individual Space Heaters	1,464	218	376	626	245	22,380	4,907	6,187	7,642	3,643	9.4
District Heat	93	23	23	27	20	5,225	1,553	1,869	927	875	18.2
Boilers	624	260	188	111	65	20,664	6,192	6,478	5,404	2,590	10.3
Packaged Heating Units	870	86	121	440	223	16,000	2,890	3,033	6,440	3,637	11.4
Other	42	12	11	15	Q	903	180	205	309	Q	32.0
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	97	275	363	82	9,021	1,508	2,968	3,455	1,091	11.7
Heat Pumps	454	43	29	285	96	8,406	1,286	1,416	3,745	1,959	14.8
Individual Air Conditioners	1,023	269	229	433	92	17,979	5,806	4,723	5,683	1,767	11.4
District Chilled Water	28	2	7	10	9	2,066	302	684	659	421	28.3
Central Chillers	142	28	31	58	25	12,991	2,519	3,163	4,854	2,456	14.4
Packaged Air-Conditioning Units	1,459	208	331	610	310	27,830	5,879	6,564	10,058	5,329	8.2
Swamp Coolers	179	Q	Q	39	129	2,085	Q	Q	335	1,546	37.0
Other	8	Q	Q	Q	Q	268	Q	Q	Q	Q	62.5
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	3,343	531	851	1,356	605	50,311	9,893	12,918	18,108	9,392	6.6
Wall Insulation	2,320	376	584	960	401	33,240	6,633	8,184	12,175	6,248	7.7
Storm or Multiple Glazing	1,680	420	616	448	195	29,684	8,075	9,885	8,380	3,344	9.2
Tinted, Reflective or Shading Glass	1,068	115	235	451	266	25,396	4,184	6,540	8,899	5,774	10.0
Exterior or Interior Shading or Awnings	1,853	279	427	741	406	34,071	6,436	8,376	12,210	7,049	8.2
Windows that Open	2,119	451	541	756	371	28,937	7,706	8,117	8,838	4,276	8.5
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	250	46	68	59	77	13,970	3,147	4,172	3,744	2,907	13.3
Economizer Cycle	414	64	126	120	105	18,313	4,110	5,571	5,179	3,453	11.8
HVAC Maintenance	2,503	495	596	944	467	49,173	10,634	12,737	16,505	9,297	7.0

See footnotes at end of table.

Table A2. Census Region, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	0.6	1.2	1.1	1.0	1.3	0.6	1.3	1.1	1.1	1.2	
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	574	114	141	202	116	15,241	3,837	4,017	4,249	3,138	12.0
Natural Lighting Control Sensors	74	12	23	20	20	3,072	626	1,211	569	666	19.7
Occupancy Sensors	59	8	16	7	28	3,629	874	743	764	1,247	18.1
Time Clock	339	74	73	93	100	12,104	2,684	2,392	3,766	3,262	13.9
Manual Dimmer Switches	413	81	120	117	96	12,329	3,027	3,777	2,996	2,529	12.6
Other	78	21	16	12	29	2,596	617	704	440	836	20.2
Energy Conservation Features (more than one may apply)											
Any Conservation Features	4,357	711	1,097	1,737	812	64,403	12,891	16,619	22,659	12,234	6.5
Building Shell	4,223	693	1,076	1,667	787	62,056	12,612	16,031	21,758	11,655	6.6
HVAC	2,604	504	626	980	494	50,281	10,840	13,100	16,864	9,477	6.8
Lighting	1,178	241	295	375	268	29,453	6,727	7,790	8,307	6,628	8.7
Other	264	57	67	85	55	5,952	1,626	1,575	1,757	993	14.1
Energy Management Practices (more than one may apply)											
Energy Management and Control System	236	38	68	71	59	14,320	2,474	4,359	4,506	2,981	13.0
Demand-Side Management Participation	315	99	68	72	75	11,310	3,436	3,279	2,600	1,994	12.9
Energy Audit	521	132	122	157	110	14,779	4,136	3,944	3,810	2,890	10.3
Building Energy Manager	49	8	11	14	16	2,311	340	647	966	359	25.3
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	36	13	8	9	6	1,079	198	447	273	161	29.4
HVAC Program	154	30	33	49	41	6,370	1,386	1,988	1,777	1,220	14.6
Lighting Program	228	85	49	44	50	8,805	3,014	2,620	1,740	1,431	15.5
Other DSM Programs	110	31	27	33	19	6,176	1,801	1,819	1,648	908	18.1

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A3. Census Region, Percent of Buildings and Floorspace, 1992

Building Characteristics	Percent of Buildings					Percent of Floorspace					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	--	1.1	1.0	0.8	1.2	--	1.2	0.9	0.9	1.1	
All Buildings	100.0	16.0	25.0	40.8	18.1	100.0	19.7	25.5	36.2	18.6	6.3
Building Floorspace (Square Feet)											
1,001 to 5,000	100.0	14.3	25.2	43.7	16.8	100.0	14.7	25.8	43.1	16.5	9.9
5,001 to 10,000	100.0	18.5	24.7	37.9	18.9	100.0	18.6	24.5	37.8	19.1	8.4
10,001 to 25,000	100.0	16.9	25.3	36.9	21.0	100.0	16.0	25.9	36.4	21.6	8.4
25,001 to 50,000	100.0	19.2	23.4	37.7	19.8	100.0	19.6	23.4	36.7	20.3	9.8
50,001 to 100,000	100.0	21.4	25.4	35.5	17.7	100.0	21.7	26.0	35.3	17.0	11.0
100,001 to 200,000	100.0	16.4	20.9	37.0	25.7	100.0	16.5	21.2	38.4	23.9	13.8
200,001 to 500,000	100.0	20.5	37.6	24.4	17.4	100.0	21.5	36.0	24.9	17.6	13.2
Over 500,000	100.0	26.0	20.5	44.5	9.1	100.0	31.6	22.0	37.0	9.4	33.1
Principal Building Activity											
Education	100.0	12.5	15.3	37.4	34.8	100.0	23.2	28.2	30.9	17.7	12.7
Food Sales	100.0	Q	22.0	44.0	24.5	100.0	Q	24.1	32.4	27.6	19.8
Food Service	100.0	20.7	28.2	31.9	19.1	100.0	29.8	28.9	27.3	13.9	14.7
Health Care	100.0	18.7	22.5	23.0	35.7	100.0	21.9	27.6	33.9	16.6	22.5
Lodging	100.0	20.0	17.0	36.7	26.4	100.0	21.3	20.0	36.1	22.6	18.0
Mercantile and Service	100.0	19.4	25.8	40.1	14.7	100.0	22.6	25.4	34.1	17.9	10.6
Office	100.0	16.8	22.6	40.0	20.6	100.0	20.5	22.8	33.7	23.0	10.3
Parking Garage	100.0	20.5	48.1	8.4	23.0	100.0	Q	Q	Q	16.4	38.9
Public Assembly	100.0	14.3	27.2	43.0	15.5	100.0	17.1	18.9	49.8	14.2	21.0
Public Order and Safety	100.0	26.5	Q	40.8	Q	100.0	32.8	Q	29.1	Q	25.9
Religious Worship	100.0	8.3	23.6	52.9	15.2	100.0	12.1	30.4	36.4	21.1	17.3
Warehouse and Storage	100.0	14.4	30.6	41.5	13.5	100.0	15.4	27.1	43.2	14.4	15.1
Other	100.0	22.7	26.1	29.9	21.3	100.0	17.6	26.6	33.9	21.9	27.6
Vacant	100.0	11.3	24.9	48.1	15.6	100.0	16.1	23.7	36.5	23.7	16.9
Year Constructed											
1899 or Before	100.0	31.0	46.1	15.7	Q	100.0	39.3	41.9	9.7	Q	19.6
1900 to 1919	100.0	24.4	41.2	25.9	8.5	100.0	29.2	34.5	21.8	14.5	21.4
1920 to 1945	100.0	22.9	26.6	35.5	15.0	100.0	30.5	26.4	30.4	12.8	13.0
1946 to 1959	100.0	14.1	23.6	41.9	20.4	100.0	19.9	25.2	37.4	17.5	11.3
1960 to 1969	100.0	15.6	22.2	41.4	20.8	100.0	19.7	21.0	39.0	20.3	12.3
1970 to 1979	100.0	12.0	25.3	43.4	19.3	100.0	15.2	29.2	35.2	20.4	9.8
1980 to 1989	100.0	12.7	17.9	50.2	19.3	100.0	14.4	20.9	44.2	20.5	12.5
1990 to 1992	100.0	11.0	29.7	39.7	19.6	100.0	11.4	26.8	36.2	25.6	20.9
Energy Sources (more than one may apply)											
Electricity	100.0	16.4	24.7	40.7	18.3	100.0	19.9	25.4	36.0	18.7	6.2
Natural Gas	100.0	13.9	31.8	33.3	21.0	100.0	19.0	30.7	29.7	20.6	7.7
Fuel Oil	100.0	50.8	14.2	32.6	2.4	100.0	41.9	19.2	27.1	11.8	12.4
District Heat	100.0	24.5	24.8	28.9	21.9	100.0	29.2	35.3	18.4	17.1	18.6
District Chilled Water	100.0	7.3	25.1	36.2	31.4	100.0	14.6	33.1	31.9	20.4	28.9
Propane	100.0	21.2	23.8	45.5	Q	100.0	30.7	17.1	44.6	7.6	19.9
Any Other	100.0	20.0	27.9	38.3	13.9	100.0	28.6	16.4	28.7	26.2	24.5
Energy End Uses (more than one may apply)											
Heated Buildings	100.0	16.6	25.1	40.4	17.9	100.0	20.7	26.3	34.9	18.0	6.3
Air-Conditioned Buildings	100.0	14.9	22.4	44.8	17.9	100.0	19.6	25.2	37.2	18.0	6.5
Buildings with Water Heating	100.0	17.9	25.9	37.3	19.0	100.0	21.2	26.4	33.5	18.8	6.4
Buildings with Cooking	100.0	19.4	27.4	35.0	18.3	100.0	24.9	25.1	33.7	16.3	9.7
Buildings with Manufacturing	100.0	21.5	31.6	31.0	15.9	100.0	23.8	28.2	32.7	15.3	22.2
Predominant Exterior Wall Material											
Masonry	100.0	16.1	24.4	40.5	19.0	100.0	20.5	26.6	35.3	17.5	7.1
Siding or Shingles	100.0	23.1	25.9	33.6	17.4	100.0	26.0	26.3	27.2	20.5	12.6
Metal Panels	100.0	9.1	28.8	49.9	12.1	100.0	12.6	24.0	52.8	10.7	15.6
Concrete Panels	100.0	6.8	13.8	40.8	38.6	100.0	20.2	14.9	29.5	35.4	22.4
Window Glass	100.0	25.3	Q	38.6	16.7	100.0	18.3	25.8	35.0	20.9	27.0
Other	100.0	12.1	18.9	41.4	27.7	100.0	10.2	29.9	27.1	Q	35.0

See footnotes at end of table.

Table A3. Census Region, Percent of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Percent of Buildings					Percent of Floorspace					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	--	1.1	1.0	0.8	1.2	--	1.2	0.9	0.9	1.1	
Predominant Roof Material											
Built-Up	100.0	13.8	21.1	40.5	24.7	100.0	16.2	21.1	38.5	24.3	8.7
Shingles (Not Wood)	100.0	20.1	26.7	38.5	14.6	100.0	23.0	30.4	30.0	16.6	9.4
Metal Surfacing	100.0	10.2	25.9	51.8	12.1	100.0	9.5	22.9	56.5	11.1	13.7
Synthetic or Rubber	100.0	25.9	39.5	25.4	9.1	100.0	32.1	36.9	22.3	8.6	11.1
Slate or Tile	100.0	25.9	14.6	29.0	30.5	100.0	26.3	19.3	28.9	25.6	20.5
Concrete	100.0	5.1	14.7	55.1	25.1	100.0	21.9	Q	36.0	19.9	34.2
Other	100.0	11.3	22.7	38.7	27.3	100.0	21.5	20.2	30.9	27.4	22.2
Floors											
One	100.0	10.9	21.1	48.4	19.6	100.0	11.1	20.2	50.7	17.9	10.1
Two	100.0	18.5	31.3	33.5	16.8	100.0	19.8	28.6	31.4	20.2	8.5
Three	100.0	34.4	35.4	18.8	11.4	100.0	28.4	30.8	22.8	17.9	12.2
Four to Nine	100.0	38.4	25.1	17.9	18.6	100.0	27.4	28.8	26.2	17.6	15.6
Ten or More	100.0	30.6	19.3	22.9	27.1	100.0	32.3	22.8	25.3	19.6	24.6
Percent Window Glass											
25 or Less	100.0	15.4	25.8	41.8	16.9	100.0	17.5	25.4	39.4	17.7	7.2
26 to 50	100.0	19.2	19.4	34.5	26.9	100.0	29.4	24.1	24.3	22.1	10.8
51 to 75	100.0	27.1	24.1	26.0	22.8	100.0	21.9	29.1	29.4	19.7	21.2
76 to 100	100.0	15.8	6.8	52.9	24.4	100.0	15.5	31.3	35.6	17.6	27.0
Workers (main shift)											
Less than 5	100.0	14.9	26.5	43.4	15.2	100.0	15.1	26.5	42.8	15.7	9.9
5 to 9	100.0	16.5	24.3	38.1	21.1	100.0	17.7	24.8	40.0	17.5	9.2
10 to 19	100.0	16.9	21.7	39.6	21.8	100.0	16.9	23.2	40.4	19.5	12.2
20 to 49	100.0	19.0	21.4	36.3	23.3	100.0	19.1	23.9	36.2	20.9	9.8
50 to 99	100.0	22.3	24.0	33.2	20.5	100.0	24.5	25.8	29.4	20.3	12.9
100 to 249	100.0	16.0	25.7	31.1	27.1	100.0	18.7	33.4	26.9	21.0	14.5
250 or More	100.0	23.7	20.1	29.0	27.3	100.0	31.4	20.9	29.4	18.4	15.9
Weekly Operating Hours											
39 or Fewer	100.0	11.9	30.2	46.7	11.2	100.0	17.0	29.8	39.8	13.5	12.2
40 to 48	100.0	14.9	23.0	42.3	19.7	100.0	15.1	23.0	43.6	18.3	9.3
49 to 60	100.0	18.3	23.1	39.4	19.2	100.0	18.7	24.7	35.6	21.0	8.8
61 to 84	100.0	20.0	26.3	34.1	19.6	100.0	21.4	26.6	31.5	20.5	10.5
85 to 167	100.0	17.4	26.6	34.9	21.0	100.0	29.4	26.2	22.9	21.6	13.5
Open Continuously	100.0	16.8	18.0	42.6	22.6	100.0	20.3	24.6	40.0	15.1	15.1
Percent Vacant for at Least Three Months											
1-50 Percent	100.0	23.7	24.0	31.4	20.9	100.0	24.3	28.2	29.1	18.4	11.7
51-99 Percent	100.0	8.3	25.1	48.4	18.2	100.0	22.4	19.5	35.0	23.0	23.7
100 Percent	100.0	11.0	25.4	44.5	19.2	100.0	18.3	23.0	33.5	25.2	15.6
None	100.0	16.0	25.1	41.2	17.7	100.0	18.6	25.2	38.3	17.9	6.9
Ownership and Occupancy											
Nongovernment Owned	100.0	16.2	25.4	41.1	17.2	100.0	18.9	24.9	36.9	19.3	6.3
Owner Occupied	100.0	17.3	26.4	39.7	16.6	100.0	19.0	27.1	35.2	18.7	6.4
Nonowner Occupied	100.0	13.7	21.2	44.2	20.9	100.0	19.2	18.0	42.2	20.6	13.9
Unoccupied	100.0	9.6	27.1	51.1	12.2	100.0	15.2	23.9	38.5	22.4	22.4
Government Owned	100.0	14.7	22.0	39.0	24.3	100.0	22.6	27.5	33.7	16.2	12.2
Number of Establishments											
One	100.0	15.9	25.2	41.3	17.7	100.0	18.6	25.6	38.4	17.5	7.3
2 to 5	100.0	20.1	26.0	33.1	20.8	100.0	23.0	23.2	30.4	23.4	12.9
6 to 10	100.0	18.4	17.7	34.9	29.0	100.0	16.9	22.0	34.2	26.9	20.7
11 to 20	100.0	11.4	17.9	41.9	28.8	100.0	17.4	25.4	40.2	16.9	28.2
More than 20	100.0	16.5	15.2	52.2	16.1	100.0	31.5	28.4	23.7	16.4	24.1
Currently Unoccupied	100.0	9.7	26.2	50.9	13.2	100.0	13.5	28.4	36.8	21.2	22.7

See footnotes at end of table.

Table A3. Census Region, Percent of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Percent of Buildings					Percent of Floorspace					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	--	1.1	1.0	0.8	1.2	--	1.2	0.9	0.9	1.1	
Percent of Floorspace Heated											
Not Heated	100.0	11.8	25.8	42.9	19.5	100.0	10.4	18.0	48.0	23.5	15.6
1 to 50	100.0	14.3	23.7	43.4	18.6	100.0	22.1	18.2	39.4	20.3	14.1
51 to 99	100.0	18.0	23.2	37.1	21.8	100.0	20.7	22.0	30.4	26.8	10.8
100	100.0	17.0	25.5	40.6	16.9	100.0	20.3	29.5	35.0	15.3	7.0
Percent of Floorspace Cooled											
Not Cooled	100.0	19.1	32.0	30.2	18.6	100.0	20.7	26.7	31.1	21.4	11.3
1 to 50	100.0	20.5	24.4	41.3	13.7	100.0	26.0	29.1	29.8	15.1	8.9
51 to 99	100.0	19.0	25.9	37.0	18.1	100.0	22.0	27.6	29.5	20.9	10.8
100	100.0	9.3	19.6	50.3	20.8	100.0	11.5	19.8	49.5	19.2	9.3
Percent Lit when Open											
Not Lit	100.0	11.2	33.3	43.2	12.2	100.0	13.9	31.4	36.4	18.3	19.5
1 to 50	100.0	19.3	27.8	39.0	13.9	100.0	17.7	27.8	37.7	16.9	11.2
51 to 99	100.0	21.1	25.8	34.8	18.3	100.0	21.8	27.5	32.4	18.3	11.8
100	100.0	14.2	22.6	42.9	20.3	100.0	20.0	23.7	37.2	19.1	6.9
Heating Equipment (more than one may apply)											
Heat Pumps	100.0	9.2	6.2	62.4	22.1	100.0	16.1	16.0	43.9	24.0	15.6
Furnaces	100.0	17.2	35.0	33.0	14.9	100.0	19.3	33.0	29.4	18.3	9.6
Individual Space Heaters	100.0	14.9	25.7	42.7	16.8	100.0	21.9	27.6	34.1	16.3	9.5
District Heat	100.0	24.9	25.1	28.5	21.5	100.0	29.7	35.8	17.7	16.8	18.7
Boilers	100.0	41.8	30.2	17.7	10.4	100.0	30.0	31.3	26.2	12.5	11.0
Packaged Heating Units	100.0	9.9	13.9	50.5	25.6	100.0	18.1	19.0	40.3	22.7	11.3
Other	100.0	27.7	25.3	35.3	Q	100.0	20.0	22.7	34.2	Q	30.6
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	100.0	11.9	33.7	44.4	10.1	100.0	16.7	32.9	38.3	12.1	11.8
Heat Pumps	100.0	9.5	6.5	62.8	21.3	100.0	15.3	16.8	44.5	23.3	15.2
Individual Air Conditioners	100.0	26.3	22.4	42.3	9.0	100.0	32.3	26.3	31.6	9.8	11.7
District Chilled Water	100.0	7.3	25.1	36.2	31.4	100.0	14.6	33.1	31.9	20.4	28.9
Central Chillers	100.0	19.7	22.0	40.6	17.7	100.0	19.4	24.3	37.4	18.9	14.8
Packaged Air-Conditioning Units	100.0	14.2	22.7	41.8	21.2	100.0	21.1	23.6	36.1	19.1	8.2
Swamp Coolers	100.0	Q	Q	21.6	71.9	100.0	Q	Q	16.1	74.1	19.8
Other	100.0	Q	Q	Q	Q	100.0	Q	Q	Q	Q	100.0
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	100.0	15.9	25.5	40.5	18.1	100.0	19.7	25.7	36.0	18.7	6.8
Wall Insulation	100.0	16.2	25.2	41.4	17.3	100.0	20.0	24.6	36.6	18.8	7.8
Storm or Multiple Glazing	100.0	25.0	36.7	26.7	11.6	100.0	27.2	33.3	28.2	11.3	9.4
Tinted, Reflective or Shading Glass	100.0	10.8	22.0	42.2	24.9	100.0	16.5	25.8	35.0	22.7	9.4
Exterior or Interior Shading or Awnings	100.0	15.1	23.1	40.0	21.9	100.0	18.9	24.6	35.8	20.7	8.4
Windows that Open	100.0	21.3	25.5	35.7	17.5	100.0	26.6	28.1	30.5	14.8	8.5
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	100.0	18.3	27.4	23.6	30.8	100.0	22.5	29.9	26.8	20.8	13.6
Economizer Cycle	100.0	15.3	30.5	28.9	25.2	100.0	22.4	30.4	28.3	18.9	12.2
HVAC Maintenance	100.0	19.8	23.8	37.7	18.7	100.0	21.6	25.9	33.6	18.9	6.9

See footnotes at end of table.

Table A3. Census Region, Percent of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Percent of Buildings					Percent of Floorspace					RSE Row Factor
	All Buildings	Northeast	Midwest	South	West	All Buildings	Northeast	Midwest	South	West	
RSE Column Factor:	--	1.1	1.0	0.8	1.2	--	1.2	0.9	0.9	1.1	
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	100.0	19.9	24.6	35.2	20.2	100.0	25.2	26.4	27.9	20.6	11.8
Natural Lighting Control Sensors	100.0	16.8	30.4	26.4	26.4	100.0	20.4	39.4	18.5	21.7	19.4
Occupancy Sensors	100.0	13.4	27.5	11.4	47.8	100.0	24.1	20.5	21.1	34.4	19.1
Time Clock	100.0	21.8	21.4	27.3	29.4	100.0	22.2	19.8	31.1	27.0	14.6
Manual Dimmer Switches	100.0	19.5	29.0	28.4	23.1	100.0	24.5	30.6	24.3	20.5	12.6
Other	100.0	26.9	20.5	14.9	37.7	100.0	23.7	27.1	16.9	32.2	20.2
Energy Conservation Features (more than one may apply)											
Any Conservation Features	100.0	16.3	25.2	39.9	18.6	100.0	20.0	25.8	35.2	19.0	6.5
Building Shell	100.0	16.4	25.5	39.5	18.6	100.0	20.3	25.8	35.1	18.8	6.6
HVAC	100.0	19.4	24.0	37.6	19.0	100.0	21.6	26.1	33.5	18.8	6.7
Lighting	100.0	20.4	25.0	31.8	22.7	100.0	22.8	26.4	28.2	22.5	9.0
Other	100.0	21.6	25.6	32.1	20.7	100.0	27.3	26.5	29.5	16.7	13.9
Energy Management Practices (more than one may apply)											
Energy Management and Control System	100.0	16.3	28.8	29.9	24.9	100.0	17.3	30.4	31.5	20.8	12.6
Demand-Side Management Participation	100.0	31.4	21.7	23.0	23.9	100.0	30.4	29.0	23.0	17.6	13.1
Energy Audit	100.0	25.4	23.3	30.1	21.2	100.0	28.0	26.7	25.8	19.6	9.9
Building Energy Manager	100.0	15.5	23.0	28.8	32.7	100.0	14.7	28.0	41.8	15.5	24.8
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	100.0	35.9	23.4	23.7	17.0	100.0	18.3	41.4	25.3	14.9	29.7
HVAC Program	100.0	19.8	21.6	31.9	26.7	100.0	21.8	31.2	27.9	19.1	14.3
Lighting Program	100.0	37.2	21.6	19.4	21.9	100.0	34.2	29.8	19.8	16.3	15.6
Other DSM Programs	100.0	28.1	24.3	30.1	17.5	100.0	29.2	29.5	26.7	14.7	17.9

-- = Data not applicable.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A4. Census Region and Division, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Census Region and Division: Northeast: New England	Northeast: Middle Atlantic	Midwest: East North Central	Midwest: West North Central	South: South Atlantic	South: East South Central	South: West South Central	West: Mountain	West: Pacific	RSE Row Factor
RSE Column Factor:	0.3	1.7	1.0	0.8	1.3	0.8	1.3	1.2	1.5	0.9	
All Buildings	4,806	186	585	749	453	755	454	754	297	574	13.1
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	87	297	422	254	431	249	490	166	285	16.2
5,001 to 10,000	975	50	129	149	92	138	97	135	51	133	14.8
10,001 to 25,000	647	22	88	104	59	99	63	76	49	87	15.3
25,001 to 50,000	280	14	40	37	29	51	29	26	20	35	17.6
50,001 to 100,000	116	9	16	22	8	18	8	14	5	16	17.6
100,001 to 200,000	71	3	8	9	6	13	7	7	4	14	23.9
200,001 to 500,000	26	*	5	5	4	4	1	2	1	4	25.3
Over 500,000	9	Q	2	1	1	1	Q	Q	Q	1	44.1
Principal Building Activity											
Education	301	12	26	26	20	40	19	54	22	82	21.6
Food Sales	130	Q	Q	Q	Q	Q	Q	Q	Q	Q	38.4
Food Service	260	Q	45	48	Q	39	Q	34	Q	38	20.6
Health Care	63	Q	9	8	Q	Q	Q	Q	Q	19	37.2
Lodging	154	Q	21	11	15	29	17	11	13	28	30.6
Mercantile and Service	1,272	55	191	216	113	177	137	196	63	124	14.3
Office	749	42	84	116	53	113	78	108	52	102	18.0
Parking Garage	24	Q	Q	Q	Q	2	Q	Q	Q	2	56.7
Public Assembly	278	11	29	44	32	53	17	49	17	26	22.3
Public Order and Safety	60	Q	16	Q	Q	Q	Q	Q	Q	Q	33.0
Religious Worship	366	Q	22	47	39	86	Q	65	23	33	23.9
Warehouse and Storage	761	18	91	142	91	116	83	117	48	54	22.5
Other	69	Q	13	Q	11	11	Q	Q	Q	Q	43.9
Vacant	319	Q	29	53	27	47	35	72	Q	31	24.0
Year Constructed											
1899 or Before	169	10	42	52	26	Q	Q	Q	Q	Q	27.6
1900 to 1919	255	22	41	67	38	21	Q	26	Q	Q	27.4
1920 to 1945	724	36	130	125	68	98	59	100	35	74	21.2
1946 to 1959	880	37	87	134	74	127	70	172	48	131	16.6
1960 to 1969	783	23	99	111	63	140	74	111	52	110	17.2
1970 to 1979	982	29	89	167	81	158	110	158	64	126	17.4
1980 to 1989	884	25	87	75	83	175	99	169	69	101	17.3
1990 to 1992	128	Q	9	18	20	26	16	9	4	21	35.2
Energy Sources (more than one may apply)											
Electricity	4,616	186	569	723	416	736	428	712	283	562	12.9
Natural Gas	2,665	63	307	561	287	188	224	476	198	362	15.4
Fuel Oil	559	104	180	59	20	130	35	17	3	11	23.3
District Heat	95	6	18	10	13	16	5	7	9	12	27.6
District Chilled Water	28	Q	2	1	6	6	Q	3	Q	7	41.1
Propane	337	Q	45	33	Q	101	38	Q	Q	Q	31.4
Any Other	163	Q	24	24	Q	40	Q	Q	Q	19	32.8
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	182	513	662	385	657	404	626	255	495	12.8
Air-Conditioned Buildings	3,502	128	393	478	307	596	369	604	221	407	12.4
Buildings with Water Heating	3,502	162	464	577	329	509	316	482	222	442	12.6
Buildings with Cooking	734	36	106	132	69	105	56	96	32	102	16.4
Buildings with Manufacturing	121	13	13	21	Q	14	Q	19	Q	13	29.2

See footnotes at end of table.

Table A4. Census Region and Division, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Census Region and Division: Northeast: New England	Northeast: Middle Atlantic	Midwest: East North Central	Midwest: West North Central	South: South Atlantic	South: East South Central	South: West South Central	West: Mountain	West: Pacific	RSE Row Factor
RSE Column Factor:	0.3	1.7	1.0	0.8	1.3	0.8	1.3	1.2	1.5	0.9	
Predominant Exterior Wall Material											
Masonry	3,115	116	387	498	262	524	296	441	210	383	12.6
Siding or Shingles	764	48	129	122	76	104	49	104	27	105	20.8
Metal Panels	745	Q	55	113	102	101	96	175	Q	45	23.4
Concrete Panels	87	Q	5	5	7	Q	Q	22	8	26	27.5
Window Glass	46	Q	Q	Q	Q	Q	Q	5	Q	7	38.4
Other	47	Q	Q	Q	Q	Q	Q	Q	Q	Q	56.6
Predominant Roof Material											
Built-Up	1,642	57	170	229	117	256	143	266	134	272	13.2
Shingles (Not Wood)	1,381	76	202	245	124	232	133	166	63	139	16.3
Metal Surfacing	1,037	Q	89	135	133	162	125	250	Q	68	22.0
Synthetic or Rubber	386	28	72	112	41	46	25	27	11	25	18.9
Slate or Tile	155	8	32	12	Q	21	Q	Q	Q	38	27.8
Concrete	37	Q	2	4	Q	15	Q	Q	Q	6	53.4
Other	167	Q	18	Q	26	23	Q	26	Q	26	33.3
Floors											
One	3,007	70	259	381	253	518	312	625	198	390	16.4
Two	1,154	54	160	226	134	172	113	102	65	129	13.9
Three	446	39	115	113	45	44	21	19	16	34	22.5
Four to Nine	186	23	48	27	20	19	7	Q	16	18	25.3
Ten or More	13	Q	3	2	Q	Q	Q	Q	Q	3	35.6
Percent Window Glass											
25 or Less	4,193	147	499	660	422	679	392	683	258	452	13.6
26 to 50	490	27	67	68	28	60	50	59	33	98	17.0
51 to 75	94	11	15	20	Q	9	Q	Q	Q	19	31.8
76 to 100	29	Q	3	2	Q	8	Q	Q	Q	4	41.9
Workers (main shift)											
Less than 5	2,718	76	328	447	275	448	247	485	155	257	16.2
5 to 9	895	44	104	148	69	117	78	145	63	125	15.4
10 to 19	561	27	67	66	56	90	73	60	36	87	18.1
20 to 49	405	23	54	54	33	61	41	45	27	67	16.4
50 to 99	130	10	19	20	12	23	9	11	8	18	19.8
100 to 249	64	3	7	11	6	10	5	5	4	13	22.1
250 or More	31	2	6	4	3	6	1	2	Q	6	23.7
Weekly Operating Hours											
39 or Fewer	1,039	16	107	176	138	185	93	208	46	70	20.7
40 to 48	1,278	52	139	198	96	183	151	207	86	166	16.7
49 to 60	1,004	43	141	159	72	152	84	159	61	132	15.4
61 to 84	645	33	95	107	63	91	44	85	38	88	14.4
85 to 167	478	28	55	74	53	72	42	52	36	65	19.8
Open Continuously	362	14	47	34	31	71	41	43	29	53	21.0
Percent Vacant for at Least Three Months											
1-50 Percent	362	30	55	51	36	53	23	38	20	56	18.7
51-99 Percent	97	Q	6	11	Q	15	Q	22	Q	10	36.2
100 Percent	398	Q	36	55	46	61	36	80	23	54	23.7
None	3,948	146	487	632	357	626	385	614	247	454	13.4
Ownership and Occupancy											
Nongovernment Owned	4,206	163	520	679	392	660	407	662	251	474	12.9
Owner Occupied	3,192	140	413	562	282	474	321	473	205	325	13.6
Nonowner Occupied	817	21	91	82	91	149	73	139	39	132	18.9
Unoccupied	197	Q	17	35	Q	37	Q	51	Q	17	30.9
Government Owned	599	23	65	71	61	95	47	91	46	100	20.6

See footnotes at end of table.

Table A4. Census Region and Division, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Census Region and Division: Northeast: New England	Northeast: Middle Atlantic	Midwest: East North Central	Midwest: West North Central	South: South Atlantic	South: East South Central	South: West South Central	West: Mountain	West: Pacific	RSE Row Factor
RSE Column Factor:	0.3	1.7	1.0	0.8	1.3	0.8	1.3	1.2	1.5	0.9	
Number of Establishments											
One	3,886	144	473	614	363	608	380	617	246	441	13.9
2 to 5	517	33	71	83	51	67	49	55	31	76	18.7
6 to 10	89	Q	11	7	Q	21	Q	9	Q	24	28.4
11 to 20	49	Q	Q	Q	Q	12	Q	Q	Q	10	44.8
More than 20	36	Q	5	3	3	8	Q	7	Q	5	36.0
Currently Unoccupied	229	Q	20	39	Q	40	Q	60	Q	17	28.8
Percent of Floorspace Heated											
Not Heated	653	Q	72	98	71	100	50	130	Q	84	20.7
1 to 50	688	20	78	105	58	126	67	106	37	91	19.1
51 to 99	618	35	76	89	54	80	40	109	39	96	19.2
100	2,846	126	358	457	270	449	297	409	178	302	13.0
Percent of Floorspace Cooled											
Not Cooled	1,304	58	192	272	146	160	84	150	76	167	19.1
1 to 50	1,176	49	192	176	111	200	110	177	51	110	15.1
51 to 99	658	40	85	112	58	82	66	96	41	79	18.3
100	1,668	39	116	190	137	314	194	331	129	218	14.7
Percent Lit when Open											
Not Lit	413	Q	41	61	77	50	37	92	Q	26	26.0
1 to 50	881	29	141	161	84	134	73	137	44	78	17.5
51 to 99	813	40	131	148	62	122	61	101	49	100	16.7
100	2,699	112	271	379	230	450	284	424	180	369	13.4
Heating Equipment (more than one may apply)											
Heat Pumps	449	8	34	16	12	160	78	43	30	70	23.3
Furnaces	1,692	60	231	378	213	187	129	241	104	148	16.3
Individual Space Heaters	1,464	55	163	233	143	229	173	223	90	155	17.0
District Heat	93	6	18	10	13	16	5	6	8	12	27.9
Boilers	624	90	171	124	64	63	24	23	32	33	18.4
Packaged Heating Units	870	22	65	76	45	155	88	197	41	181	18.0
Other	42	Q	Q	Q	Q	Q	Q	Q	Q	Q	65.6
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	33	64	157	118	113	71	179	33	49	20.4
Heat Pumps	454	11	32	18	11	161	83	41	30	66	21.6
Individual Air Conditioners	1,023	64	204	161	69	163	110	161	26	66	18.2
District Chilled Water	28	Q	2	1	6	6	Q	3	Q	7	41.1
Central Chillers	142	11	17	19	13	32	10	16	8	17	22.0
Packaged Air-Conditioning Units	1,459	48	160	197	134	211	136	263	78	232	14.8
Swamp Coolers	179	Q	Q	Q	Q	Q	Q	33	93	36	34.8
Other	8	NC	Q	Q	NC	Q	Q	Q	Q	Q	126.5
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	3,343	151	380	538	313	561	310	485	231	374	13.2
Wall Insulation	2,320	102	273	362	222	391	229	339	137	264	14.3
Storm or Multiple Glazing	1,680	110	310	399	217	203	136	110	96	99	16.8
Tinted, Reflective or Shading Glass	1,068	32	83	137	99	189	95	166	79	188	15.2
Exterior or Interior Shading or Awnings	1,853	81	198	259	168	306	170	265	134	272	14.6
Windows that Open	2,119	119	332	354	187	338	165	252	122	249	15.8

See footnotes at end of table.

Table A4. Census Region and Division, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Census Region and Division: Northeast: New England	Northeast: Middle Atlantic	Midwest: East North Central	Midwest: West North Central	South: South Atlantic	South: East South Central	South: West South Central	West: Mountain	West: Pacific	RSE Row Factor
RSE Column Factor:	0.3	1.7	1.0	0.8	1.3	0.8	1.3	1.2	1.5	0.9	
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	250	Q	30	41	27	28	11	20	21	56	17.6
Economizer Cycle	414	17	46	71	56	66	28	26	36	69	18.9
HVAC Maintenance	2,503	144	351	373	223	398	219	328	155	312	13.6
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	574	32	82	89	52	85	44	73	23	93	18.8
Natural Lighting Control Sensors	74	2	11	15	8	12	Q	Q	9	11	33.0
Occupancy Sensors	59	3	4	15	Q	3	Q	3	4	24	28.7
Time Clock	339	23	51	51	22	56	10	27	33	66	20.6
Manual Dimmer Switches	413	31	50	79	41	49	24	45	32	64	18.8
Other	78	Q	18	10	Q	5	Q	Q	13	17	36.7
Energy Conservation Features (more than one may apply)											
Any Conservation Features	4,357	182	530	693	403	704	391	642	279	533	12.9
Building Shell	4,223	179	514	677	399	679	371	617	269	518	13.2
HVAC	2,604	145	359	390	236	420	226	333	166	328	13.2
Lighting	1,178	72	168	195	100	164	74	137	81	187	14.2
Other	264	13	44	50	18	44	8	32	15	40	23.7
Energy Management Practices (more than one may apply)											
Energy Management and Control System	236	14	25	44	24	23	27	21	14	45	20.3
Demand-Side Management Participation	315	45	54	53	16	44	15	14	13	62	23.0
Energy Audit	521	43	89	84	38	64	34	59	17	93	19.9
Building Energy Manager	49	Q	Q	7	Q	3	Q	10	Q	12	40.1
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	36	Q	Q	8	Q	6	Q	Q	Q	6	50.3
HVAC Program	154	Q	20	25	8	33	Q	8	Q	32	23.9
Lighting Program	228	41	44	42	7	25	9	10	8	41	26.0
Other DSM Programs	110	Q	13	19	7	22	Q	6	Q	18	26.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A5. Census Region and Division, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Census Region and Division: Northeast		Midwest		South			West		RSE Row Factor
		New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
RSE Column Factor:	0.4	1.5	1.0	0.8	1.3	0.9	1.2	1.3	1.3	0.9	
All Buildings	67,876	3,265	10,135	10,712	6,568	10,586	5,375	8,616	3,645	8,974	10.9
Building Floorspace (Square Feet)											
1,001 to 5,000	7,327	240	834	1,224	666	1,123	659	1,373	460	748	16.2
5,001 to 10,000	7,199	387	949	1,079	684	1,028	703	992	388	988	14.6
10,001 to 25,000	10,375	333	1,330	1,685	1,004	1,542	999	1,241	811	1,430	14.9
25,001 to 50,000	10,069	520	1,456	1,356	998	1,737	1,047	912	773	1,270	18.4
50,001 to 100,000	8,062	625	1,127	1,588	510	1,254	585	1,003	288	1,083	17.2
100,001 to 200,000	9,678	460	1,138	1,231	817	1,847	943	930	497	1,815	23.3
200,001 to 500,000	7,889	156	1,540	1,496	1,343	1,083	359	526	295	1,091	25.1
Over 500,000	7,278	Q	1,759	1,053	548	972	Q	Q	Q	550	35.5
Principal Building Activity											
Education	8,470	604	1,364	1,534	852	1,168	548	904	410	1,086	17.8
Food Sales	757	Q	Q	Q	Q	Q	Q	Q	Q	Q	38.0
Food Service	1,491	Q	348	290	Q	180	Q	178	Q	154	27.4
Health Care	1,763	Q	241	265	222	307	Q	Q	Q	261	29.7
Lodging	2,891	Q	458	409	168	524	258	261	235	419	27.2
Mercantile and Service	12,402	603	2,195	1,860	1,296	1,632	1,129	1,472	662	1,552	18.7
Office	12,319	691	1,833	2,025	780	2,040	941	1,171	758	2,080	15.3
Parking Garage	1,652	Q	Q	Q	Q	Q	Q	Q	Q	224	56.2
Public Assembly	4,556	Q	547	457	404	704	180	Q	207	442	31.7
Public Order and Safety	820	Q	268	Q	Q	Q	Q	Q	Q	Q	50.2
Religious Worship	3,747	Q	377	816	322	649	286	431	200	592	29.7
Warehouse and Storage	11,484	289	1,475	1,909	1,199	2,115	1,441	1,408	607	1,042	24.5
Other	1,130	Q	120	Q	Q	167	Q	Q	Q	181	40.2
Vacant	4,396	Q	490	538	505	437	253	914	236	805	30.6
Year Constructed											
1899 or Before	1,721	113	562	404	Q	Q	Q	Q	Q	Q	38.9
1900 to 1919	3,608	310	743	780	Q	Q	Q	Q	Q	Q	38.6
1920 to 1945	8,712	570	2,085	1,586	710	1,006	562	1,078	297	818	22.5
1946 to 1959	10,421	441	1,629	1,921	708	1,230	1,057	1,610	545	1,280	19.7
1960 to 1969	12,612	436	2,048	1,861	790	2,667	907	1,340	670	1,892	20.1
1970 to 1979	14,014	634	1,490	2,350	1,736	2,267	1,195	1,478	699	2,166	16.2
1980 to 1989	14,287	669	1,384	1,442	1,540	2,589	1,266	2,463	1,022	1,912	20.5
1990 to 1992	2,502	Q	194	369	301	487	268	151	148	491	27.1
Energy Sources (more than one may apply)											
Electricity	66,549	3,265	9,971	10,586	6,328	10,431	5,237	8,318	3,562	8,853	11.0
Natural Gas	45,097	1,761	6,798	8,669	5,169	4,776	3,259	5,372	2,560	6,732	12.1
Fuel Oil	13,218	2,184	3,351	1,604	938	2,319	557	706	348	1,212	18.4
District Heat	5,339	413	1,147	991	893	451	131	402	364	548	24.6
District Chilled Water	2,066	Q	245	Q	462	252	Q	345	Q	345	38.3
Propane	3,393	Q	581	349	230	1,177	221	Q	Q	221	30.7
Any Other	1,551	Q	383	136	Q	Q	Q	Q	Q	Q	42.0
Energy End Uses (more than one may apply)											
Heated Buildings	61,996	3,220	9,638	10,168	6,135	9,482	4,550	7,627	3,382	7,794	10.8
Air-Conditioned Buildings	57,041	2,647	8,511	8,748	5,635	9,358	4,397	7,451	3,081	7,215	11.2
Buildings with Water Heating	58,479	3,043	9,367	9,580	5,880	8,581	4,127	6,884	3,221	7,795	10.7
Buildings with Cooking	23,065	1,411	4,329	3,727	2,073	3,379	1,337	3,052	1,007	2,751	17.4
Buildings with Manufacturing	3,174	371	385	722	173	486	Q	488	Q	301	32.4

See footnotes at end of table.

Table A5. Census Region and Division, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Census Region and Division: Northeast		Midwest		South			West		RSE Row Factor
		New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
RSE Column Factor:	0.4	1.5	1.0	0.8	1.3	0.9	1.2	1.3	1.3	0.9	
Predominant Exterior Wall Material											
Masonry	48,585	2,537	7,444	8,236	4,677	7,852	3,297	6,024	2,643	5,874	11.7
Siding or Shingles	3,873	365	643	617	400	371	224	457	96	700	20.4
Metal Panels	7,392	Q	786	967	808	1,389	1,300	1,211	301	487	23.7
Concrete Panels	4,961	Q	Q	323	418	587	Q	511	514	1,241	30.5
Window Glass	2,028	Q	310	480	Q	320	Q	220	Q	380	38.4
Other	1,037	Q	Q	Q	Q	Q	Q	Q	Q	Q	45.6
Predominant Roof Material											
Built-Up	30,257	882	4,007	4,485	1,889	5,096	2,175	4,381	2,048	5,293	15.1
Shingles (Not Wood)	10,570	696	1,738	2,221	992	1,201	872	1,095	466	1,289	18.8
Metal Surfacing	9,019	Q	678	941	1,123	1,884	1,184	2,029	424	579	21.4
Synthetic or Rubber	11,702	941	2,817	2,489	1,828	1,169	848	597	317	695	18.1
Slate or Tile	1,998	209	317	186	Q	310	Q	200	Q	431	33.2
Concrete	2,544	Q	225	Q	Q	Q	Q	167	Q	418	50.6
Other	1,786	Q	354	Q	246	242	Q	146	Q	269	35.2
Floors											
One	25,424	563	2,271	3,172	1,974	4,634	2,622	5,637	1,384	3,168	17.1
Two	18,025	883	2,680	3,389	1,764	2,619	1,480	1,561	1,138	2,511	15.3
Three	9,877	623	2,184	1,969	1,073	1,288	420	547	388	1,385	18.8
Four to Nine	10,377	832	2,016	1,533	1,456	1,593	Q	440	611	1,217	23.9
Ten or More	4,173	Q	984	648	Q	451	Q	432	Q	695	38.0
Percent Window Glass											
25 or Less	51,356	1,978	7,011	7,563	5,464	8,644	4,278	7,307	2,851	6,262	12.6
26 to 50	11,815	1,092	2,387	1,958	894	1,225	744	903	601	2,012	19.3
51 to 75	3,206	119	582	787	Q	393	Q	255	Q	526	29.2
76 to 100	1,499	Q	156	Q	Q	324	Q	Q	Q	175	37.5
Workers (main shift)											
Less than 5	17,944	420	2,287	3,023	1,724	2,844	1,264	3,568	947	1,866	18.7
5 to 9	7,524	342	986	1,192	675	1,252	745	1,015	367	949	16.9
10 to 19	8,077	360	1,006	808	1,064	1,224	1,272	770	557	1,016	21.5
20 to 49	10,556	533	1,481	1,659	862	1,653	911	1,254	655	1,549	16.5
50 to 99	7,763	572	1,327	1,329	673	982	438	865	453	1,125	21.4
100 to 249	7,378	312	1,065	1,562	905	1,174	342	468	273	1,277	24.0
250 or More	8,633	725	1,982	1,138	667	1,455	403	676	393	1,193	24.5
Weekly Operating Hours											
39 or Fewer	8,246	Q	1,185	1,523	931	1,282	596	1,401	352	762	22.3
40 to 48	14,998	715	1,557	2,399	1,047	2,414	2,227	1,901	926	1,812	16.6
49 to 60	14,046	489	2,133	2,404	1,070	2,195	902	1,906	927	2,021	13.7
61 to 84	12,062	790	1,788	2,116	1,097	1,894	606	1,295	490	1,986	18.5
85 to 167	8,467	528	1,958	1,033	1,184	949	471	518	456	1,370	19.5
Open Continuously	10,057	528	1,514	1,238	1,239	1,852	573	Q	495	1,022	22.4
Percent Vacant for at Least Three Months											
1-50 Percent	12,420	920	2,101	2,327	1,174	1,871	700	1,039	507	1,782	20.0
51-99 Percent	2,263	Q	307	298	Q	228	Q	Q	Q	446	37.3
100 Percent	4,109	Q	554	439	507	491	295	591	259	775	23.0
None	49,085	1,946	7,173	7,649	4,743	7,995	4,304	6,500	2,804	5,972	12.1
Ownership and Occupancy											
Nongovernment Owned	52,752	2,604	7,374	8,567	4,561	8,032	4,425	7,023	2,794	7,373	11.0
Owner Occupied	38,403	2,257	5,054	7,136	3,285	5,456	3,483	4,564	2,240	4,928	10.5
Nonowner Occupied	12,273	295	2,055	1,150	1,062	2,262	847	Q	448	2,086	22.9
Unoccupied	2,077	Q	265	281	Q	315	Q	390	Q	359	35.4
Government Owned	15,124	661	2,761	2,145	2,008	2,553	951	1,593	851	1,602	18.5

See footnotes at end of table.

Table A5. Census Region and Division, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Census Region and Division									RSE Row Factor
		Northeast		Midwest		South			West		
		New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
RSE Column Factor:	0.4	1.5	1.0	0.8	1.3	0.9	1.2	1.3	1.3	0.9	
Number of Establishments											
One	47,997	2,171	6,742	7,839	4,428	7,329	4,275	6,805	2,607	5,802	12.9
2 to 5	7,882	447	1,362	1,033	798	1,081	737	578	621	1,225	22.9
6 to 10	2,562	Q	330	407	Q	450	Q	367	Q	609	32.4
11 to 20	2,039	Q	272	Q	Q	600	Q	Q	Q	280	33.9
More than 20	4,938	Q	1,148	935	466	783	Q	277	Q	697	32.2
Currently Unoccupied	2,457	Q	281	298	Q	343	Q	454	Q	362	34.6
Percent of Floorspace Heated											
Not Heated	6,211	Q	583	625	495	1,159	825	999	269	1,191	28.1
1 to 50	11,195	500	1,979	1,181	853	2,094	847	1,474	508	1,760	23.1
51 to 99	10,211	559	1,555	1,607	642	1,444	436	1,227	739	2,002	20.2
100	40,260	2,142	6,018	7,298	4,578	5,889	3,267	4,916	2,129	4,022	11.5
Percent of Floorspace Cooled											
Not Cooled	10,835	618	1,625	1,964	934	1,228	979	1,166	564	1,759	21.7
1 to 50	21,715	1,377	4,263	3,769	2,549	3,137	1,304	2,041	859	2,417	15.4
51 to 99	13,872	655	2,393	2,522	1,303	1,823	917	1,357	927	1,975	16.2
100	21,454	615	1,854	2,457	1,783	4,398	2,175	4,053	1,295	2,824	15.1
Percent Lit when Open											
Not Lit	3,280	Q	370	424	607	395	238	560	201	401	29.9
1 to 50	9,980	436	1,327	1,942	829	1,373	1,071	1,315	336	1,352	20.7
51 to 99	14,224	824	2,274	2,734	1,180	1,784	791	Q	752	1,847	19.0
100	40,393	1,921	6,164	5,612	3,953	7,034	3,275	4,704	2,356	5,374	11.5
Heating Equipment (more than one may apply)											
Heat Pumps	8,269	295	1,033	857	467	2,218	980	433	452	1,533	20.6
Furnaces	16,909	570	2,698	3,516	2,063	1,742	1,218	2,011	1,008	2,083	15.7
Individual Space Heaters	22,380	974	3,934	3,721	2,466	3,482	1,541	2,619	1,205	2,438	14.1
District Heat	5,225	406	1,147	976	893	401	131	395	342	533	24.8
Boilers	20,664	1,868	4,325	4,234	2,244	2,493	989	Q	800	1,789	17.2
Packaged Heating Units	16,000	479	2,411	2,053	981	3,061	1,010	2,369	548	3,089	16.8
Other	903	Q	Q	Q	Q	Q	Q	Q	Q	Q	44.4
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	9,021	588	920	1,758	1,210	1,234	807	1,413	414	677	17.9
Heat Pumps	8,406	342	944	924	491	2,298	1,064	383	458	1,502	20.5
Individual Air Conditioners	17,979	1,201	4,605	3,011	1,712	2,220	1,040	2,423	475	1,292	20.6
District Chilled Water	2,066	Q	245	Q	462	252	Q	345	Q	345	38.3
Central Chillers	12,991	896	1,623	2,041	1,122	2,161	754	Q	650	1,806	22.2
Packaged Air-Conditioning Units	27,830	1,261	4,618	3,930	2,634	4,708	1,781	3,570	1,347	3,981	13.6
Swamp Coolers	2,085	Q	Q	Q	Q	Q	Q	Q	1,156	390	49.0
Other	268	NC	Q	Q	NC	Q	Q	Q	Q	Q	72.9
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	50,311	2,720	7,173	7,781	5,137	8,371	3,734	6,002	3,094	6,298	11.1
Wall Insulation	33,240	2,001	4,632	5,060	3,124	5,354	2,716	4,106	2,038	4,210	12.1
Storm or Multiple Glazing	29,684	2,314	5,761	6,180	3,706	3,704	2,083	2,593	1,500	1,843	14.7
Tinted, Reflective or Shading Glass	25,396	1,239	2,945	3,955	2,585	3,908	1,587	3,403	1,607	4,166	15.8
Exterior or Interior Shading or Awnings	34,071	1,485	4,951	5,087	3,289	5,348	2,433	4,429	1,993	5,056	13.2
Windows that Open	28,937	1,918	5,787	5,388	2,729	4,108	2,112	2,617	1,242	3,034	14.2

See footnotes at end of table.

Table A5. Census Region and Division, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Census Region and Division									RSE Row Factor
		Northeast		Midwest		South			West		
		New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
RSE Column Factor:	0.4	1.5	1.0	0.8	1.3	0.9	1.2	1.3	1.3	0.9	
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	13,970	993	2,154	2,657	1,515	1,448	433	Q	710	2,197	20.6
Economizer Cycle	18,313	976	3,134	3,080	2,491	2,204	894	Q	1,197	2,256	18.6
HVAC Maintenance	49,173	2,811	7,823	7,809	4,928	7,614	3,290	5,601	2,725	6,572	10.6
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	15,241	852	2,985	2,266	1,751	2,328	1,023	898	613	2,525	16.8
Natural Lighting Control Sensors	3,072	218	409	795	Q	383	Q	Q	216	450	27.1
Occupancy Sensors	3,629	252	622	468	Q	305	Q	367	Q	905	27.3
Time Clock	12,104	848	1,836	1,752	640	1,782	368	Q	751	2,511	23.9
Manual Dimmer Switches	12,329	814	2,213	2,719	1,058	1,593	542	862	713	1,816	20.2
Other	2,596	188	428	375	Q	231	Q	163	379	456	26.1
Energy Conservation Features (more than one may apply)											
Any Conservation Features	64,403	3,211	9,680	10,368	6,251	10,152	4,804	7,703	3,560	8,674	10.8
Building Shell	62,056	3,171	9,441	10,138	5,892	9,648	4,597	7,513	3,428	8,227	11.0
HVAC	50,281	2,887	7,954	8,087	5,012	7,854	3,379	5,631	2,814	6,663	10.4
Lighting	29,453	1,709	5,018	5,076	2,714	3,840	1,579	2,888	1,878	4,750	14.8
Other	5,952	441	1,185	1,136	439	871	168	718	401	593	22.1
Energy Management Practices (more than one may apply)											
Energy Management and Control System	14,320	859	1,615	2,768	1,591	1,805	666	2,036	831	2,149	20.2
Demand-Side Management Participation	11,310	922	2,513	2,045	1,234	1,582	290	729	432	1,562	19.1
Energy Audit	14,779	1,041	3,095	2,530	1,413	1,671	763	1,376	537	2,353	14.3
Building Energy Manager	2,311	Q	210	340	Q	267	Q	499	Q	280	37.2
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	1,079	Q	Q	341	Q	225	Q	Q	Q	153	47.1
HVAC Program	6,370	405	981	1,119	869	1,155	186	436	278	942	23.3
Lighting Program	8,805	832	2,182	1,721	899	1,056	158	527	315	1,116	22.3
Other DSM Programs	6,176	427	1,374	980	839	1,100	Q	456	Q	828	26.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A6. Climate Zone, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
		Average Annual Heating and Cooling Degree-Days (HDD and CDD)						Average Annual Heating and Cooling Degree-Days (HDD and CDD)					
		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD	
	All Buildings	More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		All Buildings	More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.4	1.5	1.0	1.3	1.2	1.1	0.5	1.5	0.9	1.1	1.2	1.2	
All Buildings	4,806	399	1,134	1,077	1,101	1,095	67,876	5,623	18,024	16,162	15,251	12,816	10.3
Building Floorspace (Square Feet)													
1,001 to 5,000	2,681	203	588	631	613	647	7,327	583	1,651	1,718	1,595	1,780	13.6
5,001 to 10,000	975	93	250	191	227	213	7,199	703	1,827	1,406	1,659	1,604	12.1
10,001 to 25,000	647	64	155	143	142	143	10,375	1,072	2,547	2,231	2,291	2,234	12.5
25,001 to 50,000	280	20	77	59	69	56	10,069	695	2,816	2,128	2,456	1,974	13.8
50,001 to 100,000	116	11	35	23	24	22	8,062	819	2,462	1,564	1,709	1,508	14.1
100,001 to 200,000	71	3	20	20	20	8	9,678	479	2,615	2,772	2,714	1,098	19.2
200,001 to 500,000	26	3	7	8	5	3	7,889	981	1,966	2,564	1,570	808	19.5
Over 500,000	9	Q	2	2	2	Q	7,278	Q	2,140	1,779	1,258	Q	31.4
Principal Building Activity													
Education	301	9	50	51	105	86	8,470	592	2,614	2,079	1,849	1,336	15.6
Food Sales	130	Q	24	30	31	36	757	Q	183	171	150	177	28.1
Food Service	260	Q	71	60	58	51	1,491	Q	514	376	273	238	16.9
Health Care	63	Q	19	7	23	10	1,763	Q	531	267	614	198	26.0
Lodging	154	21	25	28	36	44	2,891	348	678	333	682	850	21.5
Mercantile and Service	1,272	104	343	319	259	246	12,402	1,201	3,491	3,166	2,301	2,244	14.5
Office	749	58	179	138	183	190	12,319	711	3,405	3,411	2,869	1,923	12.8
Parking Garage	24	Q	9	8	1	Q	1,652	Q	399	519	189	Q	41.9
Public Assembly	278	34	58	75	54	56	4,556	419	944	856	770	Q	20.8
Public Order and Safety	60	Q	16	17	Q	Q	820	Q	194	279	Q	Q	39.1
Religious Worship	366	19	59	117	93	78	3,747	Q	900	981	977	528	21.8
Warehouse and Storage	761	80	186	153	162	180	11,484	923	2,767	2,609	2,904	2,282	17.3
Other	69	Q	18	14	9	15	1,130	Q	316	234	206	253	33.4
Vacant	319	16	76	60	74	93	4,396	237	1,089	882	1,353	835	21.2
Year Constructed													
1899 or Before	169	19	88	43	Q	Q	1,721	223	835	524	Q	Q	24.1
1900 to 1919	255	42	94	68	Q	39	3,608	480	1,411	1,021	Q	256	23.4
1920 to 1945	724	60	232	158	145	129	8,712	694	3,063	2,304	1,625	1,027	16.5
1946 to 1959	880	65	184	190	210	230	10,421	831	2,672	2,832	2,117	1,969	14.9
1960 to 1969	783	57	159	177	219	170	12,612	842	2,815	3,363	2,990	2,602	14.5
1970 to 1979	982	95	208	205	242	231	14,014	1,531	3,619	2,825	3,656	2,382	13.9
1980 to 1989	884	57	136	197	230	263	14,287	922	2,926	2,725	3,634	4,080	15.2
1990 to 1992	128	Q	32	38	34	21	2,502	Q	681	569	736	415	25.2
Census Region													
Northeast	771	Q	444	264	NC	NC	13,400	Q	6,924	5,634	NC	NC	14.2
Midwest	1,202	277	585	339	NC	NC	17,280	4,081	9,401	3,799	NC	NC	14.8
South	1,963	NC	NC	396	591	976	24,577	NC	NC	4,981	8,226	11,371	16.7
West	870	Q	104	78	510	119	12,619	Q	1,699	1,748	7,026	1,446	17.8
Energy Sources (more than one may apply)													
Electricity	4,616	382	1,089	1,039	1,058	1,048	66,549	5,476	17,730	15,965	14,878	12,501	10.2
Natural Gas	2,665	228	766	481	649	541	45,097	3,685	13,771	10,517	11,017	6,107	10.9
Fuel Oil	559	80	184	211	Q	32	13,218	1,551	4,208	4,009	2,191	1,259	18.2
District Heat	95	10	29	27	13	16	5,339	513	1,944	1,706	595	581	19.6
District Chilled Water	28	Q	5	4	10	9	2,066	Q	574	526	437	467	31.9
Propane	337	34	70	105	88	41	3,393	481	716	869	646	682	27.5
Any Other	163	Q	41	62	32	Q	1,551	Q	371	715	259	Q	28.6

See footnotes at end of table.

Table A6. Climate Zone, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
		Average Annual Heating and Cooling Degree-Days (HDD and CDD)						Average Annual Heating and Cooling Degree-Days (HDD and CDD)					
		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD	
	All Buildings	More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		All Buildings	More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.4	1.5	1.0	1.3	1.2	1.1	0.5	1.5	0.9	1.1	1.2	1.2	
Energy End Uses (more than one may apply)													
Heated Buildings	4,178	344	1,018	959	955	903	61,996	5,218	17,196	14,966	13,537	11,079	10.5
Air-Conditioned Buildings	3,502	229	766	753	838	915	57,041	4,267	14,977	13,549	12,870	11,379	10.4
Buildings with Water Heating	3,502	298	892	815	770	726	58,479	4,956	16,377	14,359	12,791	9,996	10.3
Buildings with Cooking	734	65	198	181	158	133	23,065	1,754	6,781	5,847	4,695	3,989	13.6
Buildings with Manufacturing	121	19	36	23	20	23	3,174	315	1,254	490	468	647	23.1
Predominant Exterior Wall Material													
Masonry	3,115	220	761	699	736	699	48,585	3,954	13,796	11,456	10,366	9,013	10.5
Siding or Shingles	764	79	210	200	136	140	3,873	548	1,141	942	619	623	16.0
Metal Panels	745	84	128	147	187	200	7,392	577	1,183	2,163	1,685	1,784	17.9
Concrete Panels	87	Q	13	9	27	32	4,961	403	1,020	1,081	1,627	830	22.7
Window Glass	46	Q	11	Q	10	13	2,028	Q	640	318	604	411	30.9
Other	47	Q	10	13	Q	Q	1,037	Q	244	202	Q	Q	36.1
Predominant Roof Material													
Built-Up	1,642	116	358	304	417	447	30,257	1,780	7,699	6,191	7,820	6,767	11.1
Shingles (Not Wood)	1,381	110	370	383	276	242	10,570	1,042	3,341	2,723	2,072	1,392	15.0
Metal Surfacing	1,037	94	178	224	257	285	9,019	832	1,343	1,831	2,384	2,628	17.1
Synthetic or Rubber	386	40	163	90	57	36	11,702	1,340	4,131	4,012	1,479	739	15.6
Slate or Tile	155	Q	36	28	49	34	1,998	Q	538	378	566	361	23.3
Concrete	37	Q	5	6	6	17	2,544	Q	706	399	469	705	39.5
Other	167	29	24	40	39	35	1,786	Q	265	627	462	225	25.1
Floors													
One	3,007	195	519	599	810	884	25,424	1,504	4,664	4,264	7,086	7,907	13.6
Two	1,154	126	332	310	215	170	18,025	1,888	5,118	4,644	3,800	2,575	12.2
Three	446	54	203	109	52	27	9,877	1,023	3,800	2,260	1,942	851	15.4
Four to Nine	186	23	76	54	20	13	10,377	1,070	3,276	3,552	1,383	1,096	19.3
Ten or More	13	Q	3	5	4	Q	4,173	Q	1,166	1,443	1,040	387	25.9
Percent Window Glass													
25 or Less	4,193	357	987	936	954	959	51,356	4,568	12,614	11,830	11,736	10,608	10.9
26 to 50	490	36	114	111	123	106	11,815	880	3,745	3,193	2,549	1,448	14.4
51 to 75	94	Q	27	27	18	16	3,206	Q	1,057	877	757	418	22.5
76 to 100	29	Q	5	3	5	14	1,499	Q	608	262	209	342	30.0
Workers (main shift)													
Less than 5	2,718	212	635	634	604	633	17,944	1,493	4,098	4,177	3,893	4,284	15.6
5 to 9	895	87	207	185	198	218	7,524	782	1,767	1,654	1,477	1,845	12.3
10 to 19	561	48	124	131	127	132	8,077	850	1,796	2,147	1,534	1,749	15.8
20 to 49	405	32	101	81	114	76	10,556	757	2,974	1,963	2,924	1,938	12.9
50 to 99	130	12	41	25	30	22	7,763	644	2,761	1,617	1,642	1,100	17.4
100 to 249	64	6	16	11	21	10	7,378	681	2,119	1,864	1,835	878	17.9
250 or More	31	2	9	9	7	4	8,633	415	2,509	2,741	1,946	1,022	17.8

See footnotes at end of table.

Table A6. Climate Zone, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Average Annual Heating and Cooling Degree-Days (HDD and CDD)					All Buildings	Average Annual Heating and Cooling Degree-Days (HDD and CDD)					
		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD	
		More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD			More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.4	1.5	1.0	1.3	1.2	1.1	0.5	1.5	0.9	1.1	1.2	1.2	
Weekly Operating Hours													
39 or Fewer	1,039	85	219	284	215	236	8,246	735	1,962	2,131	1,929	1,489	17.7
40 to 48	1,278	91	297	244	319	327	14,998	979	3,868	3,045	3,879	3,226	13.1
49 to 60	1,004	69	264	221	235	214	14,046	935	3,903	3,742	3,111	2,356	12.9
61 to 84	645	68	162	146	139	128	12,062	984	3,858	2,594	2,545	2,081	12.3
85 to 167	478	51	122	106	103	96	8,467	1,034	2,003	2,667	1,820	944	15.4
Open Continuously	362	34	70	75	89	94	10,057	956	2,429	1,983	1,968	2,721	18.1
Percent Vacant for at Least Three Months													
0-25 Percent	4,153	347	992	946	952	916	58,566	4,906	15,648	14,318	12,728	10,966	10.4
26-50 Percent	157	16	52	30	27	33	2,939	242	1,014	459	565	659	22.1
51-75 Percent	62	Q	13	14	12	18	1,140	Q	217	260	425	177	29.5
76-100 Percent	434	31	76	87	111	129	5,231	414	1,145	1,125	1,532	1,015	19.2
Ownership and Occupancy													
Nongovernment Owned	4,206	353	1,001	962	939	951	52,752	4,274	13,971	12,096	11,955	10,456	10.4
Owner Occupied	3,192	291	812	733	686	670	38,403	3,265	11,145	8,582	8,781	6,630	10.5
Nonowner Occupied	817	53	151	187	211	216	12,273	856	2,429	3,034	2,628	3,325	15.4
Unoccupied	197	Q	39	43	42	64	2,077	Q	397	481	546	501	22.5
Government Owned	599	46	133	114	162	144	15,124	1,349	4,053	4,066	3,296	2,360	15.8
Number of Establishments													
One	3,886	317	916	873	908	871	47,997	4,213	12,576	10,792	11,193	9,223	11.6
2 to 5	517	52	141	119	101	104	7,882	541	2,104	2,268	1,588	1,381	15.1
6 to 10	89	12	13	20	24	21	2,562	296	566	558	588	554	22.9
11 to 20	49	Q	11	8	12	14	2,039	Q	684	361	326	562	30.5
More than 20	36	Q	6	10	7	11	4,938	Q	1,620	1,525	962	521	30.3
Currently Unoccupied	229	Q	47	47	50	75	2,457	Q	474	658	594	575	23.3
Percent of Floorspace Heated													
Not Heated	653	59	125	122	152	196	6,211	453	905	1,376	1,725	1,751	18.4
1 to 50	688	45	153	149	169	171	11,195	607	2,423	2,794	2,987	2,384	17.7
51 to 99	618	55	159	122	130	153	10,211	810	2,786	2,132	2,395	2,088	14.8
100	2,846	240	697	684	651	575	40,260	3,753	11,910	9,859	8,145	6,593	11.1
Percent of Floorspace Cooled													
Not Cooled	1,304	170	368	324	263	180	10,835	1,356	3,047	2,613	2,382	1,437	15.4
1 to 50	1,176	95	304	279	231	266	21,715	1,969	6,800	5,670	4,008	3,268	12.8
51 to 99	658	57	180	143	132	146	13,872	919	4,304	3,537	2,871	2,241	13.9
100	1,668	77	282	332	475	503	21,454	1,379	3,872	4,342	5,991	5,870	12.8
Percent Lit when Open													
Not Lit	413	32	98	96	84	103	3,280	277	686	857	798	662	21.3
1 to 50	881	82	241	203	154	201	9,980	935	2,646	2,618	2,074	1,707	14.4
51 to 99	813	72	234	197	156	153	14,224	1,016	4,587	2,979	2,760	2,882	14.4
100	2,699	212	561	582	706	638	40,393	3,395	10,105	9,708	9,620	7,565	10.8

See footnotes at end of table.

Table A6. Climate Zone, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Average Annual Heating and Cooling Degree-Days (HDD and CDD)					All Buildings	Average Annual Heating and Cooling Degree-Days (HDD and CDD)					
		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD	
		More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD			More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.4	1.5	1.0	1.3	1.2	1.1	0.5	1.5	0.9	1.1	1.2	1.2	
Heating Equipment (more than one may apply)													
Heat Pumps	449	12	31	127	148	131	8,269	437	1,282	2,459	2,501	1,590	19.6
Furnaces	1,692	162	525	459	294	251	16,909	1,920	5,075	4,763	3,217	1,935	13.6
Individual Space Heaters	1,464	134	352	331	345	302	22,380	1,736	6,624	5,781	4,508	3,730	13.2
District Heat	93	10	28	27	13	15	5,225	513	1,900	1,692	560	560	19.9
Boilers	624	99	272	156	61	36	20,664	2,118	7,706	5,136	3,341	2,363	14.7
Packaged Heating Units	870	31	125	97	297	319	16,000	609	3,756	2,987	4,836	3,812	13.7
Other	42	Q	11	Q	Q	Q	903	Q	277	Q	Q	Q	36.2
Cooling Equipment (more than one may apply)													
Residential-Type Central Air Conditioners	816	54	224	198	139	203	9,021	804	2,889	2,037	1,492	1,798	15.3
Heat Pumps	454	12	36	129	149	128	8,406	487	1,393	2,425	2,565	1,536	19.1
Individual Air Conditioners	1,023	93	279	257	166	228	17,979	1,572	5,670	5,140	2,446	3,151	16.2
District Chilled Water	28	Q	5	4	10	9	2,066	Q	574	526	437	467	31.9
Central Chillers	142	11	40	29	38	25	12,991	843	3,647	2,771	3,180	2,550	18.0
Packaged Air-Conditioning Units	1,459	90	312	253	398	405	27,830	1,779	7,396	6,302	6,966	5,386	11.3
Swamp Coolers	179	Q	33	Q	71	60	2,085	Q	477	Q	532	753	35.6
Other	8	NC	Q	Q	Q	Q	268	NC	Q	Q	Q	Q	88.8
Lighting Equipment Types (more than one may apply)													
Incandescent	2,509	246	634	602	511	516	39,221	3,400	11,517	10,349	7,835	6,120	10.8
Standard Fluorescent	4,065	341	986	898	925	915	62,074	5,206	17,006	14,639	13,537	11,685	10.2
Compact Fluorescent	206	23	68	41	39	35	8,336	888	2,743	2,282	1,476	946	16.7
High-Intensity Discharge	354	32	104	64	61	93	17,570	1,807	5,961	4,329	2,975	2,498	13.7
Other	78	Q	14	13	34	16	1,612	Q	387	413	449	329	30.7
Building Shell Conservation Features (more than one may apply)													
Roof or Ceiling Insulation	3,343	308	790	780	735	730	50,311	4,409	13,460	12,134	11,195	9,113	11.2
Wall Insulation	2,320	217	541	550	527	485	33,240	2,788	9,331	7,435	7,580	6,107	12.4
Storm or Multiple Glazing	1,680	219	599	492	219	151	29,684	3,624	10,811	7,523	4,474	3,252	14.2
Tinted, Reflective or Shading Glass	1,068	61	215	211	288	294	25,396	1,359	6,910	5,306	6,263	5,558	13.5
Exterior or Interior Shading or Awnings	1,853	134	416	405	442	456	34,071	2,554	8,949	7,738	7,781	7,049	11.7
Windows that Open	2,119	204	547	548	425	395	28,937	2,563	8,617	8,275	5,363	4,119	12.6
HVAC Conservation Features (more than one may apply)													
Variable Air-Volume System	250	21	78	46	70	34	13,970	1,102	4,442	3,268	2,897	2,261	16.6
Economizer Cycle	414	45	131	103	89	47	18,313	1,725	5,772	4,837	3,551	2,429	15.0
HVAC Maintenance	2,503	210	641	552	571	528	49,173	3,977	13,951	11,867	10,861	8,517	10.9

See footnotes at end of table.

Table A6. Climate Zone, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Average Annual Heating and Cooling Degree-Days (HDD and CDD)					All Buildings	Average Annual Heating and Cooling Degree-Days (HDD and CDD)					
		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD		Fewer than 2,000 CDD and --				More than 2,000 CDD and Fewer than 4,000 HDD	
		More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD			More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD		
RSE Column Factor:	0.4	1.5	1.0	1.3	1.2	1.1	0.5	1.5	0.9	1.1	1.2	1.2	
Lighting Conservation Features (more than one may apply)													
Specular Reflectors	574	53	160	123	124	114	15,241	1,406	4,391	4,234	3,298	1,912	16.3
Natural Lighting Control Sensors	74	Q	25	14	11	17	3,072	Q	1,148	897	411	357	24.3
Occupancy Sensors	59	Q	17	9	21	7	3,629	Q	912	971	1,054	459	21.5
Time Clock	339	27	96	72	82	63	12,104	748	3,271	2,508	3,097	2,480	17.8
Manual Dimmer Switches	413	47	133	89	75	69	12,329	1,208	3,890	3,388	2,457	1,386	16.0
Other	78	9	30	14	20	6	2,596	362	962	516	583	173	23.7
Energy Conservation Features (more than one may apply)													
Any Conservation Features	4,357	363	1,042	1,010	963	978	64,403	5,349	17,513	15,589	14,151	11,801	10.5
Building Shell	4,223	357	1,014	989	926	937	62,056	4,980	17,049	15,194	13,451	11,381	10.7
HVAC	2,604	223	665	582	590	543	50,281	4,116	14,291	12,234	10,983	8,658	10.8
Lighting	1,178	115	351	241	243	229	29,453	2,760	8,847	6,941	6,283	4,622	12.5
Other	264	24	88	54	53	43	5,952	354	2,381	1,394	925	897	18.4
Energy Management Practices (more than one may apply)													
Energy Management and Control System	236	20	73	47	64	31	14,320	1,095	4,675	2,850	2,980	2,720	15.8
Demand-Side Management Participation	315	56	94	66	69	30	11,310	1,562	3,757	2,670	2,056	1,265	15.4
Energy Audit	521	53	162	91	126	89	14,779	1,318	4,727	3,325	3,361	2,049	13.4
Building Energy Manager	49	Q	10	5	15	13	2,311	Q	564	393	569	662	30.4
Demand-Side Management Programs (more than one may apply)													
Building Shell Program	36	Q	12	9	8	Q	1,079	Q	431	248	226	Q	32.3
HVAC Program	154	19	41	37	37	19	6,370	727	2,103	1,291	1,400	849	18.3
Lighting Program	228	50	74	40	44	20	8,805	1,427	2,930	2,165	1,326	957	18.3
Other DSM Programs	110	Q	26	25	22	16	6,176	900	1,557	1,726	1,156	838	20.2

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A7. Metropolitan Status, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Metropolitan	Non-metropolitan	All Buildings	Metropolitan	Non-metropolitan	
RSE Column Factor:	0.7	0.8	1.5	0.8	0.8	1.8	
All Buildings	4,806	3,085	1,721	67,876	52,691	15,185	4.9
Building Floorspace (Square Feet)							
1,001 to 5,000	2,681	1,560	1,121	7,327	4,328	2,999	6.6
5,001 to 10,000	975	654	321	7,199	4,885	2,314	5.0
10,001 to 25,000	647	470	178	10,375	7,548	2,827	6.6
25,001 to 50,000	280	213	68	10,069	7,657	2,412	9.0
50,001 to 100,000	116	99	17	8,062	6,901	1,161	8.6
100,001 to 200,000	71	58	12	9,678	7,981	1,696	13.0
200,001 to 500,000	26	24	2	7,889	7,215	674	14.8
Over 500,000	9	7	Q	7,278	6,175	Q	30.8
Principal Building Activity							
Education	301	215	85	8,470	6,578	1,892	9.6
Food Sales	130	88	42	757	554	203	18.8
Food Service	260	188	72	1,491	1,115	376	11.4
Health Care	63	51	12	1,763	1,340	422	18.6
Lodging	154	101	53	2,891	2,291	600	13.9
Mercantile and Service	1,272	806	466	12,402	9,656	2,746	8.2
Office	749	546	203	12,319	11,146	1,172	7.9
Parking Garage	24	16	Q	1,652	1,627	Q	32.0
Public Assembly	278	170	108	4,556	2,702	Q	14.8
Public Order and Safety	60	40	20	820	592	228	26.3
Religious Worship	366	173	193	3,747	2,391	1,356	13.6
Warehouse and Storage	761	463	299	11,484	8,456	3,028	10.1
Other	69	37	32	1,130	916	214	20.3
Vacant	319	190	129	4,396	3,327	1,069	12.0
Year Constructed							
1899 or Before	169	82	87	1,721	994	726	15.0
1900 to 1919	255	138	117	3,608	2,545	1,063	15.4
1920 to 1945	724	478	246	8,712	6,710	2,002	10.5
1946 to 1959	880	593	287	10,421	7,836	2,585	9.0
1960 to 1969	783	524	260	12,612	10,268	2,344	9.1
1970 to 1979	982	618	364	14,014	11,128	2,886	7.2
1980 to 1989	884	580	304	14,287	11,095	3,192	9.8
1990 to 1992	128	73	55	2,502	2,115	387	15.7
Census Region							
Northeast	771	605	166	13,400	11,710	1,690	10.0
Midwest	1,202	647	555	17,280	12,654	4,626	8.7
South	1,963	1,146	817	24,577	17,159	7,419	8.1
West	870	687	183	12,619	11,168	1,451	12.8
Energy Sources (more than one may apply)							
Electricity	4,616	2,981	1,635	66,549	51,781	14,768	4.9
Natural Gas	2,665	1,819	846	45,097	36,933	8,164	6.1
Fuel Oil	559	341	217	13,218	11,012	2,206	10.8
District Heat	95	77	18	5,339	4,792	546	15.9
District Chilled Water	28	23	5	2,066	1,774	Q	24.5
Propane	337	151	186	3,393	2,112	1,281	15.6
Any Other	163	64	99	1,551	971	580	18.0
Energy End Uses (more than one may apply)							
Heated Buildings	4,178	2,719	1,459	61,996	48,889	13,107	5.1
Air-Conditioned Buildings	3,502	2,348	1,154	57,041	45,722	11,319	5.4
Buildings with Water Heating	3,502	2,374	1,128	58,479	46,707	11,772	5.3
Buildings with Cooking	734	493	241	23,065	18,382	4,683	8.7
Buildings with Manufacturing	121	92	29	3,174	2,792	382	17.9

See footnotes at end of table.

Table A7. Metropolitan Status, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Metropolitan	Non-metropolitan	All Buildings	Metropolitan	Non-metropolitan	
RSE Column Factor:	0.7	0.8	1.5	0.8	0.8	1.8	
Climate Zone: 45-Year Average							
Fewer than 2,000 CDD and --							
More than 7,000 HDD	399	159	240	5,623	3,098	2,525	17.6
5,500-7,000 HDD	1,134	785	348	18,024	14,765	3,259	13.1
4,000-5,499 HDD	1,077	580	497	16,162	12,578	3,584	15.9
Fewer than 4,000 HDD	1,101	793	Q	15,251	12,585	Q	20.0
More than 2,000 CDD and --							
Fewer than 4,000 HDD	1,095	767	328	12,816	9,666	3,151	15.4
Predominant Exterior Wall Material							
Masonry	3,115	2,126	990	48,585	38,188	10,397	5.5
Siding or Shingles	764	425	339	3,873	2,342	1,531	8.5
Metal Panels	745	393	352	7,392	4,614	2,778	10.7
Concrete Panels	87	86	Q	4,961	4,843	Q	18.9
Window Glass	46	35	Q	2,028	1,877	Q	23.4
Other	47	20	Q	1,037	827	Q	25.1
Predominant Roof Material							
Built-Up	1,642	1,176	466	30,257	24,318	5,940	6.9
Shingles (Not Wood)	1,381	843	538	10,570	7,576	2,994	7.3
Metal Surfacing	1,037	530	507	9,019	5,318	3,701	8.9
Synthetic or Rubber	386	262	123	11,702	9,850	1,852	9.2
Slate or Tile	155	132	23	1,998	1,747	252	17.3
Concrete	37	35	Q	2,544	2,539	Q	35.7
Other	167	106	61	1,786	1,344	442	18.1
Floors							
One	3,007	1,875	1,132	25,424	17,637	7,788	7.5
Two	1,154	751	403	18,025	14,320	3,705	5.9
Three	446	305	141	9,877	7,949	1,928	9.0
Four to Nine	186	142	45	10,377	8,648	1,730	13.4
Ten or More	13	13	Q	4,173	4,138	Q	27.4
Percent Window Glass							
25 or Less	4,193	2,626	1,567	51,356	38,226	13,130	5.4
26 to 50	490	357	133	11,815	10,039	1,776	7.6
51 to 75	94	77	17	3,206	2,997	209	17.5
76 to 100	29	25	Q	1,499	1,429	Q	25.3
Building Shape							
Square	280	216	65	3,654	3,172	482	10.3
Rectangle	3,659	2,311	1,349	39,233	30,086	9,147	5.2
Rectangle or Square with Courtyard	48	37	Q	1,372	1,244	Q	23.7
Right Angle	333	215	118	6,071	4,798	1,273	8.7
Other	485	306	179	17,547	13,392	4,155	10.2
Workers (main shift)							
Less than 5	2,718	1,546	1,172	17,944	11,288	6,656	8.1
5 to 9	895	616	280	7,524	5,160	2,365	6.8
10 to 19	561	405	157	8,077	5,841	2,236	9.4
20 to 49	405	318	86	10,556	8,641	1,916	8.2
50 to 99	130	111	19	7,763	6,736	1,028	12.0
100 to 249	64	60	5	7,378	6,908	469	13.2
250 or More	31	29	2	8,633	8,117	516	13.5
Weekly Operating Hours							
39 or Fewer	1,039	519	520	8,246	5,409	2,838	8.8
40 to 48	1,278	833	445	14,998	11,050	3,948	7.0
49 to 60	1,004	681	323	14,046	11,122	2,924	7.0
61 to 84	645	465	179	12,062	10,525	1,537	7.5
85 to 167	478	326	152	8,467	6,984	1,483	9.8
Open Continuously	362	260	102	10,057	7,601	2,456	12.8

See footnotes at end of table.

Table A7. Metropolitan Status, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Metropolitan	Non-metropolitan	All Buildings	Metropolitan	Non-metropolitan	
RSE Column Factor:	0.7	0.8	1.5	0.8	0.8	1.8	
Additional Operating Hours for Equipment Use							
Heating and/or Cooling	1,223	721	501	20,300	15,889	4,411	8.3
Lighting	633	418	216	12,886	10,722	2,165	9.9
Heating and/or Cooling and Lighting	371	251	120	8,717	7,401	1,316	13.8
No Additional Hours	3,320	2,197	1,124	43,407	33,482	9,925	6.8
Percent Vacant for at Least Three Months							
1-50 Percent	362	261	100	12,420	10,890	1,530	9.1
51-99 Percent	97	59	39	2,263	1,906	356	18.4
100 Percent	398	250	148	4,109	3,138	970	11.3
None	3,948	2,515	1,433	49,085	36,757	12,328	5.5
Ownership and Occupancy							
Nongovernment Owned	4,206	2,710	1,496	52,752	41,030	11,722	5.1
Owner Occupied	3,192	2,018	1,174	38,403	29,771	8,632	4.6
Nonowner Occupied	817	567	250	12,273	9,649	2,624	11.0
Unoccupied	197	125	72	2,077	1,610	467	14.6
Government Owned	599	374	225	15,124	11,661	3,463	9.1
Number of Establishments							
One	3,886	2,451	1,435	47,997	35,446	12,552	5.8
2 to 5	517	356	161	7,882	6,671	1,210	8.3
6 to 10	89	67	22	2,562	2,126	437	14.8
11 to 20	49	40	Q	2,039	1,833	Q	24.3
More than 20	36	27	Q	4,938	4,717	Q	22.7
Currently Unoccupied	229	144	84	2,457	1,899	559	14.7
Energy-Related Space Functions (more than one may apply)							
Commercial Food Preparation	735	493	242	22,166	18,379	3,788	7.8
Computer Room	223	176	47	14,199	12,738	1,461	11.0
Rooms with Special Ventilation	236	162	74	8,042	6,569	1,473	10.2
Activity with Large Amounts of Hot Water	203	151	53	6,862	5,900	962	10.5
Multibuilding Facility							
Part of Multibuilding Facility	1,667	1,093	574	31,564	24,643	6,921	7.6
with Central Physical Plant	223	163	60	8,395	7,175	1,220	13.9
No Central Physical Plant	1,444	930	514	23,170	17,468	5,702	8.2
Not on Multibuilding Facility	3,139	1,992	1,147	36,312	28,048	8,264	4.8
Percent of Floorspace Heated							
Not Heated	653	387	266	6,211	4,097	2,114	11.6
1 to 50	688	431	257	11,195	9,087	2,108	8.8
51 to 99	618	400	218	10,211	8,290	1,920	8.3
100	2,846	1,867	980	40,260	31,217	9,043	5.7
Percent of Floorspace Cooled							
Not Cooled	1,304	737	567	10,835	6,969	3,866	8.2
1 to 50	1,176	773	403	21,715	17,363	4,352	6.4
51 to 99	658	453	205	13,872	11,888	1,984	8.3
100	1,668	1,122	546	21,454	16,471	4,983	7.8
Percent Lit when Open							
Not Lit	413	222	191	3,280	2,332	947	12.7
1 to 50	881	522	359	9,980	6,707	3,273	8.2
51 to 99	813	544	269	14,224	10,559	3,664	8.9
100	2,699	1,797	902	40,393	33,093	7,300	5.9

Table A7. Metropolitan Status, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Metropolitan	Non-metropolitan	All Buildings	Metropolitan	Non-metropolitan	
RSE Column Factor:	0.7	0.8	1.6	0.7	0.8	2.0	
Heating Equipment (more than one may apply)							
Heat Pumps	449	306	143	8,269	6,622	1,647	10.5
Furnaces	1,692	1,030	662	16,909	12,739	4,170	6.5
Individual Space Heaters	1,464	843	622	22,380	17,795	4,584	6.6
District Heat	93	76	18	5,225	4,699	525	16.2
Boilers	624	449	175	20,664	16,091	4,573	8.3
Packaged Heating Units	870	672	198	16,000	14,096	1,903	10.3
Other	42	31	Q	903	823	Q	28.7
Heating Distribution Equipment (more than one may apply)							
Radiators or Baseboards	473	331	142	13,263	10,461	2,802	8.2
Ducts for Heating	2,955	2,008	947	45,422	36,572	8,851	5.3
Heating Only	577	377	200	5,950	4,811	1,139	10.1
Heating and Cooling	2,378	1,631	747	39,472	31,760	7,712	5.7
Variable Air-Volume System	210	164	46	11,528	9,287	2,240	13.0
Fan Coil Units for Heating	99	58	40	5,474	4,462	1,013	13.0
Heating Only	78	42	36	3,569	2,845	724	15.9
Heating and Cooling	21	17	4	1,906	1,617	289	22.0
Individual Space Heaters	1,464	843	622	22,380	17,795	4,584	6.6
Other	181	104	77	3,310	2,527	783	15.1
Cooling Equipment (more than one may apply)							
Residential-Type Central Air Conditioners	816	485	331	9,021	6,565	2,456	9.1
Heat Pumps	454	306	147	8,406	6,641	1,765	10.1
Individual Air Conditioners	1,023	656	367	17,979	13,511	4,468	8.9
District Chilled Water	28	23	5	2,066	1,774	Q	24.5
Central Chillers	142	116	26	12,991	10,886	Q	14.2
Packaged Air-Conditioning Units	1,459	1,078	381	27,830	24,003	3,827	7.2
Swamp Coolers	179	131	Q	2,085	1,781	Q	27.7
Other	8	Q	Q	268	Q	Q	49.6
Cooling Distribution Equipment (more than one may apply)							
Ducts for Cooling	2,733	1,869	864	47,755	38,663	9,092	5.8
Cooling Only	355	238	117	8,283	6,902	1,381	10.3
Heating and Cooling	2,378	1,631	747	39,472	31,760	7,712	5.7
Variable Air-Volume System	221	179	42	12,430	10,197	2,233	12.6
Fan Coil Units for Cooling	56	44	12	3,875	3,414	Q	21.5
Cooling Only	35	28	Q	1,969	1,797	Q	32.2
Heating and Cooling	21	17	4	1,906	1,617	289	22.0
Individual Air Conditioners	1,023	656	367	17,979	13,511	4,468	8.9
Other	111	80	31	2,919	2,390	529	21.2
Lighting Equipment Types (more than one may apply)							
Incandescent	2,509	1,582	927	39,221	30,999	8,221	5.7
Standard Fluorescent	4,065	2,688	1,377	62,074	49,246	12,827	4.9
Compact Fluorescent	206	155	51	8,336	7,626	710	12.1
High Intensity Discharge	354	259	95	17,570	15,147	2,422	8.6
Other	78	62	Q	1,612	1,404	Q	21.6

See footnotes at end of table.

Table A7. Metropolitan Status, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Metropolitan	Non-metropolitan	All Buildings	Metropolitan	Non-metropolitan	
RSE Column Factor:	0.7	0.8	1.6	0.7	0.8	2.0	
Personal Computers and/or Computer Terminals							
1 to 4	1,269	843	426	13,355	9,512	3,843	5.7
5 to 9	336	264	73	5,970	5,271	699	8.5
10 to 19	216	166	50	6,236	5,383	854	11.9
20 to 49	164	132	32	7,439	6,335	1,104	12.3
50 to 99	59	51	8	4,908	4,319	589	12.5
100 to 249	34	31	2	4,220	3,791	429	15.8
250 or More	19	17	Q	5,569	5,322	Q	19.8
Building Shell Conservation Features (more than one may apply)							
Roof or Ceiling Insulation	3,343	2,133	1,211	50,311	38,909	11,402	5.3
Wall Insulation	2,320	1,434	886	33,240	25,260	7,980	6.3
Storm or Multiple Glazing	1,680	1,009	671	29,684	22,088	7,596	7.3
Tinted, Reflective or Shading Glass	1,068	766	302	25,396	21,097	4,300	8.8
Exterior or Interior Shading or Awnings	1,853	1,275	578	34,071	27,056	7,016	6.8
Windows that Open	2,119	1,288	831	28,937	21,326	7,611	6.4
HVAC Conservation Features (more than one may apply)							
Variable Air-Volume System	250	200	50	13,970	11,618	2,352	12.0
Economizer Cycle	414	297	117	18,313	15,338	2,975	10.9
HVAC Maintenance	2,503	1,810	693	49,173	40,338	8,835	5.9
Lighting Conservation Features (more than one may apply)							
Specular Reflectors	574	434	140	15,241	13,063	2,178	10.3
Natural Lighting-Control Sensors	74	61	Q	3,072	2,893	Q	18.3
Occupancy Sensors	59	55	Q	3,629	3,532	Q	17.7
Time Clock	339	268	70	12,104	10,086	Q	14.0
Manual Dimmer Switches	413	298	115	12,329	10,749	1,580	9.8
Other	78	60	18	2,596	2,235	361	17.3
Energy Conservation Features (more than one may apply)							
Any Conservation Features	4,357	2,839	1,518	64,403	50,638	13,765	5.3
Building Shell	4,223	2,723	1,500	62,056	48,436	13,620	5.3
HVAC	2,604	1,869	734	50,281	41,101	9,179	5.6
Lighting	1,178	876	302	29,453	24,591	4,862	8.2
Other	264	188	76	5,952	4,713	1,239	11.2
Energy Management Practices (more than one may apply)							
Energy Management and Control System	236	188	48	14,320	12,085	2,235	12.0
Demand-Side Management Participation	315	220	95	11,310	9,665	1,645	10.0
Energy Audit	521	376	146	14,779	12,870	1,909	8.3
HVAC Maintenance	2,503	1,810	693	49,173	40,338	8,835	5.9
Building Energy Manager	49	38	Q	2,311	2,140	Q	20.6

See footnotes at end of table.

Table A7. Metropolitan Status, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Metropolitan	Non-metropolitan	All Buildings	Metropolitan	Non-metropolitan	
RSE Column Factor:	0.7	0.8	1.6	0.7	0.8	2.0	
Demand-Side Management Programs (more than one may apply)							
Building Shell Program	36	25	Q	1,079	943	Q	22.1
HVAC Program	154	99	54	6,370	5,280	1,090	11.5
Lighting Program	228	163	64	8,805	7,621	1,184	12.5
Other DSM Programs	110	75	35	6,176	5,447	729	15.3

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A8. Building Size, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Buildings by Size: 1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	RSE Row Factor
RSE Column Factor:	0.5	0.7	0.8	0.8	1.0	1.1	1.3	1.4	2.2	
All Buildings	4,806	2,681	975	647	280	116	71	26	9	6.9
Principal Building Activity										
Education	301	112	43	57	40	30	12	6	Q	17.0
Food Sales	130	103	Q	Q	Q	Q	NC	NC	NC	36.1
Food Service	260	179	51	21	Q	Q	Q	NC	NC	31.2
Health Care	63	39	Q	Q	Q	Q	3	2	*	26.7
Lodging	154	56	39	26	21	7	3	1	Q	26.2
Mercantile and Service	1,272	807	265	127	40	18	10	2	2	13.9
Office	749	387	168	102	51	20	14	5	2	12.6
Parking Garage	24	Q	Q	Q	Q	Q	Q	2	Q	47.4
Public Assembly	278	137	62	53	16	6	Q	1	Q	21.7
Public Order and Safety	60	30	Q	Q	Q	Q	Q	Q	Q	42.3
Religious Worship	366	202	81	58	18	Q	Q	Q	NC	25.0
Warehouse and Storage	761	402	149	129	43	17	15	4	1	16.1
Other	69	39	Q	6	Q	Q	Q	Q	Q	35.4
Vacant	319	177	64	42	23	7	4	1	Q	21.3
Year Constructed										
1899 or Before	169	80	52	22	12	Q	Q	Q	NC	33.2
1900 to 1919	255	128	71	30	15	5	Q	Q	Q	24.4
1920 to 1945	724	415	151	97	36	14	9	2	1	17.2
1946 to 1959	880	511	174	111	50	18	11	3	*	15.1
1960 to 1969	783	435	135	118	50	23	17	5	1	14.0
1970 to 1979	982	558	201	116	62	25	12	6	2	12.2
1980 to 1989	884	487	167	134	46	25	16	5	Q	13.4
1990 to 1992	128	68	24	19	9	4	2	2	*	21.2
Census Region										
Northeast	771	383	180	109	54	25	12	5	2	13.2
Midwest	1,202	676	241	163	66	29	15	10	2	12.0
South	1,963	1,171	370	239	106	41	26	6	4	11.9
West	870	451	184	136	56	20	18	5	1	15.3
Energy Sources (more than one may apply)										
Electricity	4,616	2,539	954	628	275	114	70	25	9	6.9
Natural Gas	2,665	1,331	574	420	181	83	52	18	6	7.7
Fuel Oil	559	288	125	62	39	21	11	10	4	13.0
District Heat	95	18	11	28	16	10	6	5	1	22.9
District Chilled Water	28	Q	Q	8	9	Q	2	2	1	38.1
Propane	337	218	62	32	15	6	3	Q	Q	23.6
Any Other	163	99	41	Q	Q	Q	Q	Q	Q	36.8
Energy End Uses (more than one may apply)										
Heated Buildings	4,178	2,247	883	585	255	110	64	24	9	6.9
Air-Conditioned Buildings	3,502	1,792	758	519	236	103	59	24	9	7.1
Buildings with Water Heating	3,502	1,733	787	539	240	108	62	25	9	7.2
Buildings with Cooking	734	320	137	114	70	44	29	15	6	11.2
Buildings with Manufacturing	121	32	32	32	11	9	3	1	1	24.7
Predominant Exterior Wall Material										
Masonry	3,115	1,573	675	488	211	94	48	19	7	7.6
Siding or Shingles	764	595	105	48	13	Q	Q	Q	Q	23.3
Metal Panels	745	457	155	85	31	6	8	1	1	19.6
Concrete Panels	87	Q	14	20	16	11	8	4	1	23.3
Window Glass	46	Q	Q	Q	8	Q	2	1	1	32.3
Other	47	Q	Q	Q	Q	Q	Q	Q	Q	42.3

See footnotes at end of table.

Table A8. Building Size, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Size: 1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	RSE Row Factor
RSE Column Factor:	0.5	0.7	0.8	0.8	1.0	1.1	1.3	1.4	2.2	
Predominant Roof Material										
Built-Up	1,642	772	369	265	124	55	41	12	5	9.8
Shingles (Not Wood)	1,381	927	250	137	49	11	5	1	Q	15.7
Metal Surfacing	1,037	648	209	122	39	11	8	Q	Q	18.3
Synthetic or Rubber	386	140	79	75	39	30	11	10	2	13.6
Slate or Tile	155	75	38	25	12	4	Q	Q	Q	28.5
Concrete	37	Q	Q	Q	Q	Q	3	2	1	40.4
Other	167	108	29	15	11	Q	Q	Q	Q	30.1
Floors										
One	3,007	2,009	525	310	103	36	18	5	Q	12.4
Two	1,154	518	282	211	81	35	20	4	2	10.5
Three	446	133	121	100	54	22	11	4	1	13.8
Four to Nine	186	Q	47	26	42	21	18	10	1	19.2
Ten or More	13	NC	NC	Q	Q	Q	4	4	3	33.0
Percent Window Glass										
25 or Less	4,193	2,433	848	554	202	80	52	18	6	8.1
26 to 50	490	201	108	75	61	24	13	5	2	12.9
51 to 75	94	40	Q	12	12	9	4	2	*	21.1
76 to 100	29	Q	Q	Q	Q	Q	2	1	1	36.6
Building Shape										
Square	280	167	64	27	12	6	3	2	1	21.6
Rectangle	3,659	2,223	713	452	165	54	37	11	3	8.1
Rectangle or Square with Courtyard	48	Q	Q	Q	Q	6	Q	Q	Q	35.6
Right Angle	333	127	90	54	41	12	7	1	Q	18.1
Other	485	152	93	105	58	38	22	11	5	13.8
Workers (main shift)										
Less than 5	2,718	1,968	460	204	60	12	8	3	Q	14.9
5 to 9	895	514	218	115	37	8	3	Q	Q	18.1
10 to 19	561	160	195	144	43	10	7	Q	Q	18.1
20 to 49	405	34	94	153	84	28	10	2	Q	15.9
50 to 99	130	Q	Q	25	41	32	16	3	Q	20.9
100 to 249	64	NC	NC	Q	13	18	18	7	1	17.6
250 or More	31	NC	NC	Q	Q	7	9	9	4	20.4
Weekly Operating Hours										
39 or Fewer	1,039	688	188	107	37	14	Q	2	Q	18.5
40 to 48	1,278	687	293	183	70	25	16	4	*	11.2
49 to 60	1,004	519	216	156	71	20	17	4	1	12.2
61 to 84	645	324	146	87	41	24	16	4	2	12.3
85 to 167	478	281	69	64	31	17	10	5	1	15.4
Open Continuously	362	182	62	50	31	15	9	8	Q	16.1
Ownership and Occupancy										
Nongovernment Owned	4,206	2,423	861	540	228	82	50	16	7	7.7
Owner Occupied	3,192	1,859	660	396	169	57	38	11	4	8.2
Nonowner Occupied	817	437	167	126	47	22	11	5	Q	14.0
Unoccupied	197	127	34	18	12	Q	Q	Q	Q	29.3
Government Owned	599	258	114	108	53	34	21	10	2	12.3
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	735	323	136	114	70	44	29	15	5	10.2
Computer Room	223	37	31	46	41	31	24	10	4	14.5
Rooms with Special Ventilation	236	80	52	44	25	17	11	6	2	15.7
Activity with Large Amounts of Hot Water	203	74	29	47	26	12	9	6	1	18.0

See footnotes at end of table.

Table A8. Building Size, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Size: 1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	RSE Row Factor
RSE Column Factor:	0.5	0.7	0.8	0.8	1.0	1.1	1.3	1.4	2.2	
Percent of Floorspace Heated										
Not Heated	653	448	99	64	27	6	7	2	Q	20.6
1 to 50	688	340	156	116	46	13	10	4	2	14.2
51 to 99	618	294	152	96	40	19	11	4	1	13.2
100	2,846	1,600	568	371	167	77	43	16	5	8.5
Percent of Floorspace Cooled										
Not Cooled	1,304	889	216	128	44	12	12	2	Q	15.1
1 to 50	1,176	507	279	215	103	38	21	9	4	10.1
51 to 99	658	299	152	108	46	27	16	8	2	12.4
100	1,668	987	327	196	87	39	22	7	Q	11.6
Percent Lit when Open										
Not Lit	413	287	64	36	18	5	Q	Q	Q	25.5
1 to 50	881	489	180	144	41	14	11	2	Q	16.0
51 to 99	813	387	189	128	63	24	13	5	Q	12.1
100	2,699	1,518	541	339	158	73	46	19	4	7.9
Heating Equipment (more than one may apply)										
Heat Pumps	449	198	121	71	30	13	10	4	2	15.8
Furnaces	1,692	1,002	387	193	72	20	14	4	1	11.8
Individual Space Heaters	1,464	812	287	210	84	38	21	9	4	10.1
District Heat	93	18	11	28	15	9	6	5	1	23.3
Boilers	624	165	145	135	91	43	28	12	4	11.7
Packaged Heating Units	870	396	190	162	62	36	16	6	3	12.2
Other	42	28	Q	Q	Q	Q	Q	Q	Q	43.5
Cooling Equipment (more than one may apply)										
Residential-Type Central Air Conditioners	816	470	173	107	44	12	7	3	1	15.1
Heat Pumps	454	202	120	71	31	15	11	3	2	15.7
Individual Air Conditioners	1,023	536	198	155	73	34	16	7	5	11.7
District Chilled Water	28	Q	Q	8	9	Q	2	2	1	38.1
Central Chillers	142	Q	20	21	29	24	20	9	5	18.6
Packaged Air-Conditioning Units	1,459	625	347	264	119	58	30	12	4	9.9
Swamp Coolers	179	110	33	21	8	Q	Q	Q	Q	35.3
Other	8	Q	Q	Q	Q	Q	Q	Q	Q	68.6
Lighting Equipment Types (more than one may apply)										
Incandescent	2,509	1,342	523	347	167	66	43	17	5	7.9
Standard Fluorescent	4,065	2,145	866	591	257	110	64	25	9	6.9
Compact Fluorescent	206	68	50	31	24	16	10	6	2	15.2
High-Intensity Discharge	354	95	61	66	56	35	22	14	5	12.1
Other	78	37	Q	16	Q	Q	Q	Q	Q	35.4
Personal Computers and/or Computer Terminals										
1 to 4	1,269	651	311	204	77	15	9	3	Q	12.5
5 to 9	336	106	111	67	26	16	8	2	Q	16.8
10 to 19	216	24	56	70	44	13	7	2	Q	19.1
20 to 49	164	Q	14	63	35	27	9	4	Q	19.8
50 to 99	59	Q	Q	8	16	16	11	4	Q	16.7
100 to 249	34	NC	Q	Q	7	9	9	4	1	26.2
250 or More	19	NC	NC	NC	Q	4	4	6	3	22.4

See footnotes at end of table.

Table A8. Building Size, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Size								RSE Row Factor
		1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	
RSE Column Factor:	0.5	0.7	0.8	0.8	1.0	1.1	1.3	1.4	2.2	
Building Shell Conservation Features (more than one may apply)										
Roof or Ceiling Insulation	3,343	1,777	708	475	212	93	52	19	7	7.6
Wall Insulation	2,320	1,279	472	322	137	57	35	13	5	9.3
Storm or Multiple Glazing	1,680	800	390	263	123	56	29	13	5	10.0
Tinted, Reflective or Shading Glass	1,068	445	238	199	90	48	29	13	6	10.2
Exterior or Interior Shading or Awnings	1,853	901	392	288	137	75	37	17	5	9.5
Windows that Open	2,119	1,181	425	296	120	54	30	11	3	9.4
HVAC Conservation Features (more than one may apply)										
Variable Air-Volume System	250	67	45	45	35	24	17	11	5	14.8
Economizer Cycle	414	111	84	94	47	35	26	12	6	13.0
HVAC Maintenance	2,503	1,143	542	429	205	97	55	22	9	7.8
Lighting Conservation Features (more than one may apply)										
Specular Reflectors	574	212	127	124	55	26	18	8	3	12.4
Natural Lighting Control Sensors	74	Q	21	11	9	4	2	3	1	26.4
Occupancy Sensors	59	Q	Q	10	7	2	7	3	1	24.1
Time Clock	339	114	80	66	35	20	13	7	5	15.9
Manual Dimmer Switches	413	147	101	88	36	18	13	8	3	12.7
Other	78	23	Q	21	8	6	5	1	*	26.0
Energy Conservation Features (more than one may apply)										
Any Conservation Features	4,357	2,376	887	610	268	113	68	25	9	7.0
Building Shell	4,223	2,305	864	587	259	111	66	23	9	7.1
HVAC	2,604	1,194	569	447	208	98	57	23	9	7.6
Lighting	1,178	452	275	241	106	47	36	14	7	9.7
Other	264	102	62	50	25	14	8	2	1	17.5
Demand-Side Management Programs (more than one may apply)										
Building Shell Program	36	Q	Q	Q	Q	Q	Q	1	*	34.6
HVAC Program	154	46	30	36	14	12	9	5	2	18.1
Lighting Program	228	75	47	46	25	16	9	8	2	16.3
Other DSM Programs	110	37	Q	20	11	10	8	5	2	21.5

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A9. Building Size, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace (million square feet)	Floorspace by Building Size: 1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	RSE Row Factor
RSE Column Factor:	0.5	0.8	0.8	0.8	1.0	1.0	1.3	1.4	2.1	
All Buildings	67,876	7,327	7,199	10,375	10,069	8,062	9,678	7,889	7,278	6.8
Principal Building Activity										
Education	8,470	292	307	997	1,551	2,045	1,641	1,621	Q	16.7
Food Sales	757	286	Q	Q	Q	Q	NC	NC	NC	36.2
Food Service	1,491	485	343	325	Q	Q	Q	NC	NC	31.9
Health Care	1,763	108	Q	Q	Q	Q	401	504	381	26.5
Lodging	2,891	159	294	412	711	420	378	380	Q	26.3
Mercantile and Service	12,402	2,203	1,987	2,003	1,369	1,268	1,364	646	1,560	15.0
Office	12,319	1,018	1,248	1,656	1,823	1,355	1,973	1,708	1,537	12.6
Parking Garage	1,652	Q	Q	Q	Q	Q	Q	694	Q	48.9
Public Assembly	4,556	438	494	822	615	378	Q	418	Q	25.7
Public Order and Safety	820	91	Q	Q	Q	Q	Q	Q	Q	43.0
Religious Worship	3,747	564	562	920	663	Q	Q	Q	NC	25.3
Warehouse and Storage	11,484	1,089	1,106	2,066	1,631	1,250	2,124	1,075	1,144	16.5
Other	1,130	99	Q	110	Q	Q	Q	Q	Q	35.3
Vacant	4,396	473	459	635	768	503	464	357	Q	22.4
Year Constructed										
1899 or Before	1,721	251	397	297	431	Q	Q	Q	NC	34.6
1900 to 1919	3,608	336	523	503	522	319	Q	Q	Q	26.3
1920 to 1945	8,712	1,150	1,106	1,507	1,267	927	1,227	707	Q	17.9
1946 to 1959	10,421	1,352	1,255	1,775	1,792	1,236	1,520	1,011	Q	15.8
1960 to 1969	12,612	1,167	986	1,892	1,856	1,625	2,306	1,444	1,335	14.8
1970 to 1979	14,014	1,536	1,505	1,902	2,216	1,776	1,673	1,988	1,418	12.3
1980 to 1989	14,287	1,339	1,251	2,189	1,658	1,717	2,070	1,526	2,536	13.8
1990 to 1992	2,502	197	176	309	327	268	269	670	285	20.7
Census Region										
Northeast	13,400	1,074	1,337	1,663	1,976	1,752	1,598	1,696	2,303	13.4
Midwest	17,280	1,889	1,763	2,689	2,353	2,097	2,048	2,839	1,601	11.8
South	24,577	3,155	2,723	3,782	3,696	2,842	3,720	1,968	2,691	12.1
West	12,619	1,208	1,376	2,241	2,043	1,371	2,311	1,386	683	14.2
Energy Sources (more than one may apply)										
Electricity	66,549	6,996	7,057	10,097	9,856	7,936	9,658	7,678	7,271	6.8
Natural Gas	45,097	3,761	4,266	6,865	6,510	5,735	7,134	5,648	5,177	7.6
Fuel Oil	13,218	829	925	978	1,377	1,539	1,573	3,017	2,980	12.5
District Heat	5,339	56	73	450	545	653	780	1,532	1,250	22.1
District Chilled Water	2,066	Q	Q	115	311	Q	252	737	515	36.6
Propane	3,393	573	466	456	501	411	500	Q	Q	23.3
Any Other	1,551	250	311	Q	Q	Q	Q	Q	Q	37.8
Energy End Uses (more than one may apply)										
Heated Buildings	61,996	6,210	6,533	9,424	9,132	7,622	8,730	7,470	6,876	6.8
Air-Conditioned Buildings	57,041	4,994	5,601	8,364	8,435	7,185	8,072	7,217	7,174	7.0
Buildings with Water Heating	58,479	4,928	5,834	8,724	8,637	7,489	8,492	7,466	6,910	7.1
Buildings with Cooking	23,065	903	998	1,852	2,627	3,110	4,062	4,639	4,874	11.2
Buildings with Manufacturing	3,174	97	245	495	382	618	442	257	637	24.8
Predominant Exterior Wall Material										
Masonry	48,585	4,401	5,001	7,867	7,545	6,552	6,649	5,666	4,905	7.6
Siding or Shingles	3,873	1,536	730	750	469	Q	Q	Q	Q	23.0
Metal Panels	7,392	1,255	1,158	1,345	1,120	426	1,158	366	565	20.1
Concrete Panels	4,961	Q	108	325	576	736	1,033	1,282	Q	24.5
Window Glass	2,028	Q	Q	Q	283	Q	286	377	726	31.6
Other	1,037	Q	Q	Q	Q	Q	Q	Q	Q	43.7

See footnotes at end of table.

Table A9. Building Size, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace (million square feet)	Floorspace by Building Size								RSE Row Factor
		1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	
RSE Column Factor:	0.5	0.8	0.8	0.8	1.0	1.0	1.3	1.4	2.1	
Predominant Roof Material										
Built-Up	30,257	2,170	2,752	4,357	4,407	3,873	5,456	3,446	3,796	9.9
Shingles (Not Wood)	10,570	2,463	1,791	2,149	1,797	777	648	466	Q	16.3
Metal Surfacing	9,019	1,776	1,569	1,899	1,391	781	1,082	Q	Q	18.3
Synthetic or Rubber	11,702	391	592	1,258	1,451	2,013	1,557	2,912	1,528	14.3
Slate or Tile	1,998	215	275	357	445	275	Q	Q	Q	29.5
Concrete	2,544	Q	Q	Q	Q	Q	499	486	1,001	39.6
Other	1,786	284	203	234	379	Q	Q	Q	Q	29.4
Floors										
One	25,424	5,331	3,834	4,916	3,634	2,484	2,409	1,315	Q	12.5
Two	18,025	1,508	2,121	3,434	2,913	2,421	2,617	1,252	1,759	10.9
Three	9,877	412	898	1,630	1,960	1,562	1,567	1,125	723	13.7
Four to Nine	10,377	Q	345	391	1,538	1,491	2,486	2,916	1,134	18.9
Ten or More	4,173	NC	NC	Q	Q	Q	598	1,281	2,159	32.5
Percent Window Glass										
25 or Less	51,356	6,618	6,253	8,865	7,211	5,572	7,073	5,307	4,456	8.0
26 to 50	11,815	575	819	1,194	2,204	1,711	1,847	1,556	1,909	13.2
51 to 75	3,206	106	Q	208	449	603	548	776	414	21.2
76 to 100	1,499	Q	Q	Q	Q	Q	210	249	498	36.0
Building Shape										
Square	3,654	429	487	393	416	443	425	554	507	21.1
Rectangle	39,233	6,069	5,247	7,204	5,853	3,831	4,977	3,235	2,818	8.3
Rectangle or Square with Courtyard	1,372	Q	Q	Q	Q	382	Q	Q	Q	34.5
Right Angle	6,071	360	659	899	1,501	836	926	407	Q	18.7
Other	17,547	435	702	1,741	2,140	2,571	3,080	3,480	3,399	13.7
Workers (main shift)										
Less than 5	17,944	5,095	3,329	3,053	2,107	910	1,044	1,020	Q	16.0
5 to 9	7,524	1,554	1,612	1,801	1,348	595	444	Q	Q	18.5
10 to 19	8,077	537	1,446	2,323	1,538	643	922	Q	Q	19.1
20 to 49	10,556	120	757	2,608	3,049	1,899	1,367	628	Q	16.1
50 to 99	7,763	Q	Q	450	1,445	2,151	2,122	850	Q	21.3
100 to 249	7,378	NC	NC	Q	517	1,303	2,550	2,139	744	18.7
250 or More	8,633	NC	NC	Q	Q	561	1,229	2,812	3,951	20.9
Weekly Operating Hours										
39 or Fewer	8,246	1,797	1,341	1,592	1,309	1,007	Q	418	Q	18.7
40 to 48	14,998	1,904	2,186	2,994	2,553	1,698	2,254	1,178	230	11.4
49 to 60	14,046	1,430	1,610	2,549	2,536	1,440	2,278	1,188	1,016	12.1
61 to 84	12,062	926	1,098	1,408	1,443	1,769	2,152	1,238	2,028	13.2
85 to 167	8,467	772	492	1,022	1,151	1,132	1,390	1,480	1,027	16.3
Open Continuously	10,057	498	472	810	1,077	1,015	1,371	2,387	2,427	16.9
Ownership and Occupancy										
Nongovernment Owned	52,752	6,638	6,351	8,640	8,116	5,821	6,820	4,957	5,409	7.6
Owner Occupied	38,403	5,119	4,861	6,343	6,054	4,026	5,178	3,484	3,337	8.1
Nonowner Occupied	12,273	1,172	1,251	2,017	1,645	1,516	1,527	1,252	Q	14.7
Unoccupied	2,077	347	239	279	418	Q	Q	Q	Q	30.0
Government Owned	15,124	689	848	1,735	1,953	2,241	2,858	2,932	1,869	12.2
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	22,166	911	994	1,848	2,627	3,110	4,062	4,639	3,975	10.3
Computer Room	14,199	118	231	756	1,534	2,127	3,217	3,096	3,119	14.3
Rooms with Special Ventilation	8,042	241	394	742	851	1,095	1,628	1,839	1,250	15.4
Activity with Large Amounts of Hot Water	6,862	194	223	796	1,002	815	1,245	1,706	880	18.3

See footnotes at end of table.

Table A9. Building Size, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace (million square feet)	Floorspace by Building Size								RSE Row Factor
		1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	
RSE Column Factor:	0.5	0.8	0.8	0.8	1.0	1.0	1.3	1.4	2.1	
Percent of Floorspace Heated										
Not Heated	6,211	1,150	724	979	995	473	983	425	Q	21.9
1 to 50	11,195	1,014	1,182	1,801	1,665	937	1,395	1,148	2,054	14.7
51 to 99	10,211	844	1,115	1,546	1,415	1,289	1,590	1,168	1,245	13.4
100	40,260	4,319	4,178	6,050	5,995	5,364	5,710	5,148	3,497	8.4
Percent of Floorspace Cooled										
Not Cooled	10,835	2,332	1,598	2,012	1,635	878	1,606	672	Q	16.0
1 to 50	21,715	1,531	2,091	3,398	3,696	2,703	2,932	2,705	2,660	10.5
51 to 99	13,872	830	1,136	1,753	1,652	1,785	2,247	2,371	2,098	12.7
100	21,454	2,633	2,374	3,213	3,087	2,697	2,893	2,141	2,416	11.7
Percent Lit when Open										
Not Lit	3,280	724	458	529	613	341	Q	Q	Q	25.7
1 to 50	9,980	1,405	1,318	2,235	1,500	1,017	1,501	557	Q	16.8
51 to 99	14,224	1,076	1,405	2,092	2,300	1,605	1,816	1,363	2,568	12.7
100	40,393	4,122	4,018	5,520	5,656	5,099	6,296	5,743	3,939	8.1
Heating Equipment (more than one may apply)										
Heat Pumps	8,269	542	899	1,159	1,119	932	1,433	1,012	1,172	15.9
Furnaces	16,909	2,780	2,816	3,131	2,559	1,352	1,860	1,075	1,337	11.8
Individual Space Heaters	22,380	2,291	2,153	3,305	2,942	2,681	2,793	2,934	3,281	10.1
District Heat	5,225	56	73	443	516	624	777	1,521	1,215	22.4
Boilers	20,664	511	1,100	2,210	3,351	3,037	3,879	3,477	3,098	11.7
Packaged Heating Units	16,000	1,116	1,415	2,667	2,168	2,509	2,126	1,603	2,396	12.3
Other	903	74	Q	Q	Q	Q	Q	Q	Q	42.1
Cooling Equipment (more than one may apply)										
Residential-Type Central Air Conditioners	9,021	1,313	1,268	1,716	1,528	810	913	851	622	14.3
Heat Pumps	8,406	549	902	1,152	1,181	1,032	1,511	889	1,191	15.7
Individual Air Conditioners	17,979	1,516	1,470	2,370	2,604	2,390	2,167	2,082	3,381	12.0
District Chilled Water	2,066	Q	Q	115	311	Q	252	737	515	36.6
Central Chillers	12,991	Q	157	357	1,088	1,651	2,752	3,072	3,869	18.6
Packaged Air-Conditioning Units	27,830	1,750	2,550	4,319	4,245	4,040	4,172	3,678	3,075	9.6
Swamp Coolers	2,085	316	250	331	304	Q	Q	Q	Q	33.5
Other	268	Q	Q	Q	Q	Q	Q	Q	Q	69.4
Lighting Equipment Types (more than one may apply)										
Incandescent	39,221	3,763	3,835	5,550	6,045	4,604	5,898	5,226	4,300	8.0
Standard Fluorescent	62,074	5,927	6,422	9,562	9,191	7,594	8,740	7,528	7,110	6.9
Compact Fluorescent	8,336	195	380	507	925	1,185	1,375	1,745	2,024	15.5
High-Intensity Discharge	17,570	289	487	1,123	2,089	2,447	3,118	3,932	4,085	12.6
Other	1,612	113	Q	227	Q	Q	Q	Q	407	35.2
Personal Computers and/or Computer Terminals										
1 to 4	13,355	1,845	2,378	3,235	2,681	1,115	1,251	802	Q	13.2
5 to 9	5,970	333	819	1,135	969	1,081	1,043	507	Q	16.7
10 to 19	6,236	81	406	1,167	1,620	890	863	432	Q	19.8
20 to 49	7,439	Q	108	1,080	1,288	1,794	1,288	1,047	Q	19.8
50 to 99	4,908	Q	Q	153	608	1,160	1,546	1,133	Q	16.5
100 to 249	4,220	NC	Q	Q	251	629	1,318	1,323	619	25.8
250 or More	5,569	NC	NC	NC	Q	330	578	1,948	2,667	22.3

See footnotes at end of table.

Table A9. Building Size, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace (million square feet)	Floorspace by Building Size								RSE Row Factor
		1,001 to 5,000 Square Feet	5,001 to 10,000 Square Feet	10,001 to 25,000 Square Feet	25,001 to 50,000 Square Feet	50,001 to 100,000 Square Feet	100,001 to 200,000 Square Feet	200,001 to 500,000 Square Feet	Over 500,000 Square Feet	
RSE Column Factor:	0.5	0.8	0.8	0.8	1.0	1.0	1.3	1.4	2.1	
Building Shell Conservation Features (more than one may apply)										
Roof or Ceiling Insulation	50,311	4,951	5,270	7,668	7,504	6,454	7,160	5,653	5,650	7.5
Wall Insulation	33,240	3,554	3,481	5,145	4,949	3,940	4,733	3,637	3,800	9.0
Storm or Multiple Glazing	29,684	2,274	2,895	4,324	4,448	3,913	4,126	3,928	3,776	9.8
Tinted, Reflective or Shading Glass	25,396	1,251	1,789	3,195	3,226	3,395	3,948	4,076	4,516	10.4
Exterior or Interior Shading or Awnings	34,071	2,518	2,900	4,722	4,900	5,145	5,131	5,168	3,588	9.3
Windows that Open	28,937	3,293	3,117	4,700	4,366	3,754	4,209	3,179	2,319	9.6
HVAC Conservation Features (more than one may apply)										
Variable Air-Volume System	13,970	185	335	794	1,287	1,714	2,251	3,359	4,044	15.4
Economizer Cycle	18,313	311	622	1,576	1,703	2,465	3,461	3,606	4,570	12.8
HVAC Maintenance	49,173	3,230	4,032	6,983	7,392	6,729	7,514	6,834	6,459	7.7
Lighting Conservation Features (more than one may apply)										
Specular Reflectors	15,241	611	956	2,088	1,970	1,883	2,507	2,677	2,550	12.9
Natural Lighting Control Sensors	3,072	Q	147	189	305	259	314	910	882	25.4
Occupancy Sensors	3,629	Q	Q	201	264	174	840	1,045	955	24.1
Time Clock	12,104	310	618	1,132	1,274	1,446	1,765	2,038	3,522	16.2
Manual Dimmer Switches	12,329	446	761	1,420	1,341	1,326	1,859	2,559	2,616	13.1
Other	2,596	69	Q	388	301	446	604	383	306	24.9
Energy Conservation Features (more than one may apply)										
Any Conservation Features	64,403	6,575	6,566	9,788	9,597	7,874	9,271	7,479	7,254	7.0
Building Shell	62,056	6,375	6,405	9,403	9,270	7,683	8,935	7,098	6,887	7.1
HVAC	50,281	3,370	4,221	7,257	7,503	6,797	7,699	6,946	6,488	7.5
Lighting	29,453	1,302	2,066	3,952	3,884	3,420	4,821	4,557	5,452	10.0
Other	5,952	291	467	821	896	917	1,020	740	799	17.1
Demand-Side Management Programs (more than one may apply)										
Building Shell Program	1,079	Q	Q	Q	Q	Q	Q	310	143	33.6
HVAC Program	6,370	152	222	595	541	843	1,236	1,490	1,291	17.7
Lighting Program	8,805	225	345	704	951	1,128	1,235	2,247	1,970	16.5
Other DSM Programs	6,176	119	Q	326	418	712	1,190	1,548	1,749	21.8

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A10. Year Constructed, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	Buildings by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.8	1.4	0.9	0.8	0.8	0.7	0.9	1.4	1.7	
All Buildings	4,806	169	255	724	880	783	982	671	212	128	7.4
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	80	128	415	511	435	558	384	103	68	9.9
5,001 to 10,000	975	52	71	151	174	135	201	119	49	24	12.6
10,001 to 25,000	647	22	30	97	111	118	116	98	36	19	13.6
25,001 to 50,000	280	12	15	36	50	50	62	33	13	9	16.5
50,001 to 100,000	116	Q	5	14	18	23	25	20	5	4	18.5
100,001 to 200,000	71	Q	Q	9	11	17	12	12	3	2	25.0
200,001 to 500,000	26	Q	Q	2	3	5	6	4	1	2	26.3
Over 500,000	9	NC	Q	1	*	1	2	2	Q	*	40.5
Principal Building Activity											
Education	301	Q	12	28	76	72	46	37	12	17	21.9
Food Sales	130	Q	Q	Q	Q	Q	28	Q	Q	Q	35.1
Food Service	260	Q	Q	43	51	33	73	23	Q	Q	22.9
Health Care	63	Q	Q	7	10	15	14	9	Q	Q	43.9
Lodging	154	Q	Q	14	24	38	27	22	Q	4	26.1
Mercantile and Service	1,272	34	59	210	235	208	247	200	47	32	11.6
Office	749	31	38	108	136	102	163	113	42	15	13.7
Parking Garage	24	NC	NC	Q	Q	Q	10	Q	Q	*	55.1
Public Assembly	278	Q	15	42	42	58	52	32	Q	12	20.9
Public Order and Safety	60	NC	Q	Q	Q	Q	16	Q	Q	Q	45.2
Religious Worship	366	29	33	56	89	53	55	37	Q	Q	20.4
Warehouse and Storage	761	Q	27	112	117	107	185	125	50	21	16.0
Other	69	Q	Q	Q	13	11	15	14	Q	Q	44.8
Vacant	319	Q	40	75	53	44	49	29	Q	7	21.0
Census Region											
Northeast	771	52	62	166	124	122	118	81	31	14	15.3
Midwest	1,202	78	105	193	208	174	248	121	37	38	15.2
South	1,963	26	66	257	368	324	426	341	102	51	12.4
West	870	Q	22	109	179	163	190	128	42	25	18.9
Energy Sources (more than one may apply)											
Electricity	4,616	169	244	681	839	759	945	648	206	124	7.5
Natural Gas	2,665	112	178	437	515	465	517	279	108	53	9.0
Fuel Oil	559	31	52	105	107	89	91	52	22	8	18.3
District Heat	95	4	10	13	22	22	9	7	4	Q	27.6
District Chilled Water	28	Q	Q	Q	7	5	5	Q	Q	Q	47.9
Propane	337	Q	Q	42	60	53	67	57	16	20	23.1
Any Other	163	Q	Q	49	Q	25	31	Q	Q	Q	31.2
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	158	232	623	760	687	850	576	184	107	7.5
Air-Conditioned Buildings	3,502	119	169	491	643	563	741	515	167	93	8.1
Buildings with Water Heating	3,502	126	202	507	638	580	721	489	160	79	7.8
Buildings with Cooking	734	41	42	101	134	120	154	86	36	21	12.5
Buildings with Manufacturing	121	Q	Q	21	20	11	31	15	Q	Q	30.3
Predominant Exterior Wall Material											
Masonry	3,115	126	189	528	667	548	550	338	109	61	8.7
Siding or Shingles	764	43	60	137	121	106	141	102	31	26	14.7
Metal Panels	745	Q	Q	48	71	106	229	194	61	33	18.9
Concrete Panels	87	NC	Q	Q	Q	14	27	21	7	6	31.9
Window Glass	46	NC	Q	Q	Q	6	18	8	1	Q	46.4
Other	47	NC	Q	Q	Q	Q	17	Q	Q	Q	52.6

See footnotes at end of table.

Table A10. Year Constructed, Number of Buildings (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.8	1.4	0.9	0.8	0.8	0.7	0.9	1.4	1.7	
Predominant Roof Material											
Built-Up	1,642	53	93	294	375	328	287	159	36	17	12.0
Shingles (Not Wood)	1,381	56	93	222	269	206	285	179	37	33	11.4
Metal Surfacing	1,037	Q	Q	75	99	146	285	255	90	50	14.6
Synthetic or Rubber	386	20	26	62	79	55	59	39	28	17	17.6
Slate or Tile	155	17	14	33	25	22	Q	Q	Q	Q	27.9
Concrete	37	NC	Q	Q	Q	6	7	9	Q	1	43.0
Other	167	Q	Q	33	27	20	40	19	Q	Q	31.6
Floors											
One	3,007	Q	52	323	584	554	707	511	159	99	10.5
Two	1,154	47	89	227	214	177	217	122	39	20	11.5
Three	446	58	75	135	65	39	44	19	7	4	16.8
Four to Nine	186	46	38	37	15	11	13	16	6	5	19.8
Ten or More	13	Q	Q	3	Q	3	2	3	Q	*	34.3
Percent Window Glass											
25 or Less	4,193	141	215	651	768	681	863	593	172	110	7.9
26 to 50	490	25	36	62	88	82	96	55	33	14	15.4
51 to 75	94	Q	Q	11	16	18	18	16	Q	4	33.7
76 to 100	29	NC	Q	Q	8	3	6	7	Q	Q	50.7
Building Shape											
Square	280	Q	12	42	58	41	59	45	14	3	21.5
Rectangle	3,659	123	203	558	643	579	772	520	163	97	8.4
Rectangle or Square with Courtyard	48	Q	Q	Q	Q	8	11	7	Q	Q	52.1
Right Angle	333	19	Q	46	67	70	61	38	8	8	19.1
Other	485	17	20	75	107	85	79	61	23	18	15.5
Workers (main shift)											
Less than 5	2,718	93	157	476	501	431	514	363	106	77	10.0
5 to 9	895	41	39	122	176	131	208	120	42	16	13.0
10 to 19	561	14	36	63	94	101	130	80	29	15	16.0
20 to 49	405	14	13	46	80	78	80	63	22	10	16.0
50 to 99	130	Q	Q	10	20	23	28	24	8	5	21.7
100 to 249	64	Q	3	4	7	11	16	15	5	3	22.1
250 or More	31	Q	Q	3	2	8	6	6	2	2	25.2
Weekly Operating Hours											
39 or Fewer	1,039	57	75	185	219	150	196	103	29	24	14.0
40 to 48	1,278	43	71	208	245	188	244	194	55	30	11.9
49 to 60	1,004	22	52	137	192	171	211	146	38	34	12.7
61 to 84	645	17	23	100	82	106	154	109	36	18	14.7
85 to 167	478	22	21	61	88	86	99	57	34	10	16.9
Open Continuously	362	Q	13	34	53	82	77	63	21	12	19.0
Ownership and Occupancy											
Nongovernment Owned	4,206	163	226	644	751	659	865	614	184	102	7.7
Owner Occupied	3,192	135	175	478	561	495	657	460	145	85	8.5
Nonowner Occupied	817	23	39	122	147	130	171	137	35	14	15.4
Unoccupied	197	Q	Q	45	43	34	36	Q	Q	Q	27.1
Government Owned	599	Q	29	80	129	125	117	58	29	26	16.5
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	735	41	42	101	134	122	155	86	34	21	12.3
Computer Room	223	Q	12	26	33	43	44	34	17	6	20.7
Rooms with Special Ventilation	236	Q	Q	25	39	38	54	37	14	10	22.0
Activity with Large Amounts of Hot Water	203	Q	Q	25	42	45	44	23	12	5	21.7

See footnotes at end of table.

Table A10. Year Constructed, Number of Buildings (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.8	1.4	0.9	0.8	0.8	0.7	0.9	1.4	1.7	
Percent of Floorspace Heated											
Not Heated	653	Q	24	106	121	99	145	95	29	21	16.8
1 to 50	688	35	45	135	115	115	114	91	27	11	15.4
51 to 99	618	32	38	110	109	97	125	78	20	Q	17.8
100	2,846	88	147	374	535	473	598	408	137	87	8.2
Percent of Floorspace Cooled											
Not Cooled	1,304	50	86	234	237	220	241	157	45	35	12.4
1 to 50	1,176	67	68	190	250	181	212	147	44	17	11.3
51 to 99	658	24	44	106	111	103	142	90	22	16	15.2
100	1,668	28	58	195	282	279	387	278	101	60	10.9
Percent Lit when Open											
Not Lit	413	Q	23	76	78	55	83	58	Q	Q	22.2
1 to 50	881	61	79	168	151	138	150	95	19	20	14.0
51 to 99	813	41	52	122	150	132	163	108	30	15	14.6
100	2,699	55	101	359	501	458	586	411	148	82	8.7
Heating Equipment (more than one may apply)											
Heat Pumps	449	Q	Q	34	44	58	112	120	35	23	20.1
Furnaces	1,692	74	104	285	358	282	324	191	53	21	11.1
Individual Space Heaters	1,464	61	65	230	258	259	305	197	52	36	11.0
District Heat	93	4	10	12	22	22	9	7	4	Q	27.7
Boilers	624	53	70	128	127	107	79	33	15	12	14.6
Packaged Heating Units	870	Q	20	84	137	136	219	165	63	33	15.1
Other	42	Q	Q	Q	Q	Q	13	Q	Q	Q	54.0
Heating Distribution Equipment (more than one may apply)											
Radiators or Baseboards	473	54	68	107	87	71	54	21	9	3	17.8
Ducts for Heating	2,955	90	138	394	529	474	641	457	149	83	8.4
Heating Only	577	33	45	120	135	101	84	46	Q	Q	16.7
Heating and Cooling	2,378	57	93	274	395	372	558	411	139	78	9.6
Variable Air-Volume System	210	Q	9	16	29	29	43	38	32	12	21.1
Fan Coil Units for Heating	99	Q	8	22	20	16	12	8	Q	Q	28.0
Heating Only	78	Q	Q	18	18	10	9	7	Q	Q	32.3
Heating and Cooling	21	Q	Q	Q	Q	7	3	Q	Q	Q	43.4
Individual Space Heaters	1,464	61	65	230	258	259	305	197	52	36	11.0
Other	181	Q	Q	24	57	34	23	16	Q	Q	27.7
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	34	64	105	156	135	162	112	31	17	16.4
Heat Pumps	454	Q	13	29	43	62	116	119	38	25	20.7
Individual Air Conditioners	1,023	65	78	203	217	172	166	85	25	12	13.5
District Chilled Water	28	Q	Q	Q	7	5	5	Q	Q	Q	47.9
Central Chillers	142	Q	5	12	27	36	27	14	9	5	23.1
Packaged Air-Conditioning Units	1,459	41	41	186	256	241	348	229	77	40	11.6
Swamp Coolers	179	Q	Q	28	42	40	24	31	Q	Q	40.5
Other	8	NC	Q	Q	Q	Q	Q	Q	Q	Q	89.6
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	2,733	83	117	329	466	430	623	454	148	82	9.1
Cooling Only	355	26	24	56	71	57	65	43	9	Q	19.9
Heating and Cooling	2,378	57	93	274	395	372	558	411	139	78	9.6
Variable Air-Volume System	221	Q	10	16	30	27	50	39	33	12	19.6
Fan Coil Units for Cooling	56	Q	Q	8	9	16	9	3	Q	*	35.8
Cooling Only	35	Q	Q	Q	Q	9	Q	Q	Q	Q	44.6
Heating and Cooling	21	Q	Q	Q	Q	7	3	Q	Q	Q	43.4
Individual Air Conditioners	1,023	65	78	203	217	172	166	85	25	12	13.5
Other	111	Q	Q	12	18	31	19	Q	Q	Q	40.0

See footnotes at end of table.

Table A10. Year Constructed, Number of Buildings (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.8	1.4	0.9	0.8	0.8	0.7	0.9	1.4	1.7	
Lighting Equipment Types (more than one may apply)											
Incandescent	2,509	136	165	436	494	399	461	284	74	59	9.2
Standard Fluorescent	4,065	140	219	588	740	665	843	583	187	101	7.4
Compact Fluorescent	206	Q	9	27	26	36	44	29	13	11	22.1
High-Intensity Discharge	354	Q	13	37	52	49	77	75	27	20	17.2
Other	78	Q	Q	Q	Q	Q	12	25	Q	Q	39.5
Personal Computers and/or Computer Terminals											
1 to 4	1,269	38	57	181	228	188	301	177	68	32	12.0
5 to 9	336	Q	17	33	41	44	94	65	25	7	17.7
10 to 19	216	Q	Q	26	39	52	43	30	11	6	21.3
20 to 49	164	Q	12	14	29	36	27	24	14	5	22.2
50 to 99	59	Q	Q	5	11	9	12	12	3	2	28.0
100 to 249	34	Q	Q	6	3	8	7	6	2	2	33.1
250 or More	19	Q	Q	1	1	3	4	5	2	2	33.2
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	3,343	100	167	419	549	551	739	541	174	103	8.0
Wall Insulation	2,320	51	89	222	302	364	571	466	155	100	8.9
Storm or Multiple Glazing	1,680	88	125	218	238	230	332	257	117	75	9.8
Tinted, Reflective or Shading Glass	1,068	30	34	119	172	171	221	203	80	40	12.4
Exterior or Interior Shading or Awnings	1,853	67	94	240	336	297	364	285	110	61	10.0
Windows that Open	2,119	106	146	360	454	352	346	240	56	60	10.3
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	250	Q	11	19	39	36	53	41	33	12	19.0
Economizer Cycle	414	Q	22	38	51	61	99	63	47	24	17.0
HVAC Maintenance	2,503	93	134	317	428	429	532	371	132	68	9.0
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	574	20	27	86	93	86	115	84	38	24	15.8
Natural Lighting Control Sensors	74	Q	Q	Q	16	10	15	10	6	Q	37.0
Occupancy Sensors	59	Q	Q	4	11	16	7	9	Q	Q	37.4
Time Clock	339	24	11	48	39	58	67	64	17	12	19.1
Manual Dimmer Switches	413	38	31	63	58	56	76	55	18	18	15.9
Other	78	Q	Q	Q	7	16	24	8	Q	4	36.4
Energy Conservation Features (more than one may apply)											
Any Conservation Features	4,357	159	235	641	782	716	889	617	195	121	7.8
Building Shell	4,223	155	230	615	761	697	850	604	193	117	7.8
HVAC	2,604	95	137	328	445	442	556	382	144	76	8.7
Lighting	1,178	65	65	173	169	180	235	175	68	48	11.0
Other	264	Q	20	31	41	38	59	34	21	9	22.0
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	36	Q	Q	Q	Q	5	12	Q	Q	Q	49.6
HVAC Program	154	Q	7	14	24	29	43	17	10	Q	26.4
Lighting Program	228	9	14	36	42	39	53	22	9	4	23.2
Other DSM Programs	110	Q	Q	14	15	15	28	11	7	5	30.0

NC = No cases in sample.
Q = Data withheld because the RSE was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A11. Year Constructed, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.7	1.6	1.0	0.9	0.9	0.7	0.9	1.5	1.2	
All Buildings	67,876	1,721	3,608	8,712	10,421	12,612	14,014	10,149	4,138	2,502	9.3
Building Floorspace (Square Feet)											
1,001 to 5,000	7,327	251	336	1,150	1,352	1,167	1,536	1,064	275	197	10.7
5,001 to 10,000	7,199	397	523	1,106	1,255	986	1,505	896	355	176	12.5
10,001 to 25,000	10,375	297	503	1,507	1,775	1,892	1,902	1,613	576	309	13.8
25,001 to 50,000	10,069	431	522	1,267	1,792	1,856	2,216	1,176	482	327	17.0
50,001 to 100,000	8,062	Q	319	927	1,236	1,625	1,776	1,330	387	268	18.1
100,001 to 200,000	9,678	Q	Q	1,227	1,520	2,306	1,673	1,626	444	269	25.0
200,001 to 500,000	7,889	Q	Q	707	1,011	1,444	1,988	1,207	320	670	26.0
Over 500,000	7,278	NC	Q	Q	Q	1,335	1,418	1,237	Q	285	39.0
Principal Building Activity											
Education	8,470	Q	441	1,077	1,903	2,405	1,728	480	173	253	21.9
Food Sales	757	Q	Q	Q	Q	Q	155	Q	Q	Q	40.2
Food Service	1,491	Q	Q	246	283	187	365	103	Q	Q	30.4
Health Care	1,763	Q	Q	227	152	492	544	240	Q	Q	35.7
Lodging	2,891	Q	Q	410	328	482	579	550	Q	97	26.7
Mercantile and Service	12,402	239	422	1,381	1,883	2,680	2,607	2,109	535	545	17.2
Office	12,319	435	716	1,389	1,400	2,187	2,283	2,419	899	590	15.4
Parking Garage	1,652	NC	NC	Q	Q	Q	674	Q	Q	124	53.6
Public Assembly	4,556	Q	142	495	346	552	1,096	461	Q	197	27.2
Public Order and Safety	820	NC	Q	Q	Q	Q	168	Q	Q	Q	48.3
Religious Worship	3,747	267	433	355	1,088	628	505	358	Q	Q	25.5
Warehouse and Storage	11,484	Q	269	1,853	1,805	1,815	2,397	2,233	610	377	20.1
Other	1,130	Q	Q	Q	188	184	210	126	Q	Q	38.8
Vacant	4,396	Q	877	929	577	431	702	571	Q	77	28.2
Census Region											
Northeast	13,400	676	1,052	2,655	2,070	2,485	2,123	1,547	506	286	17.6
Midwest	17,280	720	1,246	2,296	2,629	2,652	4,086	2,482	500	670	15.2
South	24,577	167	788	2,646	3,898	4,914	4,940	3,950	2,367	906	16.5
West	12,619	Q	522	1,115	1,825	2,562	2,865	2,170	765	639	17.2
Energy Sources (more than one may apply)											
Electricity	66,549	1,721	3,402	8,396	10,135	12,479	13,781	10,047	4,106	2,483	9.4
Natural Gas	45,097	1,249	2,826	5,738	7,294	8,900	9,230	6,265	1,965	1,630	10.2
Fuel Oil	13,218	344	764	1,748	1,647	2,363	2,747	2,122	741	743	15.7
District Heat	5,339	91	269	1,135	566	1,419	976	532	149	202	22.5
District Chilled Water	2,066	Q	Q	Q	241	376	632	184	Q	164	37.6
Propane	3,393	Q	Q	390	401	642	786	609	201	212	27.2
Any Other	1,551	Q	Q	475	Q	Q	268	Q	Q	Q	36.7
Energy End Uses (more than one may apply)											
Heated Buildings	61,996	1,637	3,329	7,717	9,371	11,548	12,814	9,398	3,878	2,303	9.5
Air-Conditioned Buildings	57,041	1,307	2,759	6,586	8,260	10,601	12,286	9,225	3,760	2,258	10.1
Buildings with Water Heating	58,479	1,457	3,126	7,004	8,784	11,006	12,369	8,869	3,696	2,167	9.9
Buildings with Cooking	23,065	495	1,334	2,225	2,849	4,920	5,071	3,197	2,117	859	15.2
Buildings with Manufacturing	3,174	Q	Q	542	748	394	652	504	Q	Q	26.3
Predominant Exterior Wall Material											
Masonry	48,585	1,483	3,286	7,530	8,651	8,536	9,277	5,635	2,662	1,526	11.2
Siding or Shingles	3,873	193	236	588	579	560	717	716	178	105	17.2
Metal Panels	7,392	Q	Q	395	898	1,395	1,881	1,929	559	244	25.3
Concrete Panels	4,961	NC	Q	Q	Q	1,502	1,510	745	452	464	30.2
Window Glass	2,028	NC	Q	Q	Q	463	408	685	202	76	33.2
Other	1,037	NC	Q	Q	Q	Q	220	Q	Q	Q	49.3

See footnotes at end of table.

Table A11. Year Constructed, Floorspace (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.7	1.6	1.0	0.9	0.9	0.7	0.9	1.5	1.2	
Predominant Roof Material											
Built-Up	30,257	565	1,430	3,996	5,716	6,568	5,907	3,563	Q	699	14.8
Shingles (Not Wood)	10,570	523	926	1,777	1,834	1,570	2,142	1,310	283	206	15.6
Metal Surfacing	9,019	Q	Q	783	764	1,520	2,224	2,206	821	464	17.0
Synthetic or Rubber	11,702	238	710	1,262	1,436	2,139	2,545	1,688	817	868	17.8
Slate or Tile	1,998	219	289	586	260	247	Q	Q	Q	Q	32.1
Concrete	2,544	NC	Q	Q	Q	Q	751	762	199	159	45.5
Other	1,786	Q	Q	132	310	223	293	502	Q	Q	33.2
Floors											
One	25,424	Q	243	2,381	4,020	5,146	5,763	4,359	2,373	994	15.5
Two	18,025	338	869	1,964	3,168	3,872	3,661	2,789	710	654	14.8
Three	9,877	481	1,012	2,067	1,702	1,365	1,963	822	243	223	17.5
Four to Nine	10,377	743	1,257	1,810	1,283	1,310	1,812	1,085	620	457	19.9
Ten or More	4,173	Q	Q	490	249	918	815	1,094	192	174	30.2
Percent Window Glass											
25 or Less	51,356	1,269	2,765	6,983	7,858	9,341	11,287	6,989	3,164	1,701	10.5
26 to 50	11,815	426	677	1,233	2,068	2,390	1,817	2,119	597	488	18.0
51 to 75	3,206	Q	Q	479	342	468	661	625	231	215	25.5
76 to 100	1,499	NC	Q	Q	153	Q	249	417	Q	Q	43.0
Building Shape											
Square	3,654	Q	206	573	381	736	837	533	195	Q	26.0
Rectangle	39,233	1,107	1,971	5,568	5,877	7,086	8,367	5,943	1,989	1,324	9.6
Rectangle or Square with Courtyard	1,372	Q	Q	Q	Q	299	317	286	Q	Q	44.3
Right Angle	6,071	241	Q	630	1,025	1,132	1,191	816	248	220	23.9
Other	17,547	287	751	1,868	2,985	3,359	3,302	2,572	Q	787	18.3
Workers (main shift)											
Less than 5	17,944	692	993	3,053	2,922	2,807	3,165	2,177	Q	516	15.2
5 to 9	7,524	444	453	1,211	1,236	1,227	1,577	882	343	152	16.1
10 to 19	8,077	167	612	933	1,611	1,211	1,812	1,142	389	201	18.6
20 to 49	10,556	151	355	1,105	2,204	2,180	2,088	1,560	514	399	16.3
50 to 99	7,763	Q	Q	1,023	1,222	1,685	1,424	1,117	347	301	24.6
100 to 249	7,378	Q	476	484	719	1,369	1,895	1,600	469	349	26.5
250 or More	8,633	Q	Q	904	507	2,133	2,053	1,670	457	585	24.1
Weekly Operating Hours											
39 or Fewer	8,246	385	927	1,564	1,570	1,320	1,455	686	163	176	17.8
40 to 48	14,998	484	883	2,045	2,877	2,617	2,614	2,278	646	554	14.4
49 to 60	14,046	363	803	2,013	2,640	2,371	2,476	2,104	616	661	14.5
61 to 84	12,062	147	356	1,393	1,072	2,692	2,778	2,500	709	415	18.0
85 to 167	8,467	272	402	780	1,117	1,910	2,248	920	544	273	19.8
Open Continuously	10,057	Q	237	918	1,146	1,701	2,444	1,661	Q	423	23.5
Ownership and Occupancy											
Nongovernment Owned	52,752	1,589	2,704	6,653	8,056	8,571	10,776	9,056	3,550	1,798	10.1
Owner Occupied	38,403	1,224	1,978	4,783	6,237	6,737	8,024	6,328	1,785	1,307	9.3
Nonowner Occupied	12,273	332	486	1,453	1,426	1,491	2,435	2,442	Q	472	21.0
Unoccupied	2,077	Q	Q	417	393	344	317	Q	Q	Q	34.0
Government Owned	15,124	Q	904	2,059	2,365	4,041	3,237	1,093	588	704	17.8
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	22,166	495	1,334	2,225	2,849	4,924	5,067	3,197	1,217	859	13.6
Computer Room	14,199	Q	673	1,439	1,436	3,057	2,857	2,954	794	811	17.3
Rooms with Special Ventilation	8,042	Q	Q	1,030	1,051	1,840	1,951	995	367	437	19.6
Activity with Large Amounts of Hot Water	6,862	Q	Q	803	908	1,244	1,856	993	371	454	24.3

See footnotes at end of table.

Table A11. Year Constructed, Floorspace (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.7	1.6	1.0	0.9	0.9	0.7	0.9	1.5	1.2	
Percent of Floorspace Heated											
Not Heated	6,211	Q	325	1,119	1,053	1,084	1,292	774	262	199	26.1
1 to 50	11,195	332	764	2,015	1,495	2,040	1,966	1,666	638	279	22.1
51 to 99	10,211	313	590	1,208	1,581	2,061	2,039	1,636	438	345	17.0
100	40,260	973	1,930	4,371	6,292	7,427	8,716	6,073	2,799	1,679	10.5
Percent of Floorspace Cooled											
Not Cooled	10,835	414	849	2,126	2,161	2,011	1,728	925	377	244	15.8
1 to 50	21,715	828	1,555	3,240	3,942	3,604	3,881	3,242	891	534	14.4
51 to 99	13,872	228	679	1,492	1,636	3,167	3,035	2,339	706	590	16.2
100	21,454	251	526	1,853	2,682	3,830	5,370	3,643	2,164	1,134	14.0
Percent Lit when Open											
Not Lit	3,280	Q	321	654	554	457	630	422	Q	Q	27.5
1 to 50	9,980	652	1,175	1,584	1,862	1,523	1,414	1,258	231	280	18.4
51 to 99	14,224	429	946	1,535	2,115	2,264	2,982	1,950	Q	413	17.8
100	40,393	560	1,166	4,939	5,890	8,369	8,988	6,519	2,226	1,737	10.4
Heating Equipment (more than one may apply)											
Heat Pumps	8,269	Q	Q	619	1,013	1,055	1,783	2,290	672	534	21.6
Furnaces	16,909	511	1,043	2,659	3,131	3,367	2,982	2,308	586	323	15.3
Individual Space Heaters	22,380	530	1,286	2,345	3,173	3,862	5,434	4,022	961	768	13.7
District Heat	5,225	91	255	1,125	545	1,363	972	524	149	202	22.8
Boilers	20,664	852	1,644	2,541	3,926	4,027	3,734	1,972	Q	544	16.4
Packaged Heating Units	16,000	Q	536	1,271	1,740	3,226	3,911	3,154	1,152	893	16.6
Other	903	Q	Q	Q	Q	Q	231	Q	Q	Q	48.2
Heating Distribution Equipment (more than one may apply)											
Radiators or Baseboards	13,263	773	1,569	2,737	2,556	2,296	1,994	839	246	252	16.0
Ducts for Heating	45,422	777	2,016	4,768	6,517	8,893	9,566	7,458	3,423	2,004	11.0
Heating Only	5,950	236	398	1,114	1,144	1,594	852	487	Q	Q	24.8
Heating and Cooling	39,472	541	1,617	3,655	5,373	7,298	8,715	6,971	3,337	1,965	11.5
Variable Air-Volume System	11,528	Q	463	624	874	2,273	2,108	2,388	Q	856	23.6
Fan Coil Units for Heating	5,474	Q	324	719	932	1,125	1,219	648	Q	186	24.6
Heating Only	3,569	Q	Q	420	817	548	686	478	Q	168	29.6
Heating and Cooling	1,906	Q	Q	298	Q	577	533	Q	Q	Q	36.0
Individual Space Heaters	22,380	530	1,286	2,345	3,173	3,862	5,434	4,022	961	768	13.7
Other	3,310	Q	Q	356	746	764	526	432	Q	Q	32.2
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	9,021	232	702	1,441	1,770	1,528	1,800	992	365	190	16.9
Heat Pumps	8,406	Q	193	672	963	1,170	1,807	2,224	697	562	21.2
Individual Air Conditioners	17,979	702	1,675	3,223	3,183	3,603	2,586	1,630	Q	108	19.1
District Chilled Water	2,066	Q	Q	Q	241	376	632	184	Q	164	37.6
Central Chillers	12,991	Q	242	847	1,551	3,032	3,306	1,839	Q	571	21.8
Packaged Air-Conditioning Units	27,830	643	1,272	2,905	3,537	5,411	6,494	4,788	1,550	1,230	12.4
Swamp Coolers	2,085	Q	Q	186	285	510	386	428	Q	Q	40.8
Other	268	NC	Q	Q	Q	Q	Q	Q	Q	Q	79.2
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	47,755	995	2,075	4,804	6,681	8,567	10,517	8,288	3,651	2,177	10.7
Cooling Only	8,283	454	457	1,149	1,308	1,269	1,802	1,317	315	212	19.4
Heating and Cooling	39,472	541	1,617	3,655	5,373	7,298	8,715	6,971	3,337	1,965	11.5
Variable Air-Volume System	12,430	Q	382	805	882	1,853	2,715	2,739	1,981	973	21.1
Fan Coil Units for Cooling	3,875	Q	Q	545	271	922	1,139	464	Q	89	33.1
Cooling Only	1,969	Q	Q	Q	Q	346	606	Q	Q	Q	44.2
Heating and Cooling	1,906	Q	Q	298	Q	577	533	Q	Q	Q	36.0
Individual Air Conditioners	17,979	702	1,675	3,223	3,183	3,603	2,586	1,630	Q	108	19.1
Other	2,919	Q	Q	249	284	768	1,109	282	Q	Q	38.3

See footnotes at end of table.

Table A11. Year Constructed, Floorspace (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Year Constructed									RSE Row Factor
		1899 or Before	1900 to 1919	1920 to 1945	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1986	1987 to 1989	1990 to 1992	
RSE Column Factor:	0.4	1.7	1.6	1.0	0.9	0.9	0.7	0.9	1.5	1.2	
Lighting Equipment Types (more than one may apply)											
Incandescent	39,221	1,303	2,412	5,674	6,729	7,220	7,853	5,131	1,592	1,305	10.1
Standard Fluorescent	62,074	1,515	3,227	7,697	9,166	11,720	13,070	9,475	3,959	2,244	9.7
Compact Fluorescent	8,336	Q	349	837	639	1,764	1,958	1,425	509	719	20.6
High-Intensity Discharge	17,570	Q	504	1,798	2,116	3,382	3,734	3,503	1,180	1,217	17.6
Other	1,612	Q	Q	Q	Q	Q	293	469	Q	110	41.3
Personal Computers and/or Computer Terminals											
1 to 4	13,355	353	807	1,773	2,349	1,975	3,168	1,941	569	419	13.1
5 to 9	5,970	Q	309	442	816	1,001	1,444	1,171	381	261	19.4
10 to 19	6,236	Q	Q	807	909	1,390	1,182	1,150	340	242	25.4
20 to 49	7,439	Q	299	883	1,311	1,552	1,419	1,138	430	345	23.9
50 to 99	4,908	Q	Q	392	842	1,019	1,154	845	186	148	28.1
100 to 249	4,220	Q	Q	790	346	1,050	1,023	466	171	197	32.6
250 or More	5,569	Q	Q	374	291	1,388	1,229	1,199	411	413	28.3
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	50,311	942	2,259	4,929	6,957	9,567	11,395	8,439	3,633	2,190	10.2
Wall Insulation	33,240	561	1,210	2,187	3,300	5,498	8,182	7,208	3,219	1,877	11.6
Storm or Multiple Glazing	29,684	1,036	1,679	3,317	3,474	4,124	5,638	5,557	3,174	1,685	12.3
Tinted, Reflective or Shading Glass	25,396	379	630	1,556	2,887	4,740	5,603	5,418	2,509	1,674	15.7
Exterior or Interior Shading or Awnings	34,071	726	1,312	3,922	4,926	6,096	6,763	5,793	2,794	1,740	12.3
Windows that Open	28,937	1,215	2,297	4,759	6,211	5,654	4,703	2,750	827	520	12.4
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	13,970	Q	572	896	1,121	2,511	2,822	2,960	2,009	975	21.3
Economizer Cycle	18,313	Q	1,007	1,185	1,500	3,321	4,374	3,338	2,297	1,168	18.0
HVAC Maintenance	49,173	1,210	2,617	5,126	6,608	9,595	10,356	8,099	3,530	2,034	10.4
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	15,241	276	739	1,752	1,676	2,865	3,476	2,556	863	1,037	15.3
Natural Lighting Control Sensors	3,072	Q	Q	Q	375	355	1,081	442	205	377	29.1
Occupancy Sensors	3,629	Q	Q	207	296	771	868	790	Q	239	29.2
Time Clock	12,104	180	371	852	1,013	1,808	2,878	2,514	Q	706	22.0
Manual Dimmer Switches	12,329	391	534	988	1,572	2,413	3,082	1,979	655	715	16.8
Other	2,596	Q	Q	Q	181	610	677	395	Q	209	30.7
Energy Conservation Features (more than one may apply)											
Any Conservation Features	64,403	1,662	3,325	7,841	9,752	12,053	13,464	9,842	4,044	2,419	9.6
Building Shell	62,056	1,620	3,269	7,532	9,484	11,695	12,754	9,463	3,902	2,338	9.8
HVAC	50,281	1,229	2,662	5,313	6,726	9,812	10,636	8,199	3,602	2,103	10.2
Lighting	29,453	659	1,368	2,943	3,384	5,219	6,680	5,052	2,519	1,627	13.2
Other	5,952	Q	406	604	677	1,247	1,430	860	325	275	21.1
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	1,079	Q	Q	Q	Q	212	259	Q	Q	Q	40.6
HVAC Program	6,370	Q	189	741	629	1,497	1,637	948	340	330	21.9
Lighting Program	8,805	144	374	871	1,105	2,236	2,314	962	397	402	20.0
Other DSM Programs	6,176	Q	Q	583	701	1,729	1,457	744	352	353	25.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error(RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A12. Floors, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	One Floor	Two Floors	Three Floors	Four to Nine Floors	Ten or more Floors	All Buildings	One Floor	Two Floors	Three Floors	Four to Nine Floors	Ten or more Floors	
RSE Column Factor:	0.5	0.7	0.7	1.1	1.4	2.1	0.5	0.9	0.9	1.1	1.2	1.9	
All Buildings	4,806	3,007	1,154	446	186	13	67,876	25,424	18,025	9,877	10,377	4,173	0.6
Building Floorspace (Square Feet)													
1,001 to 5,000	2,681	2,009	518	133	Q	NC	7,327	5,331	1,508	412	Q	NC	11.5
5,001 to 10,000	975	525	282	121	47	NC	7,199	3,834	2,121	898	345	NC	9.1
10,001 to 25,000	647	310	211	100	26	Q	10,375	4,916	3,434	1,630	391	Q	14.4
25,001 to 50,000	280	103	81	54	42	Q	10,069	3,634	2,913	1,960	1,538	Q	15.0
50,001 to 100,000	116	36	35	22	21	Q	8,062	2,484	2,421	1,562	1,491	Q	14.7
100,001 to 200,000	71	18	20	11	18	4	9,678	2,409	2,617	1,567	2,486	598	16.2
200,001 to 500,000	26	5	4	4	10	4	7,889	1,315	1,252	1,125	2,916	1,281	17.9
Over 500,000	9	Q	2	1	1	3	7,278	Q	1,759	723	1,134	2,159	32.0
Principal Building Activity													
Education	301	200	62	27	11	Q	8,470	2,823	2,217	2,200	1,171	Q	17.8
Food Sales	130	105	Q	Q	NC	NC	757	500	Q	Q	NC	NC	30.7
Food Service	260	165	57	31	Q	NC	1,491	763	343	226	Q	NC	19.1
Health Care	63	34	13	7	8	Q	1,763	190	152	140	925	356	26.7
Lodging	154	41	61	30	20	2	2,891	375	714	509	1,060	233	19.5
Mercantile and Service	1,272	893	259	102	18	Q	12,402	6,255	4,066	1,454	381	Q	16.3
Office	749	360	212	101	68	8	12,319	2,411	2,385	1,763	3,133	2,628	10.7
Parking Garage	24	Q	Q	Q	5	Q	1,652	Q	Q	Q	1,311	Q	41.3
Public Assembly	278	153	77	34	14	Q	4,556	Q	971	951	531	Q	22.4
Public Order and Safety	60	42	Q	Q	Q	Q	820	313	Q	Q	Q	Q	36.5
Religious Worship	366	184	145	33	Q	NC	3,747	1,073	1,788	698	Q	NC	21.1
Warehouse and Storage	761	589	139	25	8	Q	11,484	6,926	3,243	754	Q	Q	20.7
Other	69	40	18	Q	4	Q	1,130	220	476	Q	216	Q	27.4
Vacant	319	185	87	29	17	1	4,396	1,382	1,323	597	683	412	19.3
Year Constructed													
1899 or Before	169	Q	47	58	46	Q	1,721	Q	338	481	743	Q	25.7
1900 to 1919	255	52	89	75	38	Q	3,608	243	869	1,012	1,257	Q	23.1
1920 to 1945	724	323	227	135	37	3	8,712	2,381	1,964	2,067	1,810	490	14.0
1946 to 1959	880	584	214	65	15	Q	10,421	4,020	3,168	1,702	1,283	249	14.7
1960 to 1969	783	554	177	39	11	3	12,612	5,146	3,872	1,365	1,310	918	13.4
1970 to 1979	982	707	217	44	13	2	14,014	5,763	3,661	1,963	1,812	815	12.2
1980 to 1989	884	671	161	26	23	3	14,287	6,732	3,499	1,064	1,705	1,286	13.5
1990 to 1992	128	99	20	4	5	*	2,502	994	654	223	457	174	20.6
Census Region													
Northeast	771	329	213	153	72	4	13,400	2,834	3,564	2,807	2,847	1,348	13.0
Midwest	1,202	634	361	158	47	3	17,280	5,146	5,153	3,042	2,989	950	13.0
South	1,963	1,456	387	84	33	3	24,577	12,892	5,660	2,255	2,714	1,056	12.2
West	870	588	193	51	35	4	12,619	4,552	3,649	1,772	1,827	819	14.0
Energy Sources (more than one may apply)													
Electricity	4,616	2,848	1,132	438	185	13	66,549	24,572	17,879	9,710	10,256	4,132	6.7
Natural Gas	2,665	1,494	729	303	130	9	45,097	14,415	13,582	7,524	6,825	2,751	8.0
Fuel Oil	559	249	153	103	47	6	13,218	2,017	2,435	2,991	3,387	2,987	12.6
District Heat	95	33	18	15	27	3	5,339	488	470	744	2,263	1,374	18.5
District Chilled Water	28	8	7	4	9	1	2,066	160	234	226	848	599	28.4
Propane	337	230	76	23	Q	Q	3,393	1,503	918	641	300	Q	24.0
Any Other	163	112	32	15	Q	Q	1,551	494	465	427	Q	Q	29.5
Energy End Uses (more than one may apply)													
Heated Buildings	4,178	2,492	1,071	425	178	12	61,996	22,052	17,209	9,318	9,432	3,985	6.9
Air-Conditioned Buildings	3,502	2,065	915	354	155	12	57,041	19,852	15,749	8,622	8,755	4,063	7.2
Buildings with Water Heating	3,502	1,953	962	404	171	12	58,479	19,719	16,458	9,310	9,031	3,961	7.1
Buildings with Cooking	734	377	192	103	54	7	23,065	5,953	5,517	4,208	4,716	2,672	10.6
Buildings with Manufacturing	121	72	29	10	9	Q	3,174	1,257	998	471	401	Q	26.8

See footnotes at end of table.

Table A12. Floors, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	One Floor	Two Floors	Three Floors	Four to Nine Floors	Ten or more Floors	All Buildings	One Floor	Two Floors	Three Floors	Four to Nine Floors	Ten or more Floors	
RSE Column Factor:	0.5	0.7	0.7	1.1	1.4	2.1	0.5	0.9	0.9	1.1	1.2	1.9	
Predominant Exterior Wall Material													
Masonry	3,115	1,802	824	336	145	8	48,585	17,203	13,092	7,951	8,076	2,264	7.8
Siding or Shingles	764	453	203	85	23	Q	3,873	1,705	1,333	595	186	Q	14.7
Metal Panels	745	653	82	Q	Q	Q	7,392	4,811	1,626	Q	Q	Q	26.0
Concrete Panels	87	49	18	12	8	1	4,961	1,243	1,528	673	1,096	420	21.7
Window Glass	46	20	14	5	5	2	2,028	183	168	228	379	1,070	28.1
Other	47	30	Q	Q	Q	1	1,037	279	Q	Q	Q	206	37.7
Predominant Roof Material													
Built-Up	1,642	981	405	174	74	8	30,257	10,988	7,768	4,967	4,565	1,970	9.5
Shingles (Not Wood)	1,381	781	405	148	46	Q	10,570	3,951	3,879	1,485	921	Q	12.9
Metal Surfacing	1,037	871	145	16	Q	Q	9,019	6,355	2,235	223	Q	Q	20.1
Synthetic or Rubber	386	180	108	64	30	4	11,702	2,588	2,987	2,278	2,594	1,256	13.3
Slate or Tile	155	73	35	27	19	Q	1,998	468	435	450	630	Q	24.7
Concrete	37	19	Q	4	7	1	2,544	328	Q	187	1,346	516	35.0
Other	167	102	49	13	Q	Q	1,786	747	554	288	Q	Q	25.8
Percent Window Glass													
25 or Less	4,193	2,717	981	363	127	5	51,356	22,587	13,872	7,257	6,511	1,129	7.7
26 to 50	490	240	137	63	45	5	11,815	2,293	3,526	1,805	2,671	1,521	12.4
51 to 75	94	38	28	17	8	2	3,206	380	475	730	749	872	19.9
76 to 100	29	Q	8	Q	5	1	1,499	Q	152	Q	446	651	31.2
Building Shape													
Square	280	171	77	22	8	2	3,654	1,230	698	447	547	732	18.4
Rectangle	3,659	2,381	830	312	129	8	39,233	17,350	10,179	4,125	5,567	2,012	7.7
Rectangle or Square with Courtyard	48	21	17	Q	2	Q	1,372	288	565	Q	308	Q	33.9
Right Angle	333	181	94	41	15	Q	6,071	1,833	2,147	1,233	622	Q	17.6
Other	485	252	136	64	32	3	17,547	4,724	4,436	3,889	3,332	1,166	13.3
Workers (main shift)													
Less than 5	2,718	1,922	553	193	49	Q	17,944	10,122	4,222	1,728	1,514	Q	12.2
5 to 9	895	555	230	79	31	Q	7,524	3,676	2,148	909	790	Q	15.6
10 to 19	561	290	181	57	33	Q	8,077	3,239	2,577	993	1,254	Q	15.4
20 to 49	405	175	128	74	26	Q	10,556	4,273	3,025	2,173	956	Q	13.5
50 to 99	130	47	40	25	17	Q	7,763	2,394	2,492	1,525	1,241	Q	18.2
100 to 249	64	14	18	12	18	2	7,378	1,165	2,318	1,486	2,070	338	17.9
250 or More	31	3	4	5	11	8	8,633	556	1,242	1,064	2,553	3,219	18.8
Weekly Operating Hours													
39 or Fewer	1,039	657	283	77	22	Q	8,246	3,592	2,516	1,088	706	Q	15.0
40 to 48	1,278	800	302	122	52	2	14,998	6,752	3,680	2,309	1,876	381	11.5
49 to 60	1,004	642	236	91	31	4	14,046	5,256	4,219	1,870	1,564	1,137	10.8
61 to 84	645	415	142	60	25	3	12,062	4,454	3,458	1,639	1,355	1,156	12.7
85 to 167	478	298	104	48	28	Q	8,467	2,673	2,556	1,547	1,321	Q	17.0
Open Continuously	362	196	86	49	29	3	10,057	2,697	1,598	1,423	3,555	785	14.8
Ownership and Occupancy													
Nongovernment Owned	4,206	2,626	1,022	393	154	11	52,752	21,067	14,328	6,838	7,068	3,451	7.1
Owner Occupied	3,192	1,945	805	313	122	8	38,403	13,597	11,140	5,355	5,794	2,517	7.6
Nonowner Occupied	817	542	177	66	30	2	12,273	6,536	2,697	1,262	1,029	749	13.9
Unoccupied	197	140	40	Q	Q	Q	2,077	934	491	Q	Q	Q	26.0
Government Owned	599	380	132	53	32	2	15,124	4,357	3,697	3,039	3,309	722	12.9
Lighting Equipment Types (more than one may apply)													
Incandescent	2,509	1,293	744	317	143	11	39,221	10,327	11,064	7,073	7,278	3,478	7.7
Standard Fluorescent	4,065	2,439	1,033	404	176	13	62,074	21,851	17,252	9,453	9,523	3,994	6.7
Compact Fluorescent	206	93	44	35	30	5	8,336	1,204	1,776	1,189	2,498	1,667	15.2
High-Intensity Discharge	354	183	111	30	26	4	17,570	4,781	5,174	2,683	3,263	1,668	11.6
Other	78	47	23	Q	Q	Q	1,612	639	359	Q	Q	Q	33.8

See footnotes at end of table.

Table A12. Floors, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	One Floor	Two Floors	Three Floors	Four to Nine Floors	Ten or more Floors	All Buildings	One Floor	Two Floors	Three Floors	Four to Nine Floors	Ten or more Floors	
RSE Column Factor:	0.5	0.7	0.7	1.1	1.4	2.1	0.5	0.9	0.9	1.1	1.2	1.9	
Building Shell Conservation Features (more than one may apply)													
Roof or Ceiling Insulation	3,343	2,010	857	330	137	9	50,311	18,135	14,282	7,957	6,810	3,128	7.0
Wall Insulation	2,320	1,434	600	195	84	6	33,240	12,123	9,741	4,581	4,326	2,469	8.6
Storm or Multiple Glazing	1,680	796	498	265	114	7	29,684	8,610	8,019	5,358	5,368	2,329	9.1
Tinted, Reflective or Shading Glass	1,068	604	300	103	53	8	25,396	7,551	6,991	3,749	4,340	2,765	10.7
Exterior or Interior Shading or Awnings	1,853	992	530	223	99	9	34,071	10,608	9,124	5,459	5,945	2,935	8.5
Windows that Open	2,119	1,159	547	276	130	6	28,937	8,652	7,540	5,499	5,615	1,632	9.3
HVAC Conservation Features (more than one may apply)													
Variable Air-Volume System	250	111	67	33	32	6	13,970	2,678	3,071	2,315	3,424	2,482	14.7
Economizer Cycle	414	176	129	61	41	8	18,313	3,944	4,629	3,045	3,772	2,923	12.3
HVAC Maintenance	2,503	1,357	687	305	140	13	49,173	14,958	13,699	8,222	8,204	4,091	7.5
Lighting Conservation Features (more than one may apply)													
Specular Reflectors	574	282	169	78	39	6	15,241	3,717	3,893	2,616	3,135	1,880	12.3
Natural Lighting Control Sensors	74	28	23	12	10	1	3,072	383	874	431	1,058	326	21.7
Occupancy Sensors	59	23	19	8	7	1	3,629	407	827	400	1,189	806	20.6
Time Clock	339	137	115	54	28	4	12,104	2,746	3,264	2,141	2,247	1,707	15.9
Manual Dimmer Switches	413	143	143	69	53	5	12,329	1,375	3,648	2,056	3,284	1,967	12.9
Other	78	34	23	10	11	1	2,596	529	595	389	789	294	20.8
Energy Conservation Features (more than one may apply)													
Any Conservation Features	4,357	2,620	1,105	435	184	13	64,403	22,938	17,520	9,776	9,997	4,173	6.9
Building Shell	4,223	2,530	1,077	424	179	13	62,056	22,066	17,097	9,558	9,289	4,046	6.9
HVAC	2,604	1,414	719	313	145	13	50,281	15,331	14,092	8,398	8,360	4,100	7.4
Lighting	1,178	541	368	166	93	10	29,453	7,256	7,994	5,049	5,841	3,313	9.5
Other	264	128	82	36	15	2	5,952	1,563	1,866	873	1,182	468	15.4

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A13. Predominant Exterior Wall Material, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Buildings by Exterior Wall Material						RSE Row Factor
		Masonry	Siding or Shingles	Metal Panels	Concrete Panels	Window Glass	Other	
RSE Column Factor:	0.4	0.4	0.9	1.1	1.4	2.0	2.3	
All Buildings	4,806	3,115	764	745	87	46	47	8.4
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	1,573	595	457	Q	Q	Q	13.4
5,001 to 10,000	975	675	105	155	14	Q	Q	13.2
10,001 to 25,000	647	488	48	85	20	Q	Q	17.7
25,001 to 50,000	280	211	13	31	16	8	Q	18.9
50,001 to 100,000	116	94	Q	6	11	Q	Q	21.9
100,001 to 200,000	71	48	Q	8	8	2	Q	25.7
200,001 to 500,000	26	19	Q	1	4	1	Q	25.8
Over 500,000	9	7	Q	1	1	1	Q	36.3
Principal Building Activity								
Education	301	233	43	17	4	Q	NC	22.7
Food Sales	130	99	Q	Q	Q	Q	NC	40.6
Food Service	260	186	60	Q	Q	Q	NC	26.9
Health Care	63	47	Q	Q	Q	Q	Q	42.1
Lodging	154	114	34	Q	Q	Q	Q	36.8
Mercantile and Service	1,272	805	176	250	14	Q	Q	13.7
Office	749	542	122	44	15	14	12	15.3
Parking Garage	24	14	Q	Q	Q	Q	Q	55.3
Public Assembly	278	186	56	26	Q	Q	Q	26.0
Public Order and Safety	60	47	Q	Q	Q	NC	NC	46.6
Religious Worship	366	264	89	Q	Q	NC	NC	27.6
Warehouse and Storage	761	326	93	303	27	Q	Q	18.4
Other	69	43	Q	21	Q	Q	Q	43.7
Vacant	319	210	55	39	5	Q	Q	23.3
Year Constructed								
1899 or Before	169	126	43	Q	NC	NC	NC	35.7
1900 to 1919	255	189	60	Q	Q	Q	Q	36.1
1920 to 1945	724	528	137	48	Q	Q	Q	22.0
1946 to 1959	880	667	121	71	Q	Q	Q	17.5
1960 to 1969	783	548	106	106	14	6	Q	17.9
1970 to 1979	982	550	141	229	27	18	17	14.0
1980 to 1989	884	447	132	255	27	9	13	13.9
1990 to 1992	128	61	26	33	6	Q	Q	30.4
Census Region								
Northeast	771	503	176	68	6	12	6	18.4
Midwest	1,202	759	198	215	12	Q	9	17.9
South	1,963	1,261	257	372	36	18	19	13.4
West	870	592	133	90	34	8	13	20.5
Energy Sources (more than one may apply)								
Electricity	4,616	3,035	715	691	85	43	46	8.3
Natural Gas	2,665	1,951	320	292	50	27	26	10.8
Fuel Oil	559	373	114	48	5	9	10	18.8
District Heat	95	77	Q	6	7	1	Q	29.8
District Chilled Water	28	25	Q	Q	2	Q	Q	20.7
Propane	337	155	101	74	Q	Q	Q	28.4
Any Other	163	73	41	45	Q	Q	Q	31.7
Energy End Uses (more than one may apply)								
Heated Buildings	4,178	2,850	635	533	76	41	42	8.5
Air-Conditioned Buildings	3,502	2,491	473	394	71	38	35	8.9
Buildings with Water Heating	3,502	2,465	514	380	74	39	30	8.7
Buildings with Cooking	734	546	125	31	15	15	1	15.3
Buildings with Manufacturing	121	74	Q	28	6	Q	Q	35.2

See footnotes at end of table.

Table A13. Predominant Exterior Wall Material, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Buildings by Exterior Wall Material						RSE Row Factor
		Masonry	Siding or Shingles	Metal Panels	Concrete Panels	Window Glass	Other	
RSE Column Factor:	0.4	0.4	0.9	1.1	1.4	2.0	2.3	
Predominant Roof Material								
Built-Up	1,642	1,470	68	29	46	18	11	14.3
Shingles (Not Wood)	1,381	865	448	39	6	Q	Q	16.7
Metal Surfacing	1,037	209	136	660	17	Q	Q	17.6
Synthetic or Rubber	386	318	39	5	12	8	Q	22.4
Slate or Tile	155	124	30	Q	Q	NC	NC	38.4
Concrete	37	32	Q	Q	4	Q	Q	54.2
Other	167	97	42	Q	Q	Q	Q	31.2
Percent Window Glass								
25 or Less	4,193	2,662	694	724	75	Q	36	10.3
26 to 50	490	376	61	20	11	16	Q	17.8
51 to 75	94	62	Q	Q	1	20	Q	34.4
76 to 100	29	15	Q	Q	Q	9	4	45.9
Building Shape								
Square	280	193	43	32	5	Q	Q	23.8
Rectangle	3,659	2,300	586	647	64	34	29	9.2
Rectangle or Square with Courtyard	48	39	Q	Q	Q	Q	NC	46.2
Right Angle	333	247	49	28	7	Q	Q	21.1
Other	485	336	84	33	12	8	13	17.2
Ownership and Occupancy								
Nongovernment Owned	4,206	2,707	675	669	75	38	43	8.8
Owner Occupied	3,192	2,015	548	525	42	25	39	9.8
Nonowner Occupied	817	570	87	115	29	11	4	16.4
Unoccupied	197	122	39	29	Q	Q	Q	31.1
Government Owned	599	408	90	75	13	9	Q	19.1
Building Shell Conservation Features (more than one may apply)								
Roof or Ceiling Insulation	3,343	2,222	523	477	62	28	33	9.8
Wall Insulation	2,320	1,292	476	452	46	22	32	10.5
Storm or Multiple Glazing	1,680	1,134	343	148	26	13	15	11.9
Tinted, Reflective or Shading Glass	1,068	797	116	86	40	21	9	14.2
Exterior or Interior Shading or Awnings	1,853	1,300	301	164	37	28	23	11.1
Windows that Open	2,119	1,393	458	232	14	6	Q	12.5
HVAC Conservation Features (more than one may apply)								
Variable Air-Volume System	250	188	21	16	12	9	4	18.9
Economizer Cycle	414	305	34	39	17	10	10	17.0
HVAC Maintenance	2,503	1,769	344	271	61	31	27	9.8
Lighting Conservation Features (more than one may apply)								
Specular Reflectors	574	366	74	103	22	7	2	16.9
Natural Lighting Control Sensors	74	51	Q	Q	3	3	Q	33.4
Occupancy Sensors	59	38	Q	Q	4	Q	Q	34.8
Time Clock	339	256	34	14	14	12	9	19.3
Manual Dimmer Switches	413	301	86	9	9	5	Q	19.5
Other	78	50	Q	Q	5	Q	Q	37.2
Energy Conservation Features (more than one may apply)								
Any Conservation Features	4,357	2,905	696	587	83	41	44	8.8
Building Shell	4,223	2,821	683	560	77	39	42	9.0
HVAC	2,604	1,838	356	289	63	31	27	9.5
Lighting	1,178	810	171	124	40	17	16	11.4
Other	264	176	47	31	4	Q	Q	25.3

See footnotes at end of table.

Table A13. Predominant Exterior Wall Material, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Exterior Wall Material						RSE Row Factor
		Masonry	Siding or Shingles	Metal Panels	Concrete Panels	Window Glass	Other	
RSE Column Factor:	0.4	0.4	0.9	1.1	1.4	2.0	2.3	
Demand-Side Management Programs (more than one may apply)								
Building Shell Program	36	25	Q	Q	Q	Q	Q	43.2
HVAC Program	154	113	16	14	5	2	Q	24.3
Lighting Program	228	157	34	20	8	4	5	22.4
Other DSM Programs	110	84	Q	9	5	1	Q	26.7

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A14. Predominant Exterior Wall Material, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Exterior Wall Material						RSE Row Factor
		Masonry	Siding or Shingles	Metal Panels	Concrete Panels	Window Glass	Other	
RSE Column Factor:	0.4	0.5	0.9	1.2	1.4	1.6	2.1	
All Buildings	67,876	48,585	3,873	7,392	4,961	2,028	1,037	9.1
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	4,401	1,536	1,255	Q	Q	Q	14.0
5,001 to 10,000	7,199	5,001	730	1,158	108	Q	Q	13.1
10,001 to 25,000	10,375	7,867	750	1,345	325	Q	Q	16.9
25,001 to 50,000	10,069	7,545	469	1,120	576	283	Q	19.3
50,001 to 100,000	8,062	6,552	Q	426	736	Q	Q	22.5
100,001 to 200,000	9,678	6,649	Q	1,158	1,033	286	Q	25.0
200,001 to 500,000	7,889	5,666	Q	366	1,282	377	Q	26.4
Over 500,000	7,278	4,905	Q	565	Q	726	Q	35.4
Principal Building Activity								
Education	8,470	7,714	120	145	379	Q	NC	20.9
Food Sales	757	607	Q	Q	Q	Q	NC	40.7
Food Service	1,491	1,156	282	Q	Q	Q	NC	28.9
Health Care	1,763	1,587	Q	Q	Q	Q	Q	37.0
Lodging	2,891	2,412	230	Q	Q	Q	Q	36.5
Mercantile and Service	12,402	9,035	686	1,567	886	Q	Q	18.3
Office	12,319	7,717	724	782	1,203	1,394	499	15.5
Parking Garage	1,652	1,329	Q	Q	230	Q	Q	54.3
Public Assembly	4,556	3,471	405	379	Q	Q	Q	40.4
Public Order and Safety	820	627	Q	Q	Q	NC	NC	55.8
Religious Worship	3,747	3,216	440	Q	Q	NC	NC	30.2
Warehouse and Storage	11,484	5,995	518	3,629	1,154	Q	Q	22.3
Other	1,130	636	Q	258	Q	Q	Q	37.4
Vacant	4,396	3,082	274	418	235	Q	Q	30.1
Year Constructed								
1899 or Before	1,721	1,483	193	Q	NC	NC	NC	37.7
1900 to 1919	3,608	3,286	236	Q	Q	Q	Q	41.5
1920 to 1945	8,712	7,530	588	395	Q	Q	Q	25.2
1946 to 1959	10,421	8,651	579	898	Q	Q	Q	21.4
1960 to 1969	12,612	8,536	560	1,395	1,502	463	Q	20.6
1970 to 1979	14,014	9,277	717	1,881	1,510	408	220	14.1
1980 to 1989	14,287	8,296	894	2,488	1,197	887	524	16.2
1990 to 1992	2,502	1,526	105	244	464	76	Q	21.1
Census Region								
Northeast	13,400	9,981	1,008	930	1,003	372	106	18.8
Midwest	17,280	12,914	1,017	1,774	741	524	310	15.4
South	24,577	17,174	1,052	3,900	1,461	709	281	15.1
West	12,619	8,517	796	789	1,755	423	Q	18.4
Energy Sources (more than one may apply)								
Electricity	66,549	47,832	3,647	7,131	4,906	2,008	1,024	9.2
Natural Gas	45,097	34,380	1,965	3,455	3,557	1,024	716	10.8
Fuel Oil	13,218	9,622	631	699	1,077	839	350	15.0
District Heat	5,339	3,769	Q	331	699	Q	Q	27.3
District Chilled Water	2,066	1,630	Q	Q	221	Q	Q	21.9
Propane	3,393	2,042	453	742	Q	Q	Q	29.2
Any Other	1,551	1,123	138	198	Q	Q	Q	36.9
Energy End Uses (more than one may apply)								
Heated Buildings	61,996	45,520	3,303	5,682	4,663	1,839	988	9.4
Air-Conditioned Buildings	57,041	42,084	2,625	4,854	4,563	1,978	938	9.9
Buildings with Water Heating	58,479	43,361	2,908	4,844	4,595	1,831	940	9.6
Buildings with Cooking	23,065	18,177	911	677	1,998	993	309	16.0
Buildings with Manufacturing	3,174	2,112	Q	617	298	Q	Q	32.6

See footnotes at end of table.

Table A14. Predominant Exterior Wall Material, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Exterior Wall Material						RSE Row Factor
		Masonry	Siding or Shingles	Metal Panels	Concrete Panels	Window Glass	Other	
RSE Column Factor:	0.4	0.5	0.9	1.2	1.4	1.6	2.1	
Predominant Roof Material								
Built-Up	30,257	24,929	507	1,097	2,417	768	540	15.8
Shingles (Not Wood)	10,570	7,856	2,011	191	190	Q	Q	20.0
Metal Surfacing	9,019	2,162	787	5,512	385	Q	Q	19.1
Synthetic or Rubber	11,702	8,832	187	345	1,498	675	165	19.6
Slate or Tile	1,998	1,801	167	Q	Q	NC	NC	39.8
Concrete	2,544	1,952	Q	Q	346	Q	Q	49.0
Other	1,786	1,054	206	Q	Q	Q	Q	32.1
Percent Window Glass								
25 or Less	51,356	36,972	3,282	7,026	3,639	Q	358	11.9
26 to 50	11,815	9,265	502	257	1,157	316	Q	20.8
51 to 75	3,206	1,923	Q	Q	135	820	Q	26.2
76 to 100	1,499	426	Q	Q	Q	813	224	41.7
Building Shape								
Square	3,654	2,733	193	229	202	Q	Q	22.4
Rectangle	39,233	26,511	2,655	5,820	2,673	1,115	458	10.1
Rectangle or Square with Courtyard	1,372	1,105	Q	Q	Q	Q	NC	47.5
Right Angle	6,071	4,836	272	560	310	Q	Q	25.6
Other	17,547	13,400	713	711	1,705	523	495	18.5
Ownership and Occupancy								
Nongovernment Owned	52,752	36,656	3,519	6,591	3,235	1,736	1,015	9.6
Owner Occupied	38,403	26,445	2,935	5,126	1,890	1,202	804	9.9
Nonowner Occupied	12,273	8,944	394	1,197	1,166	380	192	17.9
Unoccupied	2,077	1,267	190	268	Q	Q	Q	33.6
Government Owned	15,124	11,929	354	801	1,726	292	Q	19.1
Building Shell Conservation Features (more than one may apply)								
Roof or Ceiling Insulation	50,311	36,344	2,783	5,129	3,871	1,413	771	9.8
Wall Insulation	33,240	21,698	2,499	4,779	2,250	1,163	850	10.4
Storm or Multiple Glazing	29,684	21,861	2,044	2,319	1,989	991	481	11.9
Tinted, Reflective or Shading Glass	25,396	17,813	804	1,557	3,102	1,401	719	14.5
Exterior or Interior Shading or Awnings	34,071	25,497	1,744	2,148	2,617	1,333	732	10.6
Windows that Open	28,937	22,916	2,050	2,227	1,312	239	Q	16.8
HVAC Conservation Features (more than one may apply)								
Variable Air-Volume System	13,970	9,433	195	720	1,934	1,120	568	20.7
Economizer Cycle	18,313	12,976	411	1,069	2,316	1,070	472	16.6
HVAC Maintenance	49,173	36,110	2,189	3,869	4,195	1,938	872	10.4
Lighting Conservation Features (more than one may apply)								
Specular Reflectors	15,241	9,954	666	1,741	1,891	737	253	14.9
Natural Lighting Control Sensors	3,072	2,253	Q	Q	339	159	Q	25.2
Occupancy Sensors	3,629	2,100	Q	Q	609	296	Q	26.0
Time Clock	12,104	8,270	368	411	1,665	836	554	22.0
Manual Dimmer Switches	12,329	8,681	771	387	1,257	962	271	19.2
Other	2,596	1,748	Q	Q	416	Q	Q	29.6
Energy Conservation Features (more than one may apply)								
Any Conservation Features	64,403	46,720	3,562	6,355	4,754	2,000	1,011	9.3
Building Shell	62,056	45,091	3,510	6,093	4,485	1,879	999	9.4
HVAC	50,281	37,029	2,238	3,995	4,209	1,938	872	10.2
Lighting	29,453	20,672	1,373	2,052	3,120	1,492	744	12.7
Other	5,952	4,601	298	516	317	152	Q	18.7

See footnotes at end of table.

Table A14. Predominant Exterior Wall Material, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Exterior Wall Material						RSE Row Factor
		Masonry	Siding or Shingles	Metal Panels	Concrete Panels	Window Glass	Other	
RSE Column Factor:	0.4	0.5	0.9	1.2	1.4	1.6	2.1	
Demand-Side Management Programs (more than one may apply)								
Building Shell Program	1,079	793	Q	Q	Q	Q	Q	39.8
HVAC Program	6,370	4,528	213	328	779	335	Q	23.2
Lighting Program	8,805	6,074	316	406	1,342	399	269	18.2
Other DSM Programs	6,176	4,084	Q	283	1,285	317	Q	22.9

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A15. Predominant Roof Material, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Buildings by Roof Material: Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Concrete	Other	RSE Row Factor
RSE Column Factor:	0.4	0.6	0.7	1.0	0.9	1.5	2.5	1.7	
All Buildings	4,806	1,642	1,381	1,037	386	155	37	167	7.7
Building Floorspace (Square Feet)									
1,001 to 5,000	2,681	772	927	648	140	75	Q	108	11.8
5,001 to 10,000	975	369	250	209	79	38	Q	29	12.9
10,001 to 25,000	647	265	137	122	75	25	Q	15	13.7
25,001 to 50,000	280	124	49	39	39	12	Q	11	17.2
50,001 to 100,000	116	55	11	11	30	4	Q	Q	19.2
100,001 to 200,000	71	41	5	8	11	Q	3	Q	24.1
200,001 to 500,000	26	12	1	Q	10	Q	2	Q	27.7
Over 500,000	9	5	Q	Q	2	Q	1	Q	45.4
Principal Building Activity									
Education	301	127	68	34	41	16	Q	14	20.4
Food Sales	130	62	29	Q	Q	Q	Q	Q	34.2
Food Service	260	109	77	29	20	Q	Q	Q	23.9
Health Care	63	25	19	Q	6	Q	Q	Q	39.8
Lodging	154	56	66	Q	9	10	Q	Q	28.0
Mercantile and Service	1,272	490	285	330	102	Q	Q	44	12.9
Office	749	279	258	63	85	34	Q	28	15.6
Parking Garage	24	Q	Q	Q	Q	Q	7	Q	55.9
Public Assembly	278	62	107	44	26	18	Q	19	20.5
Public Order and Safety	60	20	Q	Q	8	Q	NC	Q	41.5
Religious Worship	366	37	256	29	Q	25	Q	Q	24.9
Warehouse and Storage	761	219	113	362	36	Q	Q	Q	17.8
Other	69	16	Q	24	12	Q	Q	Q	43.0
Vacant	319	138	70	75	20	Q	Q	Q	22.0
Year Constructed									
1899 or Before	169	53	56	Q	20	17	NC	Q	27.2
1900 to 1919	255	93	93	Q	26	14	Q	Q	24.2
1920 to 1945	724	294	222	75	62	33	Q	33	14.1
1946 to 1959	880	375	269	99	79	25	Q	27	17.0
1960 to 1969	783	328	206	146	55	22	6	20	14.8
1970 to 1979	982	287	285	285	59	Q	7	40	14.1
1980 to 1989	884	195	217	345	67	22	12	27	14.2
1990 to 1992	128	17	33	50	17	Q	1	Q	29.4
Census Region									
Northeast	771	226	278	106	100	40	2	19	14.5
Midwest	1,202	346	369	269	152	23	5	38	14.5
South	1,963	665	532	537	98	45	20	65	12.8
West	870	405	202	126	35	47	9	46	19.0
Energy Sources (more than one may apply)									
Electricity	4,616	1,596	1,347	947	378	153	35	160	7.7
Natural Gas	2,665	1,042	755	404	267	87	17	92	9.3
Fuel Oil	559	169	190	85	73	22	2	16	18.3
District Heat	95	40	10	11	14	13	Q	Q	27.8
District Chilled Water	28	11	Q	Q	6	Q	Q	Q	44.3
Propane	337	55	137	112	14	Q	Q	Q	24.7
Any Other	163	29	50	59	Q	Q	Q	Q	28.5
Energy End Uses (more than one may apply)									
Heated Buildings	4,178	1,489	1,246	763	368	140	22	150	7.6
Air-Conditioned Buildings	3,502	1,319	1,025	576	318	113	27	124	8.4
Buildings with Water Heating	3,502	1,284	1,044	554	328	136	20	135	7.9
Buildings with Cooking	734	285	232	74	80	22	7	33	13.3
Buildings with Manufacturing	121	50	18	36	13	Q	Q	NC	30.2

See footnotes at end of table.

Table A15. Predominant Roof Material, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Buildings by Roof Material: Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Concrete	Other	RSE Row Factor
RSE Column Factor:	0.4	0.6	0.7	1.0	0.9	1.5	2.5	1.7	
Predominant Exterior Wall Material									
Masonry	3,115	1,470	865	209	318	124	32	97	8.7
Siding or Shingles	764	68	448	136	39	30	Q	42	19.0
Metal Panels	745	29	39	660	5	Q	Q	Q	29.8
Concrete Panels	87	46	6	17	12	Q	4	Q	31.0
Window Glass	46	18	Q	Q	8	NC	Q	Q	43.1
Other	47	11	Q	Q	Q	NC	Q	Q	44.2
Percent Window Glass									
25 or Less	4,193	1,369	1,231	1,003	302	115	33	139	8.0
26 to 50	490	222	115	30	67	34	2	21	14.1
51 to 75	94	39	31	Q	13	Q	Q	Q	33.0
76 to 100	29	13	Q	Q	3	Q	Q	Q	47.1
Building Shape									
Square	280	121	61	54	27	Q	1	Q	21.4
Rectangle	3,659	1,213	1,027	884	271	111	30	124	8.6
Rectangle or Square with Courtyard	48	22	Q	Q	Q	Q	Q	Q	41.5
Right Angle	333	112	120	41	35	Q	Q	15	18.8
Other	485	174	164	53	47	26	Q	18	16.2
Ownership and Occupancy									
Nongovernment Owned	4,206	1,427	1,264	921	298	131	30	137	8.0
Owner Occupied	3,192	958	1,059	697	234	104	21	119	8.7
Nonowner Occupied	817	392	164	165	55	22	7	13	15.5
Unoccupied	197	76	41	59	Q	Q	Q	Q	29.0
Government Owned	599	216	118	116	88	24	7	30	15.6
Building Shell Conservation Features (more than one may apply)									
Roof or Ceiling Insulation	3,343	1,120	1,010	682	291	106	18	116	8.3
Wall Insulation	2,320	611	745	609	176	73	11	94	9.6
Storm or Multiple Glazing	1,680	465	614	254	200	74	6	68	10.8
Tinted, Reflective or Shading Glass	1,068	445	278	147	121	30	12	36	12.7
Exterior or Interior Shading or Awnings	1,853	720	547	258	196	73	5	54	10.6
Windows that Open	2,119	599	822	352	156	92	10	89	10.4
HVAC Conservation Features (more than one may apply)									
Variable Air-Volume System	250	109	49	22	43	16	Q	7	18.7
Economizer Cycle	414	166	83	51	75	16	4	20	16.6
HVAC Maintenance	2,503	960	677	384	265	105	17	95	9.3
Lighting Conservation Features (more than one may apply)									
Specular Reflectors	574	197	131	137	63	20	3	23	15.7
Natural Lighting Control Sensors	74	31	20	Q	4	Q	Q	Q	32.4
Occupancy Sensors	59	29	Q	Q	10	Q	Q	Q	31.1
Time Clock	339	164	81	30	34	13	5	12	18.2
Manual Dimmer Switches	413	129	155	32	52	24	Q	19	17.8
Other	78	30	16	Q	14	Q	Q	Q	34.4

See footnotes at end of table.

Table A15. Predominant Roof Material, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Roof Material							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Concrete	Other	
RSE Column Factor:	0.4	0.6	0.7	1.0	0.9	1.5	2.5	1.7	
Energy Conservation Features (more than one may apply)									
Any Conservation Features	4,357	1,512	1,281	853	373	149	32	157	8.1
Building Shell	4,223	1,449	1,266	821	363	146	25	152	8.1
HVAC	2,604	998	712	401	270	107	17	98	9.1
Lighting	1,178	426	327	196	124	50	9	45	10.6
Other	264	78	79	44	35	10	Q	14	19.8
Demand-Side Management Programs (more than one may apply)									
Building Shell Program	36	8	Q	Q	6	Q	Q	Q	43.4
HVAC Program	154	66	24	26	23	6	Q	Q	22.4
Lighting Program	228	80	58	27	37	12	Q	12	20.1
Other DSM Programs	110	43	20	17	19	Q	Q	Q	28.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A16. Predominant Roof Material, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Roof Material							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Concrete	Other	
RSE Column Factor:	0.4	0.6	0.9	0.9	0.8	1.6	2.3	1.6	
All Buildings	67,876	30,257	10,570	9,019	11,702	1,998	2,544	1,786	8.6
Building Floorspace (Square Feet)									
1,001 to 5,000	7,327	2,170	2,463	1,776	391	215	Q	284	12.2
5,001 to 10,000	7,199	2,752	1,791	1,569	592	275	Q	203	12.9
10,001 to 25,000	10,375	4,357	2,149	1,899	1,258	357	Q	234	13.8
25,001 to 50,000	10,069	4,407	1,797	1,391	1,451	445	Q	379	17.4
50,001 to 100,000	8,062	3,873	777	781	2,013	275	Q	*	19.4
100,001 to 200,000	9,678	5,456	648	1,082	1,557	Q	499	Q	24.4
200,001 to 500,000	7,889	3,446	466	Q	2,912	Q	486	Q	27.3
Over 500,000	7,278	3,796	Q	Q	1,528	Q	1,001	Q	41.4
Principal Building Activity									
Education	8,470	4,272	746	403	2,322	364	Q	254	20.7
Food Sales	757	375	161	Q	Q	Q	Q	Q	38.9
Food Service	1,491	590	436	96	207	Q	Q	Q	27.0
Health Care	1,763	1,062	123	Q	507	Q	Q	Q	37.6
Lodging	2,891	1,191	782	Q	538	225	Q	Q	31.6
Mercantile and Service	12,402	5,898	1,569	2,093	2,126	Q	Q	286	18.9
Office	12,319	5,525	1,891	934	2,995	269	255	450	16.9
Parking Garage	1,652	Q	Q	Q	Q	Q	1,136	Q	57.7
Public Assembly	4,556	2,138	864	588	597	183	Q	129	32.4
Public Order and Safety	820	362	Q	Q	*	Q	NC	Q	48.2
Religious Worship	3,747	636	2,128	159	Q	580	Q	Q	29.9
Warehouse and Storage	11,484	5,409	911	3,569	1,105	Q	Q	Q	21.8
Other	1,130	378	Q	302	255	Q	Q	Q	40.0
Vacant	4,396	2,055	686	615	519	Q	Q	Q	27.3
Year Constructed									
1899 or Before	1,721	565	523	Q	238	219	NC	Q	29.9
1900 to 1919	3,608	1,430	926	Q	710	289	Q	Q	31.2
1920 to 1945	8,712	3,996	1,777	783	1,262	586	Q	132	21.5
1946 to 1959	10,421	5,716	1,834	764	1,436	260	Q	310	19.3
1960 to 1969	12,612	6,568	1,570	1,520	2,139	247	Q	223	19.9
1970 to 1979	14,014	5,907	2,142	2,224	2,545	Q	751	293	15.3
1980 to 1989	14,287	5,376	1,593	3,027	2,504	206	960	620	17.4
1990 to 1992	2,502	699	206	464	868	Q	159	Q	24.4
Census Region									
Northeast	13,400	4,889	2,434	853	3,757	526	556	384	17.6
Midwest	17,280	6,375	3,213	2,064	4,318	385	Q	361	15.3
South	24,577	11,653	3,168	5,098	2,615	577	917	551	14.9
West	12,619	7,341	1,755	1,004	1,012	511	506	490	17.1
Energy Sources (more than one may apply)									
Electricity	66,549	29,764	10,321	8,639	11,595	1,990	2,505	1,735	8.8
Natural Gas	45,097	21,299	6,515	4,313	9,387	1,309	1,152	1,122	10.5
Fuel Oil	13,218	5,791	1,684	675	3,760	309	680	319	16.9
District Heat	5,339	2,413	459	329	1,477	400	Q	Q	26.6
District Chilled Water	2,066	969	Q	Q	626	Q	Q	Q	40.6
Propane	3,393	1,068	699	858	403	Q	Q	Q	28.2
Any Other	1,551	724	281	269	Q	Q	Q	Q	34.8
Energy End Uses (more than one may apply)									
Heated Buildings	61,996	28,271	9,764	7,121	11,541	1,863	1,741	1,695	9.2
Air-Conditioned Buildings	57,041	26,404	8,606	6,077	10,893	1,608	1,909	1,544	9.6
Buildings with Water Heating	58,479	27,321	8,942	5,991	11,207	1,889	1,538	1,591	9.4
Buildings with Cooking	23,065	11,267	2,927	1,153	6,039	675	570	435	16.1
Buildings with Manufacturing	3,174	1,712	185	651	444	Q	Q	NC	32.0

See footnotes at end of table.

Table A16. Predominant Roof Material, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Roof Material							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Concrete	Other	
RSE Column Factor:	0.4	0.6	0.9	0.9	0.8	1.6	2.3	1.6	
Predominant Exterior Wall Material									
Masonry	48,585	24,929	7,856	2,162	8,832	1,801	1,952	1,054	10.8
Siding or Shingles	3,873	507	2,011	787	187	167	Q	206	19.5
Metal Panels	7,392	1,097	191	5,512	345	Q	Q	Q	30.5
Concrete Panels	4,961	2,417	190	385	1,498	Q	346	Q	30.5
Window Glass	2,028	768	Q	Q	675	NC	Q	Q	39.2
Other	1,037	540	Q	Q	165	NC	Q	Q	43.8
Percent Window Glass									
25 or Less	51,356	22,455	8,542	8,623	7,245	1,361	1,782	1,349	9.8
26 to 50	11,815	5,461	1,424	302	3,155	503	590	379	18.0
51 to 75	3,206	1,664	361	Q	895	Q	Q	Q	29.2
76 to 100	1,499	677	Q	Q	407	Q	Q	Q	43.6
Building Shape									
Square	3,654	1,656	439	402	785	Q	Q	Q	26.7
Rectangle	39,233	16,439	6,248	7,141	5,664	1,042	1,623	1,076	9.8
Rectangle or Square with Courtyard	1,372	827	Q	Q	Q	Q	Q	Q	40.3
Right Angle	6,071	2,587	1,383	684	1,170	Q	Q	150	23.2
Other	17,547	8,749	2,347	776	3,941	744	553	437	17.1
Ownership and Occupancy									
Nongovernment Owned	52,752	23,928	9,166	7,817	7,271	1,546	1,638	1,387	9.2
Owner Occupied	38,403	15,568	7,642	6,013	5,401	1,352	1,335	1,091	9.3
Nonowner Occupied	12,273	7,450	1,212	1,412	1,647	147	147	258	18.4
Unoccupied	2,077	910	313	392	Q	Q	Q	Q	33.7
Government Owned	15,124	6,329	1,404	1,203	4,431	452	906	399	17.6
Building Shell Conservation Features (more than one may apply)									
Roof or Ceiling Insulation	50,311	22,615	7,342	6,327	10,107	1,380	1,105	1,435	9.6
Wall Insulation	33,240	14,028	5,003	5,663	6,061	806	583	1,097	11.0
Storm or Multiple Glazing	29,684	12,010	5,134	2,836	7,150	1,094	661	800	12.3
Tinted, Reflective or Shading Glass	25,396	12,851	2,704	1,838	6,000	604	767	632	14.5
Exterior or Interior Shading or Awnings	34,071	17,415	4,411	2,793	7,138	1,154	420	741	11.1
Windows that Open	28,937	11,974	6,324	2,704	5,301	1,351	550	733	12.0
HVAC Conservation Features (more than one may apply)									
Variable Air-Volume System	13,970	6,851	879	534	4,298	513	533	363	21.8
Economizer Cycle	18,313	8,630	1,381	918	6,021	356	506	500	18.4
HVAC Maintenance	49,173	22,887	6,655	4,517	10,465	1,654	1,617	1,378	10.2
Lighting Conservation Features (more than one may apply)									
Specular Reflectors	15,241	6,933	1,734	1,723	3,627	341	556	328	15.9
Natural Lighting Control Sensors	3,072	1,491	197	Q	756	Q	303	Q	27.6
Occupancy Sensors	3,629	1,932	Q	Q	1,229	Q	Q	Q	27.8
Time Clock	12,104	6,637	818	544	2,770	219	792	325	20.7
Manual Dimmer Switches	12,329	5,238	1,993	432	3,531	531	153	452	17.1
Other	2,596	1,254	209	Q	684	Q	Q	Q	30.8
Energy Conservation Features (more than one may apply)									
Any Conservation Features	64,403	29,187	10,018	7,593	11,560	1,961	2,337	1,747	8.8
Building Shell	62,056	28,249	9,880	7,310	11,420	1,924	1,558	1,715	9.0
HVAC	50,281	23,371	6,932	4,652	10,631	1,690	1,621	1,384	10.0
Lighting	29,453	13,917	3,841	2,299	6,340	861	1,296	900	11.9
Other	5,952	2,639	733	600	1,307	228	Q	136	19.3

See footnotes at end of table.

Table A16. Predominant Roof Material, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Roof Material							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Concrete	Other	
RSE Column Factor:	0.4	0.6	0.9	0.9	0.8	1.6	2.3	1.6	
Demand-Side Management Programs (more than one may apply)									
Building Shell Program	1,079	341	Q	Q	492	Q	Q	Q	41.5
HVAC Program	6,370	3,217	412	453	1,864	131	Q	Q	22.5
Lighting Program	8,805	3,760	918	387	3,179	235	184	142	20.6
Other DSM Programs	6,176	2,633	472	358	2,382	Q	Q	Q	26.5

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A17. Employment Size Category, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Buildings by Number of Workers: Less than 5 Workers	5 to 9 Workers	10 to 19 Workers	20 to 49 Workers	50 to 99 Workers	100 to 249 Workers	250 or More Workers	RSE Row Factor
RSE Column Factor:	0.5	0.8	0.9	1.1	1.0	1.2	1.3	1.4	
All Buildings	4,806	2,718	895	561	405	130	64	31	5.9
Building Floorspace (Square Feet)									
1,001 to 5,000	2,681	1,968	514	160	34	Q	NC	NC	10.2
5,001 to 10,000	975	460	218	195	94	Q	NC	NC	8.5
10,001 to 25,000	647	204	115	144	153	25	Q	Q	9.3
25,001 to 50,000	280	60	37	43	84	41	13	Q	13.8
50,001 to 100,000	116	12	8	10	28	32	18	7	15.7
100,001 to 200,000	71	8	3	7	10	16	18	9	21.0
200,001 to 500,000	26	3	Q	Q	2	3	7	9	19.3
Over 500,000	9	Q	Q	Q	Q	Q	1	4	26.0
Principal Building Activity									
Education	301	88	51	58	68	25	11	Q	13.6
Food Sales	130	91	Q	Q	Q	Q	Q	NC	20.9
Food Service	260	98	85	54	20	Q	NC	NC	17.3
Health Care	63	Q	Q	Q	11	Q	2	3	23.2
Lodging	154	98	18	12	18	5	Q	Q	22.5
Mercantile and Service	1,272	765	272	124	75	23	9	3	11.2
Office	749	199	203	138	122	39	26	21	10.3
Parking Garage	24	17	Q	Q	Q	Q	Q	Q	38.8
Public Assembly	278	180	46	29	11	9	Q	Q	17.8
Public Order and Safety	60	28	Q	Q	Q	Q	Q	Q	30.8
Religious Worship	366	254	46	39	20	Q	Q	NC	18.2
Warehouse and Storage	761	563	91	58	33	10	4	1	15.6
Other	69	42	Q	Q	7	Q	Q	*	30.1
Vacant	319	280	13	21	Q	Q	Q	Q	20.6
Year Constructed									
1899 or Before	169	93	41	14	14	Q	Q	Q	24.0
1900 to 1919	255	157	39	36	13	Q	3	Q	21.1
1920 to 1945	724	476	122	63	46	10	4	3	15.0
1946 to 1959	880	501	176	94	80	20	7	2	13.6
1960 to 1969	783	431	131	101	78	23	11	8	12.2
1970 to 1979	982	514	208	130	80	28	16	6	11.1
1980 to 1989	884	469	162	109	84	32	20	8	11.0
1990 to 1992	128	77	16	15	10	5	3	2	25.9
Census Region									
Northeast	771	404	148	95	77	29	10	7	12.2
Midwest	1,202	721	218	122	87	31	17	6	11.6
South	1,963	1,180	341	222	147	43	20	9	10.1
West	870	412	189	122	94	27	17	9	14.3
Energy Sources (more than one may apply)									
Electricity	4,616	2,530	895	560	405	130	64	31	5.9
Natural Gas	2,665	1,266	560	383	300	87	48	22	7.2
Fuel Oil	559	304	94	67	43	21	15	14	14.8
District Heat	95	22	14	22	17	10	4	7	20.0
District Chilled Water	28	Q	Q	10	5	3	2	3	27.9
Propane	337	215	64	33	16	5	4	Q	22.7
Any Other	163	119	Q	Q	Q	Q	Q	Q	18.6
Energy End Uses (more than one may apply)									
Heated Buildings	4,178	2,154	861	540	401	128	64	30	5.9
Air-Conditioned Buildings	3,502	1,623	781	502	384	118	63	31	6.1
Buildings with Water Heating	3,502	1,609	777	512	384	126	62	31	6.0
Buildings with Cooking	734	260	155	126	105	43	26	18	9.9
Buildings with Manufacturing	121	42	20	23	27	6	3	1	23.3

See footnotes at end of table.

Table A17. Employment Size Category, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Buildings by Number of Workers: Less than 5 Workers	5 to 9 Workers	10 to 19 Workers	20 to 49 Workers	50 to 99 Workers	100 to 249 Workers	250 or More Workers	RSE Row Factor
RSE Column Factor:	0.5	0.8	0.9	1.1	1.0	1.2	1.3	1.4	
Floors									
One	3,007	1,922	555	290	175	47	14	3	10.1
Two	1,154	553	230	181	128	40	18	4	9.9
Three	446	193	79	57	74	25	12	5	13.6
Four to Nine	186	49	31	33	26	17	18	11	17.9
Ten or More	13	Q	Q	Q	Q	Q	2	8	20.5
Percent Window Glass									
25 or Less	4,193	2,510	774	451	314	91	39	14	6.8
26 to 50	490	168	105	95	68	28	17	9	11.2
51 to 75	94	29	14	11	21	8	5	5	23.9
76 to 100	29	Q	Q	Q	Q	Q	3	3	26.9
Weekly Operating Hours									
39 or Fewer	1,039	843	89	65	27	12	Q	Q	15.1
40 to 48	1,278	616	282	185	135	41	13	6	10.8
49 to 60	1,004	517	225	124	87	27	15	8	10.8
61 to 84	645	281	167	88	67	21	14	7	11.2
85 to 167	478	242	87	70	48	18	11	3	15.0
Open Continuously	362	218	44	31	41	11	10	7	14.0
Percent Vacant for at Least Three Months									
1-50 Percent	362	120	64	65	60	23	16	13	12.5
51-99 Percent	97	68	10	Q	5	3	Q	Q	24.9
100 Percent	398	335	31	21	7	Q	Q	Q	21.3
None	3,948	2,195	791	468	332	101	44	17	6.8
Ownership and Occupancy									
Nongovernment Owned	4,206	2,465	792	469	312	98	46	25	6.4
Owner Occupied	3,192	1,856	628	356	232	70	33	18	7.3
Nonowner Occupied	817	419	162	110	79	27	13	7	11.3
Unoccupied	197	191	Q	Q	Q	NC	Q	Q	15.8
Government Owned	599	253	103	93	92	32	18	7	11.7
Percent of Floorspace Heated									
Not Heated	653	586	36	23	Q	Q	Q	Q	17.4
1 to 50	688	442	127	69	35	9	4	1	14.6
51 to 99	618	265	154	100	63	18	10	8	12.9
100	2,846	1,424	578	370	303	101	49	22	6.5
Percent of Floorspace Cooled									
Not Cooled	1,304	1,096	115	60	20	12	Q	Q	15.0
1 to 50	1,176	582	268	162	113	37	12	1	10.7
51 to 99	658	251	143	114	92	26	18	14	11.0
100	1,668	790	369	226	179	55	33	15	8.6
Percent Lit when Open									
Not Lit	413	407	Q	Q	Q	NC	NC	NC	15.0
1 to 50	881	665	136	49	20	7	Q	Q	13.8
51 to 99	813	352	180	128	103	27	14	8	10.7
100	2,699	1,294	577	381	281	96	47	24	6.9
Heating Equipment (more than one may apply)									
Heat Pumps	449	199	96	59	61	17	10	6	14.9
Furnaces	1,692	912	407	210	120	30	10	3	10.6
Individual Space Heaters	1,464	846	281	158	113	41	17	9	10.0
District Heat	93	22	14	21	16	10	4	7	20.2
Boilers	624	211	119	95	111	43	29	15	10.1
Packaged Heating Units	870	305	188	169	133	46	21	8	10.8
Other	42	Q	Q	Q	Q	Q	Q	1	37.4

See footnotes at end of table.

Table A17. Employment Size Category, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Buildings by Number of Workers: Less than 5 Workers	5 to 9 Workers	10 to 19 Workers	20 to 49 Workers	50 to 99 Workers	100 to 249 Workers	250 or More Workers	RSE Row Factor
RSE Column Factor:	0.5	0.8	0.9	1.1	1.0	1.2	1.3	1.4	
Cooling Equipment (more than one may apply)									
Residential-Type Central Air Conditioners	816	380	208	130	75	14	8	2	14.6
Heat Pumps	454	202	92	61	65	16	11	6	14.8
Individual Air Conditioners	1,023	574	194	121	85	32	12	5	11.0
District Chilled Water	28	Q	Q	10	5	3	2	3	27.9
Central Chillers	142	24	9	15	33	24	19	18	17.1
Packaged Air-Conditioning Units	1,459	512	351	263	205	77	34	16	8.4
Swamp Coolers	179	83	52	22	12	Q	Q	Q	31.4
Other	8	Q	NC	NC	Q	Q	Q	Q	81.9
Lighting Equipment Types (more than one may apply)									
Incandescent	2,509	1,323	491	339	217	78	40	21	7.2
Standard Fluorescent	4,065	2,066	848	530	400	126	64	31	5.8
Compact Fluorescent	206	79	34	25	28	16	15	10	14.8
High-Intensity Discharge	354	122	62	55	52	34	19	9	11.0
Other	78	31	15	Q	Q	Q	Q	2	29.3
Personal Computers and/or Computer Terminals									
1 to 4	1,269	565	388	196	101	18	Q	Q	8.9
5 to 9	336	16	114	109	77	14	5	Q	15.8
10 to 19	216	11	23	68	92	16	5	Q	16.7
20 to 49	164	Q	Q	22	80	35	15	2	15.6
50 to 99	59	Q	Q	Q	13	24	17	4	17.5
100 to 249	34	Q	Q	Q	Q	7	14	9	17.4
250 or More	19	Q	NC	NC	Q	Q	4	14	20.3
Lighting Conservation Features (more than one may apply)									
Specular Reflectors	574	215	111	106	83	29	17	13	11.5
Natural Lighting Control Sensors	74	34	12	Q	5	7	3	2	23.1
Occupancy Sensors	59	Q	Q	Q	8	6	8	5	22.5
Time Clock	339	111	63	65	50	24	15	11	13.2
Manual Dimmer Switches	413	166	81	62	54	23	15	12	12.4
Other	78	26	Q	Q	14	8	4	3	23.7
Off-Hour Equipment Reduction (more than one may apply)									
Heating	3,400	1,733	734	448	318	99	47	21	6.6
Cooling	2,872	1,336	659	413	305	92	46	22	6.5
Hot Water	578	268	110	90	63	30	11	6	12.3
Lighting	4,089	2,170	841	521	362	117	54	25	6.2
Other	547	236	139	91	49	19	8	5	15.8
Demand-Side Management Programs (more than one may apply)									
Building Shell Program	36	Q	Q	Q	Q	Q	Q	1	32.4
HVAC Program	154	51	25	25	22	13	10	7	16.8
Lighting Program	228	74	50	26	38	20	13	7	15.4
Other DSM Programs	110	28	26	14	13	13	8	7	20.2

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A18. Employment Size Category, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Number of Workers: Less than 5 Workers	5 to 9 Workers	10 to 19 Workers	20 to 49 Workers	50 to 99 Workers	100 to 249 Workers	250 or More Workers	RSE Row Factor
RSE Column Factor:	0.5	1.0	1.0	1.1	0.9	1.3	1.4	1.2	
All Buildings	67,876	17,944	7,524	8,077	10,556	7,763	7,378	8,633	7.4
Building Floorspace (Square Feet)									
1,001 to 5,000	7,327	5,095	1,554	537	120	Q	NC	NC	13.2
5,001 to 10,000	7,199	3,329	1,612	1,446	757	Q	NC	NC	10.1
10,001 to 25,000	10,375	3,053	1,801	2,323	2,608	450	Q	Q	13.4
25,001 to 50,000	10,069	2,107	1,348	1,538	3,049	1,445	517	Q	16.2
50,001 to 100,000	8,062	910	595	643	1,899	2,151	1,303	561	15.5
100,001 to 200,000	9,678	1,044	444	922	1,367	2,122	2,550	1,229	20.9
200,001 to 500,000	7,889	1,020	Q	Q	628	850	2,139	2,812	24.7
Over 500,000	7,278	Q	Q	Q	Q	Q	744	3,951	48.2
Principal Building Activity									
Education	8,470	481	448	738	2,533	2,213	1,874	Q	17.0
Food Sales	757	310	Q	Q	Q	Q	Q	NC	35.9
Food Service	1,491	338	438	414	252	Q	NC	NC	23.3
Health Care	1,763	Q	Q	Q	162	Q	294	1,040	25.2
Lodging	2,891	764	332	220	646	449	Q	Q	26.1
Mercantile and Service	12,402	3,000	1,927	1,550	1,750	1,246	1,188	1,740	14.7
Office	12,319	861	994	1,048	1,952	1,326	1,603	4,535	12.3
Parking Garage	1,652	874	Q	Q	Q	Q	Q	Q	35.6
Public Assembly	4,556	2,194	495	712	335	334	Q	Q	31.1
Public Order and Safety	820	151	Q	Q	Q	Q	Q	Q	39.8
Religious Worship	3,747	1,989	649	540	428	Q	Q	NC	29.7
Warehouse and Storage	11,484	3,846	1,446	1,813	1,825	1,135	1,051	368	19.1
Other	1,130	160	Q	Q	165	Q	Q	162	30.2
Vacant	4,396	2,938	230	367	Q	Q	Q	Q	33.0
Year Constructed									
1899 or Before	1,721	692	444	167	151	Q	Q	Q	33.5
1900 to 1919	3,608	993	453	612	355	Q	476	Q	29.1
1920 to 1945	8,712	3,053	1,211	933	1,105	1,023	484	904	19.3
1946 to 1959	10,421	2,922	1,236	1,611	2,204	1,222	719	507	16.0
1960 to 1969	12,612	2,807	1,227	1,211	2,180	1,685	1,369	2,133	15.2
1970 to 1979	14,014	3,165	1,577	1,812	2,088	1,424	1,895	2,053	12.5
1980 to 1989	14,287	3,795	1,226	1,531	2,075	1,464	2,069	2,127	14.3
1990 to 1992	2,502	516	152	201	399	301	349	585	23.1
Census Region									
Northeast	13,400	2,708	1,328	1,367	2,014	1,899	1,378	2,707	14.8
Midwest	17,280	4,747	1,867	1,871	2,521	2,002	2,467	1,805	12.2
South	24,577	7,676	3,013	3,266	3,818	2,286	1,984	2,535	12.7
West	12,619	2,813	1,316	1,573	2,204	1,577	1,549	1,586	13.6
Energy Sources (more than one may apply)									
Electricity	66,549	16,640	7,524	8,054	10,556	7,763	7,378	8,633	7.5
Natural Gas	45,097	8,079	4,494	5,484	8,357	5,982	6,076	6,625	8.1
Fuel Oil	13,218	1,793	786	884	1,094	1,487	2,314	4,860	13.6
District Heat	5,339	410	321	494	518	806	674	2,115	22.1
District Chilled Water	2,066	Q	Q	193	191	327	192	868	35.4
Propane	3,393	929	510	402	445	384	484	Q	23.2
Any Other	1,551	514	Q	Q	Q	Q	Q	Q	37.3
Energy End Uses (more than one may apply)									
Heated Buildings	61,996	13,604	7,075	7,528	10,440	7,652	7,323	8,374	7.5
Air-Conditioned Buildings	57,041	10,719	6,249	6,954	9,990	7,313	7,195	8,621	7.8
Buildings with Water Heating	58,479	11,207	6,432	7,089	10,215	7,644	7,278	8,613	7.8
Buildings with Cooking	23,065	2,678	1,326	1,719	3,419	3,424	3,998	6,502	13.7
Buildings with Manufacturing	3,174	334	256	384	916	395	561	328	25.1

See footnotes at end of table.

Table A18. Employment Size Category, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Number of Workers							RSE Row Factor
		Less than 5 Workers	5 to 9 Workers	10 to 19 Workers	20 to 49 Workers	50 to 99 Workers	100 to 249 Workers	250 or More Workers	
RSE Column Factor:	0.5	1.0	1.0	1.1	0.9	1.3	1.4	1.2	
Floors									
One	25,424	10,122	3,676	3,239	4,273	2,394	1,165	556	12.1
Two	18,025	4,222	2,148	2,577	3,025	2,492	2,318	1,242	12.2
Three	9,877	1,728	909	993	2,173	1,525	1,486	1,064	14.7
Four to Nine	10,377	1,514	790	1,254	956	1,241	2,070	2,553	18.8
Ten or More	4,173	Q	Q	Q	Q	Q	338	3,219	38.5
Percent Window Glass									
25 or Less	51,356	15,935	6,430	6,760	8,155	5,497	4,677	3,903	8.7
26 to 50	11,815	1,662	893	1,118	1,907	1,628	2,059	2,549	13.3
51 to 75	3,206	189	199	142	427	502	424	1,323	23.5
76 to 100	1,499	Q	Q	Q	Q	Q	218	859	38.9
Weekly Operating Hours									
39 or Fewer	8,246	5,524	636	637	663	598	Q	Q	21.6
40 to 48	14,998	3,347	2,032	2,496	3,148	1,859	1,112	1,004	12.4
49 to 60	14,046	3,047	2,284	1,947	2,033	1,386	1,615	1,733	12.3
61 to 84	12,062	1,743	1,266	1,120	1,956	1,786	1,695	2,495	14.1
85 to 167	8,467	1,470	677	1,061	1,365	1,161	1,362	1,369	17.4
Open Continuously	10,057	2,812	629	816	1,391	973	1,428	2,009	21.5
Percent Vacant for at Least Three Months									
1-50 Percent	12,420	1,041	634	1,213	1,435	1,296	2,150	4,651	14.9
51-99 Percent	2,263	521	239	Q	376	Q	Q	256	34.3
100 Percent	4,109	3,052	280	228	196	Q	Q	59	26.2
None	49,085	13,331	6,372	6,502	8,550	5,981	4,682	3,667	8.4
Ownership and Occupancy									
Nongovernment Owned	52,752	15,976	6,524	6,412	7,501	5,132	4,593	6,614	8.4
Owner Occupied	38,403	10,973	5,015	4,933	5,586	3,584	3,110	5,202	8.4
Nonowner Occupied	12,273	3,044	1,486	1,437	1,880	1,549	1,472	1,405	16.2
Unoccupied	2,077	1,959	Q	Q	Q	NC	Q	Q	47.3
Government Owned	15,124	1,968	1,000	1,665	3,056	2,631	2,785	2,019	15.1
Percent of Floorspace Heated									
Not Heated	6,211	4,578	455	Q	Q	Q	Q	Q	40.0
1 to 50	11,195	3,678	1,659	1,992	1,350	1,123	486	907	19.4
51 to 99	10,211	1,318	1,265	1,247	1,801	1,200	1,425	1,956	13.8
100	40,260	8,371	4,146	4,286	7,206	5,329	5,412	5,511	8.1
Percent of Floorspace Cooled									
Not Cooled	10,835	7,225	1,276	1,123	566	450	Q	Q	24.5
1 to 50	21,715	4,650	3,132	3,447	4,190	3,265	2,228	804	13.4
51 to 99	13,872	1,249	1,056	1,287	2,391	1,497	2,007	4,386	12.3
100	21,454	4,820	2,061	2,221	3,410	2,551	2,960	3,430	10.9
Percent Lit when Open									
Not Lit	3,280	3,185	Q	Q	Q	NC	NC	NC	40.8
1 to 50	9,980	4,775	1,914	1,433	806	578	Q	Q	22.9
51 to 99	14,224	2,779	1,518	1,604	2,723	1,496	2,007	2,097	15.2
100	40,393	7,205	4,086	4,986	6,994	5,689	5,072	6,361	8.3
Heating Equipment (more than one may apply)									
Heat Pumps	8,269	1,219	812	938	1,408	1,161	1,327	1,404	15.9
Furnaces	16,909	4,981	2,917	2,488	2,590	2,133	800	1,001	13.1
Individual Space Heaters	22,380	5,455	2,569	2,655	3,314	2,638	2,610	3,138	11.6
District Heat	5,225	396	314	487	500	785	674	2,070	22.6
Boilers	20,664	2,755	1,516	1,831	3,784	2,882	3,911	3,984	13.2
Packaged Heating Units	16,000	1,694	1,372	1,992	3,380	2,406	2,689	2,466	12.4
Other	903	Q	Q	Q	Q	Q	Q	186	39.0

See footnotes at end of table.

Table A18. Employment Size Category, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Number of Workers							RSE Row Factor
		Less than 5 Workers	5 to 9 Workers	10 to 19 Workers	20 to 49 Workers	50 to 99 Workers	100 to 249 Workers	250 or More Workers	
RSE Column Factor:	0.5	1.0	1.0	1.1	0.9	1.3	1.4	1.2	
Cooling Equipment (more than one may apply)									
Residential-Type Central Air Conditioners	9,021	2,114	1,399	1,546	1,596	861	594	910	14.0
Heat Pumps	8,406	1,272	818	898	1,454	1,140	1,405	1,420	15.1
Individual Air Conditioners	17,979	4,095	2,143	2,301	2,807	2,678	1,950	2,004	15.5
District Chilled Water	2,066	Q	Q	193	191	327	192	868	35.4
Central Chillers	12,991	Q	182	355	1,320	1,730	2,688	5,397	18.9
Packaged Air-Conditioning Units	27,830	3,619	2,612	3,389	5,525	4,500	3,770	4,414	9.0
Swamp Coolers	2,085	368	239	296	374	Q	Q	Q	33.6
Other	268	Q	NC	NC	Q	Q	Q	Q	58.7
Lighting Equipment Types (more than one may apply)									
Incandescent	39,221	8,540	4,231	4,618	5,703	4,646	4,910	6,571	8.1
Standard Fluorescent	62,074	13,520	7,100	7,490	10,414	7,646	7,334	8,570	7.5
Compact Fluorescent	8,336	714	381	376	886	1,089	1,405	3,485	18.0
High-Intensity Discharge	17,570	1,777	1,174	1,624	2,685	2,920	3,280	4,111	14.1
Other	1,612	270	251	Q	Q	Q	Q	512	34.1
Personal Computers and/or Computer Terminals									
1 to 4	13,355	3,868	3,496	2,789	2,192	858	Q	Q	17.0
5 to 9	5,970	175	735	1,550	2,075	876	379	Q	18.1
10 to 19	6,236	225	298	935	2,622	914	704	Q	22.3
20 to 49	7,439	Q	Q	360	2,293	2,203	1,750	555	21.4
50 to 99	4,908	Q	Q	Q	483	1,563	2,194	621	28.5
100 to 249	4,220	Q	Q	Q	Q	561	1,628	1,818	35.2
250 or More	5,569	Q	NC	NC	Q	Q	424	4,876	38.3
Lighting Conservation Features (more than one may apply)									
Specular Reflectors	15,241	1,661	1,289	1,924	2,519	1,673	2,030	4,145	13.0
Natural Lighting Control Sensors	3,072	444	137	Q	307	335	637	1,039	23.7
Occupancy Sensors	3,629	Q	Q	Q	347	382	1,064	1,587	25.5
Time Clock	12,104	Q	679	1,015	1,277	1,238	1,771	4,134	17.9
Manual Dimmer Switches	12,329	1,530	842	923	1,190	1,377	2,313	4,155	14.5
Other	2,596	217	Q	Q	456	455	467	728	23.9
Off-Hour Equipment Reduction (more than one may apply)									
Heating	46,248	9,628	5,842	5,649	8,030	6,026	5,194	5,878	7.5
Cooling	42,768	7,658	5,193	5,169	7,747	5,799	5,108	6,095	7.8
Hot Water	9,966	1,602	904	1,216	1,724	1,366	1,363	1,791	13.3
Lighting	54,944	12,716	6,833	7,168	9,110	6,733	5,861	6,523	7.3
Other	7,996	1,151	1,055	1,067	1,235	1,234	1,054	1,199	17.2
Demand-Side Management Programs (more than one may apply)									
Building Shell Program	1,079	Q	Q	Q	Q	Q	Q	348	36.3
HVAC Program	6,370	490	352	308	672	1,038	1,404	2,106	18.1
Lighting Program	8,805	845	432	283	1,276	1,408	1,794	2,768	16.9
Other DSM Programs	6,176	355	295	181	548	967	1,230	2,600	23.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A19. Weekly Operating Hours, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings (thousand)	Buildings by Weekly Operating Hours						RSE Row Factor
		39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours	Open Continuously	
RSE Column Factor:	0.6	1.2	0.9	1.0	1.0	1.2	1.3	
All Buildings	4,806	1,039	1,278	1,004	645	478	362	5.4
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	688	687	519	324	281	182	7.9
5,001 to 10,000	975	188	293	216	146	69	62	9.0
10,001 to 25,000	647	107	183	156	87	64	50	9.8
25,001 to 50,000	280	37	70	71	41	31	31	12.2
50,001 to 100,000	116	14	25	20	24	17	15	14.9
100,001 to 200,000	71	Q	16	17	16	10	9	17.2
200,001 to 500,000	26	2	4	4	4	5	8	19.9
Over 500,000	9	Q	*	1	2	1	Q	28.2
Principal Building Activity								
Education	301	63	127	53	45	11	Q	14.8
Food Sales	130	Q	NC	Q	28	69	23	20.4
Food Service	260	Q	20	Q	62	137	Q	15.6
Health Care	63	Q	24	18	Q	Q	11	24.6
Lodging	154	Q	Q	Q	Q	Q	137	12.7
Mercantile and Service	1,272	66	317	448	287	117	37	10.3
Office	749	46	414	175	63	30	20	12.6
Parking Garage	24	Q	Q	Q	Q	Q	6	32.7
Public Assembly	278	113	40	35	43	41	Q	14.4
Public Order and Safety	60	Q	Q	Q	Q	NC	39	22.0
Religious Worship	366	284	22	26	22	Q	Q	17.6
Warehouse and Storage	761	193	243	181	64	33	47	13.0
Other	69	Q	13	10	Q	Q	17	28.4
Vacant	319	227	42	23	11	Q	Q	19.4
Year Constructed								
1899 or Before	169	57	43	22	17	22	Q	21.4
1900 to 1919	255	75	71	52	23	21	13	18.5
1920 to 1945	724	185	208	137	100	61	34	12.7
1946 to 1959	880	219	245	192	82	88	53	10.1
1960 to 1969	783	150	188	171	106	86	82	10.7
1970 to 1979	982	196	244	211	154	99	77	9.9
1980 to 1989	884	132	249	183	145	91	83	10.6
1990 to 1992	128	24	30	34	18	10	12	25.8
Census Region								
Northeast	771	123	191	184	129	83	61	12.6
Midwest	1,202	314	294	231	170	127	65	10.5
South	1,963	486	541	395	220	167	154	9.0
West	870	116	252	193	127	101	82	14.4
Energy Sources (more than one may apply)								
Electricity	4,616	889	1,270	992	641	475	349	5.4
Natural Gas	2,665	407	753	599	404	299	202	6.9
Fuel Oil	559	119	146	131	77	41	44	14.6
District Heat	95	11	34	16	9	7	19	21.4
District Chilled Water	28	Q	8	4	4	Q	5	32.5
Propane	337	94	59	69	44	46	26	19.0
Any Other	163	31	54	35	Q	Q	18	20.5
Energy End Uses (more than one may apply)								
Heated Buildings	4,178	725	1,186	920	603	436	307	5.5
Air-Conditioned Buildings	3,502	513	1,007	786	528	405	262	5.9
Buildings with Water Heating	3,502	507	979	764	518	435	300	5.7
Buildings with Cooking	734	116	89	83	149	218	78	10.3
Buildings with Manufacturing	121	Q	46	34	19	7	6	23.6

See footnotes at end of table.

Table A19. Weekly Operating Hours, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings (thousand)	Buildings by Weekly Operating Hours: 39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours	Open Continuously	RSE Row Factor
RSE Column Factor:	0.6	1.2	0.9	1.0	1.0	1.2	1.3	
Workers (main shift)								
Less than 5	2,718	843	616	517	281	242	218	7.7
5 to 9	895	89	282	225	167	87	44	9.9
10 to 19	561	65	185	124	88	70	31	11.8
20 to 49	405	27	135	87	67	48	41	12.0
50 to 99	130	12	41	27	21	18	11	15.9
100 to 249	64	Q	13	15	14	11	10	15.7
250 or More	31	Q	6	8	7	3	7	19.2
Ownership and Occupancy								
Nongovernment Owned	4,206	917	1,036	934	577	450	292	5.8
Owner Occupied	3,192	646	787	723	437	354	245	6.5
Nonowner Occupied	817	99	241	201	138	96	43	10.7
Unoccupied	197	173	Q	Q	Q	NC	Q	12.9
Government Owned	599	122	242	69	68	28	70	12.0
Percent of Floorspace Heated								
Not Heated	653	323	100	87	43	43	56	14.9
1 to 50	688	109	215	182	89	60	33	11.8
51 to 99	618	78	164	152	105	81	38	11.5
100	2,846	528	799	583	407	294	235	6.3
Percent of Floorspace Cooled								
Not Cooled	1,304	526	271	217	116	73	100	10.4
1 to 50	1,176	127	341	346	197	106	59	8.7
51 to 99	658	80	184	133	102	99	60	10.7
100	1,668	306	482	307	230	200	142	8.4
Percent Lit when Open								
Not Lit	413	332	Q	29	Q	Q	18	17.5
1 to 50	881	172	261	192	108	91	58	10.1
51 to 99	813	126	245	187	124	79	51	9.1
100	2,699	408	759	595	402	301	234	6.9
Heating Equipment (more than one may apply)								
Heat Pumps	449	52	150	101	54	49	44	15.0
Furnaces	1,692	333	474	402	226	173	84	8.4
Individual Space Heaters	1,464	257	401	357	201	117	130	8.6
District Heat	93	9	34	16	9	7	19	21.6
Boilers	624	96	165	133	103	60	67	9.1
Packaged Heating Units	870	104	240	170	158	140	58	10.4
Other	42	Q	Q	Q	Q	Q	Q	39.8
Cooling Equipment (more than one may apply)								
Residential-Type Central Air Conditioners	816	139	268	189	104	73	43	12.3
Heat Pumps	454	50	151	103	57	49	44	15.1
Individual Air Conditioners	1,023	156	286	241	151	82	108	9.4
District Chilled Water	28	Q	8	4	4	Q	5	32.5
Central Chillers	142	13	42	20	30	15	21	16.0
Packaged Air-Conditioning Units	1,459	188	381	313	259	216	101	8.3
Swamp Coolers	179	Q	55	43	15	37	8	28.2
Other	8	Q	Q	Q	Q	Q	Q	76.8
Lighting Equipment Types (more than one may apply)								
Incandescent	2,509	496	633	489	334	322	234	6.7
Standard Fluorescent	4,065	618	1,182	942	597	437	290	5.2
Compact Fluorescent	206	13	45	46	44	29	30	17.4
High-Intensity Discharge	354	30	109	88	50	43	33	12.3
Other	78	Q	26	22	11	11	Q	27.4

See footnotes at end of table.

Table A19. Weekly Operating Hours, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings (thousand)	Buildings by Weekly Operating Hours						RSE Row Factor
		39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours	Open Continuously	
RSE Column Factor:	0.6	1.2	0.9	1.0	1.0	1.2	1.3	
Lighting Conservation Features (more than one may apply)								
Specular Reflectors	574	62	180	138	84	56	54	12.3
Natural Lighting Control Sensors	74	Q	18	7	9	17	19	25.9
Occupancy Sensors	59	Q	20	11	10	9	6	25.7
Time Clock	339	35	76	77	59	53	38	14.7
Manual Dimmer Switches	413	76	82	69	66	75	44	12.3
Other	78	Q	24	17	13	12	7	25.9
Off-Hour Equipment Reduction (more than one may apply)								
Heating	3,400	656	1,044	824	535	340	NC	5.7
Cooling	2,872	485	884	700	471	333	NC	6.1
Hot Water	578	144	152	113	89	80	NC	10.7
Lighting	4,089	809	1,247	968	621	444	NC	5.3
Other	547	57	160	157	99	74	NC	13.2
Demand-Side Management Programs (more than one may apply)								
Building Shell Program	36	Q	17	Q	6	Q	6	34.3
HVAC Program	154	19	46	26	25	24	14	18.6
Lighting Program	228	18	70	41	38	37	23	17.2
Other DSM Programs	110	7	29	13	19	27	15	23.7

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A20. Weekly Operating Hours, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Weekly Operating Hours						RSE Row Factor
		39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours	Open Continuously	
RSE Column Factor:	0.5	1.3	0.9	0.9	1.1	1.3	1.3	
All Buildings	67,876	8,246	14,998	14,046	12,062	8,467	10,057	6.8
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	1,797	1,904	1,430	926	772	498	8.1
5,001 to 10,000	7,199	1,341	2,186	1,610	1,098	492	472	9.1
10,001 to 25,000	10,375	1,592	2,994	2,549	1,408	1,022	810	9.8
25,001 to 50,000	10,069	1,309	2,553	2,536	1,443	1,151	1,077	12.5
50,001 to 100,000	8,062	1,007	1,698	1,440	1,769	1,132	1,015	14.6
100,001 to 200,000	9,678	Q	2,254	2,278	2,152	1,390	1,371	19.4
200,001 to 500,000	7,889	418	1,178	1,188	1,238	1,480	2,387	20.0
Over 500,000	7,278	Q	230	1,016	2,028	1,027	2,427	30.9
Principal Building Activity								
Education	8,470	1,221	2,761	1,447	1,607	1,333	Q	17.1
Food Sales	757	Q	NC	Q	149	372	200	31.4
Food Service	1,491	Q	81	Q	334	862	Q	24.7
Health Care	1,763	Q	151	151	Q	Q	1,284	32.9
Lodging	2,891	Q	Q	Q	Q	Q	2,730	46.6
Mercantile and Service	12,402	348	1,657	3,299	4,667	2,038	392	15.0
Office	12,319	220	4,635	4,037	2,048	752	626	14.4
Parking Garage	1,652	Q	Q	Q	Q	Q	1,268	47.4
Public Assembly	4,556	817	353	363	871	978	Q	25.4
Public Order and Safety	820	Q	Q	Q	Q	NC	619	38.7
Religious Worship	3,747	1,806	349	647	406	Q	Q	26.8
Warehouse and Storage	11,484	878	3,964	3,273	1,305	1,098	967	15.0
Other	1,130	Q	279	290	Q	Q	261	30.6
Vacant	4,396	2,756	601	267	372	Q	Q	27.0
Year Constructed								
1899 or Before	1,721	385	484	363	147	272	Q	23.7
1900 to 1919	3,608	927	883	803	356	402	237	26.7
1920 to 1945	8,712	1,564	2,045	2,013	1,393	780	918	16.7
1946 to 1959	10,421	1,570	2,877	2,640	1,072	1,117	1,146	12.8
1960 to 1969	12,612	1,320	2,617	2,371	2,692	1,910	1,701	15.5
1970 to 1979	14,014	1,455	2,614	2,476	2,778	2,248	2,444	11.4
1980 to 1989	14,287	849	2,923	2,720	3,210	1,465	3,120	14.2
1990 to 1992	2,502	176	554	661	415	273	423	21.2
Census Region								
Northeast	13,400	1,400	2,272	2,622	2,578	2,486	2,042	13.3
Midwest	17,280	2,454	3,446	3,474	3,212	2,217	2,477	11.3
South	24,577	3,278	6,543	5,002	3,795	1,938	4,021	11.3
West	12,619	1,114	2,738	2,948	2,477	1,826	1,517	12.2
Energy Sources (more than one may apply)								
Electricity	66,549	7,083	14,952	14,020	12,028	8,455	10,011	6.9
Natural Gas	45,097	4,032	9,529	9,575	9,141	6,509	6,311	7.8
Fuel Oil	13,218	1,137	2,448	2,473	2,320	1,695	3,145	12.2
District Heat	5,339	375	807	1,059	702	508	1,888	22.7
District Chilled Water	2,066	Q	312	357	178	278	724	32.7
Propane	3,393	522	532	674	533	493	639	19.5
Any Other	1,551	176	323	292	Q	Q	240	31.8
Energy End Uses (more than one may apply)								
Heated Buildings	61,996	6,000	13,745	13,251	11,529	8,141	9,329	7.1
Air-Conditioned Buildings	57,041	4,632	12,558	12,218	11,158	7,742	8,733	7.5
Buildings with Water Heating	58,479	5,005	12,613	12,405	11,308	8,020	9,128	7.3
Buildings with Cooking	23,065	1,828	3,010	3,118	5,195	4,750	5,163	12.5
Buildings with Manufacturing	3,174	Q	891	920	418	403	410	25.8

See footnotes at end of table.

Table A20. Weekly Operating Hours, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Weekly Operating Hours						RSE Row Factor
		39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours	Open Continuously	
RSE Column Factor:	0.5	1.3	0.9	0.9	1.1	1.3	1.3	
Workers (main shift)								
Less than 5	17,944	5,524	3,347	3,047	1,743	1,470	2,812	13.4
5 to 9	7,524	636	2,032	2,284	1,266	677	629	13.2
10 to 19	8,077	637	2,496	1,947	1,120	1,061	816	15.6
20 to 49	10,556	663	3,148	2,033	1,956	1,365	1,391	12.7
50 to 99	7,763	598	1,859	1,386	1,786	1,161	973	18.4
100 to 249	7,378	Q	1,112	1,615	1,695	1,362	1,428	20.5
250 or More	8,633	Q	1,004	1,733	2,495	1,369	2,009	20.7
Ownership and Occupancy								
Nongovernment Owned	52,752	6,161	11,030	12,019	10,020	6,238	7,284	7.1
Owner Occupied	38,403	3,827	8,209	9,168	7,033	4,707	5,459	7.1
Nonowner Occupied	12,273	535	2,704	2,796	2,950	1,531	Q	15.1
Unoccupied	2,077	1,798	Q	Q	Q	NC	Q	33.0
Government Owned	15,124	2,085	3,968	2,027	2,042	2,229	2,773	14.5
Percent of Floorspace Heated								
Not Heated	6,211	2,369	1,309	845	541	409	737	24.0
1 to 50	11,195	1,083	2,579	2,635	1,654	1,771	1,473	18.4
51 to 99	10,211	467	2,096	2,877	2,227	1,275	1,269	13.4
100	40,260	4,327	9,015	7,690	7,639	5,012	6,577	7.9
Percent of Floorspace Cooled								
Not Cooled	10,835	3,614	2,441	1,828	904	725	1,324	14.4
1 to 50	21,715	2,176	5,216	5,317	3,796	2,860	2,351	11.2
51 to 99	13,872	521	2,726	2,784	3,123	2,379	2,340	13.1
100	21,454	1,935	4,616	4,118	4,238	2,504	4,043	11.0
Percent Lit when Open								
Not Lit	3,280	2,853	Q	129	Q	Q	88	26.6
1 to 50	9,980	1,482	2,803	2,242	1,413	1,267	774	15.3
51 to 99	14,224	1,002	2,993	3,107	3,021	1,760	2,342	14.3
100	40,393	2,910	9,094	8,568	7,562	5,406	6,853	8.5
Heating Equipment (more than one may apply)								
Heat Pumps	8,269	353	1,904	1,852	1,683	900	1,578	16.2
Furnaces	16,909	2,241	3,794	4,053	3,019	2,682	1,121	11.2
Individual Space Heaters	22,380	2,076	4,460	5,593	4,165	2,717	3,368	10.7
District Heat	5,225	332	792	1,051	695	504	1,850	23.3
Boilers	20,664	1,829	4,262	4,104	3,636	2,639	4,194	11.9
Packaged Heating Units	16,000	784	3,548	3,166	3,832	2,932	1,737	12.6
Other	903	Q	Q	Q	Q	Q	Q	36.6
Cooling Equipment (more than one may apply)								
Residential-Type Central Air Conditioners	9,021	912	2,481	2,250	1,329	1,002	1,046	13.2
Heat Pumps	8,406	374	1,916	1,757	1,810	945	1,604	16.0
Individual Air Conditioners	17,979	1,767	3,649	3,303	2,838	2,054	4,368	15.3
District Chilled Water	2,066	Q	312	357	178	278	724	32.7
Central Chillers	12,991	374	2,013	2,143	3,212	1,358	3,891	18.0
Packaged Air-Conditioning Units	27,830	2,088	5,989	5,784	5,879	4,224	3,866	9.6
Swamp Coolers	2,085	Q	494	582	287	297	309	29.2
Other	268	Q	Q	Q	Q	Q	Q	69.9
Lighting Equipment Types (more than one may apply)								
Incandescent	39,221	3,940	8,138	8,364	7,105	5,692	5,981	7.6
Standard Fluorescent	62,074	5,447	13,833	13,398	11,710	8,266	9,421	7.0
Compact Fluorescent	8,336	290	1,126	1,626	1,795	1,556	1,943	16.6
High-Intensity Discharge	17,570	936	2,914	3,545	3,559	3,148	3,468	12.3
Other	1,612	Q	320	318	367	Q	Q	32.2

See footnotes at end of table.

Table A20. Weekly Operating Hours, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Floorspace by Weekly Operating Hours						RSE Row Factor
		39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours	Open Continuously	
RSE Column Factor:	0.5	1.3	0.9	0.9	1.1	1.3	1.3	
Lighting Conservation Features (more than one may apply)								
Specular Reflectors	15,241	756	2,951	3,117	3,048	2,637	2,732	12.5
Natural Lighting Control Sensors	3,072	Q	391	336	788	532	917	24.1
Occupancy Sensors	3,629	Q	757	701	553	777	804	23.8
Time Clock	12,104	465	1,502	2,314	3,054	2,150	2,620	17.4
Manual Dimmer Switches	12,329	805	1,594	2,398	2,427	2,442	2,664	13.6
Other	2,596	Q	491	574	565	375	499	22.8
Off-Hour Equipment Reduction (more than one may apply)								
Heating	46,248	5,241	11,764	12,021	10,403	6,819	NC	6.7
Cooling	42,768	4,078	10,698	11,114	10,219	6,660	NC	7.1
Hot Water	9,966	1,500	2,409	2,356	2,277	1,425	NC	11.9
Lighting	54,944	6,324	14,685	13,832	11,916	8,187	NC	6.3
Other	7,996	695	1,877	2,284	2,062	1,078	NC	19.2
Demand-Side Management Programs (more than one may apply)								
Building Shell Program	1,079	Q	221	Q	215	Q	312	34.6
HVAC Program	6,370	336	971	1,021	1,645	1,016	1,381	17.2
Lighting Program	8,805	469	1,315	1,598	1,720	2,056	1,647	15.6
Other DSM Programs	6,176	170	740	881	1,134	1,882	1,368	19.2

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A21. Occupancy of Government-Owned Buildings, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
		Government-Owned Buildings					Government-Owned Buildings				
	All Buildings	All Government-Owned Buildings	Federal	State	Local	All Buildings	All Government-Owned Buildings	Federal	State	Local	
RSE Column Factor:	0.4	0.8	2.1	1.5	0.9	0.4	0.9	2.0	1.5	1.0	
All Buildings	4,806	599	51	117	431	67,876	15,124	1,189	3,766	10,170	9.2
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	258	25	47	186	7,327	689	65	116	508	13.0
5,001 to 10,000	975	114	Q	Q	87	7,199	848	Q	Q	662	13.8
10,001 to 25,000	647	108	7	24	76	10,375	1,735	114	391	1,230	14.3
25,001 to 50,000	280	53	Q	14	36	10,069	1,953	Q	508	1,344	16.5
50,001 to 100,000	116	34	Q	7	25	8,062	2,241	Q	508	1,653	12.1
100,001 to 200,000	71	21	Q	5	13	9,678	2,858	Q	613	1,859	16.7
200,001 to 500,000	26	10	Q	3	6	7,889	2,932	Q	885	1,866	20.7
Over 500,000	9	2	0	Q	1	7,278	1,869	189	632	1,047	30.3
Principal Building Activity											
Education	301	201	Q	35	163	8,470	6,961	Q	1,198	5,727	12.3
Food Sales	130	NC	NC	NC	NC	757	NC	NC	NC	NC	34.3
Food Service	260	10	NC	Q	Q	1,491	157	NC	Q	Q	31.6
Health Care	63	13	Q	4	8	1,763	521	Q	158	326	34.6
Lodging	154	15	Q	8	Q	2,891	370	Q	269	Q	28.0
Mercantile and Service	1,272	63	14	Q	35	12,402	1,082	278	Q	Q	21.3
Office	749	69	11	17	41	12,319	1,654	448	528	679	18.5
Parking Garage	24	6	Q	Q	6	1,652	729	Q	Q	Q	56.1
Public Assembly	278	65	Q	12	50	4,556	1,353	Q	461	861	21.3
Public Order and Safety	60	49	Q	Q	40	820	767	Q	Q	537	31.2
Religious Worship	366	Q	Q	Q	NC	3,747	Q	Q	Q	NC	26.1
Warehouse and Storage	761	59	3	Q	47	11,484	599	177	Q	362	20.4
Other	69	16	Q	Q	Q	1,130	242	Q	Q	Q	39.7
Vacant	319	34	Q	Q	22	4,396	683	Q	Q	Q	30.3
Year Constructed											
1899 or Before	169	Q	Q	Q	Q	1,721	Q	Q	Q	Q	29.1
1900 to 1919	255	29	Q	Q	18	3,608	904	Q	Q	548	31.0
1920 to 1945	724	80	9	17	55	8,712	2,059	218	676	1,165	18.8
1946 to 1959	880	129	Q	37	83	10,421	2,365	Q	516	1,713	16.4
1960 to 1969	783	125	Q	21	100	12,612	4,041	Q	816	2,917	16.0
1970 to 1979	982	117	9	16	93	14,014	3,237	163	796	2,279	16.3
1980 to 1989	884	87	9	18	59	14,287	1,681	166	408	1,107	16.6
1990 to 1992	128	26	Q	5	20	2,502	704	Q	206	390	25.0
Census Region											
Northeast	771	88	12	18	58	13,400	3,422	107	747	2,568	16.4
Midwest	1,202	132	6	Q	98	17,280	4,153	268	1,231	2,654	18.9
South	1,963	234	22	34	179	24,577	5,097	547	955	3,595	14.2
West	870	146	11	37	97	12,619	2,452	Q	832	1,354	17.9
Energy Sources (more than one may apply)											
Electricity	4,616	578	43	116	419	66,549	14,948	1,139	3,748	10,060	9.3
Natural Gas	2,665	356	18	74	264	45,097	10,945	671	2,800	7,474	11.3
Fuel Oil	559	75	Q	13	52	13,218	3,798	288	940	2,570	15.3
District Heat	95	51	Q	24	21	5,339	2,446	375	1,153	918	19.8
District Chilled Water	28	18	Q	7	9	2,066	992	Q	449	446	31.4
Propane	337	32	Q	Q	23	3,393	699	Q	Q	624	26.7
Any Other	163	19	Q	Q	12	1,551	469	Q	Q	334	32.4

See footnotes at end of table.

Table A21. Occupancy of Government-Owned Buildings, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
		Government-Owned Buildings					Government-Owned Buildings				
	All Buildings	All Government-Owned Buildings	Federal	State	Local	All Buildings	All Government-Owned Buildings	Federal	State	Local	
RSE Column Factor:	0.4	0.8	2.1	1.5	0.9	0.4	0.9	2.0	1.5	1.0	
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	537	42	109	386	61,996	14,478	1,134	3,650	9,694	9.4
Air-Conditioned Buildings	3,502	422	31	90	301	57,041	13,128	1,059	3,328	8,742	10.3
Buildings with Water Heating	3,502	449	40	89	320	58,479	13,852	1,093	3,575	9,184	9.6
Buildings with Cooking	734	117	Q	20	94	23,065	8,064	437	1,813	5,814	14.4
Buildings with Manufacturing	121	12	Q	Q	Q	3,174	330	Q	Q	Q	31.9
Climate Zone: 45-Year Average											
Fewer than 2,000 CDD and --											
More than 7,000 HDD	399	46	Q	8	29	5,623	1,349	Q	524	763	27.9
5,500-7,000 HDD	1,134	133	9	32	91	18,024	4,053	431	981	2,641	20.0
4,000-5,499 HDD	1,077	114	13	20	82	16,162	4,066	336	968	2,762	21.9
Fewer than 4,000 HDD	1,101	162	10	26	127	15,251	3,296	213	909	2,175	24.1
More than 2,000 CDD and -- Fewer than 4,000 HDD	1,095	144	11	32	102	12,816	2,360	148	384	1,828	19.3
Predominant Exterior Wall Material											
Masonry	3,115	408	32	84	292	48,585	11,929	746	3,203	7,980	9.9
Siding or Shingles	764	90	Q	Q	63	3,873	354	Q	Q	246	19.5
Metal Panels	745	75	Q	12	60	7,392	801	Q	134	616	20.5
Concrete Panels	87	13	Q	3	7	4,961	1,726	Q	314	1,092	28.9
Window Glass	46	9	Q	Q	Q	2,028	292	Q	Q	Q	42.8
Other	47	Q	Q	Q	Q	1,037	Q	Q	Q	Q	50.1
Predominant Roof Material											
Built-Up	1,642	216	14	36	166	30,257	6,329	728	1,155	4,447	12.3
Shingles (Not Wood)	1,381	118	Q	21	82	10,570	1,404	Q	554	747	16.7
Metal Surfacing	1,037	116	Q	26	86	9,019	1,203	Q	257	895	18.2
Synthetic or Rubber	386	88	9	24	55	11,702	4,431	225	1,315	2,891	17.6
Slate or Tile	155	24	Q	6	13	1,998	452	Q	87	322	28.8
Concrete	37	7	Q	2	Q	2,544	906	Q	Q	Q	47.9
Other	167	30	Q	Q	24	1,786	399	Q	Q	278	32.6
Floors											
One	3,007	380	27	68	285	25,424	4,357	429	615	3,313	12.1
Two	1,154	132	11	26	96	18,025	3,697	183	899	2,616	14.9
Three	446	53	Q	12	32	9,877	3,039	Q	711	2,195	15.5
Four to Nine	186	32	5	10	17	10,377	3,309	Q	1,356	1,629	20.4
Ten or More	13	2	0	1	Q	4,173	722	121	185	Q	27.2
Percent Window Glass											
25 or Less	4,193	491	41	96	354	51,356	10,497	891	2,870	6,736	10.5
26 to 50	490	83	8	15	60	11,815	3,553	232	725	2,595	15.9
51 to 75	94	19	Q	Q	15	3,206	891	Q	Q	723	23.2
76 to 100	29	7	Q	Q	Q	1,499	184	Q	Q	Q	42.5
Workers (main shift)											
Less than 5	2,718	253	23	47	184	17,944	1,968	195	301	1,472	14.8
5 to 9	895	103	13	19	71	7,524	1,000	102	271	628	16.8
10 to 19	561	93	Q	17	72	8,077	1,665	Q	556	1,045	18.5
20 to 49	405	92	Q	19	68	10,556	3,056	Q	653	2,251	14.7
50 to 99	130	32	Q	9	21	7,763	2,631	Q	768	1,729	15.8
100 to 249	64	18	Q	3	13	7,378	2,785	Q	639	2,002	19.8
250 or More	31	7	Q	2	2	8,633	2,019	398	577	1,044	26.0

See footnotes at end of table.

Table A21. Occupancy of Government-Owned Buildings, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Government-Owned Buildings				All Buildings	Government-Owned Buildings				
		All Government-Owned Buildings	Federal	State	Local		All Government-Owned Buildings	Federal	State	Local	
RSE Column Factor:	0.4	0.8	2.1	1.5	0.9	0.4	0.9	2.0	1.5	1.0	
Weekly Operating Hours											
39 or Fewer	1,039	122	Q	12	99	8,246	2,085	Q	Q	1,636	17.2
40 to 48	1,278	242	14	48	179	14,998	3,968	324	555	3,089	12.7
49 to 60	1,004	69	10	10	50	14,046	2,027	Q	402	1,296	17.4
61 to 84	645	68	Q	20	43	12,062	2,042	Q	548	1,407	15.4
85 to 167	478	28	Q	8	17	8,467	2,229	Q	729	1,392	22.7
Open Continuously	362	70	Q	19	43	10,057	2,773	253	1,169	1,351	20.5
Additional Operating Hours for Equipment Use											
Heating and/or Cooling	1,223	154	15	24	114	20,300	4,733	408	1,160	3,165	15.9
Lighting	633	58	Q	10	42	12,886	2,970	233	615	2,122	18.0
Heating and/or Cooling and Lighting	371	39	Q	6	28	8,717	2,376	Q	549	1,687	21.7
No Additional Hours	3,320	427	35	90	302	43,407	9,798	688	2,541	6,570	11.1
Percent Vacant for at Least Three Months											
1-50 Percent	362	18	Q	4	12	12,420	1,504	Q	351	966	27.8
51-99 Percent	97	7	Q	Q	Q	2,263	Q	Q	Q	Q	41.9
100 Percent	398	81	Q	10	63	4,109	1,025	Q	177	769	24.3
None	3,948	493	40	100	352	49,085	12,075	912	2,887	8,277	9.8
Number of Establishments											
One	3,886	527	36	109	382	47,997	12,441	778	2,970	8,694	9.9
2 to 5	517	32	Q	5	21	7,882	1,139	Q	485	431	24.0
6 to 10	89	Q	Q	Q	Q	2,562	Q	Q	Q	Q	25.4
11 to 20	49	Q	Q	Q	Q	2,039	Q	Q	Q	Q	38.3
More than 20	36	Q	Q	Q	Q	4,938	Q	Q	Q	Q	38.8
Currently Unoccupied	229	32	Q	Q	Q	2,457	381	Q	Q	Q	33.0
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	735	119	Q	20	95	22,166	8,068	437	1,813	5,819	14.1
Computer Room	223	47	5	13	29	14,199	3,847	450	1,004	2,392	16.8
Rooms with Special Ventilation	236	53	Q	11	36	8,042	3,277	155	796	2,327	16.7
Activities with Large Amounts of Hot Water	203	25	Q	5	20	6,862	1,807	Q	229	1,493	20.4
Multibuilding Facility											
Part of Multibuilding Facility	1,667	386	28	102	256	31,564	9,755	685	3,145	5,925	12.1
with Central Physical Plant	223	111	13	43	55	8,395	4,275	376	1,755	2,143	20.1
No Central Physical Plant	1,444	275	15	60	201	23,170	5,480	308	1,390	3,782	14.1
Not on Multibuilding Facility	3,139	213	23	15	175	36,312	5,369	504	621	4,244	12.2

See footnotes at end of table.

Table A21. Occupancy of Government-Owned Buildings, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
		Government-Owned Buildings					Government-Owned Buildings				
	All Buildings	All Government-Owned Buildings	Federal	State	Local	All Buildings	All Government-Owned Buildings	Federal	State	Local	
RSE Column Factor:	0.4	0.8	2.4	1.5	0.9	0.4	0.8	1.9	1.5	1.0	
Percent of Floorspace Heated											
Not Heated	653	66	Q	10	46	6,211	746	Q	198	480	25.0
1 to 50	688	39	Q	5	32	11,195	1,944	Q	Q	1,307	26.1
51 to 99	618	64	6	11	47	10,211	1,896	Q	347	1,285	19.0
100	2,846	430	32	92	306	40,260	10,538	718	2,722	7,099	9.6
Percent of Floorspace Cooled											
Not Cooled	1,304	177	20	27	130	10,835	1,996	130	438	1,428	14.5
1 to 50	1,176	136	11	27	98	21,715	5,301	233	1,270	3,798	16.2
51 to 99	658	78	9	18	51	13,872	3,663	486	882	2,295	17.0
100	1,668	209	11	46	152	21,454	4,164	340	1,175	2,649	13.9
Percent Lit when Open											
Not Lit	413	36	Q	Q	20	3,280	469	Q	Q	345	31.8
1 to 50	881	77	Q	18	55	9,980	1,112	167	Q	489	18.9
51 to 99	813	110	14	23	73	14,224	2,976	248	767	1,961	14.9
100	2,699	377	24	70	283	40,393	10,566	691	2,500	7,375	11.0
Heating Equipment (more than one may apply)											
Heat Pumps	449	51	Q	12	37	8,269	1,158	Q	236	884	22.3
Furnaces	1,692	150	12	29	108	16,909	2,315	197	606	1,513	18.7
Individual Space Heaters	1,464	175	Q	38	131	22,380	4,556	175	1,313	3,068	13.6
District Heat	93	50	Q	23	20	5,225	2,384	360	1,138	886	20.5
Boilers	624	147	14	25	108	20,664	7,356	403	1,665	5,287	12.4
Packaged Heating Units	870	93	5	11	77	16,000	2,574	Q	232	2,170	19.8
Other	42	Q	Q	NC	Q	903	Q	Q	NC	Q	50.0
Heating Distribution Equipment (more than one may apply)											
Radiators or Baseboards	473	116	12	21	82	13,263	5,546	375	1,348	3,822	14.6
Ducts for Heating	2,955	346	28	68	250	45,422	9,887	902	2,388	6,597	10.9
Heating Only	577	90	Q	13	68	5,950	2,194	Q	449	1,698	22.3
Heating and Cooling	2,378	257	19	55	183	39,472	7,693	855	1,940	4,899	11.4
Variable Air-Volume System Used	210	48	5	10	33	11,528	3,388	255	839	2,295	19.3
Fan Coil Units for Heating	99	34	Q	12	19	5,474	2,021	178	712	1,131	19.0
Heating Only	78	23	Q	Q	13	3,569	1,224	Q	301	807	22.3
Heating and Cooling	21	11	Q	5	6	1,906	797	Q	411	324	30.0
Individual Space Heaters	1,464	175	Q	38	131	22,380	4,556	175	1,313	3,068	13.6
Other	181	25	Q	Q	18	3,310	739	Q	Q	557	29.9
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	76	Q	17	56	9,021	1,593	Q	490	991	18.7
Heat Pumps	454	50	Q	12	36	8,406	1,035	Q	238	741	21.5
Individual Air Conditioners	1,023	134	12	28	94	17,979	5,232	212	1,262	3,758	14.3
District Chilled Water	28	18	Q	7	9	2,066	992	Q	449	446	31.7
Central Chillers	142	52	5	14	33	12,991	4,200	542	1,177	2,481	18.1
Packaged Air-Conditioning Units	1,459	153	11	24	117	27,830	5,375	417	1,365	3,593	13.8
Swamp Coolers	179	25	Q	Q	14	2,085	434	Q	Q	139	45.1
Other	8	Q	Q	Q	Q	268	Q	Q	Q	Q	97.6

See footnotes at end of table.

Table A21. Occupancy of Government-Owned Buildings, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
		Government-Owned Buildings					Government-Owned Buildings				
	All Buildings	All Government-Owned Buildings	Federal	State	Local	All Buildings	All Government-Owned Buildings	Federal	State	Local	
RSE Column Factor:	0.4	0.8	2.4	1.5	0.9	0.4	0.8	1.9	1.5	1.0	
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	2,733	313	23	71	220	47,755	10,014	990	2,632	6,392	10.9
Cooling Only	355	56	Q	16	37	8,283	2,321	Q	692	1,493	21.0
Heating and Cooling	2,378	257	19	55	183	39,472	7,693	855	1,940	4,899	11.4
Variable Air-Volume System Used	221	40	6	11	23	12,430	3,133	306	1,187	1,640	17.1
Fan Coil Units for Cooling	56	19	Q	7	12	3,875	1,449	Q	582	788	24.3
Cooling Only	35	8	Q	Q	6	1,969	652	Q	Q	464	41.7
Heating and Cooling	21	11	Q	5	6	1,906	797	Q	411	324	30.0
Individual Air Conditioners	1,023	134	12	28	94	17,979	5,232	212	1,262	3,758	14.8
Other	111	19	Q	Q	17	2,919	599	Q	Q	499	36.7
Lighting Equipment Types (more than one may apply)											
Incandescent	2,509	267	20	59	189	39,221	8,765	548	2,059	6,157	11.0
Standard Fluorescent	4,065	530	41	105	384	62,074	14,583	1,059	3,677	9,847	9.3
Compact Fluorescent	206	32	Q	5	23	8,336	2,230	143	524	1,564	21.6
High-Intensity Discharge	354	78	Q	15	57	17,570	6,195	414	1,555	4,227	13.7
Other	78	Q	Q	Q	Q	1,612	Q	Q	Q	Q	40.4
Personal Computers and/or Computer Terminals											
1 to 4	1,269	136	12	30	95	13,355	1,559	243	435	881	15.3
5 to 9	336	44	Q	6	33	5,970	813	Q	195	545	21.0
10 to 19	216	55	Q	8	41	6,236	1,720	Q	317	1,265	18.2
20 to 49	164	57	Q	13	42	7,439	2,494	Q	517	1,917	16.7
50 to 99	59	24	Q	4	18	4,908	2,309	Q	441	1,572	19.4
100 to 249	34	13	Q	5	7	4,220	1,967	Q	709	1,206	23.7
250 or More	19	4	*	1	2	5,569	1,446	181	278	987	26.6
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	3,343	422	40	77	306	50,311	12,023	979	2,986	8,058	9.7
Wall Insulation	2,320	259	26	48	185	33,240	5,768	509	1,381	3,879	11.4
Storm or Multiple Glazing	1,680	184	22	32	130	29,684	5,988	628	1,429	3,931	11.6
Tinted, Reflective or Shading Glass	1,068	122	12	19	91	25,396	5,250	510	1,198	3,542	14.8
Exterior or Interior Shading or Awnings	1,853	263	22	52	189	34,071	7,749	652	2,125	4,973	11.4
Windows that Open	2,119	378	32	67	280	28,937	9,030	474	1,802	6,754	10.8
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	250	54	6	12	36	13,970	4,009	307	1,256	2,446	17.5
Economizer Cycle	414	77	11	18	47	18,313	5,393	719	1,556	3,118	15.3
HVAC Maintenance	2,503	425	34	93	298	49,173	13,179	1,006	3,366	8,807	10.2

See footnotes at end of table.

Table A21. Occupancy of Government-Owned Buildings, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Government-Owned Buildings				All Buildings	Government-Owned Buildings				
		All Government-Owned Buildings	Federal	State	Local		All Government-Owned Buildings	Federal	State	Local	
RSE Column Factor:	0.4	0.8	2.4	1.5	0.9	0.4	0.8	1.9	1.5	1.0	
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	574	92	14	17	61	15,241	4,008	423	1,226	2,359	16.8
Natural Lighting Control Sensors	74	11	Q	1	9	3,072	681	Q	Q	290	31.1
Occupancy Sensors	59	14	Q	4	8	3,629	1,076	350	Q	370	27.8
Time Clock	339	37	Q	6	28	12,104	1,915	143	355	1,418	24.8
Manual Dimmer Switches	413	33	Q	9	21	12,329	2,605	Q	756	1,737	21.8
Other	78	24	Q	Q	15	2,596	989	Q	Q	532	29.6
Energy Conservation Features (more than one may apply)											
Any Conservation Features	4,357	565	49	113	404	64,403	14,773	1,106	3,731	9,936	9.3
Building Shell	4,223	539	48	102	389	62,056	14,168	1,083	3,390	9,695	9.3
HVAC	2,604	432	34	94	304	50,281	13,276	1,015	3,376	8,885	10.1
Lighting	1,178	156	18	33	105	29,453	6,593	701	1,836	4,057	13.0
Other	264	44	Q	7	33	5,952	1,554	225	284	1,046	16.4
Off-Hour Equipment Reduction (more than one may apply)											
Heating	3,400	408	29	74	305	46,248	10,572	765	2,218	7,589	9.8
Cooling	2,872	321	24	58	239	42,768	9,727	758	2,083	6,886	10.8
Hot Water	578	73	5	10	58	9,966	2,914	180	429	2,306	15.7
Lighting	4,089	494	33	95	366	54,944	11,908	870	2,546	8,492	9.4
Other	547	52	Q	10	36	7,996	1,767	Q	Q	1,092	19.9
Energy Management Practices (more than one may apply)											
Energy Management and Control System	236	75	7	14	54	14,320	4,873	505	1,413	2,955	16.5
Demand-Side Management Participation	315	86	11	16	59	11,310	4,279	407	923	2,949	17.2
Energy Audit	521	122	Q	30	80	14,779	4,505	423	1,328	2,755	13.9
Building Energy Manager	49	18	Q	Q	13	2,311	777	Q	Q	561	36.5
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	36	13	Q	Q	Q	1,079	367	Q	Q	Q	37.7
HVAC Program	154	49	Q	6	39	6,370	2,250	Q	570	1,495	21.8
Lighting Program	228	62	Q	14	39	8,805	3,313	376	730	2,207	20.6
Other DSM Programs	110	38	Q	6	23	6,176	2,494	245	551	1,698	24.0

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A22. Occupancy of Nongovernment-Owned Buildings, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.7	0.7	0.8	1.3	2.1	
All Buildings	4,806	4,206	3,192	817	197	5.1
Building Floorspace (Square Feet)						
1,001 to 5,000	2,681	2,423	1,859	437	127	7.1
5,001 to 10,000	975	861	660	167	34	6.9
10,001 to 25,000	647	540	396	126	18	8.9
25,001 to 50,000	280	228	169	47	12	10.1
50,001 to 100,000	116	82	57	22	Q	12.4
100,001 to 200,000	71	50	38	11	Q	13.8
200,001 to 500,000	26	16	11	5	Q	16.3
Over 500,000	9	7	4	Q	Q	32.2
Principal Building Activity						
Education	301	99	89	Q	NC	15.2
Food Sales	130	130	107	24	NC	19.8
Food Service	260	250	200	51	NC	12.0
Health Care	63	51	37	Q	NC	20.8
Lodging	154	139	135	Q	NC	15.9
Mercantile and Service	1,272	1,210	907	303	NC	7.1
Office	749	680	524	155	NC	7.7
Parking Garage	24	18	16	Q	NC	35.7
Public Assembly	278	213	191	23	NC	12.2
Public Order and Safety	60	Q	Q	Q	NC	27.5
Religious Worship	366	365	349	Q	NC	13.4
Warehouse and Storage	761	702	533	170	NC	9.7
Other	69	53	42	Q	NC	26.5
Vacant	319	285	54	34	197	12.1
Year Constructed						
1899 or Before	169	163	135	23	Q	20.0
1900 to 1919	255	226	175	39	Q	15.6
1920 to 1945	724	644	478	122	45	9.7
1946 to 1959	880	751	561	147	43	8.9
1960 to 1969	783	659	495	130	34	9.1
1970 to 1979	982	865	657	171	36	9.1
1980 to 1989	884	797	606	171	20	8.8
1990 to 1992	128	102	85	14	Q	22.9
Census Region						
Northeast	771	683	552	112	19	12.4
Midwest	1,202	1,070	844	173	53	9.4
South	1,963	1,729	1,267	361	101	8.0
West	870	725	529	171	24	15.6
Energy Sources (more than one may apply)						
Electricity	4,616	4,037	3,127	796	114	5.1
Natural Gas	2,665	2,309	1,814	458	37	6.7
Fuel Oil	559	483	413	63	Q	14.9
District Heat	95	44	35	9	Q	23.1
District Chilled Water	28	11	9	Q	Q	33.2
Propane	337	305	240	57	Q	18.6
Any Other	163	144	125	Q	NC	16.8
Energy End Uses (more than one may apply)						
Heated Buildings	4,178	3,641	2,875	701	65	5.1
Air-Conditioned Buildings	3,502	3,079	2,393	641	45	5.7
Buildings with Water Heating	3,502	3,053	2,414	589	49	5.6
Buildings with Cooking	734	617	496	114	Q	8.3
Buildings with Manufacturing	121	108	83	21	Q	20.4

See footnotes at end of table.

Table A22. Occupancy of Nongovernment-Owned Buildings, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.7	0.7	0.8	1.3	2.1	
Climate Zone: 45-Year Average						
Fewer than 2,000 CDD and --						
More than 7,000 HDD	399	353	291	53	Q	19.0
5,500-7,000 HDD	1,134	1,001	812	151	39	14.1
4,000-5,499 HDD	1,077	962	733	187	43	18.7
Fewer than 4,000 HDD	1,101	939	686	211	42	18.9
More than 2,000 CDD and --						
Fewer than 4,000 HDD	1,095	951	670	216	64	12.3
Predominant Exterior Wall Material						
Masonry	3,115	2,707	2,015	570	122	5.6
Siding or Shingles	764	675	548	87	39	10.5
Metal Panels	745	669	525	115	29	11.4
Concrete Panels	87	75	42	29	Q	17.3
Window Glass	46	38	25	11	Q	28.4
Other	47	43	39	4	Q	30.1
Predominant Roof Material						
Built-Up	1,642	1,427	958	392	76	6.3
Shingles (Not Wood)	1,381	1,264	1,059	164	41	8.1
Metal Surfacing	1,037	921	697	165	59	9.5
Synthetic or Rubber	386	298	234	55	Q	9.9
Slate or Tile	155	131	104	22	Q	17.8
Concrete	37	30	21	7	Q	36.7
Other	167	137	119	13	Q	19.6
Floors						
One	3,007	2,626	1,945	542	140	7.0
Two	1,154	1,022	805	177	40	6.8
Three	446	393	313	66	Q	10.8
Four to Nine	186	154	122	30	Q	16.4
Ten or More	13	11	8	2	Q	21.5
Percent Window Glass						
25 or Less	4,193	3,702	2,802	716	185	5.3
26 to 50	490	407	315	83	Q	7.8
51 to 75	94	75	59	14	Q	21.4
76 to 100	29	22	17	Q	Q	27.2
Workers (main shift)						
Less than 5	2,718	2,465	1,856	419	191	6.8
5 to 9	895	792	628	162	Q	7.2
10 to 19	561	469	356	110	Q	8.9
20 to 49	405	312	232	79	Q	8.5
50 to 99	130	98	70	27	NC	12.7
100 to 249	64	46	33	13	Q	13.1
250 or More	31	25	18	7	Q	12.2
Weekly Operating Hours						
39 or Fewer	1,039	917	646	99	173	8.8
40 to 48	1,278	1,036	787	241	Q	7.0
49 to 60	1,004	934	723	201	Q	7.5
61 to 84	645	577	437	138	Q	7.1
85 to 167	478	450	354	96	NC	10.2
Open Continuously	362	292	245	43	Q	12.6

See footnotes at end of table.

Table A22. Occupancy of Nongovernment-Owned Buildings, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.7	0.7	0.8	1.3	2.1	
Additional Operating Hours for Equipment Use						
Heating and/or Cooling	1,223	1,069	893	173	Q	10.6
Lighting	633	575	448	121	Q	11.4
Heating and/or Cooling and Lighting	371	332	272	59	Q	16.1
No Additional Hours	3,320	2,894	2,124	581	188	6.5
Percent Vacant for at Least Three Months						
1-50 Percent	362	344	200	144	NC	7.6
51-99 Percent	97	90	58	31	Q	16.8
100 Percent	398	317	92	31	194	12.7
None	3,948	3,456	2,842	611	Q	5.7
Number of Establishments						
One	3,886	3,359	2,864	495	NC	6.1
2 to 5	517	485	257	228	NC	7.7
6 to 10	89	83	40	43	NC	15.5
11 to 20	49	48	21	26	NC	23.9
More than 20	36	35	10	25	NC	21.5
Currently Unoccupied	229	197	NC	NC	197	10.6
Energy-Related Space Functions (more than one may apply)						
Commercial Food Preparation	735	616	497	112	Q	8.3
Computer Room	223	176	138	36	Q	14.0
Rooms with Special Ventilation	236	183	149	33	Q	14.3
Activities with Large Amounts of Hot Water	203	178	145	31	Q	12.1
Multibuilding Facility						
Part of Multibuilding Facility	1,667	1,280	1,019	220	42	8.7
with Central Physical Plant	223	112	100	10	Q	21.5
No Central Physical Plant	1,444	1,169	919	210	40	8.8
Not on Multibuilding Facility	3,139	2,926	2,173	597	155	5.2
Percent of Floorspace Heated						
Not Heated	653	587	330	121	136	10.3
1 to 50	688	649	477	155	16	9.3
51 to 99	618	555	433	121	Q	8.3
100	2,846	2,416	1,953	419	45	6.2
Percent of Floorspace Cooled						
Not Cooled	1,304	1,127	799	176	151	8.1
1 to 50	1,176	1,040	789	236	16	7.9
51 to 99	658	580	457	122	Q	8.8
100	1,668	1,459	1,148	282	29	8.1
Percent Lit when Open						
Not Lit	413	377	161	39	177	12.6
1 to 50	881	805	617	183	Q	7.9
51 to 99	813	703	557	142	Q	7.3
100	2,699	2,322	1,858	452	Q	6.0

See footnotes at end of table.

Table A22. Occupancy of Nongovernment-Owned Buildings, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.6	0.7	0.7	1.2	2.8	
Heating Equipment (more than one may apply)						
Heat Pumps	449	398	318	70	Q	13.1
Furnaces	1,692	1,542	1,237	280	25	7.3
Individual Space Heaters	1,464	1,289	1,018	245	26	8.0
District Heat	93	44	34	9	Q	24.9
Boilers	624	477	404	68	Q	8.8
Packaged Heating Units	870	777	585	186	Q	10.5
Other	42	41	32	Q	Q	37.0
Heating Distribution Equipment (more than one may apply)						
Radiators or Baseboards	473	357	311	45	Q	11.1
Ducts for Heating	2,955	2,609	2,056	512	40	5.6
Heating Only	577	488	416	62	Q	13.0
Heating and Cooling	2,378	2,121	1,639	450	31	6.3
Variable Air-Volume System Used	210	162	133	28	Q	12.7
Fan Coil Units for Heating	99	65	46	15	Q	18.0
Heating Only	78	55	39	13	Q	20.6
Heating and Cooling	21	10	7	Q	NC	36.9
Individual Space Heaters	1,464	1,289	1,018	245	26	8.0
Other	181	157	128	27	Q	15.4
Cooling Equipment (more than one may apply)						
Residential-Type Central Air Conditioners	816	741	576	153	Q	11.3
Heat Pumps	454	404	326	69	Q	12.9
Individual Air Conditioners	1,023	889	711	168	Q	9.0
District Chilled Water	28	11	9	Q	Q	36.4
Central Chillers	142	90	72	16	Q	15.3
Packaged Air-Conditioning Units	1,459	1,306	991	302	13	8.4
Swamp Coolers	179	154	111	40	Q	29.6
Other	8	Q	Q	Q	NC	73.0
Cooling Distribution Equipment (more than one may apply)						
Ducts for Cooling	2,733	2,420	1,868	515	37	6.1
Cooling Only	355	299	229	64	Q	14.2
Heating and Cooling	2,378	2,121	1,639	450	31	6.3
Variable Air-Volume System Used	221	181	145	34	Q	12.3
Fan Coil Units for Cooling	56	37	29	8	NC	28.5
Cooling Only	35	28	21	Q	NC	37.8
Heating and Cooling	21	10	7	Q	NC	36.9
Individual Air Conditioners	1,023	889	711	168	Q	9.0
Other	111	93	66	26	Q	26.2
Lighting Equipment Types (more than one may apply)						
Incandescent	2,509	2,241	1,814	416	11	7.2
Standard Fluorescent	4,065	3,535	2,776	721	38	5.3
Compact Fluorescent	206	174	141	34	Q	14.2
High-Intensity Discharge	354	275	223	51	Q	11.0
Other	78	74	51	22	Q	23.7

See footnotes at end of table.

Table A22. Occupancy of Nongovernment-Owned Buildings, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.6	0.7	0.7	1.2	2.8	
Personal Computers and/or Computer Terminals						
1 to 4	1,269	1,133	884	249	Q	6.9
5 to 9	336	292	217	75	Q	9.9
10 to 19	216	161	113	48	Q	13.2
20 to 49	164	107	82	24	Q	17.1
50 to 99	59	35	25	9	NC	16.9
100 to 249	34	21	17	4	Q	22.5
250 or More	19	15	12	3	NC	24.2
Building Shell Conservation Features (more than one may apply)						
Roof or Ceiling Insulation	3,343	2,921	2,297	535	89	5.7
Wall Insulation	2,320	2,061	1,660	334	68	6.6
Storm or Multiple Glazing	1,680	1,496	1,209	242	45	7.3
Tinted, Reflective or Shading Glass	1,068	946	738	183	25	8.3
Exterior or Interior Shading or Awnings	1,853	1,590	1,220	337	32	7.1
Windows that Open	2,119	1,741	1,420	260	61	6.8
HVAC Conservation Features (more than one may apply)						
Variable Air-Volume System	250	196	157	36	Q	11.9
Economizer Cycle	414	337	262	70	Q	12.5
HVAC Maintenance	2,503	2,078	1,696	365	17	6.9
Lighting Conservation Features (more than one may apply)						
Specular Reflectors	574	482	366	110	Q	11.7
Natural Lighting Control Sensors	74	63	57	5	Q	23.0
Occupancy Sensors	59	46	39	7	NC	21.8
Time Clock	339	301	224	75	Q	11.8
Manual Dimmer Switches	413	380	326	53	Q	12.7
Other	78	54	41	10	Q	24.1
Energy Conservation Features (more than one may apply)						
Any Conservation Features	4,357	3,792	2,929	717	145	5.3
Building Shell	4,223	3,684	2,841	699	144	5.4
HVAC	2,604	2,172	1,763	387	21	6.5
Lighting	1,178	1,022	810	202	9	8.7
Other	264	219	192	24	Q	15.5
Off-Hour Equipment Reduction (more than one may apply)						
Heating	3,400	2,991	2,332	613	46	5.7
Cooling	2,872	2,550	1,960	557	34	6.1
Hot Water	578	505	395	82	28	10.4
Lighting	4,089	3,596	2,785	743	68	5.3
Other	547	495	372	117	Q	14.1

See footnotes at end of table.

Table A22. Occupancy of Nongovernment-Owned Buildings, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.6	0.7	0.7	1.2	2.8	
Energy Management Practices (more than one may apply)						
Energy Management and Control System	236	161	134	24	Q	12.9
Demand-Side Management Participation	315	229	199	27	Q	13.6
Energy Audit	521	399	334	64	Q	10.9
Building Energy Manager	49	32	27	3	Q	29.4
Demand-Side Management Programs (more than one may apply)						
Building Shell Program	36	23	18	Q	Q	31.8
HVAC Program	154	104	89	13	Q	16.9
Lighting Program	228	165	146	19	Q	16.7
Other DSM Programs	110	72	62	10	Q	21.0

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A23. Occupancy of Nongovernment-Owned Buildings, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	Floorspace of All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.7	0.7	0.7	1.4	2.1	
All Buildings	67,876	52,752	38,403	12,273	2,077	5.7
Building Floorspace (Square Feet)						
1,001 to 5,000	7,327	6,638	5,119	1,172	347	7.6
5,001 to 10,000	7,199	6,351	4,861	1,251	239	6.9
10,001 to 25,000	10,375	8,640	6,343	2,017	279	8.7
25,001 to 50,000	10,069	8,116	6,054	1,645	418	10.6
50,001 to 100,000	8,062	5,821	4,026	1,516	Q	12.3
100,001 to 200,000	9,678	6,820	5,178	1,527	Q	14.1
200,001 to 500,000	7,889	4,957	3,484	1,252	Q	16.5
Over 500,000	7,278	5,409	3,337	Q	Q	28.5
Principal Building Activity						
Education	8,470	1,508	1,402	Q	NC	14.6
Food Sales	757	757	584	173	NC	22.1
Food Service	1,491	1,334	1,076	258	NC	16.2
Health Care	1,763	1,242	1,139	Q	NC	16.7
Lodging	2,891	2,520	2,272	Q	NC	19.9
Mercantile and Service	12,402	11,319	7,797	3,522	NC	9.5
Office	12,319	10,665	7,848	2,816	NC	8.8
Parking Garage	1,652	923	828	Q	NC	42.2
Public Assembly	4,556	3,203	2,105	Q	NC	29.5
Public Order and Safety	820	Q	Q	Q	NC	35.4
Religious Worship	3,747	3,742	3,694	Q	NC	17.5
Warehouse and Storage	11,484	10,885	7,829	3,056	NC	12.6
Other	1,130	888	748	Q	NC	22.8
Vacant	4,396	3,713	1,029	607	2,077	15.5
Year Constructed						
1899 or Before	1,721	1,589	1,224	332	Q	21.2
1900 to 1919	3,608	2,704	1,978	486	Q	20.2
1920 to 1945	8,712	6,653	4,783	1,453	417	15.4
1946 to 1959	10,421	8,056	6,237	1,426	393	12.4
1960 to 1969	12,612	8,571	6,737	1,491	344	11.3
1970 to 1979	14,014	10,776	8,024	2,435	317	9.3
1980 to 1989	14,287	12,606	8,113	4,178	314	15.2
1990 to 1992	2,502	1,798	1,307	472	Q	18.5
Census Region						
Northeast	13,400	9,978	7,311	2,350	316	13.7
Midwest	17,280	13,127	10,421	2,211	495	9.4
South	24,577	19,480	13,503	5,177	800	10.4
West	12,619	10,167	7,168	2,534	465	9.5
Energy Sources (more than one may apply)						
Electricity	66,549	51,601	38,162	12,156	1,283	6.0
Natural Gas	45,097	34,151	26,187	7,466	498	6.5
Fuel Oil	13,218	9,420	7,627	1,600	Q	11.2
District Heat	5,339	2,893	2,541	350	Q	17.6
District Chilled Water	2,066	1,074	896	Q	Q	27.4
Propane	3,393	2,694	2,066	589	Q	18.1
Any Other	1,551	1,082	964	Q	NC	31.0
Energy End Uses (more than one may apply)						
Heated Buildings	61,996	47,518	35,293	11,404	821	6.1
Air-Conditioned Buildings	57,041	43,913	32,220	11,001	692	7.3
Buildings with Water Heating	58,479	44,627	33,171	10,804	651	6.6
Buildings with Cooking	23,065	15,001	10,893	4,018	Q	12.5
Buildings with Manufacturing	3,174	2,844	2,274	480	Q	19.7

See footnotes at end of table.

Table A23. Occupancy of Nongovernment-Owned Buildings, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Floorspace of All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.7	0.7	0.7	1.4	2.1	
Climate Zone: 45-Year Average						
Fewer than 2,000 CDD and --						
More than 7,000 HDD	5,623	4,274	3,265	856	Q	19.2
5,500-7,000 HDD	18,024	13,971	11,145	2,429	397	13.4
4,000-5,499 HDD	16,162	12,096	8,582	3,034	481	12.8
Fewer than 4,000 HDD	15,251	11,955	8,781	2,628	546	15.5
More than 2,000 CDD and --						
Fewer than 4,000 HDD	12,816	10,456	6,630	3,325	501	16.0
Predominant Exterior Wall Material						
Masonry	48,585	36,656	26,445	8,944	1,267	7.3
Siding or Shingles	3,873	3,519	2,935	394	190	12.3
Metal Panels	7,392	6,591	5,126	1,197	268	13.8
Concrete Panels	4,961	3,235	1,890	1,166	Q	18.1
Window Glass	2,028	1,736	1,202	380	Q	22.5
Other	1,037	1,015	804	192	Q	30.7
Predominant Roof Material						
Built-Up	30,257	23,928	15,568	7,450	910	9.2
Shingles (Not Wood)	10,570	9,166	7,642	1,212	313	11.3
Metal Surfacing	9,019	7,817	6,013	1,412	392	9.8
Synthetic or Rubber	11,702	7,271	5,401	1,647	Q	10.4
Slate or Tile	1,998	1,546	1,352	147	Q	19.2
Concrete	2,544	1,638	1,335	147	Q	30.9
Other	1,786	1,387	1,091	258	Q	24.3
Floors						
One	25,424	21,067	13,597	6,536	934	9.2
Two	18,025	14,328	11,140	2,697	491	8.3
Three	9,877	6,838	5,355	1,262	Q	11.2
Four to Nine	10,377	7,068	5,794	1,029	Q	14.5
Ten or More	4,173	3,451	2,517	749	Q	19.2
Percent Window Glass						
25 or Less	51,356	40,859	29,506	9,658	1,696	6.5
26 to 50	11,815	8,262	6,143	1,809	Q	10.2
51 to 75	3,206	2,316	1,762	514	Q	16.6
76 to 100	1,499	1,315	992	292	Q	27.6
Workers (main shift)						
Less than 5	17,944	15,976	10,973	3,044	1,959	12.2
5 to 9	7,524	6,524	5,015	1,486	Q	8.7
10 to 19	8,077	6,412	4,933	1,437	Q	12.5
20 to 49	10,556	7,501	5,586	1,880	Q	8.9
50 to 99	7,763	5,132	3,584	1,549	NC	16.8
100 to 249	7,378	4,593	3,110	1,472	Q	17.2
250 or More	8,633	6,614	5,202	1,405	Q	13.3
Weekly Operating Hours						
39 or Fewer	8,246	6,161	3,827	535	1,798	9.7
40 to 48	14,998	11,030	8,209	2,704	Q	9.0
49 to 60	14,046	12,019	9,168	2,796	Q	8.0
61 to 84	12,062	10,020	7,033	2,950	Q	11.0
85 to 167	8,467	6,238	4,707	1,531	NC	10.4
Open Continuously	10,057	7,284	5,459	Q	Q	18.5

See footnotes at end of table.

Table A23. Occupancy of Nongovernment-Owned Buildings, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Floorspace of All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.7	0.7	0.7	1.4	2.1	
Additional Operating Hours for Equipment Use						
Heating and/or Cooling	20,300	15,568	12,335	3,181	Q	7.8
Lighting	12,886	9,917	7,461	2,370	Q	10.9
Heating and/or Cooling and Lighting	8,717	6,341	5,001	1,297	Q	13.9
No Additional Hours	43,407	33,609	23,607	8,019	1,983	7.3
Percent Vacant for at Least Three Months						
1-50 Percent	12,420	10,916	6,897	4,018	NC	11.3
51-99 Percent	2,263	1,744	1,148	577	Q	21.8
100 Percent	4,109	3,083	679	380	2,023	13.1
None	49,085	37,010	29,679	7,297	Q	6.9
Number of Establishments						
One	47,997	35,556	29,992	5,565	NC	8.0
2 to 5	7,882	6,743	3,536	3,208	NC	11.8
6 to 10	2,562	2,423	1,015	1,408	NC	15.9
11 to 20	2,039	1,806	954	852	NC	22.6
More than 20	4,938	4,147	2,907	1,240	NC	20.1
Currently Unoccupied	2,457	2,077	NC	NC	2,077	12.6
Energy-Related Space Functions (more than one may apply)						
Commercial Food Preparation	22,166	14,098	10,890	3,119	Q	9.1
Computer Room	14,199	10,353	7,652	2,599	Q	11.6
Rooms with Special Ventilation	8,042	4,764	3,845	866	Q	12.7
Activities with Large Amounts of Hot Water	6,862	5,055	4,101	931	Q	13.5
Multibuilding Facility						
Part of Multibuilding Facility	31,564	21,809	15,994	5,231	584	10.5
with Central Physical Plant	8,395	4,120	3,800	306	Q	16.3
No Central Physical Plant	23,170	17,690	12,194	4,925	570	11.5
Not on Multibuilding Facility	36,312	30,943	22,409	7,041	1,492	5.4
Percent of Floorspace Heated						
Not Heated	6,211	5,465	3,193	948	1,324	14.8
1 to 50	11,195	9,251	6,610	2,456	185	14.4
51 to 99	10,211	8,314	6,130	2,152	Q	10.4
100	40,260	29,722	22,470	6,717	535	7.9
Percent of Floorspace Cooled						
Not Cooled	10,835	8,839	6,183	1,271	1,385	10.1
1 to 50	21,715	16,415	12,079	3,949	387	9.6
51 to 99	13,872	10,209	7,727	2,444	Q	10.1
100	21,454	17,290	12,414	4,608	267	11.4
Percent Lit when Open						
Not Lit	3,280	2,810	770	231	1,810	14.1
1 to 50	9,980	8,868	7,015	1,770	Q	10.3
51 to 99	14,224	11,248	8,128	3,057	Q	13.8
100	40,393	29,827	22,490	7,215	Q	6.8

See footnotes at end of table.

Table A23. Occupancy of Nongovernment-Owned Buildings, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Floorspace of All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.6	0.7	0.6	1.5	2.7	
Heating Equipment (more than one may apply)						
Heat Pumps	8,269	7,111	5,146	1,865	Q	12.8
Furnaces	16,909	14,594	10,985	3,360	249	8.7
Individual Space Heaters	22,380	17,823	13,610	3,795	419	8.5
District Heat	5,225	2,840	2,491	347	Q	19.0
Boilers	20,664	13,309	10,172	2,993	Q	13.5
Packaged Heating Units	16,000	13,425	9,074	4,257	Q	9.9
Other	903	760	540	Q	Q	33.6
Heating Distribution Equipment (more than one may apply)						
Radiators or Baseboards	13,263	7,717	6,572	1,078	Q	10.5
Ducts for Heating	45,422	35,535	25,751	9,315	469	6.8
Heating Only	5,950	3,756	3,210	446	Q	16.3
Heating and Cooling	39,472	31,779	22,542	8,869	368	7.4
Variable Air-Volume System Used	11,528	8,140	5,915	2,185	Q	21.5
Fan Coil Units for Heating	5,474	3,453	2,661	714	Q	18.1
Heating Only	3,569	2,344	1,781	486	Q	23.3
Heating and Cooling	1,906	1,109	880	Q	NC	26.9
Individual Space Heaters	22,380	17,823	13,610	3,795	419	8.5
Other	3,310	2,571	1,979	583	Q	22.1
Cooling Equipment (more than one may apply)						
Residential-Type Central Air Conditioners	9,021	7,428	5,783	1,591	Q	11.2
Heat Pumps	8,406	7,370	5,361	1,878	Q	12.5
Individual Air Conditioners	17,979	12,747	9,416	3,194	Q	16.1
District Chilled Water	2,066	1,074	896	Q	Q	30.7
Central Chillers	12,991	8,791	6,524	2,091	Q	20.5
Packaged Air-Conditioning Units	27,830	22,455	15,947	6,239	269	7.7
Swamp Coolers	2,085	1,651	1,049	582	Q	26.5
Other	268	Q	Q	Q	NC	64.0
Cooling Distribution Equipment (more than one may apply)						
Ducts for Cooling	47,755	37,741	27,003	10,124	615	7.8
Cooling Only	8,283	5,962	4,461	1,255	Q	12.9
Heating and Cooling	39,472	31,779	22,542	8,869	368	7.4
Variable Air-Volume System Used	12,430	9,296	6,695	2,482	Q	18.7
Fan Coil Units for Cooling	3,875	2,425	2,066	359	NC	25.0
Cooling Only	1,969	1,317	1,186	Q	NC	43.2
Heating and Cooling	1,906	1,109	880	Q	NC	26.9
Individual Air Conditioners	17,979	12,747	9,416	3,194	Q	16.1
Other	2,919	2,319	1,723	573	Q	25.7
Lighting Equipment Types (more than one may apply)						
Incandescent	39,221	30,456	24,018	6,198	240	7.4
Standard Fluorescent	62,074	47,490	35,290	11,653	548	6.7
Compact Fluorescent	8,336	6,105	5,089	1,016	Q	13.7
High-Intensity Discharge	17,570	11,374	8,747	2,571	Q	12.0
Other	1,612	1,496	1,052	427	Q	26.3

See footnotes at end of table.

Table A23. Occupancy of Nongovernment-Owned Buildings, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Floorspace of All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.6	0.7	0.6	1.5	2.7	
Personal Computers and/or Computer Terminals						
1 to 4	13,355	11,796	9,027	2,765	Q	8.4
5 to 9	5,970	5,156	3,604	1,553	Q	12.1
10 to 19	6,236	4,516	3,137	1,379	Q	17.8
20 to 49	7,439	4,946	3,515	1,401	Q	17.7
50 to 99	4,908	2,600	1,869	730	NC	18.4
100 to 249	4,220	2,252	1,812	434	Q	19.9
250 or More	5,569	4,123	3,298	825	NC	16.9
Building Shell Conservation Features (more than one may apply)						
Roof or Ceiling Insulation	50,311	38,288	28,012	9,262	1,014	6.5
Wall Insulation	33,240	27,472	20,366	6,417	688	7.9
Storm or Multiple Glazing	29,684	23,696	17,450	5,788	458	9.3
Tinted, Reflective or Shading Glass	25,396	20,146	14,347	5,371	428	11.3
Exterior or Interior Shading or Awnings	34,071	26,322	18,809	6,927	586	8.5
Windows that Open	28,937	19,907	16,151	3,174	582	7.7
HVAC Conservation Features (more than one may apply)						
Variable Air-Volume System	13,970	9,961	7,331	2,508	Q	18.8
Economizer Cycle	18,313	12,921	9,150	3,644	Q	13.9
HVAC Maintenance	49,173	35,994	27,164	8,415	415	8.2
Lighting Conservation Features (more than one may apply)						
Specular Reflectors	15,241	11,234	8,385	2,694	Q	10.1
Natural Lighting Control Sensors	3,072	2,392	1,920	385	Q	18.4
Occupancy Sensors	3,629	2,553	2,147	406	NC	18.8
Time Clock	12,104	10,189	6,876	3,156	Q	17.6
Manual Dimmer Switches	12,329	9,724	8,102	1,568	Q	12.1
Other	2,596	1,607	1,225	341	Q	18.1
Energy Conservation Features (more than one may apply)						
Any Conservation Features	64,403	49,630	36,377	11,630	1,624	6.2
Building Shell	62,056	47,889	35,043	11,369	1,477	6.1
HVAC	50,281	37,005	27,762	8,755	488	7.9
Lighting	29,453	22,860	16,990	5,551	319	10.7
Other	5,952	4,398	3,763	536	Q	13.7
Off-Hour Equipment Reduction (more than one may apply)						
Heating	46,248	35,676	26,466	8,684	526	6.0
Cooling	42,768	33,041	24,214	8,430	398	6.6
Hot Water	9,966	7,052	5,029	1,765	258	10.4
Lighting	54,944	43,036	31,884	10,338	814	5.4
Other	7,996	6,228	4,231	1,939	Q	17.7

See footnotes at end of table.

Table A23. Occupancy of Nongovernment-Owned Buildings, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Floorspace of All Nongovernment-Owned Buildings				RSE Row Factor
		All Buildings	Owner Occupied	Nonowner Occupied	Unoccupied	
RSE Column Factor:	0.6	0.7	0.6	1.5	2.7	
Energy Management Practices (more than one may apply)						
Energy Management and Control System	14,320	9,447	7,105	2,307	Q	18.4
Demand-Side Management Participation	11,310	7,030	5,883	1,105	Q	11.3
Energy Audit	14,779	10,274	8,475	1,753	Q	10.2
Building Energy Manager	2,311	1,534	1,398	129	Q	27.7
Demand-Side Management Programs (more than one may apply)						
Building Shell Program	1,079	712	611	Q	Q	29.8
HVAC Program	6,370	4,120	3,407	701	Q	14.2
Lighting Program	8,805	5,492	4,691	772	Q	13.3
Other DSM Programs	6,176	3,682	2,999	682	Q	15.7

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A24. Percent Vacant for at Least Three Months, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Percent Vacant for at Least Three Months				Total Floorspace	Percent Vacant for at Least Three Months				
		None	1 to 50	51 to 99	100		None	1 to 50	51 to 99	100	
RSE Column Factor:	0.5	0.5	1.1	2.0	1.6	0.5	0.6	1.2	2.3	1.6	
All Buildings	4,806	3,948	362	97	398	67,876	49,085	12,420	2,263	4,109	6.8
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	2,281	103	45	253	7,327	6,175	328	141	683	10.1
5,001 to 10,000	975	790	95	24	65	7,199	5,841	710	177	471	9.5
10,001 to 25,000	647	503	82	12	50	10,375	8,055	1,349	183	788	11.5
25,001 to 50,000	280	216	36	8	21	10,069	7,784	1,270	283	733	13.3
50,001 to 100,000	116	85	21	4	6	8,062	5,939	1,441	269	412	13.8
100,001 to 200,000	71	51	14	Q	3	9,678	6,867	2,011	Q	362	19.0
200,001 to 500,000	26	17	7	1	1	7,889	5,157	2,188	229	315	21.0
Over 500,000	9	5	3	Q	Q	7,278	3,267	3,122	Q	Q	37.2
Principal Building Activity											
Education	301	253	Q	Q	36	8,470	7,489	Q	Q	540	20.7
Food Sales	130	128	Q	NC	NC	757	753	Q	NC	NC	37.6
Food Service	260	242	Q	NC	Q	1,491	1,256	Q	NC	Q	24.3
Health Care	63	55	7	Q	Q	1,763	1,434	315	Q	Q	35.6
Lodging	154	124	12	Q	Q	2,891	2,526	219	Q	Q	25.4
Mercantile and Service	1,272	1,161	81	Q	19	12,402	8,697	3,471	Q	100	13.5
Office	749	584	142	15	8	12,319	6,722	5,155	356	86	12.9
Parking Garage	24	22	Q	Q	Q	1,652	1,465	Q	Q	Q	51.9
Public Assembly	278	236	7	Q	27	4,556	3,789	480	Q	134	25.2
Public Order and Safety	60	59	Q	NC	Q	820	776	Q	NC	Q	47.5
Religious Worship	366	344	Q	Q	Q	3,747	3,625	Q	Q	Q	28.0
Warehouse and Storage	761	674	52	Q	25	11,484	9,519	1,464	Q	331	16.2
Other	69	56	Q	Q	Q	1,130	926	Q	Q	Q	35.5
Vacant	319	Q	29	42	240	4,396	Q	433	1,226	2,630	19.1
Year Constructed											
1899 or Before	169	117	32	Q	Q	1,721	1,073	398	Q	Q	24.3
1900 to 1919	255	188	33	Q	20	3,608	2,035	801	Q	413	21.7
1920 to 1945	724	572	53	20	80	8,712	6,435	1,108	485	684	15.4
1946 to 1959	880	746	36	15	83	10,421	8,304	1,272	189	656	13.9
1960 to 1969	783	668	30	9	76	12,612	9,438	2,158	227	788	14.4
1970 to 1979	982	841	65	9	67	14,014	10,377	2,598	344	694	13.4
1980 to 1989	884	719	100	18	46	14,287	9,855	3,515	425	491	14.4
1990 to 1992	128	97	13	Q	16	2,502	1,568	569	Q	269	25.2
Census Region											
Northeast	771	633	86	8	44	13,400	9,120	3,021	508	752	14.3
Midwest	1,202	990	87	24	101	17,280	12,392	3,501	441	946	13.0
South	1,963	1,625	114	47	177	24,577	18,799	3,609	792	1,377	10.2
West	870	700	76	18	76	12,619	8,775	2,289	521	1,034	15.8
Energy Sources (more than one may apply)											
Electricity	4,616	3,881	353	92	289	66,549	48,799	12,390	2,246	3,114	7.0
Natural Gas	2,665	2,284	207	59	114	45,097	32,937	8,826	1,788	1,546	9.0
Fuel Oil	559	487	53	5	15	13,218	8,753	3,586	460	420	16.2
District Heat	95	81	8	2	Q	5,339	3,550	1,234	270	Q	23.8
District Chilled Water	28	22	4	Q	Q	2,066	1,320	516	Q	Q	38.8
Propane	337	294	17	Q	25	3,393	2,711	495	Q	174	27.1
Any Other	163	145	Q	Q	Q	1,551	1,280	Q	Q	Q	29.4
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	3,564	329	85	200	61,996	45,565	11,905	2,122	2,405	7.3
Air-Conditioned Buildings	3,502	2,978	307	70	147	57,041	41,320	11,837	2,009	1,875	7.7
Buildings with Water Heating	3,502	2,975	306	67	154	58,479	42,707	11,837	1,961	1,975	7.7
Buildings with Cooking	734	627	69	10	29	23,065	15,836	5,943	733	553	13.5
Buildings with Manufacturing	121	104	7	Q	Q	3,174	2,088	750	Q	Q	27.1

See footnotes at end of table.

Table A24. Percent Vacant for at Least Three Months, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Percent Vacant for at Least Three Months				Total Floorspace	Percent Vacant for at Least Three Months				
		None	1 to 50	51 to 99	100		None	1 to 50	51 to 99	100	
RSE Column Factor:	0.5	0.5	1.1	2.0	1.6	0.5	0.6	1.2	2.3	1.6	
Ownership and Occupancy											
Nongovernment Owned	4,206	3,456	344	90	317	52,752	37,010	10,916	1,744	3,083	6.7
Owner Occupied	3,192	2,842	200	58	92	38,403	29,679	6,897	1,148	679	8.1
Nonowner Occupied	817	611	144	31	31	12,273	7,297	4,018	577	380	12.5
Unoccupied	197	Q	NC	Q	194	2,077	Q	NC	Q	2,023	30.7
Government Owned	599	493	18	7	81	15,124	12,075	1,504	Q	1,025	16.7
Percent of Floorspace Heated											
Not Heated	653	402	36	Q	202	6,211	3,636	559	Q	1,792	17.5
1 to 50	688	531	62	45	49	11,195	7,458	2,112	1,020	606	14.0
51 to 99	618	516	84	7	11	10,211	6,887	3,021	210	94	14.5
100	2,846	2,499	179	32	136	40,260	31,105	6,729	809	1,617	8.9
Percent of Floorspace Cooled											
Not Cooled	1,304	970	55	27	251	10,835	7,765	583	253	2,233	12.3
1 to 50	1,176	980	98	40	58	21,715	16,406	3,003	1,183	1,124	10.7
51 to 99	658	559	84	7	Q	13,872	8,727	4,844	196	105	15.0
100	1,668	1,439	125	23	81	21,454	16,187	3,990	630	646	11.6
Percent Lit when Open											
Not Lit	413	163	Q	Q	226	3,280	740	Q	Q	2,418	20.2
1 to 50	881	694	97	59	31	9,980	6,886	1,290	1,460	344	12.3
51 to 99	813	678	102	12	21	14,224	9,240	4,459	259	265	13.9
100	2,699	2,413	148	18	120	40,393	32,219	6,601	492	1,081	9.9
Lighting Conservation Features (more than one may apply)											
Specular Reflectors	574	478	65	6	24	15,241	10,009	4,331	430	470	14.4
Natural Lighting Control Sensors	74	62	12	Q	Q	3,072	1,826	1,093	Q	Q	26.0
Occupancy Sensors	59	46	10	Q	Q	3,629	2,496	864	Q	Q	25.7
Time Clock	339	267	53	11	8	12,104	6,991	4,293	539	282	17.8
Manual Dimmer Switches	413	354	45	10	5	12,329	8,072	3,723	400	134	16.2
Other	78	60	10	Q	Q	2,596	1,918	429	Q	Q	25.7
Energy Conservation Features (more than one may apply)											
Any Conservation Features	4,357	3,617	336	86	318	64,403	46,647	12,146	2,165	3,445	7.4
Building Shell	4,223	3,498	329	84	312	62,056	44,651	12,027	2,097	3,282	7.4
HVAC	2,604	2,228	234	41	101	50,281	36,157	10,649	1,774	1,701	8.6
Lighting	1,178	991	132	25	30	29,453	20,140	7,548	1,030	734	10.9
Other	264	232	21	Q	Q	5,952	4,621	957	Q	166	20.2
Demand-Side Management Programs (more than one may apply)											
Building Shell Program	36	29	5	Q	Q	1,079	725	301	Q	Q	41.0
HVAC Program	154	121	22	6	Q	6,370	4,271	1,849	184	Q	20.6
Lighting Program	228	193	27	5	Q	8,805	5,918	2,458	317	Q	20.4
Other DSM Programs	110	90	16	Q	Q	6,176	4,110	1,917	Q	Q	27.0

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A25. Multibuilding Facility, Number of Buildings and Floorspace 1992

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Part of Multibuilding Facility		All Buildings	Part of Multibuilding Facility		
		All Buildings in Multibuilding Facilities	Buildings in Multibuilding Facilities with Central Physical Plant		All Buildings in Multibuilding Facilities	Buildings in Multibuilding Facilities with Central Physical Plant	
RSE Column Factor:	0.6	0.8	1.7	0.7	1.0	1.7	
All Buildings	4,806	1,667	223	67,876	31,564	8,395	6.0
Building Floorspace (Square Feet)							
1,001 to 5,000	2,681	858	76	7,327	2,315	194	9.6
5,001 to 10,000	975	334	38	7,199	2,447	274	7.9
10,001 to 25,000	647	244	47	10,375	3,834	732	8.4
25,001 to 50,000	280	123	32	10,069	4,399	1,132	10.2
50,001 to 100,000	116	49	11	8,062	3,354	749	10.6
100,001 to 200,000	71	37	10	9,678	5,083	1,292	13.9
200,001 to 500,000	26	15	7	7,889	4,665	2,089	13.2
Over 500,000	9	7	2	7,278	5,467	1,933	26.7
Principal Building Activity							
Education	301	217	54	8,470	5,115	1,458	11.6
Food Sales	130	Q	NC	757	Q	NC	29.8
Food Service	260	47	Q	1,491	415	Q	19.8
Health Care	63	27	9	1,763	1,156	766	16.0
Lodging	154	107	15	2,891	1,578	729	15.3
Mercantile and Service	1,272	281	20	12,402	4,691	Q	15.1
Office	749	236	44	12,319	4,978	1,882	10.6
Parking	24	12	2	1,652	1,155	Q	33.7
Public Assembly	278	102	19	4,556	2,717	500	19.3
Public Order and Safety	60	18	Q	820	427	Q	31.5
Religious Worship	366	86	Q	3,747	930	Q	21.4
Warehouse	761	396	28	11,484	5,963	611	13.0
Other	69	44	7	1,130	750	348	22.4
Vacant	319	84	7	4,396	1,613	448	18.2
Year Constructed							
1899 or Before	169	47	3	1,721	498	107	21.2
1900 to 1919	255	61	14	3,608	979	214	19.1
1920 to 1945	724	193	26	8,712	3,567	1,291	14.0
1946 to 1959	880	298	61	10,421	4,589	1,149	11.3
1960 to 1969	783	275	42	12,612	6,429	2,364	11.0
1970 to 1979	982	372	28	14,014	6,761	1,770	10.4
1980 to 1989	884	355	35	14,287	7,368	1,086	11.6
1990 to 1992	128	66	14	2,502	1,374	414	17.7
Census Region							
Northeast	771	254	33	13,400	5,614	1,954	12.1
Midwest	1,202	364	50	17,280	7,445	2,697	11.7
South	1,963	698	89	24,577	12,426	2,280	10.4
West	870	350	51	12,619	6,080	1,463	11.5
Energy Sources (more than one may apply)							
Electricity	4,616	1,587	220	66,549	31,027	8,340	6.1
Natural Gas	2,665	767	105	45,097	19,999	5,381	7.2
Fuel Oil	559	181	32	13,218	6,497	2,170	10.8
District Heat	95	83	82	5,339	4,506	4,253	11.6
District Chilled Water	28	27	27	2,066	1,784	1,710	17.3
Propane	337	121	5	3,393	1,562	277	20.0
Any Other	163	53	Q	1,551	592	Q	24.2

See footnotes at end of table.

Table A25. Multibuilding Facility, Number of Buildings and Floorspace 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Part of Multibuilding Facility: All Buildings in Multibuilding Facilities	Part of Multibuilding Facility: Buildings in Multibuilding Facilities with Central Physical Plant	All Buildings	Part of Multibuilding Facility: All Buildings in Multibuilding Facilities	Part of Multibuilding Facility: Buildings in Multibuilding Facilities with Central Physical Plant	
RSE Column Factor:	0.6	0.8	1.7	0.7	1.0	1.7	
Energy End Uses (more than one may apply)							
Heated Buildings	4,178	1,338	208	61,996	28,365	8,088	6.3
Air-Conditioned Buildings	3,502	1,090	174	57,041	26,158	7,402	6.8
Buildings with Water Heating	3,502	1,070	175	58,479	26,766	7,895	6.5
Buildings with Cooking	734	199	33	23,065	11,516	3,526	10.5
Buildings with Manufacturing	121	45	9	3,174	1,523	587	20.2
Workers (main shift)							
Less than 5	2,718	931	84	17,944	7,519	1,201	11.1
5 to 9	895	279	32	7,524	2,769	489	10.9
10 to 19	561	194	46	8,077	3,648	908	12.3
20 to 49	405	163	34	10,556	4,574	1,010	9.8
50 to 99	130	50	12	7,763	3,306	900	11.9
100 to 249	64	34	7	7,378	4,706	1,326	13.1
250 or More	31	17	8	8,633	5,042	2,560	12.8
Weekly Operating Hours							
39 or Fewer	1,039	336	30	8,246	2,970	594	12.5
40 to 48	1,278	508	96	14,998	7,118	1,428	8.8
49 to 60	1,004	298	25	14,046	5,417	1,037	10.3
61 to 84	645	206	17	12,062	5,526	1,070	11.3
85 to 167	478	118	15	8,467	3,878	1,437	14.6
Open Continuously	362	201	39	10,057	6,655	2,830	12.4
Ownership and Occupancy							
Nongovernment Owned	4,206	1,280	112	52,752	21,809	4,120	7.0
Owner Occupied	3,192	1,019	100	38,403	15,994	3,800	6.8
Nonowner Occupied	817	220	10	12,273	5,231	306	14.9
Unoccupied	197	42	Q	2,077	584	Q	26.6
Government Owned	599	386	111	15,124	9,755	4,275	9.9
Principal Facility Activity							
Education							
Primary or Secondary	211	211	52	4,046	4,046	859	13.5
College	48	48	29	2,485	2,485	1,732	18.2
Other	26	26	Q	364	364	Q	30.8
Retail Sales and Service							
Shopping Center/Mall	55	55	Q	2,352	2,352	Q	25.7
Automotive Sales and Service	79	79	Q	667	667	Q	32.4
Other	231	231	Q	1,798	1,798	Q	21.3
Other							
Office	140	140	13	3,931	3,931	1,162	17.3
Warehouse	229	229	Q	4,992	4,992	Q	20.9
Industrial/Manufacturing	119	119	47	2,124	2,124	1,206	19.0
Hospital or Other Health Service	56	56	20	2,193	2,193	1,444	16.4
Religious Activities	153	153	Q	1,397	1,397	Q	20.8
Hotel/Motel	77	77	Q	802	802	Q	27.1
Amusement or Recreation	92	92	7	Q	Q	Q	33.4
Transportation	35	35	Q	1,103	1,103	Q	34.6
Residential	Q	Q	Q	Q	Q	Q	51.6
Agricultural	30	30	NC	160	160	NC	43.8

See footnotes at end of table.

Table A25. Multibuilding Facility, Number of Buildings and Floorspace 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
		Part of Multibuilding Facility			Part of Multibuilding Facility		
	All Buildings	All Buildings in Multibuilding Facilities	Buildings in Multibuilding Facilities with Central Physical Plant	All Buildings	All Buildings in Multibuilding Facilities	Buildings in Multibuilding Facilities with Central Physical Plant	
RSE Column Factor:	0.6	0.8	1.7	0.7	1.0	1.7	
Central Plant that Produces (more than one may apply)							
District Hot Water	129	129	129	4,598	4,598	4,598	14.2
District Steam	125	125	125	5,534	5,534	5,534	14.0
District Chilled Water	91	91	91	4,191	4,191	4,191	15.3
Electricity	65	65	65	1,903	1,903	1,903	25.6
Demand-Side Management Programs (more than one may apply)							
Building Shell Program	36	21	5	1,079	478	169	26.0
HVAC Program	154	74	23	6,370	3,541	1,623	14.7
Lighting Program	228	96	27	8,805	4,630	2,262	14.5
Other DSM Programs	110	49	22	6,176	3,379	1,945	16.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • *To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors.* • *See Glossary for* explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A26. Energy-Related Space Functions, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Space Functions (more than one may apply): Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	RSE Row Factor
RSE Column Factor:	0.5	0.9	1.2	1.3	1.4	
All Buildings	4,806	735	223	236	203	6.4
Building Floorspace (Square Feet)						
1,001 to 5,000	2,681	323	37	80	74	11.8
5,001 to 10,000	975	136	31	52	29	13.9
10,001 to 25,000	647	114	46	44	47	11.1
25,001 to 50,000	280	70	41	25	26	12.3
50,001 to 100,000	116	44	31	17	12	12.0
100,001 to 200,000	71	29	24	11	9	13.6
200,001 to 500,000	26	15	10	6	6	14.6
Over 500,000	9	5	4	2	1	19.6
Principal Building Activity						
Education	301	98	32	28	12	13.2
Food Sales	130	40	Q	Q	Q	29.4
Food Service	260	246	Q	Q	18	17.2
Health Care	63	8	5	11	9	27.1
Lodging	154	37	6	Q	50	22.1
Mercantile and Service	1,272	89	39	54	62	12.6
Office	749	30	81	35	14	14.2
Parking Garage	24	Q	Q	Q	Q	53.9
Public Assembly	278	81	4	18	18	18.3
Public Order and Safety	60	Q	Q	Q	Q	45.3
Religious Worship	366	68	Q	Q	Q	27.7
Warehouse and Storage	761	13	20	20	Q	24.2
Other	69	Q	11	16	7	31.0
Vacant	319	18	5	Q	Q	31.3
Year Constructed						
1899 or Before	169	41	Q	Q	Q	31.2
1900 to 1919	255	42	12	Q	Q	25.3
1920 to 1945	724	101	26	25	25	15.3
1946 to 1959	880	134	33	39	42	12.0
1960 to 1969	783	122	43	38	45	12.7
1970 to 1979	982	155	44	54	44	11.8
1980 to 1989	884	120	51	51	35	11.3
1990 to 1992	128	21	6	10	5	22.3
Census Region						
Northeast	771	142	50	45	37	12.7
Midwest	1,202	203	55	61	53	11.1
South	1,963	257	67	77	71	11.4
West	870	134	51	52	41	15.7
Energy Sources (more than one may apply)						
Electricity	4,616	735	223	236	203	6.4
Natural Gas	2,665	533	149	162	154	7.5
Fuel Oil	559	101	51	43	23	13.4
District Heat	95	19	11	17	6	18.1
District Chilled Water	28	8	5	3	2	28.5
Propane	337	84	18	22	29	21.6
Any Other	163	13	Q	Q	Q	30.1

See footnotes at end of table.

Table A26. Energy-Related Space Functions, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Space Functions (more than one may apply): Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	RSE Row Factor
RSE Column Factor:	0.5	0.9	1.2	1.3	1.4	
Energy End Uses (more than one may apply)						
Heated Buildings	4,178	714	222	229	194	6.4
Air-Conditioned Buildings	3,502	661	223	215	164	6.6
Buildings with Water Heating	3,502	729	211	219	202	6.5
Buildings with Cooking	734	732	53	70	80	8.2
Buildings with Manufacturing	121	13	16	19	8	26.7
Predominant Exterior Wall Materials						
Masonry	3,115	544	159	167	169	7.1
Siding or Shingles	764	129	11	18	20	19.8
Metal Panels	745	31	23	34	Q	20.5
Concrete Panels	87	15	15	10	7	20.2
Window Glass	46	15	9	Q	Q	35.2
Other	47	1	5	Q	Q	47.5
Predominant Roof Materials						
Built-Up	1,642	283	102	92	72	8.2
Shingles (Not Wood)	1,381	234	29	51	59	11.7
Metal Surfacing	1,037	76	25	41	20	17.9
Synthetic or Rubber	386	80	51	37	36	12.5
Slate or Tile	155	22	7	8	10	24.4
Concrete	37	7	2	Q	Q	45.6
Other	167	33	7	Q	Q	30.3
Floors						
One	3,007	379	79	123	93	9.4
Two	1,154	191	61	61	62	9.8
Three	446	103	43	29	31	13.2
Four to Nine	186	54	34	21	15	17.1
Ten or More	13	7	6	2	3	21.0
Workers (main shift)						
Less than 5	2,718	260	30	75	71	12.2
5 to 9	895	156	32	50	33	13.5
10 to 19	561	126	26	38	39	13.1
20 to 49	405	105	56	38	32	11.4
50 to 99	130	43	30	19	17	13.0
100 to 249	64	26	29	10	8	13.5
250 or More	31	18	20	6	4	12.0
Weekly Operating Hours						
39 or Fewer	1,039	116	13	13	Q	19.8
40 to 48	1,278	90	76	76	21	13.9
49 to 60	1,004	83	46	46	21	12.6
61 to 84	645	149	44	34	43	11.6
85 to 167	478	220	20	41	47	12.6
Open Continuously	362	77	23	27	62	13.2
Ownership and Occupancy						
Nongovernment Owned	4,206	616	176	183	178	7.0
Owner Occupied	3,192	497	138	149	145	7.4
Nonowner Occupied	817	112	36	33	31	14.9
Unoccupied	197	Q	Q	Q	Q	44.6
Government Owned	599	119	47	53	25	12.6
Multibuilding Facility						
Part of Multibuilding Facility	1,667	198	107	101	84	9.8
with Central Physical Plant	223	33	19	25	16	16.1
No Central Physical Plant	1,444	165	89	76	68	11.3
Not on Multibuilding Facility	3,139	537	115	135	119	7.5

See footnotes at end of table.

Table A26. Energy-Related Space Functions, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Space Functions (more than one may apply): Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	RSE Row Factor
RSE Column Factor:	0.5	0.9	1.2	1.3	1.4	
Percent of Floorspace Heated						
Not Heated	653	21	Q	Q	Q	29.9
1 to 50	688	58	34	30	18	15.5
51 to 99	618	135	38	41	32	13.6
100	2,846	521	151	158	142	7.0
Percent of Floorspace Cooled						
Not Cooled	1,304	75	NC	21	39	16.4
1 to 50	1,176	158	73	84	47	10.4
51 to 99	658	178	56	45	45	11.0
100	1,668	324	93	86	72	9.1
Heating Equipment (more than one may apply)						
Heat Pumps	449	79	22	28	22	17.3
Furnaces	1,692	259	63	75	66	10.2
Individual Space Heaters	1,464	180	70	77	76	9.6
District Heat	93	18	11	17	6	18.3
Boilers	624	176	78	58	58	8.9
Packaged Heating Units	870	217	66	64	51	11.7
Other	42	18	6	Q	Q	36.0
Cooling Equipment (more than one may apply)						
Residential-Type Central Air Conditioners	816	118	43	37	28	15.0
Heat Pumps	454	80	25	28	20	17.2
Individual Air Conditioners	1,023	188	70	54	57	10.3
District Chilled Water	28	8	5	3	2	28.5
Central Chillers	142	52	37	25	16	13.5
Packaged Air-Conditioning Units	1,459	345	127	112	84	8.4
Swamp Coolers	179	38	5	15	15	30.8
Other	8	Q	Q	Q	Q	76.4
Personal Computers and/or Computer Terminals						
1 to 4	1,269	179	53	75	61	10.7
5 to 9	336	44	31	24	16	14.3
10 to 19	216	34	29	21	13	14.6
20 to 49	164	41	42	20	12	16.6
50 to 99	59	21	24	12	4	15.2
100 to 249	34	11	19	8	3	14.9
250 or More	19	11	13	4	3	18.7
Energy Conservation Features (more than one may apply)						
Any Conservation Features	4,357	728	223	235	197	6.5
Building Shell	4,223	709	221	229	193	6.5
HVAC	2,604	545	200	177	139	6.8
Lighting	1,178	275	105	96	73	8.8
Other	264	52	20	26	20	17.0
Energy Management Practices (more than one may apply)						
Energy Management and Control System	236	78	49	30	22	12.4
Demand-Side Management Participation	315	95	41	31	22	12.7
Energy Audit	521	131	55	35	32	11.0
Building Energy Manager	49	12	7	4	6	24.7

See footnotes at end of table.

Table A26. Energy-Related Space Functions, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Space Functions (more than one may apply)				RSE Row Factor
		Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	
RSE Column Factor:	0.5	0.9	1.2	1.3	1.4	
Demand-Side Management Programs (more than one may apply)						
Building Shell Program	36	8	4	6	Q	33.4
HVAC Program	154	48	22	21	13	15.8
Lighting Program	228	67	34	22	14	16.0
Other DSM Programs	110	41	18	19	12	18.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A27. Energy-Related Space Functions, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	Space Functions (more than one may apply): Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	RSE Row Factor
RSE Column Factor:	0.6	0.9	1.1	1.2	1.4	
All Buildings	67,876	22,166	14,199	8,042	6,862	6.3
Building Floorspace (Square Feet)						
1,001 to 5,000	7,327	911	118	241	194	12.3
5,001 to 10,000	7,199	994	231	394	223	13.6
10,001 to 25,000	10,375	1,848	756	742	796	11.2
25,001 to 50,000	10,069	2,627	1,534	851	1,002	12.8
50,001 to 100,000	8,062	3,110	2,127	1,095	815	11.7
100,001 to 200,000	9,678	4,062	3,217	1,628	1,245	13.4
200,001 to 500,000	7,889	4,639	3,096	1,839	1,706	15.0
Over 500,000	7,278	3,975	3,119	1,250	880	18.0
Principal Building Activity						
Education	8,470	5,676	2,202	2,176	1,380	11.8
Food Sales	757	350	Q	Q	Q	28.6
Food Service	1,491	1,453	Q	Q	176	17.4
Health Care	1,763	1,294	953	1,006	540	15.7
Lodging	2,891	1,596	548	Q	1,755	23.9
Mercantile and Service	12,402	3,806	1,092	778	1,117	16.3
Office	12,319	3,674	5,569	1,496	792	12.0
Parking Garage	1,652	Q	Q	Q	Q	47.0
Public Assembly	4,556	1,769	442	433	544	24.5
Public Order and Safety	820	Q	Q	Q	Q	48.0
Religious Worship	3,747	1,231	Q	Q	Q	29.6
Warehouse and Storage	11,484	346	2,079	563	Q	20.9
Other	1,130	Q	396	632	185	24.4
Vacant	4,396	507	550	Q	Q	40.3
Year Constructed						
1899 or Before	1,721	495	Q	Q	Q	29.1
1900 to 1919	3,608	1,334	673	Q	Q	31.5
1920 to 1945	8,712	2,225	1,439	1,030	803	18.8
1946 to 1959	10,421	2,849	1,436	1,051	908	11.7
1960 to 1969	12,612	4,924	3,057	1,840	1,244	13.6
1970 to 1979	14,014	5,067	2,857	1,951	1,856	10.9
1980 to 1989	14,287	4,414	3,748	1,362	1,365	12.4
1990 to 1992	2,502	859	811	437	454	18.7
Census Region						
Northeast	13,400	5,740	3,736	1,998	1,714	13.2
Midwest	17,280	5,804	3,265	2,499	1,867	10.2
South	24,577	6,870	3,966	2,163	2,317	10.6
West	12,619	3,753	3,233	1,381	964	12.4
Energy Sources (more than one may apply)						
Electricity	66,549	22,166	14,199	8,036	6,862	6.3
Natural Gas	45,097	18,488	10,618	6,332	5,725	6.9
Fuel Oil	13,218	7,452	5,745	2,995	2,445	9.5
District Heat	5,339	2,280	2,124	1,627	818	15.3
District Chilled Water	2,066	920	839	500	416	23.1
Propane	3,393	1,545	925	542	561	19.6
Any Other	1,551	394	Q	Q	Q	34.2

See footnotes at end of table.

Table A27. Energy-Related Space Functions, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Space Functions (more than one may apply): Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	RSE Row Factor
RSE Column Factor:	0.6	0.9	1.1	1.2	1.4	
Energy End Uses (more than one may apply)						
Heated Buildings	61,996	21,833	14,170	7,995	6,829	6.4
Air-Conditioned Buildings	57,041	21,096	14,199	7,744	6,546	6.6
Buildings with Water Heating	58,479	22,095	13,947	7,890	6,857	6.4
Buildings with Cooking	23,065	22,159	7,328	4,178	4,813	8.3
Buildings with Manufacturing	3,174	525	810	864	421	21.1
Predominant Exterior Wall Materials						
Masonry	48,585	17,270	9,222	5,898	5,571	6.8
Siding or Shingles	3,873	919	297	100	185	17.9
Metal Panels	7,392	677	958	723	Q	24.3
Concrete Panels	4,961	1,998	1,713	682	694	20.4
Window Glass	2,028	993	1,309	478	231	25.5
Other	1,037	309	701	Q	Q	37.7
Predominant Roof Materials						
Built-Up	30,257	10,364	7,468	3,567	3,043	8.4
Shingles (Not Wood)	10,570	2,931	905	761	814	17.0
Metal Surfacing	9,019	1,157	772	651	311	18.8
Synthetic or Rubber	11,702	6,039	3,852	2,250	2,250	11.7
Slate or Tile	1,998	671	180	374	295	27.3
Concrete	2,544	570	488	Q	Q	39.1
Other	1,786	435	535	Q	Q	23.9
Floors						
One	25,424	5,058	2,680	1,509	1,279	11.3
Two	18,025	5,512	2,934	1,633	1,773	10.6
Three	9,877	4,208	2,245	1,701	1,493	11.5
Four to Nine	10,377	4,716	3,700	2,317	1,485	12.7
Ten or More	4,173	2,672	2,640	881	832	18.4
Workers (main shift)						
Less than 5	17,944	1,783	409	553	537	16.1
5 to 9	7,524	1,322	391	348	318	14.6
10 to 19	8,077	1,719	538	615	708	15.7
20 to 49	10,556	3,419	1,898	1,274	1,201	11.9
50 to 99	7,763	3,424	2,504	1,467	1,369	13.7
100 to 249	7,378	3,998	2,795	1,647	1,349	16.2
250 or More	8,633	6,502	5,666	2,139	1,380	12.1
Weekly Operating Hours						
39 or Fewer	8,246	1,828	435	322	Q	19.4
40 to 48	14,998	3,014	2,954	1,748	717	12.5
49 to 60	14,046	3,118	3,207	1,401	750	12.0
61 to 84	12,062	5,188	3,200	1,481	1,163	13.4
85 to 167	8,467	4,754	1,618	1,191	1,429	14.9
Open Continuously	10,057	4,264	2,786	1,899	2,528	12.8
Ownership and Occupancy						
Nongovernment Owned	52,752	14,098	10,353	4,764	5,055	7.2
Owner Occupied	38,403	10,890	7,652	3,845	4,101	7.2
Nonowner Occupied	12,273	3,119	2,599	866	931	15.2
Unoccupied	2,077	Q	Q	Q	Q	49.1
Government Owned	15,124	8,068	3,847	3,277	1,807	10.8
Multibuilding Facility						
Part of Multibuilding Facility	31,564	10,614	7,663	4,636	3,141	9.5
with Central Physical Plant	8,395	3,526	2,478	2,281	1,413	15.0
No Central Physical Plant	23,170	7,088	5,185	2,355	1,728	11.5
Not on Multibuilding Facility	36,312	11,553	6,537	3,405	3,721	6.9

See footnotes at end of table.

Table A27. Energy-Related Space Functions, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Space Functions (more than one may apply): Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	RSE Row Factor
RSE Column Factor:	0.6	0.9	1.1	1.2	1.4	
Percent of Floorspace Heated						
Not Heated	6,211	Q	Q	Q	Q	35.4
1 to 50	11,195	2,040	1,621	816	332	20.3
51 to 99	10,211	4,284	2,934	1,539	1,556	11.6
100	40,260	15,428	9,614	5,640	4,937	7.0
Percent of Floorspace Cooled						
Not Cooled	10,835	1,070	NC	297	316	18.2
1 to 50	21,715	5,468	4,313	2,570	1,371	10.9
51 to 99	13,872	7,211	4,650	2,271	2,472	11.1
100	21,454	8,417	5,236	2,904	2,704	9.3
Heating Equipment (more than one may apply)						
Heat Pumps	8,269	2,871	2,290	1,054	1,470	15.2
Furnaces	16,909	4,459	2,291	1,261	1,300	11.3
Individual Space Heaters	22,380	7,233	5,158	2,902	2,580	9.1
District Heat	5,225	2,198	2,070	1,592	783	15.6
Boilers	20,664	10,439	6,599	3,915	3,490	9.7
Packaged Heating Units	16,000	6,349	4,384	1,773	2,137	11.3
Other	903	513	418	Q	Q	29.8
Cooling Equipment (more than one may apply)						
Residential-Type Central Air Conditioners	9,021	2,553	1,762	975	911	14.5
Heat Pumps	8,406	2,991	2,355	1,101	1,392	13.9
Individual Air Conditioners	17,979	6,750	4,361	2,339	2,338	11.6
District Chilled Water	2,066	920	839	500	416	23.1
Central Chillers	12,991	7,823	5,942	3,247	2,261	10.9
Packaged Air-Conditioning Units	27,830	10,896	8,419	4,013	3,496	8.0
Swamp Coolers	2,085	755	482	343	213	29.5
Other	268	Q	Q	Q	Q	68.4
Personal Computers and/or Computer Terminals						
1 to 4	13,355	2,810	931	822	1,358	12.7
5 to 9	5,970	1,802	1,071	591	726	15.4
10 to 19	6,236	2,026	1,212	774	460	17.6
20 to 49	7,439	2,875	2,312	1,183	847	14.5
50 to 99	4,908	2,800	2,053	1,110	828	16.1
100 to 249	4,220	2,353	2,408	1,441	744	16.6
250 or More	5,569	4,239	4,052	1,554	1,089	15.8
Energy Conservation Features (more than one may apply)						
Any Conservation Features	64,403	22,132	14,199	8,006	6,824	6.4
Building Shell	62,056	21,922	14,056	7,862	6,721	6.4
HVAC	50,281	20,551	13,133	7,303	6,314	6.6
Lighting	29,453	12,988	8,990	4,912	3,579	8.6
Other	5,952	2,615	1,708	1,116	985	15.0
Energy Management Practices (more than one may apply)						
Energy Management and Control System	14,320	8,356	6,313	3,351	2,517	10.8
Demand-Side Management Participation	11,310	6,788	4,078	2,448	2,048	10.8
Energy Audit	14,779	7,392	5,238	2,747	2,169	10.1
Building Energy Manager	2,311	1,108	849	538	588	21.5

See footnotes at end of table.

Table A27. Energy-Related Space Functions, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Space Functions (more than one may apply)				RSE Row Factor
		Commercial Food Preparation	Computer Room	Rooms with Special Ventilation	Activity with Large Amount of Hot Water	
RSE Column Factor:	0.6	0.9	1.1	1.2	1.4	
Demand-Side Management Programs (more than one may apply)						
Building Shell Program	1,079	622	480	197	Q	25.1
HVAC Program	6,370	3,964	2,540	1,612	1,303	12.9
Lighting Program	8,805	5,394	3,325	1,897	1,533	12.6
Other DSM Programs	6,176	4,240	2,660	1,469	1,431	14.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A28. Additional Operating Hours for Equipment Use, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Type of Equipment: Heating and/or Cooling	Type of Equipment: Lighting	All Buildings	Type of Equipment: Heating and/or Cooling	Type of Equipment: Lighting	
RSE Column Factor:	0.7	1.2	1.4	0.7	1.0	1.3	
All Buildings	4,806	1,223	633	67,876	20,300	12,886	5.6
Building Floorspace (Square Feet)							
1,001 to 5,000	2,681	626	307	7,327	1,778	860	8.9
5,001 to 10,000	975	256	145	7,199	1,905	1,096	7.4
10,001 to 25,000	647	171	83	10,375	2,904	1,374	8.1
25,001 to 50,000	280	90	45	10,069	3,211	1,663	9.8
50,001 to 100,000	116	44	30	8,062	2,970	2,022	10.3
100,001 to 200,000	71	26	14	9,678	3,378	1,970	11.5
200,001 to 500,000	26	8	6	7,889	2,487	1,912	14.1
Over 500,000	9	2	2	7,278	1,667	1,990	24.4
Principal Building Activity							
Education	301	82	35	8,470	3,246	2,073	10.4
Food Sales	130	48	30	757	217	152	21.2
Food Service	260	74	43	1,491	462	237	15.6
Health Care	63	24	Q	1,763	258	Q	21.7
Lodging	154	Q	Q	2,891	Q	Q	24.4
Mercantile and Service	1,272	357	217	12,402	4,530	3,097	10.4
Office	749	269	119	12,319	5,119	3,530	8.9
Parking Garage	24	Q	Q	1,652	Q	188	40.7
Public Assembly	278	85	33	4,556	1,183	511	14.3
Public Order and Safety	60	Q	Q	820	Q	Q	34.1
Religious Worship	366	101	22	3,747	1,177	458	14.3
Warehouse and Storage	761	116	75	11,484	2,604	1,435	11.0
Other	69	16	9	1,130	405	288	24.4
Vacant	319	26	29	4,396	843	680	21.0
Year Constructed							
1899 or Before	169	52	35	1,721	684	286	19.8
1900 to 1919	255	81	48	3,608	1,400	1,026	18.7
1920 to 1945	724	189	112	8,712	2,376	1,359	11.8
1946 to 1959	880	223	99	10,421	3,102	1,626	9.8
1960 to 1969	783	182	96	12,612	3,753	2,567	9.9
1970 to 1979	982	241	129	14,014	3,924	2,827	9.0
1980 to 1989	884	213	103	14,287	4,315	2,662	10.4
1990 to 1992	128	41	12	2,502	747	535	20.8
Census Region							
Northeast	771	248	99	13,400	4,360	2,417	12.3
Midwest	1,202	351	152	17,280	5,688	3,181	9.4
South	1,963	431	264	24,577	6,468	4,704	9.8
West	870	192	119	12,619	3,785	2,584	11.1
Energy Sources (more than one may apply)							
Electricity	4,616	1,223	633	66,549	20,300	12,886	5.6
Natural Gas	2,665	791	413	45,097	15,139	9,756	6.3
Fuel Oil	559	176	84	13,218	4,279	3,197	12.0
District Heat	95	37	12	5,339	1,664	1,200	16.1
District Chilled Water	28	9	3	2,066	603	298	25.3
Propane	337	71	33	3,393	782	584	16.8
Any Other	163	52	26	1,551	632	275	25.2

See footnotes at end of table.

Table A28. Additional Operating Hours for Equipment Use, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
		Type of Equipment			Type of Equipment		
	All Buildings	Heating and/or Cooling	Lighting	All Buildings	Heating and/or Cooling	Lighting	
RSE Column Factor:	0.7	1.2	1.4	0.7	1.0	1.3	
Energy End Uses (more than one may apply)							
Heated Buildings	4,178	1,211	602	61,996	19,914	12,377	5.7
Air-Conditioned Buildings	3,502	1,034	525	57,041	18,624	12,026	5.9
Buildings with Water Heating	3,502	1,080	543	58,479	19,464	12,198	5.7
Buildings with Cooking	734	231	121	23,065	7,483	5,749	8.6
Buildings with Manufacturing	121	34	19	3,174	866	583	18.8
Workers (main shift)							
Less than 5	2,718	554	313	17,944	3,200	1,933	9.1
5 to 9	895	277	120	7,524	2,201	1,059	9.5
10 to 19	561	166	75	8,077	2,332	1,085	11.4
20 to 49	405	139	69	10,556	3,587	1,914	8.2
50 to 99	130	50	29	7,763	3,234	1,784	11.4
100 to 249	64	26	20	7,378	2,750	2,181	12.6
250 or More	31	11	8	8,633	2,996	2,931	14.0
Weekly Operating Hours							
39 or Fewer	1,039	177	86	8,246	1,930	1,156	12.0
40 to 48	1,278	399	181	14,998	5,989	2,876	8.5
49 to 60	1,004	297	155	14,046	5,667	3,407	8.0
61 to 84	645	188	102	12,062	4,349	3,471	9.7
85 to 167	478	161	109	8,467	2,366	1,976	11.6
Open Continuously	362	NC	NC	10,057	NC	NC	14.6
Heating Equipment (more than one may apply)							
Heat Pumps	449	139	71	8,269	2,828	1,616	14.3
Furnaces	1,692	551	253	16,909	5,881	3,254	8.6
Individual Space Heaters	1,464	407	174	22,380	7,133	4,246	7.9
District Heat	93	36	12	5,225	1,629	1,186	16.2
Boilers	624	231	114	20,664	7,793	4,826	7.6
Packaged Heating Units	870	224	129	16,000	4,379	3,121	9.6
Other	42	11	Q	903	287	Q	30.5
Heating Distribution Equipment (more than one may apply)							
Radiators or Baseboards	473	183	79	13,263	4,906	2,485	9.1
Ducts for Heating	2,955	906	451	45,422	15,148	9,544	6.0
Heating Only	577	180	80	5,950	2,063	996	13.1
Heating and Cooling	2,378	726	372	39,472	13,085	8,548	6.3
Variable Air-Volume System	210	69	33	11,528	3,820	2,736	11.4
Fan Coil Units for Heating	99	40	16	5,474	1,750	990	14.7
Heating Only	78	30	12	3,569	1,218	673	17.1
Heating and Cooling	21	10	3	1,906	532	317	23.4
Individual Space Heaters	1,464	407	174	22,380	7,133	4,246	7.9
Other	181	61	32	3,310	1,395	986	18.0
Cooling Equipment (more than one may apply)							
Residential-Type Central Air Conditioners	816	250	126	9,021	3,081	2,020	11.1
Heat Pumps	454	144	79	8,406	2,865	1,751	13.5
Individual Air Conditioners	1,023	305	140	17,979	5,772	3,434	10.0
District Chilled Water	28	9	3	2,066	603	298	25.3
Central Chillers	142	57	37	12,991	4,149	3,550	11.7
Packaged Air-Conditioning Units	1,459	419	222	27,830	9,179	6,096	7.0
Swamp Coolers	179	48	32	2,085	748	281	23.7
Other	8	Q	Q	268	Q	Q	50.4

See footnotes at end of table.

Table A28. Additional Operating Hours for Equipment Use, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Type of Equipment		All Buildings	Type of Equipment		
		Heating and/or Cooling	Lighting		Heating and/or Cooling	Lighting	
RSE Column Factor:	0.7	1.2	1.4	0.7	1.0	1.3	
Cooling Distribution Equipment (more than one may apply)							
Ducts for Cooling	2,733	816	431	47,755	15,626	10,209	6.0
Cooling Only	355	90	60	8,283	2,541	1,661	11.8
Heating and Cooling	2,378	726	372	39,472	13,085	8,548	6.3
Variable Air-volume System	221	67	39	12,430	3,784	2,943	10.7
Fan Coil Units for Cooling	56	22	10	3,875	1,412	992	22.1
Cooling Only	35	12	7	1,969	880	675	32.4
Heating and Cooling	21	10	3	1,906	532	317	23.4
Individual Air Conditioners	1,023	305	140	17,979	5,772	3,434	10.0
Other	111	33	20	2,919	1,004	681	22.9
Lighting Equipment Types (more than one may apply)							
Incandescent	2,509	754	377	39,221	13,294	8,116	6.4
Standard Fluorescent	4,065	1,155	601	62,074	19,932	12,574	5.6
Compact Fluorescent	206	75	49	8,336	2,733	2,146	12.0
High-Intensity Discharge	354	115	72	17,570	5,420	3,650	8.9
Other	78	20	11	1,612	471	281	23.4
Building Shell Conservation Features (more than one may apply)							
Roof or Ceiling Insulation	3,343	987	459	50,311	16,818	10,152	6.2
Wall Insulation	2,320	695	320	33,240	11,362	6,874	7.4
Storm or Multiple Glazing	1,680	621	235	29,684	10,372	5,630	7.6
Tinted, Reflective or Shading Glass	1,068	300	173	25,396	8,027	5,645	8.6
Exterior or Interior Shading or Awnings	1,853	599	293	34,071	11,573	7,212	7.1
Windows that Open	2,119	577	244	28,937	8,091	4,538	7.1
HVAC Conservation Features (more than one may apply)							
Variable Air-Volume System	250	77	43	13,970	4,460	3,302	10.4
Economizer Cycle	414	130	93	18,313	5,987	4,581	10.8
HVAC Maintenance	2,503	778	356	49,173	16,520	10,587	6.3
Lighting Conservation Features (more than one may apply)							
Specular Reflectors	574	173	96	15,241	4,852	3,320	10.0
Natural Lighting Control Sensors	74	16	20	3,072	692	746	16.5
Occupancy Sensors	59	20	14	3,629	1,304	819	16.3
Time Clock	339	91	89	12,104	3,633	3,343	12.5
Manual Dimmer Switches	413	146	73	12,329	3,897	2,808	9.8
Other	78	29	14	2,596	961	583	17.1
Energy Conservation Features (more than one may apply)							
Any Conservation Features	4,357	1,203	594	64,403	20,168	12,550	5.9
Building Shell	4,223	1,176	579	62,056	19,610	12,295	5.9
HVAC	2,604	809	380	50,281	17,027	10,779	6.3
Lighting	1,178	369	223	29,453	9,492	6,747	7.2
Other	264	101	46	5,952	2,136	1,312	12.5

See footnotes at end of table.

Table A28. Additional Operating Hours for Equipment Use, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Type of Equipment		All Buildings	Type of Equipment		
		Heating and/or Cooling	Lighting		Heating and/or Cooling	Lighting	
RSE Column Factor:	0.7	1.2	1.4	0.7	1.0	1.3	
Energy Management Practices (more than one may apply)							
Energy Management and Control System	236	80	38	14,320	4,970	3,820	10.4
Demand-Side Management Participation	315	124	63	11,310	3,956	2,834	9.7
Energy Audit	521	188	82	14,779	5,473	3,792	9.3
Building Energy Manager	49	12	9	2,311	545	485	21.3
Demand-Side Management Programs (more than one may apply)							
Building Shell Program	36	13	4	1,079	372	251	24.0
HVAC Program	154	63	34	6,370	2,235	1,540	12.2
Lighting Program	228	87	45	8,805	2,900	2,082	11.7
Other DSM Programs	110	39	29	6,176	1,911	1,612	13.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A29. Energy Sources, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.5	0.6	1.1	1.6	2.4	1.6	2.3	
All Buildings	4,806	4,620	4,616	2,665	559	95	28	337	103	7.7
Building Floorspace (Square Feet)										
1,001 to 5,000	2,681	2,543	2,539	1,331	288	18	Q	218	70	12.3
5,001 to 10,000	975	954	954	574	125	11	Q	62	25	12.1
10,001 to 25,000	647	628	628	420	62	28	8	32	Q	12.4
25,001 to 50,000	280	275	275	181	39	16	9	15	Q	14.8
50,001 to 100,000	116	114	114	83	21	10	Q	6	Q	15.7
100,001 to 200,000	71	70	70	52	11	6	2	3	NC	15.7
200,001 to 500,000	26	25	25	18	10	5	2	Q	NC	17.5
Over 500,000	9	9	9	6	4	1	1	Q	Q	32.1
Principal Building Activity										
Education	301	301	301	196	28	21	9	16	NC	16.0
Food Sales	130	130	130	71	Q	NC	NC	Q	NC	29.9
Food Service	260	260	260	196	22	Q	Q	30	Q	21.1
Health Care	63	63	63	45	7	2	Q	Q	NC	28.4
Lodging	154	154	154	98	18	9	Q	17	Q	21.5
Mercantile and Service	1,272	1,270	1,268	765	198	9	Q	107	49	13.1
Office	749	749	749	474	87	24	8	15	Q	14.6
Parking Garage	24	24	24	11	Q	Q	Q	Q	NC	55.2
Public Assembly	278	278	278	171	29	10	Q	26	Q	16.8
Public Order and Safety	60	60	60	37	15	Q	NC	Q	NC	33.3
Religious Worship	366	366	366	209	60	Q	Q	52	Q	23.6
Warehouse and Storage	761	685	685	265	63	Q	Q	40	Q	16.2
Other	69	65	65	29	11	4	Q	Q	Q	18.8
Vacant	319	215	213	98	13	2	Q	Q	Q	21.0
Year Constructed										
1899 or Before	169	169	169	112	31	4	Q	Q	Q	27.6
1900 to 1919	255	244	244	178	52	10	Q	Q	Q	21.9
1920 to 1945	724	683	681	437	105	13	Q	42	37	14.1
1946 to 1959	880	839	839	515	107	22	7	60	Q	13.4
1960 to 1969	783	759	759	465	89	22	5	53	Q	12.9
1970 to 1979	982	945	945	517	91	9	5	67	Q	12.4
1980 to 1989	884	855	855	387	74	11	Q	73	Q	13.7
1990 to 1992	128	127	124	53	8	Q	Q	20	Q	28.1
Census Region										
Northeast	771	755	755	370	284	23	2	71	Q	14.7
Midwest	1,202	1,141	1,139	847	79	24	7	80	35	14.7
South	1,963	1,878	1,876	888	182	28	10	153	38	12.5
West	870	845	845	560	14	21	9	Q	Q	20.4
Energy Sources (more than one may apply)										
Electricity	4,616	4,616	4,616	2,665	556	95	28	335	99	7.7
Natural Gas	2,665	2,665	2,665	2,665	130	35	15	20	23	10.3
Fuel Oil	559	559	556	130	559	11	2	61	Q	15.4
District Heat	95	95	95	35	11	95	24	Q	Q	19.6
District Chilled Water	28	28	28	15	2	24	28	Q	Q	28.5
Propane	337	337	335	20	61	Q	Q	337	Q	24.5
Any Other	163	163	159	43	34	Q	Q	Q	103	23.1
Energy End Uses (more than one may apply)										
Heated Buildings	4,178	4,178	4,173	2,627	554	95	28	330	102	7.7
Air-Conditioned Buildings	3,502	3,502	3,502	2,263	378	82	28	230	29	8.0
Buildings with Water Heating	3,502	3,502	3,502	2,333	435	82	22	244	49	7.9
Buildings with Cooking	734	734	734	532	101	19	8	84	Q	11.9
Buildings with Manufacturing	121	121	118	83	20	6	Q	15	Q	26.5

See footnotes at end of table.

Table A29. Energy Sources, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.5	0.6	1.1	1.6	2.4	1.6	2.3	
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	399	382	382	228	80	10	Q	34	Q	27.7
5,500-7,000 HDD	1,134	1,089	1,089	766	184	29	5	70	Q	18.4
4,000-5,499 HDD	1,077	1,043	1,039	481	211	27	4	105	39	23.1
Fewer than 4,000 HDD	1,101	1,058	1,058	649	Q	13	10	88	Q	25.0
More than 2,000 CDD and --										
Fewer than 4,000 HDD	1,095	1,048	1,048	541	32	16	9	41	Q	20.8
Workers (main shift)										
Less than 5	2,718	2,534	2,530	1,266	304	22	Q	215	84	11.6
5 to 9	895	895	895	560	94	14	Q	64	Q	12.0
10 to 19	561	560	560	383	67	22	10	33	Q	13.6
20 to 49	405	405	405	300	43	17	5	16	Q	14.7
50 to 99	130	130	130	87	21	10	3	5	Q	17.1
100 to 249	64	64	64	48	15	4	2	4	Q	10.6
250 or More	31	31	31	22	14	7	3	Q	Q	17.7
Weekly Operating Hours										
39 or Fewer	1,039	891	889	407	119	11	Q	94	Q	14.9
40 to 48	1,278	1,270	1,270	753	146	34	8	59	34	11.1
49 to 60	1,004	994	992	599	131	16	4	69	Q	12.1
61 to 84	645	641	641	404	77	9	4	44	Q	11.7
85 to 167	478	475	475	299	41	7	Q	46	Q	17.2
Open Continuously	362	349	349	202	44	19	5	26	Q	14.4
Ownership and Occupancy										
Nongovernment Owned	4,206	4,041	4,037	2,309	483	44	11	305	94	8.7
Owner Occupied	3,192	3,131	3,127	1,814	413	35	9	240	78	9.1
Nonowner Occupied	817	796	796	458	63	9	Q	57	Q	15.1
Unoccupied	197	114	114	37	Q	Q	Q	Q	NC	24.0
Government Owned	599	578	578	356	75	51	18	32	Q	13.1
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	735	735	735	533	101	19	8	84	Q	12.0
Computer Room	223	223	223	149	51	11	5	18	Q	16.2
Rooms with Special Ventilation	236	236	236	162	43	17	3	22	Q	18.3
Activity with Large Amounts of Hot Water	203	203	203	154	23	6	2	29	Q	15.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A30. Energy Sources, Percent of Buildings, 1992

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	--	0.1	0.1	0.7	1.8	2.7	4.3	2.6	4.2	
All Buildings	100.0	96.1	96.0	55.5	11.6	2.0	0.6	7.0	2.2	4.6
Building Floorspace (Square Feet)										
1,001 to 5,000	100.0	94.8	94.7	49.6	10.7	.7	Q	8.1	2.6	7.4
5,001 to 10,000	100.0	97.9	97.9	58.9	12.8	1.1	Q	6.4	2.6	8.2
10,001 to 25,000	100.0	97.1	97.1	64.8	9.5	4.4	1.2	5.0	Q	8.1
25,001 to 50,000	100.0	97.9	97.9	64.6	13.7	5.6	3.3	5.4	Q	9.1
50,001 to 100,000	100.0	98.7	98.5	71.7	18.4	8.4	Q	4.8	Q	8.1
100,001 to 200,000	100.0	99.7	99.7	73.7	15.5	8.9	2.9	4.4	NC	6.3
200,001 to 500,000	100.0	96.8	96.8	70.9	38.7	18.1	9.0	Q	NC	11.0
Over 500,000	100.0	99.9	99.9	64.7	37.9	15.6	7.2	Q	Q	9.4
Principal Building Activity										
Education	100.0	100.0	100.0	65.2	9.2	7.0	3.0	5.2	NC	8.7
Food Sales	100.0	100.0	100.0	54.6	Q	NC	NC	Q	NC	18.6
Food Service	100.0	100.0	100.0	75.6	8.5	Q	Q	11.6	Q	13.0
Health Care	100.0	100.0	100.0	71.5	11.7	3.6	Q	Q	NC	15.3
Lodging	100.0	100.0	100.0	63.8	11.7	5.9	Q	11.4	Q	11.8
Mercantile and Service	100.0	99.9	99.7	60.2	15.6	.7	Q	8.4	3.8	5.9
Office	100.0	100.0	100.0	63.3	11.6	3.2	1.0	2.1	Q	9.2
Parking Garage	100.0	100.0	100.0	45.8	Q	Q	Q	Q	NC	33.9
Public Assembly	100.0	100.0	100.0	61.4	10.4	3.7	Q	9.4	Q	10.4
Public Order and Safety	100.0	100.0	100.0	61.8	24.3	Q	NC	Q	NC	17.1
Religious Worship	100.0	100.0	100.0	57.1	16.5	Q	Q	14.1	Q	14.5
Warehouse and Storage	100.0	90.0	90.0	34.8	8.2	Q	Q	5.3	Q	12.3
Other	100.0	94.2	94.2	41.6	16.4	5.6	Q	Q	Q	19.3
Vacant	100.0	67.3	66.6	30.8	4.1	.8	Q	Q	Q	19.5
Year Constructed										
1899 or Before	100.0	100.0	100.0	66.5	18.4	2.2	Q	Q	Q	16.2
1900 to 1919	100.0	95.7	95.5	69.7	20.3	3.9	Q	Q	Q	13.5
1920 to 1945	100.0	94.2	94.0	60.4	14.5	1.8	Q	5.8	5.1	9.6
1946 to 1959	100.0	95.4	95.4	58.6	12.2	2.6	.8	6.9	Q	8.3
1960 to 1969	100.0	96.9	96.9	59.4	11.4	2.9	.7	6.7	Q	7.3
1970 to 1979	100.0	96.2	96.2	52.7	9.3	.9	.5	6.8	Q	8.1
1980 to 1989	100.0	96.7	96.7	43.8	8.4	1.3	Q	8.3	Q	9.2
1990 to 1992	100.0	98.9	97.3	41.4	6.6	Q	Q	15.3	Q	14.8
Census Region										
Northeast	100.0	98.0	98.0	48.0	36.8	3.0	.3	9.3	Q	9.3
Midwest	100.0	94.9	94.7	70.5	6.6	2.0	.6	6.7	2.9	8.9
South	100.0	95.7	95.6	45.2	9.3	1.4	.5	7.8	1.9	7.1
West	100.0	97.1	97.1	64.4	1.6	2.4	1.0	Q	Q	11.8
Energy Sources (more than one may apply)										
Electricity	100.0	100.0	100.0	57.7	12.1	2.1	.6	7.3	2.2	4.4
Natural Gas	100.0	100.0	100.0	100.0	4.9	1.3	.6	.8	.8	6.4
Fuel Oil	100.0	100.0	99.6	23.2	100.0	2.0	.4	10.9	Q	8.0
District Heat	100.0	100.0	99.7	36.6	11.7	100.0	24.9	Q	Q	10.2
District Chilled Water	100.0	100.0	100.0	52.9	8.6	83.5	100.0	Q	Q	15.2
Propane	100.0	100.0	99.4	6.1	18.0	Q	Q	100.0	Q	15.4
Any Other	100.0	100.0	97.5	26.6	20.6	Q	Q	Q	63.4	13.8
Energy End Uses (more than one may apply)										
Heated Buildings	100.0	100.0	99.9	62.9	13.3	2.3	.7	7.9	2.4	3.4
Air-Conditioned Buildings	100.0	100.0	100.0	64.6	10.8	2.3	.8	6.6	.8	4.6
Buildings with Water Heating	100.0	100.0	100.0	66.6	12.4	2.3	.6	7.0	1.4	4.5
Buildings with Cooking	100.0	100.0	100.0	72.4	13.7	2.5	1.1	11.5	Q	6.8
Buildings with Manufacturing	100.0	100.0	98.2	68.9	16.8	5.4	Q	12.0	Q	14.6

See footnotes at end of table.

Table A30. Energy Sources, Percent of Buildings, 1992 (Continued)

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	--	0.1	0.1	0.7	1.8	2.7	4.3	2.6	4.2	
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	100.0	95.6	95.6	57.2	20.2	2.5	Q	8.4	Q	15.8
5,500-7,000 HDD	100.0	96.1	96.1	67.6	16.2	2.6	0.5	6.1	Q	9.4
4,000-5,499 HDD	100.0	96.9	96.5	44.7	19.6	2.5	.4	9.7	3.7	9.0
Fewer than 4,000 HDD	100.0	96.1	96.1	58.9	4.7	1.2	.9	8.0	Q	11.7
More than 2,000 CDD and --										
Fewer than 4,000 HDD	100.0	95.7	95.7	49.4	2.9	1.4	.8	3.7	Q	10.2
Workers (main shift)										
Less than 5	100.0	93.2	93.1	46.6	11.2	.8	Q	7.9	3.1	7.3
5 to 9	100.0	100.0	100.0	62.5	10.5	1.6	Q	7.2	Q	7.7
10 to 19	100.0	99.7	99.7	68.3	12.0	3.9	1.7	5.8	Q	6.7
20 to 49	100.0	100.0	100.0	74.0	10.6	4.1	1.2	3.9	Q	9.1
50 to 99	100.0	100.0	100.0	67.1	16.4	7.9	2.5	3.8	Q	9.8
100 to 249	100.0	100.0	100.0	74.7	23.9	5.6	3.0	6.0	Q	6.3
250 or More	100.0	100.0	100.0	69.3	43.2	21.7	8.6	Q	Q	10.5
Weekly Operating Hours										
39 or Fewer	100.0	85.7	85.5	39.1	11.5	1.0	Q	9.1	Q	11.3
40 to 48	100.0	99.3	99.3	58.9	11.4	2.6	.6	4.6	2.6	5.6
49 to 60	100.0	99.0	98.8	59.7	13.1	1.6	.4	6.9	Q	7.0
61 to 84	100.0	99.4	99.4	62.7	11.9	1.3	.6	6.8	Q	6.4
85 to 167	100.0	99.3	99.3	62.5	8.6	1.5	Q	9.5	Q	9.0
Open Continuously	100.0	96.5	96.5	55.9	12.3	5.2	1.5	7.0	Q	9.7
Ownership and Occupancy										
Nongovernment Owned	100.0	96.1	96.0	54.9	11.5	1.0	.3	7.2	2.2	5.5
Owner Occupied	100.0	98.1	98.0	56.8	12.9	1.1	.3	7.5	2.4	5.3
Nonowner Occupied	100.0	97.4	97.4	56.1	7.8	1.1	Q	6.9	Q	9.5
Unoccupied	100.0	58.0	58.0	18.9	Q	Q	Q	Q	NC	25.7
Government Owned	100.0	96.5	96.5	59.4	12.6	8.5	2.9	5.4	Q	7.0
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	100.0	100.0	100.0	72.5	13.7	2.5	1.1	11.4	Q	6.9
Computer Room	100.0	100.0	100.0	66.7	23.0	5.1	2.4	8.1	Q	8.3
Rooms with Special Ventilation	100.0	99.8	99.8	68.5	18.3	7.0	1.4	9.4	Q	7.1
Activity with Large Amounts of Hot Water	100.0	100.0	100.0	75.7	11.4	3.2	1.2	14.1	Q	9.0

-- = Data not applicable
NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A31. Energy Sources, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.5	0.6	0.9	1.4	2.3	1.6	2.3	
All Buildings	67,876	66,574	66,549	45,097	13,218	5,339	2,066	3,393	518	7.1
Building Floorspace (Square Feet)										
1,001 to 5,000	7,327	7,006	6,996	3,761	829	56	Q	573	177	12.5
5,001 to 10,000	7,199	7,057	7,057	4,266	925	73	Q	466	185	12.1
10,001 to 25,000	10,375	10,097	10,097	6,865	978	450	115	456	Q	12.1
25,001 to 50,000	10,069	9,856	9,856	6,510	1,377	545	311	501	Q	15.0
50,001 to 100,000	8,062	7,951	7,936	5,735	1,539	653	Q	411	Q	15.8
100,001 to 200,000	9,678	9,658	9,658	7,134	1,573	780	252	500	NC	15.6
200,001 to 500,000	7,889	7,678	7,678	5,648	3,017	1,532	737	Q	NC	18.0
Over 500,000	7,278	7,271	7,271	5,177	2,980	1,250	515	Q	Q	27.3
Principal Building Activity										
Education	8,470	8,470	8,470	6,849	1,837	688	253	470	NC	14.0
Food Sales	757	757	757	512	Q	NC	NC	Q	NC	32.3
Food Service	1,491	1,491	1,491	1,145	142	Q	Q	158	Q	25.1
Health Care	1,763	1,763	1,763	1,557	1,093	403	227	Q	NC	18.8
Lodging	2,891	2,891	2,891	2,233	827	580	Q	357	Q	22.7
Mercantile and Service	12,402	12,399	12,393	9,382	2,106	148	Q	742	203	16.4
Office	12,319	12,319	12,319	7,855	3,605	1,713	659	211	Q	14.0
Parking Garage	1,652	1,652	1,652	Q	Q	Q	Q	Q	NC	53.6
Public Assembly	4,556	4,556	4,556	2,537	825	348	Q	281	Q	25.5
Public Order and Safety	820	820	820	582	251	Q	NC	Q	NC	39.4
Religious Worship	3,747	3,747	3,747	2,899	532	Q	Q	247	Q	21.5
Warehouse and Storage	11,484	11,179	11,179	6,339	1,012	Q	Q	625	Q	19.2
Other	1,130	1,124	1,124	819	278	326	Q	Q	Q	16.7
Vacant	4,396	3,407	3,388	2,021	575	410	Q	Q	Q	30.9
Year Constructed										
1899 or Before	1,721	1,721	1,721	1,249	344	91	Q	Q	Q	27.2
1900 to 1919	3,608	3,416	3,402	2,826	764	269	Q	Q	Q	27.6
1920 to 1945	8,712	8,400	8,396	5,738	1,748	1,135	Q	390	199	17.6
1946 to 1959	10,421	10,135	10,135	7,294	1,647	566	241	401	Q	14.5
1960 to 1969	12,612	12,479	12,479	8,900	2,363	1,419	376	642	Q	14.8
1970 to 1979	14,014	13,781	13,781	9,230	2,747	976	632	786	Q	13.1
1980 to 1989	14,287	14,153	14,153	8,230	2,862	681	243	810	Q	15.5
1990 to 1992	2,502	2,489	2,483	1,630	743	202	164	212	Q	19.1
Census Region										
Northeast	13,400	13,235	13,235	8,559	5,535	1,560	302	1,041	Q	14.1
Midwest	17,280	16,920	16,914	13,838	2,541	1,884	684	579	140	12.2
South	24,577	24,004	23,985	13,408	3,582	983	659	1,514	168	11.8
West	12,619	12,415	12,415	9,292	1,559	912	421	260	Q	14.8
Energy Sources (more than one may apply)										
Electricity	66,549	66,549	66,549	45,097	13,211	5,324	2,066	3,386	508	7.1
Natural Gas	45,097	45,097	45,097	45,097	8,450	2,798	1,109	814	181	9.0
Fuel Oil	13,218	13,218	13,211	8,450	13,218	1,280	588	1,243	Q	11.6
District Heat	5,339	5,339	5,324	2,798	1,280	5,339	1,737	Q	Q	17.8
District Chilled Water	2,066	2,066	2,066	1,109	588	1,737	2,066	Q	Q	26.4
Propane	3,393	3,393	3,386	814	1,243	Q	Q	3,393	Q	22.2
Any Other	1,551	1,551	1,541	788	375	Q	Q	Q	518	29.6
Energy End Uses (more than one may apply)										
Heated Buildings	61,996	61,996	61,971	44,624	12,933	5,324	2,063	3,340	511	7.3
Air-Conditioned Buildings	57,041	57,041	57,041	41,423	12,081	4,786	2,066	2,837	206	7.9
Buildings with Water Heating	58,479	58,479	58,479	43,151	12,605	5,177	1,978	2,961	322	7.6
Buildings with Cooking	23,065	23,065	23,065	18,487	7,452	2,280	920	1,549	Q	11.5
Buildings with Manufacturing	3,174	3,174	3,167	2,546	739	486	Q	299	Q	23.9

See footnotes at end of table.

Table A31. Energy Sources, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.5	0.6	0.9	1.4	2.3	1.6	2.3	
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	5,623	5,476	5,476	3,685	1,551	513	Q	481	Q	24.1
5,500-7,000 HDD	18,024	17,730	17,730	13,771	4,208	1,944	574	716	Q	15.2
4,000-5,499 HDD	16,162	15,990	15,965	10,517	4,009	1,706	526	869	139	15.2
Fewer than 4,000 HDD	15,251	14,878	14,878	11,017	2,191	595	437	646	Q	21.2
More than 2,000 CDD and --										
Fewer than 4,000 HDD	12,816	12,501	12,501	6,107	1,259	581	467	682	Q	18.5
Workers (main shift)										
Less than 5	17,944	16,665	16,640	8,079	1,793	410	Q	929	332	16.5
5 to 9	7,524	7,524	7,524	4,494	786	321	Q	510	Q	15.0
10 to 19	8,077	8,054	8,054	5,484	884	494	193	402	Q	15.2
20 to 49	10,556	10,556	10,556	8,357	1,094	518	191	445	Q	14.7
50 to 99	7,763	7,763	7,763	5,982	1,487	806	327	384	Q	18.5
100 to 249	7,378	7,378	7,378	6,076	2,314	674	192	484	Q	12.0
250 or More	8,633	8,633	8,633	6,625	4,860	2,115	868	Q	Q	17.6
Weekly Operating Hours										
39 or Fewer	8,246	7,101	7,083	4,032	1,137	375	Q	522	Q	17.6
40 to 48	14,998	14,952	14,952	9,529	2,448	807	312	532	138	11.7
49 to 60	14,046	14,026	14,020	9,575	2,473	1,059	357	674	Q	11.3
61 to 84	12,062	12,028	12,028	9,141	2,320	702	178	533	Q	15.3
85 to 167	8,467	8,455	8,455	6,509	1,695	508	278	493	Q	18.7
Open Continuously	10,057	10,011	10,011	6,311	3,145	1,888	724	639	Q	17.4
Ownership and Occupancy										
Nongovernment Owned	52,752	51,612	51,601	34,151	9,420	2,893	1,074	2,694	478	7.9
Owner Occupied	38,403	38,173	38,162	26,187	7,627	2,541	896	2,066	400	7.6
Nonowner Occupied	12,273	12,156	12,156	7,466	1,600	350	Q	589	Q	17.0
Unoccupied	2,077	1,283	1,283	498	Q	Q	Q	Q	NC	27.5
Government Owned	15,124	14,962	14,948	10,945	3,798	2,446	992	699	Q	13.2
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	22,166	22,166	22,166	18,488	7,452	2,280	920	1,545	Q	10.8
Computer Room	14,199	14,199	14,199	10,618	5,745	2,124	839	925	Q	12.8
Rooms with Special Ventilation	8,042	8,036	8,036	6,332	2,995	1,627	500	542	Q	14.8
Activity with Large Amounts of Hot Water	6,862	6,862	6,862	5,725	2,445	818	416	561	Q	16.4

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A32. Energy Sources, Percent of Floorspace, 1992

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	--	0.1	0.1	0.7	1.8	2.9	4.6	3.3	5.2	
All Buildings	100.0	98.1	98.0	66.4	19.5	7.9	3.0	5.0	0.8	3.8
Building Floorspace (Square Feet)										
1,001 to 5,000	100.0	95.6	95.5	51.3	11.3	.8	Q	7.8	2.4	7.5
5,001 to 10,000	100.0	98.0	98.0	59.3	12.8	1.0	Q	6.5	2.6	8.1
10,001 to 25,000	100.0	97.3	97.3	66.2	9.4	4.3	1.1	4.4	Q	7.8
25,001 to 50,000	100.0	97.9	97.9	64.7	13.7	5.4	3.1	5.0	Q	8.9
50,001 to 100,000	100.0	98.6	98.4	71.1	19.1	8.1	Q	5.1	Q	8.3
100,001 to 200,000	100.0	99.8	99.8	73.7	16.3	8.1	2.6	5.2	NC	6.0
200,001 to 500,000	100.0	97.3	97.3	71.6	38.2	19.4	9.3	Q	NC	10.6
Over 500,000	100.0	99.9	99.9	71.1	40.9	17.2	7.1	Q	Q	7.6
Principal Building Activity										
Education	100.0	100.0	100.0	80.9	21.7	8.1	3.0	5.6	NC	6.4
Food Sales	100.0	100.0	100.0	67.7	Q	NC	NC	Q	NC	16.9
Food Service	100.0	100.0	100.0	76.8	9.5	Q	Q	10.6	Q	14.0
Health Care	100.0	100.0	100.0	88.3	62.0	22.9	12.9	Q	NC	6.1
Lodging	100.0	100.0	100.0	77.3	28.6	20.1	Q	12.3	Q	8.9
Mercantile and Service	100.0	100.0	99.9	75.7	17.0	1.2	Q	6.0	1.6	5.6
Office	100.0	100.0	100.0	63.8	29.3	13.9	5.3	1.7	Q	7.3
Parking Garage	100.0	100.0	100.0	Q	Q	Q	Q	Q	NC	30.3
Public Assembly	100.0	100.0	100.0	55.7	18.1	7.6	Q	6.2	Q	14.2
Public Order and Safety	100.0	100.0	100.0	71.0	30.6	Q	NC	Q	NC	13.3
Religious Worship	100.0	100.0	100.0	77.4	14.2	Q	Q	6.6	Q	9.2
Warehouse and Storage	100.0	97.3	97.3	55.2	8.8	Q	Q	5.4	Q	10.4
Other	100.0	99.5	99.5	72.5	24.6	28.9	15.7	Q	Q	8.1
Vacant	100.0	77.5	77.1	46.0	13.1	9.3	Q	Q	Q	21.9
Year Constructed										
1899 or Before	100.0	100.0	100.0	72.6	20.0	5.3	Q	Q	Q	13.3
1900 to 1919	100.0	94.7	94.3	78.3	21.2	7.5	Q	Q	Q	15.5
1920 to 1945	100.0	96.4	96.4	65.9	20.1	13.0	Q	4.5	2.3	9.7
1946 to 1959	100.0	97.3	97.3	70.0	15.8	5.4	2.3	3.8	Q	8.1
1960 to 1969	100.0	98.9	98.9	70.6	18.7	11.3	3.0	5.1	Q	6.5
1970 to 1979	100.0	98.3	98.3	65.9	19.6	7.0	4.5	5.6	Q	6.9
1980 to 1989	100.0	99.1	99.1	57.6	20.0	4.8	1.7	5.7	Q	6.9
1990 to 1992	100.0	99.5	99.2	65.2	29.7	8.1	6.6	8.5	Q	7.6
Census Region										
Northeast	100.0	98.8	98.8	63.9	41.3	11.6	2.3	7.8	Q	7.7
Midwest	100.0	97.9	97.9	80.1	14.7	10.9	4.0	3.3	.8	6.5
South	100.0	97.7	97.6	54.6	14.6	4.0	2.7	6.2	.7	6.3
West	100.0	98.4	98.4	73.6	12.4	7.2	3.3	2.1	Q	8.5
Energy Sources (more than one may apply)										
Electricity	100.0	100.0	100.0	67.8	19.9	8.0	3.1	5.1	.8	3.4
Natural Gas	100.0	100.0	100.0	100.0	18.7	6.2	2.5	1.8	.4	4.7
Fuel Oil	100.0	100.0	100.0	63.9	100.0	9.7	4.5	9.4	Q	6.1
District Heat	100.0	100.0	99.7	52.4	24.0	100.0	32.5	Q	Q	7.8
District Chilled Water	100.0	100.0	100.0	53.7	28.5	84.1	100.0	Q	Q	12.9
Propane	100.0	100.0	99.8	24.0	36.6	Q	Q	100.0	Q	11.1
Any Other	100.0	100.0	99.3	50.8	24.2	Q	Q	Q	33.4	13.4
Energy End Uses (more than one may apply)										
Heated Buildings	100.0	100.0	100.0	72.0	20.9	8.6	3.3	5.4	.8	3.4
Air-Conditioned Buildings	100.0	100.0	100.0	72.6	21.2	8.4	3.6	5.0	.4	3.7
Buildings with Water Heating	100.0	100.0	100.0	73.8	21.6	8.9	3.4	5.1	.6	3.6
Buildings with Cooking	100.0	100.0	100.0	80.2	32.3	9.9	4.0	6.7	Q	5.5
Buildings with Manufacturing	100.0	100.0	99.8	80.2	23.3	15.3	Q	9.4	Q	8.3

See footnotes at end of table.

Table A32. Energy Sources, Percent of Floorspace, 1992 (Continued)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Energy Sources Used (more than one may apply)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	District Chilled Water	Propane	Wood	
RSE Column Factor:	--	0.1	0.1	0.7	1.8	2.9	4.6	3.3	5.2	
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	100.0	97.4	97.4	65.5	27.6	9.1	Q	8.6	Q	13.0
5,500-7,000 HDD	100.0	98.4	98.4	76.4	23.3	10.8	3.2	4.0	Q	7.1
4,000-5,499 HDD	100.0	98.9	98.8	65.1	24.8	10.6	3.3	5.4	0.9	6.2
Fewer than 4,000 HDD	100.0	97.5	97.5	72.2	14.4	3.9	2.9	4.2	Q	9.0
More than 2,000 CDD and --										
Fewer than 4,000 HDD	100.0	97.5	97.5	47.7	9.8	4.5	3.6	5.3	Q	9.6
Workers (main shift)										
Less than 5	100.0	92.9	92.7	45.0	10.0	2.3	Q	5.2	1.9	10.4
5 to 9	100.0	100.0	100.0	59.7	10.4	4.3	Q	6.8	Q	9.0
10 to 19	100.0	99.7	99.7	67.9	10.9	6.1	2.4	5.0	Q	6.8
20 to 49	100.0	100.0	100.0	79.2	10.4	4.9	1.8	4.2	Q	7.2
50 to 99	100.0	100.0	100.0	77.1	19.1	10.4	4.2	4.9	Q	8.8
100 to 249	100.0	100.0	100.0	82.4	31.4	9.1	2.6	6.6	Q	5.5
250 or More	100.0	100.0	100.0	76.7	56.3	24.5	10.1	Q	Q	7.7
Weekly Operating Hours										
39 or Fewer	100.0	86.1	85.9	48.9	13.8	4.5	Q	6.3	Q	12.9
40 to 48	100.0	99.7	99.7	63.5	16.3	5.4	2.1	3.5	.9	5.1
49 to 60	100.0	99.9	99.8	68.2	17.6	7.5	2.5	4.8	Q	4.3
61 to 84	100.0	99.7	99.7	75.8	19.2	5.8	1.5	4.4	Q	5.7
85 to 167	100.0	99.9	99.9	76.9	20.0	6.0	3.3	5.8	Q	6.0
Open Continuously	100.0	99.5	99.5	62.8	31.3	18.8	7.2	6.4	Q	7.2
Ownership and Occupancy										
Nongovernment Owned	100.0	97.8	97.8	64.7	17.9	5.5	2.0	5.1	.9	4.6
Owner Occupied	100.0	99.4	99.4	68.2	19.9	6.6	2.3	5.4	1.0	3.8
Nonowner Occupied	100.0	99.1	99.1	60.8	13.0	2.9	Q	4.8	Q	8.4
Unoccupied	100.0	61.8	61.8	24.0	Q	Q	Q	Q	NC	33.2
Government Owned	100.0	98.9	98.8	72.4	25.1	16.2	6.6	4.6	Q	5.7
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	100.0	100.0	100.0	83.4	33.6	10.3	4.2	7.0	Q	4.6
Computer Room	100.0	100.0	100.0	74.8	40.5	15.0	5.9	6.5	Q	5.6
Rooms with Special Ventilation	100.0	99.9	99.9	78.7	37.2	20.2	6.2	6.7	Q	4.4
Activity with Large Amounts of Hot Water	100.0	100.0	100.0	83.4	35.6	11.9	6.1	8.2	Q	6.7

-- = Data not applicable
NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A33. Energy End Uses, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
		Energy Used For:						Energy Used For:					
	All Buildings	Space Heating	Cooling	Water Heating	Cooking	Manufacturing	All Buildings	Space Heating	Cooling	Water Heating	Cooking	Manufacturing	
RSE Column Factor:	0.7	0.7	0.7	0.7	1.1	2.5	0.8	0.8	0.8	0.8	1.3	2.5	
All Buildings	4,806	4,178	3,502	3,502	734	121	67,876	61,996	57,041	58,479	23,065	3,174	5.1
Building Floorspace (Square Feet)													
1,001 to 5,000	2,681	2,247	1,792	1,733	320	32	7,327	6,210	4,994	4,928	903	97	7.6
5,001 to 10,000	975	883	758	787	137	32	7,199	6,533	5,601	5,834	998	245	6.3
10,001 to 25,000	647	585	519	539	114	32	10,375	9,424	8,364	8,724	1,852	495	7.1
25,001 to 50,000	280	255	236	240	70	11	10,069	9,132	8,435	8,637	2,627	382	9.4
50,001 to 100,000	116	110	103	108	44	9	8,062	7,622	7,185	7,489	3,110	618	8.6
100,001 to 200,000	71	64	59	62	29	3	9,678	8,730	8,072	8,492	4,062	442	10.7
200,001 to 500,000	26	24	24	25	15	1	7,889	7,470	7,217	7,466	4,639	257	13.2
Over 500,000	9	9	9	9	6	1	7,278	6,876	7,174	6,910	4,874	637	26.3
Principal Building Activity													
Education	301	295	251	230	98	Q	8,470	8,379	7,389	8,036	5,676	Q	9.6
Food Sales	130	120	119	124	40	Q	757	723	725	739	350	Q	19.1
Food Service	260	249	244	259	244	NC	1,491	1,435	1,449	1,490	1,450	NC	10.6
Health Care	63	61	59	62	6	Q	1,763	1,746	1,747	1,760	1,289	Q	16.8
Lodging	154	150	120	152	38	Q	2,891	2,870	2,493	2,869	1,600	Q	15.9
Mercantile and Service	1,272	1,214	942	923	89	43	12,402	11,835	10,874	10,809	3,806	532	9.3
Office	749	745	731	705	30	20	12,319	12,255	12,198	12,030	3,674	363	8.6
Parking Garage	24	17	12	13	Q	Q	1,652	1,165	922	933	Q	Q	40.7
Public Assembly	278	257	208	235	82	Q	4,556	4,470	4,077	4,346	2,669	Q	17.8
Public Order and Safety	60	60	47	58	Q	NC	820	820	741	804	Q	NC	27.6
Religious Worship	366	364	286	265	68	Q	3,747	3,737	3,121	3,384	1,231	Q	15.2
Warehouse and Storage	761	445	324	311	13	35	11,484	8,800	7,885	7,887	349	1,395	11.9
Other	69	48	44	43	Q	8	1,130	1,025	1,040	1,001	Q	298	18.8
Vacant	319	154	114	121	18	Q	4,396	2,738	2,382	2,391	507	Q	18.3
Year Constructed													
1899 or Before	169	158	119	126	41	Q	1,721	1,637	1,307	1,457	495	Q	16.6
1900 to 1919	255	232	169	202	42	Q	3,608	3,329	2,759	3,126	1,334	Q	17.1
1920 to 1945	724	623	491	507	101	21	8,712	7,717	6,586	7,004	2,225	542	10.6
1946 to 1959	880	760	643	638	134	20	10,421	9,371	8,260	8,784	2,849	748	9.0
1960 to 1969	783	687	563	580	120	11	12,612	11,548	10,601	11,006	4,920	394	9.5
1970 to 1979	982	850	741	721	154	31	14,014	12,814	12,286	12,369	5,071	652	8.2
1980 to 1989	884	761	682	649	122	21	14,287	13,276	12,985	12,565	5,313	579	10.4
1990 to 1992	128	107	93	79	21	Q	2,502	2,303	2,258	2,167	859	Q	16.6
Census Region													
Northeast	771	694	521	625	142	26	13,400	12,858	11,158	12,410	5,740	756	9.6
Midwest	1,202	1,047	784	906	201	38	17,280	16,303	14,383	15,460	5,800	895	9.4
South	1,963	1,687	1,569	1,307	257	37	24,577	21,659	21,205	19,592	7,768	1,039	8.9
West	870	750	627	664	134	19	12,619	11,176	10,296	11,017	3,757	484	10.4
Energy Sources (more than one may apply)													
Electricity	4,616	4,173	3,502	3,502	734	118	66,549	61,971	57,041	58,479	23,065	3,167	5.1
Natural Gas	2,665	2,627	2,263	2,333	532	83	45,097	44,624	41,423	43,151	18,487	2,546	6.0
Fuel Oil	559	554	378	435	101	20	13,218	12,933	12,081	12,605	7,452	739	10.0
District Heat	95	95	82	82	19	6	5,339	5,324	4,786	5,177	2,280	486	14.3
District Chilled Water	28	28	28	22	8	Q	2,066	2,063	2,066	1,978	920	Q	22.3
Propane	337	330	230	244	84	15	3,393	3,340	2,837	2,961	1,549	299	15.4
Other	163	161	71	96	13	Q	1,551	1,522	1,117	1,287	399	Q	22.5

See footnotes at end of table.

Table A33. Energy End Uses, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
		Energy Used For:						Energy Used For:					
	All Buildings	Space Heating	Cooling	Water Heating	Cooking	Manufacturing	All Buildings	Space Heating	Cooling	Water Heating	Cooking	Manufacturing	
RSE Column Factor:	0.7	0.7	0.7	0.7	1.1	2.5	0.8	0.8	0.8	0.8	1.3	2.5	
Energy End Uses (more than one may apply)													
Heated Buildings	4,178	4,178	3,439	3,436	715	117	61,996	61,996	56,073	57,708	22,736	3,121	5.1
Air-Conditioned Buildings	3,502	3,439	3,502	3,016	663	92	57,041	56,073	57,041	53,839	22,003	2,870	5.4
Buildings with Water Heating	3,502	3,436	3,016	3,502	728	102	58,479	57,708	53,839	58,479	22,993	2,976	5.3
Buildings with Cooking	734	715	663	728	734	13	23,065	22,736	22,003	22,993	23,065	528	7.8
Buildings with Manufacturing	121	117	92	102	13	121	3,174	3,121	2,870	2,976	528	3,174	15.1
Climate Zone: 45-Year Average													
Fewer than 2,000 CDD and --													
More than 7,000 HDD	399	344	229	298	65	19	5,623	5,218	4,267	4,956	1,754	315	17.3
5,500 to 7,000 HDD	1,134	1,018	766	892	198	36	18,024	17,196	14,977	16,377	6,781	1,254	11.3
4,000 to 5,499 HDD	1,077	959	753	815	181	23	16,162	14,966	13,549	14,359	5,847	490	15.1
Fewer than 4,000 HDD	1,101	955	838	770	158	20	15,251	13,537	12,870	12,791	4,695	468	16.4
More than 2,000 CDD and --													
Fewer than 4,000 HDD	1,095	903	915	726	133	23	12,816	11,079	11,379	9,996	3,989	647	14.6
Workers (main shift)													
Less than 5	2,718	2,154	1,623	1,609	260	42	17,944	13,604	10,719	11,207	2,678	334	10.6
5 to 9	895	861	781	777	155	20	7,524	7,075	6,249	6,432	1,326	256	7.8
10 to 19	561	540	502	512	126	23	8,077	7,528	6,954	7,089	1,719	384	9.0
20 to 49	405	401	384	384	105	27	10,556	10,440	9,990	10,215	3,419	916	8.4
50 to 99	130	128	118	126	43	6	7,763	7,652	7,313	7,644	3,424	395	10.6
100 to 249	64	64	63	62	26	3	7,378	7,323	7,195	7,278	3,998	561	12.4
250 or More	31	30	31	31	18	1	8,633	8,374	8,621	8,613	6,502	328	11.7
Weekly Operating Hours													
39 or Fewer	1,039	725	513	507	116	Q	8,246	6,000	4,632	5,005	1,828	Q	11.2
40 to 48	1,278	1,186	1,007	979	89	46	14,998	13,745	12,558	12,613	3,010	891	7.6
49 to 60	1,004	920	786	764	83	34	14,046	13,251	12,218	12,405	3,118	920	7.6
61 to 84	645	603	528	518	149	19	12,062	11,529	11,158	11,308	5,195	418	8.4
85 to 167	478	436	405	435	218	7	8,467	8,141	7,742	8,020	4,750	403	10.6
Open Continuously	362	307	262	300	78	6	10,057	9,329	8,733	9,128	5,163	410	13.4
Energy-Related Space Functions (more than one may apply)													
Commercial Food Preparation	735	714	661	729	732	13	22,166	21,833	21,096	22,095	22,159	525	7.2
Computer Room	223	222	223	211	53	16	14,199	14,170	14,199	13,947	7,328	810	10.1
Rooms with Special Ventilation	236	229	215	219	70	19	8,042	7,995	7,744	7,890	4,178	864	10.0
Activities with Large Amounts of Hot Water	203	194	164	202	80	8	6,862	6,829	6,546	6,857	4,813	421	10.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A34. End-Use Combinations, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Heated Buildings with Air Conditioning and--			Heated Buildings Without Air Conditioning and--			Buildings Without Heating, Cooling, Water Heating, or Cooking	All Other Combinations	RSE Row Factor
		with Water Heating and Cooking	with Water Heating but Not Cooking	Without Water Heating or Cooking	with Water Heating and Cooking	with Water Heating but Not Cooking	Without Water Heating or Cooking			
RSE Column Factor:	0.4	0.7	0.5	1.0	2.1	1.1	1.1	1.1	2.1	
All Buildings	4,806	651	2,339	445	60	387	292	524	108	8.4
Building Floorspace (Square Feet)										
1,001 to 5,000	2,681	275	1,140	337	25	244	223	362	75	10.7
5,001 to 10,000	975	124	569	59	Q	77	43	82	Q	13.2
10,001 to 25,000	647	101	370	35	10	49	18	47	Q	16.4
25,001 to 50,000	280	60	161	12	9	8	Q	21	Q	19.2
50,001 to 100,000	116	41	58	Q	Q	5	Q	4	Q	18.9
100,001 to 200,000	71	27	30	Q	Q	Q	Q	Q	Q	18.9
200,001 to 500,000	26	15	9	Q	Q	Q	Q	1	Q	25.0
Over 500,000	9	6	2	Q	Q	Q	Q	Q	Q	55.1
Principal Building Activity										
Education	301	84	102	65	13	27	Q	Q	Q	17.7
Food Sales	130	36	70	Q	NC	Q	NC	NC	Q	31.7
Food Service	260	229	Q	NC	Q	Q	NC	NC	Q	14.4
Health Care	63	6	50	Q	Q	Q	NC	NC	Q	30.0
Lodging	154	32	86	Q	Q	24	NC	NC	Q	25.7
Mercantile and Service	1,272	84	677	167	Q	152	132	42	17	13.9
Office	749	28	661	37	Q	Q	Q	NC	Q	15.8
Parking Garage	24	Q	11	Q	NC	Q	Q	7	Q	51.1
Public Assembly	278	67	122	Q	Q	27	Q	Q	Q	18.9
Public Order and Safety	60	Q	43	NC	Q	Q	Q	NC	NC	39.2
Religious Worship	366	58	157	69	Q	41	Q	Q	Q	21.3
Warehouse and Storage	761	10	235	56	Q	58	85	287	29	17.9
Other	69	Q	35	Q	NC	Q	Q	Q	Q	35.8
Vacant	319	9	78	24	Q	18	16	157	Q	23.1
Year Constructed										
1899 or Before	169	37	67	Q	Q	18	Q	Q	NC	27.5
1900 to 1919	255	35	108	27	Q	53	Q	22	Q	22.5
1920 to 1945	724	76	332	76	19	73	44	91	Q	15.2
1946 to 1959	880	116	421	92	13	70	46	97	24	14.4
1960 to 1969	783	102	379	69	11	65	59	71	27	15.0
1970 to 1979	982	148	494	77	Q	64	64	105	26	15.3
1980 to 1989	884	116	483	71	Q	41	46	107	18	15.6
1990 to 1992	128	21	54	18	Q	Q	Q	20	Q	29.2
Census Region										
Northeast	771	125	368	26	15	107	52	67	Q	16.4
Midwest	1,202	177	560	45	22	139	104	147	Q	14.9
South	1,963	244	989	289	Q	50	112	221	58	13.6
West	870	105	422	85	22	91	24	89	32	19.7
Energy Sources (more than one may apply)										
Electricity	4,616	651	2,339	445	60	387	288	338	108	8.5
Natural Gas	2,665	477	1,549	215	41	241	101	Q	36	11.4
Fuel Oil	559	82	248	48	17	86	74	Q	Q	19.8
District Heat	95	16	53	12	Q	10	Q	NC	Q	23.8
District Chilled Water	28	8	15	Q	NC	NC	NC	NC	Q	41.0
Propane	337	71	118	39	Q	40	53	NC	Q	24.5
Other	163	7	55	Q	Q	Q	59	Q	Q	30.9

See footnotes at end of table.

Table A34. End-Use Combinations, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	Heated Buildings with Air Conditioning and-- with Water Heating and Cooking	Heated Buildings with Air Conditioning and-- with Water Heating but Not Cooking	Heated Buildings with Air Conditioning and-- Without Water Heating or Cooking	Heated Buildings Without Air Conditioning and-- with Water Heating and Cooking	Heated Buildings Without Air Conditioning and-- with Water Heating but Not Cooking	Heated Buildings Without Air Conditioning and-- Without Water Heating or Cooking	Buildings Without Heating, Cooling, Water Heating, or Cooking	All Other Combinations	RSE Row Factor
RSE Column Factor:	0.4	0.7	0.5	1.0	2.1	1.1	1.1	1.1	2.1	
Energy End Uses (more than one may apply)										
Heated Buildings	4,178	651	2,339	445	60	387	292	NC	Q	8.3
Air-Conditioned Buildings	3,502	651	2,339	445	NC	NC	NC	NC	67	8.9
Buildings with Water Heating	3,502	651	2,339	NC	60	387	NC	NC	66	8.6
Buildings with Cooking	734	651	NC	NC	60	NC	NC	NC	24	10.4
Buildings with Manufacturing	121	11	73	Q	Q	Q	Q	Q	Q	34.6
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	399	54	162	Q	Q	70	34	53	Q	25.4
5,500 to 7,000 HDD	1,134	175	545	44	22	145	87	111	Q	18.1
4,000 to 5,499 HDD	1,077	165	517	67	Q	105	94	98	Q	26.5
Fewer than 4,000 HDD	1,101	132	552	143	Q	54	55	125	23	26.4
More than 2,000 CDD and --										
Fewer than 4,000 HDD	1,095	123	563	179	NC	Q	21	137	58	18.5
Workers (main shift)										
Less than 5	2,718	224	1,042	316	21	278	270	494	73	10.5
5 to 9	895	136	554	78	15	62	Q	19	Q	15.8
10 to 19	561	112	352	31	Q	30	Q	Q	Q	15.2
20 to 49	405	98	267	16	7	10	Q	Q	Q	17.3
50 to 99	130	38	76	Q	Q	Q	Q	NC	Q	17.7
100 to 249	64	25	36	Q	Q	Q	NC	Q	Q	18.0
250 or More	31	18	12	Q	NC	Q	NC	Q	Q	18.9
Weekly Operating Hours										
39 or Fewer	1,039	90	283	123	20	103	103	290	26	13.9
40 to 48	1,278	74	781	141	11	101	79	75	16	14.5
49 to 60	1,004	75	587	104	Q	81	65	57	27	14.3
61 to 84	645	142	324	58	Q	39	32	35	Q	15.6
85 to 167	478	201	180	Q	Q	29	Q	22	20	16.9
Open Continuously	362	68	183	Q	Q	32	Q	44	Q	19.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A35. End-Use Combinations, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	Heated Buildings with Air Conditioning and--			Heated Buildings Without Air Conditioning and--			Buildings Without Heating, Cooling, Water Heating, or Cooking	All Other Combinations	RSE Row Factor
		with Water Heating and Cooking	with Water Heating but Not Cooking	Without Water Heating or Cooking	with Water Heating and Cooking	with Water Heating but Not Cooking	Without Water Heating or Cooking			
RSE Column Factor:	0.4	0.7	0.5	1.1	1.6	1.2	1.2	1.2	2.1	
All Buildings	67,876	21,648	31,692	2,679	1,019	3,349	1,540	4,638	1,312	9.9
Building Floorspace (Square Feet)										
1,001 to 5,000	7,327	757	3,253	862	89	702	540	918	206	11.0
5,001 to 10,000	7,199	901	4,221	425	94	565	327	585	81	13.9
10,001 to 25,000	10,375	1,667	5,980	518	142	810	293	711	255	16.7
25,001 to 50,000	10,069	2,254	5,675	389	350	273	168	773	187	21.2
50,001 to 100,000	8,062	2,953	3,985	110	Q	350	81	323	137	22.9
100,001 to 200,000	9,678	3,902	4,024	136	Q	405	Q	937	Q	26.8
200,001 to 500,000	7,889	4,574	2,565	54	Q	Q	Q	347	Q	26.9
Over 500,000	7,278	4,641	1,989	Q	1	Q	Q	44	Q	17.6
Principal Building Activity										
Education	8,470	5,124	1,893	357	537	392	Q	Q	Q	18.8
Food Sales	757	335	351	Q	NC	28	NC	NC	34	31.1
Food Service	1,491	1,380	35	NC	Q	Q	NC	NC	Q	29.9
Health Care	1,763	1,281	446	Q	Q	Q	NC	NC	Q	29.0
Lodging	2,891	1,475	982	Q	Q	267	NC	NC	Q	26.8
Mercantile and Service	12,402	3,562	6,199	766	Q	763	531	221	Q	17.6
Office	12,319	3,622	8,284	195	Q	99	Q	NC	Q	13.0
Parking Garage	1,652	Q	636	Q	NC	Q	Q	459	Q	52.9
Public Assembly	4,556	2,535	1,423	99	122	250	35	56	36	31.0
Public Order and Safety	820	279	462	NC	Q	56	Q	NC	NC	47.5
Religious Worship	3,747	1,069	1,775	272	143	393	66	Q	Q	23.0
Warehouse and Storage	11,484	341	6,781	528	Q	624	520	2,370	Q	19.6
Other	1,130	114	850	33	NC	Q	Q	57	Q	35.4
Vacant	4,396	Q	1,574	199	42	250	208	1,468	Q	25.6
Year Constructed										
1899 or Before	1,721	473	754	79	Q	208	101	Q	NC	30.7
1900 to 1919	3,608	1,249	1,368	133	85	424	71	269	Q	28.9
1920 to 1945	8,712	1,898	4,179	480	311	566	278	923	77	21.8
1946 to 1959	10,421	2,511	5,218	420	310	653	245	902	162	18.6
1960 to 1969	12,612	4,618	5,306	513	233	604	253	778	307	20.6
1970 to 1979	14,014	4,806	6,668	407	Q	572	331	788	Q	16.5
1980 to 1989	14,287	5,256	6,944	519	Q	292	215	740	Q	19.6
1990 to 1992	2,502	837	1,255	127	Q	Q	47	154	Q	27.2
Census Region										
Northeast	13,400	5,395	5,515	239	339	1,118	252	493	49	20.3
Midwest	17,280	5,530	8,569	274	262	1,032	634	909	Q	15.7
South	24,577	7,658	11,337	1,731	Q	395	487	2,442	510	16.0
West	12,619	3,064	6,271	435	401	804	167	794	682	19.2
Energy Sources (more than one may apply)										
Electricity	66,549	21,648	31,692	2,679	1,019	3,349	1,515	3,336	1,312	10.2
Natural Gas	45,097	17,427	22,412	1,207	754	2,161	625	Q	Q	11.2
Fuel Oil	13,218	7,009	4,534	283	205	615	287	Q	Q	18.3
District Heat	5,339	2,055	2,600	110	204	303	Q	NC	Q	26.7
District Chilled Water	2,066	911	1,064	82	NC	NC	NC	NC	Q	37.6
Propane	3,393	1,353	1,216	226	153	190	197	NC	Q	26.0
Other	1,551	344	746	Q	Q	142	219	Q	Q	35.7

See footnotes at end of table.

Table A35. End-Use Combinations, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Heated Buildings with Air Conditioning and-- with Water Heating and Cooking	Heated Buildings with Air Conditioning and-- with Water Heating but Not Cooking	Heated Buildings with Air Conditioning and-- Without Water Heating or Cooking	Heated Buildings Without Air Conditioning and-- with Water Heating and Cooking	Heated Buildings Without Air Conditioning and-- with Water Heating but Not Cooking	Heated Buildings Without Air Conditioning and-- Without Water Heating or Cooking	Buildings Without Heating, Cooling, Water Heating, or Cooking	All Other Combinations	RSE Row Factor
RSE Column Factor:	0.4	0.7	0.5	1.1	1.6	1.2	1.2	1.2	2.1	
Energy End Uses (more than one may apply)										
Heated Buildings	61,996	21,648	31,692	2,679	1,019	3,349	1,540	NC	69	10.5
Air-Conditioned Buildings	57,041	21,648	31,692	2,679	NC	NC	NC	NC	1,023	10.3
Buildings with Water Heating	58,479	21,648	31,692	NC	1,019	3,349	NC	NC	771	10.8
Buildings with Cooking	23,065	21,648	NC	NC	1,019	NC	NC	NC	Q	12.7
Buildings with Manufacturing	3,174	487	2,287	62	Q	146	106	Q	Q	30.9
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	5,623	1,640	2,471	Q	111	686	153	358	Q	26.5
5,500 to 7,000 HDD	18,024	6,292	8,383	293	489	1,191	548	804	24	18.4
4,000 to 5,499 HDD	16,162	5,666	7,577	274	164	851	435	1,082	113	21.9
Fewer than 4,000 HDD	15,251	4,182	7,543	714	254	517	294	1,263	Q	25.1
More than 2,000 CDD and --										
Fewer than 4,000 HDD	12,816	3,867	5,718	1,244	NC	105	111	1,130	642	24.0
Workers (main shift)										
Less than 5	17,944	2,498	6,625	1,266	135	1,702	1,373	3,833	514	16.0
5 to 9	7,524	1,116	4,408	618	181	661	91	Q	120	18.9
10 to 19	8,077	1,531	4,870	441	160	467	Q	Q	145	19.5
20 to 49	10,556	3,145	6,485	264	251	267	Q	Q	111	19.5
50 to 99	7,763	3,215	3,980	39	192	200	Q	NC	Q	27.0
100 to 249	7,378	3,872	3,233	Q	Q	Q	NC	Q	Q	25.2
250 or More	8,633	6,270	2,091	Q	NC	Q	NC	Q	Q	22.4
Weekly Operating Hours										
39 or Fewer	8,246	1,603	2,283	521	207	820	556	1,970	286	17.0
40 to 48	14,998	2,831	8,696	865	155	816	383	1,056	Q	16.5
49 to 60	14,046	2,810	8,570	645	274	636	283	Q	282	16.6
61 to 84	12,062	4,939	5,664	284	21	423	188	264	Q	20.6
85 to 167	8,467	4,478	3,069	114	221	187	56	217	125	23.9
Open Continuously	10,057	4,986	3,410	Q	142	467	75	585	143	27.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A36. Space-Heating Energy Sources, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Space-Heating Energy Source Used (more than one may apply)						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.7	0.7	1.3	1.6	2.0	2.3	
All Buildings	4,806	4,178	1,513	2,405	479	94	255	102	7.6
Building Floorspace (Square Feet)									
1,001 to 5,000	2,681	2,247	779	1,211	259	18	185	68	10.4
5,001 to 10,000	975	883	327	524	117	11	39	25	11.2
10,001 to 25,000	647	585	225	376	49	28	19	Q	12.2
25,001 to 50,000	280	255	101	157	31	15	Q	Q	16.0
50,001 to 100,000	116	110	40	73	12	9	Q	Q	16.3
100,001 to 200,000	71	64	24	45	5	6	Q	NC	16.6
200,001 to 500,000	26	24	10	15	5	5	Q	NC	22.3
Over 500,000	9	9	6	4	1	1	NC	Q	37.9
Principal Building Activity									
Education	301	295	104	182	25	20	Q	NC	17.3
Food Sales	130	120	54	61	Q	NC	Q	NC	28.9
Food Service	260	249	73	162	Q	Q	Q	Q	20.8
Health Care	63	61	23	38	5	2	Q	NC	30.7
Lodging	154	150	87	58	12	9	Q	Q	22.3
Mercantile and Service	1,272	1,214	370	719	183	9	95	48	11.3
Office	749	745	311	439	69	24	Q	Q	15.3
Parking Garage	24	17	6	Q	Q	Q	NC	NC	60.3
Public Assembly	278	257	89	156	25	10	Q	Q	16.3
Public Order and Safety	60	60	19	36	Q	Q	Q	NC	33.9
Religious Worship	366	364	122	193	59	Q	48	Q	21.3
Warehouse and Storage	761	445	173	242	47	Q	38	Q	14.7
Other	69	48	24	21	Q	4	Q	Q	18.5
Vacant	319	154	58	87	Q	2	Q	Q	20.5
Year Constructed									
1899 or Before	169	158	45	105	29	4	Q	Q	26.1
1900 to 1919	255	232	44	162	51	10	Q	Q	22.0
1920 to 1945	724	623	155	405	94	12	30	37	13.6
1946 to 1959	880	760	234	469	97	22	54	Q	12.6
1960 to 1969	783	687	236	419	75	22	34	Q	12.8
1970 to 1979	982	850	375	460	81	9	46	Q	12.0
1980 to 1989	884	761	376	342	49	11	61	Q	13.1
1990 to 1992	128	107	48	44	Q	Q	Q	Q	32.2
Census Region									
Northeast	771	694	162	341	264	23	45	Q	14.3
Midwest	1,202	1,047	194	810	63	23	68	35	15.0
South	1,963	1,687	825	786	148	27	121	38	12.2
West	870	750	332	469	Q	20	Q	Q	23.4
Energy Sources (more than one may apply)									
Electricity	4,616	4,173	1,513	2,405	479	93	253	98	7.5
Natural Gas	2,665	2,627	556	2,405	91	34	Q	21	11.0
Fuel Oil	559	554	134	98	479	11	25	Q	15.2
District Heat	95	95	17	6	3	94	Q	Q	27.5
District Chilled Water	28	28	5	3	Q	24	NC	NC	33.0
Propane	337	330	95	19	50	Q	255	Q	22.1
Any Other	163	161	48	37	26	Q	Q	102	22.2
Energy End Uses (more than one may apply)									
Heated Buildings	4,178	4,178	1,513	2,405	479	94	255	102	7.5
Air-Conditioned Buildings	3,502	3,439	1,364	2,043	312	80	169	28	8.0
Buildings with Water Heating	3,502	3,436	1,269	2,088	364	80	164	48	7.9
Buildings with Cooking	734	715	272	444	83	18	32	Q	12.1
Buildings with Manufacturing	121	117	46	77	12	5	Q	Q	26.7

See footnotes at end of table.

Table A36. Space-Heating Energy Sources, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Space-Heating Energy Source Used (more than one may apply)						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.7	0.7	1.3	1.6	2.0	2.3	
Climate Zone: 45-Year Average									
Fewer than 2,000 CDD and --									
More than 7,000 HDD	399	344	68	216	74	10	23	Q	24.4
5,500-7,000 HDD	1,134	1,018	221	725	160	28	50	Q	17.5
4,000-5,499 HDD	1,077	959	341	440	187	27	81	39	23.1
Fewer than 4,000 HDD	1,101	955	394	559	Q	13	78	Q	25.4
More than 2,000 CDD and --									
Fewer than 4,000 HDD	1,095	903	490	465	17	15	23	Q	21.9
Predominant Exterior Wall Materials									
Masonry	3,115	2,850	998	1,755	319	75	103	39	8.5
Siding or Shingles	764	635	235	292	103	Q	80	Q	15.4
Metal Panels	745	533	207	274	43	6	68	Q	14.8
Concrete Panels	87	76	41	38	Q	7	Q	NC	25.5
Window Glass	46	41	19	22	Q	1	Q	NC	37.8
Other	47	42	13	24	Q	Q	Q	NC	38.3
Predominant Roof Materials									
Built-Up	1,642	1,489	566	931	139	39	27	Q	10.0
Shingles (Not Wood)	1,381	1,246	429	697	173	10	107	34	11.4
Metal Surfacing	1,037	763	292	376	77	10	101	39	13.7
Synthetic or Rubber	386	368	111	243	51	14	Q	Q	15.8
Slate or Tile	155	140	49	69	22	13	Q	Q	22.2
Concrete	37	22	10	12	Q	Q	NC	NC	44.4
Other	167	150	55	78	Q	Q	Q	Q	27.8
Percent Window Glass									
25 or Less	4,193	3,597	1,304	2,044	409	75	239	97	8.0
26 to 50	490	464	157	298	54	15	Q	Q	12.0
51 to 75	94	89	40	53	12	3	Q	NC	28.1
76 to 100	29	27	13	10	Q	1	Q	NC	37.6
Workers (main shift)									
Less than 5	2,718	2,154	728	1,159	273	22	180	83	10.4
5 to 9	895	861	318	511	88	14	48	Q	11.4
10 to 19	561	540	212	335	56	21	16	Q	13.5
20 to 49	405	401	161	264	34	16	Q	Q	14.7
50 to 99	130	128	53	76	15	10	Q	Q	17.8
100 to 249	64	64	27	43	7	4	Q	Q	11.1
250 or More	31	30	15	16	5	7	Q	Q	22.7
Weekly Operating Hours									
39 or Fewer	1,039	725	214	376	112	10	87	Q	14.6
40 to 48	1,278	1,186	447	706	123	34	45	32	10.8
49 to 60	1,004	920	318	551	116	16	58	Q	11.1
61 to 84	645	603	201	369	69	9	30	Q	11.2
85 to 167	478	436	172	255	34	7	Q	Q	16.6
Open Continuously	362	307	161	148	24	19	Q	Q	16.3
Primary Space-Heating Energy Source									
Electricity	1,107	1,107	1,107	100	23	Q	Q	Q	17.2
Natural Gas	2,276	2,276	271	2,276	48	2	Q	Q	14.4
Fuel Oil	394	394	66	18	394	NC	Q	Q	21.7
District Heat	91	91	16	3	Q	91	Q	Q	29.6
Propane	217	217	31	Q	Q	NC	217	Q	37.0
Wood	68	68	Q	Q	Q	NC	Q	68	36.3
Any Other	Q	Q	Q	Q	NC	NC	NC	Q	81.0

See footnotes at end of table.

Table A36. Space-Heating Energy Sources, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Space-Heating Energy Source Used (more than one may apply)						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.7	0.7	1.3	1.6	2.0	2.3	
Cooling Energy Sources (more than one may apply)									
Electricity	3,404	3,342	1,354	1,966	311	65	168	28	8.2
Natural Gas	106	106	20	104	Q	Q	NC	NC	25.9
District Chilled Water	28	28	5	3	Q	24	NC	NC	33.0
Water-Heating Energy Sources (more than one may apply)									
Electricity	1,696	1,660	902	689	197	29	106	31	9.2
Natural Gas	1,647	1,621	363	1,442	51	18	Q	Q	14.0
Fuel Oil	126	124	14	11	118	Q	Q	Q	31.2
District Heat	38	38	3	4	Q	37	Q	Q	32.9
Propane	80	76	20	Q	Q	NC	55	Q	43.2
Cooking Energy Sources (more than one may apply)									
Electricity	356	344	174	168	50	10	16	Q	15.6
Natural Gas	431	425	112	356	25	11	Q	Q	18.5
Propane	70	66	32	Q	28	Q	Q	NC	33.8
Percent of Floorspace Heated									
Not Heated	653	25	Q	Q	Q	Q	Q	Q	39.8
1 to 50	688	688	283	353	73	4	51	36	13.4
51 to 99	618	618	224	392	70	9	34	Q	13.3
100	2,846	2,846	999	1,654	330	80	163	49	8.5
Heating Equipment (more than one may apply)									
Heat Pumps	449	449	444	98	17	8	18	NC	17.9
Furnaces	1,692	1,692	403	1,218	251	Q	108	Q	11.3
Individual Space Heaters	1,464	1,464	668	819	151	14	162	81	10.6
District Heat	93	93	16	5	3	93	Q	Q	27.5
Boilers	624	624	116	419	199	Q	16	Q	13.3
Packaged Heating Units	870	870	407	535	13	2	Q	Q	21.2
Other	42	42	19	22	Q	Q	Q	NC	45.8
Heating Distribution Equipment (more than one may apply)									
Radiators or Baseboards	473	473	73	273	158	47	Q	Q	13.6
Ducts for Heating	2,955	2,955	1,139	1,806	297	50	138	23	8.2
Heating Only	577	577	95	360	173	5	41	Q	14.4
Heating and Cooling	2,378	2,378	1,044	1,446	125	45	98	Q	9.1
Variable Air-Volume System	210	210	78	144	17	13	Q	Q	18.7
Fan Coil Units for Heating	99	99	30	61	21	16	Q	Q	21.3
Heating Only	78	78	27	48	16	11	Q	Q	24.0
Heating and Cooling	21	21	2	13	5	5	Q	Q	35.3
Individual Space Heaters	1,464	1,464	668	819	151	14	162	81	10.6
Other	181	181	53	100	30	Q	Q	Q	20.7

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A37. Space-Heating Energy Sources, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Space-Heating Energy Source Used (more than one may apply)						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.8	0.7	1.2	1.4	2.0	2.2	
All Buildings	67,876	61,996	25,636	38,524	7,334	5,242	1,568	504	7.6
Building Floorspace (Square Feet)									
1,001 to 5,000	7,327	6,210	2,162	3,414	748	56	479	173	10.6
5,001 to 10,000	7,199	6,533	2,427	3,893	872	73	287	182	11.2
10,001 to 25,000	10,375	9,424	3,648	6,130	770	443	270	Q	12.0
25,001 to 50,000	10,069	9,132	3,599	5,648	1,100	516	Q	Q	16.3
50,001 to 100,000	8,062	7,622	2,825	5,033	904	638	Q	Q	16.3
100,001 to 200,000	9,678	8,730	3,260	6,212	760	780	Q	NC	16.1
200,001 to 500,000	7,889	7,470	3,198	4,544	1,414	1,521	Q	NC	22.4
Over 500,000	7,278	6,876	4,517	3,650	765	1,215	NC	Q	32.6
Principal Building Activity									
Education	8,470	8,379	2,159	5,957	1,548	641	Q	NC	15.5
Food Sales	757	723	285	448	Q	NC	Q	NC	32.1
Food Service	1,491	1,435	407	855	Q	Q	Q	Q	25.1
Health Care	1,763	1,746	667	1,236	584	403	Q	NC	21.7
Lodging	2,891	2,870	1,516	1,298	272	580	Q	Q	24.3
Mercantile and Service	12,402	11,835	5,122	8,301	1,128	148	530	196	15.0
Office	12,319	12,255	5,445	6,528	1,345	1,706	Q	Q	16.2
Parking Garage	1,652	1,165	730	Q	Q	Q	NC	NC	63.5
Public Assembly	4,556	4,470	2,267	2,271	519	348	Q	Q	28.3
Public Order and Safety	820	820	184	480	Q	Q	Q	NC	38.1
Religious Worship	3,747	3,737	1,361	2,672	527	Q	154	Q	18.5
Warehouse and Storage	11,484	8,800	4,304	5,920	683	Q	297	Q	18.2
Other	1,130	1,025	267	633	Q	326	Q	Q	16.9
Vacant	4,396	2,738	924	1,594	Q	410	Q	Q	29.8
Year Constructed									
1899 or Before	1,721	1,637	419	1,161	283	91	Q	Q	26.0
1900 to 1919	3,608	3,329	846	2,345	744	269	Q	Q	27.7
1920 to 1945	8,712	7,717	2,197	4,964	1,322	1,128	151	199	18.0
1946 to 1959	10,421	9,371	3,116	6,509	1,201	545	219	Q	14.5
1960 to 1969	12,612	11,548	3,880	7,875	1,505	1,363	273	Q	16.7
1970 to 1979	14,014	12,814	6,191	7,673	1,495	972	351	Q	12.4
1980 to 1989	14,287	13,276	7,958	6,671	660	673	451	Q	16.8
1990 to 1992	2,502	2,303	1,030	1,325	124	202	Q	Q	22.2
Census Region									
Northeast	13,400	12,858	4,505	6,871	4,228	1,556	329	Q	14.3
Midwest	17,280	16,303	4,673	12,305	1,226	1,869	355	140	13.6
South	24,577	21,659	11,185	11,604	1,628	941	791	168	12.5
West	12,619	11,176	5,273	7,744	Q	875	Q	Q	16.5
Energy Sources (more than one may apply)									
Electricity	66,549	61,971	25,636	38,524	7,334	5,228	1,561	494	7.6
Natural Gas	45,097	44,624	13,927	38,524	3,883	2,724	Q	167	10.0
Fuel Oil	13,218	12,933	4,872	5,966	7,334	1,241	237	Q	12.4
District Heat	5,339	5,324	985	627	447	5,242	Q	Q	25.2
District Chilled Water	2,066	2,063	476	338	Q	1,702	NC	NC	30.9
Propane	3,393	3,340	1,550	742	935	Q	1,568	Q	20.9
Any Other	1,551	1,522	753	649	178	Q	Q	504	28.6
Energy End Uses (more than one may apply)									
Heated Buildings	61,996	61,996	25,636	38,524	7,334	5,242	1,568	504	7.7
Air-Conditioned Buildings	57,041	56,073	24,123	35,315	6,307	4,711	1,201	196	8.4
Buildings with Water Heating	58,479	57,708	23,996	36,677	6,796	5,081	1,146	308	8.0
Buildings with Cooking	23,065	22,736	10,147	14,625	3,484	2,198	316	Q	13.0
Buildings with Manufacturing	3,174	3,121	1,178	2,214	505	415	Q	Q	26.6

See footnotes at end of table.

Table A37. Space-Heating Energy Sources, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Space-Heating Energy Source Used (more than one may apply)						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.8	0.7	1.2	1.4	2.0	2.2	
Climate Zone: 45-Year Average									
Fewer than 2,000 CDD and --									
More than 7,000 HDD	5,623	5,218	1,268	3,360	1,284	513	277	Q	23.8
5,500-7,000 HDD	18,024	17,196	5,460	12,269	2,322	1,903	273	Q	15.0
4,000-5,499 HDD	16,162	14,966	6,098	8,539	2,827	1,706	428	139	15.8
Fewer than 4,000 HDD	15,251	13,537	5,940	9,380	738	560	378	Q	24.1
More than 2,000 CDD and --									
Fewer than 4,000 HDD	12,816	11,079	6,871	4,975	164	560	212	Q	22.1
Predominant Exterior Wall Materials									
Masonry	48,585	45,520	18,048	29,089	5,837	3,687	674	274	8.9
Siding or Shingles	3,873	3,303	1,366	1,775	534	Q	332	Q	15.8
Metal Panels	7,392	5,682	2,703	3,238	481	331	516	Q	17.8
Concrete Panels	4,961	4,663	2,212	2,969	Q	699	Q	NC	28.8
Window Glass	2,028	1,839	979	825	Q	Q	Q	NC	32.3
Other	1,037	988	328	628	Q	Q	Q	NC	37.7
Predominant Roof Materials									
Built-Up	30,257	28,271	12,420	17,907	2,834	2,346	236	Q	11.9
Shingles (Not Wood)	10,570	9,764	3,227	5,906	1,422	459	393	202	13.8
Metal Surfacing	9,019	7,121	3,116	4,108	509	306	708	148	14.9
Synthetic or Rubber	11,702	11,541	4,365	7,778	1,924	1,470	Q	Q	16.1
Slate or Tile	1,998	1,863	546	1,027	300	400	Q	Q	26.0
Concrete	2,544	1,741	1,157	808	Q	Q	NC	NC	49.9
Other	1,786	1,695	805	989	Q	Q	Q	Q	28.8
Percent Window Glass									
25 or Less	51,356	45,868	18,426	28,689	5,262	3,058	1,436	474	8.7
26 to 50	11,815	11,493	5,047	7,455	1,621	1,352	Q	Q	14.2
51 to 75	3,206	3,185	1,580	1,867	269	473	Q	NC	22.2
76 to 100	1,499	1,450	583	513	Q	Q	Q	NC	34.8
Workers (main shift)									
Less than 5	17,944	13,604	5,498	7,098	1,549	410	697	328	15.9
5 to 9	7,524	7,075	2,930	4,117	706	314	365	Q	14.0
10 to 19	8,077	7,528	2,907	4,826	696	487	178	Q	14.9
20 to 49	10,556	10,440	3,833	7,502	741	503	Q	Q	15.4
50 to 99	7,763	7,652	3,017	5,274	826	785	Q	Q	18.9
100 to 249	7,378	7,323	3,188	5,101	1,106	674	Q	Q	13.0
250 or More	8,633	8,374	4,263	4,607	1,710	2,070	Q	Q	22.9
Weekly Operating Hours									
39 or Fewer	8,246	6,000	1,641	3,482	1,069	347	341	Q	16.7
40 to 48	14,998	13,745	5,464	8,680	1,492	792	217	133	11.5
49 to 60	14,046	13,251	5,180	8,626	1,310	1,051	460	Q	11.9
61 to 84	12,062	11,529	5,114	7,746	893	695	259	Q	15.6
85 to 167	8,467	8,141	3,476	5,509	1,162	504	Q	Q	19.9
Open Continuously	10,057	9,329	4,761	4,481	1,409	1,853	Q	Q	20.8
Primary Space-Heating Energy Source									
Electricity	15,502	15,502	15,502	2,202	330	Q	Q	Q	20.4
Natural Gas	35,161	35,161	7,660	35,161	2,225	Q	Q	Q	14.2
Fuel Oil	4,415	4,415	839	450	4,415	NC	Q	Q	21.8
District Heat	5,014	5,014	895	393	Q	5,014	Q	Q	28.1
Propane	1,101	1,101	279	Q	Q	NC	1,101	Q	38.1
Wood	257	257	Q	Q	Q	NC	Q	257	35.6
Any Other	546	546	Q	Q	NC	NC	NC	Q	72.7

See footnotes at end of table.

Table A37. Space-Heating Energy Sources, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Space-Heating Energy Source Used (more than one may apply)						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.5	0.5	0.8	0.7	1.2	1.4	2.0	2.2	
Cooling Energy Sources (more than one may apply)									
Electricity	54,628	53,663	23,798	34,303	5,981	3,409	1,171	196	8.5
Natural Gas	1,906	1,906	430	1,816	Q	Q	NC	NC	32.4
District Chilled Water	2,066	2,063	476	338	Q	1,702	NC	NC	30.9
Water-Heating Energy Sources (more than one may apply)									
Electricity	25,482	24,878	15,574	11,961	2,363	1,070	739	159	11.8
Natural Gas	29,962	29,802	8,643	26,322	2,581	1,109	Q	Q	13.0
Fuel Oil	2,470	2,464	471	462	2,402	Q	Q	Q	31.9
District Heat	3,308	3,308	581	432	Q	3,240	Q	Q	29.6
Propane	659	648	255	Q	Q	NC	346	Q	43.8
Cooking Energy Sources (more than one may apply)									
Electricity	12,183	12,124	6,707	6,711	1,668	1,336	223	Q	17.8
Natural Gas	15,233	14,987	5,687	11,888	2,007	1,199	Q	Q	16.4
Propane	1,039	1,000	598	Q	478	Q	Q	NC	38.2
Percent of Floorspace Heated									
Not Heated	6,211	330	Q	Q	Q	Q	Q	Q	47.8
1 to 50	11,195	11,195	5,932	6,524	702	385	393	211	17.3
51 to 99	10,211	10,211	4,569	6,596	1,444	815	285	Q	14.8
100	40,260	40,260	14,983	25,235	5,148	4,024	858	188	9.2
Heating Equipment (more than one may apply)									
Heat Pumps	8,269	8,269	8,243	3,651	602	443	242	NC	15.6
Furnaces	16,909	16,909	6,018	13,797	1,746	Q	534	Q	13.2
Individual Space Heaters	22,380	22,380	12,980	13,980	2,099	1,139	984	380	9.9
District Heat	5,225	5,225	970	553	413	5,225	Q	Q	25.6
Boilers	20,664	20,664	6,583	15,967	5,260	Q	219	Q	14.6
Packaged Heating Units	16,000	16,000	8,375	11,524	627	279	Q	Q	17.4
Other	903	903	491	549	Q	Q	Q	NC	38.6
Heating Distribution Equipment (more than one may apply)									
Radiators or Baseboards	13,263	13,263	2,909	8,313	3,702	2,695	Q	Q	13.4
Ducts for Heating	45,422	45,422	20,063	30,075	4,629	3,141	1,001	151	8.9
Heating Only	5,950	5,950	1,969	4,421	1,177	207	211	Q	20.0
Heating and Cooling	39,472	39,472	18,094	25,654	3,453	2,935	790	Q	9.9
Variable Air-Volume System	11,528	11,528	5,519	7,440	1,480	1,721	Q	Q	21.2
Fan Coil Units for Heating	5,474	5,474	1,874	3,677	1,243	1,444	Q	Q	20.7
Heating Only	3,569	3,569	1,480	2,475	667	693	Q	Q	25.3
Heating and Cooling	1,906	1,906	393	1,203	576	751	Q	Q	27.2
Individual Space Heaters	22,380	22,380	12,980	13,980	2,099	1,139	984	380	9.9
Other	3,310	3,310	1,434	2,511	413	245	Q	Q	24.3

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A38. Primary Space-Heating Energy Sources, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Primary Space-Heating Energy Sources Used						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.4	0.4	0.8	0.6	1.4	1.5	2.0	2.7	
All Buildings	4,806	4,178	1,107	2,276	394	91	217	68	8.2
Building Floorspace (Square Feet)									
1,001 to 5,000	2,681	2,247	618	1,157	220	18	168	52	11.0
5,001 to 10,000	975	883	231	492	106	11	31	Q	12.3
10,001 to 25,000	647	585	148	354	34	27	Q	Q	13.4
25,001 to 50,000	280	255	62	150	22	15	Q	NC	15.8
50,001 to 100,000	116	110	26	65	8	9	Q	NC	16.7
100,001 to 200,000	71	64	13	39	3	6	Q	NC	19.3
200,001 to 500,000	26	24	5	14	1	4	NC	NC	22.4
Over 500,000	9	9	Q	3	Q	1	NC	NC	45.5
Principal Building Activity									
Education	301	295	79	170	20	20	Q	NC	18.8
Food Sales	130	120	53	57	Q	NC	Q	NC	29.9
Food Service	260	249	53	159	Q	Q	Q	Q	21.5
Health Care	63	61	20	35	Q	2	Q	NC	35.0
Lodging	154	150	77	49	Q	9	Q	NC	25.1
Mercantile and Service	1,272	1,214	245	681	154	8	75	38	12.2
Office	749	745	243	409	61	23	Q	NC	13.7
Parking Garage	24	17	6	Q	Q	Q	NC	NC	62.5
Public Assembly	278	257	59	144	21	10	Q	Q	17.7
Public Order and Safety	60	60	Q	36	Q	Q	Q	NC	37.3
Religious Worship	366	364	74	189	51	Q	44	Q	24.4
Warehouse and Storage	761	445	120	232	32	Q	32	Q	16.0
Other	69	48	17	19	Q	4	Q	NC	35.1
Vacant	319	154	49	86	Q	2	Q	Q	22.1
Year Constructed									
1899 or Before	169	158	26	97	25	4	Q	NC	26.9
1900 to 1919	255	232	18	157	41	10	Q	NC	22.9
1920 to 1945	724	623	82	391	81	12	Q	Q	14.7
1946 to 1959	880	760	150	445	88	22	46	Q	13.3
1960 to 1969	783	687	167	396	58	22	30	Q	13.6
1970 to 1979	982	850	301	427	57	8	43	Q	13.2
1980 to 1989	884	761	322	321	42	11	46	Q	13.7
1990 to 1992	128	107	41	43	Q	Q	Q	Q	34.1
Census Region									
Northeast	771	694	68	322	235	22	31	Q	16.1
Midwest	1,202	1,047	124	776	41	23	60	Q	16.7
South	1,963	1,687	655	737	115	27	107	32	13.2
West	870	750	260	440	Q	20	Q	Q	25.4
Energy Sources (more than one may apply)									
Electricity	4,616	4,173	1,107	2,276	394	91	217	64	8.2
Natural Gas	2,665	2,627	270	2,276	37	32	Q	Q	13.7
Fuel Oil	559	554	51	75	394	11	Q	Q	18.2
District Heat	95	95	Q	3	NC	91	NC	NC	29.0
District Chilled Water	28	28	2	Q	Q	23	NC	NC	39.6
Propane	337	330	52	17	38	Q	217	Q	24.5
Any Other	163	161	Q	24	Q	Q	Q	68	25.3
Energy End Uses (more than one may apply)									
Heated Buildings	4,178	4,178	1,107	2,276	394	91	217	68	8.2
Air-Conditioned Buildings	3,502	3,439	1,005	1,933	247	78	144	Q	8.7
Buildings with Water Heating	3,502	3,436	921	1,972	292	78	131	Q	8.7
Buildings with Cooking	734	715	192	410	65	17	25	Q	13.5
Buildings with Manufacturing	121	117	28	69	9	5	Q	Q	29.5

See footnotes at end of table.

Table A38. Primary Space-Heating Energy Sources, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Primary Space-Heating Energy Sources Used						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.4	0.4	0.8	0.6	1.4	1.5	2.0	2.7	
Climate Zone: 45-Year Average									
Fewer than 2,000 CDD and --									
More than 7,000 HDD	399	344	35	206	64	10	Q	Q	26.3
5,500-7,000 HDD	1,134	1,018	104	697	129	27	39	Q	19.2
4,000-5,499 HDD	1,077	959	238	414	167	26	67	Q	24.4
Fewer than 4,000 HDD	1,101	955	304	524	Q	13	75	Q	25.9
More than 2,000 CDD and --									
Fewer than 4,000 HDD	1,095	903	426	434	Q	15	Q	Q	23.7
Predominant Exterior Wall Materials									
Masonry	3,115	2,850	721	1,667	263	74	87	Q	9.5
Siding or Shingles	764	635	172	273	90	Q	68	Q	15.9
Metal Panels	745	533	155	258	29	6	59	Q	16.8
Concrete Panels	87	76	35	34	Q	6	Q	NC	32.2
Window Glass	46	41	16	19	Q	1	NC	NC	38.4
Other	47	42	8	24	Q	Q	Q	NC	39.1
Predominant Roof Materials									
Built-Up	1,642	1,489	427	873	109	39	22	Q	11.4
Shingles (Not Wood)	1,381	1,246	304	662	155	10	89	Q	12.1
Metal Surfacing	1,037	763	215	358	57	10	89	Q	15.2
Synthetic or Rubber	386	368	64	232	43	13	Q	Q	17.5
Slate or Tile	155	140	39	65	19	13	Q	Q	25.0
Concrete	37	22	8	11	Q	Q	NC	NC	46.6
Other	167	150	50	75	Q	Q	Q	Q	28.2
Percent Window Glass									
25 or Less	4,193	3,597	957	1,937	338	73	204	65	8.8
26 to 50	490	464	110	282	42	14	Q	Q	13.2
51 to 75	94	89	27	48	10	Q	Q	NC	31.2
76 to 100	29	27	12	9	Q	1	Q	NC	39.4
Workers (main shift)									
Less than 5	2,718	2,154	557	1,111	231	22	158	59	11.1
5 to 9	895	861	233	489	74	14	44	Q	12.3
10 to 19	561	540	152	309	44	21	Q	Q	15.0
20 to 49	405	401	105	246	28	16	Q	NC	14.5
50 to 99	130	128	36	67	11	9	Q	Q	20.3
100 to 249	64	64	17	39	4	4	NC	NC	18.4
250 or More	31	30	8	14	2	6	NC	NC	21.8
Weekly Operating Hours									
39 or Fewer	1,039	725	144	366	103	10	81	Q	15.1
40 to 48	1,278	1,186	318	668	103	33	35	Q	12.2
49 to 60	1,004	920	233	514	88	15	44	Q	12.0
61 to 84	645	603	149	348	60	8	28	Q	12.1
85 to 167	478	436	128	245	29	7	Q	Q	17.7
Open Continuously	362	307	134	134	12	18	Q	Q	20.0
Replacement Energy Source for Primary Heating									
Electricity Only	350	350	NC	280	Q	Q	33	Q	22.7
Natural Gas Only	213	213	125	NC	47	6	Q	Q	18.2
Fuel Oil Only	161	161	25	108	Q	6	Q	Q	23.9
Propane Only	212	212	43	121	37	Q	NC	Q	25.3
Any Other Single Energy Source Source	57	57	Q	25	Q	NC	Q	NC	39.7
More than One Energy Source	93	93	Q	58	Q	Q	Q	Q	34.0
Percent of Floorspace Heated									
Not Heated	653	25	Q	Q	Q	Q	Q	Q	42.9
1 to 50	688	688	220	332	62	3	40	Q	14.9
51 to 99	618	618	160	361	53	9	26	Q	14.5
100	2,846	2,846	720	1,576	276	79	146	Q	9.1

See footnotes at end of table.

Table A38. Primary Space-Heating Energy Sources, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Primary Space-Heating Energy Sources Used						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.4	0.4	0.8	0.6	1.4	1.5	2.0	2.7	
Heating Equipment (more than one may apply)									
Heat Pumps	449	449	362	60	10	7	Q	NC	20.5
Furnaces	1,692	1,692	205	1,162	209	Q	92	Q	12.9
Individual Space Heaters	1,464	1,464	384	753	114	14	134	53	11.3
District Heat	93	93	Q	2	NC	91	NC	NC	30.4
Boilers	624	624	33	393	170	Q	Q	Q	15.9
Packaged Heating Units	870	870	331	507	Q	2	Q	NC	20.2
Other	42	42	18	19	Q	Q	Q	NC	49.6
Heating Distribution Equipment (more than one may apply)									
Radiators or Baseboards	473	473	12	254	136	46	Q	Q	16.3
Ducts for Heating	2,955	2,955	831	1,707	241	49	111	Q	9.5
Heating Only	577	577	33	340	157	5	29	Q	17.3
Heating and Cooling	2,378	2,378	798	1,367	84	44	82	NC	9.2
Variable Air-Volume System	210	210	49	136	8	13	Q	NC	18.4
Fan Coil Units for Heating	99	99	13	56	14	16	NC	Q	22.9
Heating Only	78	78	12	44	11	11	NC	Q	25.9
Heating and Cooling	21	21	Q	12	Q	5	NC	NC	42.0
Individual Space Heaters	1,464	1,464	384	753	114	14	134	53	11.3
Other	181	181	34	93	27	Q	Q	Q	22.4

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A39. Primary Space-Heating Energy Sources, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Primary Space-Heating Energy Sources Used						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.4	0.5	0.9	0.6	1.3	1.3	2.0	2.6	
All Buildings	67,876	61,996	15,502	35,161	4,415	5,014	1,101	257	8.7
Building Floorspace (Square Feet)									
1,001 to 5,000	7,327	6,210	1,684	3,256	629	56	427	126	11.2
5,001 to 10,000	7,199	6,533	1,719	3,648	779	73	232	Q	12.1
10,001 to 25,000	10,375	9,424	2,411	5,763	519	433	Q	Q	13.3
25,001 to 50,000	10,069	9,132	2,245	5,377	791	494	Q	NC	16.0
50,001 to 100,000	8,062	7,622	1,788	4,547	569	571	Q	NC	16.6
100,001 to 200,000	9,678	8,730	1,803	5,420	472	780	Q	NC	18.6
200,001 to 500,000	7,889	7,470	1,428	4,225	387	1,430	NC	NC	22.8
Over 500,000	7,278	6,876	2,424	2,925	Q	1,177	NC	NC	38.0
Principal Building Activity									
Education	8,470	8,379	998	5,642	996	637	Q	NC	16.1
Food Sales	757	723	282	401	Q	NC	Q	NC	33.0
Food Service	1,491	1,435	307	850	Q	Q	Q	Q	25.9
Health Care	1,763	1,746	198	1,030	Q	385	Q	NC	27.8
Lodging	2,891	2,870	1,125	1,004	Q	575	Q	NC	25.1
Mercantile and Service	12,402	11,835	2,858	7,272	833	141	364	144	15.5
Office	12,319	12,255	3,746	5,924	998	1,553	Q	NC	15.4
Parking Garage	1,652	1,165	706	Q	Q	Q	NC	NC	67.8
Public Assembly	4,556	4,470	Q	2,028	Q	308	Q	Q	32.9
Public Order and Safety	820	820	Q	468	Q	Q	Q	NC	40.7
Religious Worship	3,747	3,737	602	2,612	324	Q	132	Q	21.4
Warehouse and Storage	11,484	8,800	2,121	5,612	366	Q	226	Q	19.6
Other	1,130	1,025	105	535	Q	326	Q	NC	30.2
Vacant	4,396	2,738	683	1,455	Q	410	Q	Q	31.9
Year Constructed									
1899 or Before	1,721	1,637	246	1,074	186	91	Q	NC	28.1
1900 to 1919	3,608	3,329	250	2,292	474	264	Q	NC	29.2
1920 to 1945	8,712	7,717	790	4,516	895	1,053	Q	Q	19.0
1946 to 1959	10,421	9,371	1,493	6,115	996	537	171	Q	15.4
1960 to 1969	12,612	11,548	1,893	7,241	739	1,339	115	Q	16.5
1970 to 1979	14,014	12,814	3,800	7,032	711	911	273	Q	14.0
1980 to 1989	14,287	13,276	6,230	5,665	350	656	304	Q	18.2
1990 to 1992	2,502	2,303	800	1,225	Q	163	Q	Q	26.2
Census Region									
Northeast	13,400	12,858	1,768	6,049	3,202	1,467	158	Q	16.8
Midwest	17,280	16,303	2,169	11,468	427	1,846	287	Q	14.6
South	24,577	21,659	8,529	10,660	738	903	571	122	13.7
West	12,619	11,176	3,036	6,984	Q	798	Q	Q	22.5
Energy Sources (more than one may apply)									
Electricity	66,549	61,971	15,502	35,161	4,415	4,999	1,101	246	8.7
Natural Gas	45,097	44,624	5,272	35,161	1,271	2,547	Q	Q	13.1
Fuel Oil	13,218	12,933	2,482	4,695	4,415	1,097	Q	Q	15.0
District Heat	5,339	5,324	Q	233	NC	5,014	NC	NC	28.0
District Chilled Water	2,066	2,063	136	Q	Q	1,590	NC	NC	38.5
Propane	3,393	3,340	791	675	664	Q	1,101	Q	24.9
Any Other	1,551	1,522	Q	302	Q	Q	Q	257	30.0
Energy End Uses (more than one may apply)									
Heated Buildings	61,996	61,996	15,502	35,161	4,415	5,014	1,101	257	8.8
Air-Conditioned Buildings	57,041	56,073	14,511	32,138	3,539	4,484	816	Q	9.8
Buildings with Water Heating	58,479	57,708	14,200	33,406	3,911	4,856	702	Q	9.3
Buildings with Cooking	23,065	22,736	5,738	12,913	1,704	2,040	166	Q	15.7
Buildings with Manufacturing	3,174	3,121	425	2,002	198	415	Q	Q	28.5

See footnotes at end of table.

Table A39. Primary Space-Heating Energy Sources, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Primary Space-Heating Energy Sources Used						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.4	0.5	0.9	0.6	1.3	1.3	2.0	2.6	
Climate Zone: 45-Year Average									
Fewer than 2,000 CDD and --									
More than 7,000 HDD	5,623	5,218	641	3,010	862	496	Q	Q	26.5
5,500-7,000 HDD	18,024	17,196	2,305	11,371	1,360	1,842	184	Q	17.2
4,000-5,499 HDD	16,162	14,966	2,955	7,599	1,984	1,572	319	Q	18.3
Fewer than 4,000 HDD	15,251	13,537	3,656	8,790	Q	550	Q	Q	24.7
More than 2,000 CDD and --									
Fewer than 4,000 HDD	12,816	11,079	5,945	4,391	Q	554	Q	Q	24.0
Predominant Exterior Wall Materials									
Masonry	48,585	45,520	10,902	26,557	3,505	3,509	431	Q	10.8
Siding or Shingles	3,873	3,303	822	1,588	475	Q	283	Q	16.7
Metal Panels	7,392	5,682	1,657	2,930	271	330	374	Q	18.1
Concrete Panels	4,961	4,663	1,219	2,749	Q	669	Q	NC	33.0
Window Glass	2,028	1,839	636	749	Q	Q	NC	NC	32.7
Other	1,037	988	266	589	Q	Q	Q	NC	40.5
Predominant Roof Materials									
Built-Up	30,257	28,271	7,599	16,326	1,396	2,307	170	Q	13.8
Shingles (Not Wood)	10,570	9,764	2,100	5,601	1,181	453	305	Q	15.0
Metal Surfacing	9,019	7,121	2,169	3,618	352	305	535	Q	16.1
Synthetic or Rubber	11,702	11,541	1,837	7,176	1,143	1,290	Q	Q	17.9
Slate or Tile	1,998	1,863	271	999	175	400	Q	Q	29.2
Concrete	2,544	1,741	931	Q	Q	Q	NC	NC	56.6
Other	1,786	1,695	595	906	Q	Q	Q	Q	28.0
Percent Window Glass									
25 or Less	51,356	45,868	11,594	26,374	3,239	2,893	1,045	232	10.0
26 to 50	11,815	11,493	2,513	6,695	853	1,309	Q	Q	15.7
51 to 75	3,206	3,185	837	1,673	202	462	Q	NC	25.0
76 to 100	1,499	1,450	558	419	Q	Q	Q	NC	36.8
Workers (main shift)									
Less than 5	17,944	13,604	4,410	6,727	1,227	409	562	193	17.6
5 to 9	7,524	7,075	1,869	3,950	552	313	344	Q	16.0
10 to 19	8,077	7,528	1,920	4,504	425	478	Q	Q	15.8
20 to 49	10,556	10,440	2,151	7,024	603	503	Q	NC	14.5
50 to 99	7,763	7,652	1,569	4,514	528	719	Q	Q	22.5
100 to 249	7,378	7,323	1,471	4,742	438	672	NC	NC	21.4
250 or More	8,633	8,374	2,113	3,700	642	1,919	NC	NC	21.1
Weekly Operating Hours									
39 or Fewer	8,246	6,000	1,006	3,373	895	347	298	Q	18.1
40 to 48	14,998	13,745	3,426	8,127	1,112	781	151	Q	12.8
49 to 60	14,046	13,251	3,002	8,088	729	952	302	Q	12.1
61 to 84	12,062	11,529	3,065	6,718	628	683	197	Q	16.9
85 to 167	8,467	8,141	1,649	5,039	737	451	Q	Q	20.1
Open Continuously	10,057	9,329	3,354	3,816	314	1,800	Q	Q	25.9
Replacement Energy Source for Primary Heating									
Electricity Only	2,559	2,559	NC	2,099	Q	Q	209	Q	23.9
Natural Gas Only	2,260	2,260	952	NC	702	Q	Q	Q	22.3
Fuel Oil Only	5,451	5,451	193	4,599	Q	524	Q	Q	24.9
Propane Only	2,174	2,174	259	1,477	257	Q	NC	Q	25.4
Any Other Single Energy Source Source	477	477	Q	231	Q	NC	Q	NC	52.6
More than One Energy Source	895	895	Q	581	Q	Q	Q	Q	37.2
Percent of Floorspace Heated									
Not Heated	6,211	330	Q	Q	Q	Q	Q	Q	51.3
1 to 50	11,195	11,195	4,044	5,783	495	381	302	Q	17.9
51 to 99	10,211	10,211	2,406	6,064	815	725	160	Q	16.0
100	40,260	40,260	8,980	23,226	3,072	3,890	610	Q	10.8

See footnotes at end of table.

Table A39. Primary Space-Heating Energy Sources, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Primary Space-Heating Energy Sources Used						RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	Wood	
RSE Column Factor:	0.4	0.5	0.9	0.6	1.3	1.3	2.0	2.6	
Heating Equipment (more than one may apply)									
Heat Pumps	8,269	8,269	4,723	2,541	275	376	Q	NC	18.0
Furnaces	16,909	16,909	2,201	12,649	1,292	Q	406	Q	14.2
Individual Space Heaters	22,380	22,380	6,528	12,523	1,266	1,074	679	188	11.0
District Heat	5,225	5,225	Q	Q	NC	4,996	NC	NC	30.0
Boilers	20,664	20,664	2,371	14,727	3,131	Q	Q	Q	18.3
Packaged Heating Units	16,000	16,000	4,591	10,609	Q	271	Q	NC	17.6
Other	903	903	363	474	Q	Q	Q	NC	41.1
Heating Distribution Equipment (more than one may apply)									
Radiators or Baseboards	13,263	13,263	347	7,640	2,355	2,589	Q	Q	15.9
Ducts for Heating	45,422	45,422	11,596	27,302	2,539	3,042	637	Q	10.7
Heating Only	5,950	5,950	627	3,877	1,041	206	125	Q	22.5
Heating and Cooling	39,472	39,472	10,969	23,425	1,497	2,837	512	NC	10.4
Variable Air-Volume System	11,528	11,528	2,973	6,500	365	1,659	Q	NC	23.9
Fan Coil Units for Heating	5,474	5,474	345	3,385	420	1,311	NC	Q	21.4
Heating Only	3,569	3,569	301	2,307	264	683	NC	Q	25.5
Heating and Cooling	1,906	1,906	Q	1,078	Q	628	NC	NC	29.8
Individual Space Heaters	22,380	22,380	6,528	12,523	1,266	1,074	679	188	11.0
Other	3,310	3,310	572	2,235	218	216	Q	Q	26.5

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A40. Cooling Energy Sources, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
			Cooling Energy Sources (more than one may apply)					Cooling Energy Sources (more than one may apply)			
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	
RSE Column Factor:	0.5	0.6	0.6	1.9	2.3	0.6	0.6	0.7	2.2	2.1	
All Buildings	4,806	3,502	3,404	106	28	67,876	57,041	54,628	1,906	2,066	6.5
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	1,792	1,748	47	Q	7,327	4,994	4,853	146	Q	9.1
5,001 to 10,000	975	758	739	26	Q	7,199	5,601	5,452	194	Q	7.3
10,001 to 25,000	647	519	504	19	8	10,375	8,364	8,132	268	115	10.6
25,001 to 50,000	280	236	225	Q	9	10,069	8,435	8,043	Q	311	12.1
50,001 to 100,000	116	103	100	Q	Q	8,062	7,185	6,970	Q	Q	11.6
100,001 to 200,000	71	59	58	Q	2	9,678	8,072	7,898	Q	252	13.4
200,001 to 500,000	26	24	22	1	2	7,889	7,217	6,536	Q	737	17.5
Over 500,000	9	9	9	Q	1	7,278	7,174	6,744	Q	515	30.8
Principal Building Activity											
Education	301	251	238	10	9	8,470	7,389	6,912	487	253	14.2
Food Sales	130	119	119	NC	NC	757	725	725	NC	NC	24.6
Food Service	260	244	237	Q	Q	1,491	1,449	1,365	Q	Q	14.7
Health Care	63	59	53	Q	Q	1,763	1,747	1,605	Q	227	20.9
Lodging	154	120	117	Q	Q	2,891	2,493	2,310	Q	Q	21.3
Mercantile and Service	1,272	942	920	29	Q	12,402	10,874	10,669	286	Q	11.2
Office	749	731	704	26	8	12,319	12,198	11,576	285	659	10.3
Parking Garage	24	12	12	NC	Q	1,652	922	800	NC	Q	53.1
Public Assembly	278	208	202	Q	Q	4,556	4,077	3,966	Q	Q	23.3
Public Order and Safety	60	47	46	Q	NC	820	741	726	Q	NC	36.5
Religious Worship	366	286	285	Q	Q	3,747	3,121	3,090	Q	Q	19.3
Warehouse and Storage	761	324	318	Q	Q	11,484	7,885	7,783	Q	Q	14.4
Other	69	44	42	Q	Q	1,130	1,040	915	Q	Q	26.4
Vacant	319	114	111	Q	Q	4,396	2,382	2,187	Q	Q	21.4
Year Constructed											
1899 or Before	169	119	118	Q	Q	1,721	1,307	1,289	Q	Q	22.5
1900 to 1919	255	169	164	Q	Q	3,608	2,759	2,691	Q	Q	22.6
1920 to 1945	724	491	481	Q	Q	8,712	6,586	6,308	Q	Q	14.2
1946 to 1959	880	643	625	17	7	10,421	8,260	7,934	327	241	12.4
1960 to 1969	783	563	548	20	5	12,612	10,601	10,231	428	376	12.4
1970 to 1979	982	741	721	23	5	14,014	12,286	11,375	423	632	11.6
1980 to 1989	884	682	662	21	Q	14,287	12,985	12,692	418	243	13.7
1990 to 1992	128	93	86	Q	Q	2,502	2,258	2,109	Q	164	19.8
Census Region											
Northeast	771	521	505	20	2	13,400	11,158	10,729	320	302	12.9
Midwest	1,202	784	751	35	7	17,280	14,383	13,544	512	684	12.7
South	1,963	1,569	1,552	18	10	24,577	21,205	20,609	420	659	11.3
West	870	627	596	34	9	12,619	10,296	9,747	654	421	13.0
Energy Sources (more than one may apply)											
Electricity	4,616	3,502	3,404	106	28	66,549	57,041	54,628	1,906	2,066	6.5
Natural Gas	2,665	2,263	2,176	106	15	45,097	41,423	39,652	1,906	1,109	7.7
Fuel Oil	559	378	375	3	2	13,218	12,081	11,480	439	588	14.3
District Heat	95	82	66	Q	24	5,339	4,786	3,484	Q	1,737	15.8
District Chilled Water	28	28	11	Q	28	2,066	2,066	842	Q	2,066	22.9
Propane	337	230	228	Q	Q	3,393	2,837	2,789	Q	Q	21.7
Any Other	163	71	70	Q	Q	1,551	1,117	1,107	Q	Q	31.2

See footnotes at end of table.

Table A40. Cooling Energy Sources, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Cooled Buildings	Cooling Energy Sources (more than one may apply)			All Buildings	All Cooled Buildings	Cooling Energy Sources (more than one may apply)			
			Electricity	Natural Gas	District Chilled Water			Electricity	Natural Gas	District Chilled Water	
RSE Column Factor:	0.5	0.6	0.6	1.9	2.3	0.6	0.6	0.7	2.2	2.1	
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	3,439	3,342	106	28	61,996	56,073	53,663	1,906	2,063	6.5
Air-Conditioned Buildings	3,502	3,502	3,404	106	28	57,041	57,041	54,628	1,906	2,066	6.6
Buildings with Water Heating	3,502	3,016	2,929	100	22	58,479	53,839	51,535	1,886	1,978	6.8
Buildings with Cooking	734	663	644	25	8	23,065	22,003	20,974	912	920	10.9
Buildings with Manufacturing	121	92	89	Q	Q	3,174	2,870	2,808	Q	Q	23.8
Climate Zone: 45-Year Average											
Fewer than 2,000 CDD and --											
More than 7,000 HDD	399	229	221	Q	Q	5,623	4,267	3,970	Q	Q	25.3
5,500-7,000 HDD	1,134	766	731	43	5	18,024	14,977	14,369	545	574	14.1
4,000-5,499 HDD	1,077	753	735	20	4	16,162	13,549	12,854	324	526	18.7
Fewer than 4,000 HDD	1,101	838	811	29	10	15,251	12,870	12,441	569	437	19.8
More than 2,000 CDD and --											
Fewer than 4,000 HDD	1,095	915	906	Q	9	12,816	11,379	10,994	Q	467	18.1
Predominant Exterior Wall Material											
Masonry	3,115	2,491	2,418	76	25	48,585	42,084	40,311	1,232	1,630	7.2
Siding or Shingles	764	473	462	Q	Q	3,873	2,625	2,552	Q	Q	12.9
Metal Panels	745	394	384	Q	Q	7,392	4,854	4,727	Q	Q	14.6
Concrete Panels	87	71	68	Q	2	4,961	4,563	4,237	Q	221	19.3
Window Glass	46	38	38	Q	Q	2,028	1,978	1,893	Q	Q	28.3
Other	47	35	35	Q	Q	1,037	938	908	Q	Q	37.7
Predominant Roof Material											
Built-Up	1,642	1,319	1,290	39	11	30,257	26,404	25,503	910	969	8.4
Shingles (Not Wood)	1,381	1,025	999	28	Q	10,570	8,606	8,420	293	Q	11.4
Metal Surfacing	1,037	576	559	21	Q	9,019	6,077	5,886	171	Q	13.1
Synthetic or Rubber	386	318	306	11	6	11,702	10,893	10,130	423	626	13.2
Slate or Tile	155	113	107	Q	Q	1,998	1,608	1,470	Q	Q	21.1
Concrete	37	27	23	Q	Q	2,544	1,909	1,727	Q	Q	46.5
Other	167	124	122	Q	Q	1,786	1,544	1,493	Q	Q	22.8
Percent Window Glass											
25 or Less	4,193	2,987	2,904	91	21	51,356	41,691	39,873	1,403	1,317	7.2
26 to 50	490	410	401	10	6	11,815	10,873	10,449	361	503	12.7
51 to 75	94	80	77	Q	Q	3,206	3,031	2,938	Q	Q	19.7
76 to 100	29	25	23	Q	Q	1,499	1,447	1,368	Q	Q	31.9
Workers (main shift)											
Less than 5	2,718	1,623	1,591	34	Q	17,944	10,719	10,315	213	Q	13.4
5 to 9	895	781	753	30	Q	7,524	6,249	6,065	188	Q	9.0
10 to 19	561	502	487	Q	10	8,077	6,954	6,760	Q	193	11.7
20 to 49	405	384	373	17	5	10,556	9,990	9,758	330	191	11.4
50 to 99	130	118	112	Q	3	7,763	7,313	6,855	Q	327	15.3
100 to 249	64	63	60	Q	2	7,378	7,195	6,839	Q	192	15.3
250 or More	31	31	29	1	3	8,633	8,621	8,035	197	868	14.1

See footnotes at end of table.

Table A40. Cooling Energy Sources, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
			Cooling Energy Sources (more than one may apply)					Cooling Energy Sources (more than one may apply)			
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	
RSE Column Factor:	0.5	0.6	0.6	1.9	2.3	0.6	0.6	0.7	2.2	2.1	
Weekly Operating Hours											
39 or Fewer	1,039	513	505	Q	Q	8,246	4,632	4,401	Q	Q	14.1
40 to 48	1,278	1,007	978	34	8	14,998	12,558	12,148	303	312	9.6
49 to 60	1,004	786	764	20	4	14,046	12,218	11,675	359	357	11.1
61 to 84	645	528	514	20	4	12,062	11,158	10,906	496	178	11.7
85 to 167	478	405	388	19	Q	8,467	7,742	7,292	338	278	14.8
Open Continuously	362	262	255	6	5	10,057	8,733	8,207	372	724	16.0
Primary Space-Heating Energy Source											
Electricity	1,107	1,005	1,000	Q	2	15,502	14,511	14,385	Q	136	13.2
Natural Gas	2,276	1,933	1,859	98	Q	35,161	32,138	31,178	1,687	Q	7.8
Fuel Oil	394	247	246	Q	Q	4,415	3,539	3,465	Q	Q	21.1
District Heat	91	78	63	Q	23	5,014	4,484	3,263	Q	1,590	16.4
Propane	217	144	142	NC	NC	1,101	816	786	NC	NC	32.0
Wood	68	Q	Q	NC	NC	257	Q	Q	NC	NC	35.0
Any Other	Q	Q	Q	NC	NC	546	Q	Q	NC	NC	74.8
Water-Heating Energy Sources (more than one may apply)											
Electricity	1,696	1,479	1,455	32	8	25,482	23,657	23,275	517	342	10.3
Natural Gas	1,647	1,436	1,376	71	8	29,962	27,766	26,681	1,391	494	9.5
Fuel Oil	126	88	88	Q	Q	2,470	2,089	2,015	Q	Q	27.9
District Heat	38	30	22	Q	10	3,308	2,972	2,158	Q	1,108	21.2
Propane	80	57	57	NC	Q	659	563	563	NC	Q	37.4
Cooking Energy Sources (more than one may apply)											
Electricity	356	326	317	9	4	12,183	11,792	11,353	244	546	16.8
Natural Gas	431	392	374	23	6	15,233	14,533	13,760	844	478	11.8
Propane	70	61	60	NC	Q	1,039	944	941	NC	Q	32.9
Percent of Floorspace Cooled											
Not Cooled	1,304	NC	NC	NC	NC	10,835	NC	NC	NC	NC	11.4
1 to 50	1,176	1,176	1,154	31	Q	21,715	21,715	21,068	456	Q	8.9
51 to 99	658	658	643	17	6	13,872	13,872	13,370	380	702	11.7
100	1,668	1,668	1,608	59	20	21,454	21,454	20,191	1,070	988	9.4
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	816	783	48	Q	9,021	9,021	8,761	465	Q	11.4
Heat Pumps	454	454	449	8	Q	8,406	8,406	8,388	175	Q	15.1
Individual Air Conditioners	1,023	1,023	1,015	16	2	17,979	17,979	17,734	420	225	13.4
District Chilled Water	28	28	11	Q	28	2,066	2,066	842	Q	2,066	22.9
Central Chillers	142	142	137	8	Q	12,991	12,991	12,500	783	Q	15.4
Packaged Air-Conditioning Units	1,459	1,459	1,419	52	3	27,830	27,830	26,928	1,047	628	9.7
Swamp Coolers	179	179	178	Q	Q	2,085	2,085	2,063	Q	Q	32.7
Other	8	8	7	Q	Q	268	268	255	Q	Q	69.2

See footnotes at end of table.

Table A40. Cooling Energy Sources, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
			Cooling Energy Sources (more than one may apply)					Cooling Energy Sources (more than one may apply)			
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	
RSE Column Factor:	0.5	0.6	0.6	1.9	2.3	0.6	0.6	0.7	2.2	2.1	
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	2,733	2,733	2,638	105	25	47,755	47,755	45,601	1,824	1,785	6.9
Cooling Only	355	355	352	Q	5	8,283	8,283	7,949	Q	389	14.7
Heating and Cooling	2,378	2,378	2,287	101	21	39,472	39,472	37,652	1,706	1,396	7.0
Variable Air-Volume System Used	221	221	200	16	12	12,430	12,430	11,589	605	904	14.2
Fan Coil Units for Cooling	56	56	52	Q	5	3,875	3,875	3,334	Q	767	20.5
Cooling Only	35	35	34	Q	Q	1,969	1,969	1,772	Q	Q	36.6
Heating and Cooling	21	21	18	Q	3	1,906	1,906	1,562	Q	459	22.9
Individual Air Conditioners	1,023	1,023	1,015	16	2	17,979	17,979	17,734	420	225	13.4
Other	111	111	111	Q	Q	2,919	2,919	2,757	Q	Q	27.2

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A41. Water-Heating Energy Sources, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Buildings with Water Heating	Water-Heating Energy Sources Used (more than one may apply)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	
RSE Column Factor:	0.4	0.5	0.7	0.7	2.0	2.0	2.7	
All Buildings	4,806	3,502	1,696	1,647	126	38	80	7.8
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	1,733	878	777	48	Q	50	12.6
5,001 to 10,000	975	787	390	348	43	Q	Q	12.3
10,001 to 25,000	647	539	252	276	13	8	Q	12.7
25,001 to 50,000	280	240	99	129	12	8	Q	15.2
50,001 to 100,000	116	108	41	62	Q	6	Q	14.8
100,001 to 200,000	71	62	22	37	Q	5	Q	17.9
200,001 to 500,000	26	25	10	13	1	4	Q	18.6
Over 500,000	9	9	5	3	Q	1	NC	37.0
Principal Building Activity								
Education	301	230	96	126	10	6	Q	16.3
Food Sales	130	124	70	53	Q	NC	Q	30.0
Food Service	260	259	72	165	Q	Q	Q	18.5
Health Care	63	62	17	39	Q	2	Q	30.0
Lodging	154	152	44	91	Q	6	Q	21.0
Mercantile and Service	1,272	923	476	402	46	Q	Q	14.3
Office	749	705	372	304	28	10	Q	12.7
Parking Garage	24	13	6	Q	NC	Q	NC	60.1
Public Assembly	278	235	101	114	Q	5	Q	17.8
Public Order and Safety	60	58	19	33	Q	Q	NC	34.2
Religious Worship	366	265	146	123	Q	Q	Q	23.7
Warehouse and Storage	761	311	182	124	Q	Q	Q	20.1
Other	69	43	25	17	Q	Q	NC	36.5
Vacant	319	121	71	50	Q	Q	NC	25.2
Year Constructed								
1899 or Before	169	126	57	62	Q	Q	Q	26.2
1900 to 1919	255	202	83	107	18	4	Q	23.1
1920 to 1945	724	507	197	268	36	5	Q	15.0
1946 to 1959	880	638	266	340	18	7	Q	13.1
1960 to 1969	783	580	252	299	18	11	Q	13.2
1970 to 1979	982	721	393	306	21	6	Q	12.6
1980 to 1989	884	649	413	228	Q	4	Q	13.5
1990 to 1992	128	79	37	37	Q	Q	Q	32.1
Census Region								
Northeast	771	625	249	258	113	9	19	13.0
Midwest	1,202	906	369	525	Q	13	Q	17.0
South	1,963	1,307	811	476	10	9	23	13.4
West	870	664	267	387	Q	6	Q	23.0
Energy Sources (more than one may apply)								
Electricity	4,616	3,502	1,696	1,647	126	38	80	7.8
Natural Gas	2,665	2,333	729	1,647	21	13	Q	12.5
Fuel Oil	559	435	234	78	126	5	Q	16.3
District Heat	95	82	30	18	Q	38	NC	22.5
District Chilled Water	28	22	8	8	Q	10	Q	35.1
Propane	337	244	146	10	13	Q	80	22.7
Any Other	163	96	58	26	Q	Q	Q	28.6
Energy End Uses (more than one may apply)								
Heated Buildings	4,178	3,436	1,660	1,621	124	38	76	7.8
Air-Conditioned Buildings	3,502	3,016	1,479	1,436	88	30	57	8.1
Buildings with Water Heating	3,502	3,502	1,696	1,647	126	38	80	7.9
Buildings with Cooking	734	728	264	425	26	12	30	11.6
Buildings with Manufacturing	121	102	62	38	Q	Q	NC	27.9

See footnotes at end of table.

Table A41. Water-Heating Energy Sources, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings with Water Heating	Water-Heating Energy Sources Used (more than one may apply)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	
RSE Column Factor:	0.4	0.5	0.7	0.7	2.0	2.0	2.7	
Workers (main shift)								
Less than 5	2,718	1,609	825	700	52	5	45	11.9
5 to 9	895	777	371	366	33	6	Q	12.3
10 to 19	561	512	250	245	16	5	Q	14.1
20 to 49	405	384	156	224	12	9	Q	12.4
50 to 99	130	126	53	67	7	6	Q	16.6
100 to 249	64	62	30	30	3	2	Q	17.5
250 or More	31	31	12	14	2	5	Q	20.9
Weekly Operating Hours								
39 or Fewer	1,039	507	258	227	17	Q	Q	15.8
40 to 48	1,278	979	513	432	29	11	Q	12.8
49 to 60	1,004	764	380	354	38	7	Q	11.6
61 to 84	645	518	239	253	24	3	Q	11.4
85 to 167	478	435	190	221	11	5	Q	16.6
Open Continuously	362	300	117	160	7	10	Q	16.3
Primary Space-Heating Energy Source								
Electricity	1,107	921	724	190	Q	Q	15	16.9
Natural Gas	2,276	1,972	633	1,386	Q	Q	Q	16.3
Fuel Oil	394	292	160	20	109	NC	Q	21.3
District Heat	91	78	28	18	Q	36	NC	23.1
Propane	217	131	84	Q	NC	NC	49	38.3
Wood	68	Q	Q	Q	Q	NC	Q	50.6
Any Other	Q	Q	Q	Q	NC	NC	NC	110.3
Cooking Energy Sources (more than one may apply)								
Electricity	356	353	182	153	13	8	Q	15.3
Natural Gas	431	427	79	361	5	6	NC	15.4
Propane	70	70	33	Q	11	NC	27	30.1
Water-Heating Equipment (more than one may apply)								
Centralized System	1,994	1,994	891	961	105	31	52	11.6
Self-Heating Tank	1,799	1,799	851	869	56	15	48	14.0
Heated by Space-Heating Equipment	103	103	17	42	37	7	Q	27.0
Other	106	106	30	55	15	12	Q	23.9
Distributed System	1,557	1,557	822	719	21	7	31	13.0
Residential-Type Storage Tank	1,489	1,489	792	687	18	Q	31	14.3
Point-of-Use	56	56	28	26	Q	1	Q	30.2
Other	24	24	7	15	Q	3	NC	30.7

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A42. Water-Heating Energy Sources, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings with Water Heating	Water-Heating Energy Sources Used (more than one may apply)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	
RSE Column Factor:	0.5	0.5	0.8	0.7	1.8	1.6	2.7	
All Buildings	67,876	58,479	25,482	29,962	2,470	3,308	659	8.2
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	4,928	2,483	2,248	151	Q	128	12.6
5,001 to 10,000	7,199	5,834	2,869	2,601	325	Q	Q	12.4
10,001 to 25,000	10,375	8,724	4,121	4,528	194	137	Q	12.5
25,001 to 50,000	10,069	8,637	3,564	4,640	436	308	Q	15.6
50,001 to 100,000	8,062	7,489	2,837	4,332	Q	391	Q	14.7
100,001 to 200,000	9,678	8,492	2,900	5,209	Q	576	Q	17.4
200,001 to 500,000	7,889	7,466	2,974	3,718	316	1,151	Q	19.2
Over 500,000	7,278	6,910	3,734	2,685	Q	713	NC	31.2
Principal Building Activity								
Education	8,470	8,036	2,002	5,514	798	390	Q	15.3
Food Sales	757	739	387	374	Q	NC	Q	32.3
Food Service	1,491	1,490	386	906	Q	Q	Q	23.2
Health Care	1,763	1,760	227	1,150	Q	314	Q	23.2
Lodging	2,891	2,869	398	1,938	Q	470	Q	21.9
Mercantile and Service	12,402	10,809	5,503	5,607	285	Q	Q	17.0
Office	12,319	12,030	5,790	4,824	613	1,258	Q	15.1
Parking Garage	1,652	933	530	Q	NC	Q	NC	66.2
Public Assembly	4,556	4,346	Q	1,802	Q	216	Q	34.2
Public Order and Safety	820	804	179	444	Q	Q	NC	38.6
Religious Worship	3,747	3,384	1,637	1,935	Q	Q	Q	28.1
Warehouse and Storage	11,484	7,887	4,522	3,534	Q	Q	Q	22.8
Other	1,130	1,001	522	416	Q	Q	NC	33.0
Vacant	4,396	2,391	1,236	1,222	Q	Q	NC	37.2
Year Constructed								
1899 or Before	1,721	1,457	522	841	Q	Q	Q	26.5
1900 to 1919	3,608	3,126	1,182	1,933	351	175	Q	28.3
1920 to 1945	8,712	7,004	2,336	3,857	516	563	Q	19.0
1946 to 1959	10,421	8,784	3,220	5,129	359	376	Q	14.7
1960 to 1969	12,612	11,006	3,423	6,542	416	1,140	Q	16.3
1970 to 1979	14,014	12,369	5,946	5,733	458	664	Q	13.6
1980 to 1989	14,287	12,565	7,874	4,809	Q	267	Q	17.3
1990 to 1992	2,502	2,167	980	1,117	Q	67	Q	25.7
Census Region								
Northeast	13,400	12,410	4,366	5,607	2,157	990	225	14.5
Midwest	17,280	15,460	5,643	9,161	Q	1,287	Q	15.5
South	24,577	19,592	11,302	8,476	169	449	198	14.2
West	12,619	11,017	4,171	6,717	Q	582	Q	18.4
Energy Sources (more than one may apply)								
Electricity	66,549	58,479	25,482	29,962	2,470	3,308	659	8.2
Natural Gas	45,097	43,151	13,814	29,962	1,076	1,437	Q	11.0
Fuel Oil	13,218	12,605	5,329	5,179	2,470	784	Q	12.5
District Heat	5,339	5,177	1,099	1,120	Q	3,308	NC	22.5
District Chilled Water	2,066	1,978	342	494	Q	1,108	Q	34.0
Propane	3,393	2,961	1,538	550	467	Q	659	21.5
Any Other	1,551	1,287	456	582	Q	Q	Q	36.9
Energy End Uses (more than one may apply)								
Heated Buildings	61,996	57,708	24,878	29,802	2,464	3,308	648	8.3
Air-Conditioned Buildings	57,041	53,839	23,657	27,766	2,089	2,972	563	8.5
Buildings with Water Heating	58,479	58,479	25,482	29,962	2,470	3,308	659	8.3
Buildings with Cooking	23,065	22,993	8,200	13,339	1,202	1,768	395	12.3
Buildings with Manufacturing	3,174	2,976	1,713	1,366	Q	Q	NC	25.7

See footnotes at end of table.

Table A42. Water-Heating Energy Sources, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings with Water Heating	Water-Heating Energy Sources Used (more than one may apply)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Heat	Propane	
RSE Column Factor:	0.5	0.5	0.8	0.7	1.8	1.6	2.7	
Workers (main shift)								
Less than 5	17,944	11,207	6,032	4,748	273	86	199	18.7
5 to 9	7,524	6,432	3,060	3,057	260	169	Q	14.5
10 to 19	8,077	7,089	3,421	3,500	191	168	Q	14.7
20 to 49	10,556	10,215	3,601	6,343	331	330	Q	13.6
50 to 99	7,763	7,644	2,429	4,836	399	495	Q	18.1
100 to 249	7,378	7,278	3,262	3,804	464	474	Q	20.6
250 or More	8,633	8,613	3,677	3,674	551	1,586	Q	20.4
Weekly Operating Hours								
39 or Fewer	8,246	5,005	2,085	2,636	340	Q	Q	19.2
40 to 48	14,998	12,613	6,108	6,204	527	383	Q	12.6
49 to 60	14,046	12,405	6,019	5,899	378	734	Q	12.8
61 to 84	12,062	11,308	5,306	5,804	326	435	Q	16.4
85 to 167	8,467	8,020	2,968	4,367	534	406	Q	18.7
Open Continuously	10,057	9,128	2,996	5,051	363	1,316	Q	21.1
Primary Space-Heating Energy Source								
Electricity	15,502	14,200	11,365	3,039	Q	Q	164	21.1
Natural Gas	35,161	33,406	10,389	24,877	Q	Q	Q	15.4
Fuel Oil	4,415	3,911	1,504	522	2,116	NC	Q	21.3
District Heat	5,014	4,856	987	1,086	Q	3,118	NC	23.6
Propane	1,101	702	397	Q	NC	NC	307	37.4
Wood	257	Q	Q	Q	Q	NC	Q	50.2
Any Other	546	506	Q	Q	NC	NC	NC	98.0
Cooking Energy Sources (more than one may apply)								
Electricity	12,183	12,151	5,725	5,862	512	1,192	Q	18.1
Natural Gas	15,233	15,193	3,766	11,383	597	802	NC	14.0
Propane	1,039	1,039	505	Q	313	NC	291	34.6
Water-Heating Equipment (more than one may apply)								
Centralized System	31,599	31,599	11,504	16,228	2,127	2,889	467	11.1
Self-Heating Tank	24,464	24,464	10,388	12,906	1,062	915	425	13.6
Heated by Space-Heating Equipment	3,722	3,722	514	1,706	984	841	Q	25.4
Other	4,032	4,032	773	2,130	257	1,170	Q	19.3
Distributed System	29,502	29,502	15,671	14,816	397	528	245	12.8
Residential-Type Storage Tank	25,809	25,809	14,008	13,174	273	155	241	13.5
Point-of-Use	3,367	3,367	Q	1,467	Q	138	Q	40.5
Other	1,259	1,259	439	757	Q	257	NC	30.2

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A43. Cooking Energy Sources, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Buildings with Cooking	Cooking Energy Sources (more than one may apply)			All Buildings	All Buildings with Cooking	Cooking Energy Sources (more than one may apply)			
			Electricity	Natural Gas	Propane			Electricity	Natural Gas	Propane	
RSE Column Factor:	0.5	0.8	1.1	1.0	1.8	0.5	0.9	1.2	1.0	2.3	
All Buildings	4,806	734	356	431	70	67,876	23,065	12,183	15,233	1,039	7.7
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	320	158	175	35	7,327	903	440	498	98	10.3
5,001 to 10,000	975	137	75	70	Q	7,199	998	542	518	Q	11.2
10,001 to 25,000	647	114	45	75	Q	10,375	1,852	780	1,223	Q	11.4
25,001 to 50,000	280	70	25	50	Q	10,069	2,627	923	1,930	Q	15.0
50,001 to 100,000	116	44	25	27	Q	8,062	3,110	1,764	1,885	Q	12.4
100,001 to 200,000	71	29	16	18	Q	9,678	4,062	2,252	2,597	Q	15.0
200,001 to 500,000	26	15	8	11	Q	7,889	4,639	2,254	3,470	Q	15.6
Over 500,000	9	6	4	4	Q	7,278	4,874	3,227	3,111	Q	29.3
Principal Building Activity											
Education	301	98	44	63	7	8,470	5,676	2,579	4,179	267	13.2
Food Sales	130	40	24	17	Q	757	350	230	226	Q	26.4
Food Service	260	244	101	169	30	1,491	1,450	626	1,043	147	12.7
Health Care	63	6	4	5	Q	1,763	1,289	631	1,013	Q	21.8
Lodging	154	38	15	29	Q	2,891	1,600	599	1,291	Q	22.6
Mercantile and Service	1,272	89	60	39	Q	12,402	3,806	2,395	2,797	Q	16.4
Office	749	30	15	14	Q	12,319	3,674	2,237	1,853	Q	14.1
Parking Garage	24	Q	Q	Q	NC	1,652	Q	Q	Q	NC	48.9
Public Assembly	278	82	41	41	Q	4,556	2,669	Q	1,114	Q	22.3
Public Order and Safety	60	Q	Q	Q	Q	820	Q	Q	Q	Q	40.6
Religious Worship	366	68	34	32	Q	3,747	1,231	600	823	Q	24.0
Warehouse and Storage	761	13	Q	Q	NC	11,484	349	Q	Q	NC	22.9
Other	69	Q	Q	Q	NC	1,130	Q	Q	Q	NC	29.7
Vacant	319	18	Q	12	Q	4,396	507	Q	Q	Q	30.9
Year Constructed											
1899 or Before	169	41	18	24	Q	1,721	495	188	364	Q	22.2
1900 to 1919	255	42	13	29	Q	3,608	1,334	495	1,131	Q	24.0
1920 to 1945	724	101	41	64	Q	8,712	2,225	873	1,491	Q	14.5
1946 to 1959	880	134	59	85	Q	10,421	2,849	1,171	2,119	Q	12.1
1960 to 1969	783	120	58	70	14	12,612	4,920	2,734	3,477	298	16.0
1970 to 1979	982	154	81	84	12	14,014	5,071	2,427	3,502	253	13.8
1980 to 1989	884	122	72	69	Q	14,287	5,313	3,706	2,698	Q	15.2
1990 to 1992	128	21	14	7	Q	2,502	859	590	452	Q	23.6
Census Region											
Northeast	771	142	68	73	28	13,400	5,740	2,963	3,891	510	14.2
Midwest	1,202	201	86	142	Q	17,280	5,800	2,832	4,395	Q	11.1
South	1,963	257	143	120	29	24,577	7,768	4,287	4,318	377	15.1
West	870	134	59	96	Q	12,619	3,757	2,101	2,628	Q	14.0
Energy Sources (more than one may apply)											
Electricity	4,616	734	356	431	70	66,549	23,065	12,183	15,233	1,039	7.7
Natural Gas	2,665	532	204	431	Q	45,097	18,487	8,382	15,233	Q	8.0
Fuel Oil	559	101	61	35	28	13,218	7,452	4,092	4,913	570	13.3
District Heat	95	19	10	12	Q	5,339	2,280	1,386	1,224	Q	19.5
District Chilled Water	28	8	4	6	Q	2,066	920	546	478	Q	31.5
Propane	337	84	31	5	70	3,393	1,549	685	270	1,039	20.1
Any Other	163	13	10	Q	Q	1,551	399	253	Q	Q	28.6

See footnotes at end of table.

Table A43. Cooking Energy Sources, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Buildings with Cooking	Cooking Energy Sources (more than one may apply)			All Buildings	All Buildings with Cooking	Cooking Energy Sources (more than one may apply)			
			Electricity	Natural Gas	Propane			Electricity	Natural Gas	Propane	
RSE Column Factor:	0.5	0.8	1.1	1.0	1.8	0.5	0.9	1.2	1.0	2.3	
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	715	344	425	66	61,996	22,736	12,124	14,987	1,000	7.7
Air-Conditioned Buildings	3,502	663	326	392	61	57,041	22,003	11,792	14,533	944	8.2
Buildings with Water Heating	3,502	728	353	427	70	58,479	22,993	12,151	15,193	1,039	7.8
Buildings with Cooking	734	734	356	431	70	23,065	23,065	12,183	15,233	1,039	8.6
Buildings with Manufacturing	121	13	7	7	NC	3,174	528	281	309	NC	28.3
Workers (main shift)											
Less than 5	2,718	260	146	119	29	17,944	2,678	Q	892	128	15.4
5 to 9	895	155	66	97	Q	7,524	1,326	687	705	Q	12.7
10 to 19	561	126	55	80	Q	8,077	1,719	707	1,233	Q	13.9
20 to 49	405	105	39	79	Q	10,556	3,419	1,172	2,662	Q	13.6
50 to 99	130	43	25	28	Q	7,763	3,424	1,885	2,209	Q	14.6
100 to 249	64	26	14	18	Q	7,378	3,998	2,020	3,072	Q	15.0
250 or More	31	18	11	11	Q	8,633	6,502	3,858	4,459	Q	14.4
Weekly Operating Hours											
39 or Fewer	1,039	116	68	46	Q	8,246	1,828	826	1,098	Q	18.5
40 to 48	1,278	89	38	54	Q	14,998	3,010	1,726	1,912	Q	14.2
49 to 60	1,004	83	36	56	Q	14,046	3,118	1,723	1,852	Q	12.8
61 to 84	645	149	68	97	Q	12,062	5,195	2,805	3,487	Q	11.7
85 to 167	478	218	107	126	25	8,467	4,750	2,418	3,619	179	13.8
Open Continuously	362	78	40	52	Q	10,057	5,163	2,684	3,266	Q	17.6
Water-Heating Energy Sources (more than one may apply)											
Electricity	1,696	264	182	79	33	25,482	8,200	5,725	3,766	505	12.8
Natural Gas	1,647	425	153	361	Q	29,962	13,339	5,862	11,383	Q	8.8
Fuel Oil	126	26	13	5	11	2,470	1,202	512	597	313	24.9
District Heat	38	12	8	6	NC	3,308	1,768	1,192	802	NC	24.8
Propane	80	30	Q	NC	27	659	395	Q	NC	291	28.0

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A44. Percent of Floorspace Heated, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	All Buildings	Total Heated Floorspace in All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	
RSE Column Factor:	0.6	1.6	1.2	1.1	0.7	0.6	0.6	2.2	1.6	1.2	0.7	
All Buildings	4,806	653	688	618	2,846	67,876	51,200	6,211	11,195	10,211	40,260	5.6
Building Floorspace (Square Feet)												
1,001 to 5,000	2,681	448	340	294	1,600	7,327	5,281	1,150	1,014	844	4,319	7.2
5,001 to 10,000	975	99	156	152	568	7,199	5,370	724	1,182	1,115	4,178	6.8
10,001 to 25,000	647	64	116	96	371	10,375	7,780	979	1,801	1,546	6,050	8.5
25,001 to 50,000	280	27	46	40	167	10,069	7,521	995	1,665	1,415	5,995	12.0
50,001 to 100,000	116	6	13	19	77	8,062	6,665	473	937	1,289	5,364	12.5
100,001 to 200,000	71	7	10	11	43	9,678	7,233	983	1,395	1,590	5,710	16.5
200,001 to 500,000	26	2	4	4	16	7,889	6,287	425	1,148	1,168	5,148	17.1
Over 500,000	9	Q	2	1	5	7,278	5,063	Q	2,054	1,245	3,497	32.5
Principal Building Activity												
Education	301	Q	Q	30	259	8,470	8,161	Q	Q	1,105	7,143	13.2
Food Sales	130	Q	Q	29	79	757	636	Q	Q	189	468	23.1
Food Service	260	Q	21	50	178	1,491	1,259	Q	165	337	934	17.4
Health Care	63	Q	Q	11	50	1,763	1,705	Q	Q	253	1,471	22.4
Lodging	154	Q	Q	20	124	2,891	2,724	Q	Q	601	2,185	20.0
Mercantile and Service	1,272	68	208	210	786	12,402	9,790	619	2,287	2,310	7,186	11.1
Office	749	Q	43	141	561	12,319	11,127	Q	787	3,031	8,437	10.6
Parking Garage	24	7	7	Q	Q	1,652	134	487	1,094	Q	Q	28.7
Public Assembly	278	Q	36	33	188	4,556	3,936	Q	501	402	3,487	21.7
Public Order and Safety	60	NC	Q	Q	45	820	785	NC	Q	Q	729	34.5
Religious Worship	366	Q	20	36	306	3,747	3,493	Q	297	397	3,041	18.9
Warehouse and Storage	761	325	243	38	155	11,484	4,942	2,771	4,287	1,207	3,219	12.2
Other	69	Q	Q	Q	36	1,130	876	Q	Q	Q	729	25.7
Vacant	319	170	67	Q	73	4,396	1,631	1,769	1,212	Q	1,194	15.2
Year Constructed												
1899 or Before	169	Q	35	32	88	1,721	1,319	Q	332	313	973	20.9
1900 to 1919	255	24	45	38	147	3,608	2,642	325	764	590	1,930	19.1
1920 to 1945	724	106	135	110	374	8,712	5,849	1,119	2,015	1,208	4,371	12.3
1946 to 1959	880	121	115	109	535	10,421	7,888	1,053	1,495	1,581	6,292	11.5
1960 to 1969	783	99	115	97	473	12,612	9,702	1,084	2,040	2,061	7,427	11.1
1970 to 1979	982	145	114	125	598	14,014	10,725	1,292	1,966	2,039	8,716	9.9
1980 to 1989	884	124	117	98	544	14,287	11,068	1,036	2,304	2,074	8,873	11.7
1990 to 1992	128	21	11	Q	87	2,502	2,006	199	279	345	1,679	18.1
Census Region												
Northeast	771	77	98	111	484	13,400	10,640	646	2,479	2,114	8,161	11.2
Midwest	1,202	168	163	143	727	17,280	14,107	1,120	2,034	2,249	11,876	10.1
South	1,963	280	298	229	1,155	24,577	17,550	2,983	4,414	3,107	14,073	9.5
West	870	128	128	135	480	12,619	8,903	1,460	2,268	2,740	6,151	12.6
Energy Sources (more than one may apply)												
Electricity	4,616	467	686	616	2,846	66,549	51,194	4,894	11,191	10,204	40,260	5.9
Natural Gas	2,665	47	374	425	1,820	45,097	37,980	647	7,038	7,694	29,718	8.5
Fuel Oil	559	Q	84	85	378	13,218	11,413	Q	1,357	2,696	8,760	11.9
District Heat	95	Q	4	9	82	5,339	4,887	Q	385	815	4,106	22.3
District Chilled Water	28	Q	Q	3	23	2,066	1,852	Q	Q	394	1,493	28.8
Propane	337	Q	58	49	218	3,393	2,645	Q	659	726	1,924	18.6
Any Other	163	Q	51	Q	84	1,551	1,147	Q	324	Q	923	23.0

See footnotes at end of table.

Table A44. Percent of Floorspace Heated, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	All Buildings	Total Heated Floorspace in All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	
RSE Column Factor:	0.6	1.6	1.2	1.1	0.7	0.6	0.6	2.2	1.6	1.2	0.7	
Energy End Uses (more than one may apply)												
Heated Buildings	4,178	25	688	618	2,846	61,996	51,200	330	11,195	10,211	40,260	7.0
Air-Conditioned Buildings	3,502	66	508	538	2,390	57,041	46,735	1,067	9,796	9,553	36,626	7.5
Buildings with Water Heating	3,502	73	492	539	2,398	58,479	48,559	888	9,557	9,745	38,289	7.0
Buildings with Cooking	734	19	59	133	523	23,065	20,546	Q	2,044	4,280	16,332	10.9
Buildings with Manufacturing	121	Q	26	31	58	3,174	2,292	Q	859	710	1,513	21.3
Climate Zone: 45-Year Average												
Fewer than 2,000 CDD and --												
More than 7,000 HDD	399	59	45	55	240	5,623	4,494	453	607	810	3,753	20.4
5,500-7,000 HDD	1,134	125	153	159	697	18,024	14,913	905	2,423	2,786	11,910	13.6
4,000-5,499 HDD	1,077	122	149	122	684	16,162	12,319	1,376	2,794	2,132	9,859	16.2
Fewer than 4,000 HDD	1,101	152	169	130	651	15,251	10,715	1,725	2,987	2,395	8,145	17.1
More than 2,000 CDD and --												
Fewer than 4,000 HDD	1,095	196	171	153	575	12,816	8,758	1,751	2,384	2,088	6,593	14.6
Predominant Exterior Wall Material												
Masonry	3,115	280	404	424	2,008	48,585	38,566	3,299	7,050	7,350	30,886	6.6
Siding or Shingles	764	131	90	107	436	3,873	2,859	572	422	638	2,241	11.4
Metal Panels	745	220	159	56	310	7,392	3,671	1,802	2,185	803	2,603	12.2
Concrete Panels	87	12	16	11	48	4,961	3,583	300	1,259	801	2,600	20.4
Window Glass	46	Q	Q	9	23	2,028	1,644	Q	Q	398	1,244	27.1
Other	47	Q	Q	13	20	1,037	877	Q	Q	221	686	35.7
Predominant Roof Material												
Built-Up	1,642	160	257	243	983	30,257	23,789	2,126	4,328	5,398	18,405	8.1
Shingles (Not Wood)	1,381	144	152	177	908	10,570	8,362	843	1,523	1,435	6,769	9.9
Metal Surfacing	1,037	283	211	91	452	9,019	4,729	1,990	2,653	915	3,462	10.8
Synthetic or Rubber	386	19	33	54	280	11,702	10,392	206	1,168	1,682	8,647	13.6
Slate or Tile	155	Q	13	17	110	1,998	1,693	Q	194	302	1,368	23.6
Concrete	37	15	6	Q	14	2,544	758	806	1,156	96	485	31.0
Other	167	Q	Q	35	100	1,786	1,477	Q	Q	383	1,125	22.5
Floors												
One	3,007	532	409	327	1,739	25,424	17,666	3,482	4,608	2,878	14,456	8.6
Two	1,154	87	190	160	716	18,025	14,211	877	3,386	2,823	10,939	8.1
Three	446	25	62	90	268	9,877	8,087	698	1,047	1,809	6,324	12.5
Four to Nine	186	9	26	38	114	10,377	7,687	966	1,725	1,744	5,943	16.2
Ten or More	13	Q	2	2	9	4,173	3,549	Q	Q	957	2,599	24.3
Percent Window Glass												
25 or Less	4,193	620	638	513	2,422	51,356	36,753	5,813	9,581	6,761	29,201	6.1
26 to 50	490	26	41	78	344	11,815	10,169	324	1,371	2,379	7,741	11.9
51 to 75	94	Q	Q	24	59	3,206	2,911	Q	Q	876	2,147	18.8
76 to 100	29	Q	Q	3	21	1,499	1,366	Q	Q	195	1,171	30.7
Workers (main shift)												
Less than 5	2,718	586	442	265	1,424	17,944	10,188	4,578	3,678	1,318	8,371	9.0
5 to 9	895	36	127	154	578	7,524	5,541	455	1,659	1,265	4,146	10.2
10 to 19	561	23	69	100	370	8,077	5,714	Q	1,992	1,247	4,286	11.7
20 to 49	405	Q	35	63	303	10,556	8,974	Q	1,350	1,801	7,206	10.4
50 to 99	130	Q	9	18	101	7,763	6,601	Q	1,123	1,200	5,329	14.9
100 to 249	64	Q	4	10	49	7,378	6,730	Q	486	1,425	5,412	17.0
250 or More	31	Q	1	8	22	8,633	7,450	Q	907	1,956	5,511	16.9

See footnotes at end of table.

Table A44. Percent of Floorspace Heated, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	All Buildings	Total Heated Floorspace in All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	
RSE Column Factor:	0.6	1.6	1.2	1.1	0.7	0.6	0.6	2.2	1.6	1.2	0.7	
Weekly Operating Hours												
39 or Fewer	1,039	323	109	78	528	8,246	5,005	2,369	1,083	467	4,327	11.0
40 to 48	1,278	100	215	164	799	14,998	11,236	1,309	2,579	2,096	9,015	9.1
49 to 60	1,004	87	182	152	583	14,046	10,662	845	2,635	2,877	7,690	9.5
61 to 84	645	43	89	105	407	12,062	9,925	541	1,654	2,227	7,639	11.9
85 to 167	478	43	60	81	294	8,467	6,546	409	1,771	1,275	5,012	13.1
Open Continuously	362	56	33	38	235	10,057	7,826	737	1,473	1,269	6,577	15.9
Additional Operating Hours for Equipment Use												
Heating and/or Cooling	1,223	Q	130	198	882	20,300	17,349	Q	2,614	3,571	13,695	9.7
Lighting	633	33	101	116	384	12,886	10,398	528	2,154	2,249	7,955	12.1
Heating and/or Cooling and Lighting	371	Q	34	76	257	8,717	7,300	Q	1,231	1,542	5,656	15.8
No Additional Hours	3,320	612	491	381	1,837	43,407	30,753	5,549	7,659	5,933	24,267	7.3
Percent Vacant for at Least Three Months												
1-50 Percent	362	36	62	84	179	12,420	9,716	559	2,112	3,021	6,729	13.1
51-99 Percent	97	Q	45	7	32	2,263	1,221	Q	1,020	210	809	26.0
100 Percent	398	202	49	11	136	4,109	1,821	1,792	606	94	1,617	15.9
None	3,948	402	531	516	2,499	49,085	38,443	3,636	7,458	6,887	31,105	6.4
Space-Heating Energy Source (more than one may apply)												
Electricity	1,513	Q	283	224	999	25,636	19,934	Q	5,932	4,569	14,983	9.2
Natural Gas	2,405	Q	353	392	1,654	38,524	32,467	Q	6,524	6,596	25,235	7.2
Fuel Oil	479	Q	73	70	330	7,334	6,541	Q	702	1,444	5,148	14.5
District Heat	94	Q	4	9	80	5,242	4,805	Q	385	815	4,024	22.4
Propane	255	Q	51	34	163	1,568	1,175	Q	393	285	858	23.1
Wood	102	Q	36	Q	49	504	306	Q	211	Q	188	24.8
Any Other	39	Q	Q	Q	26	661	491	Q	Q	Q	444	62.9
Primary Space-Heating Energy Source												
Electricity	1,107	Q	220	160	720	15,502	11,600	Q	4,044	2,406	8,980	11.2
Natural Gas	2,276	Q	332	361	1,576	35,161	29,755	Q	5,783	6,064	23,226	7.5
Fuel Oil	394	Q	62	53	276	4,415	3,896	Q	495	815	3,072	18.2
District Heat	91	Q	3	9	79	5,014	4,601	Q	381	725	3,890	23.3
Propane	217	Q	40	26	146	1,101	794	Q	302	160	610	25.7
Wood	68	Q	Q	Q	Q	257	145	Q	Q	Q	Q	35.5
Any Other	Q	Q	Q	Q	Q	546	Q	Q	Q	Q	Q	71.6
Replacemant Energy Source for Primary Heating												
Electricity Only	350	Q	71	55	223	2,559	1,958	Q	674	480	1,389	15.5
Natural Gas Only	213	Q	40	29	143	2,260	1,830	Q	459	279	1,479	19.7
Fuel Oil Only	161	Q	25	31	103	5,451	4,926	Q	527	779	4,140	18.3
Propane Only	212	Q	46	28	135	2,174	1,822	Q	336	366	1,438	19.1
Any Other Single Energy Source	57	NC	Q	Q	34	477	362	NC	Q	Q	153	39.7
More than One Energy Source	93	NC	Q	Q	71	895	743	NC	Q	Q	566	25.9
Percent of Floorspace Cooled												
Not Cooled	1,304	587	180	81	456	10,835	4,465	5,144	1,399	657	3,635	10.3
1 to 50	1,176	48	459	149	520	21,715	14,054	657	8,453	2,745	9,860	9.7
51 to 99	658	Q	23	337	294	13,872	11,915	Q	Q	6,041	6,764	10.3
100	1,668	15	26	51	1,576	21,454	20,766	168	517	767	20,001	13.7

See footnotes at end of table.

Table A44. Percent of Floorspace Heated, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	All Buildings	Total Heated Floorspace in All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	
RSE Column Factor:	0.6	1.6	1.2	1.1	0.7	0.6	0.6	2.2	1.6	1.2	0.7	
Percent Lit when Open												
Not Lit	413	315	29	Q	55	3,280	758	2,327	214	Q	661	17.5
1 to 50	881	130	344	83	325	9,980	5,326	1,540	3,942	857	3,641	10.7
51 to 99	813	36	66	255	456	14,224	12,007	Q	1,325	4,535	7,951	11.5
100	2,699	172	249	267	2,011	40,393	33,109	1,929	5,714	4,742	28,007	7.6
Heating Equipment (more than one may apply)												
Heat Pumps	449	NC	74	68	307	8,269	6,647	NC	1,611	1,908	4,750	13.5
Furnaces	1,692	NC	241	267	1,184	16,909	13,366	NC	4,139	2,671	10,099	8.3
Individual Space Heaters	1,464	NC	352	210	902	22,380	17,295	NC	5,663	3,667	13,049	8.6
District Heat	93	NC	4	9	80	5,225	4,805	NC	385	815	4,024	22.4
Boilers	624	NC	47	93	484	20,664	19,125	NC	1,366	3,551	15,747	10.6
Packaged Heating Units	870	NC	96	166	608	16,000	13,423	NC	2,623	3,519	9,857	11.3
Other	42	NC	Q	Q	36	903	813	NC	Q	Q	625	32.4
Heating Distribution Equipment (more than one may apply)												
Radiators or Baseboards	473	NC	33	68	372	13,263	12,374	NC	742	2,347	10,173	12.1
Ducts for Heating	2,955	NC	384	467	2,104	45,422	38,208	NC	7,757	7,852	29,813	6.6
Heating Only	577	NC	102	85	391	5,950	4,658	NC	1,673	809	3,468	13.1
Heating and Cooling	2,378	NC	282	382	1,714	39,472	33,550	NC	6,084	7,043	26,345	7.3
Variable Air-Volume System Used	210	NC	11	31	168	11,528	10,403	NC	1,255	1,764	8,508	17.4
Fan Coil Units for Heating	99	NC	11	12	76	5,474	4,973	NC	404	1,190	3,881	18.0
Heating Only	78	NC	Q	11	60	3,569	3,303	NC	Q	897	2,488	20.0
Heating and Cooling	21	NC	Q	2	16	1,906	1,669	NC	Q	293	1,393	26.1
Individual Space Heaters	1,464	NC	352	210	902	22,380	17,295	NC	5,663	3,667	13,049	8.6
Other	181	NC	24	37	120	3,310	2,919	NC	416	740	2,154	20.3
Building Shell Conservation Features (more than one may apply)												
Roof or Ceiling Insulation	3,343	196	431	475	2,241	50,311	41,248	2,154	7,135	8,462	32,559	6.4
Wall Insulation	2,320	126	307	325	1,563	33,240	27,871	1,170	4,163	5,672	22,235	7.9
Storm or Multiple Glazing	1,680	44	189	255	1,193	29,684	25,883	327	3,584	4,674	21,099	9.1
Tinted, Reflective or Shading Glass	1,068	53	136	162	718	25,396	21,475	587	3,437	4,596	16,776	10.9
Exterior or Interior Shading or Awnings	1,853	52	240	301	1,259	34,071	29,282	744	3,887	6,291	23,149	8.0
Windows that Open	2,119	198	297	279	1,345	28,937	23,120	1,738	4,442	4,202	18,555	7.8
HVAC Conservation Features (more than one may apply)												
Variable Air-Volume System	250	Q	16	35	196	13,970	12,514	Q	1,475	2,100	10,302	15.0
Economizer Cycle	414	Q	35	62	311	18,313	16,401	Q	1,908	3,119	13,204	12.6
HVAC Maintenance	2,503	38	319	347	1,799	49,173	41,573	885	7,032	7,481	33,776	7.9

See footnotes at end of table.

Table A44. Percent of Floorspace Heated, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	All Buildings	Total Heated Floorspace in All Buildings	Not Heated	Less than 51 Percent Heated	51 to 99 Percent Heated	100 Percent Heated	
RSE Column Factor:	0.6	1.6	1.2	1.1	0.7	0.6	0.6	2.2	1.6	1.2	0.7	
Off-Hour Equipment Reduction (more than one may apply)												
Heating	3,400	Q	581	525	2,280	46,248	38,248	Q	8,552	8,053	29,493	5.8
Cooling	2,872	53	427	452	1,939	42,768	34,944	771	7,616	7,616	26,765	7.7
Hot Water	578	22	94	78	385	9,966	8,578	115	1,340	1,926	6,585	11.6
Lighting	4,089	340	626	561	2,562	54,944	42,646	3,551	9,474	8,837	33,082	5.8
Other	547	24	79	102	342	7,996	6,210	156	1,725	1,765	4,350	15.4
Energy Management Practices (more than one may apply)												
Energy Management and Control System	236	Q	12	35	188	14,320	13,229	Q	877	2,708	10,707	15.1
Demand-Side Management Participation	315	Q	34	45	234	11,310	9,932	Q	1,360	1,878	8,010	13.4
Energy Audit	521	17	51	78	376	14,779	12,437	512	1,707	2,709	9,852	12.3
Building Energy Manager	49	NC	7	6	36	2,311	2,035	NC	323	289	1,699	27.9

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A45. Percent of Floorspace Cooled, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	All Buildings	Total Cooled Floorspace in All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	
RSE Column Factor:	0.6	1.2	1.0	1.1	1.0	0.7	0.8	1.4	1.1	1.2	1.1	
All Buildings	4,806	1,304	1,176	658	1,668	67,876	36,457	10,835	21,715	13,872	21,454	5.3
Building Floorspace (Square Feet)												
1,001 to 5,000	2,681	889	507	299	987	7,327	3,714	2,332	1,531	830	2,633	7.1
5,001 to 10,000	975	216	279	152	327	7,199	3,802	1,598	2,091	1,136	2,374	6.6
10,001 to 25,000	647	128	215	108	196	10,375	5,354	2,012	3,398	1,753	3,213	8.5
25,001 to 50,000	280	44	103	46	87	10,069	5,167	1,635	3,696	1,652	3,087	11.0
50,001 to 100,000	116	12	38	27	39	8,062	4,646	878	2,703	1,785	2,697	11.2
100,001 to 200,000	71	12	21	16	22	9,678	4,999	1,606	2,932	2,247	2,893	14.3
200,001 to 500,000	26	2	9	8	7	7,889	4,386	672	2,705	2,371	2,141	16.4
Over 500,000	9	Q	4	2	Q	7,278	4,389	Q	2,660	2,098	2,416	28.7
Principal Building Activity												
Education	301	49	52	39	160	8,470	4,426	1,080	3,008	1,538	2,844	12.1
Food Sales	130	Q	Q	25	70	757	598	Q	Q	235	377	20.3
Food Service	260	Q	42	72	130	1,491	1,142	Q	361	449	638	14.1
Health Care	63	Q	Q	15	40	1,763	1,591	Q	Q	576	1,081	18.0
Lodging	154	34	12	31	77	2,891	2,074	398	356	891	1,246	18.9
Mercantile and Service	1,272	330	457	163	322	12,402	6,998	1,528	4,088	3,332	3,454	9.5
Office	749	Q	84	187	460	12,319	10,485	Q	1,238	4,662	6,298	9.1
Parking Garage	24	11	10	Q	Q	1,652	78	731	891	Q	Q	32.6
Public Assembly	278	70	56	40	112	4,556	3,217	479	902	808	2,367	18.3
Public Order and Safety	60	Q	30	Q	9	820	404	Q	392	Q	186	28.3
Religious Worship	366	80	41	39	206	3,747	2,192	626	1,015	450	1,657	16.1
Warehouse and Storage	761	437	282	18	24	11,484	1,648	3,599	7,090	392	402	14.0
Other	69	25	20	10	15	1,130	617	90	478	260	301	23.7
Vacant	319	205	62	Q	44	4,396	989	2,014	1,693	Q	598	16.4
Year Constructed												
1899 or Before	169	50	67	24	28	1,721	672	414	828	228	251	19.4
1900 to 1919	255	86	68	44	58	3,608	1,366	849	1,555	679	526	17.7
1920 to 1945	724	234	190	106	195	8,712	3,511	2,126	3,240	1,492	1,853	11.5
1946 to 1959	880	237	250	111	282	10,421	4,647	2,161	3,942	1,636	2,682	9.7
1960 to 1969	783	220	181	103	279	12,612	6,994	2,011	3,604	3,167	3,830	10.3
1970 to 1979	982	241	212	142	387	14,014	8,497	1,728	3,881	3,035	5,370	8.8
1980 to 1989	884	202	191	112	379	14,287	9,055	1,302	4,132	3,045	5,807	11.0
1990 to 1992	128	35	17	16	60	2,502	1,716	244	534	590	1,134	18.0
Census Region												
Northeast	771	250	241	125	155	13,400	5,847	2,242	5,640	3,049	2,469	11.0
Midwest	1,202	417	287	170	327	17,280	8,393	2,898	6,318	3,825	4,240	9.4
South	1,963	394	486	244	839	24,577	15,202	3,372	6,482	4,097	10,627	8.8
West	870	243	161	119	347	12,619	7,015	2,323	3,275	2,902	4,118	11.2
Energy Sources (more than one may apply)												
Electricity	4,616	1,114	1,176	658	1,668	66,549	36,457	9,508	21,715	13,872	21,454	5.3
Natural Gas	2,665	402	740	457	1,065	45,097	26,496	3,674	15,579	10,765	15,079	6.5
Fuel Oil	559	180	191	79	108	13,218	8,061	1,137	3,991	4,085	4,005	11.1
District Heat	95	14	24	18	39	5,339	3,299	552	1,466	1,562	1,758	16.7
District Chilled Water	28	NC	Q	6	20	2,066	1,650	NC	Q	702	988	22.4
Propane	337	107	106	46	78	3,393	1,388	556	1,556	608	674	16.7
Any Other	163	93	47	Q	14	1,551	424	435	724	Q	190	22.8

See footnotes at end of table.

Table A45. Percent of Floorspace Cooled, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	All Buildings	Total Cooled Floorspace in All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	
RSE Column Factor:	0.6	1.2	1.0	1.1	1.0	0.7	0.8	1.4	1.1	1.2	1.1	
Energy End Uses (more than one may apply)												
Heated Buildings	4,178	739	1,131	654	1,655	61,996	36,003	5,923	21,153	13,631	21,289	5.6
Air-Conditioned Buildings	3,502	NC	1,176	658	1,668	57,041	36,457	NC	21,715	13,872	21,454	5.5
Buildings with Water Heating	3,502	485	992	606	1,418	58,479	34,691	4,640	19,984	13,574	20,281	5.9
Buildings with Cooking	734	71	159	178	326	23,065	16,180	1,062	5,471	7,211	9,321	10.0
Buildings with Manufacturing	121	29	59	22	11	3,174	956	304	2,104	461	306	18.9
Climate Zone: 45-Year Average												
Fewer than 2,000 CDD and --												
More than 7,000 HDD	399	170	95	57	77	5,623	2,424	1,356	1,969	919	1,379	18.0
5,500-7,000 HDD	1,134	368	304	180	282	18,024	8,590	3,047	6,800	4,304	3,872	12.1
4,000-5,499 HDD	1,077	324	279	143	332	16,162	8,125	2,613	5,670	3,537	4,342	14.9
Fewer than 4,000 HDD	1,101	263	231	132	475	15,251	9,012	2,382	4,008	2,871	5,991	16.7
More than 2,000 CDD and --												
Fewer than 4,000 HDD	1,095	180	266	146	503	12,816	8,306	1,437	3,268	2,241	5,870	14.1
Predominant Exterior Wall Material												
Masonry	3,115	625	758	483	1,249	48,585	27,375	6,501	15,472	9,925	16,686	6.0
Siding or Shingles	764	291	121	117	236	3,873	1,852	1,248	849	707	1,068	10.6
Metal Panels	745	351	242	30	121	7,392	1,951	2,538	3,339	481	1,034	13.8
Concrete Panels	87	17	29	14	28	4,961	2,915	397	1,583	1,663	1,317	18.4
Window Glass	46	Q	Q	10	21	2,028	1,605	Q	Q	878	796	23.2
Other	47	Q	19	Q	13	1,037	759	Q	170	216	552	31.1
Predominant Roof Material												
Built-Up	1,642	323	436	256	627	30,257	17,289	3,853	9,401	6,321	10,682	7.4
Shingles (Not Wood)	1,381	357	252	214	559	10,570	5,908	1,965	2,933	2,082	3,591	9.1
Metal Surfacing	1,037	461	319	69	188	9,019	2,837	2,942	3,839	689	1,548	11.3
Synthetic or Rubber	386	67	103	64	151	11,702	7,641	809	3,097	3,812	3,984	10.7
Slate or Tile	155	42	18	27	67	1,998	1,033	390	543	408	656	18.5
Concrete	37	10	13	Q	10	2,544	728	635	1,367	225	318	31.7
Other	167	43	35	25	64	1,786	1,021	242	535	335	674	18.8
Floors												
One	3,007	942	658	301	1,106	25,424	12,555	5,572	8,053	3,336	8,463	8.1
Two	1,154	238	312	196	407	18,025	9,877	2,276	6,267	3,561	5,921	7.5
Three	446	92	137	115	102	9,877	5,172	1,255	3,359	2,580	2,684	10.7
Four to Nine	186	31	65	41	49	10,377	5,697	1,622	3,155	2,616	2,985	14.0
Ten or More	13	Q	3	4	5	4,173	3,156	Q	881	1,780	1,402	20.8
Percent Window Glass												
25 or Less	4,193	1,206	1,045	541	1,401	51,356	25,689	9,666	17,378	8,678	15,634	5.8
26 to 50	490	80	109	85	216	11,815	7,212	942	3,594	3,264	4,015	10.4
51 to 75	94	14	18	28	33	3,206	2,285	175	598	1,427	1,006	19.4
76 to 100	29	Q	Q	4	17	1,499	1,271	Q	Q	502	800	26.7
Workers (main shift)												
Less than 5	2,718	1,096	582	251	790	17,944	6,736	7,225	4,650	1,249	4,820	9.5
5 to 9	895	115	268	143	369	7,524	3,567	1,276	3,132	1,056	2,061	8.6
10 to 19	561	60	162	114	226	8,077	3,822	1,123	3,447	1,287	2,221	11.2
20 to 49	405	20	113	92	179	10,556	6,048	566	4,190	2,391	3,410	10.9
50 to 99	130	12	37	26	55	7,763	4,216	450	3,265	1,497	2,551	13.7
100 to 249	64	Q	12	18	33	7,378	4,869	Q	2,228	2,007	2,960	13.8
250 or More	31	Q	1	14	15	8,633	7,199	Q	804	4,386	3,430	14.7

See footnotes at end of table.

Table A45. Percent of Floorspace Cooled, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	All Buildings	Total Cooled Floorspace in All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	
RSE Column Factor:	0.6	1.2	1.0	1.1	1.0	0.7	0.8	1.4	1.1	1.2	1.1	
Weekly Operating Hours												
39 or Fewer	1,039	526	127	80	306	8,246	2,790	3,614	2,176	521	1,935	10.8
40 to 48	1,278	271	341	184	482	14,998	7,657	2,441	5,216	2,726	4,616	8.5
49 to 60	1,004	217	346	133	307	14,046	7,368	1,828	5,317	2,784	4,118	8.5
61 to 84	645	116	197	102	230	12,062	7,422	904	3,796	3,123	4,238	9.7
85 to 167	478	73	106	99	200	8,467	4,897	725	2,860	2,379	2,504	12.0
Open Continuously	362	100	59	60	142	10,057	6,324	1,324	2,351	2,340	4,043	14.7
Additional Operating Hours for Equipment Use												
Heating and/or Cooling	1,223	189	327	227	479	20,300	11,845	1,677	7,124	5,315	6,185	8.8
Lighting	633	109	172	128	224	12,886	8,014	860	4,003	3,781	4,243	10.2
Heating and/or Cooling and Lighting	371	35	98	89	149	8,717	5,561	367	2,753	2,670	2,927	14.3
No Additional Hours	3,320	1,041	775	391	1,114	43,407	22,159	8,666	13,341	7,447	13,953	7.0
Percent Vacant for at Least Three Months												
1-50 Percent	362	55	98	84	125	12,420	8,384	583	3,003	4,844	3,990	11.6
51-99 Percent	97	27	40	7	23	2,263	1,013	253	1,183	196	630	24.2
100 Percent	398	251	58	Q	81	4,109	915	2,233	1,124	105	646	15.2
None	3,948	970	980	559	1,439	49,085	26,145	7,765	16,406	8,727	16,187	5.9
Cooling Energy Sources (more than one may apply)												
Electricity	3,404	NC	1,154	643	1,608	54,628	34,628	NC	21,068	13,370	20,191	5.6
Natural Gas	106	NC	31	17	59	1,906	1,535	NC	456	380	1,070	19.7
District Chilled Water	28	NC	Q	6	20	2,066	1,650	NC	Q	702	988	22.4
Percent of Floorspace Heated												
Not Heated	653	587	48	Q	15	6,211	460	5,144	657	Q	168	20.6
1 to 50	688	180	459	23	26	11,195	2,697	1,399	8,453	Q	517	13.6
51 to 99	618	81	149	337	51	10,211	6,034	657	2,745	6,041	767	10.9
100	2,846	456	520	294	1,576	40,260	27,266	3,635	9,860	6,764	20,001	6.3
Percent Lit when Open												
Not Lit	413	359	24	Q	25	3,280	314	2,501	562	Q	206	18.5
1 to 50	881	301	374	64	142	9,980	3,260	2,758	4,867	802	1,553	10.6
51 to 99	813	148	170	251	244	14,224	8,878	1,166	3,952	4,855	4,251	10.6
100	2,699	496	608	339	1,256	40,393	24,005	4,409	12,334	8,205	15,444	6.4
Cooling Equipment (more than one may apply)												
Residential-Type Central Air Conditioners	816	NC	259	168	389	9,021	5,284	NC	4,166	1,961	2,894	9.7
Heat Pumps	454	NC	111	79	263	8,406	5,451	NC	3,024	1,832	3,550	11.2
Individual Air Conditioners	1,023	NC	568	191	265	17,979	8,146	NC	10,452	3,767	3,761	11.2
District Chilled Water	28	NC	Q	6	20	2,066	1,650	NC	Q	702	988	22.4
Central Chillers	142	NC	20	46	76	12,991	10,863	NC	1,752	4,712	6,527	14.5
Packaged Air Conditioning Units	1,459	NC	346	317	796	27,830	19,229	NC	9,007	7,824	10,999	7.0
Swamp Coolers	179	NC	57	31	91	2,085	1,442	NC	659	652	774	25.2
Other	8	NC	Q	Q	Q	268	228	NC	Q	Q	Q	57.4

See footnotes at end of table.

Table A45. Percent of Floorspace Cooled, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	All Buildings	Total Cooled Floorspace in All Buildings	Not Cooled	Less than 51 Percent Cooled	51 to 99 Percent Cooled	100 Percent Cooled	
RSE Column Factor:	0.6	1.2	1.0	1.1	1.0	0.7	0.8	1.4	1.1	1.2	1.1	
Cooling Distribution Equipment (more than one may apply)												
Ducts for Cooling	2,733	NC	698	557	1,478	47,755	33,106	NC	15,366	12,367	20,022	5.7
Cooling Only	355	NC	147	68	140	8,283	5,165	NC	3,478	1,898	2,908	11.6
Heating and Cooling	2,378	NC	551	489	1,338	39,472	27,941	NC	11,888	10,469	17,115	5.9
Variable Air-Volume System Used	221	NC	38	50	134	12,430	10,197	NC	1,936	3,887	6,607	12.4
Fan Coil Units for Cooling	56	NC	17	14	25	3,875	2,914	NC	942	1,352	1,581	19.9
Cooling Only	35	NC	14	8	13	1,969	1,343	NC	699	574	697	30.7
Heating and Cooling	21	NC	Q	5	12	1,906	1,572	NC	Q	778	884	18.8
Individual Air Conditioners	1,023	NC	568	191	265	17,979	8,146	NC	10,452	3,767	3,761	11.2
Other	111	NC	45	23	44	2,919	2,202	NC	695	1,084	1,139	22.0
Building Shell Conservation Features (more than one may apply)												
Roof or Ceiling Insulation	3,343	616	835	531	1,362	50,311	30,272	5,124	15,497	11,573	18,116	5.6
Wall Insulation	2,320	412	549	356	1,004	33,240	21,638	2,963	8,977	7,713	13,588	6.8
Storm or Multiple Glazing	1,680	275	426	314	665	29,684	18,672	2,354	9,092	7,158	11,080	7.8
Tinted, Reflective or Shading Glass	1,068	91	261	195	521	25,396	17,541	1,046	6,787	7,107	10,456	9.4
Exterior or Interior Shading or Awnings	1,853	147	496	381	829	34,071	22,553	1,873	9,868	8,975	13,356	7.5
Windows that Open	2,119	604	568	277	670	28,937	13,930	4,971	10,559	5,478	7,929	7.3
HVAC Conservation Features (more than one may apply)												
Variable Air-Volume System	250	14	47	51	138	13,970	10,724	244	2,655	4,375	6,697	13.5
Economizer Cycle	414	NC	105	103	206	18,313	14,038	NC	4,005	6,384	7,924	10.3
HVAC Maintenance	2,503	327	663	427	1,086	49,173	30,641	3,338	15,589	11,979	18,267	6.5
Off-Hour Equipment Reduction (more than one may apply)												
Heating	3,400	596	964	517	1,323	46,248	26,342	4,322	16,548	10,204	15,174	5.5
Cooling	2,872	NC	1,001	535	1,335	42,768	26,905	NC	16,782	10,766	15,221	5.3
Hot Water	578	133	172	77	195	9,966	5,639	1,135	3,304	2,410	3,117	10.6
Lighting	4,089	922	1,090	580	1,498	54,944	29,637	7,602	18,829	11,369	17,144	5.2
Other	547	101	156	101	189	7,996	4,339	704	3,095	1,993	2,204	13.3
Energy Management Practices (more than one may apply)												
Energy Management and Control System	236	19	42	54	121	14,320	11,157	493	2,350	4,925	6,552	13.3
Demand-Side Management Participation	315	48	82	72	113	11,310	7,290	643	3,141	3,605	3,920	12.3
Energy Audit	521	97	134	107	184	14,779	8,810	1,143	4,763	4,251	4,622	10.2
Building Energy Manager	49	Q	7	14	22	2,311	1,606	Q	635	489	1,098	23.6

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A46. Percent of Floorspace Lit, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	All Buildings	Total Lit Floorspace in All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	
RSE Column Factor:	0.6	1.8	1.1	1.0	0.7	0.6	0.7	2.2	1.4	1.2	0.8	
All Buildings	4,806	413	881	813	2,699	67,876	54,961	3,280	9,980	14,224	40,393	5.7
Building Floorspace (Square Feet)												
1,001 to 5,000	2,681	287	489	387	1,518	7,327	5,420	724	1,405	1,076	4,122	7.3
5,001 to 10,000	975	64	180	189	541	7,199	5,527	458	1,318	1,405	4,018	7.1
10,001 to 25,000	647	36	144	128	339	10,375	7,881	529	2,235	2,092	5,520	8.5
25,001 to 50,000	280	18	41	63	158	10,069	7,993	613	1,500	2,300	5,656	11.4
50,001 to 100,000	116	5	14	24	73	8,062	6,845	341	1,017	1,605	5,099	12.1
100,001 to 200,000	71	Q	11	13	46	9,678	8,154	Q	1,501	1,816	6,296	15.5
200,001 to 500,000	26	Q	2	5	19	7,889	7,025	Q	557	1,363	5,743	18.2
Over 500,000	9	Q	Q	Q	4	7,278	6,116	Q	Q	2,568	3,939	31.1
Principal Building Activity												
Education	301	NC	Q	56	238	8,470	8,119	NC	Q	2,044	6,284	11.9
Food Sales	130	NC	Q	Q	93	757	698	NC	Q	Q	591	23.5
Food Service	260	NC	28	52	180	1,491	1,257	NC	260	350	882	15.8
Health Care	63	NC	Q	19	38	1,763	1,688	NC	Q	351	1,368	20.8
Lodging	154	Q	26	27	100	2,891	2,563	Q	342	599	1,948	20.2
Mercantile and Service	1,272	Q	217	236	809	12,402	10,929	Q	1,274	2,759	8,335	10.2
Office	749	NC	77	197	475	12,319	11,170	NC	773	3,429	8,116	9.9
Parking Garage	24	Q	Q	Q	15	1,652	1,562	Q	Q	Q	1,454	40.5
Public Assembly	278	Q	90	58	128	4,556	3,517	Q	931	Q	1,806	17.1
Public Order and Safety	60	Q	Q	13	34	820	712	Q	Q	196	542	33.3
Religious Worship	366	NC	81	67	218	3,747	2,541	NC	1,446	799	1,503	17.0
Warehouse and Storage	761	168	241	50	303	11,484	8,353	756	2,928	1,266	6,535	12.0
Other	69	Q	Q	11	42	1,130	963	Q	Q	230	746	26.2
Vacant	319	221	63	Q	26	4,396	889	2,403	1,488	Q	282	16.7
Year Constructed												
1899 or Before	169	Q	61	41	55	1,721	1,088	Q	652	429	560	19.0
1900 to 1919	255	23	79	52	101	3,608	2,309	321	1,175	946	1,166	18.8
1920 to 1945	724	76	168	122	359	8,712	6,643	654	1,584	1,535	4,939	12.5
1946 to 1959	880	78	151	150	501	10,421	8,127	554	1,862	2,115	5,890	10.8
1960 to 1969	783	55	138	132	458	12,612	10,704	457	1,523	2,264	8,369	11.4
1970 to 1979	982	83	150	163	586	14,014	11,838	630	1,414	2,982	8,988	10.4
1980 to 1989	884	74	114	138	558	14,287	12,084	512	1,489	3,539	8,745	11.9
1990 to 1992	128	Q	20	15	82	2,502	2,167	Q	280	413	1,737	20.7
Census Region												
Northeast	771	46	170	171	384	13,400	11,215	454	1,763	3,098	8,085	12.1
Midwest	1,202	138	245	210	609	17,280	13,556	1,031	2,771	3,914	9,565	9.7
South	1,963	178	344	283	1,158	24,577	19,815	1,193	3,759	4,613	15,013	9.6
West	870	51	123	148	549	12,619	10,375	601	1,688	2,599	7,731	13.7
Energy Sources (more than one may apply)												
Electricity	4,616	223	881	813	2,699	66,549	54,961	1,952	9,980	14,224	40,393	5.8
Natural Gas	2,665	50	488	504	1,623	45,097	38,236	650	6,381	9,745	28,321	7.6
Fuel Oil	559	Q	118	115	310	13,218	11,487	Q	1,382	3,202	8,401	12.4
District Heat	95	Q	11	23	61	5,339	4,747	Q	336	1,119	3,704	19.3
District Chilled Water	28	Q	Q	5	20	2,066	1,819	Q	Q	394	1,444	25.7
Propane	337	Q	54	52	214	3,393	2,868	Q	484	571	2,263	18.8
Any Other	163	Q	48	28	74	1,551	1,196	Q	351	320	832	23.1

See footnotes at end of table.

Table A46. Percent of Floorspace Lit, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	All Buildings	Total Lit Floorspace in All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	
RSE Column Factor:	0.6	1.8	1.1	1.0	0.7	0.6	0.7	2.2	1.4	1.2	0.8	
Energy End Uses (more than one may apply)												
Heated Buildings	4,178	103	760	780	2,536	61,996	52,476	1,047	8,527	13,822	38,601	6.1
Air-Conditioned Buildings	3,502	54	580	665	2,203	57,041	48,813	779	7,222	13,058	35,984	6.8
Buildings with Water Heating	3,502	67	605	663	2,167	58,479	49,962	819	7,515	13,540	36,604	6.6
Buildings with Cooking	734	Q	111	154	463	23,065	20,477	Q	2,094	6,377	14,526	10.2
Buildings with Manufacturing	121	Q	27	17	73	3,174	2,592	Q	565	765	1,815	21.4
Floors												
One	3,007	326	458	404	1,819	25,424	20,399	1,785	3,324	4,357	15,957	8.3
Two	1,154	61	262	234	598	18,025	14,363	560	3,554	3,789	10,121	8.1
Three	446	21	117	112	196	9,877	8,051	312	1,481	2,575	5,509	12.0
Four to Nine	186	Q	44	59	80	10,377	8,564	Q	1,477	2,355	6,259	15.2
Ten or More	13	Q	1	4	8	4,173	3,585	Q	143	1,147	2,546	24.4
Percent Window Glass												
25 or Less	4,193	391	803	688	2,311	51,356	40,844	2,677	8,465	9,946	30,268	8.2
26 to 50	490	14	69	103	305	11,815	9,854	514	1,281	3,260	6,759	12.7
51 to 75	94	Q	5	21	63	3,206	2,868	Q	137	866	2,131	19.3
76 to 100	29	Q	Q	Q	21	1,499	1,395	Q	Q	152	1,234	23.6
Workers (main shift)												
Less than 5	2,718	407	665	352	1,294	17,944	10,700	3,185	4,775	2,779	7,205	9.3
5 to 9	895	Q	136	180	577	7,524	5,898	Q	1,914	1,518	4,086	9.1
10 to 19	561	Q	49	128	381	8,077	6,674	Q	1,433	1,604	4,986	11.6
20 to 49	405	Q	20	103	281	10,556	9,552	Q	806	2,723	6,994	10.1
50 to 99	130	NC	7	27	96	7,763	7,137	NC	578	1,496	5,689	17.3
100 to 249	64	NC	Q	14	47	7,378	6,807	NC	Q	2,007	5,072	15.6
250 or More	31	NC	Q	8	24	8,633	8,193	NC	Q	2,097	6,361	14.5
Weekly Operating Hours												
39 or Fewer	1,039	332	172	126	408	8,246	4,210	2,853	1,482	1,002	2,910	10.6
40 to 48	1,278	Q	261	245	759	14,998	12,330	Q	2,803	2,993	9,094	8.7
49 to 60	1,004	29	192	187	595	14,046	11,784	129	2,242	3,107	8,568	9.2
61 to 84	645	Q	108	124	402	12,062	10,503	Q	1,413	3,021	7,562	10.9
85 to 167	478	Q	91	79	301	8,467	7,213	Q	1,267	1,760	5,406	12.9
Open Continuously	362	18	58	51	234	10,057	8,922	88	774	2,342	6,853	16.6
Additional Operating Hours for Equipment Use												
Heating and/or Cooling	1,223	Q	188	255	766	20,300	17,709	Q	2,565	4,855	12,832	9.6
Lighting	633	38	119	134	342	12,886	11,044	222	1,559	2,960	8,145	12.0
Heating and/or Cooling and Lighting	371	Q	54	83	228	8,717	7,758	Q	809	2,221	5,666	16.5
No Additional Hours	3,320	367	628	507	1,819	43,407	33,966	3,030	6,665	8,630	25,082	7.4
Percent Vacant for at Least Three Months												
1-50 Percent	362	Q	97	102	148	12,420	10,623	Q	1,290	4,459	6,601	12.0
51-99 Percent	97	Q	59	12	18	2,263	1,084	Q	1,460	259	492	25.1
100 Percent	398	226	31	21	120	4,109	1,407	2,418	344	265	1,081	16.2
None	3,948	163	694	678	2,413	49,085	41,847	740	6,886	9,240	32,219	6.9
Percent of Floorspace Heated												
Not Heated	653	315	130	36	172	6,211	2,653	2,327	1,540	Q	1,929	14.9
1 to 50	688	29	344	66	249	11,195	7,944	214	3,942	1,325	5,714	13.5
51 to 99	618	Q	83	255	267	10,211	8,654	Q	857	4,535	4,742	10.3
100	2,846	55	325	456	2,011	40,260	35,711	661	3,641	7,951	28,007	7.6

See footnotes at end of table.

Table A46. Percent of Floorspace Lit, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	All Buildings	Total Lit Floorspace in All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	
RSE Column Factor:	0.6	1.8	1.1	1.0	0.7	0.6	0.7	2.2	1.4	1.2	0.8	
Percent of Floorspace Cooled												
Not Cooled	1,304	359	301	148	496	10,835	6,148	2,501	2,758	1,166	4,409	10.1
1 to 50	1,176	24	374	170	608	21,715	17,015	562	4,867	3,952	12,334	9.4
51 to 99	658	Q	64	251	339	13,872	12,431	Q	802	4,855	8,205	10.4
100	1,668	25	142	244	1,256	21,454	19,367	206	1,553	4,251	15,444	10.7
Percent Lit when Closed												
Not Lit	2,987	354	637	426	1,569	34,486	25,923	2,523	6,752	6,252	18,959	7.3
1 to 50	1,689	25	242	372	1,051	31,482	27,418	530	3,206	7,685	20,061	8.0
51 to 99	43	Q	Q	13	25	1,021	952	Q	Q	282	715	28.1
100	87	30	Q	Q	54	887	669	209	Q	Q	658	22.8
Lighting Equipment Types (more than one may apply)												
Incandescent	2,509	26	567	509	1,408	39,221	32,488	391	6,575	9,350	22,906	7.5
Standard Fluorescent	4,065	48	780	771	2,467	62,074	52,649	675	8,848	13,892	38,658	6.5
Compact Fluorescent	206	Q	25	65	117	8,336	7,539	Q	547	2,410	5,378	15.5
High-Intensity Discharge	354	Q	47	65	239	17,570	16,001	Q	1,410	3,782	12,324	11.2
Other	78	NC	17	14	47	1,612	1,356	NC	295	418	900	28.2
Building Shell Conservation Features (more than one may apply)												
Roof or Ceiling Insulation	3,343	144	559	648	1,993	50,311	42,187	1,341	6,538	11,864	30,567	6.4
Wall Insulation	2,320	100	393	418	1,410	33,240	28,144	768	4,032	8,261	20,179	7.1
Storm or Multiple Glazing	1,680	59	319	349	953	29,684	25,181	481	3,727	7,851	17,625	8.2
Tinted, Reflective or Shading Glass	1,068	27	165	235	642	25,396	21,954	554	2,339	6,875	15,628	10.4
Exterior or Interior Shading or Awnings	1,853	38	296	388	1,131	34,071	29,426	618	3,586	8,583	21,285	8.1
Windows that Open	2,119	127	447	374	1,171	28,937	23,130	1,113	5,175	5,954	16,696	7.9
Lighting Conservation Features (more than one may apply)												
Specular Reflectors	574	Q	74	136	357	15,241	13,572	Q	1,373	3,215	10,477	11.3
Natural Lighting Control Sensors	74	Q	11	21	42	3,072	2,672	Q	246	966	1,826	20.6
Occupancy Sensors	59	NC	7	13	38	3,629	3,234	NC	Q	1,105	2,185	18.4
Time Clock	339	Q	59	88	187	12,104	10,522	Q	1,100	3,789	7,131	15.4
Manual Dimmer Switches	413	Q	85	109	219	12,329	10,595	Q	1,640	3,152	7,522	12.4
Other	78	NC	Q	31	42	2,596	2,378	NC	Q	902	1,570	19.8
Off-Hour Equipment Reduction (more than one may apply)												
Heating	3,400	67	645	648	2,040	46,248	38,940	549	7,112	10,292	28,295	6.1
Cooling	2,872	41	498	562	1,771	42,768	36,366	376	6,132	9,896	26,364	6.6
Hot Water	578	30	84	114	350	9,966	8,635	261	941	2,617	6,147	11.0
Lighting	4,089	101	802	752	2,434	54,944	45,536	931	9,075	11,767	33,171	5.7
Other	547	Q	82	121	338	7,996	6,890	Q	1,117	1,611	5,205	15.4

See footnotes at end of table.

Table A46. Percent of Floorspace Lit, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	All Buildings	Total Lit Floorspace in All Buildings	Not Lit when Open	Less than 51 Percent Lit	51 to 99 Percent Lit	100 Percent Lit	
RSE Column Factor:	0.6	1.8	1.1	1.0	0.7	0.6	0.7	2.2	1.4	1.2	0.8	
Energy Management Practices (more than one may apply)												
Energy Management and Control System	236	Q	14	58	163	14,320	13,263	Q	344	4,429	9,522	14.3
Demand-Side Management Participation	315	Q	48	90	177	11,310	10,083	Q	1,018	3,058	7,232	12.9
Energy Audit	521	Q	76	121	321	14,779	13,066	Q	1,312	3,996	9,411	11.4
Building Energy Manager	49	Q	Q	9	36	2,311	2,016	Q	Q	348	1,688	25.1

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A47. Heating Equipment, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Heating Equipment (more than one may apply): Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	RSE Row Factor
RSE Column Factor:	0.5	0.5	1.3	0.8	0.8	1.7	0.8	1.0	3.1	
All Buildings	4,806	4,178	449	1,692	1,464	93	624	870	42	6.7
Building Floorspace (Square Feet)										
1,001 to 5,000	2,681	2,247	198	1,002	812	18	165	396	28	10.5
5,001 to 10,000	975	883	121	387	287	11	145	190	Q	10.2
10,001 to 25,000	647	585	71	193	210	28	135	162	Q	9.5
25,001 to 50,000	280	255	30	72	84	15	91	62	Q	13.2
50,001 to 100,000	116	110	13	20	38	9	43	36	Q	12.6
100,001 to 200,000	71	64	10	14	21	6	28	16	Q	16.7
200,001 to 500,000	26	24	4	4	9	5	12	6	Q	19.0
Over 500,000	9	9	2	1	4	1	4	3	Q	33.9
Principal Building Activity										
Education	301	295	36	78	67	20	91	77	Q	14.8
Food Sales	130	120	Q	28	40	NC	Q	30	Q	26.7
Food Service	260	249	Q	102	50	Q	34	100	Q	15.5
Health Care	63	61	11	27	7	2	9	14	Q	29.4
Lodging	154	150	22	33	72	9	36	20	Q	21.0
Mercantile and Service	1,272	1,214	90	548	497	9	141	220	Q	10.8
Office	749	745	109	321	162	24	118	189	7	11.2
Parking Garage	24	17	Q	Q	12	Q	Q	Q	NC	47.2
Public Assembly	278	257	35	108	93	10	43	46	Q	15.0
Public Order and Safety	60	60	Q	26	19	Q	17	Q	NC	31.7
Religious Worship	366	364	37	188	125	Q	58	55	Q	18.1
Warehouse and Storage	761	445	38	168	235	Q	39	76	Q	14.8
Other	69	48	Q	13	23	4	11	13	Q	29.6
Vacant	319	154	23	45	62	2	20	21	Q	19.5
Year Constructed										
1899 or Before	169	158	Q	74	61	4	53	Q	Q	22.7
1900 to 1919	255	232	Q	104	65	10	70	20	Q	18.7
1920 to 1945	724	623	34	285	230	12	128	84	Q	13.4
1946 to 1959	880	760	44	358	258	22	127	137	Q	12.2
1960 to 1969	783	687	58	282	259	22	107	136	Q	12.0
1970 to 1979	982	850	112	324	305	9	79	219	13	11.4
1980 to 1989	884	761	155	244	249	11	48	228	8	12.5
1990 to 1992	128	107	23	21	36	Q	12	33	Q	29.4
Census Region										
Northeast	771	694	41	290	218	23	260	86	12	12.6
Midwest	1,202	1,047	28	592	376	23	188	121	11	13.2
South	1,963	1,687	280	557	626	27	111	440	15	12.2
West	870	750	99	252	245	20	65	223	Q	17.0
Energy Sources (more than one may apply)										
Electricity	4,616	4,173	449	1,692	1,460	93	624	870	42	6.7
Natural Gas	2,665	2,627	137	1,259	886	34	444	605	23	8.5
Fuel Oil	559	554	26	265	189	11	220	29	6	16.7
District Heat	95	95	8	Q	15	93	Q	2	Q	21.1
District Chilled Water	28	28	Q	Q	3	24	Q	Q	Q	28.4
Propane	337	330	34	134	188	Q	35	36	Q	23.8
Any Other	163	161	Q	56	110	Q	21	Q	Q	23.6

See footnotes at end of table.

Table A47. Heating Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Heating Equipment (more than one may apply)							RSE Row Factor
			Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	
RSE Column Factor:	0.5	0.5	1.3	0.8	0.8	1.7	0.8	1.0	3.1	
Energy End Uses (more than one may apply)										
Heated Buildings	4,178	4,178	449	1,692	1,464	93	624	870	42	6.7
Air-Conditioned Buildings	3,502	3,439	443	1,391	1,081	80	509	855	36	7.0
Buildings with Water Heating	3,502	3,436	404	1,433	1,097	80	600	771	40	6.9
Buildings with Cooking	734	715	79	259	180	18	178	216	18	10.2
Buildings with Manufacturing	121	117	16	47	64	5	21	23	Q	23.1
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	399	344	12	162	134	10	99	31	Q	23.3
5,500-7,000 HDD	1,134	1,018	31	525	352	28	272	125	11	14.5
4,000-5,499 HDD	1,077	959	127	459	331	27	156	97	Q	21.8
Fewer than 4,000 HDD	1,101	955	148	294	345	13	61	297	Q	22.2
More than 2,000 CDD and --										
Fewer than 4,000 HDD	1,095	903	131	251	302	15	36	319	Q	19.3
Predominant Exterior Wall Material										
Masonry	3,115	2,850	306	1,136	860	75	498	650	33	6.9
Siding or Shingles	764	635	50	308	264	Q	76	93	Q	14.6
Metal Panels	745	533	71	204	285	6	24	73	Q	17.4
Concrete Panels	87	76	14	12	28	7	14	32	Q	21.4
Window Glass	46	41	Q	9	14	1	8	13	Q	33.3
Other	47	42	Q	23	14	Q	Q	9	Q	39.1
Predominant Roof Material										
Built-Up	1,642	1,489	162	560	457	39	247	392	21	7.7
Shingles (Not Wood)	1,381	1,246	117	619	412	10	177	179	Q	11.3
Metal Surfacing	1,037	763	103	296	381	10	37	125	Q	15.8
Synthetic or Rubber	386	368	30	115	126	14	102	105	6	14.2
Slate or Tile	155	140	Q	46	35	13	29	28	NC	21.1
Concrete	37	22	Q	Q	9	Q	4	5	Q	45.8
Other	167	150	14	54	43	Q	27	35	Q	26.1
Percent Window Glass										
25 or Less	4,193	3,597	392	1,507	1,295	74	473	701	39	7.3
26 to 50	490	464	45	149	132	15	121	135	Q	11.3
51 to 75	94	89	9	27	28	3	24	29	Q	25.5
76 to 100	29	27	Q	Q	10	1	7	5	Q	33.8
Workers (main shift)										
Less than 5	2,718	2,154	199	912	846	22	211	305	Q	10.3
5 to 9	895	861	96	407	281	14	119	188	Q	10.6
10 to 19	561	540	59	210	158	21	95	169	Q	11.9
20 to 49	405	401	61	120	113	16	111	133	Q	11.2
50 to 99	130	128	17	30	41	10	43	46	Q	14.1
100 to 249	64	64	10	10	17	4	29	21	Q	15.6
250 or More	31	30	6	3	9	7	15	8	1	17.5
Weekly Operating Hours										
39 or Fewer	1,039	725	52	333	257	9	96	104	Q	14.5
40 to 48	1,278	1,186	150	474	401	34	165	240	Q	10.0
49 to 60	1,004	920	101	402	357	16	133	170	Q	9.8
61 to 84	645	603	54	226	201	9	103	158	Q	10.7
85 to 167	478	436	49	173	117	7	60	140	Q	13.8
Open Continuously	362	307	44	84	130	19	67	58	Q	13.5

See footnotes at end of table.

Table A47. Heating Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Heating Equipment (more than one may apply): Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	RSE Row Factor
RSE Column Factor:	0.5	0.5	1.3	0.8	0.8	1.7	0.8	1.0	3.1	
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	735	714	79	259	180	18	176	217	18	10.3
Computer Room	223	222	22	63	70	11	78	66	6	15.3
Rooms with Special Ventilation	236	229	28	75	77	17	58	64	Q	16.1
Activities with Large Amounts of Hot Water	203	194	22	66	76	6	58	51	Q	14.0
Multibuilding Facility										
Part of Multibuilding Facility	1,667	1,338	167	434	466	81	214	277	9	10.1
with Central Physical Plant	223	208	28	32	48	80	39	29	Q	19.7
No Central Physical Plant	1,444	1,130	139	403	418	1	175	248	9	12.0
Not on Multibuilding Facility	3,139	2,840	282	1,258	998	12	410	593	34	8.2
Space-Heating Energy Source (more than one may apply)										
Electricity	1,513	1,513	444	403	668	16	116	407	19	9.6
Natural Gas	2,405	2,405	98	1,218	819	5	419	535	22	9.3
Fuel Oil	479	479	17	251	151	3	199	13	Q	20.8
District Heat	94	94	8	Q	14	93	Q	2	Q	21.4
Propane	255	255	18	108	162	Q	16	Q	Q	25.3
Wood	102	102	NC	Q	81	Q	Q	Q	NC	29.5
Any Other	39	39	Q	Q	Q	NC	Q	Q	Q	69.2
Primary Space-Heating Energy Source										
Electricity	1,107	1,107	362	205	384	Q	33	331	18	11.0
Natural Gas	2,276	2,276	60	1,162	753	2	393	507	19	10.1
Fuel Oil	394	394	10	209	114	NC	170	Q	Q	21.0
District Heat	91	91	7	Q	14	91	Q	2	Q	22.0
Propane	217	217	Q	92	134	NC	Q	Q	Q	28.2
Wood	68	68	NC	Q	53	NC	Q	NC	NC	36.8
Any Other	Q	Q	Q	Q	Q	NC	Q	Q	NC	100.0
Replacement Energy Source for Primary Heating										
Electricity Only	350	350	Q	201	143	Q	17	67	Q	17.6
Natural Gas Only	213	213	46	56	86	6	37	37	Q	20.3
Fuel Oil Only	161	161	12	65	55	6	63	20	Q	20.4
Propane Only	212	212	Q	107	85	Q	29	26	Q	23.1
Any Other Single Energy Source	57	57	Q	33	29	Q	Q	Q	NC	27.8
More than One Energy Source	93	93	Q	55	36	Q	Q	Q	NC	28.4
Percent of Floorspace Heated										
Not Heated	653	25	NC	NC	NC	NC	NC	NC	NC	25.8
1 to 50	688	688	74	241	352	4	47	96	Q	14.2
51 to 99	618	618	68	267	210	9	93	166	Q	12.6
100	2,846	2,846	307	1,184	902	80	484	608	36	7.4
Heating Equipment (more than one may apply)										
Heat Pumps	449	449	449	60	100	8	21	40	Q	16.1
Furnaces	1,692	1,692	60	1,692	428	Q	84	62	Q	9.9
Individual Space Heaters	1,464	1,464	100	428	1,464	14	128	158	12	10.4
District Heat	93	93	8	Q	14	93	Q	2	Q	21.4
Boilers	624	624	21	84	128	Q	624	44	4	10.6
Packaged Heating Units	870	870	40	62	158	2	44	870	Q	15.5
Other	42	42	Q	Q	12	Q	4	Q	42	29.8

See footnotes at end of table.

Table A47. Heating Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Heating Equipment (more than one may apply): Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	RSE Row Factor
RSE Column Factor:	0.5	0.5	1.3	0.8	0.8	1.7	0.8	1.0	3.1	
Heating Distribution Equipment (more than one may apply)										
Radiators or Baseboards	473	473	10	56	96	47	426	23	Q	13.2
Ducts for Heating	2,955	2,955	431	1,619	659	50	281	849	33	7.1
Heating Only	577	577	Q	505	150	5	71	27	Q	16.0
Heating and Cooling	2,378	2,378	427	1,114	509	45	210	822	28	7.7
Variable Air-Volume System Used	210	210	19	74	42	13	50	83	5	14.4
Fan Coil Units for Heating	99	99	20	7	22	16	67	9	Q	19.2
Heating Only	78	78	19	Q	19	11	52	8	Q	21.4
Heating and Cooling	21	21	Q	Q	3	5	15	2	Q	31.3
Individual Space Heaters	1,464	1,464	100	428	1,464	14	128	158	12	10.4
Other	181	181	16	111	43	Q	48	36	Q	20.9
Cooling Equipment (more than one may apply)										
Residential-Type Central Air Conditioners	816	811	35	624	247	11	103	64	Q	15.3
Heat Pumps	454	453	427	66	98	8	27	40	Q	16.0
Individual Air Conditioners	1,023	1,001	51	377	526	25	263	88	Q	10.9
District Chilled Water	28	28	Q	Q	3	24	Q	Q	Q	28.4
Central Chillers	142	141	11	15	34	14	100	24	3	16.8
Packaged Air-Conditioning Units	1,459	1,426	57	474	338	24	182	780	16	9.7
Swamp Coolers	179	172	Q	69	75	Q	19	38	Q	34.1
Other	8	8	Q	Q	Q	Q	Q	Q	Q	84.3
Building Shell Conservation Features (more than one may apply)										
Roof or Ceiling Insulation	3,343	3,164	393	1,323	1,057	65	487	692	33	7.2
Wall Insulation	2,320	2,206	304	946	744	39	269	484	29	8.6
Storm or Multiple Glazing	1,680	1,642	195	776	513	37	354	278	14	9.2
Tinted, Reflective or Shading Glass	1,068	1,018	152	415	272	22	144	316	13	10.0
Exterior or Interior Shading or Awnings	1,853	1,804	253	727	527	47	292	475	23	8.6
Windows that Open	2,119	1,932	183	804	732	57	390	268	16	9.6
HVAC Conservation Features (more than one may apply)										
Variable Air-Volume System	250	249	19	75	64	19	65	83	5	13.5
Economizer Cycle	414	408	76	112	121	26	99	123	13	12.5
HVAC Maintenance	2,503	2,473	292	995	698	84	484	580	23	7.4
Off-Hour Equipment Reduction (more than one may apply)										
Heating	3,400	3,400	335	1,437	1,187	61	477	721	30	7.2
Cooling	2,872	2,821	328	1,191	881	59	388	712	27	7.4
Hot Water	578	557	64	199	154	13	127	131	Q	13.5
Lighting	4,089	3,768	392	1,575	1,289	73	546	795	36	7.0
Other	547	523	43	215	200	6	88	122	Q	17.1

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A48. Heating Equipment, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Heating Equipment (more than one may apply)							RSE Row Factor
			Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	
RSE Column Factor:	0.6	0.6	1.2	0.9	0.8	1.5	0.9	1.0	2.5	
All Buildings	67,876	61,996	8,269	16,909	22,380	5,225	20,664	16,000	903	6.8
Building Floorspace (Square Feet)										
1,001 to 5,000	7,327	6,210	542	2,780	2,291	56	511	1,116	74	10.8
5,001 to 10,000	7,199	6,533	899	2,816	2,153	73	1,100	1,415	Q	9.8
10,001 to 25,000	10,375	9,424	1,159	3,131	3,305	443	2,210	2,667	Q	9.3
25,001 to 50,000	10,069	9,132	1,119	2,559	2,942	516	3,351	2,168	Q	13.0
50,001 to 100,000	8,062	7,622	932	1,352	2,681	624	3,037	2,509	Q	12.1
100,001 to 200,000	9,678	8,730	1,433	1,860	2,793	777	3,879	2,126	Q	16.0
200,001 to 500,000	7,889	7,470	1,012	1,075	2,934	1,521	3,477	1,603	Q	18.6
Over 500,000	7,278	6,876	1,172	1,337	3,281	1,215	3,098	2,396	Q	30.3
Principal Building Activity										
Education	8,470	8,379	609	973	1,922	641	5,430	1,725	Q	15.1
Food Sales	757	723	Q	228	305	NC	Q	231	Q	26.9
Food Service	1,491	1,435	Q	539	260	Q	343	507	Q	17.7
Health Care	1,763	1,746	362	129	360	403	1,034	395	Q	19.0
Lodging	2,891	2,870	696	409	1,068	580	912	733	Q	22.8
Mercantile and Service	12,402	11,835	1,501	4,948	4,860	148	2,105	4,219	Q	16.2
Office	12,319	12,255	1,937	2,490	3,582	1,706	4,393	2,979	267	11.1
Parking Garage	1,652	1,165	Q	Q	718	Q	Q	Q	NC	51.0
Public Assembly	4,556	4,470	516	910	1,197	348	2,076	702	Q	24.5
Public Order and Safety	820	820	Q	252	249	Q	398	Q	NC	41.1
Religious Worship	3,747	3,737	368	1,909	1,184	Q	1,294	536	Q	20.9
Warehouse and Storage	11,484	8,800	1,633	2,953	4,878	Q	1,624	3,001	Q	17.1
Other	1,130	1,025	Q	254	453	326	321	381	Q	28.0
Vacant	4,396	2,738	248	754	1,344	393	451	450	Q	28.3
Year Constructed										
1899 or Before	1,721	1,637	Q	511	530	91	852	Q	Q	22.0
1900 to 1919	3,608	3,329	Q	1,043	1,286	255	1,644	536	Q	27.0
1920 to 1945	8,712	7,717	619	2,659	2,345	1,125	2,541	1,271	Q	19.6
1946 to 1959	10,421	9,371	1,013	3,131	3,173	545	3,926	1,740	Q	14.6
1960 to 1969	12,612	11,548	1,055	3,367	3,862	1,363	4,027	3,226	Q	16.0
1970 to 1979	14,014	12,814	1,783	2,982	5,434	972	3,734	3,911	231	10.9
1980 to 1989	14,287	13,276	2,962	2,894	4,983	673	3,396	4,306	309	14.6
1990 to 1992	2,502	2,303	534	323	768	202	544	893	Q	20.4
Census Region										
Northeast	13,400	12,858	1,328	3,268	4,907	1,553	6,192	2,890	180	14.4
Midwest	17,280	16,303	1,324	5,579	6,187	1,869	6,478	3,033	205	12.4
South	24,577	21,659	3,632	4,971	7,642	927	5,404	6,440	309	11.2
West	12,619	11,176	1,985	3,092	3,643	875	2,590	3,637	Q	13.4
Energy Sources (more than one may apply)										
Electricity	66,549	61,971	8,269	16,909	22,369	5,225	20,664	16,000	903	6.8
Natural Gas	45,097	44,624	4,675	14,343	16,295	2,721	17,039	12,908	678	8.0
Fuel Oil	13,218	12,933	1,579	2,239	4,695	1,241	7,856	1,974	359	10.9
District Heat	5,339	5,324	450	Q	1,192	5,225	Q	279	Q	16.9
District Chilled Water	2,066	2,063	Q	Q	650	1,702	Q	Q	Q	25.8
Propane	3,393	3,340	707	826	1,584	Q	1,067	855	Q	19.6
Any Other	1,551	1,522	Q	480	655	Q	459	Q	Q	30.7

See footnotes at end of table.

Table A48. Heating Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Heating Equipment (more than one may apply)							RSE Row Factor
			Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	
RSE Column Factor:	0.6	0.6	1.2	0.9	0.8	1.5	0.9	1.0	2.5	
Energy End Uses (more than one may apply)										
Heated Buildings	61,996	61,996	8,269	16,909	22,380	5,225	20,664	16,000	903	6.9
Air-Conditioned Buildings	57,041	56,073	8,207	15,209	19,667	4,708	19,086	15,870	845	7.3
Buildings with Water Heating	58,479	57,708	7,995	15,734	20,270	5,081	20,447	15,348	894	7.0
Buildings with Cooking	23,065	22,736	2,871	4,459	7,233	2,198	11,342	6,349	513	11.2
Buildings with Manufacturing	3,174	3,121	620	826	1,804	412	1,131	1,059	Q	25.4
Climate Zone: 45-Year Average										
Fewer than 2,000 CDD and --										
More than 7,000 HDD	5,623	5,218	437	1,920	1,736	513	2,118	609	Q	22.5
5,500-7,000 HDD	18,024	17,196	1,282	5,075	6,624	1,900	7,706	3,756	277	13.7
4,000-5,499 HDD	16,162	14,966	2,459	4,763	5,781	1,692	5,136	2,987	Q	16.5
Fewer than 4,000 HDD	15,251	13,537	2,501	3,217	4,508	560	3,341	4,836	Q	18.9
More than 2,000 CDD and --										
Fewer than 4,000 HDD	12,816	11,079	1,590	1,935	3,730	560	2,363	3,812	Q	18.7
Predominant Exterior Wall Material										
Masonry	48,585	45,520	5,863	11,739	14,669	3,669	16,840	11,586	598	7.8
Siding or Shingles	3,873	3,303	413	1,460	1,485	Q	725	546	Q	14.5
Metal Panels	7,392	5,682	1,182	2,246	3,203	331	740	1,149	Q	19.1
Concrete Panels	4,961	4,663	575	1,063	1,942	699	1,379	2,009	Q	25.3
Window Glass	2,028	1,839	202	183	788	Q	695	395	Q	27.7
Other	1,037	988	Q	218	292	Q	287	Q	Q	37.7
Predominant Roof Material										
Built-Up	30,257	28,271	3,873	6,443	9,232	2,346	10,393	8,536	441	9.9
Shingles (Not Wood)	10,570	9,764	1,068	4,091	3,083	459	2,570	1,586	Q	13.6
Metal Surfacing	9,019	7,121	1,231	2,786	3,518	306	751	1,476	Q	15.8
Synthetic or Rubber	11,702	11,541	1,385	2,476	4,653	1,470	5,013	3,518	291	14.5
Slate or Tile	1,998	1,863	Q	539	513	400	633	284	NC	24.9
Concrete	2,544	1,741	Q	Q	845	Q	688	160	Q	44.4
Other	1,786	1,695	437	414	535	Q	616	439	Q	27.5
Percent Window Glass										
25 or Less	51,356	45,868	5,874	13,831	16,789	3,044	13,633	11,684	597	7.4
26 to 50	11,815	11,493	2,022	2,576	3,710	1,349	4,994	3,346	Q	14.7
51 to 75	3,206	3,185	293	364	1,340	473	1,498	768	Q	19.2
76 to 100	1,499	1,450	80	Q	540	Q	539	201	Q	29.8
Workers (main shift)										
Less than 5	17,944	13,604	1,219	4,981	5,455	396	2,755	1,694	Q	16.7
5 to 9	7,524	7,075	812	2,917	2,569	314	1,516	1,372	Q	11.7
10 to 19	8,077	7,528	938	2,488	2,655	487	1,831	1,992	Q	13.5
20 to 49	10,556	10,440	1,408	2,590	3,314	500	3,784	3,380	Q	11.4
50 to 99	7,763	7,652	1,161	2,133	2,638	785	2,882	2,406	Q	17.1
100 to 249	7,378	7,323	1,327	800	2,610	674	3,911	2,689	Q	19.9
250 or More	8,633	8,374	1,404	1,001	3,138	2,070	3,984	2,466	186	17.7
Weekly Operating Hours										
39 or Fewer	8,246	6,000	353	2,241	2,076	332	1,829	784	Q	18.5
40 to 48	14,998	13,745	1,904	3,794	4,460	792	4,262	3,548	Q	10.3
49 to 60	14,046	13,251	1,852	4,053	5,593	1,051	4,104	3,166	Q	11.1
61 to 84	12,062	11,529	1,683	3,019	4,165	695	3,636	3,832	Q	14.4
85 to 167	8,467	8,141	900	2,682	2,717	504	2,639	2,932	Q	18.3
Open Continuously	10,057	9,329	1,578	1,121	3,368	1,850	4,194	1,737	Q	17.1

See footnotes at end of table.

Table A48. Heating Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Heating Equipment (more than one may apply)							RSE Row Factor
			Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	
RSE Column Factor:	0.6	0.6	1.2	0.9	0.8	1.5	0.9	1.0	2.5	
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation	22,166	21,833	2,871	4,459	7,233	2,198	10,439	6,349	513	10.4
Computer Room	14,199	14,170	2,290	2,291	5,158	2,070	6,599	4,384	418	12.8
Rooms with Special Ventilation	8,042	7,995	1,054	1,261	2,902	1,592	3,915	1,773	Q	13.7
Activities with Large Amounts of Hot Water	6,862	6,829	1,470	1,300	2,580	783	3,490	2,137	Q	15.0
Multibuilding Facility										
Part of Multibuilding Facility	31,564	28,365	3,949	5,908	10,324	4,403	9,877	7,405	364	11.6
with Central Physical Plant	8,395	8,088	744	1,166	2,547	4,150	2,306	1,219	Q	21.5
No Central Physical Plant	23,170	20,277	3,205	4,743	7,777	253	7,571	6,187	362	13.2
Not on Multibuilding Facility	36,312	33,631	4,320	11,001	12,056	822	10,787	8,594	538	7.2
Space-Heating Energy Source (more than one may apply)										
Electricity	25,636	25,636	8,243	6,018	12,980	970	6,583	8,375	491	11.2
Natural Gas	38,524	38,524	3,651	13,797	13,980	553	15,967	11,524	549	9.0
Fuel Oil	7,334	7,334	602	1,746	2,099	413	5,260	627	Q	16.5
District Heat	5,242	5,242	443	Q	1,139	5,225	Q	279	Q	17.1
Propane	1,568	1,568	242	534	984	Q	219	Q	Q	24.7
Wood	504	504	NC	Q	380	Q	Q	Q	NC	23.7
Any Other	661	661	Q	Q	Q	NC	Q	Q	Q	70.4
Primary Space-Heating Energy Source										
Electricity	15,502	15,502	4,723	2,201	6,528	Q	2,371	4,591	363	12.7
Natural Gas	35,161	35,161	2,541	12,649	12,523	Q	14,727	10,609	474	9.2
Fuel Oil	4,415	4,415	275	1,292	1,266	NC	3,131	Q	Q	19.3
District Heat	5,014	5,014	376	Q	1,074	4,996	Q	271	Q	18.1
Propane	1,101	1,101	Q	406	679	NC	Q	Q	Q	27.5
Wood	257	257	NC	Q	188	NC	Q	NC	NC	29.6
Any Other	546	546	Q	Q	Q	NC	Q	Q	NC	80.5
Replacement Energy Source for Primary Heating										
Electricity Only	2,559	2,559	Q	1,250	934	Q	398	605	Q	18.0
Natural Gas Only	2,260	2,260	542	539	761	Q	754	250	Q	25.2
Fuel Oil Only	5,451	5,451	589	922	1,995	546	3,844	799	Q	22.9
Propane Only	2,174	2,174	Q	921	736	Q	439	598	Q	20.1
Any Other Single Energy Source	477	477	Q	136	127	Q	Q	Q	NC	43.0
More than One Energy Source	895	895	Q	338	344	Q	Q	Q	NC	29.5
Percent of Floorspace Heated										
Not Heated	6,211	330	NC	NC	NC	NC	NC	NC	NC	33.6
1 to 50	11,195	11,195	1,611	4,139	5,663	385	1,366	2,623	Q	18.9
51 to 99	10,211	10,211	1,908	2,671	3,667	815	3,551	3,519	Q	13.8
100	40,260	40,260	4,750	10,099	13,049	4,024	15,747	9,857	625	7.7
Heating Equipment (more than one may apply)										
Heat Pumps	8,269	8,269	8,269	1,493	2,717	443	2,267	1,908	Q	15.1
Furnaces	16,909	16,909	1,493	16,909	6,657	Q	1,831	2,642	Q	11.4
Individual Space Heaters	22,380	22,380	2,717	6,657	22,380	1,139	5,131	5,318	354	10.5
District Heat	5,225	5,225	443	Q	1,139	5,225	Q	279	Q	17.1
Boilers	20,664	20,664	2,267	1,831	5,131	Q	20,664	2,870	284	11.9
Packaged Heating Units	16,000	16,000	1,908	2,642	5,318	279	2,870	16,000	Q	13.7
Other	903	903	Q	Q	354	Q	284	Q	903	25.4

See footnotes at end of table.

Table A48. Heating Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Heating Equipment (more than one may apply)							RSE Row Factor
			Heat Pumps	Furnaces	Individual Space Heaters	District Heat	Boilers	Packaged Heating Units	Other	
RSE Column Factor:	0.6	0.6	1.2	0.9	0.8	1.5	0.9	1.0	2.5	
Heating Distribution Equipment (more than one may apply)										
Radiators or Baseboards	13,263	13,263	997	1,038	3,437	2,695	10,602	1,480	Q	13.3
Ducts for Heating	45,422	45,422	7,892	16,427	13,853	3,141	13,713	15,774	737	7.6
Heating Only	5,950	5,950	Q	3,651	1,958	207	2,202	Q	Q	21.0
Heating and Cooling	39,472	39,472	7,774	12,776	11,895	2,935	11,511	14,932	661	7.7
Variable Air-Volume System Used	11,528	11,528	1,551	2,489	3,634	1,721	5,627	3,650	253	17.7
Fan Coil Units for Heating	5,474	5,474	1,364	395	1,398	1,444	3,770	1,041	Q	20.2
Heating Only	3,569	3,569	1,179	Q	959	693	2,606	739	Q	24.7
Heating and Cooling	1,906	1,906	Q	Q	439	751	1,164	302	Q	24.0
Individual Space Heaters	22,380	22,380	2,717	6,657	22,380	1,139	5,131	5,318	354	10.5
Other	3,310	3,310	791	1,431	1,185	245	1,716	954	Q	22.9
Cooling Equipment (more than one may apply)										
Residential-Type Central Air Conditioners	9,021	8,968	750	5,712	3,549	661	2,512	1,258	Q	13.0
Heat Pumps	8,406	8,383	7,638	1,534	2,679	414	2,467	1,944	Q	14.9
Individual Air Conditioners	17,979	17,806	2,110	5,214	8,131	1,497	8,503	3,614	Q	14.5
District Chilled Water	2,066	2,063	Q	Q	650	1,702	Q	Q	Q	25.8
Central Chillers	12,991	12,606	1,395	775	3,476	1,814	8,931	1,929	387	14.7
Packaged Air-Conditioning Units	27,830	27,411	2,562	7,004	9,886	1,745	7,936	13,810	385	8.9
Swamp Coolers	2,085	2,036	374	507	815	Q	516	574	Q	29.4
Other	268	268	Q	Q	Q	Q	Q	Q	Q	67.4
Building Shell Conservation Features (more than one may apply)										
Roof or Ceiling Insulation	50,311	48,409	7,215	13,130	17,426	3,953	17,060	12,791	827	7.2
Wall Insulation	33,240	32,180	5,335	9,371	11,509	2,226	10,460	8,601	547	8.1
Storm or Multiple Glazing	29,684	29,441	4,100	8,620	9,846	2,303	11,905	6,681	470	9.4
Tinted, Reflective or Shading Glass	25,396	24,816	4,330	5,466	8,405	2,382	9,406	7,985	454	12.1
Exterior or Interior Shading or Awnings	34,071	33,454	5,078	8,168	11,182	2,931	12,568	9,793	675	8.4
Windows that Open	28,937	27,381	3,310	7,507	9,247	2,724	11,218	5,341	397	9.9
HVAC Conservation Features (more than one may apply)										
Variable Air-Volume System	13,970	13,969	1,594	2,503	5,083	2,115	6,575	3,651	331	16.2
Economizer Cycle	18,313	18,231	2,637	3,395	7,069	2,285	8,524	5,409	537	12.0
HVAC Maintenance	49,173	48,460	6,442	11,789	15,970	4,984	18,475	12,488	825	7.4
***Off-Hour Equipment Reduction* (more than one may apply)**										
Heating	46,248	46,248	5,587	14,148	16,889	2,830	14,367	12,862	564	7.3
Cooling	42,768	42,090	5,605	12,673	15,017	2,663	13,369	12,835	542	7.7
Hot Water	9,966	9,854	1,275	1,850	2,635	586	4,512	2,623	Q	11.9
Lighting	54,944	51,638	6,607	15,547	18,578	3,146	16,319	14,078	647	6.6
Other	7,996	7,839	754	2,412	3,427	474	2,301	2,221	Q	19.8

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A49. Cooling Equipment, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Equipment (more than one may apply): Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	RSE Row Factor
RSE Column Factor:	0.4	0.4	0.9	1.0	0.7	1.8	1.0	0.6	2.0	3.9	
All Buildings	4,806	3,502	816	454	1,023	28	142	1,459	179	8	9.2
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	1,792	470	202	536	Q	Q	625	110	Q	12.5
5,001 to 10,000	975	758	173	120	198	Q	20	347	33	Q	12.3
10,001 to 25,000	647	519	107	71	155	8	21	264	21	Q	14.3
25,001 to 50,000	280	236	44	31	73	9	29	119	8	Q	17.4
50,001 to 100,000	116	103	12	15	34	Q	24	58	Q	Q	16.1
100,001 to 200,000	71	59	7	11	16	2	20	30	Q	Q	17.8
200,001 to 500,000	26	24	3	3	7	2	9	12	Q	Q	21.0
Over 500,000	9	9	1	2	5	1	5	4	Q	Q	41.1
Principal Building Activity											
Education	301	251	42	34	72	9	29	106	19	Q	18.4
Food Sales	130	119	Q	Q	26	NC	NC	50	Q	Q	32.5
Food Service	260	244	36	Q	46	Q	Q	160	24	NC	20.1
Health Care	63	59	11	13	13	Q	6	27	Q	Q	33.2
Lodging	154	120	16	22	72	Q	7	28	Q	NC	26.7
Mercantile and Service	1,272	942	227	93	338	Q	13	360	60	Q	13.1
Office	749	731	223	108	126	8	43	331	12	Q	13.7
Parking Garage	24	12	Q	Q	8	Q	Q	1	Q	NC	64.5
Public Assembly	278	208	39	34	76	Q	17	80	Q	Q	19.0
Public Order and Safety	60	47	Q	Q	19	NC	5	17	Q	Q	41.3
Religious Worship	366	286	79	38	68	Q	6	121	Q	Q	24.7
Warehouse and Storage	761	324	74	39	116	Q	3	120	Q	NC	19.7
Other	69	44	Q	Q	11	Q	3	25	Q	Q	37.1
Vacant	319	114	30	22	32	Q	4	33	Q	Q	27.4
Year Constructed											
1899 or Before	169	119	34	Q	65	Q	Q	41	Q	NC	29.3
1900 to 1919	255	169	64	13	78	Q	5	41	Q	Q	25.6
1920 to 1945	724	491	105	29	203	Q	12	186	28	Q	17.5
1946 to 1959	880	643	156	43	217	7	27	256	42	Q	16.3
1960 to 1969	783	563	135	62	172	5	36	241	40	Q	15.3
1970 to 1979	982	741	162	116	166	5	27	348	24	Q	14.7
1980 to 1989	884	682	144	157	110	Q	23	306	34	Q	15.2
1990 to 1992	128	93	17	25	12	Q	5	40	Q	Q	39.3
Census Region											
Northeast	771	521	97	43	269	2	28	208	Q	Q	15.5
Midwest	1,202	784	275	29	229	7	31	331	Q	Q	17.9
South	1,963	1,569	363	285	433	10	58	610	39	Q	14.5
West	870	627	82	96	92	9	25	310	129	Q	19.1
Energy Sources (more than one may apply)											
Electricity	4,616	3,502	816	454	1,023	28	142	1,459	179	8	9.1
Natural Gas	2,665	2,263	609	140	641	15	109	1,051	134	Q	11.4
Fuel Oil	559	378	81	30	195	2	35	116	Q	Q	17.8
District Heat	95	82	11	8	26	24	14	24	Q	Q	25.9
District Chilled Water	28	28	Q	Q	2	28	Q	3	Q	Q	37.1
Propane	337	230	70	33	91	Q	4	63	Q	Q	28.1
Any Other	163	71	Q	Q	42	Q	Q	13	Q	NC	36.7

See footnotes at end of table.

Table A49. Cooling Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Equipment (more than one may apply): Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	RSE Row Factor
RSE Column Factor:	0.4	0.4	0.9	1.0	0.7	1.8	1.0	0.6	2.0	3.9	
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	3,439	811	453	1,001	28	141	1,426	172	8	9.2
Air-Conditioned Buildings	3,502	3,502	816	454	1,023	28	142	1,459	179	8	9.2
Buildings with Water Heating	3,502	3,016	716	411	855	22	136	1,304	137	8	9.4
Buildings with Cooking	734	663	118	80	190	8	54	345	38	Q	14.1
Buildings with Manufacturing	121	92	24	14	31	Q	4	40	Q	Q	30.8
Climate Zone: 45-Year Average											
Fewer than 2,000 CDD and --											
More than 7,000 HDD	399	229	54	12	93	Q	11	90	Q	NC	29.7
5,500-7,000 HDD	1,134	766	224	36	279	5	40	312	33	Q	18.6
4,000-5,499 HDD	1,077	753	198	129	257	4	29	253	Q	Q	27.1
Fewer than 4,000 HDD	1,101	838	139	149	166	10	38	398	71	Q	25.8
More than 2,000 CDD and --											
Fewer than 4,000 HDD	1,095	915	203	128	228	9	25	405	60	Q	21.0
Predominant Exterior Wall Material											
Masonry	3,115	2,491	552	311	683	25	115	1,109	124	Q	9.5
Siding or Shingles	764	473	136	50	185	Q	5	145	Q	Q	18.8
Metal Panels	745	394	107	71	132	Q	5	126	25	Q	21.3
Concrete Panels	87	71	8	13	8	2	10	43	4	Q	26.1
Window Glass	46	38	Q	Q	9	Q	6	22	Q	Q	34.7
Other	47	35	Q	Q	Q	Q	2	14	Q	NC	48.0
Predominant Roof Material											
Built-Up	1,642	1,319	253	165	333	11	66	642	92	Q	10.2
Shingles (Not Wood)	1,381	1,025	309	117	341	Q	18	344	41	Q	13.7
Metal Surfacing	1,037	576	154	103	180	Q	13	185	32	Q	17.8
Synthetic or Rubber	386	318	53	32	92	6	30	174	9	Q	17.0
Slate or Tile	155	113	22	Q	33	Q	7	46	Q	Q	28.1
Concrete	37	27	Q	Q	5	Q	Q	12	Q	NC	66.4
Other	167	124	20	15	38	Q	5	57	Q	NC	33.7
Percent Window Glass											
25 or Less	4,193	2,987	717	397	885	21	96	1,191	154	Q	9.7
26 to 50	490	410	84	45	110	6	32	214	20	Q	14.9
51 to 75	94	80	12	9	22	Q	8	46	Q	Q	31.7
76 to 100	29	25	Q	Q	Q	Q	6	8	Q	NC	40.5
Workers (main shift)											
Less than 5	2,718	1,623	380	202	574	Q	24	512	83	Q	13.8
5 to 9	895	781	208	92	194	Q	9	351	52	NC	13.6
10 to 19	561	502	130	61	121	10	15	263	22	NC	15.8
20 to 49	405	384	75	65	85	5	33	205	12	Q	14.7
50 to 99	130	118	14	16	32	3	24	77	Q	Q	18.6
100 to 249	64	63	8	11	12	2	19	34	Q	Q	18.8
250 or More	31	31	2	6	5	3	18	16	Q	Q	19.8
Weekly Operating Hours											
39 or Fewer	1,039	513	139	50	156	Q	13	188	Q	Q	19.8
40 to 48	1,278	1,007	268	151	286	8	42	381	55	Q	13.0
49 to 60	1,004	786	189	103	241	4	20	313	43	Q	13.2
61 to 84	645	528	104	57	151	4	30	259	15	Q	14.2
85 to 167	478	405	73	49	82	Q	15	216	37	Q	16.6
Open Continuously	362	262	43	44	108	5	21	101	8	Q	17.5

See footnotes at end of table.

Table A49. Cooling Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Equipment (more than one may apply): Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	RSE Row Factor
RSE Column Factor:	0.4	0.4	0.9	1.0	0.7	1.8	1.0	0.6	2.0	3.9	
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	735	661	118	80	188	8	52	345	38	Q	14.1
Computer Room	223	223	43	25	70	5	37	127	5	Q	17.9
Rooms with Special Ventilation	236	215	37	28	54	3	25	112	15	Q	19.3
Activities with Large Amounts of Hot Water	203	164	28	20	57	2	16	84	15	Q	18.8
Multibuilding Facility											
Part of Multibuilding Facility with Central Physical Plant	1,667	1,090	215	164	300	27	71	434	61	Q	12.6
No Central Physical Plant	223	174	32	29	47	27	25	51	Q	Q	23.2
Not on Multibuilding Facility	1,444	916	184	135	253	Q	46	383	56	Q	13.8
	3,139	2,412	601	290	723	Q	71	1,025	117	Q	9.6
Cooling Energy Sources (more than one may apply)											
Electricity	3,404	3,404	783	449	1,015	11	137	1,419	178	7	9.9
Natural Gas	106	106	48	8	16	Q	8	52	Q	Q	28.4
District Chilled Water	28	28	Q	Q	2	28	Q	3	Q	Q	37.1
Percent of Floorspace Cooled											
Not Cooled	1,304	NC	NC	NC	NC	NC	NC	NC	NC	NC	14.2
1 to 50	1,176	1,176	259	111	568	Q	20	346	57	Q	12.5
51 to 99	658	658	168	79	191	6	46	317	31	Q	13.8
100	1,668	1,668	389	263	265	20	76	796	91	Q	11.9
Heating Equipment (more than one may apply)											
Heat Pumps	449	443	35	427	51	Q	11	57	Q	Q	19.6
Furnaces	1,692	1,391	624	66	377	Q	15	474	69	Q	13.3
Individual Space Heaters	1,464	1,081	247	98	526	3	34	338	75	Q	12.8
District Heat	93	80	11	8	25	24	14	24	Q	Q	26.2
Boilers	624	509	103	27	263	Q	100	182	19	Q	12.3
Packaged Heating Units	870	855	64	40	88	Q	24	780	38	Q	17.2
Other	42	36	Q	Q	Q	Q	3	16	Q	Q	50.7
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	816	816	816	30	142	Q	7	61	Q	Q	17.8
Heat Pumps	454	454	30	454	48	Q	9	54	Q	Q	20.9
Individual Air Conditioners	1,023	1,023	142	48	1,023	2	35	158	17	Q	14.0
District Chilled Water	28	28	Q	Q	2	28	Q	3	Q	Q	37.1
Central Chillers	142	142	7	9	35	Q	142	40	4	Q	20.3
Packaged Air-Conditioning Units	1,459	1,459	61	54	158	3	40	1,459	38	Q	14.3
Swamp Coolers	179	179	Q	Q	17	Q	4	38	179	Q	35.4
Other	8	8	Q	Q	Q	Q	Q	Q	Q	8	49.4

See footnotes at end of table.

Table A49. Cooling Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Equipment (more than one may apply): Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	RSE Row Factor
RSE Column Factor:	0.4	0.4	0.9	1.0	0.7	1.8	1.0	0.6	2.0	3.9	
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	2,733	2,733	798	444	324	25	124	1,450	144	8	9.7
Cooling Only	355	355	102	11	88	5	31	189	47	Q	18.8
Heating and Cooling	2,378	2,378	696	433	236	21	93	1,261	98	Q	10.0
Variable Air-Volume System Used	221	221	43	20	26	12	38	139	5	Q	17.9
Fan Coil Units for Cooling	56	56	Q	2	16	5	36	14	15	Q	28.1
Cooling Only	35	35	Q	Q	12	Q	19	10	14	Q	40.4
Heating and Cooling	21	21	Q	Q	4	3	16	4	Q	Q	33.2
Individual Air Conditioners	1,023	1,023	142	48	1,023	2	35	158	17	Q	14.0
Other	111	111	32	27	22	Q	9	37	50	Q	29.7
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	3,343	2,727	664	399	719	23	118	1,165	128	Q	9.6
Wall Insulation	2,320	1,908	487	310	455	11	77	805	80	Q	11.4
Storm or Multiple Glazing	1,680	1,405	390	197	393	8	72	575	38	Q	12.2
Tinted, Reflective or Shading Glass	1,068	977	237	150	164	12	60	491	62	Q	12.9
Exterior or Interior Shading or Awnings	1,853	1,705	431	254	424	17	94	751	91	Q	11.7
Windows that Open	2,119	1,515	377	186	584	15	73	499	70	Q	12.4
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	250	235	47	20	35	12	39	140	5	Q	17.1
Economizer Cycle	414	414	55	76	74	11	62	226	20	Q	16.5
HVAC Maintenance	2,503	2,176	490	294	559	28	127	992	104	Q	10.2
Off-Hour Equipment Reduction (more than one may apply)											
Heating	3,400	2,804	673	337	787	20	103	1,178	149	Q	9.8
Cooling	2,872	2,872	687	334	825	20	106	1,214	152	Q	9.8
Hot Water	578	445	86	63	123	4	28	187	23	Q	17.7
Lighting	4,089	3,168	757	397	899	23	118	1,331	167	8	9.5
Other	547	446	98	43	138	Q	16	195	27	Q	19.8

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A50. Cooling Equipment, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floor-space of All Buildings	Total Floor-space of All Cooled Buildings	Cooling Equipment (more than one may apply)								RSE Row Factor
			Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	
RSE Column Factor:	0.4	0.5	0.8	0.9	0.9	1.6	1.0	0.6	1.9	3.7	
All Buildings	67,876	57,041	9,021	8,406	17,979	2,066	12,991	27,830	2,085	268	9.0
Building Floorspace (Square Feet)											
1,001 to 5,000	7,327	4,994	1,313	549	1,516	Q	Q	1,750	316	Q	12.6
5,001 to 10,000	7,199	5,601	1,268	902	1,470	Q	157	2,550	250	Q	12.0
10,001 to 25,000	10,375	8,364	1,716	1,152	2,370	115	357	4,319	331	Q	13.9
25,001 to 50,000	10,069	8,435	1,528	1,181	2,604	311	1,088	4,245	304	Q	17.4
50,001 to 100,000	8,062	7,185	810	1,032	2,390	Q	1,651	4,040	Q	Q	15.5
100,001 to 200,000	9,678	8,072	913	1,511	2,167	252	2,752	4,172	Q	Q	17.5
200,001 to 500,000	7,889	7,217	851	889	2,082	737	3,072	3,678	Q	Q	21.0
Over 500,000	7,278	7,174	622	1,191	3,381	515	3,869	3,075	Q	Q	33.3
Principal Building Activity											
Education	8,470	7,389	900	618	3,182	253	2,243	3,067	185	Q	17.6
Food Sales	757	725	Q	Q	148	NC	NC	386	Q	Q	32.5
Food Service	1,491	1,449	160	Q	327	Q	Q	994	66	NC	21.3
Health Care	1,763	1,747	163	407	652	227	1,141	938	Q	Q	22.1
Lodging	2,891	2,493	325	668	1,310	Q	629	906	Q	NC	29.7
Mercantile and Service	12,402	10,874	1,679	1,572	3,109	Q	1,188	5,676	605	Q	18.2
Office	12,319	12,198	1,999	1,924	1,855	659	4,345	6,506	402	Q	15.0
Parking Garage	1,652	922	Q	Q	Q	Q	Q	256	Q	NC	71.2
Public Assembly	4,556	4,077	465	494	Q	Q	Q	1,533	Q	Q	35.4
Public Order and Safety	820	741	Q	Q	283	NC	306	352	Q	Q	49.8
Religious Worship	3,747	3,121	804	405	1,021	Q	Q	1,460	Q	Q	26.3
Warehouse and Storage	11,484	7,885	1,412	1,686	2,844	Q	421	3,888	410	NC	21.3
Other	1,130	1,040	Q	Q	264	Q	216	619	Q	Q	31.3
Vacant	4,396	2,382	487	274	877	Q	500	1,249	Q	Q	38.5
Year Constructed											
1899 or Before	1,721	1,307	232	Q	702	Q	Q	643	Q	NC	29.3
1900 to 1919	3,608	2,759	702	193	1,675	Q	242	1,272	Q	Q	33.4
1920 to 1945	8,712	6,586	1,441	672	3,223	Q	847	2,905	186	Q	21.7
1946 to 1959	10,421	8,260	1,770	963	3,183	241	1,551	3,537	285	Q	17.8
1960 to 1969	12,612	10,601	1,528	1,170	3,603	376	3,032	5,411	510	Q	16.8
1970 to 1979	14,014	12,286	1,800	1,807	2,586	632	3,306	6,494	386	Q	15.3
1980 to 1989	14,287	12,985	1,357	2,921	2,900	243	3,228	6,338	549	Q	20.3
1990 to 1992	2,502	2,258	190	562	108	164	571	1,230	Q	Q	25.8
Census Region											
Northeast	13,400	11,158	1,508	1,286	5,806	302	2,519	5,879	Q	Q	18.7
Midwest	17,280	14,383	2,968	1,416	4,723	684	3,163	6,564	Q	Q	16.2
South	24,577	21,205	3,455	3,745	5,683	659	4,854	10,058	335	Q	15.0
West	12,619	10,296	1,091	1,959	1,767	421	2,456	5,329	1,546	Q	15.8
Energy Sources (more than one may apply)											
Electricity	66,549	57,041	9,021	8,406	17,979	2,066	12,991	27,830	2,085	268	9.0
Natural Gas	45,097	41,423	7,449	4,872	13,165	1,109	9,868	22,082	1,404	211	10.1
Fuel Oil	13,218	12,081	1,487	1,643	4,010	588	5,753	6,004	326	Q	15.1
District Heat	5,339	4,786	661	456	1,557	1,737	1,821	1,805	Q	Q	22.3
District Chilled Water	2,066	2,066	Q	Q	225	2,066	Q	628	Q	Q	31.8
Propane	3,393	2,837	713	710	979	Q	453	1,372	Q	Q	26.0
Any Other	1,551	1,117	Q	Q	602	Q	Q	237	Q	NC	49.5

See footnotes at end of table.

Table A50. Cooling Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floor-space of All Buildings	Total Floor-space of All Cooled Buildings	Cooling Equipment (more than one may apply)								RSE Row Factor
			Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	
RSE Column Factor:	0.4	0.5	0.8	0.9	0.9	1.6	1.0	0.6	1.9	3.7	
Energy End Uses (more than one may apply)											
Heated Buildings	61,996	56,073	8,968	8,383	17,806	2,063	12,606	27,411	2,036	268	9.1
Air-Conditioned Buildings	57,041	57,041	9,021	8,406	17,979	2,066	12,991	27,830	2,085	268	9.1
Buildings with Water Heating	58,479	53,839	8,471	8,100	16,976	1,978	12,779	26,570	1,865	268	9.3
Buildings with Cooking	23,065	22,003	2,553	2,991	7,650	920	8,725	10,900	755	Q	14.1
Buildings with Manufacturing	3,174	2,870	601	689	1,268	Q	513	1,494	Q	Q	30.4
Climate Zone: 45-Year Average											
Fewer than 2,000 CDD and --											
More than 7,000 HDD	5,623	4,267	804	487	1,572	Q	843	1,779	Q	NC	29.0
5,500-7,000 HDD	18,024	14,977	2,889	1,393	5,670	574	3,647	7,396	477	Q	18.3
4,000-5,499 HDD	16,162	13,549	2,037	2,425	5,140	526	2,771	6,302	Q	Q	19.9
Fewer than 4,000 HDD	15,251	12,870	1,492	2,565	2,446	437	3,180	6,966	532	Q	22.2
More than 2,000 CDD and --											
Fewer than 4,000 HDD	12,816	11,379	1,798	1,536	3,151	467	2,550	5,386	753	Q	23.1
Predominant Exterior Wall Material											
Masonry	48,585	42,084	6,291	6,068	14,229	1,630	9,400	21,081	1,323	Q	10.7
Siding or Shingles	3,873	2,625	594	433	981	Q	170	1,095	Q	Q	18.2
Metal Panels	7,392	4,854	1,384	1,167	1,430	Q	234	1,862	289	Q	21.4
Concrete Panels	4,961	4,563	453	550	956	221	1,579	2,328	350	Q	26.5
Window Glass	2,028	1,978	Q	145	305	Q	1,259	897	Q	Q	31.5
Other	1,037	938	Q	Q	Q	Q	350	568	Q	NC	47.6
Predominant Roof Material											
Built-Up	30,257	26,404	3,631	3,998	8,114	969	6,838	14,295	1,342	Q	13.3
Shingles (Not Wood)	10,570	8,606	2,080	1,087	2,990	Q	951	3,529	252	Q	16.8
Metal Surfacing	9,019	6,077	1,623	1,157	1,594	Q	441	2,331	252	Q	18.5
Synthetic or Rubber	11,702	10,893	1,045	1,397	3,175	626	3,687	5,666	185	Q	16.5
Slate or Tile	1,998	1,608	193	Q	743	Q	118	657	Q	Q	30.2
Concrete	2,544	1,909	Q	78	830	Q	676	692	Q	NC	47.1
Other	1,786	1,544	190	451	533	Q	280	660	Q	NC	32.3
Percent Window Glass											
25 or Less	51,356	41,691	6,884	5,929	12,874	1,317	7,610	20,356	1,737	Q	10.3
26 to 50	11,815	10,873	1,669	2,132	4,006	503	3,184	5,193	255	Q	16.7
51 to 75	3,206	3,031	409	291	925	Q	1,311	1,639	Q	Q	23.3
76 to 100	1,499	1,447	Q	53	Q	Q	886	643	Q	NC	36.0
Workers (main shift)											
Less than 5	17,944	10,719	2,114	1,272	4,095	Q	Q	3,619	368	Q	19.2
5 to 9	7,524	6,249	1,399	818	2,143	Q	182	2,612	239	NC	14.7
10 to 19	8,077	6,954	1,546	898	2,301	193	355	3,389	296	NC	17.5
20 to 49	10,556	9,990	1,596	1,454	2,807	191	1,320	5,525	374	Q	15.0
50 to 99	7,763	7,313	861	1,140	2,678	327	1,730	4,500	Q	Q	20.9
100 to 249	7,378	7,195	594	1,405	1,950	192	2,688	3,770	Q	Q	21.5
250 or More	8,633	8,621	910	1,420	2,004	868	5,397	4,414	Q	Q	18.4
Weekly Operating Hours											
39 or Fewer	8,246	4,632	912	374	1,767	Q	374	2,088	Q	Q	24.5
40 to 48	14,998	12,558	2,481	1,916	3,649	312	2,013	5,989	494	Q	14.0
49 to 60	14,046	12,218	2,250	1,757	3,303	357	2,143	5,784	582	Q	15.1
61 to 84	12,062	11,158	1,329	1,810	2,838	178	3,212	5,879	287	Q	16.8
85 to 167	8,467	7,742	1,002	945	2,054	278	1,358	4,224	297	Q	20.1
Open Continuously	10,057	8,733	1,046	1,604	4,368	724	3,891	3,866	309	Q	21.9

See footnotes at end of table.

Table A50. Cooling Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floor-space of All Buildings	Total Floor-space of All Cooled Buildings	Cooling Equipment (more than one may apply)								RSE Row Factor
			Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	
RSE Column Factor:	0.4	0.5	0.8	0.9	0.9	1.6	1.0	0.6	1.9	3.7	
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	22,166	21,096	2,553	2,991	6,750	920	7,823	10,896	755	Q	12.2
Computer Room	14,199	14,199	1,762	2,355	4,361	839	5,942	8,419	482	Q	15.4
Rooms with Special Ventilation	8,042	7,744	975	1,101	2,339	500	3,247	4,013	343	Q	17.2
Activities with Large Amounts of Hot Water	6,862	6,546	911	1,392	2,338	416	2,261	3,496	213	Q	18.9
Multibuilding Facility											
Part of Multibuilding Facility	31,564	26,158	3,469	3,926	8,488	1,784	7,722	11,757	1,057	Q	13.3
with Central Physical Plant	8,395	7,402	972	807	2,487	1,710	2,844	2,475	Q	Q	20.4
No Central Physical Plant	23,170	18,756	2,497	3,119	6,001	Q	4,879	9,282	781	Q	15.7
Not on Multibuilding Facility	36,312	30,883	5,551	4,480	9,492	Q	5,268	16,073	1,028	Q	9.0
Cooling Energy Sources (more than one may apply)											
Electricity	54,628	54,628	8,761	8,388	17,734	842	12,500	26,928	2,063	255	9.6
Natural Gas	1,906	1,906	465	175	420	Q	783	1,047	Q	Q	30.6
District Chilled Water	2,066	2,066	Q	Q	225	2,066	Q	628	Q	Q	31.8
Percent of Floorspace Cooled											
Not Cooled	10,835	NC	NC	NC	NC	NC	NC	NC	NC	NC	16.0
1 to 50	21,715	21,715	4,166	3,024	10,452	Q	1,752	9,007	659	Q	14.1
51 to 99	13,872	13,872	1,961	1,832	3,767	702	4,712	7,824	652	Q	13.7
100	21,454	21,454	2,894	3,550	3,761	988	6,527	10,999	774	Q	14.5
Heating Equipment (more than one may apply)											
Heat Pumps	8,269	8,207	750	7,638	2,110	Q	1,395	2,562	374	Q	18.3
Furnaces	16,909	15,209	5,712	1,534	5,214	Q	775	7,004	507	Q	13.6
Individual Space Heaters	22,380	19,667	3,549	2,679	8,131	650	3,476	9,886	815	Q	12.6
District Heat	5,225	4,708	661	414	1,497	1,702	1,814	1,745	Q	Q	22.8
Boilers	20,664	19,086	2,512	2,467	8,503	Q	8,931	7,936	516	Q	14.6
Packaged Heating Units	16,000	15,870	1,258	1,944	3,614	Q	1,929	13,810	574	Q	15.0
Other	903	845	Q	Q	Q	Q	387	385	Q	Q	39.2
Cooling Equipment (more than one may apply)											
Residential-Type Central Air Conditioners	9,021	9,021	9,021	748	2,756	Q	1,134	1,979	Q	Q	15.4
Heat Pumps	8,406	8,406	748	8,406	2,078	Q	1,308	2,579	381	Q	17.8
Individual Air Conditioners	17,979	17,979	2,756	2,078	17,979	225	3,468	5,856	333	Q	18.1
District Chilled Water	2,066	2,066	Q	Q	225	2,066	Q	628	Q	Q	31.8
Central Chillers	12,991	12,991	1,134	1,308	3,468	Q	12,991	4,608	352	Q	20.4
Packaged Air-Conditioning Units	27,830	27,830	1,979	2,579	5,856	628	4,608	27,830	746	Q	12.4
Swamp Coolers	2,085	2,085	Q	381	333	Q	352	746	2,085	Q	32.4
Other	268	268	Q	Q	Q	Q	Q	Q	Q	268	40.8

See footnotes at end of table.

Table A50. Cooling Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floor-space of All Buildings	Total Floor-space of All Cooled Buildings	Cooling Equipment (more than one may apply)								RSE Row Factor
			Residential-Type Central Air Conditioners	Heat Pumps	Individual Air Conditioners	District Chilled Water	Central Chillers	Packaged Air-Conditioning Units	Swamp Coolers	Other	
RSE Column Factor:	0.4	0.5	0.8	0.9	0.9	1.6	1.0	0.6	1.9	3.7	
Cooling Distribution Equipment (more than one may apply)											
Ducts for Cooling	47,755	47,755	8,883	8,263	10,414	1,785	11,840	27,614	1,862	267	9.8
Cooling Only	8,283	8,283	1,363	378	2,364	389	2,855	5,213	349	Q	17.7
Heating and Cooling	39,472	39,472	7,520	7,885	8,050	1,396	8,985	22,401	1,513	Q	10.4
Variable Air-Volume System Used	12,430	12,430	1,581	1,606	2,799	904	6,640	6,568	283	Q	20.7
Fan Coil Units for Cooling	3,875	3,875	449	356	919	767	2,968	1,510	251	Q	25.8
Cooling Only	1,969	1,969	Q	Q	448	Q	1,529	810	208	Q	36.5
Heating and Cooling	1,906	1,906	Q	Q	471	459	1,439	700	Q	Q	25.5
Individual Air Conditioners	17,979	17,979	2,756	2,078	17,979	225	3,468	5,856	333	Q	18.1
Other	2,919	2,919	531	911	725	Q	1,237	1,688	536	Q	30.3
Building Shell Conservation Features (more than one may apply)											
Roof or Ceiling Insulation	50,311	45,186	7,175	7,372	13,734	1,616	11,124	21,969	1,747	231	9.9
Wall Insulation	33,240	30,278	5,004	5,354	7,885	994	7,938	14,852	1,133	Q	11.8
Storm or Multiple Glazing	29,684	27,331	4,497	4,133	8,563	808	7,663	13,555	650	Q	12.8
Tinted, Reflective or Shading Glass	25,396	24,350	3,245	4,225	5,521	1,103	8,081	12,481	1,087	Q	14.7
Exterior or Interior Shading or Awnings	34,071	32,198	5,114	5,234	9,117	1,239	9,189	16,949	1,256	Q	11.6
Windows that Open	28,937	23,966	4,487	3,471	10,572	1,042	4,967	10,421	644	Q	11.7
HVAC Conservation Features (more than one may apply)											
Variable Air-Volume System	13,970	13,727	1,623	1,606	3,768	916	6,914	6,603	283	Q	19.9
Economizer Cycle	18,313	18,313	1,832	2,627	4,869	1,110	8,255	9,808	695	Q	15.9
HVAC Maintenance	49,173	45,836	6,637	6,524	13,562	2,058	12,480	22,979	1,646	168	9.7
Off-Hour Equipment Reduction (more than one may apply)											
Heating	46,248	41,926	7,011	5,753	11,708	1,058	7,870	20,867	1,614	Q	9.0
Cooling	42,768	42,768	7,147	5,822	12,112	1,061	8,233	21,335	1,639	Q	8.9
Hot Water	9,966	8,831	1,126	1,330	2,306	326	2,525	4,190	253	Q	15.8
Lighting	54,944	47,342	7,900	6,732	13,493	1,149	8,883	23,440	1,758	237	8.7
Other	7,996	7,291	1,102	773	2,177	Q	1,575	3,983	Q	Q	22.5

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A51. Refrigeration Equipment, Number of Buildings, 1992

Building Characteristics	Number of Buildings (thousand)							RSE Row Factor
		Refrigeration Equipment Used (more than one may apply)						
				Cases and Cabinets				
	All Buildings	All Buildings	Walk-in	Any	Open	Closed	Type Unspecified	
RSE Column Factor:	0.5	0.8	0.9	0.8	2.0	0.8	2.2	
All Buildings	4,806	974	591	786	99	774	72	6.3
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	500	300	416	51	410	30	10.2
5,001 to 10,000	975	155	97	121	Q	121	18	12.5
10,001 to 25,000	647	139	75	106	15	103	15	11.3
25,001 to 50,000	280	79	46	59	Q	58	6	14.3
50,001 to 100,000	116	49	32	40	5	39	Q	13.4
100,001 to 200,000	71	30	22	24	5	24	Q	14.6
200,001 to 500,000	26	16	14	13	2	13	Q	17.3
Over 500,000	9	7	6	6	1	6	Q	34.5
Principal Building Activity								
Education	301	89	43	66	3	64	10	12.8
Food Sales	130	127	91	127	38	126	NC	17.3
Food Service	260	246	209	213	Q	210	Q	12.2
Health Care	63	10	5	9	Q	9	Q	29.6
Lodging	154	42	22	35	Q	35	Q	23.6
Mercantile and Service	1,272	223	124	176	29	173	Q	12.0
Office	749	40	16	32	2	32	Q	18.3
Parking Garage	24	Q	Q	Q	Q	Q	NC	71.4
Public Assembly	278	84	33	56	Q	55	Q	18.5
Public Order and Safety	60	Q	Q	Q	Q	Q	Q	47.2
Religious Worship	366	28	Q	17	Q	17	Q	29.4
Warehouse and Storage	761	47	30	25	Q	25	Q	26.5
Other	69	7	5	6	Q	6	Q	44.4
Vacant	319	22	9	20	Q	20	Q	38.3
Year Constructed								
1899 or Before	169	40	26	35	Q	35	Q	25.4
1900 to 1919	255	55	30	47	Q	47	Q	22.4
1920 to 1945	724	127	75	108	Q	107	Q	16.8
1946 to 1959	880	180	91	142	13	140	17	11.7
1960 to 1969	783	173	105	139	22	133	14	13.2
1970 to 1979	982	206	143	161	30	158	15	12.0
1980 to 1989	884	168	113	136	22	135	11	11.9
1990 to 1992	128	24	9	19	1	19	Q	32.2
Census Region								
Northeast	771	176	109	150	16	149	12	11.9
Midwest	1,202	256	164	212	21	211	12	12.8
South	1,963	358	207	276	41	268	38	11.8
West	870	183	111	148	21	146	9	16.7
Energy Sources (more than one may apply)								
Electricity	4,616	970	591	783	99	771	72	6.3
Natural Gas	2,665	683	417	551	69	544	53	7.8
Fuel Oil	559	112	64	91	7	90	7	16.9
District Heat	95	20	13	15	Q	15	Q	27.1
District Chilled Water	28	9	6	7	Q	6	Q	41.7
Propane	337	93	59	73	Q	72	Q	22.0
Any Other	163	16	6	15	Q	15	Q	34.8

See footnotes at end of table.

Table A51. Refrigeration Equipment, Number of Buildings, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)							RSE Row Factor
		Refrigeration Equipment Used (more than one may apply)						
				Cases and Cabinets				
	All Buildings	All Buildings	Walk-in	Any	Open	Closed	Type Unspecified	
RSE Column Factor:	0.5	0.8	0.9	0.8	2.0	0.8	2.2	
Energy End Uses (more than one may apply)								
Heated Buildings	4,178	926	566	752	95	740	70	6.2
Air-Conditioned Buildings	3,502	862	544	699	96	687	67	6.6
Buildings with Water Heating	3,502	918	569	744	97	732	66	6.6
Buildings with Cooking	734	591	422	498	63	489	32	7.2
Buildings with Manufacturing	121	14	8	12	Q	12	Q	33.4
Workers (main shift)								
Less than 5	2,718	414	219	342	32	337	32	11.1
5 to 9	895	198	133	158	21	156	Q	11.5
10 to 19	561	147	97	111	19	110	Q	13.2
20 to 49	405	119	74	99	14	96	8	12.1
50 to 99	130	47	29	38	4	37	Q	14.5
100 to 249	64	29	24	24	6	23	Q	15.2
250 or More	31	19	14	16	3	16	Q	15.7
Weekly Operating Hours								
39 or Fewer	1,039	82	22	59	Q	59	Q	18.5
40 to 48	1,278	118	55	80	7	76	15	15.9
49 to 60	1,004	127	61	93	4	92	13	14.3
61 to 84	645	214	139	176	28	175	11	10.4
85 to 167	478	319	240	281	45	277	Q	11.3
Open Continuously	362	113	75	97	13	95	Q	14.4
Energy-Related Space Functions (more than one may apply)								
Commercial Food Preparation	735	591	422	497	63	488	32	7.1
Computer Room	223	63	40	53	6	51	3	12.7
Rooms with Special Ventilation	236	90	60	79	16	76	Q	15.4
Activity with Large Amounts of Hot Water	203	106	68	82	9	79	Q	15.0
Multibuilding Facility								
Part of Multibuilding Facility	1,667	234	132	169	15	164	26	9.7
with Central Physical Plant	223	38	23	29	1	28	Q	22.7
No Central Physical Plant	1,444	196	110	140	14	135	22	11.5
Not on Multibuilding Facility	3,139	740	459	618	84	611	46	7.6

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors.
• See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A52. Refrigeration Equipment, Floorspace, 1992

Building Characteristics	Total Floorspace (million square feet)							RSE Row Factor
		Refrigeration Equipment Used (more than one may apply)						
				Cases and Cabinets				
	All Buildings	All Buildings	Walk-in	Any	Open	Closed	Type Unspecified	
RSE Column Factor:	0.5	0.8	0.9	0.8	1.9	0.9	2.1	
All Buildings	67,876	25,414	18,680	20,995	3,846	20,477	1,082	7.9
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	1,421	865	1,159	144	1,139	96	10.5
5,001 to 10,000	7,199	1,153	695	896	Q	896	135	12.7
10,001 to 25,000	10,375	2,246	1,245	1,717	268	1,662	239	10.8
25,001 to 50,000	10,069	2,925	1,683	2,177	Q	2,135	221	14.7
50,001 to 100,000	8,062	3,440	2,227	2,794	400	2,709	Q	13.2
100,001 to 200,000	9,678	4,141	3,137	3,355	682	3,302	Q	14.6
200,001 to 500,000	7,889	4,906	4,230	4,132	709	4,000	Q	17.1
Over 500,000	7,278	5,181	4,599	4,765	1,360	4,633	Q	26.6
Principal Building Activity								
Education	8,470	5,636	4,169	4,414	288	4,249	192	14.0
Food Sales	757	753	644	753	351	715	NC	18.4
Food Service	1,491	1,446	1,335	1,325	Q	1,313	Q	15.2
Health Care	1,763	1,333	1,191	1,179	Q	1,176	Q	20.1
Lodging	2,891	1,754	1,332	1,568	Q	1,568	Q	24.3
Mercantile and Service	12,402	4,721	3,710	4,286	2,179	4,209	Q	17.8
Office	12,319	3,637	2,517	2,983	529	2,903	Q	13.4
Parking Garage	1,652	Q	Q	Q	Q	Q	NC	57.1
Public Assembly	4,556	2,574	Q	2,173	Q	2,155	Q	40.5
Public Order and Safety	820	Q	Q	Q	Q	Q	Q	52.4
Religious Worship	3,747	620	Q	411	Q	411	Q	35.6
Warehouse and Storage	11,484	1,372	943	624	Q	624	Q	23.9
Other	1,130	369	211	329	Q	314	Q	40.0
Vacant	4,396	828	424	Q	Q	592	Q	50.8
Year Constructed								
1899 or Before	1,721	471	297	407	Q	407	Q	23.4
1900 to 1919	3,608	1,373	662	1,222	Q	1,222	Q	31.5
1920 to 1945	8,712	2,600	1,741	2,245	Q	2,029	Q	18.8
1946 to 1959	10,421	3,252	2,061	2,565	266	2,524	242	12.5
1960 to 1969	12,612	5,346	4,015	4,280	1,060	4,166	239	17.1
1970 to 1979	14,014	5,627	4,707	4,507	787	4,471	170	13.2
1980 to 1989	14,287	5,738	4,441	4,889	1,006	4,807	206	19.1
1990 to 1992	2,502	1,006	755	879	221	852	Q	24.0
Census Region								
Northeast	13,400	6,350	4,873	5,216	1,293	5,071	265	14.1
Midwest	17,280	6,572	4,779	5,431	953	5,309	310	11.7
South	24,577	8,299	6,056	6,722	871	6,588	404	15.5
West	12,619	4,192	2,971	3,626	729	3,509	102	14.3
Energy Sources (more than one may apply)								
Electricity	66,549	25,406	18,680	20,987	3,846	20,470	1,082	7.9
Natural Gas	45,097	20,308	14,900	16,781	3,356	16,350	790	7.8
Fuel Oil	13,218	7,895	6,473	6,444	1,112	6,231	242	10.7
District Heat	5,339	2,809	2,302	2,443	295	2,297	Q	19.5
District Chilled Water	2,066	1,143	985	1,073	Q	1,056	Q	30.1
Propane	3,393	1,655	1,366	1,360	Q	1,346	Q	21.6
Any Other	1,551	421	294	386	Q	356	Q	38.3

See footnotes at end of table.

Table A52. Refrigeration Equipment, Floorspace, 1992 (Continued)

Building Characteristics	Total Floorspace (million square feet)							RSE Row Factor
		Refrigeration Equipment Used (more than one may apply)						
				Cases and Cabinets				
	All Buildings	All Buildings	Walk-in	Any	Open	Closed	Type Unspecified	
RSE Column Factor:	0.5	0.8	0.9	0.8	1.9	0.9	2.1	
Energy End Uses (more than one may apply)								
Heated Buildings	61,996	24,956	18,328	20,606	3,607	20,089	1,074	8.0
Air-Conditioned Buildings	57,041	24,152	18,129	20,101	3,806	19,602	979	8.4
Buildings with Water Heating	58,479	25,090	18,523	20,802	3,836	20,284	1,053	8.1
Buildings with Cooking	23,065	20,594	16,061	17,880	3,420	17,550	549	10.1
Buildings with Manufacturing	3,174	790	464	643	Q	513	Q	28.9
Workers (main shift)								
Less than 5	17,944	3,090	Q	2,553	148	2,542	303	32.4
5 to 9	7,524	1,719	928	1,254	168	1,232	Q	14.7
10 to 19	8,077	2,214	1,237	1,717	156	1,699	Q	14.6
20 to 49	10,556	3,701	2,383	2,943	402	2,835	156	13.1
50 to 99	7,763	3,730	2,481	3,082	294	3,064	Q	15.7
100 to 249	7,378	4,341	3,912	3,645	789	3,490	Q	18.0
250 or More	8,633	6,618	5,600	5,801	1,890	5,615	Q	15.7
Weekly Operating Hours								
39 or Fewer	8,246	1,602	764	1,156	Q	1,156	Q	26.1
40 to 48	14,998	3,484	2,213	2,611	268	2,477	267	13.0
49 to 60	14,046	3,650	2,507	2,998	275	2,950	132	13.6
61 to 84	12,062	5,575	3,974	4,707	1,325	4,607	158	13.6
85 to 167	8,467	5,391	4,336	4,629	1,386	4,580	Q	16.9
Open Continuously	10,057	5,713	4,887	4,894	559	4,708	Q	21.5
Energy-Related Space Functions (more than one may apply)								
Commercial Food Preparation	22,166	19,699	15,165	16,981	3,420	16,651	549	8.5
Computer Room	14,199	7,860	6,090	6,429	1,095	6,160	219	10.8
Rooms with Special Ventilation	8,042	4,855	3,868	4,199	670	3,937	Q	13.4
Activity with Large Amounts of Hot Water	6,862	5,393	4,509	4,590	882	4,467	Q	14.6
Multibuilding Facility								
Part of Multibuilding Facility	31,564	12,528	10,009	10,872	2,119	10,462	388	13.4
with Central Physical Plant	8,395	4,042	3,309	3,702	811	3,530	Q	19.4
No Central Physical Plant	23,170	8,486	6,700	7,171	1,309	6,932	310	16.2
Not on Multibuilding Facility	36,312	12,886	8,670	10,122	1,727	10,015	694	7.2

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A53. Water-Heating Equipment, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Buildings With Water Heating	Water-Heating Equipment (more than one may apply)								RSE Row Factor
			Centralized System				Distributed System				
			Total	with Self-Heating Storage Tank	with Tank Heated by Space-Heating Equipment	Other	Total	Residential-Type Storage System	Point-of-Use Heaters	Other	
RSE Column Factor:	0.5	0.5	0.7	0.8	1.8	1.6	0.8	0.8	2.0	2.1	
All Buildings	4,806	3,502	1,994	1,799	103	106	1,557	1,489	56	24	7.8
Building Floorspace (Square Feet)											
1,001 to 5,000	2,681	1,733	1,020	961	28	35	721	699	Q	Q	12.4
5,001 to 10,000	975	787	453	400	36	Q	350	336	13	Q	10.0
10,001 to 25,000	647	539	285	255	13	19	264	254	9	Q	12.4
25,001 to 50,000	280	240	126	102	11	13	118	109	Q	Q	13.2
50,001 to 100,000	116	108	61	48	5	9	53	49	Q	Q	13.5
100,001 to 200,000	71	62	29	20	5	4	34	30	3	Q	16.5
200,001 to 500,000	26	25	16	9	3	4	10	8	2	1	18.6
Over 500,000	9	9	5	Q	1	1	6	4	Q	*	29.7
Principal Building Activity											
Education	301	230	140	122	8	13	95	88	Q	Q	15.6
Food Sales	130	124	68	61	NC	Q	56	55	NC	Q	25.0
Food Service	260	259	174	162	Q	Q	90	89	Q	Q	16.0
Health Care	63	62	28	25	2	2	36	33	Q	Q	26.6
Lodging	154	152	90	76	5	12	67	61	Q	Q	20.0
Mercantile and Service	1,272	923	517	465	32	23	414	399	14	Q	12.7
Office	749	705	390	348	29	14	325	312	14	4	13.3
Parking Garage	24	13	8	6	NC	Q	5	5	Q	Q	57.4
Public Assembly	278	235	153	143	5	7	86	80	Q	Q	16.7
Public Order and Safety	60	58	37	27	Q	Q	23	19	Q	Q	33.9
Religious Worship	366	265	145	136	Q	Q	124	122	Q	Q	17.8
Warehouse and Storage	761	311	162	157	Q	Q	152	149	Q	Q	14.8
Other	69	43	29	24	Q	Q	14	12	Q	Q	32.5
Vacant	319	121	54	49	Q	Q	68	66	Q	Q	21.0
Year Constructed											
1899 or Before	169	126	86	77	Q	Q	44	41	Q	Q	22.6
1900 to 1919	255	202	125	110	Q	Q	81	79	Q	Q	20.2
1920 to 1945	724	507	295	253	20	23	220	216	Q	Q	13.5
1946 to 1959	880	638	381	348	16	19	265	255	Q	Q	12.7
1960 to 1969	783	580	316	282	15	22	267	261	4	3	15.0
1970 to 1979	982	721	401	368	20	15	327	306	17	4	13.5
1980 to 1989	884	649	342	318	10	15	322	303	19	4	13.9
1990 to 1992	128	79	47	43	Q	Q	31	27	4	Q	27.3
Census Region											
Northeast	771	625	448	364	55	34	183	169	13	3	14.9
Midwest	1,202	906	565	523	20	25	359	342	10	9	16.2
South	1,963	1,307	667	619	19	34	655	634	18	6	15.4
West	870	664	313	293	9	13	361	343	17	5	18.9
Energy Sources (more than one may apply)											
Electricity	4,616	3,502	1,994	1,799	103	106	1,557	1,489	56	24	7.8
Natural Gas	2,665	2,333	1,325	1,205	57	68	1,046	998	41	19	9.2
Fuel Oil	559	435	300	231	48	28	142	131	11	3	16.6
District Heat	95	82	57	35	7	18	26	22	1	4	20.5
District Chilled Water	28	22	17	12	Q	4	5	5	Q	Q	32.5
Propane	337	244	146	130	Q	Q	103	100	Q	Q	26.1
Any Other	163	96	62	55	Q	Q	39	38	Q	Q	28.0

See footnotes at end of table.

Table A53. Water-Heating Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings With Water Heating	Water-Heating Equipment (more than one may apply)								RSE Row Factor
			Centralized System				Distributed System				
			Total	with Self-Heating Storage Tank	with Tank Heated by Space-Heating Equipment	Other	Total	Residential-Type Storage System	Point-of-Use Heaters	Other	
RSE Column Factor:	0.5	0.5	0.7	0.8	1.8	1.6	0.8	0.8	2.0	2.1	
Energy End Uses (more than one may apply)											
Heated Buildings	4,178	3,436	1,958	1,766	103	103	1,527	1,459	56	24	7.8
Air-Conditioned Buildings	3,502	3,016	1,686	1,519	89	87	1,372	1,307	54	22	8.1
Buildings with Water Heating	3,502	3,502	1,994	1,799	103	106	1,557	1,489	56	24	7.8
Buildings with Cooking	734	728	428	379	23	28	316	293	19	10	11.2
Buildings with Manufacturing	121	102	62	54	Q	Q	43	40	Q	Q	25.1
Workers (main shift)											
Less than 5	2,718	1,609	930	858	30	47	693	672	18	Q	12.4
5 to 9	895	777	448	406	28	17	340	324	Q	Q	11.6
10 to 19	561	512	297	275	11	11	221	213	Q	Q	13.5
20 to 49	405	384	198	168	19	13	196	183	8	8	12.7
50 to 99	130	126	71	58	5	10	61	56	4	Q	15.2
100 to 249	64	62	31	22	4	5	34	30	4	Q	15.5
250 or More	31	31	19	13	4	3	12	10	2	1	16.5
Weekly Operating Hours											
39 or Fewer	1,039	507	316	294	Q	Q	196	190	Q	Q	13.6
40 to 48	1,278	979	523	479	23	25	467	448	16	Q	11.7
49 to 60	1,004	764	434	389	31	14	338	329	7	4	13.3
61 to 84	645	518	287	267	14	11	237	225	12	2	13.6
85 to 167	478	435	267	228	13	25	181	173	Q	Q	14.3
Open Continuously	362	300	168	141	10	20	140	124	11	8	14.7
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	735	729	428	379	23	28	316	295	17	10	11.0
Computer Room	223	211	125	95	17	15	89	78	10	Q	16.4
Rooms with Special Ventilation	236	219	131	107	10	15	92	85	4	4	17.1
Activities with Large Amounts of Hot Water	203	202	124	100	5	21	86	76	9	4	15.4
Multibuilding Facility											
Part of Multibuilding Facility	1,667	1,070	583	504	39	46	504	470	21	17	10.8
with Central Physical Plant	223	175	108	80	11	22	70	58	6	8	18.3
No Central Physical Plant	1,444	895	475	424	28	25	433	411	15	9	12.9
Not on Multibuilding Facility	3,139	2,432	1,411	1,295	64	59	1,054	1,019	35	7	9.4
Water-Heating Energy Sources (more than one may apply)											
Electricity	1,696	1,696	891	851	17	30	822	792	28	7	11.8
Natural Gas	1,647	1,647	961	869	42	55	719	687	26	15	10.7
Fuel Oil	126	126	105	56	37	15	21	18	Q	Q	28.9
District Heat	38	38	31	15	7	12	7	Q	1	3	24.1
Propane	80	80	52	48	Q	Q	31	31	Q	NC	41.3

See footnotes at end of table.

Table A53. Water-Heating Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings With Water Heating	Water-Heating Equipment (more than one may apply)								RSE Row Factor
			Centralized System				Distributed System				
			Total	with Self-Heating Storage Tank	with Tank Heated by Space-Heating Equipment	Other	Total	Residential-Type Storage System	Point-of-Use Heaters	Other	
RSE Column Factor:	0.5	0.5	0.7	0.8	1.8	1.6	0.8	0.8	2.0	2.1	
Water-Heating Equipment (more than one may apply)											
Centralized System	1,994	1,994	1,994	1,799	103	106	50	39	10	Q	13.9
Self-Heating Tank	1,799	1,799	1,799	1,799	7	Q	38	30	8	Q	18.3
Heated by Space-Heating Equipment	103	103	103	7	103	Q	Q	Q	Q	Q	23.6
Other	106	106	106	Q	Q	106	9	Q	Q	Q	22.3
Distributed System	1,557	1,557	50	38	Q	9	1,557	1,489	56	24	13.0
Residential-Type Storage Tank	1,489	1,489	39	30	Q	Q	1,489	1,489	9	Q	15.1
Point-of-Use Heaters	56	56	10	8	Q	Q	56	9	56	Q	26.5
Other	24	24	Q	Q	Q	Q	24	Q	Q	24	16.4
Off-Hour Equipment Reduction (more than one may apply)											
Heating	3,400	2,745	1,550	1,405	84	69	1,233	1,188	42	12	8.8
Cooling	2,872	2,425	1,345	1,215	72	63	1,111	1,069	41	10	9.0
Hot Water	578	578	332	292	18	26	258	246	11	2	13.6
Lighting	4,089	3,125	1,788	1,623	92	82	1,379	1,327	45	16	8.4
Other	547	452	299	277	19	4	157	153	7	Q	19.0

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A54. Water-Heating Equipment, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	All Buildings With Water Heating	Water-Heating Equipment (more than one may apply)								RSE Row Factor
			Centralized System				Distributed System				
			Total	with Self-Heating Storage Tank	with Tank Heated by Space-Heating Equipment	Other	Total	Residential-Type Storage System	Point-of-Use Heaters	Other	
RSE Column Factor:	0.5	0.5	0.7	0.8	1.7	1.3	0.8	0.8	2.3	2.0	
All Buildings	67,876	58,479	31,599	24,464	3,722	4,032	29,502	25,809	3,367	1,259	8.7
Building Floorspace (Square Feet)											
1,001 to 5,000	7,327	4,928	2,918	2,755	78	99	2,033	1,964	Q	Q	12.9
5,001 to 10,000	7,199	5,834	3,337	2,968	253	Q	2,618	2,511	99	Q	9.7
10,001 to 25,000	10,375	8,724	4,638	4,143	207	335	4,252	4,071	159	Q	12.3
25,001 to 50,000	10,069	8,637	4,566	3,688	430	457	4,256	3,928	Q	Q	14.0
50,001 to 100,000	8,062	7,489	4,243	3,356	326	624	3,686	3,430	Q	Q	13.8
100,001 to 200,000	9,678	8,492	3,968	2,778	715	634	4,681	4,076	430	Q	15.9
200,001 to 500,000	7,889	7,466	4,725	2,643	969	1,263	3,104	2,661	468	226	18.5
Over 500,000	7,278	6,910	3,204	Q	745	484	4,871	3,168	Q	337	27.7
Principal Building Activity											
Education	8,470	8,036	5,536	3,970	929	846	2,764	2,596	Q	Q	14.1
Food Sales	757	739	413	357	NC	Q	326	319	NC	Q	27.3
Food Service	1,491	1,490	983	811	Q	Q	545	507	Q	Q	20.3
Health Care	1,763	1,760	1,235	664	273	331	596	402	Q	Q	22.5
Lodging	2,891	2,869	2,032	1,332	194	553	957	678	Q	Q	22.0
Mercantile and Service	12,402	10,809	4,630	4,042	298	315	6,351	5,555	909	Q	16.5
Office	12,319	12,030	6,717	4,626	1,066	1,069	5,880	5,189	629	332	12.3
Parking Garage	1,652	933	361	348	NC	Q	Q	Q	Q	Q	57.7
Public Assembly	4,556	4,346	3,056	2,677	243	255	2,404	1,370	Q	Q	39.0
Public Order and Safety	820	804	626	342	Q	Q	208	124	Q	Q	40.5
Religious Worship	3,747	3,384	1,790	1,518	Q	Q	1,635	1,615	Q	Q	21.2
Warehouse and Storage	11,484	7,887	2,753	2,569	Q	Q	5,249	5,121	Q	Q	17.2
Other	1,130	1,001	497	381	Q	Q	515	493	Q	Q	28.2
Vacant	4,396	2,391	971	828	Q	Q	1,491	1,287	Q	Q	34.0
Year Constructed											
1899 or Before	1,721	1,457	967	745	Q	Q	620	593	Q	Q	25.6
1900 to 1919	3,608	3,126	1,880	1,463	Q	Q	1,313	1,245	Q	Q	29.6
1920 to 1945	8,712	7,004	4,074	3,088	396	661	3,078	2,949	Q	Q	18.0
1946 to 1959	10,421	8,784	5,153	4,057	502	614	3,874	3,686	Q	Q	14.5
1960 to 1969	12,612	11,006	5,523	3,855	1,136	667	5,627	4,867	Q	179	14.6
1970 to 1979	14,014	12,369	6,893	5,243	760	1,064	6,046	5,350	594	277	13.1
1980 to 1989	14,287	12,565	6,014	5,160	427	594	7,833	6,172	Q	362	19.3
1990 to 1992	2,502	2,167	1,095	853	Q	103	1,110	947	227	Q	21.5
Census Region											
Northeast	13,400	12,410	7,854	5,376	1,478	1,217	4,792	3,825	1,043	311	13.8
Midwest	17,280	15,460	9,002	6,922	995	1,196	7,009	6,369	271	440	14.5
South	24,577	19,592	9,298	7,966	663	825	11,836	10,315	Q	299	16.0
West	12,619	11,017	5,445	4,200	587	793	5,866	5,299	510	209	14.6
Energy Sources (more than one may apply)											
Electricity	66,549	58,479	31,599	24,464	3,722	4,032	29,502	25,809	3,367	1,259	8.7
Natural Gas	45,097	43,151	22,563	17,504	2,658	2,928	22,057	19,793	2,105	1,001	8.6
Fuel Oil	13,218	12,605	8,217	5,091	1,858	1,659	5,066	4,242	836	520	12.0
District Heat	5,339	5,177	3,840	1,555	864	1,457	1,492	1,043	283	439	19.3
District Chilled Water	2,066	1,978	1,654	911	210	546	364	264	Q	Q	29.0
Propane	3,393	2,961	1,767	1,424	352	Q	1,352	1,244	Q	Q	22.2
Any Other	1,551	1,287	735	568	Q	Q	643	601	Q	Q	37.5

See footnotes at end of table.

Table A54. Water-Heating Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	All Buildings With Water Heating	Water-Heating Equipment (more than one may apply)								RSE Row Factor
			Centralized System				Distributed System				
			Total	with Self-Heating Storage Tank	with Tank Heated by Space-Heating Equipment	Other	Total	Residential-Type Storage System	Point-of-Use Heaters	Other	
RSE Column Factor:	0.5	0.5	0.7	0.8	1.7	1.3	0.8	0.8	2.3	2.0	
Energy End Uses (more than one may apply)											
Heated Buildings	61,996	57,708	31,163	24,052	3,722	4,007	29,166	25,478	3,364	1,259	8.7
Air-Conditioned Buildings	57,041	53,839	28,896	22,235	3,586	3,649	27,509	23,914	3,332	1,198	9.0
Buildings with Water Heating	58,479	58,479	31,599	24,464	3,722	4,032	29,502	25,809	3,367	1,259	8.7
Buildings with Cooking	23,065	22,993	13,455	9,266	2,165	2,412	11,484	8,740	2,504	802	13.1
Buildings with Manufacturing	3,174	2,976	1,250	1,000	Q	Q	1,829	1,699	Q	Q	23.2
Workers (main shift)											
Less than 5	17,944	11,207	6,452	5,923	239	320	5,740	4,678	Q	Q	20.5
5 to 9	7,524	6,432	3,656	3,111	298	275	2,890	2,780	Q	Q	13.9
10 to 19	8,077	7,089	3,982	3,626	148	208	3,182	3,070	Q	Q	14.9
20 to 49	10,556	10,215	4,868	3,821	517	574	5,571	5,154	286	232	13.5
50 to 99	7,763	7,644	3,922	2,843	535	705	4,101	3,726	299	Q	16.8
100 to 249	7,378	7,278	3,725	2,403	727	761	3,869	3,374	449	Q	18.7
250 or More	8,633	8,613	4,995	2,737	1,259	1,189	4,148	3,027	1,145	512	15.7
Weekly Operating Hours											
39 or Fewer	8,246	5,005	2,981	2,537	Q	Q	2,117	2,031	Q	Q	17.3
40 to 48	14,998	12,613	6,552	5,425	646	543	6,489	6,081	422	Q	12.7
49 to 60	14,046	12,405	6,404	5,035	584	833	6,263	5,964	293	146	12.1
61 to 84	12,062	11,308	5,310	4,286	648	487	6,277	5,765	560	165	14.7
85 to 167	8,467	8,020	4,154	2,994	504	657	4,095	3,275	Q	Q	17.3
Open Continuously	10,057	9,128	6,199	4,186	1,144	1,244	4,261	2,693	Q	492	21.6
Energy-Related Space Functions (more than one may apply)											
Commercial Food Preparation	22,166	22,095	12,560	8,370	2,165	2,412	10,582	8,737	1,605	802	10.6
Computer Room	14,199	13,947	7,891	4,783	1,846	1,557	6,723	5,717	1,023	511	12.1
Rooms with Special Ventilation	8,042	7,890	5,146	3,191	1,151	962	3,115	2,667	449	363	14.5
Activities with Large Amounts of Hot Water	6,862	6,857	4,482	2,764	743	1,080	2,792	2,187	511	330	16.4
Multibuilding Facility											
Part of Multibuilding Facility	31,564	26,766	14,041	9,819	2,200	2,440	14,372	11,519	2,518	910	12.8
with Central Physical Plant	8,395	7,895	5,004	2,486	1,111	1,493	3,083	2,058	796	543	17.8
No Central Physical Plant	23,170	18,872	9,037	7,333	1,089	948	11,289	9,461	Q	367	15.8
Not on Multibuilding Facility	36,312	31,713	17,559	14,645	1,522	1,591	15,130	14,289	849	350	8.6
Water-Heating Energy Sources (more than one may apply)											
Electricity	25,482	25,482	11,504	10,388	514	773	15,671	14,008	Q	439	14.8
Natural Gas	29,962	29,962	16,228	12,906	1,706	2,130	14,816	13,174	1,467	757	9.9
Fuel Oil	2,470	2,470	2,127	1,062	984	257	397	273	Q	Q	27.1
District Heat	3,308	3,308	2,889	915	841	1,170	528	155	138	257	21.4
Propane	659	659	467	425	Q	Q	245	241	Q	NC	41.6

See footnotes at end of table.

Table A54. Water-Heating Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	All Buildings With Water Heating	Water-Heating Equipment (more than one may apply)								RSE Row Factor
			Centralized System				Distributed System				
			Total	with Self-Heating Storage Tank	with Tank Heated by Space-Heating Equipment	Other	Total	Residential-Type Storage System	Point-of-Use Heaters	Other	
RSE Column Factor:	0.5	0.5	0.7	0.8	1.7	1.3	0.8	0.8	2.3	2.0	
Water-Heating Equipment (more than one may apply)											
Centralized System	31,599	31,599	31,599	24,464	3,722	4,032	2,622	1,380	Q	Q	13.0
Self-Heating Tank	24,464	24,464	24,464	24,464	500	Q	2,314	1,186	Q	Q	17.7
Heated by Space-Heating Equipment	3,722	3,722	3,722	500	3,722	Q	Q	Q	Q	Q	21.9
Other	4,032	4,032	4,032	Q	Q	4,032	164	Q	Q	Q	18.4
Distributed System	29,502	29,502	2,622	2,314	Q	164	29,502	25,809	3,367	1,259	17.1
Residential-Type Storage Tank	25,809	25,809	1,380	1,186	Q	Q	25,809	25,809	727	Q	12.5
Point-of-Use Heaters	3,367	3,367	Q	Q	Q	Q	3,367	727	3,367	Q	37.0
Other	1,259	1,259	Q	Q	Q	Q	1,259	Q	Q	1,259	21.6
Off-Hour Equipment Reduction (more than one may apply)											
Heating	46,248	42,817	21,660	16,996	2,410	2,435	22,288	20,255	1,932	723	8.7
Cooling	42,768	40,185	20,206	15,694	2,303	2,379	21,047	19,122	1,849	688	8.8
Hot Water	9,966	9,966	5,736	4,453	604	754	4,556	4,167	332	151	12.0
Lighting	54,944	48,476	25,008	19,951	2,577	2,723	24,757	22,633	2,009	767	8.2
Other	7,996	7,424	4,100	3,368	484	264	3,618	3,312	Q	Q	20.4

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A55. Lighting Equipment, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Lit Buildings	Lighting Equipment Types (more than one may apply)					RSE Row Factor
			Incandescent	Standard Fluorescent	Compact Fluorescent	High-Intensity Discharge	Other	
RSE Column Factor:	0.6	0.6	0.7	0.6	1.6	1.2	3.1	
All Buildings	4,806	4,452	2,509	4,065	206	354	78	5.6
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	2,429	1,342	2,145	68	95	37	9.1
5,001 to 10,000	975	920	523	866	50	61	Q	8.3
10,001 to 25,000	647	618	347	591	31	66	16	8.9
25,001 to 50,000	280	268	167	257	24	56	Q	10.6
50,001 to 100,000	116	113	66	110	16	35	Q	11.3
100,001 to 200,000	71	70	43	64	10	22	Q	12.6
200,001 to 500,000	26	25	17	25	6	14	Q	13.8
Over 500,000	9	9	5	9	2	5	Q	25.0
Principal Building Activity								
Education	301	301	128	291	21	34	Q	13.9
Food Sales	130	130	51	130	Q	Q	Q	28.7
Food Service	260	260	213	240	Q	Q	Q	14.3
Health Care	63	63	46	60	6	5	Q	26.9
Lodging	154	153	142	124	21	5	Q	19.1
Mercantile and Service	1,272	1,262	566	1,211	40	91	23	8.6
Office	749	749	415	727	51	38	20	10.0
Parking Garage	24	22	7	19	Q	6	Q	39.8
Public Assembly	278	277	198	245	18	28	Q	10.6
Public Order and Safety	60	59	29	57	Q	Q	NC	29.7
Religious Worship	366	366	315	289	Q	14	Q	17.9
Warehouse and Storage	761	628	311	509	13	90	11	11.4
Other	69	63	32	52	Q	12	NC	27.5
Vacant	319	121	58	110	Q	6	Q	20.1
Year Constructed								
1899 or Before	169	161	136	140	Q	Q	Q	23.7
1900 to 1919	255	232	165	219	9	13	Q	18.3
1920 to 1945	724	659	436	588	27	37	Q	11.5
1946 to 1959	880	813	494	740	26	52	Q	11.1
1960 to 1969	783	735	399	665	36	49	Q	11.0
1970 to 1979	982	909	461	843	44	77	12	10.5
1980 to 1989	884	826	358	770	42	102	34	9.0
1990 to 1992	128	118	59	101	11	20	Q	21.1
Census Region								
Northeast	771	735	435	687	57	53	Q	12.3
Midwest	1,202	1,082	662	995	41	107	9	11.0
South	1,963	1,811	939	1,607	51	142	31	10.0
West	870	824	473	776	57	52	31	13.3
Energy Sources (more than one may apply)								
Electricity	4,616	4,452	2,509	4,065	206	354	78	5.5
Natural Gas	2,665	2,632	1,555	2,486	141	219	54	6.7
Fuel Oil	559	549	311	522	36	53	8	13.9
District Heat	95	95	45	94	13	17	Q	18.0
District Chilled Water	28	28	14	28	2	4	Q	24.7
Propane	337	325	194	292	18	25	Q	19.5
Any Other	163	156	92	133	Q	Q	Q	21.1
Energy End Uses (more than one may apply)								
Heated Buildings	4,178	4,107	2,324	3,850	202	322	72	5.6
Air-Conditioned Buildings	3,502	3,467	1,934	3,281	179	287	67	5.7
Buildings with Water Heating	3,502	3,457	2,040	3,283	186	290	67	5.7
Buildings with Cooking	734	730	546	694	65	72	20	8.0
Buildings with Manufacturing	121	117	63	112	8	25	Q	19.9

See footnotes at end of table.

Table A55. Lighting Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Lit Buildings	Lighting Equipment Types (more than one may apply)					RSE Row Factor
			Incandescent	Standard Fluorescent	Compact Fluorescent	High-Intensity Discharge	Other	
RSE Column Factor:	0.6	0.6	0.7	0.6	1.6	1.2	3.1	
Percent Window Glass								
25 or Less	4,193	3,857	2,111	3,506	163	300	68	6.0
26 to 50	490	478	318	444	35	46	8	9.6
51 to 75	94	91	64	89	6	6	Q	20.1
76 to 100	29	26	15	26	2	2	Q	28.0
Workers (main shift)								
Less than 5	2,718	2,368	1,323	2,066	79	122	31	8.3
5 to 9	895	895	491	848	34	62	15	8.4
10 to 19	561	557	339	530	25	55	Q	10.1
20 to 49	405	405	217	400	28	52	Q	9.9
50 to 99	130	130	78	126	16	34	Q	11.8
100 to 249	64	64	40	64	15	19	Q	13.4
250 or More	31	31	21	31	10	9	2	11.9
Weekly Operating Hours								
39 or Fewer	1,039	765	496	618	13	30	Q	13.1
40 to 48	1,278	1,265	633	1,182	45	109	26	9.0
49 to 60	1,004	974	489	942	46	88	22	8.3
61 to 84	645	633	334	597	44	50	11	8.8
85 to 167	478	471	322	437	29	43	11	11.2
Open Continuously	362	344	234	290	30	33	Q	12.0
Energy-Related Space Functions (more than one may apply)								
Commercial Food Preparation	735	731	547	695	65	72	20	8.1
Computer Room	223	222	120	221	29	45	4	11.7
Rooms with Special Ventilation	236	236	138	227	21	40	Q	14.5
Activity with Large Amounts of Hot Water	203	203	151	196	24	25	Q	12.5
Multibuilding Facility								
Part of Multibuilding Facility	1,667	1,517	809	1,315	71	165	21	8.6
with Central Physical Plant	223	214	95	206	19	35	Q	16.1
No Central Physical Plant	1,444	1,303	713	1,109	52	130	18	9.3
Not on Multibuilding Facility	3,139	2,934	1,700	2,750	135	188	57	6.1
Percent Lit when Open								
Not Lit	413	59	26	48	Q	Q	NC	16.0
1 to 50	881	881	567	780	25	47	17	10.2
51 to 99	813	813	509	771	65	65	14	8.6
100	2,699	2,699	1,408	2,467	117	239	47	7.0
Percent Lit when Closed								
Not Lit	2,987	2,633	1,467	2,315	94	174	45	7.4
1 to 50	1,689	1,689	977	1,632	107	167	33	7.0
51 to 99	43	43	25	43	Q	5	Q	30.0
100	87	87	39	76	Q	Q	Q	30.9
Lighting Equipment Types (more than one may apply)								
Incandescent	2,509	2,509	2,509	2,162	132	161	48	6.6
Standard Fluorescent	4,065	4,065	2,162	4,065	183	312	73	5.3
Compact Fluorescent	206	206	132	183	206	39	7	12.2
High-Intensity Discharge	354	354	161	312	39	354	11	8.7
Other	78	78	48	73	7	11	78	20.9

See footnotes at end of table.

Table A55. Lighting Equipment, Number of Buildings, 1992 (Continued)
(Thousand)

Building Characteristics	All Buildings	All Lit Buildings	Lighting Equipment Types (more than one may apply)					RSE Row Factor
			Incandescent	Standard Fluorescent	Compact Fluorescent	High-Intensity Discharge	Other	
RSE Column Factor:	0.6	0.6	0.7	0.6	1.6	1.2	3.1	
Lighting Conservation Features (more than one may apply)								
Specular Reflectors	574	574	326	533	60	119	14	10.0
Natural Lighting Control Sensors	74	74	55	69	13	18	Q	19.2
Occupancy Sensors	59	59	25	58	11	10	Q	18.3
Time Clock	339	339	224	323	33	42	7	12.0
Manual Dimmer Switches	413	413	358	383	52	41	14	10.9
Other	78	78	42	76	13	13	Q	20.6
Off-Hour Equipment Reduction (more than one may apply)								
Heating	3,400	3,358	1,862	3,144	157	258	66	6.1
Cooling	2,872	2,850	1,559	2,696	139	229	61	6.1
Hot Water	578	558	331	520	36	43	8	11.3
Lighting	4,089	4,034	2,231	3,709	174	316	76	5.8
Other	547	543	334	522	42	53	21	13.0

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A56. Lighting Equipment, Floorspace, 1992
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Lit Buildings	Lighting Equipment Types (more than one may apply)					RSE Row Factor
			Incandescent	Standard Fluorescent	Compact Fluorescent	High-Intensity Discharge	Other	
RSE Column Factor:	0.6	0.7	0.7	0.7	1.4	1.2	3.0	
All Buildings	67,876	65,354	39,221	62,074	8,336	17,570	1,612	5.9
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	6,693	3,763	5,927	195	289	113	9.3
5,001 to 10,000	7,199	6,816	3,835	6,422	380	487	Q	8.4
10,001 to 25,000	10,375	9,939	5,550	9,562	507	1,123	227	8.7
25,001 to 50,000	10,069	9,620	6,045	9,191	925	2,089	Q	11.1
50,001 to 100,000	8,062	7,845	4,604	7,594	1,185	2,447	Q	11.3
100,001 to 200,000	9,678	9,627	5,898	8,740	1,375	3,118	Q	12.8
200,001 to 500,000	7,889	7,663	5,226	7,528	1,745	3,932	Q	14.3
Over 500,000	7,278	7,151	4,300	7,110	2,024	4,085	407	22.7
Principal Building Activity								
Education	8,470	8,470	5,368	8,379	846	3,186	Q	12.3
Food Sales	757	757	331	757	Q	Q	Q	30.8
Food Service	1,491	1,491	1,284	1,430	Q	Q	Q	17.8
Health Care	1,763	1,763	1,446	1,754	647	551	Q	20.2
Lodging	2,891	2,889	2,698	2,768	815	328	Q	21.8
Mercantile and Service	12,402	12,368	6,516	12,059	1,432	3,075	274	14.5
Office	12,319	12,319	7,946	12,167	2,719	2,359	507	9.1
Parking Garage	1,652	1,649	310	1,424	Q	1,094	Q	38.1
Public Assembly	4,556	4,553	2,780	4,406	578	1,177	Q	21.5
Public Order and Safety	820	809	388	803	Q	Q	NC	35.7
Religious Worship	3,747	3,747	3,427	3,424	Q	188	Q	22.1
Warehouse and Storage	11,484	10,893	4,760	9,255	414	4,365	260	15.4
Other	1,130	1,113	638	1,070	Q	370	NC	22.1
Vacant	4,396	2,534	1,329	2,379	Q	445	Q	26.4
Year Constructed								
1899 or Before	1,721	1,665	1,303	1,515	Q	Q	Q	22.6
1900 to 1919	3,608	3,299	2,412	3,227	349	504	Q	23.3
1920 to 1945	8,712	8,226	5,674	7,697	837	1,798	Q	16.4
1946 to 1959	10,421	9,959	6,729	9,166	639	2,116	Q	14.1
1960 to 1969	12,612	12,279	7,220	11,720	1,764	3,382	Q	13.8
1970 to 1979	14,014	13,609	7,853	13,070	1,958	3,734	293	9.7
1980 to 1989	14,287	13,857	6,724	13,434	1,933	4,682	582	11.9
1990 to 1992	2,502	2,461	1,305	2,244	719	1,217	110	15.0
Census Region								
Northeast	13,400	13,076	8,905	12,733	2,990	4,623	Q	13.1
Midwest	17,280	16,531	10,724	15,946	1,847	5,841	263	9.4
South	24,577	23,671	12,240	21,658	1,607	4,686	553	10.6
West	12,619	12,076	7,351	11,737	1,891	2,419	437	9.2
Energy Sources (more than one may apply)								
Electricity	66,549	65,354	39,221	62,074	8,336	17,570	1,612	5.9
Natural Gas	45,097	44,847	28,989	43,913	6,297	13,140	1,262	6.7
Fuel Oil	13,218	13,113	9,692	12,959	3,668	5,383	550	9.9
District Heat	5,339	5,318	3,434	5,265	1,168	1,874	Q	14.7
District Chilled Water	2,066	2,066	1,619	2,060	434	572	Q	21.3
Propane	3,393	3,344	2,239	3,253	624	1,110	Q	18.2
Any Other	1,551	1,514	854	1,439	Q	Q	Q	27.8
Energy End Uses (more than one may apply)								
Heated Buildings	61,996	61,448	37,268	59,873	8,215	16,581	1,529	6.0
Air-Conditioned Buildings	57,041	56,642	34,240	55,594	7,950	15,956	1,463	6.3
Buildings with Water Heating	58,479	58,095	36,008	56,893	8,080	16,337	1,484	6.1
Buildings with Cooking	23,065	23,024	17,061	22,821	5,206	7,952	866	9.7
Buildings with Manufacturing	3,174	3,144	1,708	3,093	327	1,437	Q	19.1

See footnotes at end of table.

Table A56. Lighting Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Lit Buildings	Lighting Equipment Types (more than one may apply)					RSE Row Factor
			Incandescent	Standard Fluorescent	Compact Fluorescent	High-Intensity Discharge	Other	
RSE Column Factor:	0.6	0.7	0.7	0.7	1.4	1.2	3.0	
Percent Window Glass								
25 or Less	51,356	49,184	27,146	46,188	4,412	12,920	1,205	6.5
26 to 50	11,815	11,509	8,723	11,284	2,570	3,698	295	11.3
51 to 75	3,206	3,179	2,382	3,127	904	655	Q	15.6
76 to 100	1,499	1,482	969	1,474	450	296	Q	23.2
Workers (main shift)								
Less than 5	17,944	15,476	8,540	13,520	714	1,777	270	14.4
5 to 9	7,524	7,524	4,231	7,100	381	1,174	251	11.9
10 to 19	8,077	8,022	4,618	7,490	376	1,624	Q	12.4
20 to 49	10,556	10,556	5,703	10,414	886	2,685	Q	10.2
50 to 99	7,763	7,763	4,648	7,646	1,089	2,920	Q	12.7
100 to 249	7,378	7,378	4,910	7,334	1,405	3,280	Q	15.7
250 or More	8,633	8,633	6,571	8,570	3,485	4,111	512	13.6
Weekly Operating Hours								
39 or Fewer	8,246	6,145	3,940	5,447	290	936	Q	14.3
40 to 48	14,998	14,895	8,138	13,833	1,126	2,914	320	9.1
49 to 60	14,046	13,917	8,364	13,398	1,626	3,545	318	8.3
61 to 84	12,062	11,996	7,105	11,710	1,795	3,559	367	10.7
85 to 167	8,467	8,433	5,692	8,266	1,556	3,148	Q	15.8
Open Continuously	10,057	9,969	5,981	9,421	1,943	3,468	Q	15.4
Energy-Related Space Functions (more than one may apply)								
Commercial Food Preparation	22,166	22,126	17,061	21,923	5,206	7,952	866	9.0
Computer Room	14,199	14,183	9,094	14,066	3,658	5,883	592	9.7
Rooms with Special Ventilation	8,042	8,036	5,370	7,976	1,509	3,153	Q	11.1
Activity with Large Amounts of Hot Water	6,862	6,862	5,572	6,819	1,767	2,578	Q	13.4
Multibuilding Facility								
Part of Multibuilding Facility	31,564	30,480	17,558	28,305	4,290	10,181	720	9.4
with Central Physical Plant	8,395	8,288	5,167	8,078	1,925	3,287	Q	16.3
No Central Physical Plant	23,170	22,193	12,392	20,227	2,365	6,894	509	10.5
Not on Multibuilding Facility	36,312	34,874	21,662	33,769	4,046	7,388	892	5.9
Percent Lit when Open								
Not Lit	3,280	757	391	675	Q	Q	NC	19.4
1 to 50	9,980	9,980	6,575	8,848	547	1,410	295	13.5
51 to 99	14,224	14,224	9,350	13,892	2,410	3,782	418	11.2
100	40,393	40,393	22,906	38,658	5,378	12,324	900	7.1
Percent Lit when Closed								
Not Lit	34,486	31,963	18,367	29,325	3,314	7,394	923	8.2
1 to 50	31,482	31,482	19,880	30,950	4,791	9,658	639	7.3
51 to 99	1,021	1,021	667	1,021	Q	355	Q	26.6
100	887	887	306	777	Q	Q	Q	30.9
Lighting Equipment Types (more than one may apply)								
Incandescent	39,221	39,221	39,221	36,935	6,590	10,037	1,157	6.5
Standard Fluorescent	62,074	62,074	36,935	62,074	8,111	16,557	1,493	6.0
Compact Fluorescent	8,336	8,336	6,590	8,111	8,336	3,746	368	11.7
High-Intensity Discharge	17,570	17,570	10,037	16,557	3,746	17,570	673	9.8
Other	1,612	1,612	1,157	1,493	368	673	1,612	22.4

See footnotes at end of table.

Table A56. Lighting Equipment, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Lit Buildings	Lighting Equipment Types (more than one may apply)					RSE Row Factor
			Incandescent	Standard Fluorescent	Compact Fluorescent	High-Intensity Discharge	Other	
RSE Column Factor:	0.6	0.7	0.7	0.7	1.4	1.2	3.0	
Lighting Conservation Features (more than one may apply)								
Specular Reflectors	15,241	15,241	10,321	14,714	4,117	6,900	664	10.6
Natural Lighting Control Sensors	3,072	3,072	2,394	3,004	1,090	1,635	Q	14.9
Occupancy Sensors	3,629	3,629	2,288	3,601	1,263	1,474	Q	14.8
Time Clock	12,104	12,104	8,318	11,853	3,413	4,488	398	14.5
Manual Dimmer Switches	12,329	12,329	10,505	12,139	4,058	4,313	586	11.3
Other	2,596	2,596	1,461	2,552	893	904	Q	13.5
Off-Hour Equipment Reduction (more than one may apply)								
Heating	46,248	45,960	27,823	44,726	5,812	12,443	1,208	6.2
Cooling	42,768	42,619	25,769	41,757	5,617	11,986	1,150	6.4
Hot Water	9,966	9,807	6,665	9,483	1,659	3,081	158	10.1
Lighting	54,944	54,489	32,756	51,840	6,317	14,013	1,325	5.5
Other	7,996	7,961	4,989	7,831	1,170	2,170	228	14.9

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A57. Energy Conservation Features, Number of Buildings and Floorspace, 1992

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	0.9	1.0	1.9	0.8	0.9	0.9	0.9	1.2	1.7	
All Buildings	4,806	4,357	4,223	2,604	1,178	264	67,876	64,403	62,056	50,281	29,453	5,952	4.7
Building Floorspace (Square Feet)													
1,001 to 5,000	2,681	2,376	2,305	1,194	452	102	7,327	6,575	6,375	3,370	1,302	291	7.4
5,001 to 10,000	975	887	864	569	275	62	7,199	6,566	6,405	4,221	2,066	467	5.6
10,001 to 25,000	647	610	587	447	241	50	10,375	9,788	9,403	7,257	3,952	821	6.6
25,001 to 50,000	280	268	259	208	106	25	10,069	9,597	9,270	7,503	3,884	896	8.4
50,001 to 100,000	116	113	111	98	47	14	8,062	7,874	7,683	6,797	3,420	917	9.2
100,001 to 200,000	71	68	66	57	36	8	9,678	9,271	8,935	7,699	4,821	1,020	10.3
200,001 to 500,000	26	25	23	23	14	2	7,889	7,479	7,098	6,946	4,557	740	11.9
Over 500,000	9	9	9	9	7	1	7,278	7,254	6,887	6,488	5,452	799	24.2
Principal Building Activity													
Education	301	300	296	245	74	27	8,470	8,457	8,379	7,719	3,297	922	9.3
Food Sales	130	119	114	70	20	Q	757	695	656	510	197	Q	19.7
Food Service	260	251	245	166	92	Q	1,491	1,465	1,451	1,073	546	Q	11.2
Health Care	63	63	63	47	26	6	1,763	1,735	1,735	1,664	1,304	368	15.5
Lodging	154	152	150	120	51	12	2,891	2,868	2,825	2,585	1,340	379	15.5
Mercantile and Service	1,272	1,186	1,141	643	293	56	12,402	12,038	11,667	8,905	5,339	1,003	9.2
Office	749	727	722	534	220	41	12,319	12,239	12,185	11,004	7,042	904	7.3
Parking Garage	24	20	16	10	5	Q	1,652	1,303	678	753	748	Q	33.9
Public Assembly	278	269	262	175	96	21	4,556	4,501	4,341	3,959	2,969	410	15.6
Public Order and Safety	60	59	59	46	19	Q	820	818	818	762	205	Q	23.8
Religious Worship	366	355	347	199	101	31	3,747	3,707	3,657	2,759	1,652	526	13.0
Warehouse and Storage	761	555	511	256	135	30	11,484	9,764	9,082	5,812	3,323	711	10.3
Other	69	58	56	34	22	Q	1,130	1,099	1,032	968	589	Q	17.9
Vacant	319	242	240	60	25	Q	4,396	3,716	3,550	1,808	901	Q	16.2
Year Constructed													
1899 or Before	169	159	155	95	65	Q	1,721	1,662	1,620	1,229	659	Q	16.0
1900 to 1919	255	235	230	137	65	20	3,608	3,325	3,269	2,662	1,368	406	16.2
1920 to 1945	724	641	615	328	173	31	8,712	7,841	7,532	5,313	2,943	604	10.8
1946 to 1959	880	782	761	445	169	41	10,421	9,752	9,484	6,726	3,384	677	9.0
1960 to 1969	783	716	697	442	180	38	12,612	12,053	11,695	9,812	5,219	1,247	9.1
1970 to 1979	982	889	850	556	235	59	14,014	13,464	12,754	10,636	6,680	1,430	7.6
1980 to 1989	884	812	797	526	243	55	14,287	13,886	13,365	11,800	7,572	1,185	9.3
1990 to 1992	128	121	117	76	48	9	2,502	2,419	2,338	2,103	1,627	275	14.2
Census Region													
Northeast	771	711	693	504	241	57	13,400	12,891	12,612	10,840	6,727	1,626	9.0
Midwest	1,202	1,097	1,076	626	295	67	17,280	16,619	16,031	13,100	7,790	1,575	8.1
South	1,963	1,737	1,667	980	375	85	24,577	22,659	21,758	16,864	8,307	1,757	9.2
West	870	812	787	494	268	55	12,619	12,234	11,655	9,477	6,628	993	9.3
Energy Sources (more than one may apply)													
Electricity	4,616	4,258	4,124	2,604	1,178	263	66,549	63,709	61,362	50,281	29,453	5,927	4.7
Natural Gas	2,665	2,542	2,467	1,660	778	175	45,097	44,303	43,053	36,273	21,197	4,733	5.4
Fuel Oil	559	541	526	397	190	56	13,218	13,125	12,996	12,104	8,603	1,830	9.8
District Heat	95	95	90	86	50	10	5,339	5,316	5,135	5,146	3,046	687	12.5
District Chilled Water	28	28	27	28	14	Q	2,066	2,066	2,007	2,063	1,152	224	19.7
Propane	337	331	321	172	77	18	3,393	3,376	3,339	2,506	1,439	201	15.5
Any Other	163	155	150	70	32	Q	1,551	1,494	1,472	912	552	Q	19.6

See footnotes at end of table.

Table A57. Energy Conservation Features, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	0.9	1.0	1.9	0.8	0.9	0.9	0.9	1.2	1.7	
Energy End Uses (more than one may apply)													
Heated Buildings	4,178	3,996	3,881	2,568	1,122	260	61,996	60,736	58,915	49,515	28,384	5,793	4.7
Air-Conditioned Buildings	3,502	3,376	3,285	2,271	997	227	57,041	56,223	54,488	46,884	27,166	5,425	5.0
Buildings with Water Heating	3,502	3,392	3,298	2,275	1,042	232	58,479	57,571	55,914	47,711	27,924	5,618	4.7
Buildings with Cooking	734	727	707	548	275	52	23,065	23,031	22,814	21,458	13,887	2,615	7.5
Buildings with Manufacturing	121	119	112	74	49	18	3,174	3,151	3,050	2,260	1,624	545	16.2
Floors													
One	3,007	2,620	2,530	1,414	541	128	25,424	22,938	22,066	15,331	7,256	1,563	7.9
Two	1,154	1,105	1,077	719	368	82	18,025	17,520	17,097	14,092	7,994	1,866	6.0
Three	446	435	424	313	166	36	9,877	9,776	9,558	8,398	5,049	873	8.4
Four to Nine	186	184	179	145	93	15	10,377	9,997	9,289	8,360	5,841	1,182	11.0
Ten or More	13	13	13	13	10	2	4,173	4,173	4,046	4,100	3,313	468	16.6
Ownership and Occupancy													
Nongovernment Owned	4,206	3,792	3,684	2,172	1,022	219	52,752	49,630	47,889	37,005	22,860	4,398	5.1
Owner Occupied	3,192	2,929	2,841	1,763	810	192	38,403	36,377	35,043	27,762	16,990	3,763	4.7
Nonowner Occupied	817	717	699	387	202	24	12,273	11,630	11,369	8,755	5,551	536	10.9
Unoccupied	197	145	144	21	9	Q	2,077	1,624	1,477	488	319	Q	18.9
Government Owned	599	565	539	432	156	44	15,124	14,773	14,168	13,276	6,593	1,554	8.7
Percent of Floorspace Heated													
Not Heated	653	383	363	46	60	Q	6,211	3,976	3,439	949	1,203	Q	17.3
1 to 50	688	626	605	331	132	25	11,195	10,534	9,852	7,172	3,723	463	10.7
51 to 99	618	601	585	366	214	36	10,211	10,131	9,861	7,771	5,463	1,073	8.3
100	2,846	2,746	2,670	1,861	772	199	40,260	39,762	38,905	34,389	19,063	4,257	5.1
Percent of Floorspace Cooled													
Not Cooled	1,304	980	938	333	181	37	10,835	8,180	7,569	3,397	2,287	527	9.9
1 to 50	1,176	1,125	1,079	690	320	73	21,715	21,269	20,089	15,879	8,224	1,836	6.6
51 to 99	658	646	630	446	223	55	13,872	13,768	13,541	12,333	7,985	1,711	8.2
100	1,668	1,606	1,575	1,135	453	99	21,454	21,186	20,858	18,672	10,957	1,877	7.2
Percent Lit when Open													
Not Lit	413	244	241	30	Q	Q	3,280	2,243	2,110	638	Q	Q	16.8
1 to 50	881	785	762	426	197	36	9,980	9,131	8,863	6,140	3,352	792	8.6
51 to 99	813	791	768	523	290	75	14,224	14,110	13,846	11,807	7,914	1,711	8.5
100	2,699	2,537	2,452	1,624	679	145	40,393	38,919	37,237	31,696	17,945	3,391	5.4
Heating Equipment (more than one may apply)													
Heat Pumps	449	441	435	323	148	29	8,269	8,230	8,053	6,847	4,245	675	10.3
Furnaces	1,692	1,640	1,605	1,028	427	118	16,909	16,632	16,246	12,184	6,275	1,301	6.7
Individual Space Heaters	1,464	1,371	1,327	724	374	79	22,380	21,647	20,986	16,301	10,200	2,479	6.6
District Heat	93	93	89	85	49	10	5,225	5,202	5,021	5,047	2,969	631	12.7
Boilers	624	616	602	487	239	66	20,664	20,594	20,141	18,645	11,665	2,640	7.1
Packaged Heating Units	870	836	811	604	256	53	16,000	15,778	15,456	12,832	7,681	1,275	8.3
Other	42	42	42	25	15	Q	903	903	889	838	571	Q	24.7

See footnotes at end of table.

Table A57. Energy Conservation Features, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	0.9	1.0	1.9	0.8	0.9	0.9	0.9	1.2	1.7	
Cooling Equipment (more than one may apply)													
Residential-Type Central Air Conditioners	816	791	780	508	226	53	9,021	8,822	8,655	6,842	3,703	984	9.4
Heat Pumps	454	447	441	326	142	27	8,406	8,376	8,244	6,978	4,319	687	10.1
Individual Air Conditioners	1,023	964	935	581	259	60	17,979	17,621	16,995	13,842	7,780	1,757	9.2
District Chilled Water	28	28	27	28	14	Q	2,066	2,066	2,007	2,063	1,152	224	19.7
Central Chillers	142	141	140	129	77	14	12,991	12,950	12,739	12,569	9,301	1,906	10.9
Packaged Air-Conditioning Units	1,459	1,421	1,375	1,028	468	104	27,830	27,573	26,845	23,508	13,211	2,667	6.2
Swamp Coolers	179	171	164	109	56	Q	2,085	2,062	2,020	1,697	1,115	Q	22.4
Other	8	8	8	4	Q	Q	268	268	268	181	Q	Q	48.6
Lighting Equipment Types (more than one may apply)													
Incandescent	2,509	2,364	2,304	1,471	768	171	39,221	38,196	37,436	31,251	19,761	4,049	5.3
Standard Fluorescent	4,065	3,851	3,734	2,457	1,100	248	62,074	60,445	58,496	49,090	28,649	5,719	4.6
Compact Fluorescent	206	203	200	154	106	22	8,336	8,321	8,283	7,885	6,649	1,294	10.0
High-Intensity Discharge	354	337	316	237	166	39	17,570	17,188	16,304	14,328	10,593	2,206	7.8
Other	78	73	72	52	32	12	1,612	1,603	1,538	1,266	1,074	233	21.2
Water-Heating Equipment (more than one may apply)													
Centralized System	1,994	1,950	1,900	1,325	610	141	31,599	31,322	30,682	26,731	16,074	3,122	7.3
Self-Heating Tank	1,799	1,760	1,714	1,178	522	126	24,464	24,241	23,694	20,029	11,593	2,188	8.2
Heated by Space-Heating Equipment	103	100	99	85	51	10	3,722	3,713	3,670	3,530	2,470	358	16.2
Other	106	104	101	75	46	9	4,032	3,987	3,936	3,791	2,473	667	13.9
Distributed System	1,557	1,491	1,447	989	462	97	29,502	28,871	27,855	23,497	13,877	2,682	7.2
Residential-Type Storage Tank	1,489	1,423	1,379	932	433	88	25,809	25,182	24,166	19,873	11,047	2,335	7.1
Point-of-Use Heaters	56	56	56	45	26	11	3,367	3,364	3,364	3,306	2,728	427	23.8
Other	24	24	24	23	12	3	1,259	1,259	1,259	1,235	677	331	18.7
Building Shell Conservation Features (more than one may apply)													
Roof or Ceiling Insulation	3,343	3,343	3,343	2,104	974	219	50,311	50,311	50,311	40,883	24,203	5,180	4.7
Wall Insulation	2,320	2,320	2,320	1,472	697	161	33,240	33,240	33,240	27,448	17,643	3,509	5.6
Storm or Multiple Glazing	1,680	1,680	1,680	1,170	566	137	29,684	29,684	29,684	25,702	15,921	3,207	6.3
Tinted, Reflective or Shading Glass	1,068	1,068	1,068	780	407	90	25,396	25,396	25,396	22,350	15,756	2,914	7.5
Exterior or Interior Shading or Awnings	1,853	1,853	1,853	1,318	594	142	34,071	34,071	34,071	29,261	17,758	3,744	6.0
Windows that Open	2,119	2,119	2,119	1,198	503	130	28,937	28,937	28,937	22,346	11,266	2,790	6.0
HVAC Conservation Features													
Variable Air-Volume System	250	250	244	250	134	24	13,970	13,970	13,900	13,970	10,536	1,814	9.9
Economizer Cycle	414	414	413	414	226	46	18,313	18,313	18,174	18,313	13,273	2,343	8.4
HVAC Maintenance	2,503	2,503	2,411	2,503	837	197	49,173	49,173	47,705	49,173	25,184	5,294	4.9

See footnotes at end of table.

Table A57. Energy Conservation Features, Number of Buildings and Floorspace, 1992 (Continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	All Buildings	Any Conservation Features	Building Shell	HVAC	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	0.9	1.0	1.9	0.8	0.9	0.9	0.9	1.2	1.7	
Lighting Conservation Features (more than one may apply)													
Specular Reflectors	574	574	536	420	574	54	15,241	15,241	14,568	13,372	15,241	2,181	8.3
Natural Lighting Control Sensors	74	74	73	55	74	8	3,072	3,072	2,937	2,868	3,072	598	14.5
Occupancy Sensors	59	59	58	49	59	8	3,629	3,629	3,546	3,517	3,629	691	11.8
Time Clock	339	339	328	255	339	30	12,104	12,104	11,748	11,066	12,104	1,439	10.7
Manual Dimmer Switches	413	413	408	328	413	39	12,329	12,329	12,233	11,314	12,329	1,739	8.6
Other	78	78	78	70	78	12	2,596	2,596	2,589	2,453	2,596	430	14.1
Energy Conservation Features (more than one may apply)													
Any Conservation Features	4,357	4,357	4,223	2,604	1,178	264	64,403	64,403	62,056	50,281	29,453	5,952	4.7
Building Shell	4,223	4,223	4,223	2,511	1,123	255	62,056	62,056	62,056	48,798	28,234	5,755	4.7
HVAC	2,604	2,604	2,511	2,604	871	206	50,281	50,281	48,798	50,281	25,730	5,419	4.8
Lighting	1,178	1,178	1,123	871	1,178	108	29,453	29,453	28,234	25,730	29,453	3,436	6.3
Other	264	264	255	206	108	264	5,952	5,952	5,755	5,419	3,436	5,952	6.5
Energy Management Practices (more than one may apply)													
Energy Management and Control System	236	234	232	213	119	27	14,320	14,254	14,134	13,986	10,627	1,474	9.9
Demand-Side Management Participation	315	314	309	264	166	39	11,310	11,273	11,198	10,668	8,257	1,730	8.8
Energy Audit	521	511	497	397	208	58	14,779	14,509	14,269	13,105	8,976	2,038	7.8
Building Energy Manager	49	49	49	42	18	1	2,311	2,311	2,281	2,242	1,295	165	18.5
Demand-Side Management Programs (more than one may apply)													
Building Shell Program	36	36	36	33	21	Q	1,079	1,079	1,079	1,042	890	Q	19.8
HVAC Program	154	153	149	136	77	25	6,370	6,342	6,298	6,166	4,679	1,122	10.6
Lighting Program	228	227	224	182	131	24	8,805	8,797	8,759	8,250	6,869	1,360	10.5
Other DSM Programs	110	110	109	99	62	15	6,176	6,176	6,146	6,063	4,906	967	13.5

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A58. Building Shell Conservation Features, Number of Buildings, 1992
(Thousand)

Building Characteristics	Type of Building Shell Conservation Features (more than one may apply)								RSE Row Factor
	All Buildings	Any Building Shell Conser-Vation Features	Roof or Ceiling Insulation	Wall Insula-tion	Storms or Multiple Glazing	Tinted, Reflective or Shading Glass	Exterior or Interior Shadings or Awnings	Windows that Open	
RSE Column Factor:	0.8	0.8	0.9	1.0	1.1	1.3	1.1	1.1	
All Buildings	4,806	4,223	3,343	2,320	1,680	1,068	1,853	2,119	4.4
Building Floorspace (Square Feet)									
1,001 to 5,000	2,681	2,305	1,777	1,279	800	445	901	1,181	6.5
5,001 to 10,000	975	864	708	472	390	238	392	425	5.5
10,001 to 25,000	647	587	475	322	263	199	288	296	6.5
25,001 to 50,000	280	259	212	137	123	90	137	120	8.3
50,001 to 100,000	116	111	93	57	56	48	75	54	8.5
100,001 to 200,000	71	66	52	35	29	29	37	30	10.5
200,001 to 500,000	26	23	19	13	13	13	17	11	11.4
Over 500,000	9	9	7	5	5	6	5	3	32.1
Principal Building Activity									
Education	301	296	232	137	86	65	171	235	9.4
Food Sales	130	114	77	61	45	40	45	Q	20.9
Food Service	260	245	214	147	123	74	138	65	10.1
Health Care	63	63	55	41	36	20	49	35	17.0
Lodging	154	150	118	90	72	24	74	124	13.7
Mercantile and Service	1,272	1,141	910	623	401	249	425	459	6.9
Office	749	722	610	448	372	257	487	336	6.7
Parking Garage	24	16	9	9	7	1	Q	12	38.2
Public Assembly	278	262	207	133	96	50	85	145	8.8
Public Order and Safety	60	59	54	37	31	16	30	43	21.8
Religious Worship	366	347	282	208	177	122	112	264	11.9
Warehouse and Storage	761	511	377	250	140	93	145	242	9.5
Other	69	56	38	30	21	9	24	25	19.9
Vacant	319	240	160	109	73	48	64	114	11.6
Year Constructed									
1899 or Before	169	155	100	51	88	30	67	106	14.6
1900 to 1919	255	230	167	89	125	34	94	146	12.5
1920 to 1945	724	615	419	222	218	119	240	360	8.4
1946 to 1959	880	761	549	302	238	172	336	454	7.7
1960 to 1969	783	697	551	364	230	171	297	352	7.6
1970 to 1979	982	850	739	571	332	221	364	346	7.4
1980 to 1989	884	797	715	622	374	283	395	296	6.8
1990 to 1992	128	117	103	100	75	40	61	60	16.1
Census Region									
Northeast	771	693	531	376	420	115	279	451	9.1
Midwest	1,202	1,076	851	584	616	235	427	541	8.2
South	1,963	1,667	1,356	960	448	451	741	756	7.7
West	870	787	605	401	195	266	406	371	12.0
Energy Sources (more than one may apply)									
Electricity	4,616	4,124	3,290	2,290	1,664	1,057	1,844	2,066	4.4
Natural Gas	2,665	2,467	1,987	1,340	1,045	695	1,220	1,189	5.5
Fuel Oil	559	526	440	282	295	103	213	333	11.8
District Heat	95	90	66	39	38	23	48	59	13.1
District Chilled Water	28	27	23	11	8	12	17	15	24.1
Propane	337	321	275	217	144	56	100	193	14.9
Any Other	163	150	112	83	58	10	34	104	17.2

See footnotes at end of table.

Table A58. Building Shell Conservation Features, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Any Building Shell Conser-Vation Features	Roof or Ceiling Insulation	Wall Insula-tion	Storms or Multiple Glazing	Tinted, Reflective or Shading Glass	Exterior or Interior Shadings or Awnings	Windows that Open	RSE Row Factor
	Type of Building Shell Conservation Features (more than one may apply)								
RSE Column Factor:	0.8	0.8	0.9	1.0	1.1	1.3	1.1	1.1	
Energy End Uses (more than one may apply)									
Heated Buildings	4,178	3,881	3,164	2,206	1,642	1,018	1,804	1,932	4.4
Air-Conditioned Buildings	3,502	3,285	2,727	1,908	1,405	977	1,705	1,515	4.6
Buildings with Water Heating	3,502	3,298	2,728	1,918	1,495	928	1,635	1,625	4.5
Buildings with Cooking	734	707	594	400	353	237	399	336	6.2
Buildings with Manufacturing	121	112	95	63	48	31	52	45	16.9
Floors									
One	3,007	2,530	2,010	1,434	796	604	992	1,159	6.6
Two	1,154	1,077	857	600	498	300	530	547	5.2
Three	446	424	330	195	265	103	223	276	8.1
Four to Nine	186	179	137	84	114	53	99	130	11.1
Ten or More	13	13	9	6	7	8	9	6	17.7
Workers (main shift)									
Less than 5	2,718	2,240	1,683	1,160	760	410	703	1,181	6.5
5 to 9	895	837	687	487	345	210	453	412	6.2
10 to 19	561	534	450	317	252	182	297	251	7.4
20 to 49	405	389	339	223	206	152	249	181	6.9
50 to 99	130	128	102	75	64	53	83	62	9.5
100 to 249	64	64	55	38	35	39	45	23	10.1
250 or More	31	31	27	20	18	20	24	9	9.8
Weekly Operating Hours									
39 or Fewer	1,039	839	610	406	295	168	224	527	8.7
40 to 48	1,278	1,155	925	649	472	314	617	606	6.4
49 to 60	1,004	894	720	513	340	221	402	404	6.8
61 to 84	645	579	475	326	249	154	264	237	6.0
85 to 167	478	445	362	247	195	131	198	166	9.0
Open Continuously	362	311	252	180	130	81	147	179	9.5
Ownership and Occupancy									
Nongovernment Owned	4,206	3,684	2,921	2,061	1,496	946	1,590	1,741	4.5
Owner Occupied	3,192	2,841	2,297	1,660	1,209	738	1,220	1,420	4.6
Nonowner Occupied	817	699	535	334	242	183	337	260	7.6
Unoccupied	197	144	89	68	45	25	32	61	16.1
Government Owned	599	539	422	259	184	122	263	378	8.6
Primary Space-Heating Energy Source									
Electricity	1,107	1,032	870	674	378	330	530	426	7.7
Natural Gas	2,276	2,105	1,694	1,143	917	582	1,038	1,020	5.7
Fuel Oil	394	369	303	175	204	51	138	248	15.4
District Heat	91	87	63	37	36	21	45	57	13.4
Propane	217	205	174	141	81	31	46	123	20.1
Wood	68	59	41	Q	Q	Q	Q	43	33.3
Any Other	Q	Q	Q	Q	Q	NC	Q	Q	57.8
Cooling Energy Sources (more than one may apply)									
Electricity	3,404	3,189	2,643	1,849	1,357	947	1,644	1,474	4.6
Natural Gas	106	106	93	70	55	33	68	44	12.6
District Chilled Water	28	27	23	11	8	12	17	15	24.1

See footnotes at end of table.

Table A58. Building Shell Conservation Features, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	Type of Building Shell Conservation Features (more than one may apply)								RSE Row Factor
	All Buildings	Any Building Shell Conser-Vation Features	Roof or Ceiling Insulation	Wall Insula-tion	Storms or Multiple Glazing	Tinted, Reflective or Shading Glass	Exterior or Interior Shadings or Awnings	Windows that Open	
RSE Column Factor:	0.8	0.8	0.9	1.0	1.1	1.3	1.1	1.1	
Water-Heating Energy Sources (more than one may apply)									
Electricity	1,696	1,620	1,382	1,004	692	459	785	748	5.6
Natural Gas	1,647	1,527	1,213	837	717	446	808	771	6.2
Fuel Oil	126	118	103	55	73	20	42	83	21.6
District Heat	38	36	28	19	18	10	19	22	17.0
Propane	80	76	70	53	39	Q	31	46	26.1
Cooking Energy Sources (more than one may apply)									
Electricity	356	343	294	204	174	115	195	149	8.7
Natural Gas	431	419	342	222	195	141	242	203	7.8
Propane	70	68	62	51	42	16	38	41	20.6
Percent of Floorspace Heated									
Not Heated	653	363	196	126	44	53	52	198	14.4
1 to 50	688	605	431	307	189	136	240	297	8.0
51 to 99	618	585	475	325	255	162	301	279	7.7
100	2,846	2,670	2,241	1,563	1,193	718	1,259	1,345	4.8
Percent of Floorspace Cooled									
Not Cooled	1,304	938	616	412	275	91	147	604	9.0
1 to 50	1,176	1,079	835	549	426	261	496	568	5.6
51 to 99	658	630	531	356	314	195	381	277	7.6
100	1,668	1,575	1,362	1,004	665	521	829	670	6.1
Percent Lit when Open									
Not Lit	413	241	144	100	59	27	38	127	14.3
1 to 50	881	762	559	393	319	165	296	447	7.2
51 to 99	813	768	648	418	349	235	388	374	6.7
100	2,699	2,452	1,993	1,410	953	642	1,131	1,171	4.9
Percent Lit when Closed									
Not Lit	2,987	2,542	1,967	1,379	918	555	961	1,428	5.5
1 to 50	1,689	1,573	1,290	879	726	485	854	645	5.4
51 to 99	43	37	29	22	15	13	22	14	22.2
100	87	71	56	41	22	15	16	32	21.4
Building Shell Conservation Features (more than one may apply)									
Roof or Ceiling Insulation	3,343	3,343	3,343	2,128	1,445	919	1,558	1,527	4.5
Wall Insulation	2,320	2,320	2,128	2,320	1,139	683	1,100	1,065	5.2
Storm or Multiple Glazing	1,680	1,680	1,445	1,139	1,680	552	908	888	5.7
Tinted, Reflective or Shading Glass	1,068	1,068	919	683	552	1,068	647	330	6.2
Exterior or Interior Shading or Awnings	1,853	1,853	1,558	1,100	908	647	1,853	871	5.4
Windows that Open	2,119	2,119	1,527	1,065	888	330	871	2,119	5.7
HVAC Conservation Features (more than one may apply)									
Variable Air-Volume System	250	244	219	161	146	124	180	99	7.9
Economizer Cycle	414	413	374	270	229	175	281	163	8.1
HVAC Maintenance	2,503	2,411	2,012	1,403	1,120	753	1,248	1,152	4.7

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A59. Building Shell Conservation Features, Floorspace, 1992

(Million Square Feet)

Building Characteristics	Type of Building Shell Conservation Features (more than one may apply)								RSE Row Factor
	All Buildings	Any Building Shell Conser-Vation Features	Roof or Ceiling Insulation	Wall Insula-tion	Storms or Multiple Glazing	Tinted, Reflective or Shading Glass	Exterior or Interior Shadings or Awnings	Windows that Open	
RSE Column Factor:	0.8	0.8	0.9	1.0	1.1	1.4	1.0	1.1	
All Buildings	67,876	62,056	50,311	33,240	29,684	25,396	34,071	28,937	4.8
Building Floorspace (Square Feet)									
1,001 to 5,000	7,327	6,375	4,951	3,554	2,274	1,251	2,518	3,293	6.7
5,001 to 10,000	7,199	6,405	5,270	3,481	2,895	1,789	2,900	3,117	5.6
10,001 to 25,000	10,375	9,403	7,668	5,145	4,324	3,195	4,722	4,700	6.3
25,001 to 50,000	10,069	9,270	7,504	4,949	4,448	3,226	4,900	4,366	8.5
50,001 to 100,000	8,062	7,683	6,454	3,940	3,913	3,395	5,145	3,754	8.3
100,001 to 200,000	9,678	8,935	7,160	4,733	4,126	3,948	5,131	4,209	10.4
200,001 to 500,000	7,889	7,098	5,653	3,637	3,928	4,076	5,168	3,179	11.8
Over 500,000	7,278	6,887	5,650	3,800	3,776	4,516	3,588	2,319	25.5
Principal Building Activity									
Education	8,470	8,379	7,025	3,377	3,212	2,898	5,131	5,959	8.5
Food Sales	757	656	476	285	247	225	280	Q	21.3
Food Service	1,491	1,451	1,215	754	868	412	738	450	12.7
Health Care	1,763	1,735	1,584	1,131	1,329	1,093	1,507	1,177	14.2
Lodging	2,891	2,825	2,218	1,661	1,639	947	1,750	2,416	16.6
Mercantile and Service	12,402	11,667	10,081	6,379	4,970	4,434	4,885	3,701	10.7
Office	12,319	12,185	10,180	7,738	6,963	6,819	9,044	4,061	7.1
Parking Garage	1,652	678	324	283	414	260	336	440	40.3
Public Assembly	4,556	4,341	3,802	2,828	2,593	Q	2,542	1,666	30.8
Public Order and Safety	820	818	748	464	561	226	551	545	27.9
Religious Worship	3,747	3,657	2,718	2,154	2,296	1,419	1,620	2,862	13.9
Warehouse and Storage	11,484	9,082	6,517	4,178	3,127	2,970	3,791	3,760	11.5
Other	1,130	1,032	737	560	519	447	582	309	19.6
Vacant	4,396	3,550	2,685	1,448	945	1,219	1,315	1,473	17.4
Year Constructed									
1899 or Before	1,721	1,620	942	561	1,036	379	726	1,215	17.3
1900 to 1919	3,608	3,269	2,259	1,210	1,679	630	1,312	2,297	18.1
1920 to 1945	8,712	7,532	4,929	2,187	3,317	1,556	3,922	4,759	11.8
1946 to 1959	10,421	9,484	6,957	3,300	3,474	2,887	4,926	6,211	9.7
1960 to 1969	12,612	11,695	9,567	5,498	4,124	4,740	6,096	5,654	10.0
1970 to 1979	14,014	12,754	11,395	8,182	5,638	5,603	6,763	4,703	7.0
1980 to 1989	14,287	13,365	12,072	10,427	8,731	7,927	8,587	3,577	11.6
1990 to 1992	2,502	2,338	2,190	1,877	1,685	1,674	1,740	520	12.8
Census Region									
Northeast	13,400	12,612	9,893	6,633	8,075	4,184	6,436	7,706	9.2
Midwest	17,280	16,031	12,918	8,184	9,885	6,540	8,376	8,117	6.9
South	24,577	21,758	18,108	12,175	8,380	8,899	12,210	8,838	10.5
West	12,619	11,655	9,392	6,248	3,344	5,774	7,049	4,276	8.3
Energy Sources (more than one may apply)									
Electricity	66,549	61,362	49,956	33,068	29,615	25,306	33,941	28,564	4.8
Natural Gas	45,097	43,053	35,416	22,379	21,530	18,217	24,915	20,481	5.2
Fuel Oil	13,218	12,996	11,451	8,061	8,471	6,385	8,177	6,422	7.9
District Heat	5,339	5,135	4,046	2,290	2,337	2,425	2,994	2,823	12.8
District Chilled Water	2,066	2,007	1,616	994	808	1,103	1,239	1,042	20.1
Propane	3,393	3,339	2,829	2,153	1,692	1,222	1,653	1,865	14.9
Any Other	1,551	1,472	1,276	860	557	190	604	921	22.2

See footnotes at end of table.

Table A59. Building Shell Conservation Features, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	Type of Building Shell Conservation Features (more than one may apply)								RSE Row Factor
	All Buildings	Any Building Shell Conser-Vation Features	Roof or Ceiling Insulation	Wall Insula-tion	Storms or Multiple Glazing	Tinted, Reflective or Shading Glass	Exterior or Interior Shadings or Awnings	Windows that Open	
RSE Column Factor:	0.8	0.8	0.9	1.0	1.1	1.4	1.0	1.1	
Energy End Uses (more than one may apply)									
Heated Buildings	61,996	58,915	48,409	32,180	29,441	24,816	33,454	27,381	4.9
Air-Conditioned Buildings	57,041	54,488	45,186	30,278	27,331	24,350	32,198	23,966	5.1
Buildings with Water Heating	58,479	55,914	46,407	30,978	28,564	24,373	32,745	25,632	4.9
Buildings with Cooking	23,065	22,814	19,707	12,919	12,918	11,271	14,890	11,124	8.8
Buildings with Manufacturing	3,174	3,050	2,714	1,489	1,312	1,338	1,377	1,349	16.3
Floors									
One	25,424	22,066	18,135	12,123	8,610	7,551	10,608	8,652	9.9
Two	18,025	17,097	14,282	9,741	8,019	6,991	9,124	7,540	6.6
Three	9,877	9,558	7,957	4,581	5,358	3,749	5,459	5,499	8.2
Four to Nine	10,377	9,289	6,810	4,326	5,368	4,340	5,945	5,615	9.7
Ten or More	4,173	4,046	3,128	2,469	2,329	2,765	2,935	1,632	16.2
Workers (main shift)									
Less than 5	17,944	14,210	11,054	7,342	5,825	4,030	5,026	7,113	14.7
5 to 9	7,524	6,814	5,268	3,466	2,895	1,539	3,499	3,488	7.0
10 to 19	8,077	7,444	5,591	3,629	3,212	2,112	3,539	3,976	8.6
20 to 49	10,556	10,084	8,475	5,328	5,110	4,255	6,428	4,856	7.6
50 to 99	7,763	7,642	6,110	4,087	4,115	3,118	5,085	3,784	10.0
100 to 249	7,378	7,308	6,550	4,137	3,797	4,492	4,703	2,828	12.1
250 or More	8,633	8,554	7,263	5,251	4,729	5,850	5,792	2,891	10.7
Weekly Operating Hours									
39 or Fewer	8,246	6,858	5,264	3,236	2,793	1,778	2,264	4,100	9.8
40 to 48	14,998	13,770	10,776	6,694	6,236	5,097	8,025	7,031	6.8
49 to 60	14,046	12,952	10,748	7,451	5,658	5,250	7,205	5,306	6.3
61 to 84	12,062	11,444	9,551	6,535	5,312	5,075	5,945	3,813	8.7
85 to 167	8,467	8,074	6,350	3,678	3,795	3,455	4,329	3,767	11.1
Open Continuously	10,057	8,958	7,622	5,647	5,890	4,740	6,303	4,921	15.1
Ownership and Occupancy									
Nongovernment Owned	52,752	47,889	38,288	27,472	23,696	20,146	26,322	19,907	5.3
Owner Occupied	38,403	35,043	28,012	20,366	17,450	14,347	18,809	16,151	4.2
Nonowner Occupied	12,273	11,369	9,262	6,417	5,788	5,371	6,927	3,174	14.2
Unoccupied	2,077	1,477	1,014	688	458	428	586	582	17.7
Government Owned	15,124	14,168	12,023	5,768	5,988	5,250	7,749	9,030	8.4
Primary Space-Heating Energy Source									
Electricity	15,502	14,541	12,530	9,993	7,487	7,528	8,980	4,553	11.3
Natural Gas	35,161	33,455	27,048	16,869	16,546	13,894	19,312	15,927	5.8
Fuel Oil	4,415	4,266	3,494	2,066	2,554	949	1,993	3,098	16.0
District Heat	5,014	4,813	3,731	2,117	2,199	2,276	2,725	2,722	13.5
Propane	1,101	1,064	939	750	468	133	247	633	21.5
Wood	257	230	183	Q	Q	Q	Q	145	32.2
Any Other	546	546	Q	Q	Q	NC	Q	Q	52.0
Cooling Energy Sources (more than one may apply)									
Electricity	54,628	52,132	43,216	29,191	26,170	23,187	30,810	22,866	5.2
Natural Gas	1,906	1,848	1,632	1,075	1,025	831	1,112	740	18.4
District Chilled Water	2,066	2,007	1,616	994	808	1,103	1,239	1,042	20.1

See footnotes at end of table.

Table A59. Building Shell Conservation Features, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Any Building Shell Conser-Vation Features	Roof or Ceiling Insulation	Wall Insula-tion	Storms or Multiple Glazing	Tinted, Reflective or Shading Glass	Exterior or Interior Shadings or Awnings	Windows that Open	RSE Row Factor
	Type of Building Shell Conservation Features (more than one may apply)								
RSE Column Factor:	0.8	0.8	0.9	1.0	1.1	1.4	1.0	1.1	
Water-Heating Energy Sources (more than one may apply)									
Electricity	25,482	24,351	20,939	15,193	12,583	11,163	14,199	8,865	8.8
Natural Gas	29,962	28,615	23,238	14,456	14,742	12,247	17,025	14,352	5.9
Fuel Oil	2,470	2,417	2,046	1,182	1,464	667	1,246	1,836	19.6
District Heat	3,308	3,238	2,543	1,632	1,466	1,572	2,078	1,728	15.1
Propane	659	647	586	428	326	Q	297	434	27.5
Cooking Energy Sources (more than one may apply)									
Electricity	12,183	12,060	10,728	7,206	7,152	6,568	8,077	5,184	14.1
Natural Gas	15,233	15,099	12,898	8,040	8,241	7,061	9,567	8,143	8.9
Propane	1,039	1,033	935	800	630	435	592	661	25.5
Percent of Floorspace Heated									
Not Heated	6,211	3,439	2,154	1,170	327	587	744	1,738	18.9
1 to 50	11,195	9,852	7,135	4,163	3,584	3,437	3,887	4,442	12.2
51 to 99	10,211	9,861	8,462	5,672	4,674	4,596	6,291	4,202	8.7
100	40,260	38,905	32,559	22,235	21,099	16,776	23,149	18,555	5.4
Percent of Floorspace Cooled									
Not Cooled	10,835	7,569	5,124	2,963	2,354	1,046	1,873	4,971	10.2
1 to 50	21,715	20,089	15,497	8,977	9,092	6,787	9,868	10,559	7.3
51 to 99	13,872	13,541	11,573	7,713	7,158	7,107	8,975	5,478	7.9
100	21,454	20,858	18,116	13,588	11,080	10,456	13,356	7,929	8.5
Percent Lit when Open									
Not Lit	3,280	2,110	1,341	768	481	554	618	1,113	18.3
1 to 50	9,980	8,863	6,538	4,032	3,727	2,339	3,586	5,175	9.1
51 to 99	14,224	13,846	11,864	8,261	7,851	6,875	8,583	5,954	11.1
100	40,393	37,237	30,567	20,179	17,625	15,628	21,285	16,696	5.2
Percent Lit when Closed									
Not Lit	34,486	30,170	24,198	16,513	14,385	10,863	15,626	16,050	7.2
1 to 50	31,482	30,110	24,757	15,719	14,597	13,760	17,640	12,265	5.5
51 to 99	1,021	977	838	664	502	558	577	185	21.6
100	887	800	518	344	200	215	228	437	24.5
Building Shell Conservation Features (more than one may apply)									
Roof or Ceiling Insulation	50,311	50,311	50,311	30,885	25,474	22,124	28,758	21,398	5.0
Wall Insulation	33,240	33,240	30,885	33,240	20,010	15,537	20,202	13,019	5.8
Storm or Multiple Glazing	29,684	29,684	25,474	20,010	29,684	14,838	19,831	13,784	6.1
Tinted, Reflective or Shading Glass	25,396	25,396	22,124	15,537	14,838	25,396	17,622	8,104	8.0
Exterior or Interior Shading or Awnings	34,071	34,071	28,758	20,202	19,831	17,622	34,071	14,783	5.8
Windows that Open	28,937	28,937	21,398	13,019	13,784	8,104	14,783	28,937	5.9
HVAC Conservation Features (more than one may apply)									
Variable Air-Volume System	13,970	13,900	12,198	9,265	9,208	9,741	10,395	4,616	11.9
Economizer Cycle	18,313	18,174	16,606	11,625	11,172	11,287	12,871	6,430	9.7
HVAC Maintenance	49,173	47,705	39,959	26,728	25,113	21,907	28,549	21,809	5.2

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A60. Energy Management Practices, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.3	0.8	0.8	1.4	1.5	2.4	0.8	0.7	1.6	
All Buildings	4,806	222	197	55	34	12	315	521	49	10.3
Building Floorspace (Square Feet)										
1,001 to 5,000	2,681	45	44	Q	Q	Q	103	209	Q	22.8
5,001 to 10,000	975	37	31	Q	Q	NC	66	107	Q	23.9
10,001 to 25,000	647	50	41	12	9	Q	68	94	6	18.2
25,001 to 50,000	280	29	25	5	6	Q	30	50	5	20.8
50,001 to 100,000	116	28	23	8	4	Q	23	32	6	17.4
100,001 to 200,000	71	19	18	8	4	Q	14	17	2	18.0
200,001 to 500,000	26	10	10	3	3	*	9	9	2	19.5
Over 500,000	9	5	5	Q	Q	1	2	3	1	38.1
Principal Building Activity										
Education	301	50	38	9	11	Q	54	75	10	21.4
Food Sales	130	Q	Q	Q	Q	Q	Q	Q	Q	44.6
Food Service	260	11	Q	Q	Q	Q	24	31	Q	37.8
Health Care	63	10	10	Q	Q	Q	11	11	Q	36.1
Lodging	154	4	2	Q	Q	Q	21	33	Q	35.0
Mercantile and Service	1,272	28	26	13	Q	Q	50	106	Q	18.1
Office	749	68	66	13	7	3	62	96	10	16.4
Parking Garage	24	Q	Q	Q	Q	Q	Q	Q	Q	62.7
Public Assembly	278	14	12	Q	Q	Q	24	40	Q	31.3
Public Order and Safety	60	Q	Q	Q	Q	Q	Q	Q	Q	52.7
Religious Worship	366	11	8	Q	Q	NC	15	37	Q	39.8
Warehouse and Storage	761	9	8	Q	Q	Q	24	45	Q	33.2
Other	69	Q	Q	Q	Q	Q	Q	Q	Q	58.6
Vacant	319	5	Q	Q	Q	Q	7	12	Q	48.4
Year Constructed										
1899 or Before	169	Q	Q	Q	Q	NC	12	25	Q	31.0
1900 to 1919	255	11	8	Q	Q	Q	18	26	Q	40.9
1920 to 1945	724	14	9	Q	Q	Q	45	76	Q	29.5
1946 to 1959	880	32	24	Q	5	Q	55	95	11	20.2
1960 to 1969	783	38	32	6	5	Q	53	99	8	21.0
1970 to 1979	982	49	48	13	8	Q	74	112	15	18.8
1980 to 1989	884	55	55	17	10	Q	51	81	5	18.4
1990 to 1992	128	20	19	6	2	1	7	7	Q	32.0
Census Region										
Northeast	771	37	23	11	8	1	99	132	8	21.6
Midwest	1,202	66	55	11	9	6	68	122	11	17.6
South	1,963	63	68	15	11	Q	72	157	14	19.1
West	870	57	51	18	6	Q	75	110	16	20.1
Energy Sources (more than one may apply)										
Electricity	4,616	222	197	55	34	12	315	520	49	10.3
Natural Gas	2,665	169	148	37	21	10	195	336	31	11.4
Fuel Oil	559	35	29	13	11	Q	65	85	6	22.7
District Heat	95	25	20	4	5	Q	30	27	6	22.6
District Chilled Water	28	12	13	Q	2	Q	11	9	4	32.4
Propane	337	5	4	Q	Q	Q	18	32	Q	43.1
Any Other	163	Q	Q	Q	Q	NC	Q	Q	Q	46.4
Energy End Uses (more than one may apply)										
Heated Buildings	4,178	222	197	55	34	12	313	505	49	10.3
Air-Conditioned Buildings	3,502	204	197	47	31	12	267	425	42	10.3
Buildings with Water Heating	3,502	215	190	52	34	12	288	453	47	10.4
Buildings with Cooking	734	76	65	22	15	5	95	131	12	14.9
Buildings with Manufacturing	121	7	4	Q	Q	Q	16	25	Q	38.7

See footnotes at end of table.

Table A60. Energy Management Practices, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.3	0.8	0.8	1.4	1.5	2.4	0.8	0.7	1.6	
Floors										
One	3,007	81	78	24	14	Q	132	259	24	17.0
Two	1,154	78	65	17	7	3	91	144	9	16.2
Three	446	30	25	7	5	Q	51	72	9	20.0
Four to Nine	186	28	24	5	6	1	35	41	6	18.7
Ten or More	13	6	5	2	2	Q	5	5	1	25.2
Workers (main shift)										
Less than 5	2,718	36	27	13	Q	Q	103	178	15	24.0
5 to 9	895	27	27	Q	Q	Q	68	102	Q	24.0
10 to 19	561	45	41	Q	Q	Q	41	92	Q	22.0
20 to 49	405	50	42	8	9	Q	52	85	12	18.5
50 to 99	130	27	22	8	5	Q	24	33	6	18.0
100 to 249	64	22	22	9	6	2	18	21	2	16.5
250 or More	31	16	16	5	2	1	9	11	2	16.6
Weekly Operating Hours										
39 or Fewer	1,039	23	14	Q	Q	Q	31	70	Q	28.2
40 to 48	1,278	68	61	9	7	Q	90	142	15	17.1
49 to 60	1,004	49	47	8	3	3	60	90	8	17.7
61 to 84	645	34	31	10	8	1	56	88	4	18.7
85 to 167	478	29	26	14	5	Q	48	75	6	20.3
Open Continuously	362	19	18	7	9	Q	30	57	8	25.1
Ownership and Occupancy										
Nongovernment Owned	4,206	153	142	41	20	11	229	399	32	11.6
Owner Occupied	3,192	128	119	32	17	10	199	334	27	12.7
Nonowner Occupied	817	23	24	9	Q	Q	27	64	3	21.9
Unoccupied	197	Q	Q	Q	Q	Q	Q	Q	Q	10.0
Government Owned	599	69	54	14	14	Q	86	122	18	18.2
Space-Heating Energy Source (more than one may apply)										
Electricity	1,513	79	75	24	13	6	109	202	22	15.1
Natural Gas	2,405	147	132	32	19	7	172	299	28	12.1
Fuel Oil	479	18	12	Q	5	Q	52	67	Q	29.4
District Heat	94	24	20	Q	5	Q	29	27	6	23.0
Propane	255	Q	Q	Q	Q	NC	12	17	NC	60.4
Wood	102	Q	Q	NC	Q	NC	Q	Q	NC	69.7
Any Other	39	Q	Q	Q	NC	NC	Q	Q	Q	94.8
Cooling Energy Sources (more than one may apply)										
Electricity	3,404	188	180	45	29	12	252	413	39	10.5
Natural Gas	106	11	11	Q	Q	Q	12	18	Q	38.2
District Chilled Water	28	12	13	Q	2	Q	11	9	4	32.4
Water-Heating Energy Sources (more than one may apply)										
Electricity	1,696	86	85	23	16	Q	134	195	18	15.0
Natural Gas	1,647	114	98	26	14	7	130	225	27	13.7
Fuel Oil	126	Q	2	Q	Q	Q	20	27	Q	47.2
District Heat	38	17	13	2	4	Q	15	10	3	26.1
Propane	80	Q	Q	Q	Q	Q	Q	Q	Q	71.6
Cooking Energy Sources (more than one may apply)										
Electricity	356	36	31	12	9	Q	49	65	6	20.2
Natural Gas	431	52	44	14	9	4	56	76	8	17.8
Propane	70	Q	Q	Q	Q	NC	11	14	Q	57.1

See footnotes at end of table.

Table A60. Energy Management Practices, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.3	0.8	0.8	1.4	1.5	2.4	0.8	0.7	1.6	
Percent of Floorspace Heated										
Not Heated	653	NC	Q	Q	NC	Q	Q	17	NC	37.7
1 to 50	688	11	7	4	Q	Q	34	51	7	26.6
51 to 99	618	34	32	11	5	Q	45	78	6	21.5
100	2,846	178	158	39	28	9	234	376	36	11.1
Percent of Floorspace Cooled										
Not Cooled	1,304	18	NC	Q	Q	NC	48	97	Q	28.6
1 to 50	1,176	41	27	5	5	Q	82	134	7	17.5
51 to 99	658	49	50	12	8	3	72	107	14	16.9
100	1,668	115	120	30	18	8	113	184	22	14.0
Percent Lit when Open										
Not Lit	413	Q	Q	Q	Q	Q	Q	Q	Q	21.4
1 to 50	881	14	7	Q	Q	Q	48	76	Q	30.4
51 to 99	813	55	46	15	11	3	90	121	9	17.6
100	2,699	154	143	38	23	9	177	321	36	12.0
Percent Lit when Closed										
Not Lit	2,987	101	84	25	18	Q	157	293	32	14.8
1 to 50	1,689	118	110	29	17	6	153	213	18	12.1
51 to 99	43	2	2	Q	Q	Q	Q	7	Q	45.8
100	87	Q	Q	Q	Q	Q	Q	Q	Q	56.0
Heating Equipment (more than one may apply)										
Heat Pumps	449	27	25	5	2	1	33	60	5	21.7
Furnaces	1,692	66	61	12	Q	Q	109	163	Q	18.7
Individual Space Heaters	1,464	60	52	16	8	6	102	167	15	17.3
District Heat	93	24	20	Q	5	Q	29	27	6	23.0
Boilers	624	62	46	18	14	3	89	132	13	13.9
Packaged Heating Units	870	65	66	19	7	4	67	113	15	16.5
Other	42	9	9	Q	Q	Q	Q	7	Q	54.2
Cooling Equipment (more than one may apply)										
Residential-Type Central Air Conditioners	816	38	37	5	Q	Q	60	68	Q	25.6
Heat Pumps	454	27	25	5	2	1	36	59	5	22.2
Individual Air Conditioners	1,023	30	22	Q	7	Q	71	121	9	21.4
District Chilled Water	28	12	13	Q	2	Q	11	9	4	32.4
Central Chillers	142	37	38	10	10	2	30	39	5	15.8
Packaged Air-Conditioning Units	1,459	105	105	29	13	8	119	206	23	14.1
Swamp Coolers	179	7	6	Q	Q	Q	6	18	Q	43.1
Other	8	Q	Q	Q	Q	Q	Q	Q	Q	67.6
Lighting Equipment Types (more than one may apply)										
Incandescent	2,509	127	107	25	17	8	190	300	26	12.4
Standard Fluorescent	4,065	220	195	55	34	12	301	492	48	10.3
Compact Fluorescent	206	27	22	11	7	1	57	55	4	17.4
High-Intensity Discharge	354	43	36	13	7	3	56	73	5	13.1
Other	78	Q	Q	Q	Q	Q	8	Q	Q	54.5

See footnotes at end of table.

Table A60. Energy Management Practices, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.3	0.8	0.8	1.4	1.5	2.4	0.8	0.7	1.6	
Water-Heating Equipment (more than one may apply)										
Centralized System	1,994	129	109	32	23	7	172	264	32	14.1
Self-Heating Tank	1,799	107	91	28	16	6	147	224	28	15.5
Heated by Space-Heating Equipment	103	12	9	Q	2	Q	14	23	Q	34.4
Other	106	12	10	2	5	Q	17	23	3	26.2
Distributed System	1,557	92	88	22	14	6	121	204	16	15.1
Residential-Type Storage Tank	1,489	80	77	16	9	4	108	193	13	15.0
Point-of-Use	56	9	9	Q	Q	Q	12	9	Q	44.6
Other	24	5	4	Q	Q	Q	4	5	Q	39.3

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A61. Energy Management Practices, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.4	0.9	0.9	1.3	1.7	1.9	0.8	0.7	1.5	
All Buildings	67,876	13,412	12,489	5,162	3,897	887	11,310	14,779	2,311	11.2
Building Floorspace (Square Feet)										
1,001 to 5,000	7,327	139	136	Q	Q	Q	321	623	Q	23.0
5,001 to 10,000	7,199	290	241	Q	Q	NC	485	785	Q	23.3
10,001 to 25,000	10,375	868	730	218	161	Q	1,075	1,540	94	18.2
25,001 to 50,000	10,069	1,058	931	195	210	Q	1,105	1,820	194	21.1
50,001 to 100,000	8,062	1,944	1,626	578	324	Q	1,581	2,271	418	17.1
100,001 to 200,000	9,678	2,478	2,329	997	529	Q	1,960	2,345	304	17.9
200,001 to 500,000	7,889	3,254	3,097	913	840	152	2,548	2,891	508	19.4
Over 500,000	7,278	3,381	3,399	2,194	Q	368	2,235	2,504	658	32.4
Principal Building Activity										
Education	8,470	2,891	2,156	504	927	Q	2,560	2,810	482	19.4
Food Sales	757	Q	Q	Q	Q	Q	Q	Q	Q	50.5
Food Service	1,491	118	Q	Q	Q	Q	159	174	Q	40.4
Health Care	1,763	918	936	Q	225	Q	911	804	Q	24.9
Lodging	2,891	386	454	Q	Q	Q	707	878	Q	39.2
Mercantile and Service	12,402	1,674	1,682	1,315	Q	Q	1,728	1,878	Q	25.5
Office	12,319	4,400	4,231	1,459	836	430	2,707	3,793	560	13.1
Parking Garage	1,652	Q	Q	Q	Q	Q	Q	Q	Q	53.3
Public Assembly	4,556	Q	Q	Q	Q	Q	700	807	Q	48.2
Public Order and Safety	820	Q	Q	Q	Q	Q	Q	Q	Q	57.6
Religious Worship	3,747	261	199	Q	Q	NC	402	418	Q	39.6
Warehouse and Storage	11,484	512	466	Q	Q	Q	648	1,477	Q	28.5
Other	1,130	317	317	Q	Q	Q	221	Q	Q	41.4
Vacant	4,396	142	Q	Q	Q	Q	126	705	Q	46.0
Year Constructed										
1899 or Before	1,721	Q	Q	Q	Q	NC	161	360	Q	31.4
1900 to 1919	3,608	498	283	Q	Q	Q	476	905	Q	44.2
1920 to 1945	8,712	790	681	Q	Q	Q	1,244	1,763	Q	27.8
1946 to 1959	10,421	1,166	976	Q	235	Q	1,331	2,255	308	19.7
1960 to 1969	12,612	2,448	2,166	563	450	Q	2,793	3,060	376	18.2
1970 to 1979	14,014	2,994	2,953	955	790	Q	2,741	3,331	790	16.8
1980 to 1989	14,287	4,211	4,135	2,617	Q	353	2,060	2,775	318	20.5
1990 to 1992	2,502	1,196	1,218	543	303	114	504	330	56	21.6
Census Region										
Northeast	13,400	2,285	1,688	787	907	302	3,436	4,136	340	20.2
Midwest	17,280	4,123	3,735	1,190	931	259	3,279	3,944	647	15.6
South	24,577	4,158	4,437	Q	Q	132	2,600	3,810	966	22.5
West	12,619	2,846	2,629	1,254	519	193	1,994	2,890	359	14.5
Energy Sources (more than one may apply)										
Electricity	66,549	13,412	12,489	5,162	3,897	887	11,310	14,734	2,311	11.2
Natural Gas	45,097	9,805	9,008	3,462	2,488	794	8,665	10,911	1,682	10.2
Fuel Oil	13,218	4,971	4,920	2,126	1,698	477	4,148	4,533	673	14.3
District Heat	5,339	2,389	2,047	513	583	Q	1,676	1,899	864	18.8
District Chilled Water	2,066	1,024	1,028	340	269	Q	644	514	622	24.9
Propane	3,393	313	402	Q	Q	Q	529	810	Q	33.7
Any Other	1,551	Q	Q	Q	Q	NC	Q	Q	Q	41.1
Energy End Uses (more than one may apply)										
Heated Buildings	61,996	13,412	12,462	5,134	3,897	878	11,248	14,348	2,311	11.4
Air-Conditioned Buildings	57,041	12,933	12,489	4,990	3,774	887	10,667	13,636	2,222	11.5
Buildings with Water Heating	58,479	13,323	12,404	5,118	3,897	887	11,030	14,086	2,285	11.4
Buildings with Cooking	23,065	8,753	8,099	3,698	3,172	579	6,788	7,392	1,108	16.0
Buildings with Manufacturing	3,174	400	328	Q	Q	Q	712	1,076	Q	29.5

See footnotes at end of table.

Table A61. Energy Management Practices, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.4	0.9	0.9	1.3	1.7	1.9	0.8	0.7	1.5	
Floors										
One	25,424	2,854	2,659	Q	Q	Q	1,686	3,070	340	25.4
Two	18,025	2,939	2,662	1,254	433	253	3,025	3,842	332	15.5
Three	9,877	1,813	1,619	601	540	Q	1,958	2,571	407	19.9
Four to Nine	10,377	3,393	3,249	978	794	197	3,073	3,407	769	16.1
Ten or More	4,173	2,413	2,301	853	846	291	1,567	1,889	462	23.4
Workers (main shift)										
Less than 5	17,944	Q	Q	Q	Q	Q	1,073	1,550	Q	47.7
5 to 9	7,524	334	273	Q	Q	Q	713	1,073	Q	24.4
10 to 19	8,077	666	568	Q	Q	Q	461	1,095	Q	22.3
20 to 49	10,556	1,498	1,196	254	387	Q	1,630	2,497	281	18.7
50 to 99	7,763	1,900	1,545	653	349	Q	1,701	2,376	561	20.3
100 to 249	7,378	3,010	2,986	1,325	949	209	2,303	2,628	245	18.4
250 or More	8,633	4,787	4,773	1,776	1,197	458	3,428	3,560	789	16.5
Weekly Operating Hours										
39 or Fewer	8,246	476	252	Q	Q	Q	660	1,245	Q	32.2
40 to 48	14,998	2,317	2,119	522	525	Q	1,762	2,496	347	16.4
49 to 60	14,046	2,679	2,558	731	360	257	1,932	2,811	392	15.2
61 to 84	12,062	2,796	2,706	1,362	785	129	2,499	3,244	290	15.9
85 to 167	8,467	2,065	1,647	830	525	Q	2,413	2,044	370	22.6
Open Continuously	10,057	3,080	3,207	Q	Q	162	2,044	2,938	671	27.0
Ownership and Occupancy										
Nongovernment Owned	52,752	8,803	8,651	4,305	2,647	734	7,030	10,274	1,534	13.4
Owner Occupied	38,403	6,515	6,408	2,660	1,529	592	5,883	8,475	1,398	11.0
Nonowner Occupied	12,273	2,253	2,243	Q	Q	Q	1,105	1,753	129	30.6
Unoccupied	2,077	Q	Q	Q	Q	Q	Q	Q	Q	9.9
Government Owned	15,124	4,610	3,838	857	1,250	153	4,279	4,505	777	15.5
Space-Heating Energy Source (more than one may apply)										
Electricity	25,636	6,142	6,142	3,164	Q	365	4,570	6,331	747	18.6
Natural Gas	38,524	7,707	7,295	2,721	1,971	536	7,325	8,765	1,340	11.5
Fuel Oil	7,334	1,747	1,502	319	663	Q	2,042	2,248	200	22.1
District Heat	5,242	2,349	2,040	492	550	Q	1,607	1,880	864	19.0
Propane	1,568	Q	Q	Q	Q	NC	188	222	NC	59.1
Wood	504	Q	Q	NC	Q	NC	Q	Q	NC	57.0
Any Other	661	Q	Q	Q	NC	NC	Q	Q	Q	86.0
Cooling Energy Sources (more than one may apply)										
Electricity	54,628	12,115	11,656	4,697	3,465	882	10,015	13,101	1,773	11.8
Natural Gas	1,906	413	443	Q	Q	Q	461	629	Q	41.3
District Chilled Water	2,066	1,024	1,028	340	269	Q	644	514	622	24.9
Water-Heating Energy Sources (more than one may apply)										
Electricity	25,482	5,493	5,494	2,990	Q	287	3,830	5,518	632	18.5
Natural Gas	29,962	6,438	5,892	2,073	1,607	491	6,124	7,085	1,242	11.6
Fuel Oil	2,470	421	227	Q	Q	Q	616	776	Q	42.7
District Heat	3,308	1,799	1,586	354	423	Q	1,135	1,378	445	24.1
Propane	659	Q	Q	Q	Q	Q	Q	Q	Q	70.6
Cooking Energy Sources (more than one may apply)										
Electricity	12,183	5,455	5,183	2,784	2,142	306	3,729	3,562	429	21.5
Natural Gas	15,233	5,300	4,802	1,836	1,737	448	4,906	5,155	784	15.8
Propane	1,039	Q	Q	Q	Q	NC	231	358	Q	54.6

See footnotes at end of table.

Table A61. Energy Management Practices, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.4	0.9	0.9	1.3	1.7	1.9	0.8	0.7	1.5	
Percent of Floorspace Heated										
Not Heated	6,211	NC	Q	Q	NC	Q	Q	512	NC	51.5
1 to 50	11,195	644	682	513	Q	Q	1,360	1,707	323	35.5
51 to 99	10,211	2,631	2,358	1,017	749	297	1,878	2,709	289	17.2
100	40,260	10,138	9,422	3,604	2,847	466	8,010	9,852	1,699	12.9
Percent of Floorspace Cooled										
Not Cooled	10,835	479	NC	Q	Q	NC	643	1,143	Q	29.9
1 to 50	21,715	2,072	1,459	727	601	Q	3,141	4,763	635	20.9
51 to 99	13,872	4,634	4,570	1,417	1,138	400	3,605	4,251	489	14.5
100	21,454	6,228	6,461	2,846	Q	316	3,920	4,622	1,098	18.3
Percent Lit when Open										
Not Lit	3,280	Q	Q	Q	Q	Q	Q	Q	Q	20.9
1 to 50	9,980	331	256	76	Q	Q	1,018	1,312	Q	27.3
51 to 99	14,224	4,293	3,781	2,141	Q	288	3,058	3,996	348	24.6
100	40,393	8,764	8,448	2,944	1,913	550	7,232	9,411	1,688	10.1
Percent Lit when Closed										
Not Lit	34,486	5,410	5,050	2,291	2,140	351	4,414	6,427	1,189	17.5
1 to 50	31,482	7,672	7,095	2,772	1,724	511	6,492	7,909	1,022	11.9
51 to 99	1,021	254	276	Q	Q	Q	Q	328	Q	47.6
100	887	Q	Q	Q	Q	Q	Q	Q	Q	47.8
Heating Equipment (more than one may apply)										
Heat Pumps	8,269	1,789	1,865	664	364	162	1,568	2,295	355	19.4
Furnaces	16,909	1,501	1,404	564	Q	Q	2,325	2,772	Q	19.6
Individual Space Heaters	22,380	4,473	4,307	1,616	645	399	4,194	5,725	758	13.4
District Heat	5,225	2,349	2,040	492	550	Q	1,607	1,880	864	19.0
Boilers	20,664	6,709	6,163	2,658	2,627	495	5,475	6,211	863	17.6
Packaged Heating Units	16,000	3,372	3,282	1,641	813	422	3,063	3,568	536	15.4
Other	903	427	427	Q	Q	Q	Q	414	Q	38.9
Cooling Equipment (more than one may apply)										
Residential-Type Central Air Conditioners	9,021	1,216	1,254	246	Q	Q	1,687	1,732	Q	22.2
Heat Pumps	8,406	1,648	1,729	581	327	159	1,578	2,261	359	19.2
Individual Air Conditioners	17,979	3,028	2,473	Q	Q	Q	3,362	4,490	408	30.3
District Chilled Water	2,066	1,024	1,028	340	269	Q	644	514	622	24.9
Central Chillers	12,991	7,088	7,255	3,059	2,624	362	4,419	5,027	836	17.6
Packaged Air-Conditioning Units	27,830	5,858	5,648	2,217	1,196	502	4,951	7,052	1,020	11.5
Swamp Coolers	2,085	423	412	Q	Q	Q	197	363	Q	36.0
Other	268	Q	Q	Q	Q	Q	Q	Q	Q	58.7
Lighting Equipment Types (more than one may apply)										
Incandescent	39,221	8,456	7,833	2,901	2,308	746	8,577	9,683	1,586	10.7
Standard Fluorescent	62,074	13,279	12,379	5,146	3,857	886	11,161	14,501	2,298	11.3
Compact Fluorescent	8,336	3,450	3,358	1,615	1,153	277	3,657	3,422	623	16.1
High-Intensity Discharge	17,570	5,343	4,970	2,277	1,641	627	5,238	5,745	874	13.3
Other	1,612	371	344	159	Q	Q	340	439	Q	43.2

See footnotes at end of table.

Table A61. Energy Management Practices, Floorspace, 1992 (Continued)
(Million Square Feet)

Building Characteristics	All Buildings	Energy Management Control System: (more than one may apply)					DSM Partici-pation	Energy Audit	Building Energy Manager	RSE Row Factor
		Heating	Cooling	Lighting	Hot Water	Other				
RSE Column Factor:	0.4	0.9	0.9	1.3	1.7	1.9	0.8	0.7	1.5	
Water-Heating Equipment (more than one may apply)										
Centralized System	31,599	8,669	7,911	2,945	3,016	583	6,484	8,229	1,561	15.7
Self-Heating Tank	24,464	5,662	5,253	2,420	2,063	324	4,637	5,654	1,057	19.0
Heated by Space-Heating Equipment	3,722	1,611	1,352	260	419	Q	832	1,322	Q	28.2
Other	4,032	1,697	1,566	345	572	137	1,224	1,483	372	20.5
Distributed System	29,502	6,253	6,098	3,231	Q	367	4,944	6,660	818	17.7
Residential-Type Storage Tank	25,809	4,491	4,330	1,919	794	340	3,745	5,761	636	13.8
Point-of-Use	3,367	Q	Q	Q	Q	Q	1,014	794	Q	52.2
Other	1,259	496	492	268	Q	Q	410	453	Q	35.3

NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A62. Reduction in Equipment Use During Off Hours, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.7	0.8	0.8	1.5	0.8	1.8	
All Buildings	4,806	3,400	2,872	578	4,089	547	4.8
Building Floorspace (Square Feet)							
1,001 to 5,000	2,681	1,845	1,499	277	2,248	299	6.6
5,001 to 10,000	975	746	635	127	857	112	6.0
10,001 to 25,000	647	469	417	97	569	83	7.1
25,001 to 50,000	280	181	169	40	234	26	10.0
50,001 to 100,000	116	88	83	24	98	13	9.0
100,001 to 200,000	71	49	47	10	61	11	11.8
200,001 to 500,000	26	16	15	4	18	3	14.6
Over 500,000	9	5	5	1	5	1	22.5
Principal Building Activity							
Education	301	274	231	57	300	32	10.1
Food Sales	130	76	74	Q	100	Q	20.0
Food Service	260	209	215	52	241	78	10.1
Health Care	63	42	45	Q	51	Q	21.4
Lodging	154	Q	Q	Q	Q	Q	14.5
Mercantile and Service	1,272	1,056	800	153	1,203	175	6.8
Office	749	628	621	84	722	115	7.8
Parking Garage	24	12	10	Q	15	Q	40.1
Public Assembly	278	222	182	56	269	23	10.3
Public Order and Safety	60	16	Q	Q	19	Q	36.3
Religious Worship	366	350	275	62	362	24	12.8
Warehouse and Storage	761	368	287	41	591	56	10.0
Other	69	26	24	Q	50	Q	23.9
Vacant	319	111	88	40	151	16	12.9
Year Constructed							
1899 or Before	169	125	100	26	154	19	16.8
1900 to 1919	255	194	147	29	225	28	14.8
1920 to 1945	724	513	418	101	619	68	8.8
1946 to 1959	880	632	540	103	752	97	7.7
1960 to 1969	783	539	453	102	653	63	8.3
1970 to 1979	982	702	607	101	838	149	7.9
1980 to 1989	884	604	532	104	745	109	7.7
1990 to 1992	128	90	74	12	104	15	18.2
Census Region							
Northeast	771	570	434	150	671	125	9.8
Midwest	1,202	834	628	113	1,034	113	10.4
South	1,963	1,386	1,310	176	1,647	174	7.7
West	870	609	500	139	737	135	12.4
Energy Sources (more than one may apply)							
Electricity	4,616	3,398	2,872	578	4,079	547	4.7
Natural Gas	2,665	2,140	1,872	353	2,400	327	6.4
Fuel Oil	559	450	298	102	500	71	12.0
District Heat	95	63	60	13	75	6	16.0
District Chilled Water	28	20	20	4	23	Q	25.8
Propane	337	274	196	55	304	66	15.9
Any Other	163	130	47	Q	139	Q	17.2

See footnotes at end of table.

Table A62. Reduction in Equipment Use During Off Hours, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.7	0.8	0.8	1.5	0.8	1.8	
Energy End Uses (more than one may apply)							
Heated Buildings	4,178	3,400	2,821	557	3,768	523	4.8
Air-Conditioned Buildings	3,502	2,804	2,872	445	3,168	446	4.9
Buildings with Water Heating	3,502	2,745	2,425	578	3,125	452	4.9
Buildings with Cooking	734	560	532	160	639	132	7.4
Buildings with Manufacturing	121	98	78	20	111	30	18.2
Floors							
One	3,007	2,074	1,733	316	2,528	337	6.4
Two	1,154	888	752	169	1,021	124	5.7
Three	446	309	265	61	380	63	10.2
Four to Nine	186	120	112	29	151	22	13.7
Ten or More	13	9	9	4	9	2	20.6
Workers (main shift)							
Less than 5	2,718	1,733	1,336	268	2,170	236	6.8
5 to 9	895	734	659	110	841	139	6.4
10 to 19	561	448	413	90	521	91	8.0
20 to 49	405	318	305	63	362	49	7.5
50 to 99	130	99	92	30	117	19	10.0
100 to 249	64	47	46	11	54	8	11.7
250 or More	31	21	22	6	25	5	14.1
Weekly Operating Hours							
39 or Fewer	1,039	656	485	144	809	57	9.0
40 to 48	1,278	1,044	884	152	1,247	160	6.5
49 to 60	1,004	824	700	113	968	157	6.8
61 to 84	645	535	471	89	621	99	6.3
85 to 167	478	340	333	80	444	74	9.1
Open Continuously	362	NC	NC	NC	NC	NC	10.0
Ownership and Occupancy							
Nongovernment Owned	4,206	2,991	2,550	505	3,596	495	4.9
Owner Occupied	3,192	2,332	1,960	395	2,785	372	5.2
Nonowner Occupied	817	613	557	82	743	117	8.2
Unoccupied	197	46	34	28	68	Q	18.6
Government Owned	599	408	321	73	494	52	8.8
Primary Space-Heating Energy Source							
Electricity	1,107	830	758	155	940	131	7.8
Natural Gas	2,276	1,890	1,631	281	2,088	278	6.7
Fuel Oil	394	345	216	73	374	59	13.8
District Heat	91	60	57	12	72	6	16.2
Propane	217	192	133	29	206	39	20.9
Wood	68	61	Q	Q	64	Q	28.7
Any Other	Q	Q	Q	Q	Q	Q	100.0
Cooling Energy Sources (more than one may apply)							
Electricity	3,404	2,722	2,790	438	3,077	430	4.9
Natural Gas	106	87	87	10	100	21	13.5
District Chilled Water	28	20	20	4	23	Q	25.8

See footnotes at end of table.

Table A62. Reduction in Equipment Use During Off Hours, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.7	0.8	0.8	1.5	0.8	1.8	
Water-Heating Energy Sources (more than one may apply)							
Electricity	1,696	1,341	1,186	298	1,539	214	5.8
Natural Gas	1,647	1,286	1,163	239	1,450	210	7.6
Fuel Oil	126	103	73	39	119	20	18.9
District Heat	38	22	19	6	27	Q	21.4
Propane	80	62	47	17	70	Q	26.9
Cooking Energy Sources (more than one may apply)							
Electricity	356	260	252	71	306	74	10.2
Natural Gas	431	340	320	91	370	70	9.8
Propane	70	49	48	20	63	Q	22.3
Percent of Floorspace Heated							
Not Heated	653	Q	53	22	340	24	17.1
1 to 50	688	581	427	94	626	79	9.0
51 to 99	618	525	452	78	561	102	8.2
100	2,846	2,280	1,939	385	2,562	342	5.2
Percent of Floorspace Cooled							
Not Cooled	1,304	596	NC	133	922	101	8.8
1 to 50	1,176	964	1,001	172	1,090	156	6.4
51 to 99	658	517	535	77	580	101	8.5
100	1,668	1,323	1,335	195	1,498	189	6.7
Percent Lit when Open							
Not Lit	413	67	41	30	101	Q	17.0
1 to 50	881	645	498	84	802	82	7.8
51 to 99	813	648	562	114	752	121	7.2
100	2,699	2,040	1,771	350	2,434	338	5.5
Percent Lit when Closed							
Not Lit	2,987	1,884	1,475	322	2,345	286	6.1
1 to 50	1,689	1,435	1,326	238	1,662	253	5.6
51 to 99	43	32	30	Q	34	Q	22.7
100	87	49	41	Q	48	Q	23.0
Heating Equipment (more than one may apply)							
Heat Pumps	449	335	328	64	392	43	12.1
Furnaces	1,692	1,437	1,191	199	1,575	215	6.8
Individual Space Heaters	1,464	1,187	881	154	1,289	200	7.6
District Heat	93	61	59	13	73	6	16.1
Boilers	624	477	388	127	546	88	6.5
Packaged Heating Units	870	721	712	131	795	122	9.3
Other	42	30	27	Q	36	Q	32.7
Cooling Equipment (more than one may apply)							
Residential-Type Central Air Conditioners	816	673	687	86	757	98	10.2
Heat Pumps	454	337	334	63	397	43	12.0
Individual Air Conditioners	1,023	787	825	123	899	138	7.5
District Chilled Water	28	20	20	4	23	Q	25.8
Central Chillers	142	103	106	28	118	16	13.1
Packaged Air-Conditioning Units	1,459	1,178	1,214	187	1,331	195	7.0
Swamp Coolers	179	149	152	23	167	27	24.7
Other	8	Q	Q	Q	8	Q	59.1

See footnotes at end of table.

Table A62. Reduction in Equipment Use During Off Hours, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.7	0.8	0.8	1.5	0.8	1.8	
Lighting Equipment Types (more than one may apply)							
Incandescent	2,509	1,862	1,559	331	2,231	334	5.8
Standard Fluorescent	4,065	3,144	2,696	520	3,709	522	4.6
Compact Fluorescent	206	157	139	36	174	42	13.4
High-Intensity Discharge	354	258	229	43	316	53	8.4
Other	78	66	61	8	76	21	19.3
Water-Heating Equipment (more than one may apply)							
Centralized System	1,994	1,550	1,345	332	1,788	299	7.9
Self-Heating Tank	1,799	1,405	1,215	292	1,623	277	8.5
Heated by Space-Heating Equipment	103	84	72	18	92	19	18.8
Other	106	69	63	26	82	4	20.4
Distributed System	1,557	1,233	1,111	258	1,379	157	8.1
Residential-Type Storage Tank	1,489	1,188	1,069	246	1,327	153	8.4
Point-of-Use Heaters	56	42	41	11	45	7	17.1
Other	24	12	10	2	16	Q	23.3
Energy Conservation Features (more than one may apply)							
Any Conservation Features	4,357	3,243	2,761	568	3,812	523	4.9
Building Shell	4,223	3,146	2,683	555	3,698	508	5.0
HVAC	2,604	2,046	1,807	377	2,327	327	5.3
Lighting	1,178	907	813	189	1,036	163	6.5
Other	264	215	179	38	229	42	12.1
Off-Hour Equipment Reduction (more than one may apply)							
Heating	3,400	3,400	2,736	544	3,349	486	4.9
Cooling	2,872	2,736	2,872	435	2,827	407	5.0
Hot Water	578	544	435	578	574	106	7.7
Lighting	4,089	3,349	2,827	574	4,089	541	4.7
Other	547	486	407	106	541	547	10.0

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A63. Reduction in Equipment Use During Off Hours, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	1.3	0.8	1.9	
All Buildings	67,876	46,248	42,768	9,966	54,944	7,996	4.8
Building Floorspace (Square Feet)							
1,001 to 5,000	7,327	5,109	4,160	813	6,183	839	7.0
5,001 to 10,000	7,199	5,502	4,691	968	6,328	803	5.9
10,001 to 25,000	10,375	7,504	6,690	1,546	9,130	1,333	6.9
25,001 to 50,000	10,069	6,566	6,097	1,463	8,460	872	10.3
50,001 to 100,000	8,062	6,191	5,824	1,664	6,850	935	8.9
100,001 to 200,000	9,678	6,622	6,368	1,353	8,245	1,435	11.6
200,001 to 500,000	7,889	4,637	4,643	1,210	5,300	817	14.6
Over 500,000	7,278	4,118	4,295	949	4,448	962	21.4
Principal Building Activity							
Education	8,470	7,703	6,846	2,567	8,368	1,117	8.9
Food Sales	757	359	352	Q	529	Q	22.9
Food Service	1,491	1,165	1,177	277	1,370	435	12.2
Health Care	1,763	420	440	Q	477	Q	20.7
Lodging	2,891	Q	Q	Q	Q	Q	17.2
Mercantile and Service	12,402	10,411	9,412	1,831	11,888	1,684	11.2
Office	12,319	10,221	10,153	2,179	11,612	2,052	7.6
Parking Garage	1,652	224	180	Q	360	Q	40.7
Public Assembly	4,556	2,856	2,562	738	3,299	229	15.7
Public Order and Safety	820	158	Q	Q	188	Q	31.8
Religious Worship	3,747	3,467	2,967	553	3,628	183	16.0
Warehouse and Storage	11,484	6,828	6,283	1,012	9,796	1,334	13.2
Other	1,130	512	603	Q	829	Q	22.7
Vacant	4,396	1,853	1,555	457	2,453	681	20.2
Year Constructed							
1899 or Before	1,721	1,231	1,047	193	1,615	182	16.7
1900 to 1919	3,608	2,571	2,183	433	3,158	644	20.4
1920 to 1945	8,712	5,927	5,264	1,345	7,275	1,138	14.5
1946 to 1959	10,421	7,385	6,666	1,447	8,738	1,199	9.4
1960 to 1969	12,612	8,816	8,373	2,070	10,456	1,142	10.6
1970 to 1979	14,014	9,221	8,756	1,947	10,971	1,711	7.3
1980 to 1989	14,287	9,235	8,776	2,153	10,724	1,589	10.3
1990 to 1992	2,502	1,862	1,703	380	2,007	390	15.9
Census Region							
Northeast	13,400	9,784	8,647	3,239	11,022	2,092	11.7
Midwest	17,280	11,672	10,289	1,513	13,927	1,101	8.7
South	24,577	15,849	15,770	3,068	19,511	2,784	7.3
West	12,619	8,943	8,062	2,146	10,483	2,019	8.8
Energy Sources (more than one may apply)							
Electricity	66,549	46,241	42,768	9,966	54,790	7,996	4.8
Natural Gas	45,097	33,985	31,820	7,212	38,038	5,361	6.0
Fuel Oil	13,218	8,778	8,045	3,172	9,855	1,546	8.9
District Heat	5,339	2,877	2,703	597	3,208	474	15.2
District Chilled Water	2,066	1,058	1,061	326	1,149	Q	21.8
Propane	3,393	2,420	2,039	630	2,719	564	15.8
Any Other	1,551	1,182	824	Q	1,285	Q	28.9

See footnotes at end of table.

Table A63. Reduction in Equipment Use During Off Hours, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	1.3	0.8	1.9	
Energy End Uses (more than one may apply)							
Heated Buildings	61,996	46,248	42,090	9,854	51,638	7,839	4.9
Air-Conditioned Buildings	57,041	41,926	42,768	8,831	47,342	7,291	5.2
Buildings with Water Heating	58,479	42,817	40,185	9,966	48,476	7,424	5.0
Buildings with Cooking	23,065	15,994	15,633	4,555	17,764	2,854	8.1
Buildings with Manufacturing	3,174	2,453	2,277	438	2,703	712	15.9
Floors							
One	25,424	17,330	15,529	2,961	21,177	3,303	7.1
Two	18,025	14,059	12,948	2,892	15,994	2,071	7.4
Three	9,877	6,751	6,435	1,503	8,169	1,008	9.8
Four to Nine	10,377	5,181	4,887	1,513	6,520	957	12.2
Ten or More	4,173	2,927	2,968	1,098	3,085	657	18.8
Workers (main shift)							
Less than 5	17,944	9,628	7,658	1,602	12,716	1,151	8.7
5 to 9	7,524	5,842	5,193	904	6,833	1,055	8.4
10 to 19	8,077	5,649	5,169	1,216	7,168	1,067	9.2
20 to 49	10,556	8,030	7,747	1,724	9,110	1,235	8.4
50 to 99	7,763	6,026	5,799	1,366	6,733	1,234	12.5
100 to 249	7,378	5,194	5,108	1,363	5,861	1,054	13.8
250 or More	8,633	5,878	6,095	1,791	6,523	1,199	14.0
Weekly Operating Hours							
39 or Fewer	8,246	5,241	4,078	1,500	6,324	695	11.9
40 to 48	14,998	11,764	10,698	2,409	14,685	1,877	7.0
49 to 60	14,046	12,021	11,114	2,356	13,832	2,284	7.0
61 to 84	12,062	10,403	10,219	2,277	11,916	2,062	10.4
85 to 167	8,467	6,819	6,660	1,425	8,187	1,078	11.6
Open Continuously	10,057	NC	NC	NC	NC	NC	17.5
Ownership and Occupancy							
Nongovernment Owned	52,752	35,676	33,041	7,052	43,036	6,228	5.3
Owner Occupied	38,403	26,466	24,214	5,029	31,884	4,231	4.9
Nonowner Occupied	12,273	8,684	8,430	1,765	10,338	1,939	10.5
Unoccupied	2,077	526	398	258	814	Q	21.7
Government Owned	15,124	10,572	9,727	2,914	11,908	1,767	8.9
Primary Space-Heating Energy Source							
Electricity	15,502	10,439	9,788	2,604	11,948	1,913	8.9
Natural Gas	35,161	27,746	25,608	5,139	30,879	4,426	6.8
Fuel Oil	4,415	3,707	2,935	1,300	4,004	680	15.6
District Heat	5,014	2,659	2,489	564	2,971	458	15.9
Propane	1,101	955	734	170	1,049	276	23.1
Wood	257	218	Q	Q	242	Q	23.9
Any Other	546	525	Q	Q	546	Q	58.8
Cooling Energy Sources (more than one may apply)							
Electricity	54,628	40,349	41,173	8,479	45,643	7,000	5.3
Natural Gas	1,906	1,329	1,320	186	1,534	501	20.0
District Chilled Water	2,066	1,058	1,061	326	1,149	Q	21.8

See footnotes at end of table.

Table A63. Reduction in Equipment Use During Off Hours, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	1.3	0.8	1.9	
Water-Heating Energy Sources (more than one may apply)							
Electricity	25,482	18,864	18,052	4,279	22,061	3,497	7.6
Natural Gas	29,962	21,990	20,532	4,908	24,389	3,609	6.9
Fuel Oil	2,470	2,008	1,623	964	2,107	367	20.8
District Heat	3,308	1,739	1,651	387	1,980	Q	19.9
Propane	659	557	454	270	581	Q	31.2
Cooking Energy Sources (more than one may apply)							
Electricity	12,183	8,627	8,325	2,430	9,461	1,811	12.1
Natural Gas	15,233	10,693	10,612	2,985	11,858	1,631	10.1
Propane	1,039	729	710	288	820	Q	29.0
Percent of Floorspace Heated							
Not Heated	6,211	Q	771	115	3,551	156	22.7
1 to 50	11,195	8,552	7,616	1,340	9,474	1,725	13.5
51 to 99	10,211	8,053	7,616	1,926	8,837	1,765	9.0
100	40,260	29,493	26,765	6,585	33,082	4,350	5.2
Percent of Floorspace Cooled							
Not Cooled	10,835	4,322	NC	1,135	7,602	704	10.5
1 to 50	21,715	16,548	16,782	3,304	18,829	3,095	8.0
51 to 99	13,872	10,204	10,766	2,410	11,369	1,993	9.5
100	21,454	15,174	15,221	3,117	17,144	2,204	7.0
Percent Lit when Open							
Not Lit	3,280	549	376	261	931	Q	20.9
1 to 50	9,980	7,112	6,132	941	9,075	1,117	10.5
51 to 99	14,224	10,292	9,896	2,617	11,767	1,611	8.2
100	40,393	28,295	26,364	6,147	33,171	5,205	6.0
Percent Lit when Closed							
Not Lit	34,486	17,880	15,259	3,706	22,449	2,900	6.7
1 to 50	31,482	27,215	26,285	5,934	31,126	4,871	5.8
51 to 99	1,021	748	827	Q	903	Q	22.6
100	887	405	398	Q	466	Q	25.7
Heating Equipment (more than one may apply)							
Heat Pumps	8,269	5,587	5,605	1,275	6,607	754	10.5
Furnaces	16,909	14,148	12,673	1,850	15,547	2,412	8.2
Individual Space Heaters	22,380	16,889	15,017	2,635	18,578	3,427	7.6
District Heat	5,225	2,830	2,663	586	3,146	474	15.2
Boilers	20,664	14,367	13,369	4,512	16,319	2,301	7.5
Packaged Heating Units	16,000	12,862	12,835	2,623	14,078	2,221	9.6
Other	903	564	542	Q	647	Q	29.2
Cooling Equipment (more than one may apply)							
Residential-Type Central Air Conditioners	9,021	7,011	7,147	1,126	7,900	1,102	9.3
Heat Pumps	8,406	5,753	5,822	1,330	6,732	773	10.3
Individual Air Conditioners	17,979	11,708	12,112	2,306	13,493	2,177	10.4
District Chilled Water	2,066	1,058	1,061	326	1,149	Q	21.8
Central Chillers	12,991	7,870	8,233	2,525	8,883	1,575	10.1
Packaged Air-Conditioning Units	27,830	20,867	21,335	4,190	23,440	3,983	6.6
Swamp Coolers	2,085	1,614	1,639	253	1,758	Q	24.9
Other	268	Q	Q	Q	237	Q	52.3

See footnotes at end of table.

Table A63. Reduction in Equipment Use During Off Hours, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	Off-Hour Equipment Reduction (more than one may apply)					RSE Row Factor
		Heating	Cooling	Hot Water	Lighting	Other	
RSE Column Factor:	0.8	0.8	0.8	1.3	0.8	1.9	
Lighting Equipment Types (more than one may apply)							
Incandescent	39,221	27,823	25,769	6,665	32,756	4,989	6.0
Standard Fluorescent	62,074	44,726	41,757	9,483	51,840	7,831	4.9
Compact Fluorescent	8,336	5,812	5,617	1,659	6,317	1,170	11.5
High-Intensity Discharge	17,570	12,443	11,986	3,081	14,013	2,170	9.5
Other	1,612	1,208	1,150	158	1,325	228	20.4
Water-Heating Equipment (more than one may apply)							
Centralized System	31,599	21,660	20,206	5,736	25,008	4,100	6.7
Self-Heating Tank	24,464	16,996	15,694	4,453	19,951	3,368	7.7
Heated by Space-Heating Equipment	3,722	2,410	2,303	604	2,577	484	19.3
Other	4,032	2,435	2,379	754	2,723	264	16.6
Distributed System	29,502	22,288	21,047	4,556	24,757	3,618	7.8
Residential-Type Storage Tank	25,809	20,255	19,122	4,167	22,633	3,312	7.9
Point-of-Use Heaters	3,367	1,932	1,849	332	2,009	Q	29.1
Other	1,259	723	688	151	767	Q	24.4
Energy Conservation Features (more than one may apply)							
Any Conservation Features	64,403	45,323	42,049	9,901	52,836	7,887	4.9
Building Shell	62,056	44,055	40,921	9,745	51,227	7,741	4.9
HVAC	50,281	36,041	34,136	8,391	40,914	5,783	5.0
Lighting	29,453	20,997	20,334	4,955	23,627	3,616	6.6
Other	5,952	4,236	3,851	982	4,467	783	10.0
Off-Hour Equipment Reduction (more than one may apply)							
Heating	46,248	46,248	40,965	9,705	45,945	7,182	4.9
Cooling	42,768	40,965	42,768	8,608	42,420	6,617	5.2
Hot Water	9,966	9,705	8,608	9,966	9,929	2,040	7.1
Lighting	54,944	45,945	42,420	9,929	54,944	7,957	4.6
Other	7,996	7,182	6,617	2,040	7,957	7,996	12.2

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A64. Participation in Lighting Demand-Side Management (DSM) Program, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with Lighting DSM Programs	Type of Lighting Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.3	0.8	0.9	1.3	1.3	1.3	1.8	
All Buildings	4,806	315	228	73	98	105	30	10.3
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	103	75	18	32	36	Q	17.9
5,001 to 10,000	975	66	47	17	26	24	Q	18.7
10,001 to 25,000	647	68	46	14	20	18	Q	16.7
25,001 to 50,000	280	30	25	10	10	11	Q	18.2
50,001 to 100,000	116	23	16	7	5	8	Q	16.8
100,001 to 200,000	71	14	9	3	2	4	3	20.1
200,001 to 500,000	26	9	8	3	2	3	2	21.3
Over 500,000	9	2	2	1	1	1	Q	22.3
Principal Building Activity								
Education	301	54	37	16	14	24	5	19.4
Food Sales	130	Q	Q	NC	Q	Q	NC	38.7
Food Service	260	24	18	Q	Q	Q	Q	25.4
Health Care	63	11	10	Q	Q	6	Q	34.8
Lodging	154	21	18	Q	Q	Q	Q	30.2
Mercantile and Service	1,272	50	40	14	18	15	Q	22.7
Office	749	62	47	21	26	17	6	16.9
Parking Garage	24	Q	Q	Q	Q	Q	Q	67.6
Public Assembly	278	24	14	Q	Q	Q	Q	22.2
Public Order and Safety	60	Q	Q	Q	Q	Q	NC	53.4
Religious Worship	366	15	Q	Q	Q	Q	Q	31.1
Warehouse and Storage	761	24	17	Q	Q	9	Q	29.7
Other	69	Q	Q	Q	Q	Q	Q	46.6
Vacant	319	7	Q	Q	Q	Q	Q	36.3
Year Constructed								
1899 or Before	169	12	9	Q	Q	Q	Q	39.6
1900 to 1919	255	18	14	Q	Q	Q	Q	34.5
1920 to 1945	724	45	36	11	18	17	Q	24.4
1946 to 1959	880	55	42	16	11	16	Q	18.5
1960 to 1969	783	53	39	8	14	25	4	19.9
1970 to 1979	982	74	53	15	24	24	8	17.7
1980 to 1989	884	51	31	10	18	12	5	20.5
1990 to 1992	128	7	4	2	1	Q	Q	35.2
Census Region								
Northeast	771	99	85	30	41	45	9	18.2
Midwest	1,202	68	49	14	10	32	4	21.8
South	1,963	72	44	10	22	7	10	20.8
West	870	75	50	19	25	21	8	20.9
Energy Sources (more than one may apply)								
Electricity	4,616	315	228	73	98	105	30	10.2
Natural Gas	2,665	195	144	55	55	69	19	12.3
Fuel Oil	559	65	50	16	25	20	6	18.1
District Heat	95	30	21	4	9	14	3	25.0
District Chilled Water	28	11	6	Q	4	Q	Q	40.4
Propane	337	18	14	Q	Q	Q	Q	35.5
Any Other	163	Q	Q	Q	Q	Q	Q	33.1

See footnotes at end of table.

Table A64. Participation in Lighting Demand-Side Management (DSM) Program, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with Lighting DSM Programs	Type of Lighting Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.3	0.8	0.9	1.3	1.3	1.3	1.8	
Ownership and Occupancy								
Nongovernment Owned	4,206	229	165	50	75	79	19	11.9
Owner Occupied	3,192	199	146	42	68	73	17	12.5
Nonowner Occupied	817	27	19	8	7	7	Q	25.0
Unoccupied	197	Q	Q	Q	Q	Q	NC	30.4
Government Owned	599	86	62	22	23	25	11	17.9

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A65. Participation in Lighting Demand-Side Management (DSM) Program, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with Lighting DSM Programs	Type of Lighting Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.4	0.8	0.9	1.3	1.1	1.1	2.1	
All Buildings	67,876	11,310	8,805	3,168	2,691	3,785	1,946	9.4
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	321	225	60	94	113	Q	18.9
5,001 to 10,000	7,199	485	345	130	188	175	Q	18.9
10,001 to 25,000	10,375	1,075	704	225	302	298	Q	17.0
25,001 to 50,000	10,069	1,105	951	373	385	427	Q	18.3
50,001 to 100,000	8,062	1,581	1,128	501	357	549	Q	17.4
100,001 to 200,000	9,678	1,960	1,235	468	322	584	390	20.6
200,001 to 500,000	7,889	2,548	2,247	854	544	1,018	445	21.8
Over 500,000	7,278	2,235	1,970	557	499	620	Q	21.6
Principal Building Activity								
Education	8,470	2,560	1,933	791	608	1,083	293	20.0
Food Sales	757	Q	Q	NC	Q	Q	NC	39.1
Food Service	1,491	159	112	Q	Q	Q	Q	30.8
Health Care	1,763	911	715	Q	Q	343	Q	25.2
Lodging	2,891	707	515	Q	Q	Q	Q	34.7
Mercantile and Service	12,402	1,728	1,482	368	292	311	Q	26.3
Office	12,319	2,707	2,062	924	888	901	347	13.1
Parking Garage	1,652	Q	Q	Q	Q	Q	Q	67.4
Public Assembly	4,556	700	432	Q	Q	Q	Q	34.2
Public Order and Safety	820	Q	Q	Q	Q	Q	NC	58.9
Religious Worship	3,747	402	Q	Q	Q	Q	Q	39.6
Warehouse and Storage	11,484	648	537	Q	Q	256	Q	24.8
Other	1,130	221	194	Q	Q	Q	Q	43.6
Vacant	4,396	126	Q	Q	Q	Q	Q	37.7
Year Constructed								
1899 or Before	1,721	161	144	Q	Q	Q	Q	34.6
1900 to 1919	3,608	476	374	Q	Q	Q	Q	35.7
1920 to 1945	8,712	1,244	871	364	270	431	Q	22.6
1946 to 1959	10,421	1,331	1,105	420	233	489	Q	22.0
1960 to 1969	12,612	2,793	2,236	528	655	869	991	20.4
1970 to 1979	14,014	2,741	2,314	943	655	984	424	16.3
1980 to 1989	14,287	2,060	1,359	514	497	589	161	17.3
1990 to 1992	2,502	504	402	255	142	131	Q	26.0
Census Region								
Northeast	13,400	3,436	3,014	1,018	1,001	1,597	Q	16.3
Midwest	17,280	3,279	2,620	1,068	537	1,039	448	19.0
South	24,577	2,600	1,740	562	559	433	478	17.8
West	12,619	1,994	1,431	520	594	715	310	14.8
Energy Sources (more than one may apply)								
Electricity	66,549	11,310	8,805	3,168	2,691	3,785	1,946	9.4
Natural Gas	45,097	8,665	6,855	2,494	2,046	2,831	1,602	11.3
Fuel Oil	13,218	4,148	3,410	1,173	1,148	1,653	669	12.9
District Heat	5,339	1,676	1,305	497	349	747	391	20.0
District Chilled Water	2,066	644	479	Q	139	124	Q	31.2
Propane	3,393	529	427	Q	Q	Q	Q	33.4
Any Other	1,551	Q	Q	Q	Q	Q	Q	46.6

See footnotes at end of table.

Table A65. Participation in Lighting Demand-Side Management (DSM) Program, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with Lighting DSM Programs	Type of Lighting Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.4	0.8	0.9	1.3	1.1	1.1	2.1	
Ownership and Occupancy								
Nongovernment Owned	52,752	7,030	5,492	1,994	1,829	2,418	946	9.3
Owner Occupied	38,403	5,883	4,691	1,755	1,617	2,077	849	9.6
Nonowner Occupied	12,273	1,105	772	239	183	341	Q	23.9
Unoccupied	2,077	Q	Q	Q	Q	Q	NC	30.2
Government Owned	15,124	4,279	3,313	1,174	862	1,366	1,000	17.6

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A66. Participation in Heating, Ventilation and Air Conditioning (HVAC) Demand-Side Management (DSM) Program, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with HVAC DSM Programs	Type of HVAC Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.3	0.8	0.9	1.4	1.3	1.6	1.5	
All Buildings	4,806	315	154	56	60	48	43	10.5
Building Floorspace (Square Feet)								
1,001 to 5,000	2,681	103	46	20	18	20	Q	19.0
5,001 to 10,000	975	66	30	Q	Q	Q	Q	17.8
10,001 to 25,000	647	68	36	11	16	Q	11	17.8
25,001 to 50,000	280	30	14	Q	6	Q	Q	19.6
50,001 to 100,000	116	23	12	4	4	2	4	19.5
100,001 to 200,000	71	14	9	4	3	3	4	19.6
200,001 to 500,000	26	9	5	2	2	1	2	25.3
Over 500,000	9	2	2	*	1	1	*	27.1
Principal Building Activity								
Education	301	54	32	10	8	17	7	22.0
Food Sales	130	Q	Q	Q	Q	Q	Q	41.3
Food Service	260	24	Q	Q	Q	Q	Q	26.4
Health Care	63	11	4	Q	Q	Q	2	32.0
Lodging	154	21	8	Q	Q	Q	Q	34.1
Mercantile and Service	1,272	50	21	Q	12	Q	Q	22.9
Office	749	62	27	13	12	5	8	19.6
Parking Garage	24	Q	Q	Q	Q	Q	Q	72.1
Public Assembly	278	24	15	Q	Q	Q	Q	24.1
Public Order and Safety	60	Q	Q	Q	Q	Q	NC	57.0
Religious Worship	366	15	Q	Q	Q	Q	Q	33.2
Warehouse and Storage	761	24	13	Q	Q	Q	Q	29.1
Other	69	Q	Q	Q	Q	Q	Q	49.7
Vacant	319	7	Q	Q	Q	Q	Q	38.7
Year Constructed								
1899 or Before	169	12	Q	Q	Q	Q	Q	40.0
1900 to 1919	255	18	7	Q	Q	Q	Q	37.3
1920 to 1945	724	45	14	8	Q	Q	Q	26.9
1946 to 1959	880	55	24	6	Q	10	4	22.2
1960 to 1969	783	53	29	8	10	10	8	22.7
1970 to 1979	982	74	43	19	14	6	12	20.1
1980 to 1989	884	51	27	8	15	12	8	21.3
1990 to 1992	128	7	Q	1	Q	Q	Q	40.4
Census Region								
Northeast	771	99	30	11	13	7	11	21.2
Midwest	1,202	68	33	13	10	9	10	19.1
South	1,963	72	49	18	19	13	9	21.5
West	870	75	41	14	19	19	13	20.5
Energy Sources (more than one may apply)								
Electricity	4,616	315	154	56	60	48	43	10.4
Natural Gas	2,665	195	92	38	33	31	27	11.6
Fuel Oil	559	65	32	7	13	4	11	21.4
District Heat	95	30	16	4	8	6	5	28.9
District Chilled Water	28	11	6	Q	Q	Q	Q	46.2
Propane	337	18	8	Q	Q	Q	Q	40.1
Any Other	163	Q	Q	Q	Q	Q	Q	35.4

See footnotes at end of table.

Table A66. Participation in Heating, Ventilation and Air Conditioning (HVAC) Demand-Side Management (DSM) Program, Number of Buildings, 1992 (Continued)

(Thousand)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with HVAC DSM Programs	Type of HVAC Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.3	0.8	0.9	1.4	1.3	1.6	1.5	
Ownership and Occupancy								
Nongovernment Owned	4,206	229	104	41	44	27	30	11.7
Owner Occupied	3,192	199	89	34	37	22	26	12.3
Nonowner Occupied	817	27	13	7	5	5	Q	25.5
Unoccupied	197	Q	Q	NC	Q	Q	NC	32.4
Government Owned	599	86	49	15	16	21	13	20.0

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A67. Participation in Heating, Ventilation and Air Conditioning (HVAC) Demand-Side Management (DSM) Program, Floorspace, 1992

(Million Square Feet)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with HVAC DSM Programs	Type of HVAC Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.4	0.8	0.9	1.4	1.1	1.6	1.5	
All Buildings	67,876	11,310	6,370	2,389	2,395	1,775	2,086	9.9
Building Floorspace (Square Feet)								
1,001 to 5,000	7,327	321	152	69	60	70	Q	19.7
5,001 to 10,000	7,199	485	222	Q	Q	Q	Q	16.6
10,001 to 25,000	10,375	1,075	595	186	247	Q	177	17.7
25,001 to 50,000	10,069	1,105	541	Q	229	Q	Q	19.9
50,001 to 100,000	8,062	1,581	843	289	321	154	320	19.5
100,001 to 200,000	9,678	1,960	1,236	553	449	361	529	20.3
200,001 to 500,000	7,889	2,548	1,490	636	502	312	537	25.5
Over 500,000	7,278	2,235	1,291	430	509	498	274	23.6
Principal Building Activity								
Education	8,470	2,560	1,434	595	547	358	522	22.6
Food Sales	757	Q	Q	Q	Q	Q	Q	41.4
Food Service	1,491	159	Q	Q	Q	Q	Q	30.9
Health Care	1,763	911	663	Q	Q	Q	410	27.4
Lodging	2,891	707	510	Q	Q	Q	Q	37.0
Mercantile and Service	12,402	1,728	690	Q	287	Q	Q	25.3
Office	12,319	2,707	1,696	730	697	370	417	14.1
Parking Garage	1,652	Q	Q	Q	Q	Q	Q	71.3
Public Assembly	4,556	700	461	Q	Q	Q	Q	35.1
Public Order and Safety	820	Q	Q	Q	Q	Q	NC	62.3
Religious Worship	3,747	402	Q	Q	Q	Q	Q	41.9
Warehouse and Storage	11,484	648	320	Q	Q	Q	Q	28.5
Other	1,130	221	Q	Q	Q	Q	Q	44.3
Vacant	4,396	126	Q	Q	Q	Q	Q	39.9
Year Constructed								
1899 or Before	1,721	161	Q	Q	Q	Q	Q	35.6
1900 to 1919	3,608	476	189	Q	Q	Q	Q	38.4
1920 to 1945	8,712	1,244	741	350	Q	Q	Q	29.4
1946 to 1959	10,421	1,331	629	182	Q	159	180	21.1
1960 to 1969	12,612	2,793	1,497	369	642	308	638	19.3
1970 to 1979	14,014	2,741	1,637	796	417	480	494	20.1
1980 to 1989	14,287	2,060	1,289	436	554	388	368	19.1
1990 to 1992	2,502	504	330	196	207	141	142	26.7
Census Region								
Northeast	13,400	3,436	1,386	601	672	546	357	19.5
Midwest	17,280	3,279	1,988	742	675	393	649	20.5
South	24,577	2,600	1,777	566	555	299	619	17.6
West	12,619	1,994	1,220	479	495	537	461	16.3
Energy Sources (more than one may apply)								
Electricity	66,549	11,310	6,370	2,389	2,395	1,775	2,086	10.0
Natural Gas	45,097	8,665	4,910	1,806	1,670	1,343	1,679	11.3
Fuel Oil	13,218	4,148	2,818	797	1,076	872	1,084	14.4
District Heat	5,339	1,676	966	410	437	341	317	22.7
District Chilled Water	2,066	644	418	Q	225	131	178	25.7
Propane	3,393	529	365	Q	Q	Q	Q	35.4
Any Other	1,551	Q	Q	Q	Q	Q	Q	49.3

See footnotes at end of table.

Table A67. Participation in Heating, Ventilation and Air Conditioning (HVAC) Demand-Side Management (DSM) Program, Floorspace, 1992 (Continued)

(Million Square Feet)

Building Characteristics	All Buildings	All Buildings with Any DSM Programs	All Buildings with HVAC DSM Programs	Type of HVAC Assistance (more than one may apply)				RSE Row Factor
				General Information	Site-Specific Information	Incentives	Other	
RSE Column Factor:	0.4	0.8	0.9	1.4	1.1	1.6	1.5	
Ownership and Occupancy								
Nongovernment Owned	52,752	7,030	4,120	1,473	1,477	1,196	1,177	9.6
Owner Occupied	38,403	5,883	3,407	1,232	1,271	948	1,008	10.4
Nonowner Occupied	12,273	1,105	701	241	193	248	Q	24.3
Unoccupied	2,077	Q	Q	NC	Q	Q	NC	31.9
Government Owned	15,124	4,279	2,250	915	919	578	909	19.4

NC = No cases in sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, "Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A68. Principal Building Activity, Number of Buildings and Floorspace, 1992

Building Characteristics	All Buildings (thousand)	Total Floorspace (million square feet)	RSE Row Factor
RSE Column Factor:	0.9	1.1	
All Buildings	4,806	67,876	3.7
Principal Building Activity			
Education	301	8,470	7.5
Food Sales	130	757	14.4
Food Service	260	1,491	8.7
Health Care			
Inpatient	19	1,287	18.6
Outpatient	44	476	17.8
Laboratory	19	510	23.7
Lodging	131	2,175	12.8
Mercantile and Service	1,272	12,402	6.3
Office	749	12,319	5.8
Parking Garage	24	1,652	25.0
Public Assembly	278	4,556	12.8
Public Order and Safety	60	820	20.8
Religious Worship	366	3,747	11.0
Skilled Nursing	23	715	22.2
Warehouse and Storage			
Nonrefrigerated	733	11,056	8.1
Refrigerated	28	428	26.2
Other	50	620	18.2
Vacant	319	4,396	10.4

Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A69. Energy Sources Used for Particular End Uses, Number of Buildings, 1992
(Thousand)

Building Characteristics	All Buildings Using Energy	Energy End Use in Building							RSE Row Factor
		Primary Space Heating	Secondary Space Heating	Water Heating	Cooling	Cooking	Manu-facturing	Electricity Generation	
RSE Column Factor:	0.9	1.7	1.5	1.1	0.3	0.7	1.9	1.1	
All Buildings	4,620	4,178	682	3,502	3,502	734	121	153	5.4
Energy Sources Used for End Use (more than one may apply)									
Electricity	4,616	1,107	406	1,696	3,404	356	95	Q	5.8
Natural Gas	2,665	2,276	130	1,647	106	431	22	44	8.8
Fuel Oil	559	394	84	126	Q	Q	Q	73	13.6
District Heat	95	91	4	38	*	6	Q	Q	20.6
District Chilled Water	28	--	--	--	28	--	--	--	5.5
Propane	337	217	38	80	Q	70	9	9	21.5
Wood	103	68	33	Q	--	Q	NC	NC	12.8
Any Other	67	Q	Q	Q	Q	NC	Q	25	24.6

-- = Data not applicable
NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
* = Value rounds to zero in the units displayed.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Table A70. Energy Sources Used for Particular End Uses, Floorspace, 1992
(Million Square Feet)

Building Characteristics	All Buildings Using Energy	Energy End Use in Building							RSE Row Factor
		Primary Space Heating	Secondary Space Heating	Water Heating	Cooling	Cooking	Manu-facturing	Electricity Generation	
RSE Column Factor:	0.8	1.3	1.7	1.1	0.3	1.0	1.5	0.9	
Total Floorspace	66,574	61,996	16,517	58,479	57,041	23,065	3,174	10,373	5.7
Energy Sources Used for End Use (more than one may apply)									
Electricity	66,549	15,502	10,134	25,482	54,628	12,183	2,579	Q	7.6
Natural Gas	45,097	35,161	3,363	29,962	1,906	15,233	799	2,691	8.8
Fuel Oil	13,218	4,415	2,919	2,470	Q	Q	Q	6,984	10.9
District Heat	5,339	5,014	449	3,308	210	809	Q	Q	19.0
District Chilled Water	2,066	--	--	--	2,066	--	--	--	5.4
Propane	3,393	1,101	466	659	Q	1,039	201	312	22.1
Wood	518	257	248	Q	--	Q	NC	NC	11.9
Any Other	1,067	546	Q	Q	Q	NC	Q	358	33.4

-- = Data not applicable
NC = No cases in sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
Notes: • To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report.
Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A,"Building Questionnaire," 1992 Commercial Buildings Energy Consumption Survey.

Appendix B

How the Survey Was Conducted

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Appendix B

How the Survey Was Conducted

Introduction

The Commercial Buildings Energy Consumption Survey (CBECS) is conducted by the Energy Information Administration (EIA) on a triennial basis to provide basic statistical information on energy consumption and expenditures for U.S. commercial buildings and also to provide data on energy-related characteristics of these buildings. To obtain this information, a survey is conducted based upon a sample of commercial buildings selected according to the sample design requirements described in the "Sample Design" section of this appendix. A "building" is the basic unit for the CBECS as opposed to an "establishment" because a building is the energy consuming unit.

This is the fifth in a series of surveys for the commercial sector. Previous surveys were conducted in 1979, 1983, 1986, and 1989. The first three surveys were called the Nonresidential Buildings Energy Consumption Survey (NBECS). In 1989, the survey's name was changed to Commercial Buildings Energy Consumption Survey (CBECS); however, the survey's design remained essentially the same. For consistency, all the surveys will be referred to as CBECS in this report. A special feature of the 1992 CBECS is that it was designed as a longitudinal survey to revisit the same buildings as interviewed in the 1986 CBECS.

The CBECS is conducted in two major data collection stages: a Building Characteristics Survey and an Energy Suppliers Survey. The first stage, the Building Characteristics Survey, collects information about selected commercial buildings through voluntary personal interviews with the buildings' owners, managers, or tenants. These data are collected on Forms EIA-871A, Building Questionnaire (consisting of the Building Questionnaire together with the Authorization Form) and EIA-871G, Construction Improvements and Maintenance and Repairs Supplement, for the Bureau of the Census (Census). The Census Form was incorporated as Section R of Form EIA-871A. The Authorization Form is used to secure the release of the buildings' energy consumption and expenditures records from the energy supplier. These data are collected during the Energy Suppliers Survey, which is the second stage.

The Energy Suppliers Survey obtains data concerning the building's actual consumption of energy and expenditures for energy from records maintained by energy suppliers. This information is obtained by means of a mail survey conducted under EIA's mandatory data collection authority using Forms EIA-871C through F. Additionally, the 1992 CBECS asked energy suppliers about any Demand-Side Management (DSM) programs they may have provided to the building. Under EIA's direction, a survey research firm conducted both the personal interviews for the Building Characteristics Survey and the mail survey for the Energy Suppliers Survey.

The data presented in this report are from the Building Characteristics Survey only. A companion volume to this report, to be published at a later date, will cover data on energy consumption and expenditures for these buildings.

This appendix has two main sections: Sample Design and Building Characteristics Survey. These sections focus on components of the sample and on the procedures for collecting and processing the first-stage survey data. Additional sections include Public-Use Data Preparation, Confidentiality, Longitudinal Issues, and Special Data Collection for the Census. The data collected for the Bureau of the Census are published by the Census Bureau and are not included in this report. The Building Questionnaire, the Authorization Form, and Census Supplement are shown in Appendix G.

Target Population

The target population for the 1992 CBECS consisted of all commercial buildings in the United States larger than 1,000 square feet. Thus, to be eligible for the survey, a building had to satisfy three criteria: (1) it had to meet the survey's definition of a building, (2) it had to be used primarily for some commercial purpose, and (3) it had to measure 1,001 square feet or more. A commercial building is defined by CBECS as a structure totally enclosed by walls that extend from the foundation to the roof and is intended for human access. To be primarily used for some commercial purpose, the building must have more than 50 percent of its floorspace devoted to activities that are neither residential, industrial, nor agricultural. Further information on these criteria are provided later in the "Building Characteristics Survey" section under "Determining Building Eligibility for CBECS." The 1992 CBECS estimated that there were 4,806 thousand buildings in the target population.

What's New in 1992 CBECS

For the 1992 CBECS, new questions were added and some of the previous questions were expanded on the Building Questionnaire. The new questions collected information on issues such as energy-related functions and DSM programs. The expanded questions collected more detailed information on issues ranging from building use to lighting. Also, wording and structural changes were incorporated into the 1992 questionnaire in order to: (1) improve data quality by ensuring comparability with the 1986 Building Questionnaire; (2) resolve ambiguities, which ultimately help the interviewers and the respondents to better understand the questions; and (3) meet the user needs which were reported in an extensive CBECS User-Needs Study conducted in 1991. (See Appendix G for the Building Questionnaire.)

HIGHLIGHTS OF CHANGES IN THE 1992 CBECS

- Sample size increase of 400 buildings including 150 new, large office buildings
- Longitudinal revisit of 1986 CBECS provides data on the same building at two different points of time
- Expanded questions about the building to assist the interviewer in selecting the correct structure to interview
- Extensive CBECS user-needs study to maintain client-oriented survey results in extending and adding new questions to provide more detail on energy-related building characteristics:
  - Equipment - lighting, personal computers, refrigeration, hot water heating
  - Physical Characteristics - below-ground level floors, building shape, ground-level length and width of square and rectangular buildings, attachment to other structures, renovations and demolitions
  - Conservation and Energy Management - Demand-Side Management (DSM) participation, additional operating hours for equipment, responsibility for operation and maintenance of equipment, economizer cycles, special space functions
  - Energy Source and Related Information - gas transported for the account of others, photovoltaic cells (PVC's), solar thermal panels, wood, special energy technologies.

Comparability with the 1986 Building Questionnaire

Since the 1992 CBECS was a longitudinal revisit of the same buildings as in the 1986 CBECS, revisions were made to ensure that for certain questions, the CBECS Building Questionnaire for 1992 was comparable to the one for 1986. Additionally, a section of questions was added to confirm that the interview was being conducted for the same building as defined for the 1986 CBECS interview. These questions required the interviewer to compare the statistics provided in 1986 and 1992 for square footage, number of floors, and year constructed. The respondents were required to explain any differences in the numbers. This additional information assisted the interviewer when determining if the 1992 building was the same building for which the interview was conducted in 1986.

Resolving Ambiguities

Some questionnaire revisions were conducted to resolve ambiguities noted in the 1989 CBECS. One such ambiguity involved identifying the correct structure to interview. The resulting revision was the development of a section (interviewer observation of the building) for the interviewer to complete before the interview began. This section assisted the interviewer in selecting the correct structure and parts of the structure to interview. Other revisions that occurred to resolve ambiguities are discussed below.

1992 CBECS User-Needs Study

Assessment of previous CBECS data through an extensive CBECS user-needs study[18] conducted in 1991, resulted in a list of specific user needs and led to revisions in the 1992 CBECS Building Questionnaire content. EIA conducted this assessment in response to heightened awareness of energy-related issues sparked by the Department of Energy's development of the National Energy Strategy (NES) and the associated pending Congressional legislation (Energy Policy Act of 1992, enacted in 1993). Since CBECS is the sole nationwide data set addressing energy-related issues in commercial buildings, changes to the CBECS Building Questionnaire were essential to begin addressing questions raised by the energy legislation. Major changes to the 1992 CBECS Building Questionnaire are listed below.

Equipment

- Lighting - Questions related to types of lighting were expanded to distinguish among incandescent, fluorescent, compact fluorescent, HID, and other types of lighting. A 1986 question about lighting conservation features was expanded to record whether specular reflectors, daylighting controls, occupancy sensors, time clocks or timed switches, dimmer switches, or other lighting conservation equipment existed in the building.

- Office - 1992 was the first time CBECS requested the number of personal computers/computer terminals. Office equipment is believed to be the fastest growing segment of energy consumption in buildings. Personal computers/computer terminals are an indication of other office equipment such as facsimile machines and copying machines.

[18] For a detailed discussion of the 1992 CBECS user-needs study, see *User-Needs Study for the 1992 Commercial Buildings Energy Consumption Survey*,DOE/EIA-0555(92)/4, Energy Information Administration (Washington, D.C:Government Printing Office, September 1992).

- Heating, Ventilation, and Cooling System (HVAC) - The equipment questions were expanded to obtain a more precise identification of the types of HVAC equipment in buildings, such as: an open-ended question about the overall system used to heat and/or cool the building; questions asking the percent of floorspace that was heated by each type of equipment and linking the distribution system to the specific heating equipment (also asking the same for cooling); and, residential-type central air conditioners were added to the types of specific equipment that may be a part of the cooling system.

- Other - Refrigeration questions were expanded to obtain more details about the types of refrigeration units. For the first time, the number of refrigeration units was also obtained. Also, this was the first time CBECS asked whether the hot water heating system was a centralized or distributed system.

Building Characteristics

- Physical Characteristics - Questions were expanded to determine: whether there were any below-ground level floors in buildings; whether the building was attached to another building; the shape of the building; and the length and width at ground level of square-and rectangular-shaped buildings. Also, the exterior wall material category "concrete panels" was renamed "pre-cast concrete panels," and "sheet metal panels" were added as a category.

- Building Activities - This was the first time CBECS separated the principal building activity category of "assembly" into "public assembly" and "religious worship." Also, for the first time CBECS asked how space was used in a building (space function) and the percent of floorspace used for each of the following energy-related space functions: commercial food preparation and serving; computer room(s) with separate air-conditioning systems; special ventilation equipment such as laboratories or clean rooms; any activity requiring large amounts of hot water, and any other function that requires large amounts of energy.

- Renovations and Demolitions - As in 1989, the 1992 CBECS Building Questionnaire asked whether the building's floorspace had increased or decreased since 1986 and, if so, by how much.

Conservation Activities and Energy Management

- DSM - This was the first time detailed questions about DSM programs were asked. These questions included whether the building's electric or natural gas utility had sponsored any DSM programs; whether the building or facility had participated in, or planned to participate in, any DSM programs sponsored in-house, by a utility, or a third-party; which specific DSM program areas the building had participated in, such as, lighting, building envelope, and HVAC systems; identification of specific program sponsors; and what type of assistance was received through the DSM program, such as, general information, incentives, or alternatives rates. During the Energy Suppliers Survey, additional data were collected on DSM participation for the specific building.

- Ownership and Occupancy Characteristics - Questions about vacant buildings were expanded to ask which months the building or part of the building was vacant and the percentage of floorspace vacant each month. The occupancy characteristic questions were changed to distinguishing the occupant by type of government agency, privately-owned utility company, church or other occupant. Questions were added about detailed daily operating schedules and the number of workers across all shifts as well as the main shift.

- Energy Management Characteristics - Energy management questions were expanded to ask whether or not there was a change in the temperature setting or a reduction in the use of the hot water heating, lighting, or other equipment when the building was not in full use. Questions were added to obtain the "shoulder hours" for the HVAC and lighting equipment. That is, the additional hours other than normal operating hours when the HVAC and/or lighting equipment was in use. If there were shoulder hours, the 1992 CBECS obtained the approximate hours per week this equipment was operating.

Also, the 1992 CBECS specifically asked about the individual responsible for the day-to-day operation and maintenance of the building's HVAC equipment; whether most windows could be opened; whether a heating and/or cooling system had variable air-volume and/or an economizer cycle; and whether there were any special energy technologies in the building.

Energy Source and Related Information

- Gas Transported for the Account of Others - Questions were included about gas transported for the account of others (often referred to as transported gas). These included whether the building purchased it, who supplied it, and what costs were involved.

- Renewable Energy Sources - Questions were asked about photovoltaic cells (PVC's) that convert sunlight directly into energy and solar thermal panels that use sunlight to heat fluids. PVC's and solar thermal panels were added as separate categories for the types of fuels or energy sources used in the building.

- Wood - Questions were asked about the number of cords burned in the building by the end of calendar year 1992, whether the wood was purchased or provided free of charge from some other source, and categorical expenditures for wood during calendar year 1992.

- Special Energy Technologies - This was the first time since the 1983 survey that a question was asked about special energy technologies that might be present in buildings. The categories asked were thermal energy storage (TES) or pump storage; passive solar features; geothermal energy; well water for cooling; waste incineration to produce energy; and wind generation.

Sample Design

A consistent, comprehensive list of all buildings in the target population does not exist. Such a list for the entire Nation would be prohibitively expensive to develop and maintain. As a result, the sample design for the CBECS is not based upon sampling from a national list of commercial buildings.

The sample design for the CBECS is a multistage area probability cluster sample design supplemented by a list sample of "large" buildings, recently constructed buildings, and "special" buildings (Federal Government buildings, post offices, hospitals, nursing homes, colleges, universities, secondary schools, and elementary schools). The area sample portion of the design is a sample from the broad spectrum of commercial buildings. The supplemental list sample provides an oversample of "large" buildings and "special" buildings. Similarly, for recently constructed buildings, the area sample is used to provide a sample from the broad spectrum of new buildings and the supplemental list sample provides an oversample of "large," new buildings.

The accuracy of the estimates of the total amount of energy used in commercial buildings is increased if energy-intensive buildings are sampled at a higher rate. The sampling rate for different types of buildings varies in the area sample portion of the design, but the cost of the area sample design increases as the difference between sampling rates increases. The addition of the supplemental list sample to the sample design allows the use of very high sampling rates for the largest commercial buildings at a lower cost than expanding the scope of the area sample. Similarly, it is more cost effective to use the supplemental list sample to oversample "special" buildings and recently constructed buildings than to expand the area sample approach.

Longitudinal Sample Design

The sample design for the 1992 CBECS was essentially the same as for earlier CBECS, particularly the 1986 CBECS. The 1992 CBECS is a longitudinal revisit of the 1986 sample and deliberately maximizes overlap with that earlier sample. The buildings selected in 1986 were re-selected in 1992 with some exceptions as described in the "Field-Listing Buildings Within Segments" section.

The primary objective of the longitudinal sample design was to observe the changes in a sample of the same commercial buildings over a 6-year period between two CBECS (1986 and 1992). Previously, a longitudinal sample design was incorporated in the 1983 CBECS using the 1979 CBECS buildings. However, data analysis revealed that 4 years were not enough time to expect a change in energy consumption and expenditures.

Sample Design Updates

The 1986 sample was updated for the 1992 CBECS in three ways:

Area Sample

- For the area sample, field workers visited a portion of the areas surveyed in 1986 and updated the building listings from that earlier survey. A sample of buildings was selected from the "new" (i.e., not previously listed) buildings identified during this area sample list update.

Supplemental List Sample

- Large facilities that were sampled from the 1986 lists were recontacted in 1992 by telephone to ascertain if there were any new buildings constructed since the 1986 sample.

- An additional list sample was selected from Dodge Reports of new construction projects to ensure better representation in the sample of (1) newly constructed large buildings and (2) large (250,000 square feet or more) office buildings. This list frame identified buildings constructed between the 1986 and 1992 CBECS.[19] For more indepth discussion, see "Supplementary Sample from Lists of Large and Specialized Buildings" section in this appendix.

Sampling Procedures

As briefly described earlier, the 1992 CBECS sample was a multistage area probability sample supplemented by a sample from lists of "large" buildings and "special" buildings. For both the area sample and the supplemental list sample, sampling procedures began with the selection of Primary Sampling Units (PSU) the geographic areas of the country in which all subsequent sampling procedures were carried out. Sampling procedures for the area sample were as follows: ZIP Code Groups were subsampled as the Secondary Sampling Units (SSU's) within the sampled PSU's; segments were subsampled within the SSU's; lists of all nonresidential buildings were compiled for all sampled segments; and, buildings were selected from those lists. For the supplemental list sample, "large" and "special" buildings were selected directly from the lists of large and specialized buildings for each PSU. These lists covered the entire PSU's, not just the sampled ZIP Code Groups used for the area sample.

[19]Dodge Reports are collected, maintained, and distributed by the F.W. Dodge Division of the McGraw-Hill Information Systems Company, New York, NY.

Projected Sampling Results

The goal of the 1992 CBECS sampling procedures (both the area sample and the supplemental list sample) was to achieve completed interviews of 6,400 buildings, including an additional 150 large, new office buildings taken from the Dodge list of large (250,000 square feet or more) office buildings. This total would include 4,850 buildings from the area sample and 1,550 buildings from the supplemental list sample, which includes the "large" buildings and "special" buildings lists and lists of new construction projects since 1986.

Actual Sample Selected

In order to achieve the 1992 CBECS sampling goal, the actual sample selected included 7,699 buildings from the area sample and 2,472 buildings from the supplemental list sample.

Actual Sampling Results

These procedures resulted in 6,637 completed interviews. This total included 4,944 buildings from the area sample and 1,693 buildings from the supplemental list sample. Therefore, the 1992 CBECS sampling procedures achieved the goals for the number of completed surveys. More importantly, the 1992 CBECS adequately represents the U.S. commercial buildings population to efficiently measure commercial buildings energy consumption.

The following sections provide more details about the sample design and selection for the area sample and the supplemental list sample components.

Multistage Area Probability Sample

The area component of the 1992 CBECS sample used a four-stage cluster sampling design: Selecting Primary Sampling Units, Selecting Secondary Sampling Units, Selecting Segments, and Selecting Buildings (Figure B1). The first three of these stages involved sampling progressively smaller geographic areas. For the 1992 CBECS, the PSU's, SSU's and Segments selected for the 1986 CBECS were reused, since 1992 was a revisit of the 1986 sample. For the fourth stage of sampling, selection of buildings were re-executed in 1992 using procedures to update the building lists from the 1986 CBECS to include new construction in selected segments and to maximize the overlap with the 1986 sample.

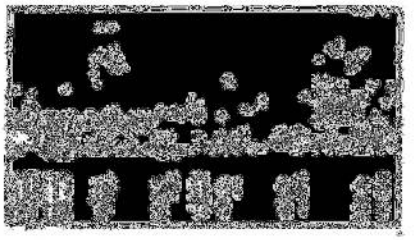
Selecting Primary Sampling Units

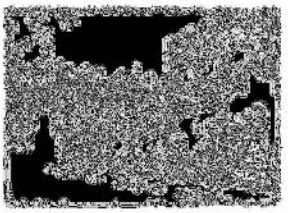
To prepare for the first-stage of the area sample, approximately 3,100 counties and independent cities of the United States were grouped into 1,799 PSU's. A PSU typically consists of one or more contiguous counties, such as a metropolitan statistical area (MSA) with surrounding suburban counties or a set of one or more rural counties. Essentially, for the first stage, the same PSU's were selected for the 1986, 1989, and 1992 CBECS. These CBECS all used the same PSU's that were selected for the first stage of the 1984 Residential Energy Consumption Survey (RECS).[20] The two survey designs diverged at the second and subsequent stages.

[20] Energy Information Administration. Office of Energy Markets and End Use, *1987 Residential Energy Consumption Survey Sample Design Procedures Manual* (Princeton, NJ: Response Analysis Corporation, September 1988.)

Primary Sampling Units

3,100 counties in the United States grouped into 1,759 PSU's which in turn are grouped into 129 strata. One PSU selected from each of the 129 stratum. Ten randomly dropped to cut survey costs, giving a total of 119 PSU's.



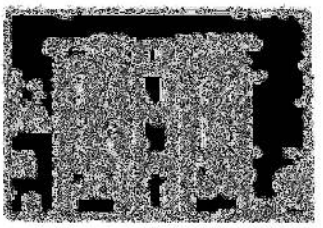


Segments

Each sampled SSU divided into geographically compact segments chosen from each sampled SSU, for a total of 496 segments.

Ultimate Clusters

An average of 16 buildings sampled for each of 496 segments, for a total of 7,649 buildings.



PSU's with similar characteristics were grouped to form 129 strata. Characteristics used to define the strata were Census division, MSA or non-MSA status, the predominant residential heating fuel in 1980, and climate zone.[21] Within each stratum, one PSU was selected with probability proportional to its 1980 Census population. The design of efficient area samples requires that the area segments be as nearly equal in size as possible. For CBECS, population is correlated with the survey's characteristic of interest--commercial buildings.

Probability-proportional-to-size (PPS) sampling is commonly used to take advantage of existing knowledge about the sample units to improve the reliability of survey estimates. For quantities roughly proportional to these measures of size (MOS's), estimates based on PPS sampling have lower variances than estimates based on equal-probability sampling. The 1980 population of a PSU was a useful MOS because of its relationship with commercial activity and energy consumption.

Thirty-two PSU's had populations large enough for each of these PSU's to form a stratum by itself, so that each was selected with certainty. For the noncertainty PSU's, the Keyfitz method was used to assign selection probabilities.[22] This method enhanced the probability of inclusion of specific PSU's that had been selected for the previous RECS, while ensuring that the current RECS selection probabilities were still proportional to 1980 population levels. Controlled selection was used to improve the geographic coverage of the sample by maximizing the number of different States represented by the sampled PSU's.[23]

For the 1989 CBECS and 1992 CBECS, 10 non-MSA PSU's were randomly deleted from the initial sample of PSU's to reduce survey costs. The PSU's to be dropped were selected in 1989 by subsampling PSU's from entirely non-MSA strata in each of the four Census regions. The same 10 PSU's that were dropped for the 1989 CBECS were dropped again in 1992, reducing the number of PSU's from the 129 in the 1986 CBECS to 119 in 1989 and 1992.

The reduction in the number of PSU's was accompanied by a reduction in the buildings in the sample. That is, there was no attempt to "replace," in other PSU's, the buildings that would have been selected from the deleted PSU's. An additional weighing factor was introduced in the 1989 sample design and again in the 1992 sample design to compensate for the reduced sampling rate in entirely non-MSA strata.

Selecting Secondary Sampling Units

To form second-stage sampling units for CBECS, each sampled PSU was divided into areas corresponding to five-digit ZIP Codes.[24] ZIP Codes covering small areas or representing individual buildings or post office boxes were grouped together with larger area ZIP Codes. All second-stage sampling units are, thus, referred to as ZIP groups. A total of about 3,900 ZIP groups were formed within the sampled PSU's. Of these, 444 ZIP groups were selected, using probabilities proportional to a second-stage MOS which was the estimated number of buildings in the ZIP group. The second-stage MOS was designed to reflect the level of commercial activity and was computed for each ZIP group using employment data from the Census' 1983 County Business Patterns (CBP) reports, and employee occupancy rates in different building types obtained from the 1979 CBECS.

[21] *1987 Residential Energy Consumption Survey Sample Design Procedures Manual.*

[22] M.H., Hansen, W. N. Hurwitz, and W. G. Madow, *Sample Survey Methods and Theory*, Vol. 2 (New York: John Wiley and Sons, 1953.)

[23] R.M. Groves, and I. Hess, "An Algorithm for Controlled Selection," *Probability Sampling of Hospitals and Patients*, 2nd ed. I. Hess, D. Riedel, and T. Fitzpatrick (Eds.) (Ann Arbor, MI, 1975.)

[24] Energy Information Administration, Office of Energy Markets and End Use, The 1992 *Commercial Buildings Energy Consumption Survey Sample Selection Procedures Manual* (Princeton, NJ: Response Analysis Corporation, October 1992.)

The ZIP group MOS was used to select ZIP groups into the sample, using a procedure that was closely integrated with the selection of the third-stage units. The 129 sampled PSU's were sorted into cells defined by Census region and MSA/non-MSA status. A size for each cell was defined as the sum of the PSU-weighted MOS of all ZIP groups in the PSU's of that cell. The desired number of third-stage sampling units (prior to deletion of the 10 non-MSA PSU's) were allocated to the cells, proportional to the cell sizes. The third-stage units were then suballocated to the PSU's within the cells, again using the ZIP group MOS.

Within each PSU, a controlled selection procedure was used to allocate third-stage units to the ZIP groups within that PSU, such that ZIP groups of various MOS were represented in the sample. A ZIP group was considered to be selected into the sample if one or more third-stage units were allocated to it. Of the ZIP groups sampled, most were selected once. However, some ZIP groups with a large MOS were selected two or more times. A total of 509 selections occurred within the original sample of 129 PSU's, representing 444 unique ZIP groups. The number of times that a ZIP group was selected corresponded to the number of third-stage sampling units to be drawn into the sample from that ZIP group.

Selecting Segments

The third-stage sampling unit was the segment, which was a geographically compact area containing roughly 100 nonresidential buildings. Sampled ZIP groups were divided into segments based on field maps and rough counts of the number of nonresidential buildings on each block face. Within the original sample of 129 PSU's, a total of 509 segments were selected from within sampled ZIP groups using equal probability sampling. If the field mapping and counting procedures were performed in all PSU's and ZIP groups nationwide, approximately 43,260 potential segments would result. Thus, the 509 segments actually selected represented a sampling rate of roughly 1 in 85 segments nationwide. Within PSU's and ZIP groups, the segments were selected such that 509 of the 43,260 potential segments nationwide were sampled with equal overall probabilities. However, due to the subsampling of PSU's mentioned earlier, segments in the non-MSA PSU's in the 119 PSU's designated for the 1992 CBECS had overall probabilities of selection equal to approximately three-fourths of the probabilities of selection of segments in the MSA PSU's. After deleting the 10 subsampled PSU's (and the 23 segments located in them), a total of 486 segments remained for the area sample for the 1992 CBECS.

Field-Listing Buildings Within Segments

Once segments were selected, preparations were made for the fourth stage of sampling, selecting commercial buildings from within segments. With a few exceptions, a building, for purposes of CBECS, is defined as a structure totally enclosed by walls extending from the foundation to the roof; Commercial buildings house some type of commercial activity.

Since the 1992 CBECS is a longitudinal revisit of the 1986 sample, the 1992 sample deliberately maximized overlap with that earlier sample. That is, the buildings selected in 1986 were re-selected in 1992, with the exception of the 1986 buildings that were in the 10 PSU's that were dropped from the 1989 and 1992 surveys. These 1986 buildings in the dropped PSU's were excluded from the 1992 building selection.

In 1986, field workers canvassed on foot each sampled segment, identifying and listing the addresses of all commercial buildings. Field workers also estimated the square footage and apparent principal usage of listed buildings. This information was subsequently used to assign buildings to strata for sampling.

Updating the Area Sample for New Construction. A complete relisting (updating) of 191 of the originally sampled 509 segments was conducted for the 1992 CBECS to account for any buildings newly constructed or converted to commercial use after the earlier survey as well as those demolished or converted *from* commercial use. The selection in 1989 of the 191 update segments was made randomly within strata defined on the basis of advance estimates of the number of newly constructed buildings in the segment. Since the update segments represented a stratified subsample of the original sample of segments, new buildings in these segments could be appropriately weighted to provide national estimates of newly constructed buildings. The remaining segments were not updated, and thus were weighted to reflect only those buildings in existence at the time of the 1986 CBECS.

To avoid double counting, buildings in nonupdate segments that were constructed after the 1986 listings were not eligible for the sample, since such new construction was already represented by the weighted update sample. For this reason, if a sampled building in a nonupdate segment was found during the interview to have a construction year later than 1986, the building was deleted on the assumption that it was a new building on the site of an old listing. Nonupdate segment buildings reported as constructed in 1987 were retained if they otherwise matched the 1986 listing description.

Selecting Buildings. Buildings were sampled within size/usage strata with equal probability. However, sampling fractions varied between strata so that strata containing large buildings were sampled more intensively than strata containing small buildings. For example, while the stratum of office buildings under 10,000 square feet was sampled at an overall rate of only 1 in 1,400 (.000714), the stratum of office buildings with 50,000 or more square feet was sampled at a rate of 1 in 204 (.004902). This stratified sampling is similar to PPS sampling in that each uses MOS (but in a different way) to increase the reliability of estimates of square footage and energy consumption. The desired overall sampling rates used for selection of the area sample for the 1992 CBECS are provided in Table B1.

Table B1. Area Sampling Rates by Size and Use Class

Use Class	Size (Square Feet)			
	Under 10,000	10,000 - 24,000	25,000 - 49,999	50,000 or more
Retail	.000595	.002101	.003677	.004902
Office	.000714	.002451	.003677	.004902
Open Space	.000714	.002451	.004902	.007354
Other	.000794	.002451	.003677	.003677

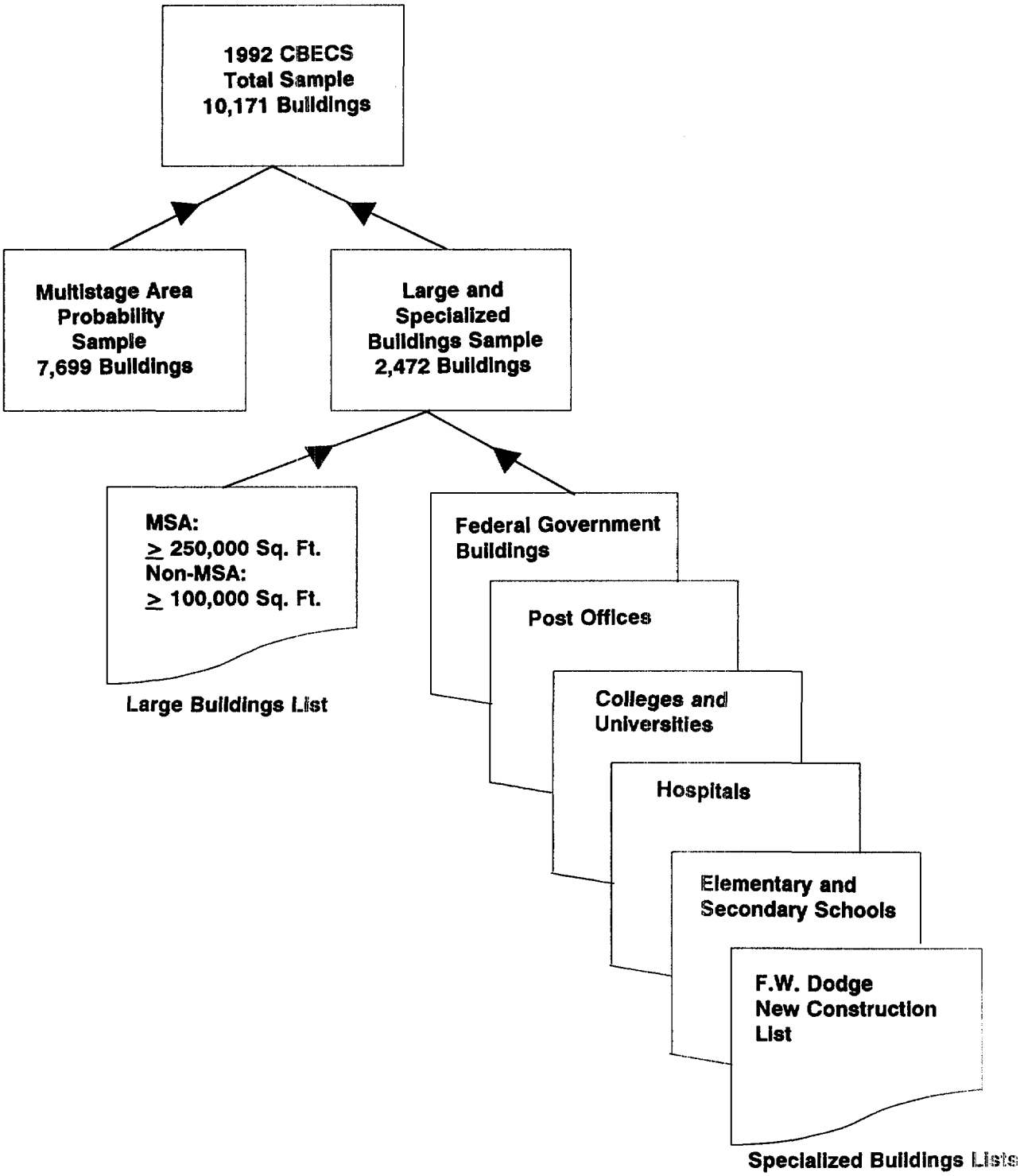
Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

Approximately 16 buildings were sampled from each of the 486 segments. The number of buildings included in the CBECS varied from the number sampled, depending on what the interviewer actually found at the building site. If during the interview a sample selection turned out to be a facility (for example, a campus or complex) of two or three buildings rather than a single building, all buildings in the facility were taken into the sample. Buildings at facilities of four or more buildings were subsampled. A final total of 7,699 buildings was selected into the multistage area probability sample.

Supplementary List Sample from Lists of Large and Specialized Buildings

As mentioned previously, a supplemental list sample was used to correct the under-representation of some commercial buildings in the 1992 CBECS sample. To ensure adequate coverage of buildings that were significant energy users, the multistage area probability sample was supplemented within each selected PSU by a sample from a list of "large" buildings or facilities. In addition, to improve the precision of energy consumption estimates for certain types of buildings, a supplementary sample was drawn from seven lists of special buildings (Figure B2).

Figure B2. 1992 CBECS Sample Design



Source: Energy Information Administration, Office of Energy Markets and End Use, the 1992 Commercial Buildings Energy Consumption Survey.

Compiling the Large Building and Special Building Lists

In PSU's that were MSA's, the list of large buildings contained buildings with 250,000 or more square feet of enclosed floorspace. In the non-MSA PSU's, this list included buildings of 100,000 or more square feet. The list was compiled through inquiries with Chambers of Commerce, other local sources, and special directories. The seven lists of specialized buildings were limited to certain types of buildings or facilities with 50,000 or more square feet. These lists included (1) hospitals, (2) colleges and universities, (3) elementary and secondary schools, (4) post offices, (5) Federal Government buildings, (6) Dodge reports for "small" new construction projects (50,000 to 250,000 square feet) and (7) Dodge reports for "large" new construction projects (over 250,000 square feet).

These lists of specialized buildings were used for three reasons. First, they contained many large buildings and, thus, helped ensure accurate coverage of significant energy users. (The Dodge reports ensured better representation in the sample of newly constructed large buildings.) Second, the special lists ensured good coverage for certain building types that are distinguished separately in CBECS reports, such as health care and education. Third, the lists compensated for inadequacies in the MOS's developed for ZIP groups using the CBP reports. The CBP reports do not cover employees exempt from the Social Security System, such as a portion of the Federal workforce.

The weighing procedure used for the final sample does not require that the supplemental lists be comprehensive to produce unbiased estimates. However, the more complete these lists are, the more efficient the sample design.

Updating the Supplemental List Sample. The compiled supplemental lists included both individual buildings and facilities (complexes of buildings). Facilities from the supplemental list sample were updated centrally by telephone prior to field work to determine how many buildings were in the facility. If there were four or more buildings, all buildings were listed (by phone if possible) and the listings were subsampled. If there were three or fewer buildings, all the buildings were included. All facilities that could not be updated centrally were updated during the field period.

Selecting Buildings. The lists within each sampled PSU were stratified by building size and general usage, and buildings were sampled with equal probability within strata. (For some buildings, building size in square feet was estimated from available data such as the number of beds for hospitals, or the number of students for education buildings.) As in the area sample, strata containing large buildings were sampled more intensively than strata of small buildings. Also, as with the area sample, if a selected unit turned out to be a facility with three or fewer buildings, all were taken into the sample. Otherwise, the facility was subsampled.

The eight lists (that is, the large buildings list and seven specialized building lists) were sampled independently. The problem of overlap was handled by unduplicating the large buildings list to the extent possible, and by using a "priorities" approach, whereby, a building present on a lower priority list was disregarded if it was selected from a higher priority list. The priorities of the lists, in descending order, were as follows: (1) hospitals, (2) colleges and universities, (3) elementary and secondary schools, (4) post offices, (5) large buildings lists, and (6) Federal Government buildings, (7) Dodge reports over 250,000 square feet and (8) Dodge reports 50,000 to 250,000 square feet. For example, if a given building was present on the hospitals list, its selection from a lower priority list was disregarded.[25]

[25]Energy Information Administration, Office of Energy Markets and End Use, The 1992 *Commercial Buildings Energy Consumption Survey Sample Selection Procedures Manual* (Princeton, NJ: Response Analysis Corporation, October 1989.)

The desired overall sampling rates used for selection of the large buildings and special buildings list for the 1992 CBECS were the same as the area sample, supplemented by rates for larger size classes. The supplemental list sampling rates by size class are as follows: 100,000 to 249,999 square feet, .013889; 250,000 to 399,999 square feet, .05; 400,000 to 999,999 square feet, .10; 1,000,000 to 4,999,999 square feet, .10; 5,000,000 square feet or more, 1.00.

Dodge Lists of New Construction

For the Dodge reports on large projects (over 250,000 feet), a complete list of projects in each sampled PSU was obtained, and a sample was drawn from that list. Thus, it was possible to determine if a building sampled from some other source was also included in this Dodge list. For small Dodge projects (between 50,000 and 250,000 square feet), only a sample was obtained. Therefore, there was no way to verify whether a building that by definition should have been covered by this list was in fact included in the list from which that sample was drawn. For this reason, this "conceptual list" was given lowest priority.

There was also a problem of overlap between the supplemental list sample and the multistage area probability sample. Computation of joint probabilities of selection would be somewhat intractable in the complex design. Instead, a less efficient, but unbiased, procedure was adopted where buildings were made self-representing if they were sampled from an area segment and also appeared on one of the list frames.[26] A new building sampled from an update segment of the area sample and between 50,000 and 250,000 square feet in size was assumed to appear on the (unverifiable) Dodge list for that size range. Smaller new buildings were assumed not to appear on Dodge lists, and larger ones were checked against the complete lists that were obtained for that size range.

Sample of Large, New Office Buildings

In the 1992 CBECS, in addition to the regular supplemental list sample of Dodge reports of New Construction, another sample of approximately 150 buildings was selected from the Dodge list of large (250,000 or more square feet) office buildings. This sample was limited to buildings with a construction start date after February 1, 1989, and was included to permit special study of energy conservation issues in office buildings. The final weights for the sample were adjusted to compensate for this oversampling.

The overall sampling rates for the Dodge lists were the same as for other list samples except for the newer large office buildings. The sampling rates by size class for the newer large office buildings were as follows: 100,000 to 249,999 square feet, .208333; 250,000 to 399,999 square feet, .75; 400,000 to 999,999 square feet, 1.0; 1,000,000 to 4,999,999, 1.0; 5,000,000 square feet or more, 1.0. These rates achieved the desired supplemental list sample of newer large office buildings.

Total List Sample

A total of 1,871 list entries were sampled. Because some entries were multibuilding facilities, the final list sample comprised 2,472 individual buildings.

[26]A. Chu "Proof that the Assignment of Conditional Weights Will Produce Unbiased Estimates," in Weighing Procedures for CBECS III, Technical Memorandum (Rockville, MD: Westat., 1987).

Building Characteristics Survey

Determining Building Eligibility

To be eligible for the survey, a building had to satisfy three criteria: (1) it had to meet the survey's definition of a building, (2) it had to be used primarily for some commercial purpose, and (3) it had to measure 1,001 square feet or more. The eligibility of a building for inclusion in this survey was evaluated at three different times: during the development of the area and supplemental sample listings, at the time the interviewer observed the building, and during the interview of the building owner or manager. To prevent inaccurate exclusion of eligible buildings based on lister or interviewer judgment, somewhat looser criteria were applied at the stages of listing and interviewer observation to allow a knowledgeable respondent to ultimately screen eligible buildings during the interview.

The first eligibility criterion, building definition, has been used consistently in all the CBECS. The second criterion, commercial activity, has been more strictly interpreted in the successive surveys, to concentrate on a well-defined population that does not overlap with a group covered by other EIA surveys. The third criterion, size, was added in the 1986 CBECS to eliminate the very small buildings, which form a large, inherently ill-defined, group of marginal structures. These buildings contribute minimally to total commercial floorspace and energy consumption of the overall sample; yet, different, reasonable decisions on how to identify these buildings could lead to substantial variations in building counts.

Criterion 1: Building Definition

The definition of a building was the same one used in previous CBECS: a structure totally enclosed by walls that extend from the foundation to the roof and intended for human access. Thus, structures such as water, radio and television towers were excluded from the survey. Also excluded were (1) partially open structures, such as lumber yards; (2) enclosed structures that people usually do not enter, such as pumping stations and cooling towers at electric power plants; (3) enclosed structures that are not buildings, such as oil tanks, statues, and monuments; and (4) dilapidated or incomplete buildings missing a roof or a wall. There are two exceptions to the building definition criterion: a structure built on pillers so that the first fully enclosed level is elevated; and parking garages since they can have energy-using equipment such as HVAC and lighting equipment.

Criterion 2: Building Use

The second criterion was that a building had to be primarily used for some commercial purpose; that is, more than 50 percent of the building's floorspace must have been devoted to activities that were neither residential, industrial, nor agricultural. The primary use of the sampled building governed whether the building was included in the CBECS. That is, if an administrative office building within an industrial complex was the sampled building, it was considered in scope because its principal building activity was commercial. However, if the sampled building was an industrial processing plant within the same complex, it would have been out of scope because its principal building activity was industrial. Examples of nonresidential buildings that were <u>not</u> included in the CBECS samples are:

- Farm Buildings, such as barns, unless space is used for retail sales to the general public
- Industrial or Manufacturing Buildings that involve the processing or procurement of goods, merchandize, or food
- Buildings on most military bases

- Buildings where access is restricted for national security reasons

- Single-family detached dwellings that are primarily residential, even if the occupants use part of the dwelling for business purposes

- Mobile homes that are not placed on a permanent foundation (even if the mobile home is used for nonresidential purposes)

Buildings used for industrial purposes and for processing of agricultural products were included in the listing stage. However, during the interviewing stage, interviewers were instructed not to begin interviews at buildings where they observed 75 percent or more of the floorspace used for residential, industrial, or agricultural purposes. Once the interview began, initial screening questions instructed the interviewer to terminate the interview if the respondent indicated that 50 percent or more of the square footage was used for residential, industrial, or agricultural purposes. In the 1979 and 1983 CBECS, buildings used primarily for residential purposes, but having any commercial activity, were included in the survey and report tables. Beginning with the 1986 CBECS, if more than 50 percent of the floorspace of these buildings was used for residential purposes they were excluded from CBECS. In 1992, interviewers retired 463 buildings prior to beginning the interview and terminated 948 interviews because the building's use was not predominantly commercial.

Criterion 3: Building Size

The third criterion was that a commercial building had to measure more than 1,000 square feet (about twice the size of a two-car garage) to be considered in scope for the 1992 CBECS. This building size criteria was met in two successive size cutoffs, which were evaluated during the listing and interviewing stages. During the listing stage, a building had to measure 500 square feet to be included in the segment listing. Interviewers did not begin interviews when they observed a building to be 500 square feet or less. During the interviewing stage, a building had to measure more than 1,000 square feet for continuance of the interview. Interviewers asked screening questions designed to terminate the interview when the square footage was 1,000 square feet or less. In 1992, 154 buildings were retired during the listing stage and interviewers terminated 521 interviews because the building's size was less than 1,000 square feet.

Data Collection

Data Collection for the 1992 CBECS involved many phases and began with the questionnaire design. After the questionnaire design, the data collection phases continued with supervisor and interviewer training, data processing, and concluded with minimizing nonresponse to ensure output of quality data. A survey contractor performed the data collection under the direction of EIA.

Building Questionnaire Design

Questionnaire design work for the 1992 CBECS was conducted by EIA. Although a set of core questions remained the same as those used in previous surveys, the 1992 Building Questionnaire was redesigned to improve data quality. The redesign of the 1992 Building Questionnaire included new questions, expanded questions, and incorporated some structural and wording changes to questions. A more detailed discussion of revisions to the 1992 CBECS Building Questionnaire is provided in "What's New in 1992 CBECS" section of this appendix.

As in 1989, the 1992 CBECS Building Questionnaire also asked if the sampled building was part of a multibuilding facility and whether the multibuilding facility had a central physical plant that produced district heating, district cooling, or electricity. In 1992, the CBECS asked for the primary function of multibuilding facilities or complexes to help provide a standard building classification scheme for these commercial buildings.

In the 1992 CBECS, questions were added at the request, and with the financial support of the Department of Energy's Office of Energy Efficiency and Renewable Energy. These questions obtained information about special ways space was used in the building, special energy technologies, water heating equipment, the energy source distribution system, building shape, and how energy was managed in the building.

Also, as in 1986 and 1989, the 1992 CBECS Building Questionnaire contained questions added at the request, and with the financial support, of the Census (Section R, Form EIA-871G, Construction Improvements and Maintenance and Repairs Supplement). The content of Section R, collected by EIA as an agent for the Census, was essentially unchanged from 1989. For more details on the Census-funded questions, see "Special Data Collection for the Bureau of the Census" later in this appendix.

Supervisor and Interviewer Training

The CBECS Building Questionnaire is a complex instrument designed to be collected in a personal interview at the building site. Well-trained interviewers are imperative to collecting the technical information. Training for the 1992 CBECS included three in-person training sessions: one for supervisors and two for interviewers. At all sessions, mixed media techniques were used including lectures, slide presentations, small group sessions to practice interviewing and administering the questionnaire, and a tour of the HVAC system at the hotel where the training was conducted. EIA and the Census personnel observed the interviewer training sessions and were available as resource persons. EIA personnel also participated in all training sessions providing an overview of the CBECS and a presentation on the key 1992 CBECS energy concepts.

In July 1992, six regional supervisors and their assistants were trained at a four-day supervisor training session in Washington, DC. They were trained in CBECS data collection, field office procedures, and quality control. The supervisors were also trained to serve as small-group leaders at the subsequent interviewer training sessions.

Prior to interviewer training, all interviewer trainees received the CBECS Interviewers' Manual, the survey questionnaire, a home study exercise to be completed prior to training, and a training agenda. The CBECS Interviewer's Manual included step-by-step instructions for planning, conducting, and recording interviews. Interviewer trainees who had not previously worked as CBECS interviewers received *CBECS: General Interviewing Techniques Manual* and *Home Study Guide* with exercises to be completed and reviewed by the supervisor prior to training.

In August 1992, 162 interviewer trainees attended one of two, three-and-a-half-day interviewer training sessions in either the Washington, DC area or Denver, Colorado. All interviewers working on CBECS were trained at one of these sessions. Forty-six of the interviewing staff had worked on the 1989 CBECS. Of the 162 interviewers, 114 had some prior interviewing experience, and 48 had no prior interviewing experience.

For the first time, the 1992 CBECS interviewing training sessions included a formalized evaluation process. Based on the results of a key concepts quiz/test and an evaluation by supervisors, the interviewers were considered to have successfully completed training, or were placed on probation, or were released from the study. At the end of the interviewer training sessions, 13 interviewers were placed on probation and one trainee was released. The remaining interviewers successfully completed training and were certified to conduct CBECS interviews.

Each interviewer training session was conducted by the survey contractor's central office staff with the assistance of the regional supervisors. The sessions covered the background of the CBECS, the definition of a building, finding the sampled building, determining a building's activity, a review of the most important or different questions in the questionnaire, and administrative information. New interviewers were trained in an additional session on general interviewing techniques, which included a video tape on basic interviewing techniques. All interviewers received the question-by-question specifications describing the intent of each question, definitions of terms used in the survey, and how to ask each question. These materials completed the CBECS Interviewers Manual that the interviewers received prior to attending the interviewer training sessions. All interviewers had completed four scripted-practice interviews by the conclusion of the training session. Each trainee's performance was monitored and evaluated by the regional supervisors, and only those judged qualified were given field assignments.

Interviewer Supervision

Several steps were taken to ensure that the interviews were conducted as intended. Questionnaires were field-edited twice; once by the interviewer and once by the supervisor before being mailed to the central office for data processing. For more information about how the data were edited, see "Data Editing" later in this appendix.

In addition, the regional supervisor conducted a validation of a random sample of 10 percent of each interviewer's work. Interviewers were informed that a sample of their work would be validated, but they were not informed which completed interviews would be checked. The regional supervisors telephoned the respondents identified on the questionnaire to confirm that the interview had been conducted and to verify several key data items. Overall, 17.9 percent of completed interviews were validated.

Corrective actions were taken when problems with an interviewer's performance were identified. These actions included monitoring the interviewer's work more closely, retraining the interviewer on the sections of the questionnaire causing the interviewer problems and, as a last resort, dismissing the interviewer.

The Interview

Each interview began with a series of screening questions designed to verify the building's address, location within the segment boundaries, and eligibility for the survey. Respondents were asked about the building as a whole rather than individual establishments located within the building.

The completed building interview lasted an average of 49 minutes. This included the time for the interviewer to ascertain and record if the listing was correct, to ask all questions on the Building Characteristics Questionnaire, and to obtain a signed authorization form from the respondent. The Census section added six minutes to the interview.

The average time for each completed interview (including interviewer preparation, travel, callbacks, interviewing, and editing time) was 6 hours and 14 minutes. Each interviewer conducted an average of 46 interviews: 9 interviewers each completed 10 or fewer interviews, while 5 interviewers each completed more than 90.

Data Collection Procedures

Initial contacts with the building representatives were made through an introductory letter mailed to them at each building in the survey sample. The letter, signed by the Director of the Office of Energy Markets and End Use of the EIA, was addressed to the building owner or manager. The letter explained that the building had been selected for the survey, introduced the survey contractor, assured the building manager that the data would remain confidential, and discussed the uses and needs for the CBECS data in setting national energy policies. To protect confidentiality, the letter was addressed by the survey contractor after it was signed at EIA.

Data collection began the week of August 28, 1992, and ended December 4, 1992. The data were collected by the contractor's field staff consisting of 162 interviewers under the supervision of six regional supervisors and their assistants and a central office staff consisting of a project manager, a field director, and a subsampling assistant.

Natural Disaster Areas

Several natural disasters occurred in areas that affected the 1992 CBECS. In these areas, all data collection procedures were stopped after the disaster. To allow EIA to evaluate the effect of these disasters on the CBECS sample, procedures were developed to obtain the following information about the sampled buildings: (1) condition of the building and surrounding buildings; (2) current principal building activity; (3) approximate size; and (4) approximate age. Extra efforts were undertaken to make up for the loss of these buildings by assuring that the response rate for the nonaffected buildings would remain high. (See Appendix C, "Nonsampling and Sampling Errors" for a discussion on imputations for these buildings.)

Interviewers

Prior to the interview, the interviewer observed the outside of the building to assess the approximate size and the principal building activity. Interviewers visited all sampled buildings in person to ascertain if the structure met the eligibility requirements of the survey. Failure to meet any one of several criteria resulted in the building's ineligibility for interviewing. These criteria were explained in the "Determining Building Eligibility" section; however, several other circumstances may have resulted in ineligible buildings. These circumstances included duplication of buildings, demolished buildings, and buildings for which construction was not completed. When these circumstances occurred, buildings were assigned an "ineligible for contact" disposition code. For certain demolished buildings, interviewers obtained information on the condition of the building, the current principal building activity, the approximate size, and the estimated age of the building.

During the initial visit to the sampled buildings, the interviewers also identified and attempted to schedule an interview with an individual associated with the building who met the survey criteria for a building representative and who could serve as that building's respondent. The respondent could be the owner of the building, a tenant, a hired building manager or engineer, or a spokesperson for a management company. Table B2 shows the number of in-person contacts required to obtain a completed 1992 CBECS Building Questionnaire.

Table B2. Number of In-Person Contacts to Obtain a Completed Building Questionnaire

Number of In-Person Contacts	Completed Interviews	Percent
1	1,775	26.7
2	2,443	36.8
3	1,313	19.8
4	589	8.9
5+	517	7.8
Total	6,637	100.0

Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

Minimizing Nonresponse

Several approaches were employed in the effort to minimize nonresponse, including: advance mailings to building owners or managers; in-person visits and telephone callbacks; establishment of an 800 "hot line" number to address respondents' concerns or questions; personalized letters to documented refusals; and providing additional field staff in several MSA's to help those who still had problem cases. These approaches dealt with the three categories of nonresponse for CBECS: refusals, cases where the knowledgeable respondent was located outside of the sample PSU's, and cases where the respondent was unavailable during the field data collection period. Although a telephone version of the 1992 CBECS Building Questionnaire was produced and ready for use, the 1992 CBECS response rates were sufficiently high that telephone nonresponse conversion was not warranted.

An additional type of nonresponse conversion dealt with respondents who declined to sign the authorization forms that would allow their energy suppliers to release the building's energy consumption records and information on DSM program participation. Personalized written requests for signed authorization forms were mailed for all buildings for which energy usage had been reported and a signed form had not been obtained by an interviewer. Such requests were mailed to 305 buildings interviewed by field staff. A total of 83 signed authorization forms were received by mail.

As previously noted, before the initial contact with the building was made, a letter, along with a brochure showing the 1989 CBECS data, was sent from the Director of the Office of Energy Markets and End Use to each building owner or manager. Then, during the field period, the interviewer assigned to the building was authorized to make up to four in-person visits at different times of the day throughout the week to minimize the number of building representatives not contacted. After two failed in-person visits, the interviewer and supervisor discussed the case to determine if subsequent in-person visits should be authorized. After the fourth in-person visit, three additional in-person visits could be authorized only to obtain signed authorization forms. Field supervisors also notified the central office of potential refusals and the field director sent personalized letters addressing individual concerns and urging participation. Approximately 330 such letters were mailed to 363 buildings (or facilities); completed interviews were obtained for 102 of these buildings.

Response Rates

As mentioned in the "Sample Design" section, the total 1992 CBECS sample consisted of 10,171 buildings; 7,699 from the area sample and 2,472 from the supplemental list sample (Figure B2). Of these, 7,282 buildings were eligible for interviewing, 5,464 from the area sample and 1,818 from the supplemental list sample. Of the total number of buildings eligible, interviews were completed at 91.1 percent, or 6,637 buildings. Authorization forms were obtained for 88.5 percent of interviews completed (5,719 of 6,463 buildings) where energy was used in the buildings. Eligibility was not determined for an additional 146 buildings located in areas devastated by natural disasters. Of these, 133 were from the area sample and 13 from the supplemental list sample. (See Appendix C, "Nonsampling and Sampling Errors," for a discussion of imputation procedures used for these buildings.) Table B3 provides the detailed information on the building disposition for the total sample, the area sample, and the supplemental list sample.

Data Editing

Data editing for the 1992 CBECS Building Characteristics Survey occurred at several points during data collection and processing. During data collection, questionnaires were edited by the interviewers and the supervisors. Upon receipt of the questionnaire for data processing and during data entry, questionnaires were manually edited. Once data entry was complete, questionnaires were machine edited. The final data editing occurred during review of data frequencies and crosstabulations.

Table B3. Number and Distribution of 1992 CBECS Sample Buildings by Building Disposition

Building Disposition	Number of Buildings	Percent of All Buildings	Percent of Eligible Buildings	Percent of Eligible & Disaster Area Buildings
Combined Sample				
Total	10,171	100.0		
Eligible for Interview	7,282	71.6	100.0	
Interviewed	6,637	65.2	91.1	89.4
Not Interviewed	645	6.3	8.9	
Not Eligible for Interview	2,743	27.0		
Natural Disaster Areas	146	1.4		
Area Sample				
Total	7,699	100.0		
Eligible for Interview	5,464	71.0	100.0	
Interviewed	4,944	64.2	90.5	88.3
Not Interviewed	520	6.8	9.5	
Not Eligible for Interview	2,102	27.3		
Natural Disaster Areas	133	1.7		
List Sample				
Total	2,472	100.00		
Eligible for Interview	1,818	73.5	100.0	
Interviewed	1,693	68.5	93.1	92.5
Not Interviewed	125	5.0	6.9	
Not Eligible for Interview	641	26.0		
Natural Disaster Areas	13	0.5		

Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

As mentioned in the previous section, questionnaires were edited twice in the field before being sent to the central office. The first field edit was performed by the interviewer after completing the interview and before submitting it to the field supervisor. During this edit, the interviewer checked the form for legibility and completeness. Once received by the field supervisor, the form underwent a second field edit using the "Field Edit Form" to check a set of 17 specified data items. The purpose of this field edit was to provide the supervisor, the survey contractor, and the interviewer with continuous feedback on the quality of the data being collected. The supervisor mailed a copy of the form to the interviewer, discussed the results of these edits in weekly telephone conferences with each interviewer, and mailed a copy of the field edit form with each questionnaire to the survey contractor's central office.

After the central office received the questionnaires, they manually edited and coded the questionnaires in preparation for data entry. The manual scan edit checked for completeness and logical consistency and identified cases with missing data. The coding process assigned the "Other Specify" questionnaire responses to either previously created codes or newly created codes. Preparation for data entry involved checking the accuracy of the questionnaire skip patterns and checking that only allowable values or codes were entered. All data entry was performed with 100 percent verification of all keystrokes. Throughout the editing and coding process, inconsistencies or ambiguities in the data occurred that needed correcting before data entry or machine edit.

The survey contractor took several steps to resolve inconsistencies or ambiguities in the data. First, the contractor reviewed other parts of the questionnaire for explanations that might help solve the problem. Several open-ended questions were included in the questionnaire, which allowed the respondent to either describe or include additional information about a particular item. Also, the interviewers had been asked to write comments or to explain any special cases in the margin of the questionnaire during and after the interview. These open-ended questions and notes were relied upon extensively in the resolution process and were very helpful in explaining some of the inconsistencies. Second, in some hard-to-resolve cases, EIA personnel provided technical guidance on how to reconcile some questionnaire responses. Finally, when these efforts failed to resolve a problem, especially when the energy sources or heating and cooling equipment were concerned, the survey contractor contacted the respondent by telephone for clarification. Telephone data retrieval only occurred before machine edit, if selected key data items were missing from the questionnaire.

After manual editing, coding and telephone data retrieval for selected missing key data items were complete, the data were machine edited to ensure further completeness and logical consistency and to verify that the values fell within allowable codes or within acceptable ranges. Items failing these edits were reviewed by trained editors to assess the nature of the problem and to determine how to correct the problem. These edit failures were most often due to problems in coding or data entry. Items failing edits that could not be resolved were referred to the contractors' supervisory-level personnel for review and resolution. EIA personnel also provided technical guidance for the error-resolution process. Telephone data retrieval was conducted for the remaining edit failures.

Overall, telephone contacts to clarify both questionable or missing information were made to the respondents for 1,558 buildings, 23 percent of all completed cases. All changes made to any questionnaire response as a result of these reviews were carefully documented and explained on an error resolution sheet attached to the questionnaire.

As the last step, prior to the delivery of the data tape to the EIA, the contractor produced data frequencies and crosstabulations. These were reviewed to search for outlying values and inconsistencies that the edits may not have identified. After having inconsistencies corrected by the contractor, the EIA began the data preparation for the report.

Data Preparation for the Report

Draft data tapes from the Building Characteristics Survey portion of the 1992 CBECS were received in May and June 1993. EIA data analysts reviewed and processed the data to prepare them for the final data tape. Crosstabulations were run to check for internal consistency of the data and 1992 CBECS data were compared with data from previous CBECS. Questions concerning data accuracy or values were referred to the survey contractor for verification. Respondents were recontacted to verify responses when possible. EIA staff judgment was the final authority on some of the data items.

If retrieval of missing data for one or more items failed, or if retrieval was not performed because the item was not a key data item, data values were supplied by imputation. For a description of the imputation process, see Appendix C, "Nonsampling and Sampling Errors."

Public-Use Data Preparation

Following the publication of the 1986 and 1989 CBECS statistical reports for both the Building Characteristics Survey and the Energy Suppliers Survey, further work was performed on the basic survey data at the microlevel to prepare the final data tape for release to the public. As in 1986 and 1989, measures for the 1992 CBECS data such as the stripping of all geographic identifiers, except Census region and Census division, were taken to mask the data to ensure that the identity of individual respondents was kept confidential. In 1986 and 1989, all of these procedures culminated in the release of a final data file containing data from both the Building Characteristics Survey and the Energy Suppliers Survey to the public through the National Technical Information Service (NTIS) and the U.S. Government Printing Office (GPO).

For the 1992 CBECS, public-use data diskettes are available in conjunction with each part of the survey. Diskettes containing only the building characteristics data will be made available upon publication of this report. The public-use data file containing data from both the Energy Supplier Survey and the Building Characteristics Survey will be made available when the *Commercial Buildings Energy Consumption and Expenditures 1992* report is published. The public-use data file issued with the reports will be on floppy diskettes to use with personal computers. (See Appendix I for information about ordering the public-use data diskettes.)

Confidentiality of Information

The EIA does not receive or take possession of the names or addresses of individual respondents or any other individually identifiable energy data that could be specifically linked with a building respondent. All names and addresses are maintained by the survey contractor for survey verification purposes only. In addition, geographic identifiers and National Oceanic and Atmospheric Administration (NOAA) Weather Division identifiers are not included on any data files delivered to EIA. Geographic location information is provided to EIA at the Census division level. (See Appendix F for map.) Building characteristics, which could uniquely identify a particular responding building, such as number of floors, building square footage, and number of workers in the building, are masked on any data provided to the EIA. All building-level records that are placed on public-use data files are masked for further confidentiality protection.

Special Data Collection for the Bureau of Census

For the 1986, 1989 and 1992 CBECS, the Census-funded the data collection on expenditures for construction improvements and for maintenance and repairs. EIA collected this supplemental information in the 1992 CBECS Building Questionnaire and in a subsequent Census Followup study. The Census section of the Building Questionnaire was submitted separately for clearance and approval to the U.S. Office of Management and Budget.

In the 1992 CBECS Building Questionnaire, the Census-funded questions were in Section R (Census Supplement) and all respondents were asked these questions. Any respondent who did not have access to the construction improvements was asked the name, address, and telephone number of the person who would have it. These individuals were later contacted if the building was selected for the subsequent Census Followup. Before the Census Followup was conducted, item response on the key item concerning construction improvements was 93.8 percent, or 6,155 of the 6,561 buildings had completed data for this item.

A subsequent three-phase Census Followup study was conducted to reduce both total and partial nonresponse to the Census Supplement, as well as to verify independently the data that were obtained during the original interview. Buildings owned by private utility companies were not eligible for the Census Followup. In the spring of 1993, a letter explaining the purpose of the followup study, along with worksheets and definitions, was sent to 337 building owners and tenant representatives. The respondents were told to use the worksheets to calculate and record the amount of expenditures and to retain the worksheets pending a telephone call from the data collection contractor. Several weeks later, specially trained telephone interviewers called to obtain the data. Five cases met the inclusion criteria for more than one phase of the Census Followup. The overall response rate for the Census Followup was 79.2 percent.

In the first phase of the Census Followup, "Nonresponse Conversion" buildings were selected. These were buildings that failed to answer one or both questions in the Census Supplement during the building characteristics interview. There were 104 "Nonresponse Conversion" buildings. A total of 75 responses was obtained from the first-phase followup effort.

In the second phase of the Census Followup, cases were selected for item nonresponse of "don't know" to the Census-sponsored construction improvements question. Cases were included if the respondent provided the name, address, and telephone number of the person or persons who would have the information. These referrals were often to management companies not located in the same city as the sampled buildings. There were a total of 146 item nonresponse buildings; and 120 or 82.2 percent provided additional information.

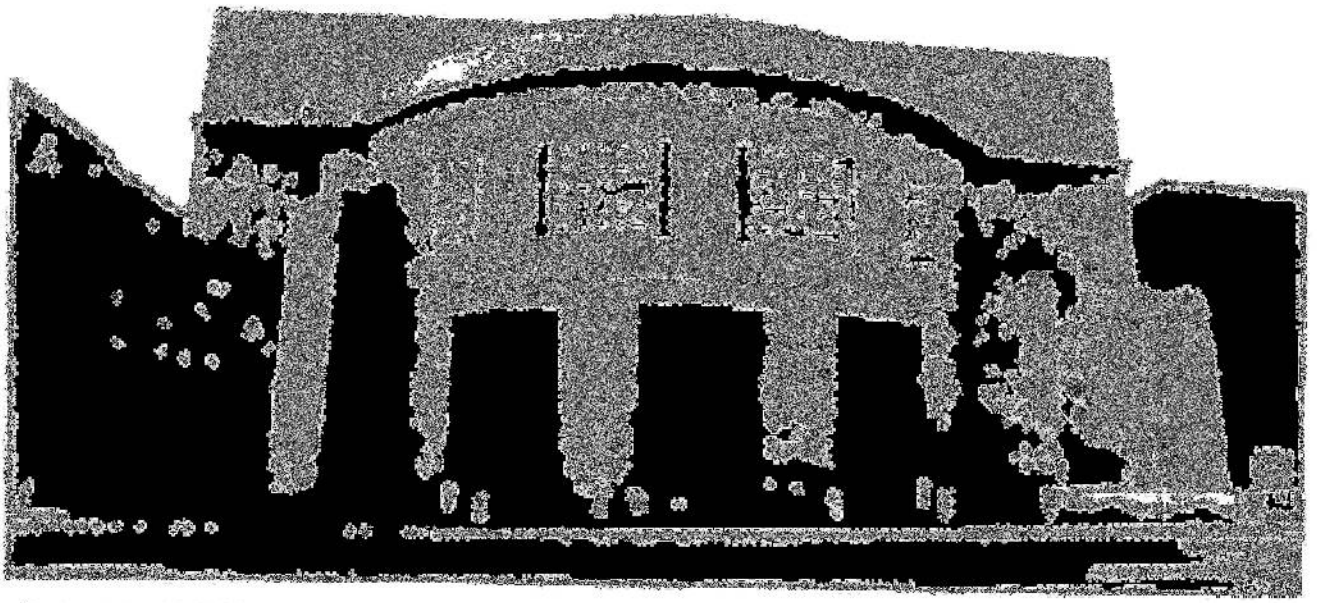
In the third and final phase of the Census Followup, cases were selected to verify independently the data obtained in the original interview when the reported expenditures for one or both questions were $5 million or more. Packages of materials explaining the verification study and requesting the respondent to provide data on the two types of expenditures were mailed to the original respondents to the Census-sponsored questions. The respondents were then telephoned to obtain the data. Of the original interviews, a sample of 92 buildings was selected and 76, or 82.6 percent, resubmitted the data.

The results of the Census Followup study are being evaluated by the Census and will be used in the design of future surveys. The data from the construction improvements and maintenance and repairs questions will be published by the Census in a supplement to the *Current Construction Reports, C-30 Series, Value of New Construction Put in Place.*[27]

[27] 1989 results were published in Expenditures for Nonresidential Improvements and Repairs:1989, *Current Construction Reports Special Studies*, Bureau of the Census, December 1991.

Appendix C

Nonsampling and Sampling Errors



Appendix C

Nonsampling and Sampling Errors

Introduction

All of the statistics published in this report are estimates of population values, such as the total floorspace of commercial buildings in the United States. These estimates are based on reported data from representatives of a randomly chosen subset of the entire population of commercial buildings. As a result, the estimates always differ from the true population values.

The differences between the estimated values and the actual population value errors are of two types, nonsampling errors and sampling errors. Nonsampling errors are differences that would be expected to occur in all possible samples, or in the average of all estimates from all possible samples.

The two sections that follow this introduction, "Data Collection Problems" and "Nonresponse," describe some of the sources of nonsampling error, and how the survey is designed and conducted to minimize such errors. Nonsampling errors can result from: (1) inaccuracy in the data collection due to questionnaire design errors, interviewer error, respondent misunderstanding, and data processing errors; (2) nonresponse for an entire sampled building (unit nonresponse); and (3) nonresponse on a particular question from a responding building (item nonresponse). The section "Data Collection Problems" addresses some of the difficulties encountered in trying to obtain meaningful data on questionnaire items in the 1992 survey. The section "Nonresponse" presents in detail the procedures used to handle unit and item nonresponse.

Most unit nonresponse cases were caused by a respondent's unavailability or refusal to participate in the survey. Item nonresponse resulted when the building respondent did not know, or, less frequently, refused to give the answer to a particular question. Unlike the sampling error, the nonsampling error's magnitude cannot be estimated from the sample data. For this reason, avoiding biases at the outset is a primary objective of all stages of survey design and field procedures. The wording and format of survey questionnaires, the procedures used to select and train interviewers, and the quality control built into the data collection, receipt, and processing operations were all designed to minimize these sources of error. For a discussion of the questionnaire design, interviewer training, and data control, see Appendix B, "How the Survey Was Conducted."

Sampling errors, on the other hand, are random differences between the survey estimate and the population value, that occur because the survey estimate is calculated from a randomly chosen subset of the entire population. The sampling error, averaged over all possible samples, would be zero, but since there is only one sample for the 1992 CBECS, the sampling error is nonzero and unknown for the particular sample chosen. However, the sample design permits sampling errors to be estimated. The section, "Estimation of Standard Errors," describes how the sampling error is estimated and presented for statistics given in this report.

Nonsampling Error

Data Collection Problems

Even though the interviewer was instructed to conduct the interview with the person most knowledgeable about the building, there was a great deal of variation in how much CBECS respondents knew about their buildings. Some respondents did not know some of the information requested; some were able to provide certain information only if the questions were expressed in the particular terms they understood. This presented a special challenge to the CBECS questionnaire designers: with such a diverse population of respondents, it is difficult to construct standard wording for energy concepts that would be understood by all respondents. (See Appendix G, "Survey Forms," for a copy of the Buildings Questionnaire.) Additionally, even when a question is worded clearly and the respondent understands the question and has the required knowledge, simple clerical errors (possibly the fault of the questionnaire layout) can sometimes lead to inaccuracies in the data.

Following is a summary of some difficulties that EIA staff has identified with the survey responses. The extent of these comments should not be viewed as a failure of the questionnaire or the interview process; the data collection process worked well. Rather, these comments indicate areas that require further refinements to improve overall data quality.

Principal Building Activity

The principal building activity refers to the primary function or activity that occupies the most floorspace in the building sampled. In some cases, particularly if the sampled building was one of a number of buildings on a facility, the respondent reported the overall function of the facility or establishment to which the building belonged. In CBECS, for instance, a library is classified as a public assembly building, but a library on a university campus may have been reported as an education building (academic or technical instruction). To help alleviate this confusion, the 1992 CBECS asked a separate question for the overall facility activity for those buildings identified as being part of a facility. The principal activities of respondent buildings were checked against other available information, including the facility activity, interviewer observations, and the building's name, and recoded if an obvious assignment error was made.

Another difficulty with identifying principal building activities is that buildings with the same title may, in fact, have different primary functions. For example, space in a building referred to as a "courthouse" can be devoted primarily to office activities (office), to jail cells (public order and safety), or to hearing rooms (public assembly).

For some buildings, no one activity occupied 50 percent or more of the floorspace, but the activity occupying more space than any other was either industrial or residential. For example, it is possible for a building to have 30 percent of the floorspace devoted to assembly, 30 percent to food sales, and 40 percent to residential. Since more than 50 percent of the floorspace was occupied by commercial activity, these buildings were retained in the sample as commercial buildings, but were included in the "Other" category.

Operating Hours

During the imputation phase of the survey, it became apparent that there were some buildings with anomalous operating hours, which warranted a closer investigation of operating hours. For example, some a.m. times had been reported as p.m. times, and vice versa, apparently through an interviewer or respondent error. Other cases were apparently reported accurately--some buildings do indeed have unusual operating hours.

In 1992, as in 1989, data on operating hours were not ascertained in cases where the building respondent reported that the building was not in use during the previous 12 months. These cases are treated in the detailed tables as having zero operating hours per week. This represents a change from the 1986 survey questionnaire.

In 1992, operating hours were also determined for each day of the week, unlike 1989, which asked for the operating hours for the category "Monday through Friday" and then separately for "Saturday" and for "Sunday." This change allowed for more accurate validation of the total operating hours for the building.

Number of Workers

The CBECS collects data on the number of people who work in commercial buildings. Included in this number are volunteer workers, but not clients, students, or employees who work away from the building. A change in the question between the 1986 and the 1989 CBECS resulted in a somewhat smaller estimate of employment totals for 1989 than the corresponding estimates for 1986. The 1986 CBECS asked for the total number of people working in the building across all shifts. Although this was not obvious in the 1986 questionnaire, it was specified in the interviewer instructions. While it is not inconceivable that some respondents in 1986 may have given the number of workers for the main shift, the responses are, for the most part, consistent with the total number working across all shifts. On the other hand, the 1989 survey specifically asked for the number working during the main shift. The total number of people who work in the building provides a better basis for estimating floorspace by region from employment data, which tend to be more readily available from economic series. The number working during the main shift gives a more meaningful number with to estimate the capacity of the building's energy-using systems. In order to compare the 1992 CBECS number of workers with both the 1986 and 1989 CBECS, the 1992 CBECS asked both the total number of workers across all shifts and the number of workers for the main shift.

In the 1992 CBECS, if a building was not in use during the previous 12 months it was still included in the less-than five category of number of workers.

Heating and Cooling

The phrasing of questions on heating and cooling equipment has presented difficulties in every CBECS conducted thus far and, unfortunately, illustrates difficulties both in question wording and in respondent knowledge. Commercial buildings' heating and cooling systems vary greatly in design and complexity. The CBECS questionnaire designers try to formulate a few questions that could broadly characterize a building's heating and cooling system.

In previous CBECS, some building respondents (especially those from larger buildings), found the questions to be too general to adequately describe their buildings' systems. Other building respondents lacked even the rudimentary knowledge of their buildings' systems required by the questionnaire. To alleviate some of the problems encountered in earlier CBECS in which inconsistencies appeared between types of equipment, fuel sources and the distribution system, the 1992 CBECS questionnaire limited the respondents' choices in such a way that only sensible combinations of heating or cooling equipment with distribution equipment could appear. Additionally, a general question was added to the questionnaire, which asked the respondent to describe the heating and cooling system. This verbatim description was not coded on the computer file, but was of immeasurable value in deciphering the respondents' intentions.

The question of whether the building used "heat pumps" also confused a number of respondents. Two types of problems were associated with the use of heat pumps. First, 134 respondents indicated that they used a heat pump for either heating or cooling but not for both heating and cooling. This may have resulted because the placement of the heat pump category in the cooling question was different from the heating question. (See Appendix G, "Survey Forms," for a copy of the Buildings Questionnaire.)

The second problem pertaining to heat pumps was more troublesome. Some respondents indicated that they used heat pumps for heating but they listed only natural gas as their heating fuel. To date, there are only prototypes of natural gas heat pumps. After further investigation, the respondents that listed heat pumps as heating equipment had been mistaken. The heat pumps were most often confused with packaged units.

Gas Transported for the Account of Others

For the first time, the 1992 CBECS building respondents were asked whether they purchased natural gas directly from a source other than the local distributing company (LDC). This purchasing arrangement is known as "gas transported for the account of others." It is also known as "direct purchase gas" or "spot market gas." The 1992 CBECS data show that the larger buildings tend to be the ones that receive direct purchase gas.

In the 1989 CBECS, this information was asked of the energy suppliers only. Although suppliers could provide the volume of natural gas delivered they could not, in many cases, report the expenditures since they did not know the purchase price of the transported gas. It was believed that the building respondent would be better able to provide information about whether they purchased natural gas under this arrangement, who the suppliers were and what were the wellhead costs, city gate price, LDC charge, and other costs associated with gas transported for the account of others. This, however, proved to be another area where the building respondent had difficulty providing information. Of those reporting that they did buy natural gas under this purchasing arrangement, only 18 percent could report one or more of the costs associated with the purchase.

It appears that CBECS respondents, the people who are supposed to be most knowledgeable about the energy-using systems of the buildings are not the most knowledgeable about billing arrangements. In future CBECS, it may be necessary to target the person most knowledgeable about billing with a separate data collection effort in order to make reliable estimates about gas transported for the account of others.

Renewable Energy Sources

The CBECS attempted to collect information on the use of renewable energy sources in 1992 by including wood, photovoltaic cells (PVC's), and solar thermal panels in the list of possible energy sources that were used to supply energy to the building. An additional question was also asked about the use of special energy technologies, which included passive solar features, geothermal energy, and wind generation. Wood was used in about 2 percent of the buildings as an energy source. Table C1 shows the number of sample buildings reporting the use of various renewable energy sources and special energy technologies such as solar thermal panels, photovoltaic cells, passive solar features, geothermal energy and wind generation. The small number of respondents (less than 20 buildings) prohibited publishing the data in the detailed tables.

Table C1: Number of Sample Buildings Using Renewable Energy Sources and Special Energy Technologies, 1992

Renewable Energy Sources	Sample Cases
Total	6,751
Wood	74
Photovoltaic Cells	1
Solar Thermal Panels	8
Passive Solar Features	49
Thermal Energy Storage	53
Geothermal Energy	2
Well Water for Cooling	43
Waste Incineration to Produce Energy	19
Wind Generation	0

Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

Nonresponse

Unit Nonresponse

The response rate for the 1992 CBECS, reported in Appendix B, was 91.1 percent. That is, of the 7,282 buildings eligible for interview, 8.9 percent did not participate in the Building Characteristics Survey. This rate was similar to that for the 1986 and 1989 CBECS, and represents an extremely low-unit-nonresponse rate for a voluntary survey of this length and complexity.

Weight adjustment was the method used to reduce unit nonresponse bias in the survey statistics. The CBECS sample was designed so that survey responses could be used to estimate characteristics of the entire stock of commercial buildings in the United States. The method of estimation used was to calculate basic sampling weights (base weights) that related the sampled buildings to the entire stock of commercial buildings. In statistical terms, a base weight is the reciprocal of the probability of selecting a building into the sample. A base weight can be understood as the number of actual buildings represented by a sampled building: a sampled building that has a base weight of 1,000 represents itself and 999 similar (but unsampled) buildings in the total stock of buildings.

To reduce the bias from unit nonresponse in the survey statistics, the base weights of respondent buildings were adjusted upward, so that the respondent buildings would represent not only unsampled buildings but also nonrespondent buildings. The base weights of respondent buildings were multiplied by the Adjustment Factor A, defined as the sum of the base weights over all buildings selected for the sample divided by the corresponding sum over all respondent buildings. Respondent weights remained nonzero after weight adjustment. Nonrespondent weights were set to zero because they were accounted for by the upward adjustment of respondent weights.

Unit nonrespondents tended to fall into certain categories. For example, nonresponse tended to be higher in the Northeast than in the Midwest. To reduce nonresponse bias as much as possible, adjustment factors were computed independently within 119 subgroups according to characteristics known from the sampling stage for both responding and nonresponding buildings. These characteristics included the general building activity, the rough size of the building, Census region, and metropolitan versus nonmetropolitan location.

Item Nonresponse

Table C2 contains item nonresponse rates for some of the building characteristics presented in this report. "Eligible" in this context refers to interviewed buildings to which the question item applied; certain sequences of responses to previous questions would make some question items not applicable for some respondents.

Nonresponses to several items in otherwise completed questionnaires were treated by a technique known as hot-deck imputation. In hot-decking, when a certain response is missing for a given building, another building, called a "donor," is randomly chosen to furnish its reported value for that missing item. That value is then assigned to the building with item nonresponse (the nonrespondent, or "receiver").

To serve as a donor, a building had to be similar to the nonrespondent in characteristics correlated with the missing item. This procedure was used to reduce the bias caused by different nonresponse rates for a particular item among different types of buildings. What characteristics were used to define "similar" depended on the nature of the item to be imputed. The most frequently used characteristics were: principal building activity, floorspace category, year constructed category, and Census region. Other characteristics (such as type of heating fuel, type of heating and cooling equipment, and the response for the particular item in the 1986 CBECS for those buildings that were surveyed in 1986) were used for specific items. To hot-deck values for a particular item, all buildings were first grouped according to the values of the matching characteristics specified for that item. Within each group defined by the matching variables, donor buildings were assigned randomly to receiver buildings.

As in the 1986 and 1989 surveys, the 1992 CBECS used a vector hot-deck procedure. With this procedure, the building that donated a particular item to a receiver also donated certain related items if any of these were missing. Thus, a vector of values, rather than a single value, is copied from the donor to the receiver. This procedure helps to keep the hot-decked values internally consistent, avoiding the generation of implausible combinations of building characteristics.

Special Imputations for 1992 CBECS

In 1992, due to natural disasters, there were large areas that were inaccessible to interviewers, and thus could not be interviewed. Because these buildings were clustered in a few areas, they were not adequately represented by buildings elsewhere, and thus it was decided that the unit nonresponse adjustment procedure would not be the optimal way to compensate for these buildings. Instead, in those areas, it was decided to impute for all of the building characteristics, based on information available from the 1992 sample listing stage and from the 1986 survey. These imputations are included in the item nonresponse rates given in Table C2.

Estimation of Standard Errors

Sampling error, as described in the introduction to this appendix, is the difference between the survey estimate and the true population value due to using a random sample to estimate for a population. This difference arises because a random subset, rather than the whole population, is observed. The typical magnitude of the sampling error is measured by the standard error of the estimate. The standard error is the root-mean-square difference between the estimate based on a particular sample and the value that would be obtained by averaging estimates over all possible samples.

If the estimates are unbiased, meaning there is no systematic error, this average over all possible samples is the true population value. In this case, the standard error is simply the root-mean-square difference between the survey estimate and the true population value. If systematic error is present, however, this bias is not included in the error measured by the standard error. Thus, the standard error tends to understate the total estimation error if there are non-negligible biases.

Table C2. Item Nonresponse Percentages for Selected Building Characteristics

Building Characteristics	Eligible Buildings	Number Missing	Percent Nonresponse
Square footage	6751	1525	22.6
Square footage category	6751	196	2.9
Year construction was completed	6751	1906	28.2
Year of construction category	6751	313	4.6
Expansion or reduction since 12/31/86	5889	106	1.8
PCs/computer terminals in building	6751	170	2.5
Able to switch main heating fuel	6102	369	6.0
Percent heated in 1992	6102	216	3.5
Percent cooled in 1992	5429	195	3.6
Commercial refrigerator/freezer equipment present	6751	136	2.0
Building owner	6751	126	1.9
Building is completely vacant	6751	133	2.0
Multibuilding facility or complex	6751	115	1.7
Principal facility activity	3165	118	3.7
Occupant status	6751	115	1.7
Number of establishments/organizations	6751	246	3.6
Space vacant for at least 3 months	6751	167	2.5
Months in use out of past 12 months	6751	253	3.7
Total weekly hours open	6526	418	6.4
Total weekly hours open category	6526	79	1.2
Heat/cool equipment in use extra hours	5649	208	3.7
Lighting equipment in use extra hours	5649	206	3.6
Number of workers (all shifts)	6526	1230	18.8
Number of workers category (all shifts)	6526	217	3.3
Number of workers	6526	1139	17.5
Number of workers category	6526	224	3.4
Wall construction material	6751	126	1.9
Roof construction material	6751	254	3.8
Building shape	6751	119	1.8
No. ext. walls attached other structure	4972	105	2.1
Percent glass on exterior	6751	280	4.1
Percent lit during operating hours	6751	288	4.3
Percent lit during off-hours	6751	366	5.4
Variable air volume (VAV) system	6751	373	5.5
Economizer cycle	6751	299	4.4
Roof or ceiling insulation	6751	427	6.3
Exterior wall insulation	6751	631	9.3
Storm windows or doors	6751	229	3.4
Tinted or reflective glass	6751	178	2.6
Shadings or awnings	6751	174	2.6
Most windows can be opened and closed	6751	161	2.4
Utility sponsored DSM, past 3 years	6751	1081	16.0
Building participated DSM, past 3 years	6751	546	8.1
Facility participated DSM, past 3 years	3110	287	9.2
Building plans participate in DSM in future	6751	873	12.9
Energy audit ever performed	6751	949	14.1
Regular preventive maintenance program	6751	226	3.3
Energy management and control system	6751	180	2.7
Other features to help conserve energy	6751	207	3.1
Person responsible for HVAC equipment	6751	152	2.3
Non-emergency generating capability	6751	137	2.0
Central physical plant on facility	3165	100	3.2
Expenditures for electric in 1992 category	6574	1572	23.9
Expenditures for natural gas in 1992 category	4160	1157	27.8
Interruptible natural gas service	4160	505	12.1
Building uses transportation gas	4160	158	3.8

Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

In principle, random errors can be contributed to the estimate by sources other than the sampling process. Such additional sources of random error include random errors by respondents and data entry staff and random unit nonresponse. To recognize these additional sources of variation, the definition of the sampling process can be expanded to include not just the selection of buildings but all steps required to obtain a set of responses. Under this expanded definition, all random errors can be regarded as sampling errors. The procedures designed to estimate the sampling error for CBECS, incorporate all random components of the estimation process.

Jackknife Replication

Throughout this report, standard errors are given as percents of their estimated values, that is, as relative standard errors (RSE's). Computations of standard errors are more conveniently described, however, in terms of the estimation variance, which is the square of the standard error.

For some types of surveys, a convenient algebraic formula for computing variances can be obtained. However, the CBECS used a list-supplemented, multistage area sample design (see Appendix B, "How the Survey Was Conducted") of such complexity that it is virtually impossible to construct an exact algebraic expression for estimating variances. In particular, convenient formulas based on an assumption of simple random sampling, typical of most standard statistical packages, are entirely inappropriate for the CBECS estimates. Such formulas tend to give severely understated standard errors, making the estimates appear much more accurate than is the case.

The method used to estimate sampling variances for this survey was a jackknife replication method. The idea behind replication methods is to form several pseudoreplicates of the sample by selecting subsets of the full sample. The subsets are selected in such a way that the observed variance of estimates based on the different pseudoreplicates estimates the sampling variance in the overall estimate.

The replication method used begins by grouping first-stage sampling units, such that the units in each group represent two or more independent draws from the same pool of first-stage units, and draws for different groups are also independent. This grouping of first-stage sampling units must be done in accordance with the way the sampling was actually conducted. For the 1992 CBECS, 44 groups of first-stage sampling units were created in this way.

The kth jackknife pseudoreplicate sample set is obtained by deleting all observations from one of the members in the kth group, and multiplying the weights on all cases in the other group members by 2 if there are 2 members in the group and by 1.5 if there are 3 members in the group. Observations in all other groups are unaffected. The kth pseudoestimate is then obtained from this pseudoreplicate sample by following all the steps used to construct the full-sample estimate.

The variances are estimated from the pseudoestimates in the following way. Let X' be a survey estimate (based on the full sample) of characteristic X for a certain category of buildings. For example, X may be the total square footage of buildings using natural gas in the Midwest. Let X_k' be the pseudoestimate of X based on the kth pseudoreplicate sample. The estimated variance of the full-sample estimate X' is then given by:

$$S_X'^2 = \sum_{k=1}^{44} (X_k' - X')^2 .$$

The standard error of X′ is given by:

$$S_{X'} = \sqrt{S_{X'}^2} \ .$$

The relative standard error (percent) of X′ is obtained from this standard error as:

$$RSE_{X'} = \left(\frac{S_{X'}}{X'}\right) \times 100 \ .$$

Generalized Variances

For every estimate in this report, the RSE was computed by the methods described above. This was the RSE used for any statistical tests or confidence intervals given in the text, or to determine if the estimate was too inaccurate to publish (RSE greater than 50 percent).

Space limitations prevent publishing the complete set of RSE's with this document. Instead, a generalized variance technique is provided, by which the reader can compute an approximate RSE for each of the estimates in the main summary tables. For an estimate in the ith row and j^{th} column of a particular table, the approximate RSE is given by the simple formula

$$RSE_{i,j} = R_i C_j$$

where R_i is the RSE row factor given in the last column of row i, and C_j is the RSE column factor given at the top of column j.

The use of the row and column RSE factors is illustrated in Appendix A, "Detailed Tables" section.

Derivation of Row and Column Factors

The row and column factors are determined from a two-factor analysis of the table of RSE's, on the basis of the model

$$\log(RSE_{i,j}) = m + a_i + b_j \ .$$

least-squares estimates for this model are given by

$$m = \overline{\log(RSE)}$$

$$a_i = \overline{\log(RSE_{i.})} - \overline{\log(RSE)}$$

$$b_j = \overline{\log(RSE_{.j})} - \overline{\log(RSE)}$$

where $\overline{\log(RSE)}$ is the mean of $\log(RSE_{i,j})$ over all rows i and columns j, $\overline{\log(RSE_{i.})}$ is the mean over all columns j for a particular row i, and is the mean over all rows i for a particular column j. The row and

column RSE factors are then computed as

$$R_i = \log^{-1}(m + a_i) = \log^{-1}(\overline{\log(RSE_{i.})})$$

$$C_j = \log^{-1}(b_j) = \log^{-1}(\overline{\log(RSE_{.j})} - \overline{\log(RSE)}) .$$

The RSE row factor, R_i, is thus the geometric mean of the RSE's in row i, and the RSE column factor, C_j, is an adjustment factor with geometric mean equal to 1.0.

For a few table cells, there were no sample cases, hence no estimate and no RSE. As a result, some of the arrays of direct estimates $RSE_{i,j}$ had a few missing values. In such cases, the formulas given above for row and column factors still apply, but only after appropriate estimates have been substituted for the missing values. In cases where a statistic was not publishable, because of a high RSE or small cell sample size, the value of $RSE_{i,j}$ was set to missing, so that the computed row and column factors are based only on published cases. Additionally, no RSE Column factors are included for the four columns of median statistics found in Appendix A, "Detailed Tables" (Table A1).

Appendix D

Comparison of CBECS, 1983 to 1992

The religious worship building-type category—where people gather for religious activity, was one of the types of buildings surveyed in the 1992 CBECS. Churches are included under this category.

Appendix D

Comparison of CBECS, 1983 to 1992

This appendix provides a thumbnail sketch of the CBECS[28] over surveys years, 1983, 1986, 1989 and 1992 to assist the user in interpreting the changes that have occurred in the CBECS between 1983 and 1992. This appendix is a direct result of an extensive user-needs study conducted in 1991 for the 1992 CBECS. Users commented that comparisons of CBECS reports were often difficult because of changes to the CBECS questionnaire content. This appendix facilitates the comparison of CBECS data by providing a survey-to-survey glance at energy-related building characteristics that are vital to providing data characteristics for commercial buildings in the United States.

The first survey of commercial buildings was in 1979 and resulted from public concern about foreign oil dependency during the energy crisis in the 1970's. The next commercial buildings survey was in 1983, and thereafter, the CBECS was conducted on a triennial basis. Since the 1983 CBECS was a revisit of the 1979 survey, this appendix begins with the major energy-related commercial building characteristics collected in 1983. Throughout the development of the CBECS energy policy and concerns changed; therefore, the survey of commercial buildings changed to meet these needs. Although comparisons of CBECS reports are difficult, each successive CBECS has evolved to better reflect the energy-related characteristics of U.S. commercial buildings during that survey. Many of these changes were the direct result of input from the users of the CBECS data for the user-needs study. Also, each CBECS reflects the EIA's commitment to obtain the most current energy-related characteristics for commercial buildings. Tables D1 through D5 present a comparison of how selected CBECS data were collected in 1983, 1986, 1989, and 1992. Tables D6 and D7 show new or expanded information for the 1992 CBECS.

Table D1. CBECS Survey Sample and Design, 1983 to 1992[a]

Survey Sample and Design	1983	1986	1989	1992
Sample Size (in scope)	8,479 total 6,773 from 1979 sample and updates 1,706 supplemental list sample	9,189 total 7,349 area sample 1,840 supplemental list sample	8,791 total 6,659 area sample 2,132 supplemental list sample	10,171 total 7,699 area sample 2,472 supplemental list sample Includes an oversample of 400 buildings and 150 office buildings
Target Population - Buildings	Subset of nonresidential buildings excluding buildings in which industrial or agricultural activities occupy more of the total floorspace than any other type of activity	Used primarily for commercial purpose 1,001 square feet or more Buildings 1,000 square feet or less were excluded from the published estimates.[b]	Same as 1986 Interviews were not conducted at buildings 1,000 square feet or less.	Same as 1986 Same as 1989
Target Population - Location	48 contiguous States and District of Columbia	50 States and District of Columbia	Same as 1986	Same as 1986
Data Collection Instruments	Computer Assisted Telephone Interview (CATI)	Personal interview	Same as 1986	Same as 1986
Supplemental Collections	None Collected	Census - collected data on expenditures and maintenance and repairs for construction improvement	Census - same as 1986 EPA - collected data on asbestos EIA - conducted a Facility Survey	Census - same as 1986

[a]For a discussion on the 1992 CBECS sample design, see Appendix B, How the Survey was Conducted.
[b]For a detailed discussion of the scope of the 1986 publication, see the *1986 Commercial Buildings Consumption and Expenditures*, DOE/EIA-0318(86), Energy Information Administration (Washington, DC: Government Printing Office, May 1989).

Source: Energy Information Administration, Office of Energy Markets and End Use, 1983, 1986, 1989, and 1992 Commercial Buildings Energy Consumption Surveys.

[28] Previous surveys were conducted in 1979, 1983, and 1986 under the name Nonresidential Buildings Energy Consumption Survey (NBECS); for consistency, all surveys will be referred to as CBECS in this appendix as well as throughout this report.

Building structure characteristics, such as, year constructed and building activity, and building use characteristics like ownership, hours of operation, and number of employees are all related to a commercial buildings energy consumption. Table D2 shows how the building's characteristics are updated in successive CBECS questionnaires to reflect changes in energy-related interests. The major energy-related commercial building characteristics are square footage, year constructed, and principal building activity. Since the number of occupants (establishments) and the building's operating hours are major contributing factors to energy consumption in commercial buildings, the questionnaire items that measure these characteristics are constantly being updated to reflect the changes in the commercial sector.

Table D2. Comparison of Building Use and Structure Characteristics, 1983 to 1992

Building Characteristics 1983 Baseline	1986	1989	1992
Principal Building Activity Categories			
Only asked of respondent Categories: 1. Assembly 2. Education 3. Food Sales/Service 4. Health Care 5. Lodging 6. Mercantile/Service 7. Office 8. Residential 9. Warehouse 10. Other 11. Vacant	Asked of respondent **and** interviewer observation; Categories: 1. Assembly 2. Education 3. Food Sales 4. Food Service 5. Health Care 6. Lodging - includes Skilled Nursing 7. Mercantile/Service 8. Office 9. Public Order and Safety 10. Warehouse 11. Other 12. Vacant	Same as 1986 Categories: 1. Assembly 2. Education 3. Food Sales 4. Food Services 5. Health Care 6. Lodging - includes Skilled Nursing 7. Mercantile/Service 8. Office 9. Parking Garage 10. Public Order and Safety 11. Warehouse 12. Other 13. Vacant	Same as 1986 Categories: 1. Education 2. Food Sales 3. Food Service 4. Health Care 5. Lodging - includes Skilled Nursing 6. Mercantile/Service 7. Office 8. Parking Garage 9. Public Assembly 10. Public Order and Safety 11. Religious Worship 12. Warehouse and Storage 13. Other 14. Vacant
Floorspace			
Actual square footage OR Square footage categories: 5,000 or Less 5,001 to 10,000 10,001 to 25,000 25,001 to 50,000 50,001 to 100,000 100,001 to 200,000 Over 200,000	Actual square footage OR Square footage categories: 5,000 or Less 5,001 to 10,000 10,001 to 25,000 25,001 to 50,000 50,001 to 100,000 100,001 to 200,000 200,001 to 500,000 Over 500,000	Actual square footage OR Square footage categories: 1,001 to 5,000 5,001 to 10,000 10,001 to 25,000 25,001 to 50,000 50,001 to 100,000 100,001 to 200,000 200,001 to 500,000 Over 500,000	Actual square footage OR Same categories as 1989.
Year Constructed			
Actual year constructed OR Year constructed categories: 1900 or Before 1901-1920 1921-1945 1946-1960 1961-1970 1971-1973 1974-1979 1980-1983	Actual year constructed OR Year constructed categories: 1900 or Before 1901-1920 1921-1945 1946-1960 1961-1970 1971-1973 1974-1979 1980-1983 1984-1986	Actual year constructed OR **Different categories:** 1899 or before 1900-1919 1920-1945 1946-1959 1960-1969 1970-1979 1980-1983 1984-1986 1987-1989	Actual year constructed OR Year constructed categories: 1899 or before 1900-1919 1920-1945 1946-1959 1960-1969 1970-1979 1980-1989 1990-1992

See footnotes at end of table.

Table D2. Comparison of Building Use and Structure Characteristics, 1983 to 1992 (Continued)

Building Characteristics - - 1983 Baseline	1986	1989	1992
Ownership/Occupancy			
Occupancy by an agency of the Federal, State, or local governments	Occupant of the building is the buildings' owner or the owner's business	Occupancy question expanded to include more ways establishments and businesses can occupy a building	1989 occupancy question and a new occupancy question collects: Federal government, State government, local government, private utility, or church
Ownership by an agency of the Federal, State, or local governments	Ownership by Federal, State, and/or local governments (yes, no for each)	Ownership by a government agency. If yes, choose only one; Federal, State, or local agency	Ownership by: Federal government, State government, local government, private utility, or church
Hours of Operation			
Number of hours building is "in operation" each day of the week for any activity	Number of usual operating hours for weekdays, Saturday, Sunday, and holidays when at least 50% of the building's floorspace was in full use OR Open 24 hours or not open	Number of usual operating hours for weekdays, Saturday, Sunday (does not ask for holidays) during the months the building is in use OR Open 24 hours or not open OR Hours vary	Number of normal operating hours for each day of the week (similar to 1983) when the building is in use OR Open 24 hours, not open, or hours vary by day OR Hours vary by season
Number of Employees			
Number of workers in the building (for a typical workday most of the year)	Number of workers in the building "most of the year?" (for all shifts on a typical workday during the year)	Number of workers in the building during the "main shift" during the months the building is in use (for main shift on a typical workday during the year)	Number of workers during the "main shift" when the building is use AND Number of workers across all shifts when the building is in use
Number of Floors			
Number of floors in the tallest section; includes basement, floors in parking garage and below ground level	Same as 1983.	Same as 1983.	Same as 1983 and a separate question collected number of floors below ground level
Predominant Exterior Wall Material Categories			
Not Collected	(Includes Frame) Masonry Over Wood Frame Masonry Frame Steel Frame Siding Over Wood Frame Masonry Frame Metal Panels Concrete Panels	Masonry Siding or Shingles Metal Panels Concrete Panels Window Glass	Same as 1989.
Predominant Roof Material Categories			
Not Collected	(Includes Surface Area) Built-Up Shingles (not wood) Metal Surfacing Synthetic or Rubber Slate or Tile Wood Shingles, Shakes or Other Wooden Materials	Built-Up Shingles (not wood) Metal Surfacing Synthetic or Rubber Slate or Tile Concrete Wooden Materials	Built-Up Shingles (not wood) Metal Surfacing Synthetic or Rubber Slate or Tile Concrete

Source: Energy Information Administration, Office of Energy Markets and End Use, 1983, 1986, 1989, and 1992 Commercial Buildings Energy Consumption Surveys.

One of the major objectives of CBECS is to collect information on the type of energy that is used in the commercial sector and the use of that energy. To meet this objective, CBECS has consistently collected data about the major energy sources and also about renewable energy sources. Very few buildings reported having a secondary water-heating fuel in the 1986 CBECS; therefore, the 1992 CBECS (as well as the 1989 CBECS) did not distinguish between primary and secondary water heating.

Table D3. Comparison of Energy Sources and End Uses, 1983 to 1992

Energy Sources and End Uses - 1983 Baseline	1986	1989	1992
Energy Source Categories			
Electricity Natural Gas Fuel Oil/Kerosene Purchased Steam Propane Other Purchased Chilled Water Coal Purchased Hot Water Wood Solar	Electricity Natural Gas Fuel Oil/Kerosene/Diesel District Steam or Hot Water District Chilled Water Propane Minor Fuels Coal LPG or Bottled Gas Wood Solar	Electricity Natural Gas Fuel Oil/Diesel/Kerosene Bottled Gas/LPG/Propane District Heat District Chilled Water Other Wood Coal Active Solar with Collector Panels	Electricity Natural Gas Fuel Oil/Diesel/Kerosene Bottled Gas/LPG/Propane District Heat District Chilled Water Other District Hot Water Wood Coal Photovoltaic Cells (PVCs) that convert sunlight directly into energy Solar thermal panels that use sunlight to heat fluids
End Use Categories			
Heating Air Conditioning for Cooling Water Heating Cooking Manufacturing Electricity Generation	Space Heating Primary Secondary Air conditioning for Cooling Water Heating Primary Secondary Cooking Manufacturing Electricity Generation	Heating Main Secondary or Backup Air Conditioning for Cooling Water Heating Cooking Manufacturing Electricity Generation	Heating Main Any Other Air Conditioning for Cooling Water Heating Cooking Manufacturing Electricity Generation

Source: Energy Information Administration, Office of Energy Markets and End Use, 1983, 1986, 1989, and 1992 Commercial Buildings Energy Consumption Surveys.

In the 1983 CBECS, several separate questions obtained the data for the heating equipment, heating distribution systems, and cooling equipment in the building. Beginning with the 1986 CBECS, the format was changed to group several categories under a single question. The 1986 CBECS grouped the heating and cooling equipment together; the 1989 CBECS grouped the heating equipment and heating distribution systems together and the cooling equipment and cooling distribution systems together; and the 1992 CBECS linked the equipment and the distribution systems in matrix form. Self-contained units usually serve more than one room and contain both heating equipment and fans. Although the 1983 CBECS collected these specifically as self-contained units, later CBECS defined these as packaged heating units. In 1989, heating panels were no longer a separate distribution category; instead, they were included in the individual space heaters category. In 1992, the category for evaporative coolers (swamp coolers) was collected after a 6-year hiatus.

Table D4. Comparison of Selected Equipment and Equipment-Related Practices, 1983 to 1992

Heating/Cooling - 1983 Baseline	1986	1989	1992
Heating Equipment Categories			
Furnaces/Boilers (inside/outside) Self-Contained Units Heat Pumps Passive Solar Heating	Boilers (inside) Warm-Air Furnaces Individual Space Heaters or Electric Baseboards Packaged Heating Units Air Source Heat Pump Receives District Heat	Boilers (inside) Furnaces Individual Space Heaters Packaged Heating Units Heat Pumps	Heat Pumps Furnaces Individual Space Heaters District Steam or Hot Water Boilers Packaged Heating Units
Cooling Equipment Categories			
Window Units Wall Units Central Systems Heat Pumps Well Water for Cooling	Central Cooling (chillers) Individual Air Conditioners (A/C) Packaged A/C Units Air Source Heat Pumps Receives District Chilled Water Swamp Coolers (Evaporative Coolers)	Central Cooling Individual A/C Packaged A/C Units Heat Pump for Cooling	Residential Type A/C Heat Pumps Individual Room A/C District Chilled Water Central Chillers Packaged A/C Units Swamp Coolers (Evaporative Coolers)
Heating Distribution/Circulation Categories			
Air Forced through Ducts Baseboards Electric Hot Water Steam Radiators/Convectors/Heating Panels in Wall/Floor/Ceiling	Ducted-Forced Air Heating Only Heating and Cooling Variable Air-Volume System Used Steam Radiators or Baseboards Hot Water Radiators or Baseboards Fan-Coil Units Heating Only Heating and Cooling Heating Panels	Air Ducts Heating or Reheating Coils Fan-Coil Units Steam or Hot Water Radiators or Baseboards	Radiators or Baseboards Ducts for Heating Heating Only Heating and Cooling Variable Air-Volume System Used Fan-Coil Units for Heating Heating Only Heating and Cooling Individual Space Heaters
Percent of Floorspace Heated			
Percentage of total heated floorspace	Percentage total floorspace heated to at least 50 degrees Fahrenheit	Same as 1986.	Same as 1986
Percent of Floorspace Cooled			
Percentage of the total square footage cooled	Same as 1983.	Percentage total floorspace cooled by air conditioning equipment	Same as 1989.
Lighting Equipment			
Not Collected	Types of bulbs and percent of floorspace lit by: Standard Fluorescent Energy Efficient Fluorescent Standard Incandescent Fluorescent Energy Efficient Incandescent High-Intensity Discharge	Types of Bulbs and Percent of Floorspace lit by: Incandescent Fluorescent High-Intensity Discharge	Types of Bulbs and Percent of Floorspace lit by: Incandescent Fluorescent other than Compact Fluorescent Compact Fluorescent High-Intensity Discharge
Equipment Related Practices			
Heating/cooling reduced during off-hours	Same as 1983.	Same as 1983.	Heating/Cooling, Hot Water and Lighting reduced during off hours

Source: Energy Information Administration, Office of Energy Markets and End Use, 1983, 1986, 1989, and 1992 Commercial Buildings Energy Consumption Surveys.

Conservation and energy management has become an increasingly important CBECS issue. Because energy-efficient equipment is critical to increased conservation in commercial buildings, the 1992 CBECS included more questions on lighting equipment and HVAC systems.

Table D5. Comparison of Selected Conservation Measures, 1983 to 1992

Conservation Measures - Baseline 1983	1986	1989	1992
Lighting			
Not Collected	Percent of floorspace lit: During operating hours During off hours Presence of: High-Efficiency Ballasts Daylighting Controls Occupancy Sensors/Timed Switches/Time Clocks "Delamping" program	Same as 1986 Presence of: High-Efficiency Ballasts	Same as 1986 Use of: Specular Reflectors Daylighting Controls Occupancy Sensors Time Clocks/Timed Switches Manual Dimmer Switches
Insulation and Weatherstripping Categories			
Roof or Ceiling Insulation Wall Insulation Tinted, reflective, insulated, or thermal pane (special glass) Presence of insulation, insulation added recently, more insulation to be added	Roof or Ceiling Insulation Wall Insulation Storm or Multiple Glazing Tinted, Reflective or Shading Glass or Film Exterior or Interior Shadings or Awnings Weatherstripping or Caulking Same as 1983	Same as 1986 Installed during building construction or added afterwards and when was feature added	Same as 1989 except deletes weatherstripping or caulking
Percent of Exterior Window Glass Categories			
Less than 25 25 to 49 50 to 74 75 or more	25 or Less 26 to 50 51 to 75 Over 75	Not Collected	25 or Less 26 to 50 51 to 75 76 to 100
Energy Audit			
Energy audit conducted in the past year? If yes, was the auditor a private contractor or a utility professional. Measures were taken in response to energy audit. Insulation added as a result of energy audit. If so, was cost savings a reason for addition.	Energy audit ever conducted? If yes, the year. If the year was 1986, the month.	Not Collected	Energy audit conducted since December 31, 1986? If yes, was the sponsor the government, utility or sponsored in-house.
Energy Management and Control System			
Heating or cooling system monitored or controlled by a computerized building automation system	Presence of a Computerized Energy Management and Control System	Energy Management and Control System for: Lighting Heating and Cooling	Energy Management and Control System for: Lighting Heating Cooling Domestic Hot Water
Maintenance and Control of Heating and Cooling			
Regular maintenance at least once a year Heating and/or Cooling Monitored or Controlled by Employee	Same as 1983. Same as 1983.	Regular maintenance program as of July 1989. Same as 1983; if yes, "with thermostat?"	Regularly scheduled maintenance and repair program Not Collected
Heating, Ventilation, and Air Conditioning			
Not Collected	Variable Air-Volume System Waste Heat Recovery	Not Collected	Variable Air-Volume System Economizer Cycle

Source: Energy Information Administration, Office of Energy Markets and End Use, 1983, 1986, 1989, and 1992 Commercial Buildings Energy Consumption Surveys.

In the 1992 CBECS, both new and expanded data on energy-related characteristics were collected on: lighting, equipment (personal computers, refrigeration, and water-heating), building shape, energy-related space functions, Demand-Side Management (DSM) participation, and gas transported for the account of others.[29] Questions were added on gas transported for the account of others (transported gas) to explain some of the differences between supply data and consumption data. Collecting information on the person with the day-to-day responsibility for the heating and cooling system was intended to obtain information about the types of buildings that used a building energy manager. These data are reported in Appendix A, "Detailed Tables," under the row category "Energy Management Practices." (For detailed information on the new or expanded energy-related characteristics, see Appendix B, "How the Survey Was Conducted," and *User-Needs for the 1992 Commercial Buildings Energy Consumption Survey* (DOE/EIA-0555(92)/4, September 1992)).

Table D6. New Energy-Related Building Characteristics, 1992

New Energy-Related Characteristics			
Demand-Side Management (DSM) Type of DSM Program Sponsor of Program Type of Assistance	**Day-to-Day Responsibility** Building Owner/Manager Custodian or Maintenance Engineer Dedicated Building Energy Manager Cleaning or Maintenance Contractor Repair Service Called	**Energy-Related Space Functions** Commercial Food Preparation Computer Room Rooms with Special Ventilation Activities with Large Amounts of Hot Water	**Principal Facility Activity** Collected to provide finer breakdown for buildings on a multibuilding facility
Water-Heating Equipment Centralized System Self-Heating Tank Heated by Space Equipment Decentralized Residential-Type Storage Tank Instantaneous Heater	**Additional Operating Hours for Equipment** Number of additional operating hours when heating and/or cooling or lighting are in use	**Gas Transported for the Account of Others** Purchase of gas transported for the account of others, Supplier of gas, Costs of gas (Previously collected on the 1989 CBECS Supplier Survey)	**Number of Personal Computers/ Computer Terminals** Collects ranges that match the ranges for the number of employees to allow the data user to calculate the approximate ratio of equipment to worker

Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

Table D7. Expanded Energy-Related Building Characteristics, 1992

Expanded Energy-Related Characteristics			
Special Energy Technologies 1992 Categories: thermal energy storage (TES) passive solar geothermal energy well water cooling waste incineration to produce energy wind generation Similar categories first introduced in the 1983 CBECS	**Refrigeration** 1992 collects how many cases or cabinets are "open" and "closed" and the approximate linear feet of these cases or cabinets Limited refrigeration information collected in 1989	**Heating, Ventilation, and Cooling** 1992 collects description of overall heating and cooling system Collects the percent of floorspace heated/cooled by equipment types Links the distribution system to the equipment Similar characteristics collected in 1983 CBECS	**Lighting Conservation Features** 1992 collects percent of floorspace lit by: Specular Reflectors Natural Lighting Controls Occupancy Sensors Time Clocks/Switches Manual Dimmer Switches Limited information collected in the 1983 survey and modified

Source: Energy Information Administration, Office of Energy Markets and End Use, 1992 Commercial Buildings Energy Consumption Survey.

[29]The companion volume, *Commercial Buildings Energy Consumption and Expenditures 1992* will contain data about gas transported for the account of others.

Appendix E

Types of Buildings

Most parking garages are not totally enclosed by walls, however, CODE defines them as buildings, by specific comparison to the general definition.

Appendix E

Types of Buildings

Buildings were classified according to principal activity, which was the primary business, commerce, or function carried on within each building. Buildings used for more than one of the activities described below were assigned to the activity occupying the most floorspace at the time of the interview. Thus, a building assigned to a particular principal activity category may have been used for other activities in a portion of its space or at some time during the year.

Each of the principal activity categories is listed alphabetically and described below. Lists of specific types of buildings included in each category are presented for clarification, but are not intended to be exhaustive.

1. **Agricultural**: See **Other**.

2. **Education**: refers to buildings used for academic or technical classroom instruction. This category includes the following:

   Schools:
   - Preschool
   - Elementary
   - Junior high
   - Senior high
   - College or university classrooms/Laboratories
   - Vocational school

   Other activities that occur on school campuses are reported separately:

   - Administration (see Office)
   - Auditorium (see Public Assembly)
   - Dormitory (see Lodging)
   - Gymnasium (see Public Assembly)
   - Infirmary (see Health Care)
   - Library (see Public Assembly)
   - Museum (see Public Assembly)
   - School for the Mentally Retarded (see Health Care)
   - Stadium (see Public Assembly)
   - Student Union (see Public Assembly)

3. **Food Sales**: refer to buildings used for retail or wholesale of food. This category includes the following:

   - Convenience store or market
   - Farmer's market, Fruit/Vegetable market
   - Meat/Seafood store
   - Retail bakery
   - Specialty food store
   - Supermarket/Grocery store

4. **Food Service**: refers to buildings used for preparation and sale of prepared food and beverages for consumption. This category includes the following:

   Prepared-Meal Services:
   - Cafeteria

   Carryout-Service:
   - Caterer
   - Fast-food establishment
   - Pizza parlor
   - Sandwich shop

   Full-Service Restaurant:
   - Bar
   - Bar and grill
   - Coffee shop
   - Diner
   - Full-menu-service establishment

5. **Health Care**: refers to buildings used as diagnostic and treatment facilities for both inpatient and outpatient care.

   Inpatient facilities treat the mentally or physically ill. Buildings for overnight care are in this grouping. This category includes the following:

   Medical Care Hospital:
   - Chronic disease
   - Ear, eye, nose, and throat
   - General medical and surgical
   - Maternity
   - Medical infirmary (connected with an institution)
   - Orthopedic
   - Tuberculosis/other respiratory disease

   Mental Facility:
   - Mental retardation/schools for the mentally retarded
   - Psychiatric

   Rehabilitation Facility:
   - Alcoholism
   - Substance abuse/narcotics/drug addiction
   - Physical therapy

   Veterinary Facility:
   - Hospital for animals
   - Kennel

   Excluded from this group are skilled nursing or other residential care facilities (nursing homes). These buildings are classified as "Lodging" buildings.

Outpatient care may be medical, dental, or psychiatric. A building used for outpatient veterinary practices also falls into this category. This category includes the following:

Dental Clinic

Medical Clinic:
- Abortion/birth control
- Ear, eye, nose, and throat
- Emergency walk-in
- General

Mental health/psychiatric clinic

Veterinary clinic

(Inpatient and outpatient buildings are combined in the "Health Care" category in Appendix A, "Detailed Tables" of this report.)

6. **Industrial/Manufacturing**: See **Other.**

7. **Laboratory**: refers to buildings used for activities which utilize equipment for experimental testing or for analysis. This category includes the following:

   Mechanical/Electrical Laboratory
   Medical/Dental Laboratory
   Agricultural Laboratory

   (Laboratory buildings are included in the "Other" category in Appendix A, "Detailed Tables" of this report.)

8. **Lodging**: refers to buildings used to offer multiple accommodations for short-term or long-term residents (including nursing homes). This category includes the following:

   Short-Term Residence:
   - Convention hotel
   - Hotel
   - Inn
   - Motel
   - Shelter home
   - Tourist home

   Long-Term Residence:
   - Boarding house
   - Convent/monastery
   - Dormitory/sorority/fraternity
   - Orphanage

   (Skilled nursing homes are included in the "Lodging" category in Appendix A, "Detailed Tables" of this report.)

9. **Mercantile and Service**: refers to buildings used for sales and displays of goods or services (excluding food). This category includes the following:

   Automotive Sales and Service:
   - Automobile dealers
   - Gasoline stations
   - Motor vehicle repair/service

   Retail Sales:
   - Building materials, garden supply, hardware store
   - Department stores, apparel stores
   - Drugstores
   - Furniture, home-furnishings and home-equipment stores
   - Multiretail establishments

   Services (Except Food):
   - Laundry/dry cleaner/car wash
   - Multiservice establishment
   - Personal services
   - Post office

   Shopping Mall

   Strip Shopping Center

   Wholesale Goods (except food)

10. **Nonrefrigerated Warehouse or Storage: See Warehouse and Storage.**

11. **Office**: refers to buildings used for general office space, professional offices, and administrative offices. This category includes the following:

   Data Processing:
   - Computer center
   - Data entry/Keypunch

   Financial Office Building:
   - Bank
   - Brokerage firm
   - Insurance
   - Real estate
   - Securities

   Professional Office Building:
   - Administration of an institution
   - Consulting
   - Corporate
   - Engineering
   - Law
   - Management
   - Medical
   - Mixed professional

12. **Other**: refers to buildings used for activities that do not fit into any of the specifically named categories. This category includes the following:

    Crematorium
    Hangar
    Public restrooms/Showers
    Telephone exchange

    (Also included in the "Other" category are buildings that have several commercial activities that together represent 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/manufacturing, or residential.)

    (Laboratory buildings are also included in the "Other" category in Appendix A, "Detailed Tables," of this report.)

13. **Parking Garage**: refers to buildings in which cars are parked. Buildings in this category need not be totally enclosed by walls.

14. **Public Assembly**: refers to buildings in which people gather, in private or public meeting halls, for social or recreational activities. (In previous surveys, Public Assembly has been classified under **Assembly**.) This category includes the following:

    Entertainment Building:
    - Archive/art gallery/exhibit hall/library/museum
    - Coliseum/arena (enclosed)
    - Concert hall
    - Observatory/planetarium
    - Night Club
    - Radio/TV station or studio
    - Theater/movie house/cinema

    Recreational Facility:
    - Amusement arcade
    - Bowling alley
    - Gymnasium/YMCA or YWCA/indoor racket sports, recreation center/athletic facility
    - Indoor pool
    - Poolroom
    - Skating rink (ice skating or roller skating)

    Social/Public/Civic Assembly:
    - Assembly hall
    - Auditorium
    - Convention hall
    - Funeral home
    - Lecture hall
    - Lodge hall
    - Meeting hall
    - Student union
    - Town hall

    Other Enclosed Assembly Building:
    - Armory
    - Passenger terminal
    - Stadium

15. **Public Order and Safety**: refers to buildings used for the preservation of law and order or safety. This category includes the following:

    Courthouse
    Fire station
    Jail/prison
    Penitentiary
    Police station
    Reformatory
    Sheriff's office

16. **Refrigerated Warehouse or Storage**: See **Warehouse and Storage.**

17. **Religious Worship**: refers to buildings in which people gather for religious activities. (In previous surveys, Religious Assembly has been classified under **Assembly**.) This category includes the following:

    Chapel
    Church
    Mosque
    Synagogue
    Temple

18. **Residential**: See **Other**.

19. **Skilled Nursing/Other Residential Care**: refers to buildings used as facilities which offer 24-hour nursing/medical care. This category includes the following:

    Homes for the aged
    Nursing homes

    (Skilled nursing homes are included in the "Lodging" category in Appendix A, "Detailed Tables," of this report.)

20. **Warehouse and Storage**: refers to buildings used to store goods, manufactured products, merchandise, or raw materials. This category includes the following:

    Refrigerated Storage
    Nonrefrigerated Warehouse

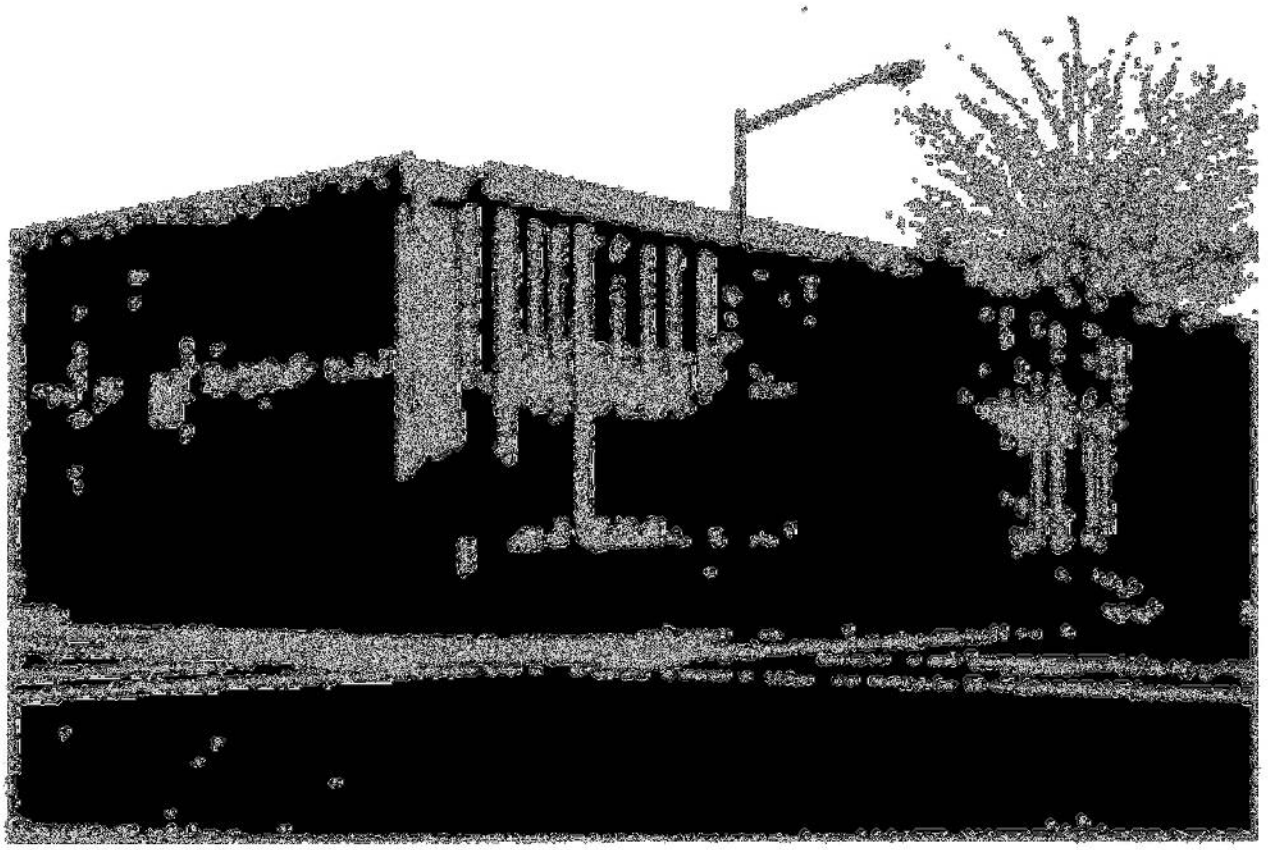
    (Refrigerated storage is specifically designed to store perishable goods or merchandise under refrigeration. Includes "cold storage" facilities, which store products at temperatures between 0 degrees Fahrenheit and 50 degrees Fahrenheit and "freezer facilities," which store products at between 0 degrees Fahrenheit and -20 degrees Fahrenheit.

    Refrigerated and nonrefrigerated warehouses are combined under the "Warehouse" category in Appendix A, "Detailed Tables," of this report.)

21. **Vacant**: refers to commercial buildings in which more floorspace was vacant than was used for any single commercial activity (as defined above) at the time of interview. Thus a vacant building may have some occupied floorspace.

Appendix F

U.S. Climate Zones and Census Regions and Divisions Maps

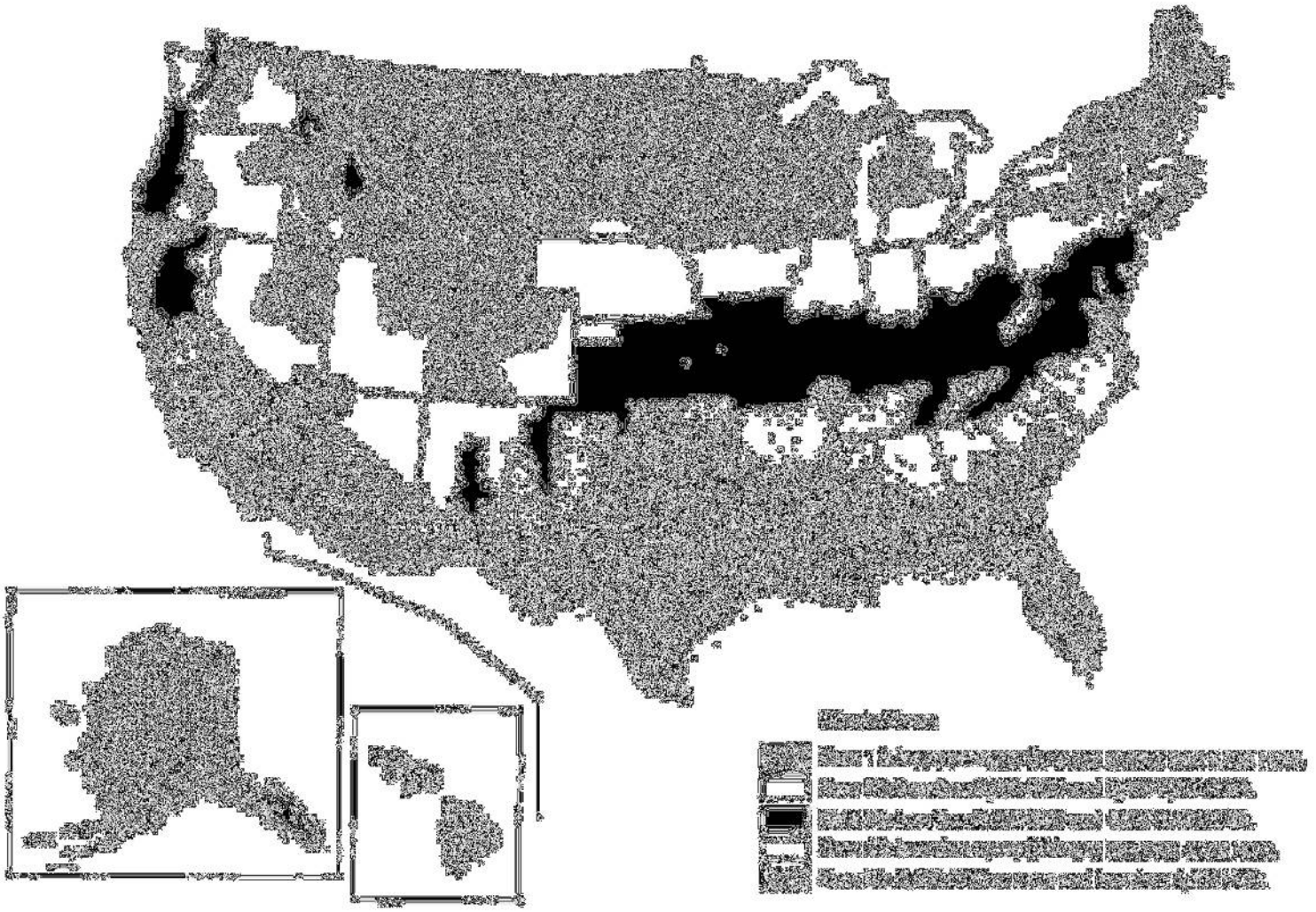


In the 2002 CBECS, an example of a multibuilding facility is a university campus.

Appendix F

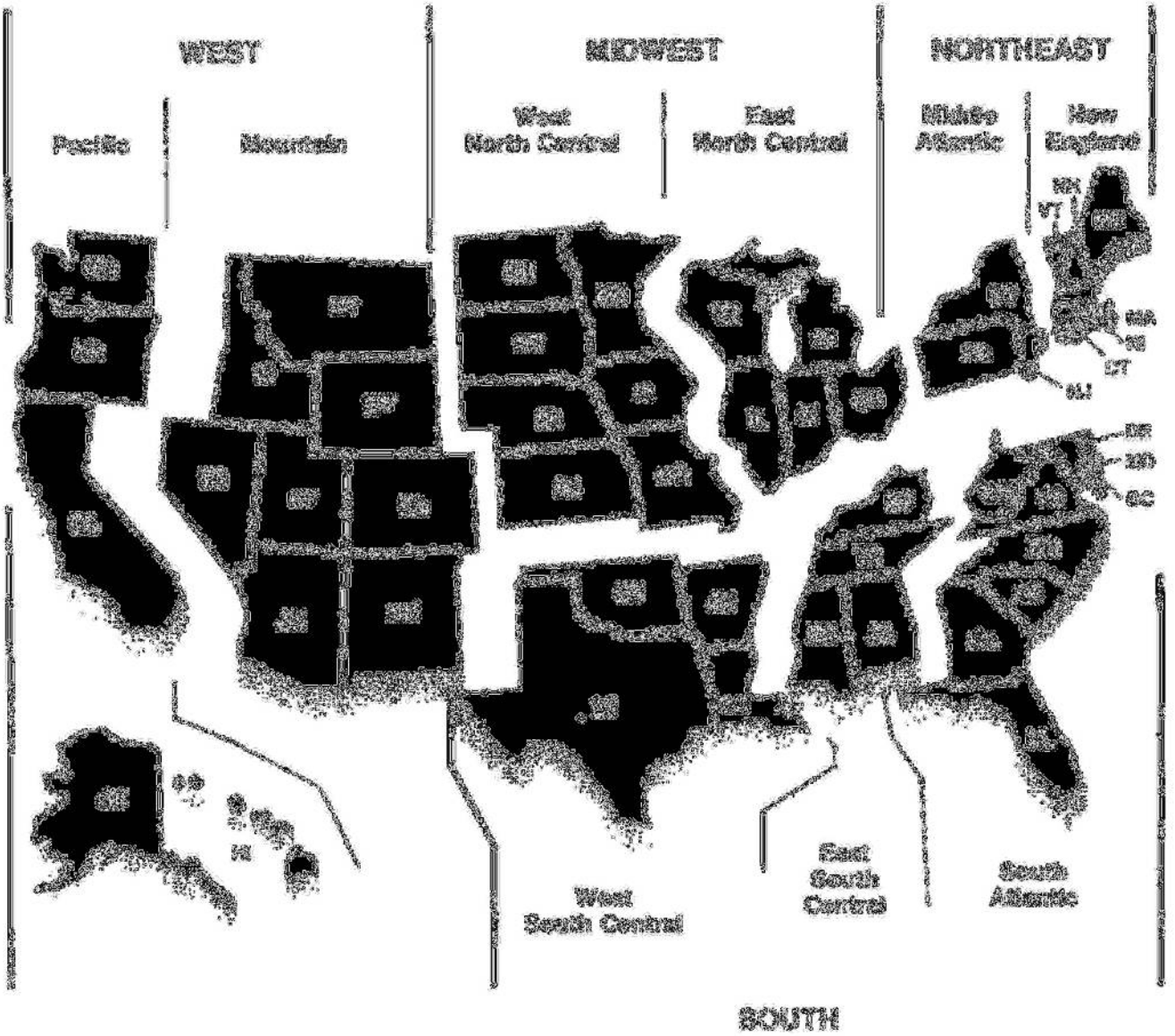
U.S. Climate Zones and Census Regions and Divisions Maps

U.S. Climate Zones



U.S. Census Regions and Divisions

U.S. Census Regions and Divisions



Appendix G

Survey Forms

In the 1993 CBECS, libraries are classified as a public assembly building type.

Appendix G

Survey Forms

This appendix contains the following data collection forms used in the 1992 Commercial Buildings Energy Consumption Survey.

- Form EIA-871-A--Building Questionnaire (actual form was green)
- For EIA-871-A--Authorization Form (Waiver). This is included as the last two pages of the Building Questionnaire
- Form EIA-G--Construction Improvement and Maintenance and Repairs Supplemental (collected for the U.S. Bureau of the Census). This is included in Section R of the Building Questionnaire.

Form EIA-871A (03/92)

Form Approval
OMB No: 1905-0145
Expires: May 31, 1994

U.S. DEPARTMENT OF ENERGY

Commercial Buildings Energy Consumption Survey For 1992
BUILDING QUESTIONNAIRE

ID: _____

BUILDING NAME: _____

ADDRESS: _____
STREET

_____
CITY STATE ZIP

COMMENTS: _____

_____

_____

INITIAL CONTACT TO DETERMINE RESPONDENT

I'm _____ from Westat, Inc., a social science research firm. We are conducting a study for the U.S. Department of Energy about energy consumption in nonresidential buildings. May I speak with the building manager or a person knowledgeable about the types of energy coming into the building? May I have that person's name, title and address at which he or she might be located?

NAME: _____

TITLE: _____

LOCATION: _____ PHONE (____) _____

FAX # (____) _____

INTRODUCTION TO INTERVIEW

Hello, I'm _____ from Westat, Inc., a social science research firm. We are conducting a study for the U.S. Department of Energy about energy consumption in nonresidential buildings (HAND LETTER). *Although your response is voluntary, we hope you will participate in this important study of energy use.*

IF ASKED ABOUT CONFIDENTIALITY, READ:

Any information we collect that would permit identification of respondents or their buildings will be confidential and used only for statistical purposes. Data that can be identified with individual respondents will not be disclosed or released to anyone, including the Department of Energy, for any other purpose, except as required by law.

INTERVIEWER NAME: _____ ID NO. _____

BOX 1

INTERVIEWER OBSERVATION OF BUILDING

1-1. IS BUILDING A SHOPPING CENTER/MALL, SERIES OF ATTACHED STORAGE UNITS, A BLOCK OF CLASSROOMS OR MOTEL ROOMS?

YES . . . . . 1 (BOX 3 AND CIRCLE 1)

NO 2

1-2. CAN YOU DETERMINE FROM THE LISTING, THE BUILDING TO INTERVIEW?

YES, THE LISTED STRUCTURE IS CLEARLY IDENTIFIABLE AND SEPARATE FROM ANY OTHER STRUCTURE . . . . . 1 (BOX 3 AND CIRCLE 1)

NO 2

1-3. FROM YOUR OBSERVATION, THE LISTED STRUCTURE,

*APPEARS TO BE ATTACHED TO ANOTHER **LISTED** STRUCTURE(S) (RECORD ADDRESS OF OBSERVED ATTACHED STRUCTURE):*
_____, ... 1 (A-2)

*APPEARS TO BE ATTACHED TO ANOTHER **UNLISTED** STRUCTURE(S) (RECORD ADDRESS OF OBSERVED ATTACHED STRUCTURE):*
_____, ... 2 (A-2)

APPEARS TO BE TWO OR MORE ATTACHED STRUCTURES DESCRIBED BY A SINGLE LISTING LINE (RECORD ADDRESSES OR DESCRIPTIONS OF OBSERVED ATTACHED STRUCTURES):
_____, ... 3 (A-1)

IS THREE OR FEWER FREESTANDING STRUCTURES (CONDUCT AN INTERVIEW FOR EACH STRUCTURE). . . . . 4 (BOX 3 AND CIRCLE 3)

IS FOUR OR MORE FREESTANDING STRUCTURES (CALL SAMPLING HOTLINE FOR INSTRUCTIONS) 5

COULD BE ONE OF SEVERAL STRUCTURES, CANNOT DETERMINE WHICH ONE (CALL SUPERVISOR FOR INSTRUCTIONS) 6

TIME BEGAN: _____

A. BUILDING IDENTIFICATION QUESTIONS

A-1. First, I need to make sure we have correctly described the building we want you to answer questions about. Our records list the structure as (ADDRESS OR DESCRIPTION FROM LABEL OR LISTING). Is the entire structure owned by the same person or organization?

YES 1
NO 2 (A-1B)

A-1A. Are there permanent walls that extend from the ground level to the roof that subdivide (ADDRESS OR DESCRIPTION FROM LABEL OR LISTING) into totally separate structures such as (READ DESCRIPTION FROM 1-3)?

YES 1
NO . . . . . 2 (BOX 3 AND CIRCLE 5)

A-1B. What are the addresses of the (separate/separately owned) parts of this structure? IF PARTS OF STRUCTURE DO NOT HAVE ADDRESSES, OBTAIN DISTINGUISHING DESCRIPTIONS. ONLY RECORD PARTS OF STRUCTURE DESCRIBED BY SAMPLED LISTING LINE.

(1) _____
(2) _____
(3) _____
(4) _____

} (BOX 3 AND CIRCLE 6)

A-2. First, I need to make sure we have correctly described the building we want you to answer questions about. Our records list the structure as (ADDRESS OR DESCRIPTION FROM LABEL OR LISTING). Is that attached or connected to any other structure, such as (READ THE DESCRIPTION(S) FROM 1-3)?

YES 1
NO ..... 2 (BOX 3 AND CIRCLE 1)

What is(are) the attached address(es)? (RECORD ADDITIONAL ADDRESS(ES)):

(1) _____
(2) _____
(3) _____
(4) _____

A-3A. Is (READ A-2 LINE (1), REPEAT FOR LINE (2) ETC.) also owned by the same person or organization that owns (ADDRESS OR DESCRIPTION FROM LABEL OR LISTING)?		A-3B. FOR EACH "YES" IN A-3A ASK: Are there permanent walls that extend from the ground level to the roof of the structure described by (LABEL OR LISTING LINE DESCRIPTION) which totally separate it from the structure described by (A-2(1), A-2(2) ETC. DESCRIPTION)?	
		YES	NO
A-2 LINE (1)	YES ..... 1 NO 2	1	2
A-2 LINE (2)	YES ..... 1 NO 2	1	2
A-2 LINE (3)	YES ..... 1 NO 2	1	2
A-2 LINE (4)	YES ..... 1 NO 2	1	2
IF ALL ABOVE ARE "NO" GO TO BOX 3 AND CIRCLE 3.			

BOX 2
ARE ALL A-3B ANSWERS YES?

ALL "YES" ..... 1 (BOX 3 AND CIRCLE 1)

ALL "NO" ..... 2 (BOX 3 AND CIRCLE 5)

SOME "YES"; SOME "NO" ..... 3 (BOX 3 AND CIRCLE 4)

BOX 3

INTERVIEW WILL BE FOR:

SAMPLED LISTED BUILDING 1

EACH SEPARATE FREE STANDING STRUCTURE 2

THE SEPARATELY OWNED STRUCTURE DESCRIBED BY THE SAMPLED LISTED LINE. CONDUCT ONE INTERVIEW FOR THE SAMPLED BUILDING ONLY 3

THE STRUCTURE DESCRIBED BY THE SAMPLED LISTING LINE, INCLUDING EACH STRUCTURE THAT IS NOT SEPARATED FROM IT BY A PERMANENT WALL. CONDUCT ONE INTERVIEW FOR ALL PARTS OF THE BUILDING 4

STRUCTURE CONSIDERED TO BE ONE BUILDING. INCLUDE ALL PARTS OF THE BUILDING 5

EACH SEPARATE OR SEPARATELY OWNED STRUCTURE DESCRIBED BY THE SAMPLED LISTING LINE 6

A-4. The questions I will be asking you will be about the building at (READ ALL ADDRESSES THAT DESCRIBE THE BUILDING).

Does this building, as we have described it, have any other addresses associated with it?

YES 1
NO 2 (A-5)

RECORD VERIFIED STREET ADDRESS(ES):_____

_____

_____

A-5. What is the name of the building? (IF BUILDING HAS NO NAME, ASK NAME OF (LARGEST) ESTABLISHMENT THAT OCCUPIES BUILDING OR OTHER GENERAL DESCRIPTION)

VERIFIED NAME:_____ (BOX 4)

BOX 4

VERIFIED BUILDING NAME IS: (CIRCLE ONE)

NAME OF BUILDING OR ONLY ESTABLISHMENT IN BUILDING . . . 1

NAME OF LARGEST ESTABLISHMENT IN BUILDING 2

NAME OF ESTABLISHMENT BUT NOT LARGEST 3

OTHER 4

A-6. What is the building's ZIP Code? (RECORD NINE DIGIT ZIP CODE IF AVAILABLE)

_____ -_____
ZIP Code

BOX 5

*IF AREA SAMPLE: CHECK TO SEE IF THE **FIRST FIVE DIGITS** OF BUILDING'S **ZIP CODE** MATCH ZIP CODE ON THE LABEL (CHECK ONE BOX)*

BUILDING ZIP MATCHES LABEL: CONTINUE WITH INTERVIEW 1

BUILDING ZIP DOES NOT MATCH LABEL. VERIFY THAT YOU ARE AT THE CORRECT ADDRESS AND WITHIN THE SEGMENT BOUNDARIES.

IF YOU ARE, CONTINUE WITH INTERVIEW 2

IF YOU ARE NOT, DISCONTINUE AND CALL SUPERVISOR 3

A-7. What is the gross or total square feet of all the space, both finished and unfinished, enclosed within the exterior walls of this building, including: basements, indoor parking facilities, hallways, lobbies, stairways, and elevator shafts?

_____ (BOX 6)
TOTAL SQUARE FEET

RECORD ON FOLD-OUT PAGE

DON'T KNOW 9-8

A-8. Here is a card that has categories of gross total square feet. HAND CARD A-8. Which category in your estimation best describes the total gross square feet in this building including all the areas just mentioned? CIRCLE CODE BELOW AND ENTER RANGE ON FOLD-OUT PAGE.

HAND CARD A-8

1,000 SQUARE FEET OR LESS 01
1,001 TO 5,000 SQUARE FEET 02
5,001 TO 10,000 SQUARE FEET 03
10,001 TO 25,000 SQUARE FEET 04
25,001 TO 50,000 SQUARE FEET 05
50,001 TO 100,000 SQUARE FEET 06
100,001 TO 200,000 SQUARE FEET 07
200,001 TO 500,000 SQUARE FEET 08
500,001 TO 1 MILLION SQUARE FEET 09
OVER 1 MILLION SQUARE FEET 10
DON'T KNOW 98

INTERVIEWER: REMEMBER THAT 1,000 SQUARE FEET IS APPROXIMATELY TWICE THE SIZE OF A TWO CAR GARAGE.

BOX 6

IS A-7/A-8 GREATER THAN 1,000?

YES . . . . . *1 (A-9)*

NO . . . . . *2 (TERMINATE)*

This completes the interview. Thank you for your time and help.

TIME ENDED: _____

A-9. Including basements, floors that may be used as a parking garage, or any other floors below ground level, how many floors are in the tallest section of the building?

_____ ---------> RECORD ON FOLD-OUT PAGE, THEN IF ONE FLOOR, A-10. IF MORE THAN ONE FLOOR, A-11.

OF FLOORS

DON'T KNOW 998 (A-12)

A-10. ASK IF ONLY ONE FLOOR: Is any portion of this floor below ground level?

YES 1 (A-12)
NO 2 (A-12)

A-11. ASK IF MORE THAN ONE FLOOR: How many of these floors are below ground level? Please include any floors that are partially below ground level.

_____

FLOORS BELOW GROUND

DON'T KNOW 998

A-12. When was the construction of the major or largest portion of the (A-7/A-8 SQUARE FEET) square feet completed?

_____ ---------> RECORD ON FOLD-OUT PAGE THEN:
IF COMPLETED IN 1992, ASK A-13
IF COMPLETED 1987 TO 1991, ASK B-1
IF COMPLETED BEFORE 1987, ASK A-15

YEAR

DON'T KNOW 9-8 (A-14)

A-13. In what month of 1992 was the building first open for occupancy?

_____ (B-1)

MONTH

DON'T KNOW 9-8 (B-1)

A-14. Here is a card with categories of years. In your estimation, which category contains the year the largest portion of the building was completed?

RECORD ON FOLD-OUT PAGE

HAND CARD A-14

1899 or before	01	1970 - 1979	06	
1900 - 1919	02	1980 - 1986	07	
1920 - 1945	03	1987 - 1989	08	(B-1)
1946 - 1959	04	1990 - 1992	09	(B-1)
1960 - 1969	05	DON'T KNOW	98	

A-15. Has there been an expansion (addition) or reduction (deletion) to the gross total square feet of this building since December 31, 1986? CIRCLE ONE.

YES, AN EXPANSION (ADDITION) 1

YES, A REDUCTION (DELETION) 2

NO . . . . . 3 (BOX 7)

A-16. How large, in square feet, was this (expansion/reduction)?

_____ SQUARE FEET

DON'T KNOW 9-8

BOX 7

LOOK AT THE LABEL ON THE FOLDOUT PAGE.

IS THE BUILDING FROM THE 1986 SAMPLE?

YES . . . . . 1 (BOX 8)

NO 2 (B-1)

BOX 8

CHECK QUESTIONS A-7/A-8, A-9, AND A-12/A-14 ON THE FOLD-OUT PAGE, ARE THEY THE SAME AS 1986 ON FOLD-OUT PAGE FOR THE FOLLOWING?

	YES	NO	UNABLE TO COMPARE
SQUARE FEET	*1*	*2*	*8*
NUMBER OF FLOORS	*1*	*2*	*8*
YEAR CONSTRUCTED	*1*	*2*	*8*

ARE THE SQUARE FEET/NUMBER OF FLOORS/YEAR CONSTRUCTED:

ALL ANSWERED YES OR UNABLE TO COMPARE . . . . . *1 (B-1)*

ONE OR MORE NO *2*

A-17. An interview was conducted for (ADDRESS OR DESCRIPTION FROM LABEL OR LISTING) in 1986. At that time, the (square feet/number of floors/year constructed) was (READ 1986 VALUE FROM THE FOLD-OUT PAGE). Could you please explain the difference? (RECORD EXPLANATION VERBATIM)

_____

_____

_____

_____

_____

BOX 9

ARE YOU AT THE SAME ADDRESS AS DESCRIPTION FROM LABEL OR LISTING?

YES. *1*
(CONTINUE INTERVIEW)

NO. *2*
(DISCONTINUE INTERVIEW AND CALL SUPERVISOR.)

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B. PRINCIPAL BUILDING ACTIVITIES

B-1. INTERVIEWER: BEFORE ASKING QUESTION B-2, CODE BEST DESCRIPTION BASED ON YOUR OBSERVATION. (CIRCLE ONE)

B-2. HAND CARD B-2 In the next few questions, we are trying to define the principal activity in this building. By activity, we mean what the building is used for. Here is a card that shows how building activities are categorized for this study. Considering all of the (A-7/A-8 SQUARE FEET) square feet in this building, would you estimate that 75 percent or more of this space (is used for/is) (INTERVIEWER OBSERVATION)?

	ACTIVITY	CIRCLE ONE	YES	NO
a.	VACANT	01	1 (B-5a)	2 (B-3)
b.	OFFICE/PROFESSIONAL	02	1 (B-7)	2 (B-3)
c.	SHOPPING CENTER/MALL/RETAIL/SERVICE	03	1 (B-7)	2 (B-3)
d.	LABORATORY	04	1 (B-7)	2 (B-3)
e.	NON-REFRIGERATED WAREHOUSE OR STORAGE	05	1 (B-7)	2 (B-3)
f.	FOOD SALES (SUCH AS GROCERY STORES)	06	1 (B-7)	2 (B-3)
g.	PUBLIC ORDER AND SAFETY	07	1 (B-7)	2 (B-3)
h.	OUTPATIENT HEALTH SERVICES/CLINIC	08	1 (B-7)	2 (B-3)
i.	INDUSTRIAL PROCESSING AND MANUFACTURING (IF ANY RETAIL ACTIVITY, CODE AS OTHER AND DESCRIBE)	09	1 (B-6)	2 (B-3)
j.	AGRICULTURAL PURPOSES (IF ANY RETAIL ACTIVITY, CODE AS OTHER AND DESCRIBE)	10	1 (B-6)	2 (B-3)
k.	REFRIGERATED WAREHOUSE OR STORAGE	11	1 (B-7)	2 (B-3)
l.	RELIGIOUS WORSHIP (E.G. CHURCH, SYNAGOGUE, OR MOSQUE)	12	1 (B-5l)	2 (B-3)
m.	PUBLIC ASSEMBLY	13	1 (B-5m)	2 (B-3)
n.	EDUCATION (CLASSROOM BUILDING)	14	1 (B-5n)	2 (B-3)
o.	FOOD SERVICES (RESTAURANTS)	15	1 (B-5o)	2 (B-3)
p.	HOSPITAL/INPATIENT HEALTH SERVICES	16	1 (B-5p)	2 (B-3)
q.	SKILLED NURSING/OTHER RESIDENTIAL CARE (NURSING HOME)	17	1 (B-5q)	2 (B-3)
r.	HOTEL/MOTEL/DORM, ETC.	18	1 (B-5r)	2 (B-3)
s.	RESIDENTIAL (LIVING QUARTERS WITH KITCHEN)	19	1 (B-6)	2 (B-3)
t.	INDOOR ENCLOSED PARKING GARAGE	20	1 (B-7)	2 (B-3)
u.	OTHER (SPECIFY):_____ (E.G. "RETAIL STORE IN A PRINT SHOP" OR "AIRCRAFT HANGAR")	21	1 (B-7)	2 (B-3)

B-3.

Please tell me which activities occupy space in this building.

CIRCLE ALL ACTIVITIES MENTIONED	B-4. Of the (A-7/A-8 SQUARE FEET) square feet in this building, approximately what percentage of space does this activity occupy? TOTAL SHOULD EQUAL 100%		
a. 01	%	---->	B-5. a. IF 50% OR MORE VACANT, ASK: What was this vacant space previously used for? OR IF NEVER USED: What was this space intended to be used for? _____ _____ _____ _____ (GO TO B-7)
b. 02	%		
c. 03	%		
d. 04	%		
e. 05	%		
f. 06	%		
g. 07	%		
h. 08	%		
i. 09	%	IF 50% OR MORE, GO TO B-6.	
j. 10	%	IF 50% OR MORE, GO TO B-6.	
k. 11	%		
l. 12	%	----->	B-5. l. What is the total seating capacity of religious worship areas of the building? _____ SEATS
m. 13	%	---->	m. What is the fixed seating capacity of public assembly areas of the building? _____ SEATS
n. 14	%	---->	n. How many students can be seated in all of the classrooms in the building at one time? _____ STUDENTS
o. 15	%	---->	o. What is the total seating capacity of the food service areas of the building? _____ SEATS
p. 16	%	---->	p. What is the licensed bed capacity of the building? _____ BEDS
q. 17	%	---->	q. What is the licensed bed capacity of the building? _____ BEDS
r. 18	%	---->	r. How many guest rooms are there in the building? _____ ROOMS
s. 19	%	IF 50% OR MORE, GO TO B-6.	AFTER COMPLETING ALL B-4 AND B-5 QUESTIONS GO TO B-7
t. 20	%		
u. 21	%		

IF INELIGIBLE TERMINATE:

B-6. This completes the interview. Thank you very much for your time and help. TIME END: _____

COLUMN A	COLUMN B
B-7. HAND CARD B-7 Now I am going to ask you some questions about some of the ways that space may be used in this building. Previously you told me that this building contains (INSERT A-7/A-8 SQUARE FEET) square feet. *Thinking about all the square footage in this building, please tell me if any space in this building is used:* FEATURE	IF "YES" IN COLUMN A: What is your best estimate of the percent of the floorspace used for (FEATURE)
a. for commercial food preparation and serving such as kitchens, steam tables and warming areas? Do not include seating areas. YES . . . . . 1 -------> NO . . . . . 2 DON'T KNOW 8	_____ %
b. as computer room(s) with separate air conditioning system(s)? YES . . . . . 1 -------> NO . . . . . 2 DON'T KNOW 8	_____ %
c. any use that requires special ventilation equipment, such as laboratories or "clean rooms"? YES . . . . . 1 -------> NO . . . . . 2 DON'T KNOW 8	_____ %
d. any activities requiring large amounts of hot water such as a commercial laundry room, heated pool, spa, sauna, steam room? YES . . . . . 1 -------> NO . . . . . 2 DON'T KNOW 8	_____ %
e. any other function that requires large amounts of energy, such as an ice-skating rink? YES . . . . . 1 -------> NO . . . . . 2 DON'T KNOW . . . . . 8 IF YES, SPECIFY: _____ _____	_____ %

B-8. Are there any personal computers and/or computer terminals in this building? (Personal Computers are also known as PCs.)

YES	1
NO	2 (C-1)
DON'T KNOW	8 (C-1)

B-9. Which category in your estimation best describes the number of PCs and/or computer terminals in this building? CIRCLE ONLY ONE.

HAND CARD B-9

1-4	01
5-9	02
10-19	03
20-49	04
50-99	05
100-249	06
250-499	07
500-999	08
1,000-2,499	09
2,500-4,999	10
5,000 or more	11
DON'T KNOW	98

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C. ENERGY SOURCES AND END USES

C-1. Here is a list of various types of fuels or energy sources. During calendar year 1992 which of these fuels or energy sources will have been used to supply energy to this building?

HAND CARD C-1

- ELECTRICITY
- NATURAL GAS
- FUEL OIL, DIESEL OR KEROSENE
- BOTTLED GAS, LPG OR PROPANE
- DISTRICT STEAM PIPED INTO THE BUILDING FROM A CENTRAL PLANT OR UTILITY
- DISTRICT HOT WATER PIPED INTO THE BUILDING FROM A CENTRAL PLANT OR UTILITY
- DISTRICT CHILLED WATER PIPED INTO THE BUILDING FROM A CENTRAL PLANT OR UTILITY
- WOOD
- COAL
- PHOTOVOLTAIC CELLS (PVCs) THAT CONVERT SUNLIGHT DIRECTLY INTO ENERGY
- SOLAR THERMAL PANELS THAT USE SUNLIGHT TO HEAT FLUIDS

FOR EACH ENERGY SOURCE MENTIONED, PLACE A CHECK (√) IN COLUMN C-1 ON THE FOLD-OUT PAGE

C-2. In addition to (NAMES OF ENERGY SOURCES IN C-1), are there any other energy sources used in this building?

YES ..... 1 ----> RECORD ON FOLD-OUT PAGE
NO 2

C-3. Of the energy sources you just mentioned: RECORD ON FOLD-OUT PAGE

a. Which is used as the main energy source for heating: that is, the energy source used to heat most of the square footage in this building most of the time?

b. Which other energy sources, if any, are used for heating?

Which, if any, of the energy sources you just mentioned are used:

c. For air-conditioning?
d. For domestic hot water heating?
e. For commercial or institutional cooking or food serving?
f. For manufacturing or any other type of industrial activity?
g. To generate electricity?

(CHECK ALL THAT APPLY)

BOX 10

SCAN THE FOLD-OUT PAGE. DOES EACH REPORTED ENERGY SOURCE, OTHER THAN ELECTRICITY, HAVE AT LEAST ONE END-USE REPORTED?

YES ..... 1 (BOX 11)
NO 2 (C-4)

C-4. How is (ENERGY SOURCE WITHOUT END-USE) used in the building (during calendar year 1992)? IF OTHER END-USE APPEARS ON THE FOLD-OUT PAGE, RECORD ON FOLD-OUT PAGE, IF NOT, SPECIFY HERE, AND GO TO BOX 11.

RECORD ON FOLD-OUT PAGE AND GO TO BOX 11.

_____

_____

BOX 11

SCAN THE FOLD-OUT PAGE. HAS AT LEAST ONE BOX BEEN CHECKED IN EACH C-3 COLUMN?

YES . . . . . 1 (BOX 12)
NO 2 (C-5)

C-5. What energy source is used for (END-USE) (during calendar year 1992)?

RECORD ON FOLD-OUT PAGE AND GO TO BOX 12.

BOX 12

SCAN THE FOLD-OUT PAGE. DOES THE BUILDING HAVE AT LEAST ONE FUEL FOR HEATING?

YES 1 (C-6)
NO 2 (C-8)

C-6. Could this building switch to a different main heating fuel within one week's time without substantially reducing the area heated or the temperature maintained in the heated area?

YES 1
NO 2 (C-8)
DON'T KNOW 8 (C-8)

C-7. If the building did have to switch the main heating fuel within one week's time, what fuels would be used instead of (ENERGY SOURCE FROM C-3 column a)? CIRCLE ALL THAT APPLY.

ELECTRICITY 01
NATURAL GAS 02
FUEL OIL/KEROSENE/DIESEL 03
PROPANE 04
DISTRICT STEAM 05
DISTRICT HOT WATER 06
WOOD 07
OTHER (SPECIFY) 08

_____

_____

C-8. Here is a card which lists some special energy technologies which only a few buildings have currently. Are any of these technologies used at present in this building? CIRCLE ALL THAT APPLY.

HAND CARD C-8

a. THERMAL ENERGY STORAGE (TES) OR PUMP STORAGE . . 01

b. PASSIVE SOLAR FEATURES 02

c. GEOTHERMAL ENERGY 03

d. WELL WATER FOR COOLING 04

e. WASTE INCINERATION TO PRODUCE ENERGY 05

f. WIND GENERATION 06

g. ANY OTHER TECHNOLOGY (SPECIFY) 07

_____

_____

h. NONE 08

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D. EQUIPMENT

BOX 13

SCAN COLUMN A OF C-3 ON THE FOLDOUT PAGE. DOES THIS BUILDING HAVE AN ENERGY SOURCE FOR HEATING CHECKED?

YES. 1 (D-1)
NO . . . . . 2 (SKIP TO BOX 14 ON PAGE 20)

D-1. What percentage of the (A-7/A-8 SQUARE FEET) square feet in this building is heated to at least 50° Fahrenheit during calendar year 1992? Be sure to include basements and enclosed garages if they are heated to at least 50 degrees.

_____ % (D-3)

HEATED BUT LESS THAN 50 DEGREES . . . . . 995 (BOX 14 ON PAGE 20)
DON'T KNOW 998

D-2. Here is a list of ranges. What is your best estimate of the percent of heated square feet in this building (to at least 50° Fahrenheit during calendar year 1992)?

HAND CARD BLUE

a. 25 PERCENT OR LESS 1
b. 26 TO 50 PERCENT 2
c. 51 TO 75 PERCENT 3
d. 76 TO 100 PERCENT 4
e. DON'T KNOW 8

INTERVIEWER:

INTENT IS TO DETERMINE THE PERCENTAGE HEATED FOR HUMAN OCCUPANCY.

INCLUDE ALL PARTS OF THE BUILDING HEATED TO AT LEAST 50 DEGREES.

D-3. Now I am going to ask you some questions about how this building is heated and cooled. First, I will ask about the overall heating and cooling system. Then, I will ask a few questions about specific types of heating and cooling equipment.

Briefly, please describe the overall system that is used to heat and/or cool this building.

_____

_____

_____

_____

_____

_____

COLUMN A

D-4. Here is a card listing different types of specific equipment that may be part of the building's heating system and that you may or may not have mentioned in your description. Does this building use:

HAND CARD D-4

ASK ABOUT EACH FEATURE IN THIS COLUMN BEFORE GOING TO COLUMN B.

FEATURE	YES	NO	DK
a. Heat pumps? (*These are devices that heat the interior of a building by absorbing heat from the outside air. They may stand alone or be combined with another type of equipment. In warmer weather, they can also be used to cool a building.*)	1	2	8
b. Furnaces that heat air directly, without using steam or hot water? (*Similar to a residential furnace.*)	1	2	8
c. Individual space heaters, free standing or mounted in walls, ceilings, or windows? (*This includes portable heaters, hanging unit heaters, heating panels, electric baseboards, perimeter heaters that contain heating elements, wood stoves, and fireplaces.*)	1	2	8
d. District steam or hot water piped in from outside the building? Hot water does not include domestic hot water used for cooking and cleaning.	1	2	8
e. Boilers inside the building that produce steam or hot water? (*Also include boilers just outside the building that are primarily associated with it.*)	1	2	8
f. Packaged heating units, often mounted on the roof or on a slab beside the building? (*These are known as self-contained units. They contain heating equipment as well as fans, and may or may not include air conditioning equipment.*)	1	2	8
g. Some other heating equipment? (SPECIFY): _____ _____	1	2	8

☐ BUILDING IS HEATED BUT RESPONDENT DOESN'T KNOW ANY EQUIPMENT TYPE. CHECK THIS BOX AND SKIP TO BOX 14 ON PAGE 20; OTHERWISE GO TO COLUMN B)

BE SURE THAT AT LEAST ONE HEATING SYSTEM IN ROWS "a" THROUGH "g" IS MARKED IN COLUMN A BEFORE GOING TO COLUMN B.

COLUMN B	COLUMN C				
D-5. ASK ABOUT ALL FEATURES WITH A "YES" IN COLUMN A BEFORE GOING TO COLUMN C: Thinking of the heated floorspace in the building, what percent is heated by the (FEATURE)?	D-6. FOR EACH FEATURE WITH A "YES" IN COLUMN A, ASK: Please select the method or methods that best describe how the heat from the (FEATURE) is distributed throughout the building. CIRCLE ALL THAT APPLY HAND CARD D-6				
	STEAM OR HOT WATER RADIATORS OR BASEBOARDS	FORCED AIR THROUGH VENTS (DUCTS) OR AIR HANDLING UNITS	FAN-COIL UNITS WITHOUT VENTS (DUCT)	OTHER	DON'T KNOW
a. _____ %		2	3	4	8
b. _____ %		2		4	8
c. _____ %					
d. _____ %	1	2	3	4	8
e. _____ %	1	2	3	4	8
f. _____ %		2		4	8
g. _____ %	1	2	3	4	8
TOTAL _____ TOTAL SHOULD ADD UP TO AT LEAST 100%					

INTERVIEWER: IF DISTRICT STEAM OR HOT WATER IS PIPED IN FROM OUTSIDE THE BUILDING THERE IS PROBABLY NO BOILER IN THE BUILDING.

MANY PEOPLE USE THE WORDS "BOILER" AND "FURNACE" INTERCHANGEABLY. BE CAREFUL THAT THE DEFINITION IS HEARD.

BOX 14
SCAN COLUMN C OF C-3 ON THE FOLDOUT PAGE. DOES THIS BUILDING HAVE AT LEAST ONE ENERGY SOURCE FOR AIR CONDITIONING CHECKED?

YES. 1 (D-7)
NO . . . . . 2 (SKIP TO D-12 ON PAGE 24)

D-7. What percentage of the (A-7/A-8 SQUARE FEET) square feet in the building is cooled by air-conditioning equipment (during calendar year 1992)?

_____ % (D-9)

DON'T KNOW 998

D-8. Here is a list of ranges. What is your best estimate of the percent of the square feet in this building that is cooled by air-conditioning equipment (during calendar year 1992)?

HAND CARD BLUE

a. 25 PERCENT OR LESS 1
b. 26 TO 50 PERCENT 2
c. 51 TO 75 PERCENT 3
d. 76 TO 100 PERCENT 4
e. DON'T KNOW 8

INTERVIEWER:
THE TERM AIR CONDITIONING REFERS TO THE REMOVAL OF HEAT FROM THE AIR THROUGH THE USE OF REFRIGERATION EQUIPMENT. THE CIRCULATION OF AIR BY FANS IS NOT CONSIDERED AIR-CONDITIONING.

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COLUMN A

D-9. Here is a card listing different types of specific equipment that may be part of a building's cooling system and which you may or may not have mentioned in your earlier description.

HAND CARD
D-9

Does this building use:

ASK ABOUT EACH FEATURE IN THIS COLUMN BEFORE GOING TO COLUMN B.

FEATURE	YES	NO	DK
a. Residential type central air conditioners, other than heat pumps, that cool air directly and circulate it without using chilled water? (*They may be found either alone or in combination with a boiler or furnace.*)	1	2	8
b. Heat pumps for cooling? (*These are devices that can also be used for heating in cooler weather by absorbing heat from the outside air. They may stand alone or be combined with another type of equipment.*)	1	2	8
c. Individual room air-conditioners mounted in a window or wall?	1	2	8
d. District chilled water piped in from outside the building?	1	2	8
e. Central chillers inside the building that chill water for air conditioning? (*Also include chillers just outside the building that are primarily associated with it.*)	1	2	8
f. Packaged air conditioning units, often mounted on the roof or on a slab beside the building? (*These are known as self- contained units, or Direct Expansion (DX). They contain air conditioning equipment as well as fans, and may or may not include heating equipment.*)	1	2	8
g. "Swamp" coolers (Evaporative Coolers)?	1	2	8
h. Some other cooling equipment?	1	2	8
SPECIFY: _____			
☐ BUILDING AIR-CONDITIONED BUT RESPONDENT DOES NOT KNOW EQUIPMENT TYPE. CHECK THIS BOX AND SKIP TO D-12. OTHERWISE GO TO D-10, COLUMN B.			

BE SURE THAT AT LEAST ONE COOLING SYSTEM IN ROWS "a" THROUGH "h" IS MARKED IN COLUMN A BEFORE GOING TO COLUMN B

COLUMN B	COLUMN C			
D-10. ASK ABOUT ALL FEATURES WITH A "YES" IN COLUMN A BEFORE GOING TO COLUMN C: Thinking of the cooled floorspace in the building, what percent is air-conditioned by (FEATURE)?	D-11. FOR EACH FEATURE WITH A "YES" IN COLUMN A, ASK: Please select the method(s) that best describes how the air-conditioning from the (FEATURE) is distributed throughout the building. HAND CARD D-11 CIRCLE ALL THAT APPLY.			
	FAN-COIL UNITS WITHOUT VENTS (DUCTS)	FORCED AIR THROUGH VENTS (DUCTS) OR AIR HANDLING UNITS	OTHER	DON'T KNOW
a. _____ %		2	3	8
b. _____ %		2	3	8
c. _____ %				
d. _____ %	1	2	3	8
e. _____ %	1	2	3	8
f. _____ %		2	3	8
g. _____ %	1	2	3	8
h. _____ %	1	2	3	8
TOTAL _____				
TOTAL SHOULD ADD UP TO AT LEAST 100%				

INTERVIEWER: IF DISTRICT CHILLED WATER IS PIPED IN FROM OUTSIDE THE BUILDING THERE IS PROBABLY NO CHILLER IN THE BUILDING.

D-12. Is there any commercial refrigeration or freezer equipment present in this building?

YES 1
NO . . . . . 2 (BOX 15)
DON'T KNOW . . . . . 8 (BOX 15)

INTERVIEWER: THIS INCLUDES EQUIPMENT OUTSIDE, IF ADJACENT TO THE BUILDING.

D-13. Are there any refrigerated and/or freezer walk-in units in this building?

YES 1
NO 2 (D-15)
DON'T KNOW 8 (D-15)

D-14. How many of these walk-in units are there?

_____
UNITS

DON'T KNOW 98

D-15. In this building, are there any refrigeration and/or freezer cases or cabinets other than walk-ins for the sale, display or storage of perishable materials, such as food or medical supplies?

YES 1
NO . . . . . 2 (BOX 15)
DON'T KNOW . . . . . 8 (BOX 15)

COLUMN A	COLUMN B	COLUMN C
D-16. Other than walk-in units, are any of these commercial sales, display or storage cases or cabinets: READ ACROSS EACH ROW, THEN DOWN	D-17. IF "YES" IN COLUMN A, ASK: How many units are there?	D-18. IF "YES" IN COLUMN A, ASK: Approximately how many linear feet of (D-16 EQUIPMENT TYPE) cases or cabinets are there in this building?
a. Open (without doors or with only flexible covers)? YES . . . . . 1 ----> NO . . . . . 2 DON'T KNOW 8	a. _____ UNITS DON'T KNOW . . 9-8	a. _____ LINEAR FEET DON'T KNOW 9-8
b. Closed (with doors)? YES . . . . . 1 ----> NO . . . . . 2 DON'T KNOW 8	b. _____ UNITS DON'T KNOW . . 9-8	b. _____ LINEAR FEET DON'T KNOW 9-8

BOX 15

SCAN COLUMN D OF C-3 ON THE FOLDOUT PAGE. DOES THIS BUILDING HAVE AT LEAST ONE ENERGY SOURCE FOR WATER HEATING CHECKED?

YES. 1 (D-19)
NO . . . . . 2 (SKIP TO SECTION E)

D-19. Here is a listing of types of water heating systems. How would you best describe this building's water heating system? (CIRCLE ALL THAT APPLY)

HAND CARD D-19

a. A CENTRALIZED SYSTEM (WHERE ALL WATER HEATING IS PERFORMED IN ONE PLACE):

1. WITH A STORAGE TANK THAT GENERATES ITS OWN HEAT 1

2. WHICH DRAWS HEAT FROM THE SPACE HEATING EQUIPMENT 2

3. OTHER TYPE OF CENTRALIZED SYSTEM 3

SPECIFY _____

_____

b. A DISTRIBUTED/POINT OF USE SYSTEM (WHICH HAS MORE THAN ONE WATER HEATING UNIT LOCATED AT, OR CLOSE BY, THE POINT OF USE):

4. WITH RESIDENTIAL-TYPE STORAGE WATER HEATERS 4

5. WITH INSTANTANEOUS HEATERS AT POINT OF USE (NO HOT WATER STORAGE TANKS) 5

6. OTHER TYPE OF DISTRIBUTED SYSTEM 6

SPECIFY _____

_____

c. DON'T KNOW 8

E. BUILDING OWNERSHIP AND OCCUPANCY CHARACTERISTICS

The next few questions are about the ownership and occupancy of the building.

E-1. Is this building **owned** by: CIRCLE ONLY ONE.

HAND CARD E-1

a. a **federal** government agency? 1

b. a **state** government agency? 2

c. a **local** government agency? 3

d. one of the following types of **privately-owned** utility companies: railroad, oil pipeline, electric, gas, telephone, or TV cable? 4

e. a church, synagogue, or other religious organization or group? 5

f. any other type of individual or group? (such as a private business or non-profit organization)? 6

E-2. By "occupancy", we mean to hold or lease space on a full-time basis. Is any part of this building **occupied** by: CIRCLE ONE RESPONSE ON EACH LINE.

HAND CARD E-2

	YES	NO	DK
a. a **federal** government agency?	1	2	8
b. a **state** government agency?	1	2	8
c. a **local** government agency?	1	2	8
d. one of the following types of **privately-owned** utility companies: railroad, oil pipeline, electric, gas, telephone, or TV cable?	1	2	8
e. a church, synagogue, or other religious organization or group?	1	2	8
f. any other type of individual or group (such as a private business or non-profit organization)?	1	2	8
g. building is completely vacant?	1	2	8

E-3. Is the building part of a multibuilding facility or complex? By a multibuilding facility or complex, we mean a group of two or more buildings on the same site owned or operated by a single organization, business or individual.

YES . . . . . 1 ——> RECORD ON FOLD-OUT PAGE
NO 2 (E-5)

E-4. What is the primary business, commerce, or function carried on in this multibuilding facility or complex? CIRCLE ONLY ONE.

HAND CARD E-4

SCHOOLS:
- PRIMARY OR SECONDARY SCHOOL (GRADES K-12) 01
- COLLEGE, UNIVERSITY OR JUNIOR COLLEGE 02
- OTHER SCHOOLS 03

RETAIL SALES AND SERVICES:
- SHOPPING CENTER/MALL 04
- AUTOMOTIVE SALES AND SERVICE 05
- OTHER RETAIL SALES AND SERVICE 06

OTHER FUNCTIONS:
- OFFICE 07
- WAREHOUSE 08
- INDUSTRIAL/MANUFACTURING 09
- HOSPITAL OR OTHER HEALTH SERVICE 10
- RELIGIOUS ACTIVITIES (OTHER THAN SCHOOLS) 11
- HOTEL/MOTEL 12
- AMUSEMENT OR RECREATION (SUCH AS A COUNTRY CLUB OR CONCERT HALL) 13
- TRANSPORTATION (SUCH AS TERMINALS, DEPOTS, AIRPORTS) 14
- RESIDENTIAL 15
- AGRICULTURAL 16
- OTHER (SPECIFY)_____ . . 17

E-5. Here is a card that lists different ways businesses or organizations can occupy a building. (By "occupy", we mean to hold or lease space on a full-time basis.) Please tell me which category best applies to this building.

RECORD ON FOLD-OUT PAGE

HAND CARD E-5

a. **ONE** BUSINESS OR ORGANIZATION AND THE OCCUPANT IS:

1. THE OWNER OR OWNER'S REPRESENTATIVE 1 (E-8)
2. NOT THE OWNER OR OWNER'S REPRESENTATIVE 2 (E-8)

b. **MORE THAN ONE** BUSINESS OR ORGANIZATION AND THE OCCUPANT(S):

3. INCLUDE THE OWNER OR OWNER'S REPRESENTATIVE 3
4. DO NOT INCLUDE THE OWNER OR OWNER'S REPRESENTATIVE 4

c. CURRENTLY UNOCCUPIED 5 (E-8)

E-6. (Including the owner or owner's representative), how many businesses or organizations currently occupy the building?

RECORD ON FOLD-OUT PAGE

_____ (E-8)
NUMBER OF BUSINESSES OR ORGANIZATIONS

DON'T KNOW 9-8

E-7. Which category on this card gives your best estimate of the number of businesses or organizations currently occupying the building?

HAND CARD E-7

2 - 5 1
6 - 10 2
11 - 20 3
21 - 49 4
50 - 99 5
100 OR MORE 6
DON'T KNOW 8

E-8. Has any space in the building been vacant or unoccupied for at least 3 consecutive months during calendar year 1992? Please include your expectations for the rest of the year.

YES 1
NO 2 (E-12)
DON'T KNOW 8 (E-12)

COLUMN A	COLUMN B	COLUMN C				
E-9. Please indicate which months during 1992 that this building or part of this building was vacant. Please include your expectations for the rest of the year. CIRCLE ALL THAT APPLY.	ASK FOR EACH MONTH CIRCLED IN COLUMN A E-10 What is your best estimate of the percent of (A-7/A-8 SQUARE FEET) that was vacant during (MONTH)?	ASK ONLY IF THE ANSWER TO COLUMN B IS "DON'T KNOW". HAND CARD BLUE E-11. Please indicate the range that best describes the vacant floorspace during (MONTH).				
MONTH		0-25%	26-50%	51-75%	76-100%	DON'T KNOW
JANUARY 01	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
FEBRUARY 02	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
MARCH 03	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
APRIL 04	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
MAY 05	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
JUNE 06	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
JULY 07	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
AUGUST 08	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
SEPTEMBER 09	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
OCTOBER 10	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
NOVEMBER 11	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8
DECEMBER 12	_____% DON'T KNOW . . . 998 --->	1	2	3	4	8

E-12. How many months out of the past 12 months was this building in use?

_____
NUMBER OF MONTHS

NOT IN USE DURING PAST 12 MONTHS 00 (F-1)
DON'T KNOW 98 (E-14)

E-13. When the building is in use, what are the normal operating hours on: READ EACH DAY OF THE WEEK AND RECORD THE OPERATING HOURS. BE SURE TO CIRCLE AM OR PM.

(Except for buildings that are open 24 hours a day, operating hours refer to the arrival and departure times of most of the occupants of the building.)

DAY	OPERATING HOURS	OPEN 24 HRS. (✓)	NOT OPEN (✓)	HOURS VARY (✓)
Monday?	AM ____ PM to AM ____ PM	☐	☐	☐
Tuesday?	AM ____ PM to AM ____ PM	☐	☐	☐
Wednesday?	AM ____ PM to AM ____ PM	☐	☐	☐
Thursday?	AM ____ PM to AM ____ PM	☐	☐	☐
Friday?	AM ____ PM to AM ____ PM	☐	☐	☐
Saturday?	AM ____ PM to AM ____ PM	☐	☐	☐
Sunday?	AM ____ PM to AM ____ PM	☐	☐	☐

--OR-->

HOURS VARY BY SEASON
☐ (E-14)

INTERVIEWER REMEMBER:			
	NOON	=	12:00 PM
	MIDNIGHT	=	12:00 AM

E-14. During the months it is in use, what is the total number of operating hours per week for most of the building?

_____ (E-16)
HOURS

DON'T KNOW 9-8

E-15. Which category on the card best describes the number of operating hours per week for most of the building when it is in use?

HAND CARD E-15

1-39 HOURS 1
40-48 HOURS 2
49-60 HOURS 3
61-84 HOURS 4
85-167 HOURS 5
OPEN CONTINUOUSLY 6 (E-18)
DON'T KNOW 8

BOX 16

ARE ALL "OPEN 24 HOURS A DAY" BOXES CHECKED IN E-13?

YES..... 1 (RECORD ON FOLDOUT, THEN GO TO E-18)
NO..... 2 (E-16)

COLUMN A	COLUMN B
ASK ABOUT EACH FEATURE IN THIS COLUMN BEFORE GOING TO E-17 COLUMN B. E-16. Are there additional hours during the week when most of the:	FOR EACH FEATURE WITH A "YES" IN COLUMN A, ASK: E-17. Approximately how many additional hours per week is the (INSERT FEATURE) in use?
a. heating and/or cooling equipment is in use? YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ ADDITIONAL HOURS/WEEK DON'T KNOW 9-8
b. lighting is in use? YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ ADDITIONAL HOURS/WEEK DON'T KNOW 9-8

E-18. My next few questions are about the number of people who work in this building.

When the building is in use, approximately how many people work in the building? Do not include employees who work out of the building such as drivers with delivery routes, customers, patients, or students. Do include volunteer workers. If there are multiple shifts, so that the number of people in the building varies at different times of the day, please give us the total number of employees across all shifts.

HAND CARD E-18

_____ (E-20)
NUMBER OF PEOPLE

DON'T KNOW 9-8

E-19. Here is a card which shows categories. Which category in your estimation best applies to the number of people who work in the building (when the building is in use) across all shifts?

HAND CARD PINK

NONE	00
1-4	01
5-9	02
10-19	03
20-49	04
50-99	05
100-249	06
250-499	07
500-999	08
1,000-2,499	09
2,500-4,999	10
5,000 OR MORE	11
DON'T KNOW	98

E-20. (When the building is in use) how many people work in the building during its main shift? By main shift, we mean the shift when most people are in the building.

_____ (F-1)
NUMBER OF PEOPLE

DON'T KNOW 9-8

E-21. Which category on this card best describes the number of people who normally work in the building during its main shift?

HAND CARD PINK

NONE	00
1-4	01
5-9	02
10-19	03
20-49	04
50-99	05
100-249	06
250-499	07
500-999	08
1,000-2,499	09
2,500-4,999	10
5,000 OR MORE	11
DON'T KNOW	98

F. BUILDING ENVELOPE CHARACTERISTICS:

F-1. Here is a card that shows different types of construction materials. Which best describes the **major type of exterior wall** construction material used on this building? CIRCLE ONLY ONE.

HAND CARD F-1

WINDOW OR VISION GLASS (GLASS THAT CAN BE SEEN THROUGH) 01

DECORATIVE OR CONSTRUCTION GLASS 02

SHEET METAL PANELS 03

PRE-CAST CONCRETE PANELS 04

BRICK, STONE, STUCCO, CONCRETE OR OTHER MASONRY 05

ALUMINUM, ASBESTOS, PLASTIC OR WOOD SIDING, SHINGLES, TILES OR SHAKES 06

OTHER (SPECIFY)

_____ 07

DON'T KNOW 98

F-2. Here is a card with different types of roofing materials. Which category best describes the building's **major type of exterior roof** surface? CIRCLE ONLY ONE.

HAND CARD F-2

WOOD SHINGLES, SHAKES OR OTHER WOODEN MATERIALS 01

SLATE OR TILE SHINGLES 02

ASPHALT, FIBERGLASS, OR OTHER SHINGLES 03

BUILT-UP (TAR, FELTS OR FIBERGLASS AND A BALLAST, SUCH AS STONE) 04

METAL SURFACING 05

PLASTIC, RUBBER, OR SYNTHETIC SHEETING (SINGLE OR MULTIPLE PLY) 06

CONCRETE 07

OTHER (SPECIFY)

_____ 08

DON'T KNOW 98

F-3. Here is a card that shows some common building shapes. Please tell me which one most nearly resembles the floorplan of this building at ground level. This is sometimes called the "footprint" of the building. CIRCLE ONLY ONE.

HAND CARD F-3

SQUARE 01
RECTANGLE 02
RECTANGLE OR SQUARE WITH AN INTERIOR COURTYARD 03
"H" SHAPED 04 (F-6)
"U" SHAPED 05 (F-6)
"E" SHAPED 06 (F-6)
"T" SHAPED 07 (F-6)
"L" OR RIGHT ANGLE SHAPED 08 (F-6)
"+" OR "CROSS" SHAPED 09 (F-6)
OTHER: (SPECIFY OR DRAW IN SPACE BELOW)
_____ 10 (F-6)

F-4. What is your best estimate of the:

a. length of this building at ground level?

_____ FEET
DON'T KNOW 9-8

b. width of this building at ground level?

_____ FEET
DON'T KNOW 9-8

F-5. Now please think about all the exterior walls of this building that are above ground. How many of the walls touch or are attached to another structure? Would you say it is: CIRCLE ONLY ONE.

None, the building is freestanding? 0
One? 1
Two? 2
Three? 3
Four? 4
DON'T KNOW 8

F-6. Which of the ranges on this card best describes the percent of the exterior wall surface of this building that is covered with glass doors or window glass?

HAND CARD F-6

10 PERCENT OR LESS 1
11 TO 25 PERCENT 2
26 TO 50 PERCENT 3
51 TO 75 PERCENT 4
76 TO 100 PERCENT 5
DON'T KNOW 8

G. THE LIGHTING SYSTEM

G-1. The next set of questions pertains to the electric lighting system used in this building.

What percentage of the (A-7/A-8 SQUARE FEET) square feet of the interior of this building is lit electrically during operating hours?

_____ % (G-3)

BUILDING HAS NO OPERATING HOURS (E-12 = 00) 991 (G-3)
DON'T KNOW 998

INTERVIEWER: REMEMBER, IF A BUILDING HAS NO OPERATING HOURS, BY DEFINITION, ALL BUILDING HOURS ARE CONSIDERED "OFF HOURS"

G-2. Here is a list of ranges. What is your best estimate of the percent of the square feet in this building that is lit electrically?

HAND CARD BLUE

25 PERCENT OR LESS 1
26 TO 50 PERCENT 2
51 TO 75 PERCENT 3
76 TO 100 PERCENT 4
DON'T KNOW 8

G-3. What percentage of the (A-7/A-8 SQUARE FEET) square feet of the interior of this building is lit during off hours? By off hours, we mean on weekends and holidays, during the off-season and any extended periods when the whole building is not in use. Do not include the space lit by emergency lighting.

_____ % (BOX 17)

NO OFF-HOURS (OPEN 24 HOURS A DAY) ..... 991 (BOX 17)
DON'T KNOW 998

G-4. Which of the ranges on the card best describes the percent of the square feet in the building lit during off-hours?

HAND CARD BLUE

25 PERCENT OR LESS 1
26 TO 50 PERCENT 2
51 TO 75 PERCENT 3
76 TO 100 PERCENT 4
DON'T KNOW 8

BOX 17

LOOK AT THE ANSWERS TO G-1 AND G-3. IS ANY PERCENTAGE OF THE BUILDING REPORTED LIT IN EITHER G-1 OR G-3?

YES ..... 1 (GO TO G-5)
NO ..... 2 (GO TO H-1)

COLUMN A	COLUMN B	COLUMN C
READ ALL OF COLUMN A BEFORE COLUMN B. G-5. Is any of the square footage inside this building served by: HAND CARD G-5 FEATURE	IF "YES" IN COLUMN A, ASK: G-6. Thinking about the amount of building space that is lighted, what percent of the lighted space is lit by (FEATURE)?	IF "DON'T KNOW" IN COLUMN B, ASK: G-7. Which of these ranges best represents the percent of the inside of this building lit by (FEATURE)? HAND CARD BLUE
a. Incandescent light bulbs, including regular or energy efficient light bulbs? YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	_____ % DON'T KNOW . . . 9-8 -->	25% OR LESS . . . . . 1 26 to 50% . . . . . 2 51 to 75% . . . . . 3 76 to 100% . . . . . 4 DON'T KNOW 8
b. Fluorescent Lighting other than compact fluorescent bulbs? YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	_____ % DON'T KNOW . . . 9-8 -->	25% OR LESS . . . . . 1 26 to 50% . . . . . 2 51 to 75% . . . . . 3 76 to 100% . . . . . 4 DON'T KNOW 8
c. Compact Fluorescent bulbs? YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	_____ % DON'T KNOW . . . 9-8 -->	25% OR LESS . . . . . 1 26 to 50% . . . . . 2 51 to 75% . . . . . 3 76 to 100% . . . . . 4 DON'T KNOW 8
d. High Intensity Discharge (HID) Lights such as high pressure sodium, metal halide or mercury vapor? YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	_____ % DON'T KNOW . . . 9-8 -->	25% OR LESS . . . . . 1 26 to 50% . . . . . 2 51 to 75% . . . . . 3 76 to 100% . . . . . 4 DON'T KNOW 8
e. Some other type of lighting? YES (SPECIFY) _____ 1 NO . . . . . 2 DON'T KNOW 8	_____ % DON'T KNOW . . . 9-8 -->	25% OR LESS . . . . . 1 26 to 50% . . . . . 2 51 to 75% . . . . . 3 76 to 100% . . . . . 4 DON'T KNOW 8
	TOTAL MUST BE AT LEAST 100%	

COLUMN A	COLUMN B	COLUMN C
READ ALL OF COLUMN A BEFORE COLUMN B. G-8. Here is a list of some features that may be part of this building's interior lighting system. Does your lighting system use any: HAND CARD G-8 FEATURE	IF "YES" IN COLUMN A: G-9. Thinking about the amount of building space that is lighted, what percent of the lighted inside of this building is served by (FEATURE)?	IF DON'T KNOW IN COLUMN B, ASK: G-10. Which of the following ranges best represents the percentage of the inside of this building served by (FEATURE)? HAND CARD BLUE
a. Reflectors specifically designed to increase the amount of light from the fixture? (These are known as Specular Reflectors.) YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ % DON'T KNOW .... 9-8 -->	25% OR LESS ..... 1 26 to 50% ..... 2 51 to 75% ..... 3 76 to 100% ..... 4 DON'T KNOW 8
b. Daylighting controls that detect natural light and turn lights off when there is sufficient natural light? YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ % DON'T KNOW .... 9-8 -->	25% OR LESS ..... 1 26 to 50% ..... 2 51 to 75% ..... 3 76 to 100% ..... 4 DON'T KNOW 8
c. Occupancy sensors that shut lights off when no motion is detected? YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ % DON'T KNOW .... 9-8 -->	25% OR LESS ..... 1 26 to 50% ..... 2 51 to 75% ..... 3 76 to 100% ..... 4 DON'T KNOW 8
d. Time clocks or timed switches which turn interior lights on or off according to predetermined schedule? YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ % DON'T KNOW .... 9-8 -->	25% OR LESS ..... 1 26 to 50% ..... 2 51 to 75% ..... 3 76 to 100% ..... 4 DON'T KNOW 8
e. Manual dimmer switches? YES ..... 1 NO ..... 2 DON'T KNOW 8	_____ % DON'T KNOW .... 9-8 -->	25% OR LESS ..... 1 26 to 50% ..... 2 51 to 75% ..... 3 76 to 100% ..... 4 DON'T KNOW 8
f. Some other lighting conservation equipment? YES (SPECIFY)_____ ..... 1 NO ..... 2 DON'T KNOW 8	_____ % DON'T KNOW .... 9-8 -->	25% OR LESS ..... 1 26 to 50% ..... 2 51 to 75% ..... 3 76 to 100% ..... 4 DON'T KNOW 8

H. ENERGY MANAGEMENT FEATURES OR PRACTICES

COLUMN A

H-1. This next section deals with energy management features or practices. Are any of the following present in this building:
FOR EACH "YES" IN COLUMN "A", IMMEDIATELY FOLLOW THE ARROW TO COLUMN "B" AND "C".
WHEN THERE IS NO ARROW, RETURN TO COLUMN "A" AND ASK ABOUT THE NEXT FEATURE.

HAND CARD
H-1

FEATURE

a. A variable air volume (VAV) system on the heating or cooling system?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

b. Equipment that uses outside air for cooling (Economizer Cycle)?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

c. Roof or ceiling insulation?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

d. Insulation in exterior walls?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

e. Storm windows, storm doors, thermal pane or double or triple paned glass?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

f. Tinted or reflective glass or shading films?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

g. Exterior awnings or interior horizontal or vertical shades or mini blinds?
- YES . . . . . 1 ---->
- NO 2
- DON'T KNOW 8

COLUMN B				COLUMN C			
IF "YES" IN COLUMN A ASK: (Was/Were) the (FEATURE) installed during building construction or added afterwards?				IF "ADDED" IN COLUMN B ASK: When (was/were) the (FEATURE) most recently added? Was it in 1992, between 1987 and 1991, or before 1987?			
	DON'T KNOW	INSTALLED	ADDED	1992	1987-1991	BEFORE 1987	DON'T KNOW
a.	8	1	2 --->	1	2	3	8
b.	8	1	2 --->	1	2	3	8
c.	8	1	2 --->	1	2	3	8
d.	8	1	2 --->	1	2	3	8
e.	8	1	2 --->	1	2	3	8
f.	8	1	2 --->	1	2	3	8
g.	8	1	2 --->	1	2	3	8

H-2. Can you open and close most of the windows (including door panels) in this building?

YES 1
NO 2
NO WINDOWS 3
DON'T KNOW 8

H-3. The next group of questions concern programs specifically targeted and designed to improve energy efficiency, reduce energy costs, or promote the use of a different energy source. Such programs are often called Demand-Side Management (DSM) programs.

During the past 3 years, has your electric or natural gas utility sponsored demand-side management programs which you may or may not have participated in? CIRCLE ONE.

YES 1
NO 2
BUILDING DID NOT PURCHASE ELECTRICITY OR NATURAL GAS FROM A UTILITY 3
DON'T KNOW 8

H-4. During the past 3 years, has this building participated in any demand-side management programs, either in-house, utility, or third-party sponsored?

YES 1 (H-7)
NO 2
DON'T KNOW 8

BOX 18

IS E-3 ON THE FOLD-OUT PAGE CHECKED?
YES 1 (H-5)
NO 2 (H-6)

H-5. During the past 3 years, has the facility participated in any demand-side management programs, either in-house, utility or third-party sponsored?

YES 1
NO 2
DON'T KNOW 8

H-6 Are there plans for this building to participate in a demand side management program in the future?

YES 1 (H-10)
NO 2 (H-10)
DON'T KNOW 8 (H-10)

COLUMN A		COLUMN B						
H-7. HAND CARD H-7 Here is a card listing potential areas for demand-side management programs. In which of the following has this building participated during the past 3 years? (CIRCLE ALL THAT APPLY) READ ALL OF COLUMN A BEFORE COLUMN B.		H-8. HAND CARD H-8 FOR EACH H-7 CIRCLED, ASK H-8 AND H-9 BEFORE GOING TO NEXT CIRCLED H-7 POTENTIAL AREA. Who was the (H-7 POTENTIAL AREA) program sponsored by? **EU** = Electric Utility, **GU** = Gas Utility, **IH** = In-house, **TP** = Third Party, **O** = Other, **DK** = DON'T KNOW (CIRCLE ALL THAT APPLY)						
POTENTIAL AREA			EU	GU	IH	TP	O	DK
a. Lighting?	01		1	2	3	4	5	8
b. Building envelope or shell?	02		1	2	3	4	5	8
c. Heating, ventilation and air conditioning (HVAC) equipment installation or retrofit?	03		1	2	3	4	5	8
d. Energy efficient motor(s) including adjustable speed drives or variable speed motors?	04		1	2	3	4	5	8
e. Water heating?	05		1	2	3	4	5	8
f. Direct electricity load control?	06		1	2	3	4	5	8
g. Thermal storage?	07		1	2	3	4	5	8
h. Standby electricity generation?	08		1	2	3	4	5	8
i. Process heating or cooling, such as waste heat recovery?	09		1	2	3	4	5	8
j. Any other type of program? SPECIFY_____	10		1	2	3	4	5	8

COLUMN C

H-9. (Here is a card with types of assistance which can be provided through demand-side management programs.) What type of assistance was received for (H-7 POTENTIAL AREA)? CIRCLE ALL THAT APPLY FOR EACH H-7 POTENTIAL AREA.

HAND CARD H-9

	GENERAL INFORMATION	SITE-SPECIFIC INFORMATION	INCENTIVES	ALTERNATIVE RATES	FUEL SWITCHING	OTHER PROGRAM	DON'T KNOW
a.	1	2	3	4	5	6	8
b.	1	2	3	4	5	6	8
c.	1	2	3	4	5	6	8
d.	1	2	3	4	5	6	8
e.	1	2	3	4	5	6	8
f.	1	2	3	4	5	6	8
g.	1	2	3	4	5	6	8
h.	1	2	3	4	5	6	8
i.	1	2	3	4	5	6	8
j.	1	2	3	4	5	6	8

H-10. Since December 31, 1986, has an energy audit been performed on this building?

YES 1
NO 2 (H-12)
DON'T KNOW 8 (H-12)

H-11. Was the most recent energy-audit: CIRCLE ONE.

HAND CARD H-11

a. sponsored or performed by a local utility? 1
b. sponsored or performed as a part of a Federal, State, or local government program? 2
c. initiated by the building or business owner and performed by in-house personnel or a private contractor? 3
d. sponsored and performed by some other group? (SPECIFY)_____ 4
e. DON'T KNOW 8

H-12. Is there a regularly scheduled maintenance and repair program for the heating and cooling system in the building?

YES 1
NO 2
DON'T KNOW 8

☐ CHECK HERE IF BUILDING ALWAYS IN FULL USE/ALWAYS OPEN 24 HOURS (I.E., BOX 16 ON FOLDOUT CHECKED) AND GO TO H-14.

H-13. When the building is not in full use, is there a change in temperature setting or a reduction in the use of any of the following equipment: CIRCLE ONE ON EACH LINE.

	YES	NO	DK
a. heating?	1	2	8
b. cooling?	1	2	8
c. domestic hot water heating?	1	2	8
d. lighting?	1	2	8
e. any other equipment?	1	2	8

SPECIFY: _____

H-14. Does this building have a computerized energy management and control system or EMCS?

YES 1
NO 2 (H-16)
DON'T KNOW 8 (H-16)

H-15. Does the energy management system routinely control the following equipment:

	YES	NO	DK
a. heating?	1	2	8
b. cooling?	1	2	8
c. domestic hot water heating?	1	2	8
d. lighting?	1	2	8
e. any other equipment such as elevator banks and escalators?	1	2	8

SPECIFY: _____

H-16. Does this building have any other features which are specifically designed to help conserve energy?

YES..... 1
NO 2 (H-18)
DON'T KNOW 8 (H-18)

H-17. Briefly, please describe those features. RECORD VERBATIM.

_____
_____
_____
_____

H-18. Which of the following best describes the person who has day-to-day responsibility for physically operating and maintaining the building's heating and/or cooling equipment? Is this person: CIRCLE ONE.

HAND CARD H-18

a. the building owner/manager (including office/store/branch site managers)? 1

b. the custodian or maintenance engineer? 2

c. a dedicated energy manager, whose chief responsibility is to manage energy use and energy using equipment? 3

d. a cleaning or maintenance contractor? 4

e. someone else? (SPECIFY):_____ 5

f. No one, a repair service is called when something happens? ... 6 (I-1)

g. NOT APPLICABLE: BUILDING NOT HEATED OR COOLED 7 (I-1)

h. DON'T KNOW 8 (I-1)

H-19. How long has this person had this responsibility for this building: CIRCLE ONE.

Less than 1 year? 1

1 to 3 years? 2

4 to 6 years? 3

over 6 years? 4

DON'T KNOW 8

H-20. In a typical week, how much of this person's time is devoted to operating and maintaining the heating and/or cooling equipment in this building?

HAND CARD H-20

10 PERCENT OR LESS 1

11 TO 25 PERCENT 2

26 TO 50 PERCENT 3

51 TO 75 PERCENT 4

76 TO 100 PERCENT 5

DON'T KNOW 8

I. ELECTRICITY GENERATION OR COGENERATION

I-1. Does this building have the ability to generate electric power?

YES	1
NO	2 (BOX 19)
DON'T KNOW	8 (BOX 19)

I-2. Please indicate the primary use of the generators in the building as listed on this card. CIRCLE ONE.

HAND CARD I-2

EMERGENCY BACK-UP GENERATION, FOR USE ONLY WHEN THERE IS AN INTERRUPTION OF NORMAL SERVICE FROM YOUR UTILITY	1 (BOX 19)
GENERATORS USED ONLY DURING PERIODS OF HIGH ELECTRIC POWER DEMAND	2
GENERATORS OPERATING CONTINUOUSLY FOR MOST OF THE YEAR	3
OTHER (SPECIFY) _____	4
DON'T KNOW	8

I-3. Is the electric power generating system in this building also a cogeneration system? That is, in addition to producing electric power, does the same system simultaneously produce heat which is used in this or another building for space heating, water heating, air cooling, industrial processes, and so on?

YES	1
NO	2
DON'T KNOW	8

I-4. Is the building's cogeneration or generation system electrically interconnected with an electric utility? That is, is it able to deliver electricity to the grid as well as receive electricity?

YES	1
NO	2
DON'T KNOW	8

I-5. Using this card, indicate what happens to the electric power which is generated onsite. Is it: CIRCLE ALL THAT APPLY.

HAND CARD I-5

a.	Totally consumed within the building?	1
b.	Partially or totally delivered to the local electric utility?	2
c.	Partially or totally delivered to another building or buildings?	3
d.	DID NOT USE GENERATORS DURING CALENDAR YEAR 1992	4
e.	DON'T KNOW	8

J. CENTRAL PHYSICAL PLANT/MULTIBUILDING FACILITIES

BOX 19
LOOK AT E-3 ON THE FOLD-OUT PAGE. IS THE BUILDING PART OF A MULTIBUILDING FACILITY?

YES 1

NO . . . . . 2 (SECTION K)

J-1. Does this multibuilding facility have a central physical plant that produces district hot water, district steam, district chilled water or electricity?

YES 1
NO . . . . . 2 (SECTION K)
DON'T KNOW . . . . . 8 (SECTION K)

J-2. Does the central physical plant on the multibuilding facility produce:

	YES	NO	DK
a. district hot water? . . .	1	2	8
b. district steam?	1	2	8
c. district chilled water? .	1	2	8
d. electricity?	1	2	8

J-3. Is the central physical plant for this multibuilding facility located in the building we have been talking about?

YES . . . . . 1 (SECTION K)
NO 2
DON'T KNOW 8 (J-5)

J-4. What is the full name of the building containing the central plant?

_____
BUILDING NAME

_____
BUILDING STREET ADDRESS

_____
CITY, STATE, ZIP

J-5. What is the name, phone number, and FAX number of a contact person for this central physical plant?

_____ ( ) _____ ( ) _____
CONTACT NAME PHONE NUMBER FAX NUMBER

THIS PAGE INTENTIONALLY LEFT BLANK

K. ELECTRICITY PAGE

☐ LOOK AT THE FOLD-OUT PAGE, IF NO ELECTRICITY USED IN BUILDING DURING CALENDAR YEAR 1992 CHECK HERE AND GO TO NATURAL GAS PAGE (SECTION L).

K-1a. Is all the electricity used in this building generated in this building?

YES . . . . . 1 (SECTION L)
NO 2

K-1. What is the name and address of the supplier that provided (or may yet provide) electricity to the building during calendar year 1992?

Does this building have any other electricity suppliers? ASK K-1 UNTIL THE RESPONDENT ANSWERS "NO" AND CHECK THE "NO OTHER SUPPLIERS" BOX. IF MORE THAN THREE SUPPLIERS, GO TO ADDITIONAL SUPPLIER PAGE (SECTION O).

K-2. Is there a single bill or statement, or are there separate bills or statements, from (SUPPLIER) for this building?

K-3. Please tell me the name of each business or organization that received a bill or statement from (SUPPLIER) for electricity during calendar year 1992.

IF LIST IS NOT PROVIDED,
COMPLETE A CUSTOMER SHEET.

K-4. (Does the bill or statement/Do the bills or statements) from (SUPPLIER) cover just this building or are other buildings covered as well?

K-5. What is the approximate square footage of the other buildings that are included (on this bill or statement/or these bills or statements)?

K-6. (Does the bill or statement/Do any of the bills or statements) include charges for any other major electrical usage outside the building, such as parking lot lights, exterior lights, signs or billboards, large pumps or, swimming pools?

K-7. What are the other major electrical uses? SPECIFY:

SUPPLIER NO. 1 ID:	SUPPLIER NO. 2 ID:	SUPPLIER NO. 3 ID:
K-1. NAME _____ _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____ ☐ NO OTHER SUPPLIERS	NAME _____ _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____ ☐ NO OTHER SUPPLIERS	NAME _____ _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____ ☐ NO OTHER SUPPLIERS
K-2. SINGLE BILL . . . . . 1 (K-4) SEPARATE BILLS 2 (K-3)	SINGLE BILL . . . . . 1 (K-4) SEPARATE BILLS 2 (K-3)	SINGLE BILL . . . . . 1 (K-4) SEPARATE BILLS 2 (K-3)
K-3. LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2
K-4. JUST THIS BUILDING . 1 (K-6) OTHER BUILDING(S) . . 2 DON'T KNOW 8 (K-6)	JUST THIS BUILDING . . 1 (K-6) OTHER BUILDING(S) . . . 2 DON'T KNOW 8 (K-6)	JUST THIS BUILDING . 1 (K-6) OTHER BUILDING(S) . . 2 DON'T KNOW 8 (K-6)
K-5. _____ SQUARE FOOTAGE DON'T KNOW 8	_____ SQUARE FOOTAGE DON'T KNOW 8	_____ SQUARE FOOTAGE DON'T KNOW 8
K-6 YES . . . . . 1 (K-7) NO . . . . . 2 (BOX 20) DON'T KNOW . . . 8 (BOX 20)	YES . . . . . 1 (K-7) NO . . . . . 2 (BOX 20) DON'T KNOW . . . . . 8 (BOX 20)	YES . . . . . 1 (K-7) NO . . . . . 2 (BOX 20) DON'T KNOW . . . . . 8 (BOX 20)
K-7. _____ GO TO BOX 20	_____ GO TO BOX 20	_____ GO TO BOX 20

BOX 20

ASK K-2 THROUGH K-7 ABOUT NEXT ELECTRICITY SUPPLIER. IF NO ADDITIONAL SUPPLIERS, GO TO NATURAL GAS PAGE (SECTION L).

L. NATURAL GAS PAGE

☐	LOOK AT THE FOLD-OUT PAGE, IF NO NATURAL GAS USED IN BUILDING DURING CALENDAR YEAR 1992 CHECK HERE AND GO TO FUEL OIL/DIESEL/KEROSENE PAGE (SECTION M).

L-1. What is the name and address of the supplier that has provided (or may yet provide) natural gas to this building during calendar year 1992?

Does this building have any other natural gas suppliers? ASK L-1 UNTIL THE RESPONDENT ANSWERS "NO" AND CHECK THE "NO OTHER SUPPLIERS" BOX. IF MORE THAN THREE SUPPLIERS, GO TO ADDITIONAL SUPPLIER PAGE (SECTION O).

L-2.	Is there a single bill or statement, or are there separate bills or statements, from (SUPPLIER) for this building?
L-3.	Please tell me the name of each business or organization that received a bill from (SUPPLIER) for natural gas during calendar year 1992. IF LIST NOT PROVIDED COMPLETE A CUSTOMER SHEET
L-4.	(Does the bill or statement/Do the bills or statements) from (SUPPLIER) cover just this building or are other buildings covered as well?
L-5.	What is the approximate square footage of the other buildings that are included (on this bill or statement/on these bills or statements?
L-6.	(Does the bill or statement/Do any of the bills or statements) include charges for any other major natural gas usage outside the building, such as for kilns, gas space heaters, exterior or decorative lighting, compressed natural gas vehicles, or pumps not used in this building?
L-7.	What are the other major natural gas uses? SPECIFY:

SUPPLIER NO. 1 ID:	SUPPLIER NO. 2 ID:	SUPPLIER NO. 3 ID:
L-1. NAME _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____ ☐ NO OTHER SUPPLIERS	NAME _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____ ☐ NO OTHER SUPPLIERS	NAME _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____ ☐ NO OTHER SUPPLIERS
L-2. SINGLE BILL . . . . . 1 (L-4) SEPARATE BILLS 2 (L-3)	SINGLE BILL . . . . . 1 (L-4) SEPARATE BILLS 2 (L-3)	SINGLE BILL . . . . . 1 (L-4) SEPARATE BILLS 2 (L-3)
L-3. LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2
L-4. JUST THIS BUILDING . 1 (L-6) OTHER BUILDING(S) . . 2 DON'T KNOW 8 (L-6)	JUST THIS BUILDING . . 1 (L-6) OTHER BUILDING(S) . . . 2 DON'T KNOW 8 (L-6)	JUST THIS BUILDING . 1 (L-6) OTHER BUILDING(S) . . 2 DON'T KNOW 8 (L-6)
L-5. _____ SQUARE FOOTAGE DON'T KNOW 8	_____ SQUARE FOOTAGE DON'T KNOW 8	_____ SQUARE FOOTAGE DON'T KNOW 8
L-6. YES . . . . . 1 (L-7) NO . . . . . 2 (BOX 21) DON'T KNOW . . 8 (BOX 21)	YES . . . . . 1 (L-7) NO . . . . . 2 (BOX 21) DON'T KNOW . . 8 (BOX 21)	YES. . . . . 1 (L-7) NO. . . . . .2 (BOX 21) DON'T KNOW . . . . 8 (BOX 21)
L-7. _____ GO TO BOX 21	_____ GO TO BOX 21	_____ GO TO BOX 21

BOX 21

ASK L-2 THROUGH L-7 ABOUT NEXT NATURAL GAS SUPPLIER. IF NO ADDITIONAL SUPPLIERS, GO TO FUEL OIL/DIESEL/KEROSENE PAGE (SECTION M).

M. FUEL OIL/DIESEL/KEROSENE PAGE

☐	LOOK AT THE FOLD-OUT PAGE. IF NO FUEL OIL/DIESEL/KEROSENE HAS BEEN OR WILL BE DELIVERED DURING CALENDAR YEAR 1992, CHECK HERE AND GO TO STEAM/HOT WATER/CHILLED WATER PAGE (SECTION N).

M-1. What is the name and address of the supplier that has provided (or may yet provide) fuel, oil, deisel or kerosene to the building during calendar year 1992?

M-1a. Does this supplier deliver diesel, residual or some other type of fuel oil? CHECK BOX IN M-1a SUPPLIER COLUMN ON NEXT PAGE FOR EACH TYPE USED.

Does this building have any other fuel oil, deisel or kerosene suppliers? ASK M-1 UNTIL THE RESPONDENT ANSWERS "NO" AND CHECK THE "NO OTHER SUPPLIERS" BOX. IF MORE THAN THREE SUPPLIERS GO TO ADDITIONAL SUPPLIER PAGE (SECTION O)

M-2.	Is there a single bill or statement or are there seperate bills or statements from (SUPPLIER) for this building?
M-3.	Please tell me the name of each business or organization that received a bill from (SUPPLIER) for fuel oil, diesel or kerosene during calendar year 1992. IF LIST NOT PROVIDED, COMPLETE A "CUSTOMER SHEET"
M-4.	(Does the bill or statement/Do the bills or statements) from (SUPPLIER) cover just this building or are other buildings covered as well?
M-5.	What is the approximate square footage of the other buildings that are included (on this bill or statement/on these bills or statements)?
M-6.	(Does the bill or statement/Do any of the bills or statements) include charges for any other major fuel oil, diesel, or kerosene usage outside the building, such as for kilns, welding, pumps or motors?
M-7.	What are the other major uses? SPECIFY:

M. FUEL OIL/DIESEL/KEROSENE PAGE

SUPPLIER NO. 1 ID:	SUPPLIER NO. 2 ID:	SUPPLIER NO. 3 ID:
M-1. NAME _____	NAME _____	NAME _____
ST. ADD. _____	ST. ADD. _____	ST. ADD. _____
PO BOX _____	PO BOX _____	PO BOX _____
CITY _____	CITY _____	CITY _____
STATE/ZIP _____	STATE/ZIP _____	STATE/ZIP _____
M-1a. ☐ Diesel (No. 1, 2, or 4)	☐ Diesel (No. 1, 2, or 4)	☐ Diesel (No. 1, 2, or 4)
☐ Residual (No. 5 or 6)	☐ Residual (No. 5 or 6)	☐ Residual (No. 5 or 6)
☐ Other (SPECIFY) _____	☐ Other (SPECIFY) _____	☐ Other (SPECIFY) _____
☐ NO OTHER SUPPLIERS	☐ NO OTHER SUPPLIERS	☐ NO OTHER SUPPLIERS
M-2. SINGLE BILL 1 (M-4)	SINGLE BILL 1 (M-4)	SINGLE BILL 1 (M-4)
SEPERATE BILLS 2 (M-3)	SEPERATE BILLS 2 (M-3)	SEPERATE BILLS 2 (M-3)
M-3. LIST PROVIDED 1	LIST PROVIDED 1	LIST PROVIDED 1
NOT PROVIDED 2	NOT PROVIDED 2	NOT PROVIDED 2
M-4. JUST THIS BUILDING . 1 (M-6)	JUST THIS BUILDING . . 1 (M-6)	JUST THIS BUILDING . 1 (M-6)
OTHER BUILDING(S) . . 2	OTHER BUILDING(S) . . . 2	OTHER BUILDING(S) . . 2
DON'T KNOW 8 (M-6)	DON'T KNOW 8 (M-6)	DON'T KNOW 8 (M-6)
M-5. _____ SQUARE FOOTAGE	_____ SQUARE FOOTAGE	_____ SQUARE FOOTAGE
DON'T KNOW 8	DON'T KNOW 8	DON'T KNOW 8
M-6. YES 1 (M-7)	YES 1 (M-7)	YES 1 (M-7)
NO . . . . . 2 (BOX 22)	NO . . . . . 2 (BOX 22)	NO . . . . . 2 (BOX 22)
DON'T KNOW . . 8 (BOX 22)	DON'T KNOW . . 8 (BOX 22)	DON'T KNOW . . 8 (BOX 22)
M-7. _____	_____	_____
GO TO BOX 22	GO TO BOX 22	GO TO BOX 22

BOX 22

ASK M-2 THROUGH M-7 ABOUT NEXT FUEL OIL, DIESEL OR KEROSENE SUPPLIER. IF NO ADDITIONAL SUPPLIERS, GO TO STEAM/HOT WATER/CHILLED WATER PAGE (SECTION N).

N. STEAM/HOT WATER/CHILLED WATER

☐ LOOK AT THE FOLD-OUT PAGE. IF NO STEAM, HOT WATER, OR CHILLED WATER USED IN BUILDING DURING CALENDAR YEAR 1992, CHECK HERE AND GO TO SECTION O.

FOR EACH DISTRICT ENERGY SOURCE USED, WRITE "STEAM", "HOT WATER" OR "CHILLED WATER" ABOVE A COLUMN.

N-1. What is the name and address of the supplier or organization that has provided (or may yet provide) (steam/hot water/chilled water) to the building during calendar year 1992?

IF CENTRAL PLANT WITH NAME AND ADDRESS RECORDED IN SECTION J: ENTER "CP" IN COLUMN. IF NOT CENTRAL PLANT: RECORD NAME AND ADDRESS IN COLUMN.

Does this building have any other (steam/hot water/chilled water) suppliers? ASK N-1 UNTIL THE RESPONDENT ANSWERS "NO" FOR THIS DISTRICT ENERGY SOURCE. IF MORE THAN THREE SUPPLIERS, GOT TO SECTION O.

N-2.	Is there a single bill or statement or are there separate bills or statements from (SUPPLIER) for this building?
N-3.	Please tell me the name of each business or organization that received a bill from (SUPPLIER) during the calendar year 1992. IF LIST NOT PROVIDED, COMPLETE A "CUSTOMER SHEET"
N-4.	(Does the bill or statement/Do the bills or statements) from (SUPPLIER) cover just this building or are other buildings covered as well?
N-5.	What is the approximate square footage of the other buildings that are included (on this bill or statement/on these bills or statements)?
N-6.	What is the approximate square footage of the other buildings on the district loop that serves this building?

N. STEAM, HOT WATER, OR CHILLED WATER PAGE

ENERGY SOURCE	ENERGY SOURCE	ENERGY SOURCE
SUPPLIER ID:	SUPPLIER ID:	SUPPLIER ID:
N-1. NAME _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____	NAME _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____	NAME _____ ST. ADD. _____ PO BOX _____ CITY _____ STATE/ZIP _____
N-2. SINGLE BILL . . . . . 1 (N-4) SEPARATE BILLS . . . . . 2 (N-3) NO BILLS 3 (N-6)	SINGLE BILL . . . . . 1 (N-4) SEPARATE BILLS . . . . . 2 (N-3) NO BILLS 3 (N-6)	SINGLE BILL . . . . . 1 (N-4) SEPARATE BILLS . . . . . 2 (N-3) NO BILLS 3 (N-6)
N-3. LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2
N-4. JUST THIS BUILDING . 1 (BOX 23) OTHER BUILDING(S) . . 2 DON'T KNOW . . . . . 8 (BOX 23)	JUST THIS BUILDING . 1 (BOX 23) OTHER BUILDING(S) . . 2 DON'T KNOW . . . . . 8 (BOX 23)	JUST THIS BUILDING . 1 (BOX 23) OTHER BUILDING(S) . . 2 DON'T KNOW . . . . . 8 (BOX 23)
N-5. _____ SQUARE FOOTAGE DON'T KNOW . . . . . 8 GO TO BOX 23	_____ SQUARE FOOTAGE DON'T KNOW . . . . . 8 GO TO BOX 23	_____ SQUARE FOOTAGE DON'T KNOW . . . . . 8 GO TO BOX 23
N-6. _____ SQUARE FOOTAGE DON'T KNOW . . . . . 8 GO TO BOX 23	_____ SQUARE FOOTAGE DON'T KNOW . . . . . 8 GO TO BOX 23	_____ SQUARE FOOTAGE DON'T KNOW . . . . . 8 GO TO BOX 23

BOX 23

ASK ABOUT NEXT DISTRICT ENERGY SOURCE. IF NO ADDITIONAL DISTRICT SOURCES, GO TO SECTION O.

O. ADDITIONAL SUPPLIER PAGE (FOR USE ONLY WHEN MORE THAN THREE SUPPLIERS FOR ANY ENERGY SOURCE)

☐ NO ADDITIONAL SUPPLIERS. GO TO SECTION P.

O-1. Is there any other supplier that has provided (or may yet provide) (ENERGY SOURCE) to the building? ASK O-1 UNTIL RESPONDENT ANSWERS "NO" AND CHECK THE "NO OTHER SUPPLIERS" BOX.

O-2.	Is there a single bill or statement, or are there separate bills or statements from (SUPPLIER) for this building?
O-3.	Please tell me the name of each business or organization that received a bill or statement from (SUPPLIER) for energy during the calendar year 1992. IF LIST NOT PROVIDED, COMPLETE A "CUSTOMER SHEET"
O-4.	(Does the bill or statement/Do the bills or statements) from (SUPPLIER) cover just this building or are other buildings covered as well?
O-5.	What is the approximate square footage of the other buildings that are included (on this bill or statement/these bills or statements)?
O-6.	(Does the bill or statement/Do any of the bills or statements) include charges for any other major use of this energy source besides the ones you have already told me about?
O-7.	What are the (OTHER MAJOR ENERGY SOURCES) used for? SPECIFY:

O. ADDITIONAL SUPPLIERS

ENERGY SOURCE	ENERGY SOURCE	ENERGY SOURCE
SUPPLIER ID:	SUPPLIER ID:	SUPPLIER ID:
O-1. NAME ST. ADD. PO BOX CITY STATE/ZIP ☐ NO OTHER SUPPLIERS	NAME ST. ADD. PO BOX CITY STATE/ZIP ☐ NO OTHER SUPPLIERS	NAME ST. ADD. PO BOX CITY STATE/ZIP ☐ NO OTHER SUPPLIERS
O-2. SINGLE BILL . . . . . 1 (O-4) SEPARATE BILLS 2 (O-3)	SINGLE BILL . . . . . 1 (O-4) SEPARATE BILLS 2 (O-3)	SINGLE BILL . . . . . 1 (O-4) SEPARATE BILLS 2 (O-3)
O-3. LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2	LIST PROVIDED . . . . . 1 NOT PROVIDED 2
O-4. JUST THIS BUILDING . . 1 (O-6) OTHER BUILDING(S) . . . 2 DON'T KNOW 8 (O-6)	JUST THIS BUILDING . . . 1 (O-6) OTHER BUILDING(S) . . . . 2 DON'T KNOW 8 (O-6)	JUST THIS BUILDING . . 1 (O-6) OTHER BUILDING(S) . . . 2 DON'T KNOW 8 (O-6)
O-5. SQUARE FOOTAGE DON'T KNOW 8	SQUARE FOOTAGE DON'T KNOW 8	SQUARE FOOTAGE DON'T KNOW 8
O-6. YES . . . . . 1 (O-7) NO . . . . . 2 (BOX 24) DON'T KNOW . . . . . 8 (BOX 24)	YES . . . . . 1 (O-7) NO . . . . . 2 (BOX 24) DON'T KNOW . . . . . 8 (BOX 24)	YES . . . . . 1 (O-7) NO . . . . . 2 (BOX 24) DON'T KNOW . . . . . 8 (BOX 24)
O-7. GO TO BOX 24	GO TO BOX 24	GO TO BOX 24

BOX 24
ASK ABOUT NEXT SUPPLIER. IF NO ADDITIONAL SUPPLIERS, RETURN TO APPROPRIATE ENERGY SOURCE PAGE.

P. ENERGY SOURCE DELIVERY

P-1. ☐ NO ELECTRICITY USED IN BUILDING. GO TO P-2.

Earlier you said that electricity was used in this building. Please give me the range on this card which will best describe the total expenditures during calendar year 1992 for the electricity used in this building.

HAND CARD GREEN

$100 OR LESS	01
$101 to $500	02
$501 to $1,000	03
$1,001 to $2,000	04
$2,001 to $5,000	05
$5,001 to $10,000	06
$10,001 to $20,000	07
$20,001 to $50,000	08
$50,001 to $100,000	09
$100,001 to $200,000	10
$200,001 to $500,000	11
$500,001 to $1,000,000	12
OVER $1,000,000	13
DON'T KNOW	98

P-2. ☐ NO NATURAL GAS USED IN BUILDING. GO TO P-8.

Earlier you said that natural gas is used in this building. Please give me the range on this card which will best describe the total expenditures during calendar year 1992 for the natural gas used in this building.

HAND CARD GREEN

$100 OR LESS	01
$101 to $500	02
$501 to $1,000	03
$1,001 to $2,000	04
$2,001 to $5,000	05
$5,001 to $10,000	06
$10,001 to $20,000	07
$20,001 to $50,000	08
$50,001 to $100,000	09
$100,001 to $200,000	10
$200,001 to $500,000	11
$500,001 to $1,000,000	12
OVER $1,000,000	13
DON'T KNOW	98

P-3. During the year, were any of the natural gas accounts in the building on an interruptible service rate? (This is a special rate offered to customers by gas companies, that allows the gas company to cut back on the amount of gas supplied to the building during periods of high demand.)

YES	1
NO	2
DON'T KNOW	8

P-4. Does this building buy or contract for its natural gas from someone other than the local distribution company (utility) and then have the utility deliver that gas? Gas bought this way is often called gas for the account of others, transported gas, spot market gas, or direct purchase gas.

YES 1
NO 2 (P-8)
DON'T KNOW 8 (P-7)

P-5. Can you give me the name of the company or broker that the direct purchase gas is bought or contracted from?

YES ..... 1 —> RECORD BELOW AND THEN GO TO P-6
NO 2 (P-7)

COMPANY NAME: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

CONTACT PERSON: _____

TELEPHONE (INCLUDE AREA CODE): (_____) _____

FAX NUMBER: (_____) _____

P-6. Can you supply us with cost figures for the components of the direct purchase gas. That is:

a. well head costs? ... $_____

b. city gate costs? .... $_____

c. local distributing company charges? .. $_____

d. other costs? ..... $_____

e. DON'T KNOW 8

f. Prices quoted are per:

Therm 1
Cubic foot (cf) 2
100 Cu. ft. (Ccf) 3
1000 Cu. ft. (Mcf) 4
Other (SPECIFY) 5
_____

GO TO P-8

P-7. Can you give me the name of a person who can provide more information about natural gas purchases for this building?

YES ..... 1 RECORD BELOW AND THEN GO TO P-8
NO 2

CONTACT PERSON: _____

TELEPHONE (INCLUDE AREA CODE): (_____) _____

FAX NUMBER: (_____) _____

P-8. ☐ NO FUEL OIL OR DIESEL USED IN BUILDING. GO TO P-10.

Earlier you said that fuel oil, diesel or kerosene is used in this building. Which of the ranges on this card will best describe the total expenditures during calendar year 1992 for the fuel oil, diesel or kerosene used in this building?

HAND CARD GREEN

$100 OR LESS	01
$101 to $500	02
$501 to $1,000	03
$1,001 to $2,000	04
$2,001 to $5,000	05
$5,001 to $10,000	06
$10,001 to $20,000	07
$20,001 to $50,000	08
$50,001 to $100,000	09
$100,001 to $200,000	10
$200,001 to $500,000	11
$500,001 to $1,000,000	12
OVER $1,000,000	13
DON'T KNOW	98

P-9. Think about all the fuel oil storage tanks for this building. What is the total capacity, in gallons, of all the fuel oil storage tanks?

_____ GALLONS

DON'T KNOW 9-8

P-10. ☐ NO BOTTLED GAS/LPG/PROPANE USED IN BUILDING. GO TO P-12.

Earlier you said that bottled gas is used in this building. HAND CARD P-10. Which of the ranges on this hand card will best describe the amount of bottled gas used in this building during calendar year 1992?

HAND CARD P-10

LESS THAN 100	01	GALLONS 1
100 TO 499	02	POUNDS 2
500 TO 999	03	
1,000 OR MORE	04	
DON'T KNOW	98	

INTERVIEWER: YOU MUST CIRCLE EITHER POUNDS OR GALLONS

P-11. Which of the ranges on this card will best describe the total expenditures during calendar year 1992 for the bottled gas used in this building?

HAND CARD P-11

$100 OR LESS	01
$101 to $500	02
$501 to $1,000	03
$1,001 to $2,000	04
$2,001 to $5,000	05
$5,001 to $10,000	06
$10,001 to $20,000	07
OVER $20,000	08
DON'T KNOW	98

P-12. ☐ NO WOOD USED IN BUILDING. GO TO SECTION Q.

Earlier you said that wood is used in this building. Which of the ranges on this card best describes how much wood will have been burned in this building by the end of calendar year 1992?

HAND CARD P-12

LESS THAN 1 CORD	01
1 TO 9 CORDS	02
10 TO 20 CORDS	03
MORE THAN 20 CORDS	04
DON'T KNOW	98

P-13. Has this wood been purchased or has it been provided free of charge from some other source such as waste wood?

PURCHASED	1	
PROVIDED FREE OF CHARGE FROM ANOTHER SOURCE	2	(SECTION Q)
DON'T KNOW	8	(SECTION Q)

P-14. Which of the ranges on this card will best describe the total expenditures during calendar year 1992 for the wood used in this building?

HAND CARD P-14

$100 OR LESS	01
$101 to $500	02
$501 to $1,000	03
$1,001 to $2,000	04
$2,001 to $5,000	05
$5,001 to $10,000	06
$10,001 to $20,000	07
OVER $20,000	08
DON'T KNOW	98

Q. AUTHORIZATION FORM

Q-1. As I mentioned, the purpose of the study is to relate building characteristics with energy consumption and expenditures. We are also interested in learning more about demand-side management and energy audit programs. This information can only be obtained by going directly to each energy supplier of the building. In order for the energy company to release this information to Westat, we need to have an authorization form from you, or some other representative of your company. **We also need account numbers for the building.**

a. Should the authorization form be signed by you or someone else?

RESPONDENT 1
SOMEONE ELSE (SPECIFY) 2

NAME: _____
TITLE: _____
ADDRESS: _____
CITY, STATE, ZIP: _____
PHONE NUMBER: (_____) _____
FAX NUMBER (_____) _____

b. Should the account number(s) be obtained from you or someone else?

RESPONDENT 1
INDIVIDUAL LISTED ABOVE 2
SOMEONE ELSE (SPECIFY BELOW) 3

NAME: _____
TITLE: _____
ADDRESS: _____
CITY, STATE, ZIP: _____
PHONE NUMBER: (_____) _____
FAX NUMBER (_____) _____

BOX 25

AFTER AUTHORIZATION OBTAINED, CODE STATUS OF ACCOUNT NUMBER EFFORT

	OBTAINED	*NOT OBTAINED*	*INAPPLICABLE*
ELECTRICITY	*1*	*2*	*3*
NATURAL GAS	*1*	*2*	*3*

Q-2. RECORD TIME ENDED AND CONTINUE WITH SECTION R.

TIME ENDED: _____

Form Approval
OMB No: 0607-0751
Expires: December 31, 1993

R. CONSTRUCTION IMPROVEMENTS AND MAINTENANCE AND REPAIRS SUPPLEMENT

TIME BEGAN: _____

The final questions of the interview are about expenditures for construction improvements and maintenance and repairs to this building during calendar year 1992. This information will be used to measure the effect of these activities on the U.S. economy.

R-1. The first question is about the cost of construction improvements, including additions, alterations, and major replacements to the building. Approximately, what is the total amount of money that will be spent in calendar year 1992 by all persons and businesses for construction improvements to the building? **Include expenditures to date plus estimated expenditures for the remainder of the year.** Construction improvements are defined on this card.

HAND CARD R-1

$_____ (R-2)
DOLLARS

NEEDS A FEW DAYS TO COMPILE DATA 9-6 (R-1a)
DON'T KNOW 9-8 (R-1b)

R-1a. When can I call you back to get this information?

_____ _____ (R-2)
DATE TIME

R-1b. What is the name, address, and telephone number of the person who is most likely to know the total amount expected to be spent on construction improvements to this building during calendar year 1992?

NAME: _____ (R-2)
ADDRESS: _____
CITY, STATE, ZIP: _____
PHONE NUMBER: (_____) _____

NO ONE PERSON KNOWS THE TOTAL ..... 6 (BOX 26)
DON'T KNOW ..... 8 (BOX 26)

BOX 26

LOOK AT QUESTIONS E-5 AND E-6 ON THE FOLDOUT PAGE AND CIRCLE ONE:

ONE OCCUPANT: THE OWNER (E-5 = 1) ..... *1* *(R-2)*
ONE OCCUPANT: NOT THE OWNER (E-5 = 2) ..... *2* *(R-1c)*
TWO OCCUPANTS: INCLUDING THE OWNER
(E-5 = 3 AND E-6 = 2) ..... *3* *(R-1c)*
ALL OTHER SITUATIONS ..... *4* *(R-2)*

R-1c. How much money will the owner spend on construction improvements to this building during calendar year 1992?

$_____ (R-1e)
DOLLARS

DON'T KNOW 9-8 (R-1d)

R-1d. What is the name, address, telephone number, and FAX number of the person who is most likely to know how much the owner will spend on construction improvements to this building?

NAME: _____ (R-1e)
ADDRESS: _____
CITY, STATE, ZIP: _____
PHONE NUMBER: (____) _____
FAX NUMBER: (____) _____

DON'T KNOW 8 (R-2)

R-1e. ☐ CHECK HERE IF CURRENTLY UNOCCUPIED AND SKIP TO R-2.

R-1f. How much (additional) money will the current occupant spend on construction improvements to this building during calendar year 1992?

$_____ (R-2)
DOLLARS

DON'T KNOW 8 (R-1g)

R-1g. What is the name, address, telephone number, and FAX number of the current tenant in this building?

NAME: _____ (R-2)
ADDRESS: _____
CITY, STATE, ZIP: _____
PHONE NUMBER: (____) _____
FAX NUMBER: (____) _____

R-2. The next question is about expenditures for maintenance and repairs to the building. This refers to the cost for the upkeep of the building rather than additional investment in it and is described in more detail on this card.

Approximately, what is the total amount of money that will be spent in calendar year 1992 by all persons and businesses for maintenance and repairs to the building? **Including expenditures to date plus estimated expenditures for the remainder of the year.**

HAND CARD R-2

$_____ (R-2e)
DOLLARS

NEEDS A FEW DAYS TO COMPILE DATA 9-6 (R-2a)
DON'T KNOW OR NO ONE PERSON KNOWS ..... 9-8 (BOX 27)

R-2a. When can I call you back to get this information?

_____ _____ (R-2e)
DATE TIME

BOX 27

LOOK AT QUESTIONS E-5 AND E-6 ON THE FOLDOUT PAGE AND CIRCLE ONE:

ONE OCCUPANT: THE OWNER (E-5 = 1) 1 (R-2e)
ONE OCCUPANT: NOT THE OWNER (E-5 = 2) 2 (R-2b)
TWO OCCUPANTS: INCLUDING THE OWNER (E-5 = 3 AND E-6 = 2) 3 (R-2b)
ALL OTHER SITUATIONS 4 (R-2e)

R-2b. How much money will the owner spend on maintenance and repairs to this building during calendar year 1992?

$_____ (R-2c)
DOLLARS

DON'T KNOW 9-8 (R-2e)

R-2c. ☐ CHECK HERE IF CURRENTLY UNOCCUPIED AND SKIP TO R-2e.

R-2d. How much (additional) money will the current tenant spend on maintenance and repairs for this building during calendar year 1992?

$_____ (R-2e)
DOLLARS

DON'T KNOW 9-8 (R-2e)

R-2e. END: This completes the interview. Thank you very much for your time and help.

TIME ENDED: _____

BOX 28

INDICATE WHO PROVIDED THE EXPENDITURE INFORMATION FOR CONSTRUCTION IMPROVEMENTS AND MAINTENANCE AND REPAIRS:

		R-3 CONSTRUCTION IMPROVEMENTS (CIRCLE ONE)	*R-4 MAINTENANCE AND REPAIRS (CIRCLE ONE)*
a.	*OWNER*	*1*	*1*
b.	*REPRESENTATIVE OF OWNER'S BUSINESS*	*2*	*2*
c.	*OCCUPANT*	*3*	*3*
d.	*OCCUPANT REPRESENTATIVE*	*4*	*4*
e.	*OTHER (SPECIFY)*	*5*	*5*

_____

RESPONDENT NAME: _____

TELEPHONE: (_____) _____

FAX NUMBER: (_____) _____

INTERVIEWER OBSERVATIONS

FILL THIS OUT IF YOU COMPLETE THE BUILDING INTERVIEW.

1. Building is, or is part of a facility that is, a (CIRCLE ONE):

Hospital 1
College/University 2
Elementary/Middle/High School 3
Post Office 4
Other 5

2. Does the interview's definition of the building agree with the listing sheet (CIRCLE ONE)?

YES, BOX 3 = "SAMPLED LISTED BUILDING" 1 (4)
NO 2

3. A. Please indicate the name and address(es) of the building from the listing sheet.

NAME: _____

ADDRESS: _____

_____

B. Please indicate the name and address(es) of the building as defined for the interview.

(A-5) NAME: _____

(A-4) ADDRESS: _____

_____

C. Please explain the circumstances of the above difference between listing and interview definition of the building.

_____

_____

_____

4. The individual who completed all or most of the questionnaire should be recorded on the front cover. Did any other person respond to the questionnaire?

YES 1
NO 2 (6)

5. Please list all other respondents.

NAME: _____

TITLE: _____

LOCATION: _____

PHONE NO. (____) _____

NAME: _____

TITLE: _____

LOCATION: _____

PHONE NO. (____) _____

6. What is your observation of the type of building or kind of business that occurs within the building? Please be thorough in your description.

_____

_____

_____

_____

_____

7. Is this building, as defined for the interview, freestanding or attached to another building?

FREESTANDING 1
ATTACHED 2

8. Please describe any unusual circumstances you may have encountered in obtaining the energy consumption authorization form. (If you did not obtain the authorization form or account numbers, explain why.)

_____

_____

_____

_____

_____

9. Is this a strip shopping center or enclosed mall?

STRIP SHOPPING CENTER 1
ENCLOSED MALL 2
NOT A STRIP CENTER/MALL ..... 3 (END)

10. Approximately how many establishments are in this shopping center/mall?

2-5 1
6-10 2
11-20 3
21-49 4
50-99 5
100 OR MORE 6

THIS PAGE INTENTIONALLY BLANK

NONINTERVIEW REPORT

FILL THIS OUT IF YOU DID NOT COMPLETE THE BUILDING INTERVIEW.

1. Why were you unable to complete the interview?

REFUSAL/BREAKOFF 1
INELIGIBLE BUILDING 2 (4)
RESPONDENT COULD NOT BE CONTACTED 3

2. IF NOT RECORDED ON FRONT COVER: What is the name, title, and telephone number of the individual who refused, broke off, or could not be contacted for the interview?

NAME: _____

TITLE: _____

TELEPHONE NO.: ( ) _____

3. Why did the respondent refuse? (RECORD VERBATIM) OR: Why were there problems contacting the respondent?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

SKIP TO 5

4. Please explain in detail why the building was ineligible for the interview.

_____
_____
_____
_____
_____

5. What is your observation of the type of building or kind of business that occurs within the building?

_____
_____
_____
_____
_____
_____
_____

6. How many floors does the building have, ground level and above?

_____
OF FLOORS

IF INELIGIBLE BUILDING: END.

7. IF INDUSTRIAL, AGRICULTURAL, OR RESIDENTIAL MENTIONED IN 5: Would you estimate that 50% or more of the space in this building is used for (industrial/agricultural/residential) activities?

YES 1
NO 2
DON'T KNOW 8

8. Which category in your estimation best applies to the total square feet in this building?

1,000 square feet or less 1
1,001 to 50,000 square feet 2
Over 50,000 square feet 3
DON'T KNOW 8

Form EIA-871A (03/92)

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

LIST OF RECIPIENTS OF SEPARATE BILLS	ADDITIONAL INFORMATION TO EXPLAIN BILLING
1. Name _____ Address _____	_____ _____
2. Name _____ Address _____	_____ _____
3. Name _____ Address _____	_____ _____
4. Name _____ Address _____	_____ _____
5. Name _____ Address _____	_____ _____
6. Name _____ Address _____	_____ _____
7. Name _____ Address _____	_____ _____
8. Name _____ Address _____	_____ _____
9. Name _____ Address _____	_____ _____
10. Name _____ Address _____	_____ _____
11. Name _____ Address _____	_____ _____
12. Name _____ Address _____	_____ _____

Form EIA-871A (03/92)

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

LIST OF RECIPIENTS OF SEPARATE BILLS	ADDITIONAL INFORMATION TO EXPLAIN BILLING
13. Name _____ Address _____	_____ _____
14. Name _____ Address _____	_____ _____
15. Name _____ Address _____	_____ _____
16. Name _____ Address _____	_____ _____
17. Name _____ Address _____	_____ _____
18. Name _____ Address _____	_____ _____
19. Name _____ Address _____	_____ _____
20. Name _____ Address _____	_____ _____
21. Name _____ Address _____	_____ _____
22. Name _____ Address _____	_____ _____
23. Name _____ Address _____	_____ _____
24. Name _____ Address _____	_____ _____

Form EIA-871A (03/92)

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

LIST OF RECIPIENTS OF SEPARATE BILLS	ADDITIONAL INFORMATION TO EXPLAIN BILLING
25. Name _____ Address _____	_____ _____
26. Name _____ Address _____	_____ _____
27. Name _____ Address _____	_____ _____
28. Name _____ Address _____	_____ _____
29. Name _____ Address _____	_____ _____
30. Name _____ Address _____	_____ _____
31. Name _____ Address _____	_____ _____
32. Name _____ Address _____	_____ _____
33. Name _____ Address _____	_____ _____
34. Name _____ Address _____	_____ _____
35. Name _____ Address _____	_____ _____
36. Name _____ Address _____	_____ _____

Form EIA-871A (03/92)

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

LIST OF RECIPIENTS OF SEPARATE BILLS	ADDITIONAL INFORMATION TO EXPLAIN BILLING
37. Name _____ Address _____	_____ _____
38. Name _____ Address _____	_____ _____
39. Name _____ Address _____	_____ _____
40. Name _____ Address _____	_____ _____
41. Name _____ Address _____	_____ _____
42. Name _____ Address _____	_____ _____
43. Name _____ Address _____	_____ _____
44. Name _____ Address _____	_____ _____
45. Name _____ Address _____	_____ _____
46. Name _____ Address _____	_____ _____
47. Name _____ Address _____	_____ _____
48. Name _____ Address _____	_____ _____

FOLD-OUT PAGE

1986	1992	E-3. MULTIBUILDING FACILITY ☐
_____ SQUARE FEET	A-7/A-8 _____ SQUARE FEET	E-5. OCCUPANT STATUS: ONE: THE OWNER ..... 1 ONE: NOT THE OWNER ..... 2 MORE THAN ONE: INCLUDING THE OWNER ..... 3 MORE THAN ONE: NOT INCLUDING THE OWNER ..... 4 CURRENTLY UNOCCUPIED 5
_____ NO. OF FLOORS	A-9 _____ NO. OF FLOORS	E-6. NO. OF BUSINESSES:_____
_____ YEAR BUILT	A-12/A-14 _____ YEAR BUILT	BOX 16. OPEN 24 HRS ☐

C-1. Here is a list of various types of energy sources. Which of these fuels or energy sources have been or may be used to supply energy to this building during calendar year 1992?	C-3. END USES FOR ENERGY SOURCES DURING CALENDAR YEAR 1992:						
	a. Main fuel for heating	b. Any other heating fuels	c. Fuel for air-conditioning	d. Fuel for domestic hot water heating	e. Fuel for commercial/ institutional cooking or serving	f. Fuel for manufacturing/ industrial activity	g. Fuel to generate electricity
NOT PERFORMED	☐	☐	☐	☐	☐	☐	☐
C-1. ENERGY SOURCES (CHECK ALL USED)	CHECK ONE	CHECK ALL THAT APPLY	CHECK ALL THAT APPLY	CHECK ALL THAT APPLY	CHECK ALL THAT APPLY	CHECK ALL THAT APPLY	CHECK ALL THAT APPLY
a. Electricity ☐	☐	☐	☐	☐	☐	☐	
b. Natural Gas ☐	☐	☐	☐	☐	☐	☐	☐
c. Fuel Oil/Diesel/ Kerosene ☐	☐	☐	☐	☐	☐	☐	☐
d. Bottled Gas/LPG/ Propane ☐	☐	☐	☐	☐	☐	☐	☐
e. District Steam ☐	☐	☐	☐	☐	☐	☐	
f. District Hot Water ☐	☐	☐	☐	☐	☐	☐	
g. District Chilled Water ☐			☐				
h. Wood ☐	☐	☐		☐	☐	☐	☐
i. Coal ☐	☐	☐		☐	☐	☐	☐
j. Electricity from solar photovoltaic cells (PVC's) ☐	☐	☐	☐	☐	☐	☐	☐
k. Thermal Energy from active solar collectors ☐	☐	☐	☐	☐	☐	☐	☐
l. Other (Specify) _____ ☐	☐	☐	☐	☐	☐	☐	☐
END USE PERFORMED BUT ENERGY SOURCE NOT KNOWN	☐	☐	☐	☐	☐	☐	☐

Form EIA-871A (03/92)

Form Approval:
OMB No: 1905-0145
Expires: May 31, 1994

UNITED STATES DEPARTMENT OF ENERGY
COMMERCIAL BUILDINGS ENERGY CONSUMPTION SURVEY

AUTHORIZATION FORM

I hereby give permission to Westat, Inc. to obtain energy consumption information and information on participation in demand-side management and energy audit programs for confidential use in connection with their survey for the U.S. Department of Energy.

This authorization covers the total amount of fuels and the total price charged for the fuels consumed during the 26-month period of December 1, 1991 to January 31, 1994 by the building/establishment identified below. It also covers demand-side management programs and audits conducted during the 48-month period of January 1, 1990 to December 31, 1993.

Companies are authorized to provide billing information by monthly periods or by delivery date, whichever is applicable. A photocopy of this authorization may be accepted with the same authority as the original.

Building name

Address

City State ZIP

Please print name of authorizing person

Employed by ( ) Telephone

X
Signature of authorizing person

Address (if different than above)

Title

City State ZIP

PLEASE COMPLETE ONE BLOCK FOR EACH COMPANY THAT SUPPLIED FUEL USED BY THE ABOVE NONRESIDENTIAL BUILDING SINCE DECEMBER 1, 1991.

Energy Source

Print full name of company

Address (if known) City and State ZIP

( ) Telephone ( ) FAX

Account Number(s)

Energy Source

Print full name of company

Address (if known) City and State ZIP

( ) Telephone ( ) FAX

Account Number(s)

☐ Demand-side management and energy audit information is not to be released if this box is initialed by the authorizing person.

CONTINUED ON REVERSE SIDE

Form EIA-871A (03/92)

COMMERICAL BUILDINGS ENERGY CONSUMPTION SURVEY
AUTHORIZATION FORM (Continued)

X
Signature of Authorizing Person

Energy Source

Print full name of company

Address (if known) City and State ZIP

( ) ( )
Telephone FAX

Account Number(s)

Energy Source

Print full name of company

Address (if known) City and State ZIP

( ) ( )
Telephone FAX

Account Number(s)

Energy Source

Print full name of company

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Account Number(s)

Appendix H

Metric Conversion Factors

The 1993 CBECS classifies a laboratory as a building used for activities, which utilizes equipment for experimental testing and analysis.

Appendix H

Metric Conversion Factors

Data in the Energy Information Administration publications are expressed in units, such as British thermal units, barrels, cubic feet, and short tons, that historically have been used in the United States. However, because U.S. activities involve foreign nations, most of which use metric units of measure, the United States is committed to making the transition to the metric system. The metric conversion factors presented in Table H1 can be used to calculate the metric-unit equivalents of values expressed in U.S. units. For example, 500 short tons are the equivalent of 453.6 metric tons (500 short tons x 0.9071847 metric tons/short tons=453.6 metric tons).

Table H1. Metric Conversion Factors

Type of Unit	U.S. Unit		Conversion Factor	Metric Unit
Mass	Short Tons	X	0.907 1847	= Metric Tons (t)
	Short Tons Uranium Oxide (U_3O_8)	X	0.769	= Metric Tons Uranium (U)
	Short Tons Uranium Fluoride (UF_6)	X	0.613	= Metric Tons Uranium (U)
	Long Tons	X	1.016	= Metric Tons(t)
	Pounds(lb)	X	0.453 592 37[a]	= Kilograms(kg)
	Pounds Uranium Oxide(lb U_3O_8)	X	0.384 645[b]	= Kilograms (Kg)
	Ounces, Avoirdupois(oz)	X	28. 349 52	= Grams(g)
	Barrels of Oil(bbl)	X	0.158 987 3	= Cubic Meters (m^3)
Volume	Cubic Yards(yd^3)	X	0.765 555	= Cubic Meters (m^3)
	Cubic Feet(ft^3)	X	0.028 316 85	= Cubic Meters (m^3)
	U.S. Gallons(gal)	X	3.785 412	= Liter (L)
	Ounces, Fluid(fl oz)	X	29.573 53	= Milliliters (ml)
	Cubic Inches(in^3)	X	16.387 06	= Milliliters (ml)
Length	Miles (mi)	X	1,609 344[a]	= Kilometers (km)
	Yards (yd)	X	0.914 4[a]	= Meters (m)
	Feet (ft)	X	0.304 8[a]	= Meters (m)
	Inches (in)	X	2.54[a]	= Centimeters (cm)
Area	Acres	X	0.404 69	= Hectares (ha)
	Square Miles (mi^2)	X	2,589 988	= Square Kilometers (km^2)
	Square Yards (yd^2)	X	0.836 127 4	= Square Meters (m^2)
	Square Feet (ft^2)	X	0.092 903 04[a]	= Square Meters (m^2)
	Square Inches (in^2)	X	6.4561 6[a]	= Square Centimeters (cm^2)
Temperature	Degrees Fahrenheit[c] (^oF)	X	5/9 (after subtracting 32)[a]	= Degrees Celsius (^oc)
Energy	British thermal units (Btu)	X	1,055.056	= Joules (J)
	Calories (cal)	X	4.186 8	= Joules (J)
	Kilowatthours (kWh)	X	3.6	= Megajoules (MJ)

[a]Exact Conversion.
[b]Calculated by the Energy Information Administration.
[c]To convert degrees Celsius (^oC) to degrees Fahrenheit (^oF) multiply by 9/5, then add 32.
Sources: •General Services Administration, Federal Standard 376B, *Preferred Metric Units for General Use by the Federal Government* (Washington, DC, January 27, 1993), pp. 9-11, 13, and 16. •National Institute of Standards and Technology, *Special Publications* 330, 811, and 814. •American National Standards Institute/Institute of Electrical and Electronic Engineers, ANS/EEE Std.268-1982, pp 28 and 29. •Energy Information Administration/*Monthly Energy Review August 1993*, Appendix B, pp 161.

Appendix I

Related EIA Publications on Energy Consumption

A collage of publications and electronic data superimposed, which consider data collected from various EIA surveys.

Appendix I

Related EIA Publications on Energy Consumption

For information about how to obtain these publications, see the inside cover of this report. Please note that the prices quoted here are subject to change.

In addition to the reports listed below, public use data tapes and data diskettes for the residential, residential transportation, and commercial sectors are available from the National Technical Information Service (NTIS). To obtain information on how to order the tapes/diskettes, you may call NTIS at 703-487-4807, FAX number 703-321-8547. Data diskettes can also be obtained from GPO. For GPO ordering information, call 202-512-2235.

Commercial Sector

Note: The name of the Nonresidential Buildings Energy Consumption Survey was changed to the Commercial Buildings Energy Consumption Survey, beginning with the 1989 survey. The survey name was also dropped from the report title at that time and subsequently.

Characteristics of Buildings

"Commercial Buildings Characteristics 1992," *Monthly Energy Review*, January 1994, DOE/EIA-0035(94/01).

Commercial Buildings Characteristics 1989; June 1991, DOE/EIA-0246(89), GPO Stock No. 061-003-00699-0, $18.00.

Nonresidential Buildings Energy Consumption Survey: Characteristics of Commercial Buildings, 1986; September 1988, DOE/EIA-0246(86), GPO Stock No. 061-003-00580-2, $16.00.

Nonresidential Buildings Energy Consumption Survey: Characteristics of Commercial Buildings, 1983; July 1985, DOE/EIA-0246(83), GPO Stock No. 061-003-00439-3, $7.50.

Nonresidential Buildings Energy Consumption Survey: Characteristics of Commercial Buildings, 1983; A Supplemental Reference, DOE/EIA-M008, $22.95. Available from the NTIS, Order No. DE-8-5015581.

Nonresidential Buildings Energy Consumption Survey: Fuel Characteristics and Conservation Practices; June 1981, DOE/EIA-0278, GPO Stock No. 061--00300200-5, $9.00.

Nonresidential Buildings Energy Consumption Survey: Building Characteristics; March 1981, DOE/EIA-0246, GPO Stock No. 061-003-00171-8, $6.50.

Consumption and Expenditures

Commercial Buildings Consumption and Expenditures 1989; April 1992, DOE/EIA-0318(89), GPO Stock No. 061-003-00753-8, $25.00.

Nonresidential Buildings Energy Consumption Survey: Commercial Buildings Consumption and Expenditures 1986; May 1989, DOE/EIA-0318(86), GPO Stock No. 061-003-00613-2, $19.00.

Nonresidential Buildings Energy Consumption Survey: Commercial Buildings, Consumption and Expenditures 1983; September 1986, DOE/EIA-0318(83), GPO Stock No. 061-003-00496-2, $13.00.

Nonresidential Buildings Energy Consumption Survey: 1979 Consumption and Expenditures, Part 1: Natural Gas and Electricity; March 1983, DOE/EIA-0318/1, GPO Stock No. 061-003-00298-6, $9.50.

Nonresidential Buildings Energy Consumption Survey: 1979 Consumption and Expenditures, Part 2: Steam, Coal, Fuel Oil, LPG, and Total Fuels; December 1983, DOE/EIA-0318(79)/2, GPO Stock No. 061-003-00366-4, $6.00.

Other Publications on the Commercial Sector

"Assessment of Energy Use in Multibuilding Facilities," *Monthly Energy Review*, December 1993, DOE/EIA-0035(93/12).

Energy Consumption Series--*Assessment of Energy Use in Multibuilding Facilities*, August 1993, DOE/EIA-0555(93)/1, GPO Stock No. 061-003-00817-8, $7.50.

Energy Consumption Series--*User-Needs Study for the 1992 Commercial Buildings Energy Consumption Survey*, September 1992, DOE/EIA-0555(92)/4, GPO Stock No. 061-003-00770-8, $8.50.

Energy Consumption Series--*Lighting in Commercial Buildings*; March 1992, DOE/EIA-0555(92)/1, GPO Stock No. 061-003-00749-0, $6.50.

Residential Sector

Housing Characteristics

Note: The survey name was dropped from the beginning of the report title starting with the 1987 data reports.

Housing Characteristics 1990; May 1992, DOE/EIA-0314(90), GPO Stock No. 061-003-00754-6, $23.00.

Housing Characteristics 1987; May 1989, DOE/EIA-0314(87), GPO Stock No. 061-003-00619-1, $13.00.

Residential Energy Consumption Survey: Housing Characteristics 1984; October 1986, DOE/EIA-0314(84), GPO Stock No. 061-003-00499-7, $12.00.

Residential Energy Consumption Survey: Housing Characteristics, 1982; August 1984, DOE/EIA-0314(82), GPO Stock No. 061-003-00393-1, $7.00.

Residential Energy Consumption Survey Housing Characteristics, 1981; August 1983, DOE/EIA-0314(81), GPO Stock No. 061-003-00330-3, $6.50.

Residential Energy Consumption Survey: Housing Characteristics, 1980; June 1982, DOE/EIA-0314, GPO Stock No. 061-003-00256-1, $11.00.

Residential Energy Consumption Survey: Characteristics of the Housing Stock and Households, 1978; February 1980, DOE/EIA-0207/2, GPO Stock No. 061-003-00093-2, $4.25.

Residential Energy Consumption Survey: Conservation; February 1980, DOE/EIA-0207/3, GPO Stock No. 061-003-00087-8, $6.00.

Preliminary Conservation Tables from the National Interim Energy Consumption Survey; August 1979, DOE/EIA-0193/P (no GPO Stock No.).

Characteristics of the Housing Stock and Households: Preliminary Findings from the National Interim Energy Consumption Survey; October 1979, DOE/EIA-0199/P (no GPO Stock No. available).

Consumption and Expenditures

Note: The survey name was dropped from the beginning of the report title starting with the 1987 data reports. The titles were changed to *Household Energy Consumption and Expenditures 1987, Part 1: National* and *Part 2: Regional.*

"Household Energy Consumption and Expenditures 1990," *Monthly Energy Review*, August 1993, DOE/EIA-0035(93/08).

Household Energy Consumption and Expenditures 1990; February 1993, DOE/EIA-0321/1(90), GPO Stock No. 061-003-00795-3, $22.00.

Household Energy Consumption and Expenditures 1990\S; DOE/EIA-0321/2(90), GPO Stock No. 061-003-00796-1, $21.00.

Household Energy Consumption and Expenditures 1987, Part 1: National Data; October 1989, DOE/EIA-0321/1(87), GPO Stock No. 061-003-00635-3, $15.00. Note: Energy end-use data are included in this report.

Household Energy Consumption and Expenditures 1987, Part 2: Regional Data; DOE/EIA-0321/2(87) (no GPO Stock No. available), $16.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1984 Through March 1985, Part 1: National Data; March 1987, DOE/EIA-0321/1(84), GPO Stock No. 061-003-00519-5, $9.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1984 Through March 1985, Part 2: Regional Data; May 1987, DOE/EIA-0321/2(84), GPO Stock No. 061-003-00528-4, $17.00. Note: Energy end-use data are included in this report.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1982 Through March 1983, Part 1: National Data; November 1984, DOE/EIA-0321/1(82), GPO Stock No. 061-003-00411-3, $7.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1982 Through March 1983, Part 2: Regional Data; December 1984, DOE/EIA-0321/2(82), GPO Stock No. 061-003-00414-8, $9.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1981 Through March 1982, Part 1: National Data; September 1983, DOE/EIA-0321/1(81), GPO Stock No. 061-003-00340-1, $6.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1981 Through March 1982, Part 2: Regional Data; October 1983, DOE/EIA-0321/2(81), GPO Stock No. 061-003-00357-5, $8.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1980 Through March 1981, Part 1: National Data; September 1982, DOE/EIA-0321/1(80), GPO Stock No. 061-003-00278-1, $7.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1980 Through March 1981, Part 2: Regional Data; June 1983, DOE/EIA-0321/2(80), GPO Stock No. 061-003-00319-2, $7.00.

Residential Energy Consumption Survey: 1979-1980 Consumption and Expenditures, Part 1: National Data (Including Conservation); April 1981, DOE/EIA-0262/1, GPO Stock No. 061-003-00191-2, $6.50.

Residential Energy Consumption Survey: 1979-1980 Consumption and Expenditures, Part II: Regional Data; May 1981, DOE/EIA-0262/2, GPO Stock No. 061-003-00189-1, $8.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1978 Through March 1979; July 1980, DOE/EIA-0207/5, GPO Stock No. 061-003-00131-9, $7.50.

Single-Family Households: Fuel Oil Inventories and Expenditures: National Interim Energy Consumption Survey; December 1979, DOE/EIA-0207/1, GPO Stock No. 061-003-00075-4, $3.50.

Other Publications on the Residential Sector

Energy Consumption Series--*User-Needs Study of the 1993 Residential Energy Consumption Survey,* September 1993, DOE/EIA-0555(93)/2, GPO 061-003-00819-4, $13.00.

"End-Use Consumption of Residential Energy" *Monthly Energy Review* (Article), pp. vii-xiv, July 1987, DOE/EIA-0035(87/07).

Residential Energy Consumption Survey: Trends in Consumption and Expenditures 1978-1984 June 1987, DOE/EIA-0482, GPO Stock No. 061-003-00-535-7, $12.00.

Residential Conservation Measures; July 1986, SR/EEUD/86/01 (no GPO Stock No.).

An Economic Evaluation of Energy Conservation and Renewable Energy Tax Credits; October 1985, Service Report (no GPO Stock No.).

Residential Energy Consumption and Expenditures by End Use for 1978, 1980, and 1981; December 1984, DOE/EIA-0458, GPO Stock No. 061-003-00415-6, $4.50.

Weatherization Program Evaluation, SR-EEUD-84-1; August 1984 (available from the Office of the Assistant Secretary for Conservation and Renewable Energy, Department of Energy).

Residential Energy Consumption Survey: Regression Analysis of Energy Consumption by End Use; October 1983, DOE/EIA-0431, GPO Stock No. 061-00300-347-8, $5.00.

National Interim Energy Consumption Survey: Exploring the Variability In Energy Consumption; July 1981, DOE/EIA-0272, GPO Stock No. 061-003-00-205-6, $5.00.

National Interim Energy Consumption Survey: Exploring the Variability in Energy Consumption--A Supplement; October 1981, DOE/EIA-0272/S, GPO Stock No. 061-003-00217-0, $4.50.

Energy Use by U.S. Households; November 1980, DOE/EIA-0248 (brochure, no GPO Stock No.).

Residential Transportation Sector

Note: The survey name was dropped from the beginning of the report title starting with the 1988 data report, and the report title changed to *Household Vehicles Energy Consumption 1988.*

Household Vehicles Energy Consumption 1991; December 1993, DOE/EIA-0464(91), GPO Stock No. 061-003-00652-3, $14.00.

"Energy Preview: Residential Transportation Energy Consumption Survey Preliminary Estimates, 1991," *Monthly Energy Review*, January 1993, DOE/EIA-0035(93/01).

Household Vehicles Energy Consumption 1988; February 1990, DOE/EIA-0464(88), GPO Stock No. 061-003-00652-3, $11.00.

Residential Transportation Energy Consumption Survey: Consumption Patterns of Household Vehicles 1985; April 1987, DOE/EIA-0464(85), GPO Stock No. 061-003-00521-7, $8.50.

Residential Transportation Energy Consumption Survey: Consumption Patterns of Household Vehicles, 1983; January 1985, DOE/EIA-0464(83), GPO Stock No. 061-003-00420-2, $4.50.

Residential Energy Consumption Survey: Consumption Patterns of Household Vehicles, Supplement: January 1981 to September 1981; February 1983, DOE/EIA-0328, GPO Stock No. 061-003-00297-8, $4.75.

Residential Energy Consumption Survey: Consumption Patterns of Household Vehicles, June 1979 to December 1980; April 1982, DOE/EIA-0319 (no GPO Stock No.).

Industrial Sector

"Energy Preview: Manufacturing Energy Consumption Survey Preliminary Estimates, 1991," *Monthly Energy Review*, September 1993, DOE/EIA-0035(93/01).

"Energy Efficiency in the Manufacturing Sector," *Monthly Energy Review* (Article), p.1, December 1992.

Manufacturing Energy Consumption Survey: Changes in Energy Intensity in the Manufacturing Sector 1980-1988, December 1991, DOE/EIA-0552(80-88). GPO Stock No. 061-003-00734-1, $4.75.

Manufacturing Energy Consumption Survey: Manufacturing Fuel-Switching Capability 1988; September 1991, DOE/EIA-0515(88), GPO Stock No. 061-003-00720-1, $9.00.

Manufacturing Energy Consumption Survey: Consumption of Energy, 1988; May 1991, DOE/EIA-0512(88), GPO Stock No. 061-003-00703-8, $11.00.

Manufacturing Energy Consumption Survey: Energy Efficiency in Manufacturing, 1985; January 1990, DOE/EIA-0516(85), GPO Stock No. 061-003-00650-7, $4.25.

Manufacturing Energy Consumption Survey: Fuel-Switching Capability, 1985; December 1988, DOE/EIA-0515(85), GPO Stock No. 061-003-00601-9, $3.50.

Manufacturing Energy Consumption Survey: Methodological Report, 1985; November 1988, DOE/EIA-0514(85), GPO Stock No. 061-003-00595-1, $6.00.

Manufacturing Energy Consumption Survey: Consumption of Energy, 1985; November 1988, DOE/EIA-0512(85), GPO Stock No. 061-003-00594-2, $6.00.

"Manufacturing Sector Energy Consumption 1985 Provisional Estimates," *Monthly Energy Review* (Article), pp. vii-x, January 1987, DOE/EIA-0035(-87/01).

Report on the 1980 Manufacturing Industries' Energy Consumption Study and Survey of Large Combustors; February 1983, DOE/EIA-0358, GPO Stock No. 061-003-00293-5, $5.00.

Industrial Energy Consumption, Survey of Large Combustors: Report on Alternate Fuel-Burning-Capabilities of Large Boilers in 1979; February 1982, DOE/EIA-0304, GPO Stock No. 061-003-0233-1, $2.50.

Methodological Report of the 1980 Manufacturing Industries Survey of Large Combustors (EIA-463); March 1982, DOE/EIA-0306 (no GPO Stock No.).

Other Publications on the Industry Sector

Energy Consumption Series--*Derived Annual Estimates of Manufacturing Energy Consumption 1974-1988*, August 1992, DOE/EIA-0555(92)/3, GPO Stock No. 061-003-00766-0, $7.00.

Energy Consumption Series--*Development of the 1991 Manufacturing Energy Consumption Survey*, May 1992, DOE/EIA-0555(92)/2, GPO Stock No. 061-003-00757-1, $5.50.

Cross-Sector

Energy Consumption by End-Use Sector: A Comparison of Measures by Consumption and Supply Surveys; April 6, 1990, DOE/EIA-0533 (no GPO Stock No. available), $2.50.

Natural Gas: Use and Expenditures; April 1983, DOE/EIA-0382, GPO Stock No. 061-003-00307-9, $5.50.

Public Use Tapes

Note: All tapes are available through the NTIS.

Residential and Residential Transportation Sectors

Residential Energy Consumption Survey: 1987 and Residential Transportation Energy Consumption Survey, 1988, Order No. PB90-501461, $220.

Residential Energy Consumption Survey: 1984 and Residential Transportation Energy Consumption Survey, 1985; Order No. PB87-186540, $220.

Residential Energy Consumption Survey: 1982 and Residential Transportation Energy Consumption Survey, 1983; Order No. PB85-221760, $220.

Residential Energy Consumption Survey: Consumption and Expenditures, 1980-1981; Monthly Billing Data; Order No. PB84-166230, $220.

Residential Energy Consumption Survey: Housing Characteristics, 1981; Consumption and Expenditures, 1981-1982; Monthly Billing Data; Order No. PB84-120476, $220.

Residential Energy Consumption Survey: Housing Characteristics, Annualized Consumption and Expenditures, 1980-1981; Order No. PB83-199554, $220.

Residential Energy Consumption Survey: Household Transportation Panel Monthly Gas Purchases and Vehicle and Household Characteristics, 6/79-9/81; Order No. PB84-162452, $220.

Residential Energy Consumption Survey: Household Screener Survey, 1979-1980; Order No. PB82-1148-77, $220.

Residential Energy Consumption Survey: Household Monthly Energy Consumption and Expenditures, 1978-1979; Order No. PB82-114901, $220.

National Interim Energy Consumption Survey (Residential), 1978; Order No. PB81-108714, $220.

Commercial Sector

Nonresidential Buildings Energy Consumption Survey: 1986 Data; Order No. PB90-500034, $220.

Nonresidential Buildings Energy Consumption Survey: 1979 and 1983 Data; Order No. PB88-245162, $220.

Public Use Diskettes

Note: Diskettes are available through the GPO and NTIS.

Residential Energy Consumption Survey 1987 Data, **GPO** - ASCII or dBASE format, order by title, $45 for each set. **NTIS** - ASCII format: Order No. PB-91-505115, $130, and dBASE format: Order No. PB-91-505107, $130.

Commercial Buildings Energy Consumption Survey 1989 data, **GPO** - ASCII format, order by title, $45.00. **NTIS** - ASCII format: Order No. PB92-504232, $140.

Nonresidential Buildings Energy Consumption Survey 1986 Data, **NTIS** - ASCII format: Order No. PB91-506808, $130.

Residential Transportation Energy Consumption Survey 1988 Data, **GPO** - ASCII or dBASE format,

order by title, $15 for each set. NTIS - ASCII format: Order No. PB91-507269, dBASE format: Order No. PB91-507277, $50 each.

Planned Publications

Manufacturing Energy Consumption Survey: Consumption of Energy 1991; planned for July 1994.

Sample Design for the Residential Energy Consumption Survey (Energy Consumption Series); planned for September 1994.

Commercial End-Use Intensities (Energy Consumption Series); planned for October 1994.

Measuring Energy Efficiency in the U.S. Economy (Energy Consumption Series); planned for January 1995.

Buildings and Energy in the 1980's (Energy Consumption Series); planned for December 1994.

Commercial Buildings Energy Consumption and Expenditures 1992; planned for early 1995.

Housing Characteristics 1993; planned for early 1995.

Note: The Energy Information Administration also publishes annually the *State Energy Data Report, Consumption Estimates*, DOE/EIA-0214 and the *State Energy Price and Expenditures Report*, DOE/EIA-0376; and the *Monthly Energy Review*, DOE/EIA-0035. These reports contain annual and monthly consumption information derived from EIA supply surveys.

Glossary

Activities Requiring Large Amounts of Hot Water: This survey collects data for activities within the buildings that require large amounts of hot water for other than space heating. Examples of these activities are commercial laundry rooms, heated swimming pools, spas, or sauna and steam rooms. (See **Energy-Related Space Functions**.)

Additional Operating Hours for Equipment Use: In this report, the hours the heating, cooling, and lighting equipment are on in addition to normal, weekly operating hours. (See **Weekly Operating Hours.**)

Agricultural: In this survey, activities involving the production, processing, sale, storage, or housing of agricultural products, including livestock. Buildings that housed such activities were included during the listing stage. However, buildings that had 50 percent or more of the floorspace devoted to agricultural activity were considered out of scope and were deleted from the sample during the interview phase. Farms and farm buildings (silos, grain elevators, and barns), whose buildings are overwhelmingly residential and agricultural, were out of scope for the CBECS and were not listed. (See **Commercial Building, Out of Scope, Nonresidential Building, Building, Principal Building Activity**, and Appendix B, "How the Survey was Conducted.")

Air Conditioning: See **Cooling**.

Air-Handling Units: A method for channeling warm or cool air to different parts of a building. The process of moving the conditioned air often involves drawing air over heating or cooling coils and forcing it from a central location through ducts or air-handling units. Air-handling units are hidden in the walls or ceilings, where they use steam or hot water to heat or chilled water to cool the air inside the duct work. In the "Detailed Tables," air-handling units are included in the "Ducts for Heating" heating distribution category and in the "Ducts for Cooling" cooling distribution category. (See **Cooling, Duct,** and **Space Heating**.)

Alternative-Rate DSM Program Assistance: A DSM program assistance that offers special rate structures or discounts on the consumer's monthly electric bill in exchange for participation in DSM programs aimed at cutting peak demands or changing load shape. These rates are intended to reduce consumer bills and shift hours of operation of equipment from on-peak to off-peak periods through the application of time-differentiated rates. For example, utilities often pay consumers several dollars a month (refund on their monthly electric bill) for participation in a load control program. Large commercial and industrial consumers sometimes obtain interruptible rates, which provide a discount in return for the consumer's agreement to cut electrical loads upon request from the utility (usually during critical periods, such as summer afternoons when the system demand approaches the utility's generating capability). (See **DSM Program Assistance**.)

Asphalt or Fiberglass Shingles: See **Shingles**.

Authorization Form: A form signed by the building respondent, authorizing energy suppliers that serve the building to release information on the amounts and costs of energy consumed in the building and the participation by the building in DSM programs during a specified period. (See **Energy Supplier** and Appendix B, "How the Survey Was Conducted.")

Baseboard: As a type of heating equipment, a system in which either electric resistance coils or finned tubes carrying steam or hot water are mounted behind shallow panels along baseboards. Baseboards rely on passive convection to distribute heated air in the space. Electric baseboards are an example of an "Individual Space Heater." (See **Electric Baseboard** or **Individual Space Heater**.)

Boiler: A type of space-heating equipment consisting of a vessel or tank where heat produced from the combustion of fuels such as natural gas, fuel oil, or coal is used to generate hot water or steam. Many buildings have their own boilers, while other buildings have steam or hot water piped in from a central plant. For this survey, only boilers inside the building (or serving only that particular building) are counted as part of the building's heating system. Steam or hot water piped into a building from a central plant is considered district heat. (See **Furnace, HVAC,** and **District Heat.**)

Bottled Gas: See **Liquefied Petroleum Gas (LPG)** and **Propane.**

Building: In this survey, a structure totally enclosed by walls extending from the foundation to the roof, containing over 1,000 square feet of floorspace, and intended for human occupancy. Structures that were included in the survey as a specific exception were parking garages not totally enclosed by walls and a roof, as well as structures erected on pillars to elevate the first fully enclosed level, but leaving the sides at ground level open.

Excluded from the survey as nonbuildings were the following: structures (other than the exceptions just noted) that were not totally enclosed by walls and a roof (such as oil refineries, steel mills, and water towers); street lights, pumps, billboards, bridges, swimming pools, and construction sites; mobile homes and trailers, even if they housed commercial activity; and oil storage tanks. (See **Commercial Building** and **Nonresidential Building.**)

Building Energy Manager: A person whose chief day-to-day responsibility is the physical operation and maintenance of the building's heating and/or cooling equipment. In Appendix A, "Detailed Tables," this is included under the "Energy Management Practices" category. (See **Energy Management Practices.**)

Building Floorspace: See **Floorspace.**

Building Ownership (Owner/Manager): See **Ownership of Building.**

Building Shape: The shape of the building that mostly resembles the floorplan of the building. This is often referred to as the "footprint" of the building. For this survey, the following shapes were asked: square, rectangle, rectangle or square with courtyard, right angle (L shape) and H, U, E, T, or cross shapes. In the "Detailed Tables" of this report, the "Other" category under Building Shape includes H, U, E, T, L and cross shapes.

Building Shell Conservation Features: A building feature designed to reduce the energy loss or gain through the shell or envelope of the building. In the "Detailed Tables," this category includes roof, ceiling or wall insulation; storm windows or double- or triple-paned glass (multiple glazing); tinted or reflective glass or shading films; exterior or interior shadings or awnings, and windows that open. This category does not include any building shell DSM program participation. In the "Detailed Tables," any building shell DSM program participation is included in DSM programs. (See **Roof or Ceiling Insulation, Wall Insulation, Storm Windows, Storm Doors, Storm or Multiple Glazing, Reflective or Shading Glass or Film, Exterior or Interior Shadings or Awnings,** and **Windows that Open.**)

Building Shell (Envelope): The thermal envelope of the building, that is, the roof, exterior walls, and bottom floors that enclose conditioned space through which thermal energy may be transferred to or from the exterior.

Building Shell (Envelope) DSM Program: A DSM program that promotes reduction of energy consumption through improvements to the building envelope. Includes installation of insulation, weatherstripping, caulking, window film, and window replacement. In the "Detailed Tables," this is included in the "DSM Program Participation" category. (See **Building Shell (Envelope) and DSM Programs.**)

Built-Up Roof: A roof covering consisting of several successive layers (each of which is called a ply) usually of roofing felt with mopping of hot asphalt between layers and topped by a mineral-surfaced layer or by gravel embedded in a heavy coat of asphalt.

Campus or Complex: See **Multibuilding Facility**.

CDD: See **Cooling Degree-Days (CDD)**.

Census Division: A geographic area consisting of several States defined by the U.S. Department of Commerce, Bureau of the Census. (See the map in Appendix F.) The States are grouped into four regions and nine divisions:

Region	Division	States
Northeast	New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
	Middle Atlantic	New Jersey, New York, and Pennsylvania
Midwest	East North Central	Illinois, Indiana, Michigan, Ohio, and Wisconsin
	West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota
South	South Atlantic	Delaware, the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia
	East South Central	Alabama, Kentucky, Mississippi, and Tennessee
	West South Central	Arkansas, Louisiana, Oklahoma, and Texas
West	Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming
	Pacific	Alaska, California, Hawaii, Oregon, and Washington

Census Region: See **Census Division** and the map in Appendix F.

Central Chiller: Any centrally located air-conditioning system that produces chilled water in order to cool air. The chilled water or cold air is then distributed throughout the building using pipes or air ducts, or both. These systems are also commonly known as "chillers," "centrifugal chillers," "reciprocating chillers" or "absorption chillers." Chillers are generally located in, or just outside, the building they serve. Chillers located at central plants are included under district chilled water. (See **Cooling, District Chilled Water, Central Physical Plant,** and **HVAC**.)

Central Cooling: Cooling of an entire building with a refrigeration unit to condition the air. Typically central chillers and ductwork are present in a centrally cooled building. (See **Cooling**.)

Central Physical Plant: A plant that is owned by, and on the grounds of, a multibuilding facility that provides district heating, district cooling, or electricity to one or more buildings on the same facility. The central physical plant may be by itself in a separate building or may be located in a building where other activities occur. (See **Multibuilding Facility, District Heat,** or **District Chilled Water**.)

Centralized Water Heating System: Equipment, to heat and store water for other than space heating purposes, which provides hot water from a single location for distribution throughout a building. A residential-type tank water heater is a good example of a centralized water heater. (See Water Heating Equipment and Distributed/Point of Use Water Heating System.)

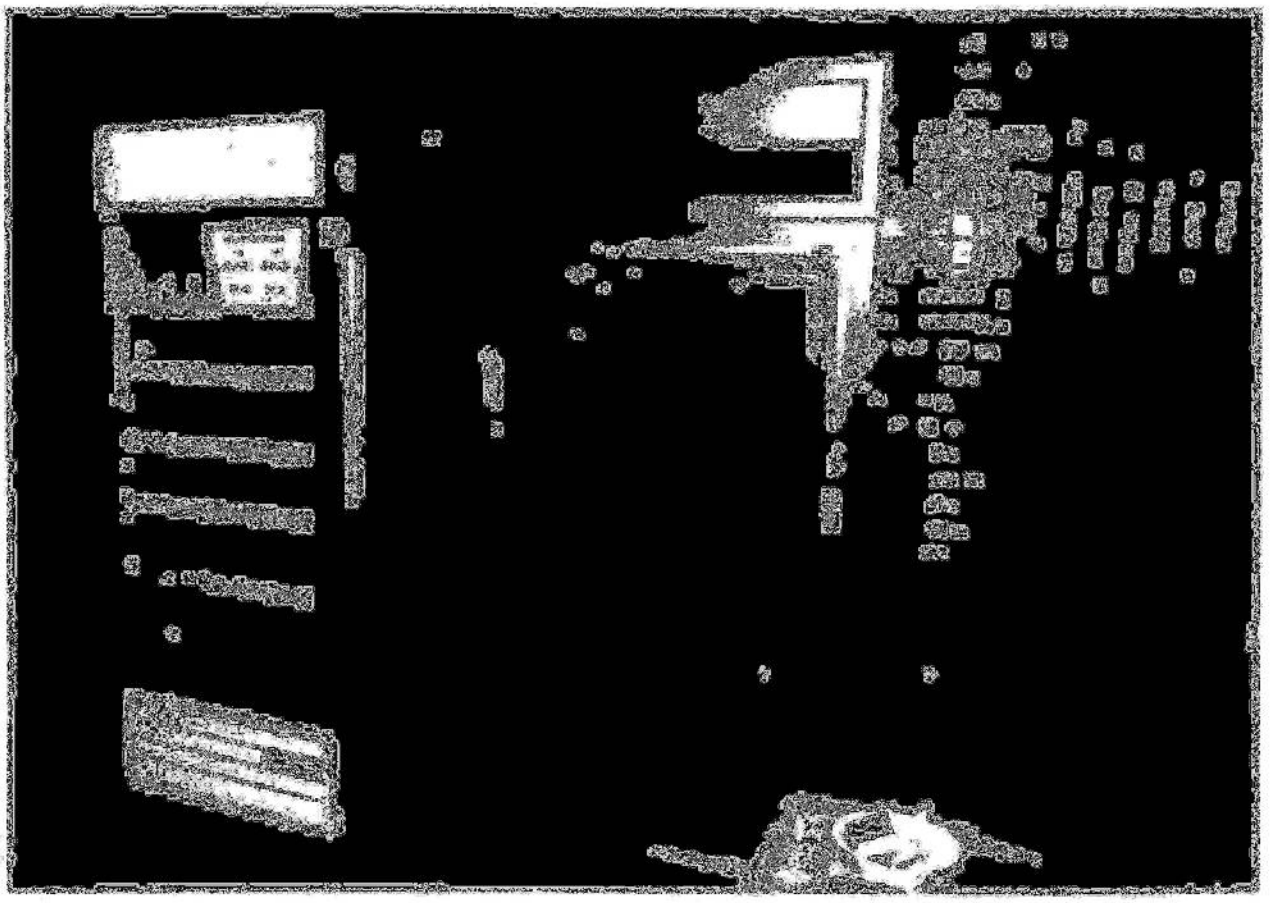
Chiller: See Central Chiller.

Climate Zone: One of five climatically distinct areas, defined by long-term weather conditions affecting the heating and cooling loads in buildings. The zones were developed from seven distinct climate categories originally identified by the American Institute of Architects (AIA) for the U.S. Department of Energy and the U.S. Department of Housing and Urban Development. The zones were determined according to the 45-year average (1931-1975) of the annual heating and cooling degree-days (base 65 degrees Fahrenheit). An individual building was assigned to a climate zone according to the 45-year average annual degree-days for its NOAA Division. (See Heating Degree-Days (HDD), Cooling Degree-Days (CDD), and NOAA Division.)

The zones are defined as follows:

Climate Zone	Average Annual Cooling Degree-Days	Average Annual Heating Degree-Days
1	Less than 2,000	More than 7,000
2	Less than 2,000	5,500 to 7,000
3	Less than 2,000	4,000 to 5,499
4	Less than 2,000	Less than 4,000
5	2,000 or more	Less than 4,000

Closed Refrigeration Unit: Refers to commercial refrigeration/freezer units with doors that close. (See Refrigeration/Freezer Equipment.)



Coal: A black or brownish-black solid, combustible substance formed by the partial decomposition of vegetable matter without access to air. In this report, the term includes anthracite, bituminous and subbituminous coal, as well as the derivative of coal (formed by destructive distillation or imperfect combustion) known as coke. This survey determined if coal was used in the commercial building but did not collect consumption and expenditure data on the use of coal as an energy source. In this report, coal is included in the "Any Other" energy source category and in the "Other" for the primary space-heating energy sources and space-heating energy sources categories. (See **Energy Source**.)

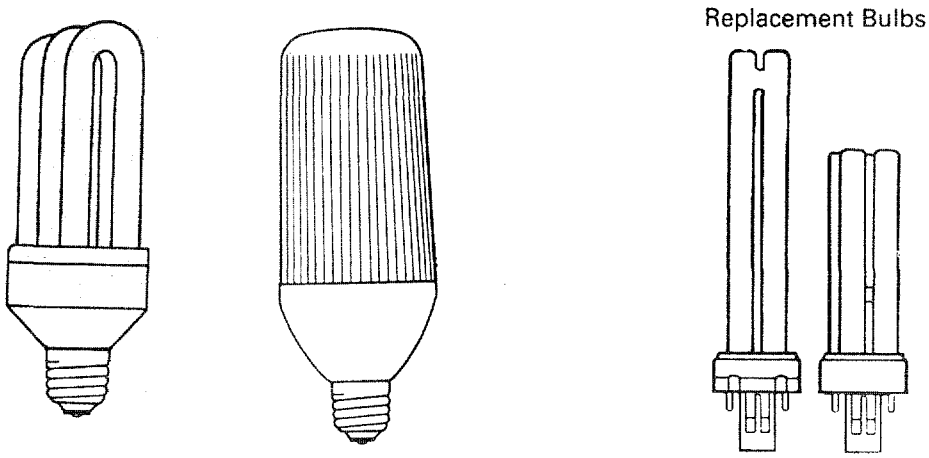
Cogeneration: The sequential or simultaneous process in which useful heat/steam is generated, used in a variety of process applications, and then directed into a turbine to generate electricity and/or mechanical work from the useful thermal energy still available for use. This process of electric generation may be electrically interconnected with a electric utility and grid, to deliver electricity to the grid as well as receive it from the grid. Neither generation of electricity without use of the byproduct heat, nor waste-heat recovery from processes other than electricity generation is included in the definition of cogeneration. (See **Electricity Generation**.)

Commercial: Neither residential, manufacturing/industrial, nor agricultural. (See **Residential, Manufacturing/ Industrial, Agricultural,** and **Commercial Building**.)

Commercial Building: A building with more than 50 percent of its floorspace used for commercial activities. Commercial buildings include, but are not limited to, stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, and jails. Government buildings were included except for buildings on sites with restricted access, such as some military bases or reservations. Farms and buildings located on farms (such as silos, grain elevators, and barns) were excluded from the survey. For a more complete list of buildings in the survey, see Appendix E, "Types of Buildings." (See **Building, Commercial, Residential, Manufacturing/Industrial, Agricultural, Nonresidential Building,** and **Principal Building Activity**.)

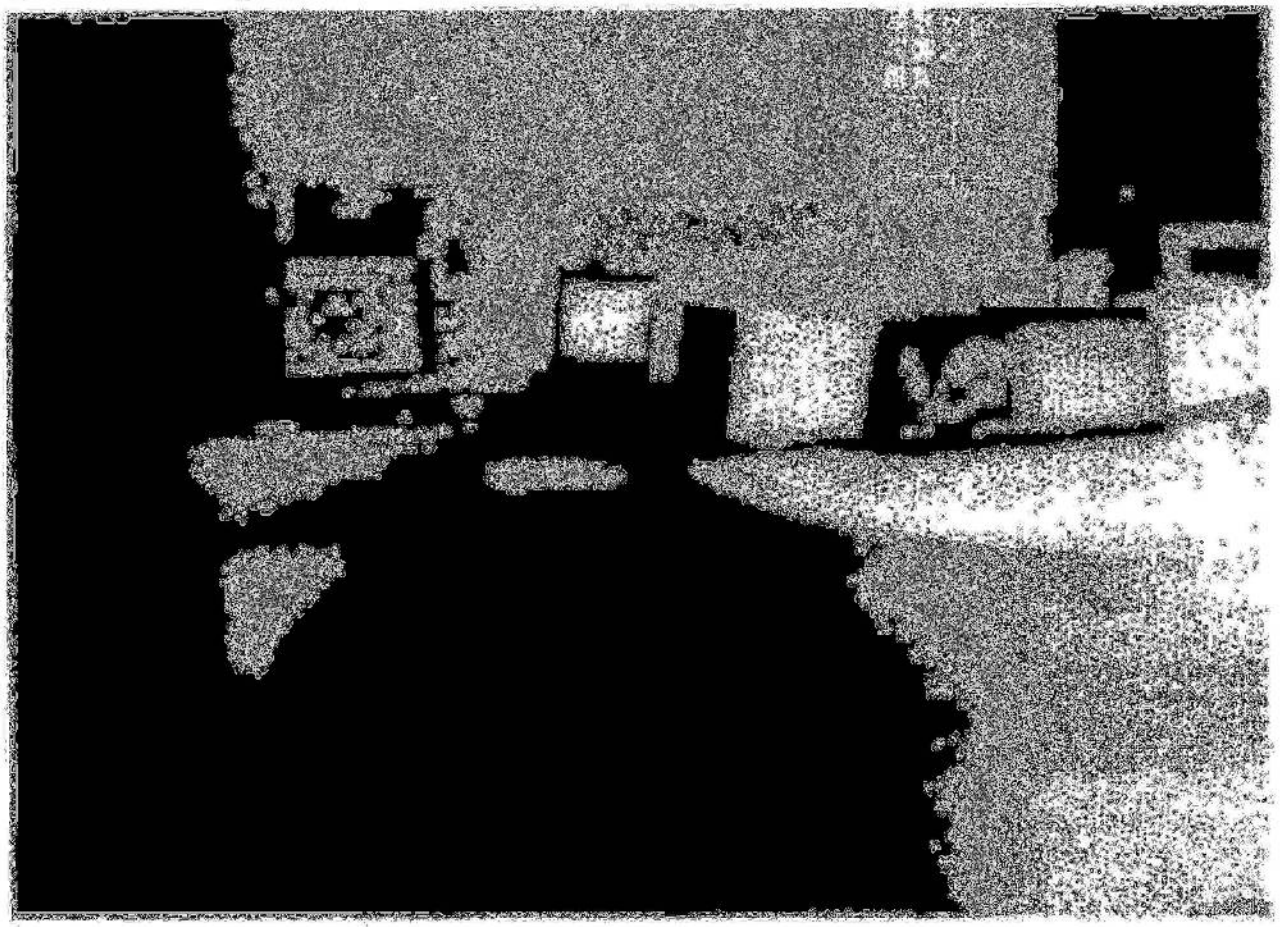
Commercial Food Preparation and Serving: In this survey, this term denotes space specifically designed and equipped to meet the needs for preparing and serving food commercially. This includes kitchens in restaurants, diners, and other commercial institutions such as schools. The term "commercial" also includes what is sometimes classified as "institutional"; that is food preparation and serving areas in schools, hospitals, prisons, shelters, churches and nursing homes. This category includes cafeterias where food is brought in and kept warm with steam tables or other warming devices until it is served. It does <u>not</u> include employee or student "lounge" areas with microwave or other food preparation equipment and/or vending machines. (See **Energy-Related Space Functions**.)

Compact Fluorescent Light Bulbs: Designed to replace screw-in incandescent light bulbs, they are often found in table lamps, wall sconces and hall and ceiling fixtures of commercial buildings with residential type lights. They combine the efficiency of fluorescent lighting with the convenience of standard incandescent bulbs. Light is produced the same way as other fluorescent lamps. Compact fluorescent bulbs have either electronic or magnetic ballasts. (See **Light Bulbs** and **Fluorescent Light Bulbs**).



Computer Room with Separate Air-Conditioning System: In this survey, space specifically designed and equipped to meet the needs of computer equipment for controlled temperature and/or humidity. The air-conditioning system for this area is separate from that used to control the environment in other parts of the building. The space is usually separated by walls and doors. Sometimes such rooms have raised floors with ventilation equipment located under the floor. (See Energy-Related Space Function.)

Computer Terminal: An electronic system which consists of a computer screen or monitor and a data entry device such as a keyboard. Terminals used in offices usually look like PCs without the box or central processing unit (CPU) case. The "CPU" for the terminal is the mainframe computer located in a central place. (See Personal Computer.)



Concrete Panel: A wall construction panel made of concrete, which is either prefabricated in a factory or poured at the site and then lifted into the structure. (See Precast Concrete Panel.)

Concrete Roof: A poured concrete roof, often intended to bear the load of a parking garage that occupies the roof area of a building.

Conservation Features: A feature in the building designed to reduce the usage of energy. (See Building Shell Conservation Features, HVAC Conservation Features, and Lighting Conservation Features.)

Cooking: In this report, the use of energy for commercial or institutional food preparation. This survey asked specifically about "commercial or institutional cooking," which was intended to include any kitchen facility that was not part of a residence. This is one of the energy end uses specifically asked for in this survey. (See Energy End Use.)

Cooking - Energy-Related Space Function: See Commercial Food Preparation and Serving.

Cooling: Conditioning of room air for human comfort by a refrigeration unit (such as an air-conditioner or heat pump) or by a central cooling or district cooling system that circulates chilled water. Use of fans or blowers by themselves, without chilled air or water, is not included in this definition of cooling. This is one of six end uses specifically asked for in this survey. (See **Energy End Use, Central Cooling, Central Chiller, Heat Pump, HVAC,** and **Residential Type Central Air Conditioner**.)

Cooling Degree-Days (CDD): A measure of how hot a location was over a period of time, relative to a base temperature. In this report, the base temperature is 65 degrees Fahrenheit, and the period of time is one year. The cooling degree-day is the difference between that day's average temperature and the base temperature if the daily average is greater than the base; it is zero if the daily average temperature is less than or equal to the base temperature. The cooling degree-days for a longer period of time is the sum of the daily cooling degree-days for the days in that period. (See **Heating Degree-Days (HDD)** and **Climate Zone and NOAA Division**.)

Daylighting Controls: See **Natural Lighting Control Sensors**.

Decorative or Construction Glass: An exterior building wall material of glass decorative coverings such as glass blocks or spandrels, that are not window or vision (see through) glass. Structural glass or glass curtain walls used on the outside of buildings are also included in this category. In Appendix A, "Detailed Tables," decorative or construction glass is included in the "Other" wall materials category. (See **Window or Vision Glass**.)

Demand-Side Management (DSM): In this report, this is the planning and implementation of strategies designed to encourage consumers to improve energy efficiency, reduce energy costs, change the time of usage, or promote the use of a different energy source. DSM covers the complete range of load-shape objectives, including strategic conservation and load management, as well as strategic load growth.

Demand-Side Management Program Assistance: See **DSM Program Assistance**.

Demand-Side Management Program Participation: See **DSM Program Participation**.

Demand-Side Management Programs: See **DSM Programs**.

Demand-Side Management Program Sponsor: See **DSM Program Sponsor**.

Direct Electricity Load-Control DSM Program: DSM program activities that can interrupt consumer load at the time of peak load by direct control of the utility system operator by interrupting the power supply to individual equipment on consumer premises. In Appendix A, "Detailed Tables," this is included in the "Other DSM Programs" category under DSM Program Participation and in the "DSM Program Participation" category under Energy Management Practices. (See **DSM Programs**.)

Distributed/Point-of-Use Water-Heating System: A system for heating hot water, for other than space heating purposes, which is located at more than one place within a building. A point-of use water heater is located at the faucet and heats water only as required for immediate use. Because water is not heated until it is required, this equipment is more energy-efficient. (See **Water-Heating Equipment** and **Centralized Water Heating System**.)

District Chilled Water: Chilled water from an outside source used as an energy source for cooling in a building. The water is chilled in a central district system and piped into the building. Chilled water may be purchased from a utility or provided by a central physical plant in a separate building that is part of the same multibuilding facility (for example, a hospital complex or university). (See **Energy Source, Central Physical Plant**, and **Multibuilding Facility**.)

District Heat: Steam or hot water from an outside source as an energy source for space heating or another end use in a building. The steam or hot water is produced in a central plant and piped into the building. The district heat may be purchased from a utility or provided by a central physical plant in a separate building that is part of the same multibuilding facility (for example, a hospital complex or university.) For this report, district steam and district hot water are reported together as district heat in most places. (See **Energy Source**, **Central Physical Plant**, and **Multibuilding Facility**.)

District Hot Water: District heat in the form of hot water. (See **District Heat**.)

District Steam: District heat in the form of steam. (See **District Heat**.)

DSM: See **Demand-Side Management (DSM)**.

DSM Program Assistance: In this report, DSM program assistance consists of general information, site-specific information, incentives, alternative-rate programs, fuel-switching programs, and other DSM programs. This assistance can be provided by utilities, in-house group, or third parties, such as an energy service company or contractor. (See **General Information DSM Program Assistance, Site-Specific Information DSM Program Assistance, Incentives DSM Program Assistance, Alternative-Rate DSM Program Assistance, Fuel-Switching DSM Program Assistance, and Other DSM Programs Assistance.**)

DSM Program Participation: In Appendix A, "Detailed Tables," this category includes the building envelope or shell DSM Programs; HVAC DSM Programs; Lighting DSM Programs; and Other DSM programs, which includes Direct Electricity Load-Control DSM Programs, Energy Efficient Motors DSM Programs, Process Heating or Cooling DSM Programs, Standby Electricity Generation DSM Programs, Thermal Storage DSM Programs, and Water Heating DSM Programs. Also, Appendix A, "Detailed Tables," DSM Program Participation is a category under Energy Management Practices. (See **Building (Shell) Envelope DSM Program, Direct Electricity Load-Control DSM Program, Energy Efficient Motors DSM Program, HVAC DSM Program, Lighting DSM Program, Process Heating or Cooling DSM Program, Standby Electricity Generation DSM Program, Thermal Storage DSM Program, Water Heating DSM Program and Energy Management Practices.**)

DSM Programs: In this report, these programs are organized activities that are intended to affect the amount and timing of consumer energy usage by encouraging consumers to improve energy efficiency, reduce energy costs, change the time of energy usage, or promote the use of a different energy source. (See **Building Shell (Envelope) DSM Program, Direct Electricity Load-Control DSM Program, Energy Efficient Motors DSM Program, HVAC DSM Program, Lighting DSM Program, Process Heating or Cooling DSM Program, Standby Electricity Generation DSM Program, Thermal Storage DSM Program**, and **Water-Heating DSM Program**.)

DSM Program Sponsor: In this report, a DSM program can be sponsored by electric and natural gas utilities, in-house, or a third party, such as an energy service company or contractor. (See **Electric Utility DSM Program Sponsor, In-House DSM Program Sponsor, Natural Gas Utility DSM Program Sponsor**, and **Third Party DSM Program Sponsor**.)

Duct: A passageway made of sheet metal or other suitable material to convey air from the heating, ventilating, and cooling systems to and from the point of utilization. (See **Air-Handling Units**.)

Economizer Cycle: An HVAC conservation feature, a method of operating a ventilation system to reduce the air-conditioning load. Wherever the temperature and humidity of the outdoor air are more favorable (lower heat content) than the temperature and humidity of the return air, more outdoor air is brought into the building. An economizer consists of indoor and outdoor temperature and humidity sensors, dampers, motors, and motor controls. In Appendix A, "Detailed Tables," this is included under the "HVAC Conservation Features" category. (See **HVAC Conservation Features**.)

Electric Baseboard: An individual space heater with electric resistance coils mounted behind shallow panels along baseboards. Electric baseboards rely on passive convection to distribute heated air to the space. (See **Individual Space Heater** and **Baseboard**.)

Electricity: As an energy source for this report, electric energy supplied to a building by a central utility via power lines or from a central physical plant in a separate building that is part of the same multibuilding facility. Electric power generated within a building for exclusive use in that building is specifically excluded from the definition of electricity as an energy source. (See **Energy Source, Central Physical Plant,** and **Multibuilding Facility**.)

Electricity Generation: The onsite production of electricity using electricity generators on either a regular or emergency basis. This is one of the end uses of energy specifically asked for in this survey. Not included in this survey were electricity-generating plants belonging to utility companies, which produce electric power for sale to other buildings, that are not part of the same multibuilding facility. (See **Energy End Use, Electricity, Multibuilding Facility,** and **Cogeneration**.)

Electric Utility DSM Program Sponsor: An electric utility which suggests ways to increase the energy efficiency of buildings, to reduce energy costs, to change the usage patterns, or to promote the use of a different energy source through DSM programs. (See **DSM Program Sponsor and Utility-Sponsored DSM Program**.)

EMCS: See **Energy Management and Control System (EMCS)**.

Emergency Backup Generation: The use of electricity generators only during interruptions of normal power supply.

Energy Audit: In this report, an evaluation to provide information on the physical and operating characteristics of a building and its energy uses and processes that is collected at the premise or facility by trained auditors. Audit services vary from simple walk-throughs to building management training programs and site-specific process and efficiency evaluations. Audits can be initiated or sponsored and performed by a local utility, a Federal, State or local government, a building owner, or an energy service contractor. In Appendix A, "Detailed Tables," this is included in the "Energy Management Practices" category. (See **Energy Management Practices**.)

Energy Conservation Features: In Appendix A, "Detailed Tables," this includes building shell conservation features, HVAC conservation features, lighting conservation features, any conservation features and other conservation features incorporated by the building. However, this category does not include any DSM program participation by the building. Any DSM program participation is included in DSM Programs. (See **Building Shell Conservation Features, HVAC Conservation Features**, and **Lighting Conservation Features**.)

Energy Efficient Motor(s) DSM Program: A DSM program designed to promote high-efficiency motors, adjustable speed drives or variable speed motors to ensure that the motor's speed and size is properly matched to the load placed on the motor. In Appendix A, "Detailed Tables," this is included in the "Other DSM Programs" under the DSM Program category. (See **DSM Programs**.)

Energy End Use: A use for which energy is consumed in a building. Information on six specific end uses was collected in this survey. (See **Cooking, Cooling, Space Heating, Electricity Generation, Manufacturing,** and **Water Heating**.)

Energy Management and Control System (EMCS): An energy conservation feature that uses mini/microcomputers, instrumentation, control equipment, and software to manage a building's use of energy for heating, ventilation, air conditioning, lighting, and/or business-related processes. These systems can also manage fire control, safety, and security. In Appendix A, "Detailed Tables," this is included under the "Energy Management Practices" category. Not included as EMCS are time-clock thermostats.

Energy Management Practices: In this report, involvement, as a part of the building's normal operations, in energy efficiency programs that are designed to reduce the energy used by specific end-use systems. In Appendix A, "Detailed Tables," this includes the following: EMCS, DSM Program Participation, Energy Audit, and a Building Energy Manager. (See **Energy Management and Control System (EMCS), DSM Program Participation, Energy Audit, and Building Energy Manager.**)

Energy-Related Space Functions: In this report, this includes using space in the building for one or more of four specific functions: commercial food preparation and serving, computer rooms with separate air conditioning systems, special ventilation equipment, activities requiring large amounts of hot water; and any other large use of energy. This report also collected the total square footage used for each special space function. (See **Commercial Food Preparation and Serving, Computer Room with Separate Air-Conditioning System, Rooms with Special Ventilation**, and **Activities Requiring Large Amounts of Hot Water**.)

Energy Source: A type of energy or fuel consumed in the building. For this report, the energy sources identified are electricity, natural gas, fuel oil, district heat, district chilled water, propane, wood, coal, and active solar. In this survey, information about the use of these energy sources in commercial buildings was obtained from the building respondent. (See **Electricity, Natural Gas, Fuel Oil, District Heat, District Chilled Water, Liquefied Petroleum Gas (LPG), Propane, Wood, Coal,** and **Photovoltaic Cells and Solar Thermal Panels**.)

Energy Supplier: Fuel companies supplying electricity, natural gas, fuel oil, or other sources of energy to a building. In the 1992 CBECS, only suppliers of electricity, natural gas, fuel oil, and district heat or chilled water were sent the Supplier Survey. (See **Energy Source** and Appendix B, "How the Survey was Conducted.")

Energy Supplier Survey: This is the second stage of the CBECS, the Building Survey is the first stage, where data concerning actual energy consumption were obtained from the energy suppliers to the building. (See Appendix B, "How the Survey was Conducted.")

Envelope: See **Building Shell (Envelope)**.

Establishment: As defined by the Standard Industrial Classification manual developed by the Office of Management and Budget, "an economic unit, generally, at a single physical location where business is conducted or where services or industrial operations are performed." However, "establishment" is not synonymous with "building." In this survey, respondents were asked how many establishments or organizations occupy (i.e., hold or lease price on a full-time basis) the building.

Evaporative Cooler (Swamp Cooler): An air-cooling unit that turns air into moist, cool air by saturating the air with water vapor. It does not cool air by use of a refrigeration unit. This type of equipment is commonly found in warm, dry climates. In this report, evaporative coolers are included under "Other" in the cooling equipment category. (See **Cooling**.)

Exterior or Interior Shadings or Awnings: An energy management feature, that is, a covering designed to reduce the flux of light into a building. Exterior shadings or awnings include any type of shading (including architectural) or awning on the outside of the building designed to limit solar penetration. Interior shadings are drapes, horizontal or vertical shades, mini blinds, or any other means of covering a window from the inside to limit the amount of solar or thermal penetration. (See **Building Shell Conservation Features**.)

Facility: At the sampling stage, an establishment that encompasses more than one building at a single location. Examples include college campuses and large hospital complexes. The building represents the interviewed sampling unit for this survey. Listings for the area sample ordinarily identified each building individually. However, listings for the large and specialized buildings lists sometime represented a facility including several buildings. If an intended sampling unit turned out to be a cluster of buildings such as a

campus, sampling proceeded in one of two ways: (1) If there were three or fewer buildings in the cluster, all buildings were sampled or (2) If there were four or more buildings, subsampling from the cluster was performed. For all sample buildings, a survey question determined whether the building was part of a multibuilding facility. In many cases, a building was reported at interview to be part of a multibuilding facility even though the building had not been identified as part of a facility at the sampling stage. More rarely, a building identified as part of a facility during sampling was reported not to be part of a multibuilding facility at interview. (See **Building, List Sample, Multibuilding Facility** and Appendix B, "How the Survey was Conducted.")

Fan-Coil Unit Without Ducts: A type of heating and cooling distribution equipment using circulating hot or chilled water with fans. Fan-coil units have thermostatically controlled built-in fans that draw air from the room and then across fanned tubes containing hot water, steam, or chilled water. The hot water, steam or chilled water can be produced by equipment within the building or be piped into the building as part of a district heating or cooling system. (See **Space Heating** and **Cooling**.)

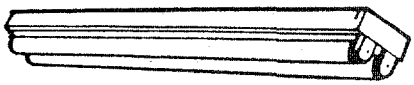
Floors: The number of levels in the tallest section of a building that are actually considered a part of the building, including parking areas, basements, or other floors below ground level.

Floorspace: All the area enclosed by the exterior walls of a building, including indoor parking facilities, basements, hallways, lobbies, stairways, and elevator shafts. For aggregate floorspace statistics, floorspace was summed or aggregated over all buildings in a category (such as all office buildings in the United States). (See **Square Footage** and **Weight**.)

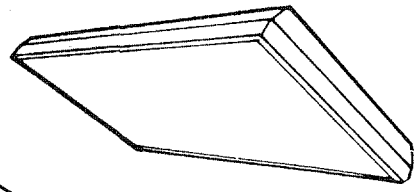
Fluorescent Light Bulbs: These are usually long, narrow, white tubes made of a glass coated on the inside with fluorescent material, which is connected to a fixture at both ends of the light bulb; some are circular tubes. The light bulb produces light by passing electricity through mercury vapor, which causes the fluorescent coating to glow or fluoresce. Excluded are compact fluorescent light bulbs which are a separate category. In Appendix A, "Detailed Tables," these bulbs are included in the "Standard Fluorescent" category under Lighting Equipment. (See **Light Bulbs**.)

Slimline Lamp

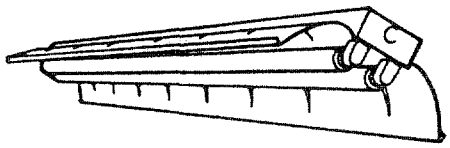
Fixtures



Strip



Lay-In



Industrial

Forced Air Through Vents or Air-Handling Units: See **Air-Handling Units**.

Fuel Oil: A liquid petroleum product less volatile than gasoline, used as an energy source. In this report, fuel oil includes distillate fuel oil (No. 1, 2, and 4), residual fuel oil (No. 5 and 6), and kerosene. Number 1 distillate fuel oil is used mostly as a blending stock to assure that heavier grades of fuel flow under severe cold weather conditions. Number 2 fuel oil is the most common form of heating oil. Number 2 distillate collectively refers to Number 2 heating oil and Number 2 diesel fuel. Although these products are not precisely identical, they are essentially interchangeable in most applications. Number 4 distillate is a blend of Numbers 2, 5 or Number 6 residual fuel oil, used in large stationary diesel engines and boilers equipped with fuel preheating equipment. (See **Energy Source**.)

Fuel-Switching: See **Replacement Energy Source for Primary Heating**.

Fuel-Switching DSM Program Assistance: DSM program assistance where the sponsor encourages consumers to change from one fuel to another for a particular end-use service. For example, utilities might encourage consumers to replace electric water heaters with gas units or encourage industrial consumers to use electric microwave heaters instead of natural gas-heaters. (See **DSM Program Assistance**.)

Furnace: An enclosed chamber where fuel is burned or electrical resistance is used to heat air directly, without using steam or hot water. The warm air for heating, which is distributed throughout the building, typically by air ducts. (See **Boiler, Ducts, Space Heating**, and **HVAC**.)

Gas Transported for the Account of Others: Natural gas physically delivered to a building by a local utility, but not bought from that utility. A separate transaction was made to purchase the volume of gas and the utility was paid for the use of its pipeline to deliver the gas. Included are quantities covered by long-term contracts and quantities involved in short-term or spot-market sales. Also called "Direct-Purchase Gas," "Spot-Market Gas," "Spot Gas," "Transported Gas," and Self-Help Gas." (See Appendix C, "Nonsampling and Sampling Errors.)

General Information DSM Program Assistance: This DSM program assistance refers to efforts of a DSM sponsor to inform consumers about DSM options through such mechanisms as brochures, bill stuffers, and workshops. (See **DSM Program Assistance**.)

Geothermal Energy: Energy from the internal heat of the earth which may be residual heat, friction heat, or a result of radioactive decay. The heat is found in rocks and fluids at various depths and can be extracted by drilling and/or pumping. In commercial buildings, the water or steam produced from geothermal energy can be used in space heating, domestic hot water heating, and space cooling.

Government Owned: Owned by a Federal, State, or local government agency. The building may be occupied by agencies of more than one government and may also be shared with nongovernment establishments.

HDD: See **Heating Degree-Days (HDD)**.

Heating: See **Space Heating** or **Water Heating**.

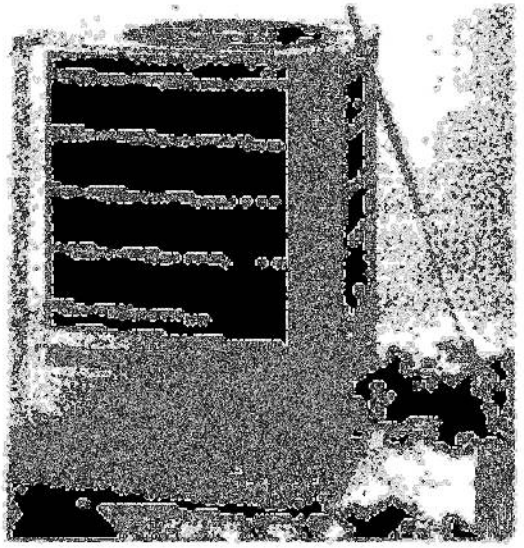
Heating Degree-Days (HDD): A measure of how cold a location was over a period of time, relative to a base temperature. In this report, the base temperature used is 65 degrees Fahrenheit, and the period of time is one year. The heating degree-day is the difference between the base temperature and the day's average temperature if the daily average is less than the base; and zero if the daily average temperature is greater than or equal to the base temperature. The heating degree-days for a longer period of time is the sum of the daily heating degree-days for days in that period. (See **Cooling Degree-Days (CDD), Climate Zone,** and **NOAA Division**.)

Heating Distribution Equipment: The part of a heating system that distributes conditioned water and/or air throughout a building by means of pipes, ducts, or fans. Often the distribution equipment serves both heating and cooling.

Heating Equipment: The equipment used for heating ambient air in the building, such as a heat pump, furnace, individual space heater, district steam or hot water piped in from outside the building, boiler and packaged-heating units. (See Heating Distribution Equipment and also descriptions of specific types of space-heating equipment; Boiler, Furnace, Heat Pump, Individual Space Heater, and Packaged-Heating Units.)

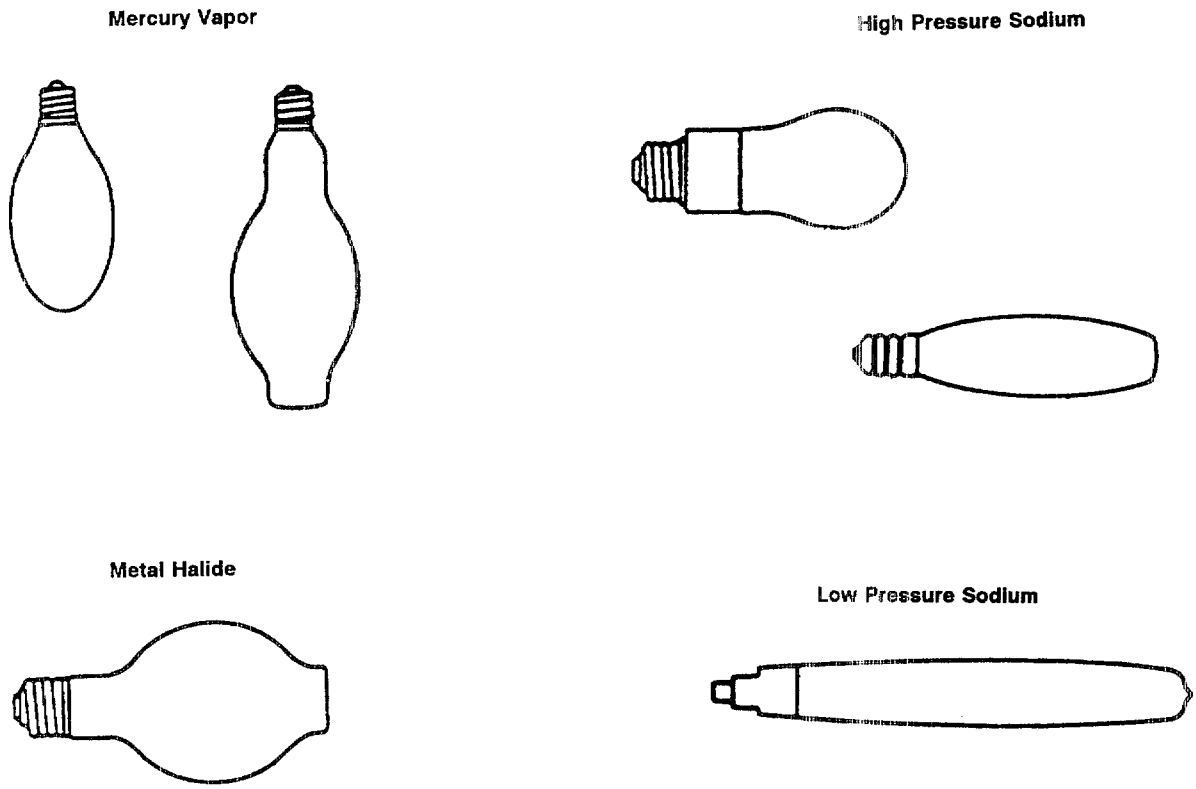
Heating, Ventilation, and Air Conditioning (HVAC): The system or systems that condition air in a building.

Heat Pump: During the heating season, heating and/or cooling equipment that draws heat into a building from outside and, during the cooling season, ejects heat from the building to the outside. Heat pumps are vapor-compression refrigeration systems whose indoor/outdoor coils are used reversibly as condensers or evaporators, depending on the need for heating or cooling. (See Cooling, Space Heating, Central Cooling, and HVAC.)



HID: See **High-Intensity Discharge (HID) Light Bulbs**.

High-Intensity Discharge (HID) Light Bulbs: A lamp that produces light by passing electricity through gas, which causes the gas to glow. Examples of HID lamps are mercury vapor lamps, metal halide lamps, and high- and low-pressure sodium lamps. HID lamps have an extremely long life and emit far more lumens per fixture than do fluorescent lights. (See **Light Bulbs.**)



Hot-Deck Imputation: An imputation procedure for deriving a probable response to a questionnaire item concerning the commercial building using random resampling from nonmissing cases to fill in values for missing cases. (See **Imputation** and Appendix C, "Nonsampling and Sampling Errors.")

HVAC: See **Heating, Ventilation, and Air Conditioning (HVAC)**.

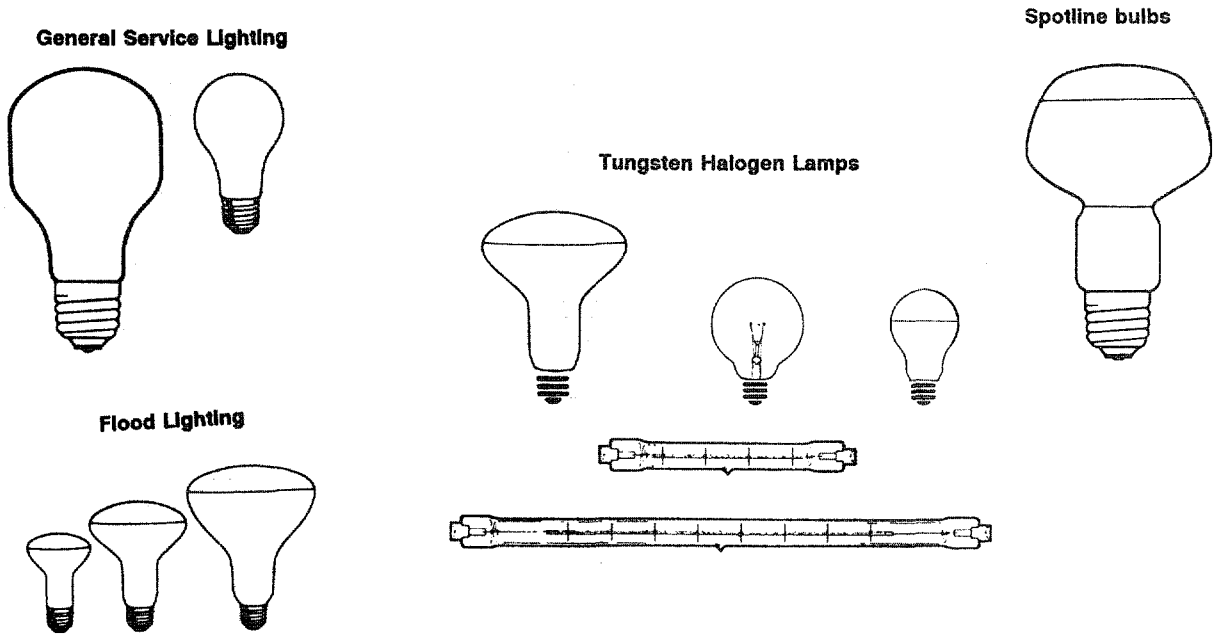
HVAC Conservation Features: A building feature designed to reduce the amount of energy consumed by the heating, cooling, and ventilating equipment. This report, this category includes the presence of variable air-volume (VAV) systems, an economizer cycle, and preventive maintenance programs for the heating and cooling equipment. However, this category does not include any HVAC DSM Program Participation. Any HVAC DSM program participation is included in DSM Programs. (See **Variable Air-Volume (VAV) System**, **Economizer Cycle**, and **Preventive Maintenance Program for the Heating and/or Cooling Equipment**.)

HVAC DSM Program: A DSM program designed to promote the efficiency of the heating or cooling delivery system, including replacement. Includes ventilation (economizers; heat recovery from exhaust air), cooling (evaporative cooling, cool storage; heat recovery from chillers; high-efficiency air conditioning), heating, and automatic energy management systems. In Appendix A, "Detailed Tables," this is included under the "DSM Program" category. (See **DSM Programs**.)

HVAC Maintenance: (See **Preventive Maintenance Program for Heating and/or Cooling Equipment**.)

Imputation: A statistical method used to fill in values for missing items, designed to minimize the bias of estimates based on the filled-in data set. (See **Hot-Deck Imputation,** and Appendix C, "Nonsampling and Sampling Errors.")

Incandescent Light Bulbs: A light bulb that produces a soft warm light by electrically heating a tungsten filament so that it glows. Because so much of the energy is lost as heat, these are highly inefficient sources of light. The halogen light bulb is a type of incandescent light bulb made more efficient by the addition of a halogen gas. Included in this category are the familiar type of light bulbs which screw into sockets, as well as energy-efficient incandescent bulbs such as Tungsten Halogen (spotlights), Reflector or R-Lamps (accent and task lighting), Parabolic Aluminized Reflector (PAR) lamps (flood and spot lighting), and Ellipsoidal Reflector (ER) lamps (recessed lighting). (See **Light Bulbs**.)



Incentives DSM Program Assistance: This DSM assistance program offers monetary or non-monetary awards to encourage consumers to buy energy-efficient equipment and to participate in programs designed to reduce energy usage. Examples of incentives are zero or low-interest loans, rebates, and direct installation of low cost measures, such as water heater wraps or compact fluorescent bulbs. (See **DSM Program Assistance.**)

Individual Room Air Conditioners in Walls or Windows: Self-contained air-conditioning units installed in either walls or windows (with heat-radiating condensers exposed to the outdoor air). These units are characterized by a lack of pipes or duct work for distributing the cool air; the units condition air only in the room or areas where they are located. (See **Cooling**.)

Individual Space Heater: A free-standing or self-contained unit that generates and delivers heat to a local zone within the building. The heater may be permanently mounted in a wall or floor, or may be portable. Examples of individual space heaters include electric baseboards, electric radiant or quartz heaters, heating panels, gas- or kerosene-fired unit heaters, wood stoves, and infrared radiant heaters. These heaters are characterized by a lack of pipes or duct work for distributing hot water, steam, or warm air through the building. (See **Baseboard or Electric Baseboard.**)

Industrial: See **Manufacturing/Industrial**.

In-House DSM Program Sponsor: The building's owner or management encourages consumers in the building to improve energy efficiency, reduce energy costs, change timing of energy usage, or promote the use of a different energy source by sponsoring its own DSM programs. (See **DSM Program Sponsor**.)

In Scope: Meeting the requirements for eligibility in the CBECS, and, therefore, included in the population covered by the survey. These eligibility requirements were (a) that the structure be a building, according to the CBECS definition; (b) that the building be larger than 1,000 square feet; and (c) that more than 50 percent of the floorspace be used for commercial activities. (See **Building, Commercial, Floorspace**, and Appendix B, "How the Survey Was Conducted.")

Insulation: A building shell conservation feature consisting of material placed between the interior of a building and the outdoor environment to reduce the rate of heat loss to the environment or heat gain from the environment. Examples include glass-wool fill and foam board. (See **Roof or Ceiling Insulation, Wall Insulation,** and **Building Shell Conservation Features**.)

Interruptible Rate: See **Alternative-Rate DSM Program Assistance.**

Kerosene: A petroleum distillate with properties similar to No. 1 fuel oil, used primarily in space heaters, cooking stoves, and water heaters. In this report, no distinction is made between kerosene and fuel oil. (See **Fuel Oil.**)

Lamp: See **Light Bulbs**.

Large and Specialized Buildings Lists: Lists that were used to select a supplementary sample of buildings for the CBECS. The sample of buildings drawn from these lists was used to supplement the Multistage Area Probability Sample within each selected PSU. (See **Multistage Area Probability Sample, List Sample,** and Appendix B, "How the Survey was Conducted.")

Licensed Bed Capacity: The number of beds that a hospital, inpatient health service, skilled nursing, or residential care facility is licensed to have. (See **Principal Building Activity, Special Measures of Occupancy**, and Appendix E, "Types of Buildings.")

Light Bulbs: A term generally used to describe a manmade source of light. The term is often used when referring to a "bulb" or "tube." The CBECS collects data only about light bulbs using electricity. (See **Incandescent Light Bulbs, Fluorescent Light Bulbs,** and **High-Intensity Discharge (HID) Light Bulbs**.)

Lighting Conservation Features: A building feature or practice designed to reduce the amount of energy consumed by the lighting system. In Appendix A, "Detailed Tables," lighting conservation features include natural lighting control sensors, manual dimmer switches, occupancy sensors, specular reflectors, and time clocks or timed switches. However, this category does not include lighting DSM program participation. Any Lighting DSM Program participation is included in DSM Programs. (See **Natural Lighting Control Sensors, Manual Dimmer Switches, Occupancy Sensors, Specular Reflectors**, and **Time Clocks or Timed Switches**.)

Lighting DSM Program: A DSM program designed to promote efficient lighting systems in new construction or existing facilities. Lighting DSM programs can include: certain types of high-efficiency fluorescent fixtures including T-8 lamp technology, solid state electronic ballasts, specular reflectors, compact fluorescent fixtures, LED and Electro-Luminescent Emergency Exit Signs, High Pressure Sodium with switchable ballasts, Compact Metal Halide, occupancy sensors, and daylighting controllers. These are included in Appendix A, "Detailed Tables," under DSM Program Participation. (See **DSM Programs**.)

Lighting Equipment: These are light bulbs used to light the building's interior, such as incandescent light bulbs, fluorescent light bulbs, compact fluorescent light bulbs, and high-intensity discharge (HID) lights. (See **Incandescent Light Bulbs, Fluorescent Light Bulbs, Compact Fluorescent Light Bulbs, and High-Intensity Discharge (HID) Light Bulbs**.)

Liquefied Petroleum Gas (LPG): Gas fuel in liquid form supplied to a building as an energy source. The fuel is usually delivered by tank trucks and stored near the building in a tank or cylinder until used. LPG contains mostly propane, but can contain such gases as butane, propylene, butylene, or ethane. For this report, any LPG reported was assumed to be propane. (See **Energy Source, Propane**, and **Natural Gas.**)

List Sample: A sample drawn from the large and specialized building lists used to supplement the area probability sample. (See **Large and Specialized Buildings Lists** and Appendix B, "How the Survey Was Conducted.")

LPG: See **Liquefied Petroleum Gas (LPG).**

Manual Dimmer Switches: A lighting conservation feature that changes the level of light in the building. These are like residential-style dimmer switches, which are not commonly used with fluorescent or HID lamps. (See **Lighting Conservation Features**.)

Manufacturing: As an energy end use, any of the energy-using operations required for manufacturing/industrial processes. Manufacturing is one of the six end uses of energy specifically requested in this survey. (See **Energy End** Use and **Manufacturing/Industrial**.)

Manufacturing/Industrial: This survey includes activities involving the processing or procurement of goods, merchandise, raw materials, or food. These activities are: food processing; leather/textile mills; light assembly factories, such as those for apparel and electronic instruments; heavy assembly factories, such as those for machinery and other heavy equipment; paper processing; chemical or petroleum processing, metalworks, glassworks, and other similar manufacturing plants; printing and publishing; generation, transmission, or distribution of electricity, natural gas, steam, or other utility or sanitary service; and construction and natural resource procurement.

Also, the manufacturing and industrial buildings were excluded from the population covered. Such buildings could be included in the sample during the listing stage. However, buildings that had 50 percent or more of their square footage devoted to manufacturing or industrial activities were dropped from the sample during the interview stage. (See **Principal Building Activity**, Appendix B, "How the Survey Was Conducted and Appendix E, "Types of Buildings.")

Masonry: A general term covering wall construction using masonry materials such as brick, concrete block, stone, and tile that are set in mortar; also included is stucco. This category does not include concrete panels since concrete panels represent a different method of constructing buildings. Concrete panels are reported separately. (See **Concrete Panel**.)

Mean: The simple arithmetic average for a population is the sum of all the values in a population divided by the size of the population. For this report, population means are estimated by computing the weighted sum of the sample values, then dividing by the sum of the sample weights. (See **Median** and **Weight**.)

Mean Operating Hours: The arthritic average number of operating hours per building is the weighted sum of the number of operating hours divided by the weighted sum of the number of buildings.

Mean Square Feet per Building: The arthritic average square feet per building is the weighted sum of the total square feet divided by the weighted sum of the number of buildings.

Mean Square Feet per Worker: The arthritic average square feet per worker is the weighted sum of the total square feet divided by the weighted sum of the total number of main shift workers.

Median: The middle value in the population. Half the population has a value above the median and half has a value below. The median is different from the mean in that its estimate is not influenced much by extremes in the sample. An estimate of the mean square feet per building would be affected by the inclusion of some very large buildings, and would not express square footage for a "typical" building. In contrast, the median square feet would not be so affected. (See **Mean**.)

Median Age of the Building: The middle age of all buildings in the CBECS--half of all buildings have an age above the median age of the building and half of all buildings have an age below the median age of the building.

Median Operating Hours: The middle number of operating hours of all buildings in the CBECS--half of all buildings have operating hours above the median operating hours and half of all buildings have operating hours below the median operating hours.

Median Square Feet per Building: The middle size (in square feet) of all buildings in the CBECS--half of all buildings have a size above the median square feet per building and half of all buildings have a size below the median square feet per buildings.

Median Square Feet per Worker: The middle amount of the space per worker of all buildings in the CBECS--half of all buildings have space per worker above the median square feet per worker and half of all buildings have space below the median square feet per worker.

Metal Panels: An exterior wall construction material made of aluminum or galvanized steel panels fabricated in factories and fastened to the frame of the building to form outside walls. Pre-engineered metal buildings are also included in this category.

Metal Surfacing: Light-gauge metal sheets used for roofing.

Metric Conversion Factors: In this report, estimates are presented in customary U.S. units. Floorspace estimates may be converted to metric units by using the relationship, 1 square foot is approximately equal to .0929 square meters. Energy estimates may be converted to metric units by using the relationship, 1 Btu is approximately equal to 1,055 joules. One kilowatthour is exactly equal to 3,600,000 joules. One gigajoule (10_9 joules) is approximately 278 kilowatthours (kWh).) (For additional metric conversions, see Appendix H, "Metric Conversion Factors.")

Metropolitan Statistical Area (MSA): As defined by the U.S. Office of Management and Budget, an MSA is (1) a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more (or "twin cities" with a combined population of at least 50,000), or (2) an urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). The contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSA's consist of towns and cities, rather than counties. (See **Nonmetropolitan Statistical Area.**)

Metropolitan Status: A building classification referring to the location of the building either located within a MSA or outside of a MSA. (See **Metropolitan Statistical Area (MSA)** and **Nonmetropolitan Statistical Area**.)

More than One May Apply: In Appendix A, "Detailed Tables," a row stub accompanied by this phrase indicates overlapping categories, so that a particular building may be represented in more than one line under this stub. In general, row stubs without this designation are exclusive, that is, they divide the population of buildings into distinct groups, so that a particular building is represented in no more than one line under this stub.

MSA: See **Metropolitan Statistical Area (MSA)**.

Multibuilding Establishment: An establishment that operates in a multibuilding facility. (See **Multibuilding Facility**.)

Multibuilding Facility: A group of two or more buildings on the same site owned or operated by a single organization, business, or individual. Examples include university campuses and hospital complexes. (See **Building, Facility,** and Appendix B, "How the Survey Was Conducted.")

Multiple-Establishment Building: A single building that houses more than one establishment. Examples include enclosed shopping malls and office suites. In this survey, the building was the interviewed sampling unit. If establishments in the building were billed for an energy source using separate meters or accounts, the utility (or energy supplier) was asked to provide data on consumption and expenditures for the entire building, on an "aggregate" reporting form that was provided. (See **Establishment, Single-Establishment Building, Multibuilding Establishment,** and **Building.**)

Multistage Area Probability Sample: A sample design executed in stages with geographic "clusters" of sampling units selected at each stage. This procedure reduces survey expense while maintaining representative national coverage. (See Appendix B, "How the Survey Was Conducted.")

Natural Gas: Hydrocarbon gas (mostly methane) supplied as an energy source to individual buildings by pipelines from a central utility company. Natural gas does not refer to liquefied petroleum gas (LPG) or to privately owned gas wells operated by a building owner. (See **Energy Source, Liquefied Petroleum Gas (LPG),** and **Propane.**)

Natural Gas Utility DSM Program Sponsor: A DSM program sponsored by a natural gas utility that suggests ways to increase the energy efficiency of buildings, to reduce energy costs, to change the usage patterns, or to promote the use of a different energy source. (See **DSM Program Sponsor** and **Utility-Sponsored DSM Program**).

Natural Lighting Control Sensors: A control system that varies the light output of an electric lighting system in response to variations in available daylight. It is sometimes referred to as "daylighting controls" or "photocells." (See **Lighting Conservation Features.**)

NOAA Division: One of the 356 weather divisions designated by the National Oceanic and Atmospheric Administration (NOAA), encompassing the 50 contiguous United States and the District of Columbia. These divisions usually follow county borders to encompass counties with similar weather conditions. However, the NOAA division does not follow county borders when weather conditions vary considerably within a county, as is likely to be the case when a county borders the ocean or contains high mountains. A State contains an average of seven NOAA divisions; a NOAA division contains an average of nine counties. (See **Climate Zone, Cooling Degree-Days,** and **Heating Degree-Days.**)

Nongovernment Owned: Owned by a private-owned utility company, a church, synagogue, or other religious organization or any other type of individual or group; such as, a private business or nonprofit organization. The building may be occupied by more than one nongovernment agency, and may be owner occupied, nonowner occupied or unoccupied.

Nonmetropolitan Statistical Area: Buildings not located within MSA's as defined by the U.S. Office of Management and Budget. (See **Metropolitan Statistical Area (MSA).**)

Nonresidential Building: A building used for some purpose other than residential. Nonresidential buildings comprise three groups: commercial, manufacturing/industrial, and agricultural. Commercial buildings are the focus of this report. (See **Commercial Building, Manufacturing/Industrial, Building, Residential, Principal Building Activity, Out of Scope**, and Appendix E, "Types of Buildings.")

Number of Rooms - Lodging: The number of guest rooms or quarters in a short-term residential building, such as a motel, tourist home, or hotel; or the number of bedrooms or residential suites in a long-term facility, such as a dormitory, boarding house, orphanage, convent, monastery, fraternity, or sorority house. (See **Principal Building Activity, Special Measures of Occupancy**, and Appendix E, "Types of Buildings.")

Number of Workers in the Building: The number of people working in a building during all shifts of a typical workday during the year. Included in this definition are self-employed workers and volunteers. Excluded from this definition are customers, patients, and students, unless they are working for establishments in the building. Also excluded are employees who work out of the office, such as salespeople who report in, delivery people with routes, and messengers. (See Appendix C, "Nonsampling and Sampling Errors" and **Workers (Main Shift.))**

Number of Workers in the Building (Main Shift): See **Workers (Main Shift)** and **Number of Workers in the Building**.

Occupancy of Building: To occupy is to lease or hold a space on a full-time basis.

Occupancy Sensors: A lighting conservation feature that uses motion or sound to switch lights on or off; also known as "ultrasonic switching." When movement is detected, the lights turn on and remain on as long as there is movement in the room. Occupancy sensors that detect sound work like ultrasonic switching; when sound is detected, the lights turn on. In this report, occupancy sensors refer to detecting movement, not sound. (See **Lighting Conservation Features**.)

Off-Hours Equipment Reduction: A conservation feature where there is a change in the temperature setting or reduction in the use of heating, cooling, domestic hot water heating, lighting or any other equipment either manually or automatically. (See **Conservation Features**.)

Open Refrigeration Unit: Refrigeration in cabinets (units) without covers or with flexible covers made of plastic or some other material, hung in strips or curtains (fringed material, usually plastic, that push aside like a bead curtain). Flexible covers stop the flow of warm air into the refrigerated space.

Operating Hours: See **Weekly Operating Hours.**

Other DSM Assistance Programs: A DSM program assistance that includes an alternative-rate, fuel-switching, and any other DSM assistance programs that are offered to consumers to encourage their participation in DSM programs. (See **Alternative-Rate DSM Program Assistance, DSM Program Assistance, and Fuel-Switching DSM Program Assistance**.)

Out of Scope: Violating one or more of the requirements for eligibility in the survey, therefore not included in the population covered by CBECS. (See **In Scope**.)

Owner Occupied: Having the owner or the owner's business represented at the site. A building is considered owner occupied if an employee or representative of the owner (such as a building engineer or building manager) maintains office space in the building. Similarly, a chain store is considered owner occupied even though the actual owner may not be in the building but headquartered elsewhere. Other examples of the owner's business occupying a building include State-owned university buildings, elementary and secondary schools owned by a public school district, and a post office where the building is owned by the U.S. Postal Service.

Ownership of Building: The individual, agency, or organization that owns the building. In this report, building ownership is grouped into the following categories: Federal, State, or local government agency; a privately owned utility company; a church, synagogue, or other religious group; or any other type of individual or group.

Packaged Air-Conditioning (Cooling) Units: See **Packaged Units.**

Packaged-Heating Units: See **Packaged Units.**

Packaged Units: Units built and assembled at a factory and installed as a self-contained unit to heat or cool all or portions of a building. Packaged units are in contrast to engineer-specified units built up from individual components for use in a given building. "Packaged Units" is a term that can apply to heating equipment, cooling equipment, or combined heating and cooling equipment. Some types of electric packaged

units are also called "Direct Expansion" or DX units. (See Cooling, Heating, Ventilation, and Cooling (HVAC), and Space Heating.)

Passive Solar Features: A deliberate approach to designing buildings to make use of natural ways to heat buildings in the winter and keep them cool in the summer. Passive solar design features include orientating the building on the lot so that large window areas face south to capture sunlight during the winter months; building "overhangs" on the south-facing windows to keep the sun from over-heating the building during the summer; using certain types of building material to absorb heat during the day and release heat at night; and planting trees and vegetation to minimize heat gain in the building in the summer.

Passive Solar Heating: A solar heating system that uses no external mechanical power (such as pumps or blowers) to move the collected solar heat. (See Passive Solar Features.)

Percent Cooled: The percentage of the building's square footage that is cooled to meet the comfort requirements of the occupants. (See Square Footage and Cooling.)

Percent Heated: The percentage of the building's square footage designed to be heated to at least 50 degrees Fahrenheit. (See Total Square Footage and Space Heating.)

Percent Lit When Closed: The percentage of the building's square footage that is lit electrically during all hours other than the usual operating hours. (See Percent Lit When Open, Square Footage, and Weekly Operating Hours.)

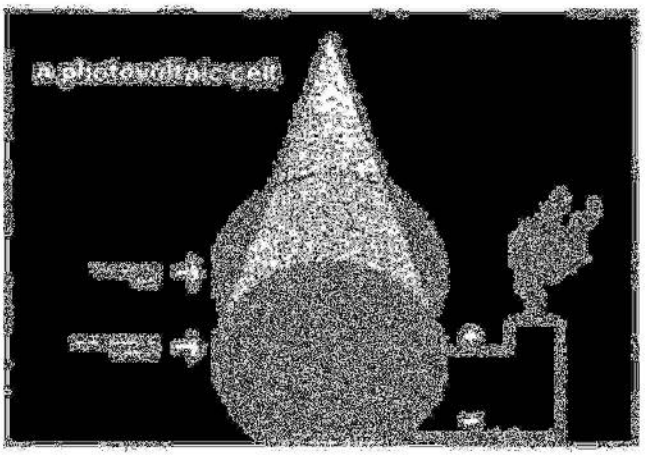
Percent Lit When Open: The percentage of the building's square footage that is lit electrically during usual operating hours. (See Percent Lit When Closed, Square Footage and Weekly Operating Hours.)

Percent Vacant for at Least Three Months: The percent of the building that is unoccupied for at least three consecutive months that is usually occupied at full capacity.

Percent Window Glass: The percentage of the building's exterior wall construction material made of glass that can be seen through from the inside of the building. This percentage excludes glass covered or constructed of glass material that cannot be seen through. (See Decorative or Construction Glass and Window or Vision Glass.)

Personal Computer: A self-contained electronic system with all the components necessary to perform computerized functions which is called a terminal and has a screen, keyboard and/or mouse, and a CPU. A microcomputer for producing written, programmed or coded material, playing games, or doing calculations. (See Computer Terminal.)

Photovoltaic Cells (PVC's): A device that produces electrical current by converting light or similar radiation. In Appendix A, "Detailed Tables," PVC's are included in the "Other" Energy Sources, Space-Heating and Primary Space-Heating categories.



Plastic, Rubber, or Synthetic Roofing: A layer of heavy gauge plastic or rubber used for roofing. In Appendix A, "Detailed Tables," plastic, rubber or synthetic roofing are included in the "Synthetic or Rubber" wall materials category.

Point of Use Water-Heating System: See **Distributed/Point-of-Use Water-Heating System**.

Precast Concrete Panel: Refers to concrete panels usually made in factories and delivered to the construction site where they are hoisted onto the structure. Sometimes concrete panels are poured at the site and then hoisted on the structure. The panels are either solid or insulated. They can have plain, colored or textured finishing. In Appendix A, "Detailed Tables," pre-cast concrete panels are included in the "Concrete Panels" wall materials category. (See **Concrete Panel.**)

Preventive Maintenance Program for Heating and/or Cooling Equipment: As used in this report, an HVAC conservation feature consisting of a program of routine inspection and service for the heating and/or cooling equipment. The inspection is performed on a regular basis, even if there are no apparent problems. In Appendix A, "Detailed Tables," this is included in the "HVAC Conservation Features" category. (See **HVAC Conservation Features.**)

Primary Sampling Unit (PSU): A sampling unit selected at the first stage in a multistage area probability sample. A PSU typically consists of one to several contiguous counties--for example, a MSA with surrounding suburban counties. (See **Multistage Area Probability Sample, Metropolitan Statistical Area (MSA)**, and Appendix B, "How the Survey Was Conducted.")

Primary Space-Heating Energy Source: The energy source used to heat most of the square footage in the building most of the time.

Principal Building Activity: The activity or function occupying the most floorspace in the building. The categories were designed to group buildings that have similar patterns of energy consumption. Examples of various types of principal activity include office, health care, lodging, and mercantile and service. (See Appendix E, "Types of Buildings.")

Principal Facility Activity: The main purpose for the activities across all buildings in a facility within the building; for example, the principal building activity for a library or school campus would be public assembly; however, the principal facility activity would be school.

Process Heating or Cooling DSM Program: A DSM program designed to promote increased electric energy efficiency applications in industrial process heating or cooling. In Appendix A, "Detailed Tables," this is included in the "Other DSM Programs" under the "DSM Program" category. (See **DSM Programs** and **Waste Heat Recovery**.)

Propane: A gaseous petroleum product that liquefies under pressure; propane is a major component in liquefied petroleum gas, or LPG. Any LPG reported in the CBECS was assumed to be propane. (See **Liquefied Petroleum Gas (LPG)**.)

PSU: See **Primary Sampling Unit (PSU)**.

Public Assembly: The principal building activity for buildings in which people gather, in private or public meeting halls, for social or recreational activities. this building activity was first reported in the 1992 CBECS. In previous surveys, "Public Assembly" (along with "Religious Worship") had been classified under the principal building activity "Assembly." (See **Religious Worship** and Appendix E, "Types of Buildings.")

Pump Storage: See **Thermal Energy Storage (TES) or Pump Storage**.

Radiator: A heating unit usually visibly exposed within the room or space to be heated; it transfers heat from steam or hot water by radiation to objects within visible range and by conduction to the surrounding air, which in turn is circulated by natural convection. Typically, a radiator is a freestanding, cast-iron fixture. (See **Space Heating**.)

Reduced Use--Off Hours: See **Off-Hours Equipment Reduction**.

Reflective or Shading Glass or Film: A building shell energy conservation feature consisting of tinted or reflective glass or shading films installed on the exterior glazing of a building to reduce the rate of solar penetration into the building. (See **Building Shell Conservation Features**.)

Reflectors: See **Specular Reflectors**.

Refrigeration/Freezer Equipment: These include: commercial refrigeration/freezer units for the sale or storage of perishable materials; residential-type refrigerators/freezers; water coolers; or any other refrigeration equipment, excluding air conditioning. Freezers are designed to keep their contents below the freezing point (32 degrees Fahrenheit), and refrigeration equipment is designed to maintain the stored items below room temperature, but above the freezing point. In this report, data are collected on refrigeration/freezer equipment inside and/or adjacent to the building. (See **Closed Refrigeration Unit** and **Open Refrigeration Unit**.)

Regular HVAC Maintenance: See **Preventive Maintenance Program for Heating and/or Cooling Equipment**.

Reheating Coils: A part of some air-conditioning systems. Electric coils in air ducts used primarily to raise the temperature of circulated air after it was over cooled to remove moisture. Some buildings report reheating coils as their sole heating source. (See **Air-Handling Units, Cooling,** and **Space Heating**.)

Relative Standard Error: See **RSE or Relative Standard Error**.

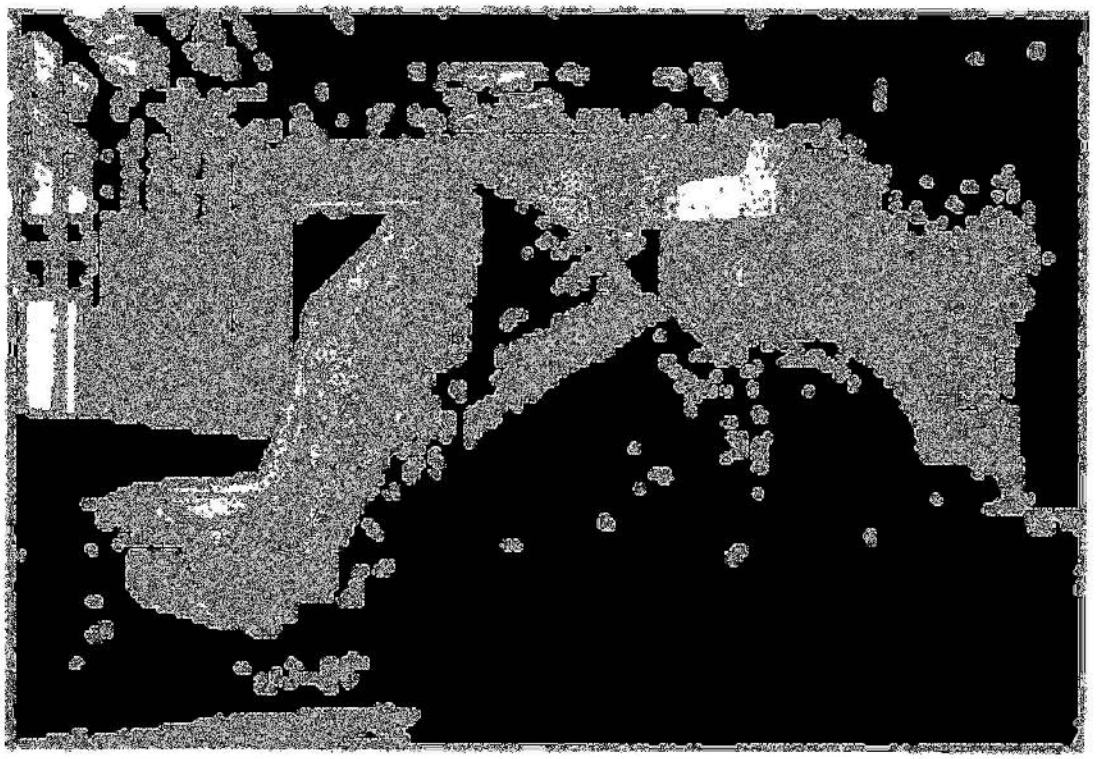
Religious Worship: The principal building activity for buildings in which people gather for religious activities. This building activity was first reported in the 1992 CBECS. In previous surveys, "Religious Worship" (along with "Public Assembly") had been classified under the principal building activity "Assembly." (See **Public Assembly** and Appendix E, "Types of Buildings.")

Replacement Energy Source for Primary Heating: In this report, the heating energy source to which the building could switch within one week without major modifications to the main heating equipment, without substantially reducing the area heated, and without substantially reducing the temperature maintained in the heated area.

Residential: This survey includes activities related to use as a dwelling for one or more households. Residential buildings that contained commercial activities were included in the sample during the listing stage. However, buildings that had 50 percent or more of their square footage devoted to residential activities were considered out of scope and dropped from the sample during the interview stage. (See **Principal Building Activity, In Scope, Commercial Building**, and Appendix B, "How the Survey Was Conducted.")

Residential Type Central Air Conditioner: There are four basic parts to a residential central air- conditioning system: (1) a condensing unit, (2) a cooling coil, (3) ductwork, and (4) a control mechanism such as a thermostat. There are two basic configurations of residential central systems: (1) a "split system" where the condensing unit is located outside and the other components are inside, and (2) a packaged-terminal air-conditioning (PTAC) unit that both heats and cools or cools only. This system contains all four components encased in one unit and is usually found in a "utility closet." If the residential type is a "PTAC" it should be coded under "Packaged air conditioning units."

Roof or Ceiling Insulation: A building shell conservation feature consisting of insulation placed in the roof (below the waterproofing layer) or in the ceiling of the top floor in the building. (See **Insulation** and **Building Shell Conservation Features**.)



Rooms with Special Ventilation: This survey collects data for "any one that requires special ventilation equipment, such as laboratories or "clean rooms." This category refers to the part of buildings that have special ventilation equipment for controlling or maintaining the temperature, humidity, or clean the air. In addition to laboratories, other examples of spaces with special ventilation requirements include dry cleaning establishments, enclosed parking garages, auto body repair shops, operating rooms in hospitals, kitchens in full-service restaurants, or other areas which utilize fume hoods; safety cabinets, ventilation fans, diffusers, exhaust air system, exhaust fans, and supply fans. Note: To be considered special ventilation equipment, a fan must be attached to ducts and these ducts must be ducted to the outside. (See Energy-Related Space Functions.)

RSE Column Factor: An adjustment factor that appears above each column of the published tables and is used to compute RSE's. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that cell. (See RSE or Relative Standard Error, RSE Row Factor, and Appendix C, "Nonsampling and Sampling Errors.")

RSE or Relative Standard Error: A measure of the reliability or precision of a survey statistic. Variability occurs in survey statistics because the different samples that could be drawn would each produce different values for the survey statistics. The RSE is defined as the standard error of a survey estimate, divided by the survey estimate and multiplied by 100. (Standard error is the square root of the variance.) For example, an RSE of 10 percent means that the standard error is one-tenth as large as the survey estimate. (See Appendix C, "Nonsampling and Sampling Errors.")

RSE Row Factor: A component that appears to the right of each row of the published tables and is used to compute RSE's. The row factor is equal to the geometric mean of the RSE's in a particular row of the main tables. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that cell. (See RSE or Relative Standard Error, RSE Column Factor, and Appendix C, "Nonsampling and Sampling Errors.")

Sampling: The procedure used to select cases (in this survey, buildings) for interview from the population (commercial buildings in the United States). (See Multistage Area Probability Sampling and Appendix B, "How the Survey Was Conducted.")

Seating Capacity - Classrooms: The number of students that can be seated in the classrooms and/or lecture halls of an education building at a given time. (See **Principal Building Activity, Special Measures of Occupancy,** and Appendix E, "Types of Buildings.")

Seating Capacity - Food Service: The number of patrons that can be seated in a food service building at a given time. (See **Principal Building Activity, Special Measures of Occupancy,** and Appendix E, "Types of Buildings.")

Seating Capacity - Religious Worship: The number of persons that can be seated at a given time in a building used for religious worship. (See **Principal Building Activity, Special Measures of Occupancy**, and Appendix E, "Types of Buildings.")

Secondary Heating Fuel: Fuels used in secondary space-heating equipment. When no secondary space-heating equipment is used, a secondary space-heating fuel that is used in the main space-heating equipment is not included in the tabulations. This occurs when, for example, wood and coal are both used in a furnace but wood is named the main space-heating fuel. Coal, in this case, is not tabulated.

Shadings or Awnings: See **Exterior or Interior Shadings or Awnings**.

Shakes: Flat pieces of weatherproof material laid with others in a series of overlapping rows as covering for roofs and sometimes the sides of buildings. Shakes are similar to wood shingles, but instead of having a cut and smoothly planed surface, shakes have textured grooves and a rough or "split" appearance to give a rustic feeling. (See **Shingles, Siding,** and **Wooden Materials**.)

Sheet Metal Panels: Includes metal panels made in factories and shipped to the building site where they are fastened to the building frame. They are usually aluminum or galvanized steel. (See **Metal Panels**.)

Shingles: Flat pieces of weatherproof material laid with others in a series of overlapping rows as covering for roofs and sometimes the sides of buildings. Shingles are manufactured in a variety of materials including fiberglass, wood, plastic, baked clay, tile, asbestos, asphalt, and aluminum. Wood Shingles are included in the "Other" predominant roof material category. (See **Siding, Shakes, Slate or Tile Shingles,** and **Wooden Materials**.)

Siding: An exterior wall covering material made of wood, plastic (including vinyl), or metal. The structural walls may be masonry or wood. Siding is generally produced in the shape of boards applied to the outside of a building in overlapping rows. (See **Wooden Materials**.)

Single-Establishment Building: A building that houses only one establishment, for example, a building dedicated to the offices of a single corporation. (See **Establishment, Multibuilding Establishment, Multiple-Establishment Building**, and **Building**.)

Site-Specific Information DSM Program Assistance: A DSM assistance program that provides guidance on energy efficiency and load management options tailored to a particular customer's facility; it often involves an on-site inspection of the customer facility to identify cost-effective DSM actions that could be taken. They include audits, engineering design calculations on information provided about the building, and technical assistance to architects and engineers who design new facilities.(See **DSM Program Assistance**.)

Slate or Tile Shingles: A type of roofing material. Tile refers to any thin, square, or rectangular piece of baked clay, stone, or concrete used as a roofing material. Slate refers to a particular stone used for roofing.

Solar Thermal Panels: These are thermal panels that use sunlight to heat fluids, a system that actively concentrates thermal energy from the sun by means of solar collector panels. The panels typically consist of flat, sun-oriented boxes with transparent covers, containing water tubes or air baffles under a blackened heat-absorbent panel. The energy is usually used for space heating, for water heating and/or for heating swimming pools. This is included under the "Any Other" energy sources category.

Space Heating: The use of mechanical equipment (including wood stoves and active solar heating devices) to heat all, or part, of a building to at least 50 degrees Fahrenheit. This is one of the six end uses of energy specifically asked for in this survey. (See **Energy End Use**.)

Special Energy Technologies: See **Thermal Energy Storage (TES) or Pump Storage, Passive Solar Heating, Geothermal Energy, Well Water for Cooling, Waste Incineration to Produce Energy, and Wind Generation**.

Special Measures of Occupancy: A measure relating to the intensity of use of a building, for example, the number of licensed beds in a hospital or the number of guest rooms in a hotel. (See **Seating Capacity - Classrooms, Seating Capacity - Food Service, Seating Capacity - Religious, Number of Rooms - Lodging**, and **Licensed Bed Capacity**.)

Specular Reflectors: A lighting conservation feature, this is the mirror-like backing of a florescent lighting fixture specifically designed to reflect light into the room. The materials and shape of the reflector are designed to reduce absorption of light within the fixture, while delivering light in the desired angular pattern. The most common materials used are silver (highest reflectivity) and aluminum (lowest cost). See **Lighting Conservation Features**.

Square Feet per Worker: The ratio of the total square footage in each category to the total number of workers in the category.

Square Footage: Floorspace, in units of square feet. One square foot is approximately equal to 0.0929 square meters. (See **Floorspace, Total Square Footage** and **Metric Conversion**.)

Standard Error: A measure of the precision of an estimate, equal to the square root of the variance. (See **Variance, RSE or Relative Standard Error**, and Appendix C, "Nonsampling and Sampling Errors.")

Standard Fluorescent: A light bulb made of a glass tube coated on the inside with fluorescent material, which produces light by passing electricity through mercury vapor causing the fluorescent coating to glow or fluoresce.

Standby Electricity Generation: Involves use of generators during times of high demand on utilities to avoid extra "peak-demand" changes.

Standby Electricity Generation DSM Program: A DSM program that encourages consumers to use generators during times of high electricity demand to avoid "peak-demand" charges. In Appendix A, "Detailed Tables," this is included in the "Other DSM Programs" under the DSM Program category. (See **DSM Programs**.)

Steam or Hot Water Radiators or Baseboards: See **Baseboard** and **Radiator**.

Storm Doors: A building shell conservation feature consisting of a second door installed outside or inside a prime door creating an insulating air space. Included are sliding glass doors made of double glass or of insulating glass such as thermopane, double or triple pane glass as well as sliding glass doors with glass or plexiglass installed outside or inside of the door. Plastic materials covering doors or doors with storm window covering on just the glass portion of the door are counted only if they can be used year after year. (See **Storm or Multiple Glazing**.)

Storm or Multiple Glazing: A building shell conservation feature consisting of storm windows, storm doors, or double- or triple-paned glass that are placed on the exterior of the building to reduce the rate of heat loss. (See **Building Shell Conservation Features.**)

Storm Windows: A building shell conservation feature consisting of a window or glazing material placed outside or inside a window creating an insulating air space. Windows with double glass or thermopanes are considered storm windows as well as windows with glass or plexiglass placed on the outside or inside of the window. Plastic material over windows is counted as a storm window if the same plastic material can be used year after year. (See **Storm or Multiple Glazing.**)

Swamp Coolers: Air-conditioning equipment that removes heat by evaporating water. Evaporative cooling techniques are most commonly found in warm, dry climates such as in the Southwest, although they are found throughout the country. They usually work by spraying cool water into the air ducts, cooling the air as the spray evaporates. (See **Evaporative Cooler (Swamp Cooler)**, and **Cooling.**)

Synthetic or Rubber Roofing: See **Plastic, Rubber or Synthetic Roofing.**

Thermal Energy Storage (TES) or Pump Storage: The temporary storage of energy for later use. Examples of thermal storage are the storage of solar energy for night heating, the storage of summer heat for winter use, the storage of winter ice for space cooling in the summer, and the storage of heat or coolness generated electrically during time when electricity is cheaper (off-peak hours) for later use when electricity rates are higher. There are four basic types TES systems: ice storage, water storage, storage in a thermal mass such as soil, rock or other solids, and storage in other material such as glycol. The most commonly installed types of thermal energy storage systems in commercial buildings are those using ice or chilled water for cooling the building.

Thermal Storage DSM Program: This is a DSM program that shifts the time of energy usage through the temporary storage of energy for later use. In Appendix A, "Detailed Tables," this is included in the "Other Program" under the DSM Program category. (See **DSM Programs** and **Thermal Energy Storage (TES) or Pump Storage.**)

Thermostat: A device that adjusts the amount of heating and cooling produced and/or distributed by automatically responding to the temperature in the environment.

Third-Party DSM Program Sponsor: An energy service company (ESCO) which promotes a program sponsored by a manufacturer or distributor of energy products such as lighting or refrigeration whose goal is to encourage consumers to improve energy efficiency, reduce energy costs, change the time of usage, or promote the use of a different energy source. (See **DSM Program Sponsor.**)

Time Clocks or Timed Switches: Time clocks are automatic controls, which turn lights off and on at predetermined times. (See **Lighting Conservation Features.**)

Tinted Glass: See **Reflective or Shading Glass or Film.**

Transported Gas: See **Gas Transported for the Account of Others.**

Total Square Footage: Square footage of floorspace summed or aggregated over all buildings in a category (such as all office buildings in the United States). In this survey, aggregate square footage was estimated by multiplying each building's square footage by its weight, then summing over all sample buildings of interest to represent nationwide totals. (See **Floorspace** and **Weight.**)

Usage Requiring Special Ventilation Equipment: See **Rooms with Special Ventilation.**

Utility-Sponsored DSM Program: In this report, this is any DSM program sponsored by an electric and/or natural gas utility to review equipment and construction features in buildings and advise on ways, among other things, to increase the energy efficiency of buildings; such as, programs to encourage the use of more energy-efficient equipment. Also, included in this survey were programs to improve the energy efficiency in the lighting system or building equipment, or the thermal efficiency of the building shell. (See DSM Program Sponsor.)

Vacant: As a principal building activity, the designation for a building in which most of the floorspace was not occupied by any tenant or establishment. A vacant building may contain occupants who are using up to 50 percent of the floorspace. The CBECS also measures vacancy in terms of the fraction of space vacant within an individual building and the fraction of time the building was in use. For all buildings, data were collected on the percent of floorspace vacant three or more months, and/or the number of months the building was in use. (See Principal Building Activity, and Appendix B, "Types of Buildings.")

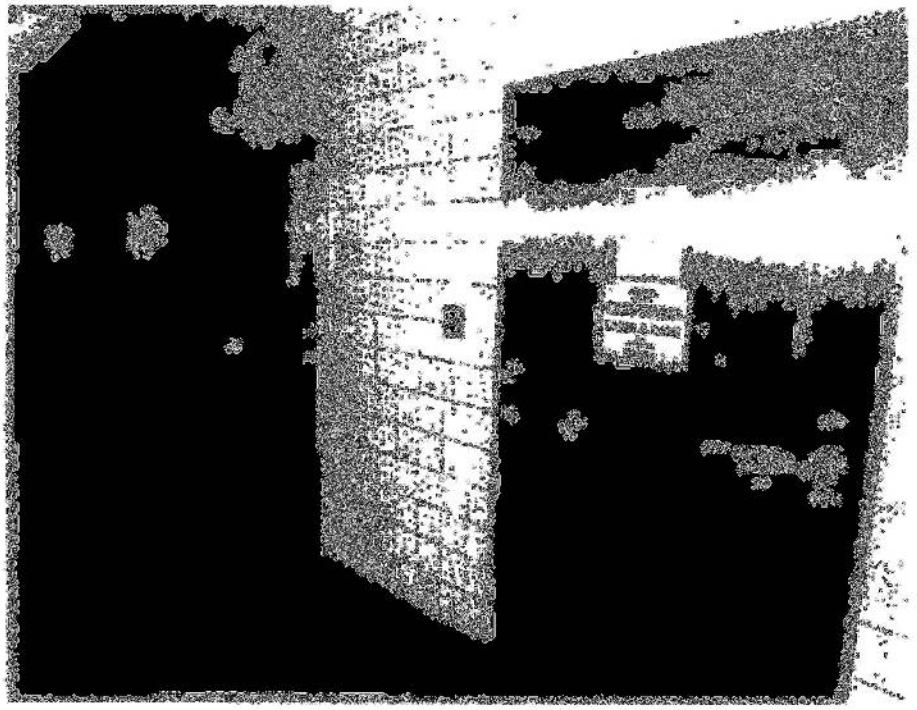
Variable Air-Volume (VAV) System: An HVAC system that supplies varying quantities of conditioned (heated or cooled) air to different parts of the building according to the heating and cooling needs of those specific areas. This is an HVAC conservation feature and is usually referred to as "VAV." (See HVAC Conservation Features.)

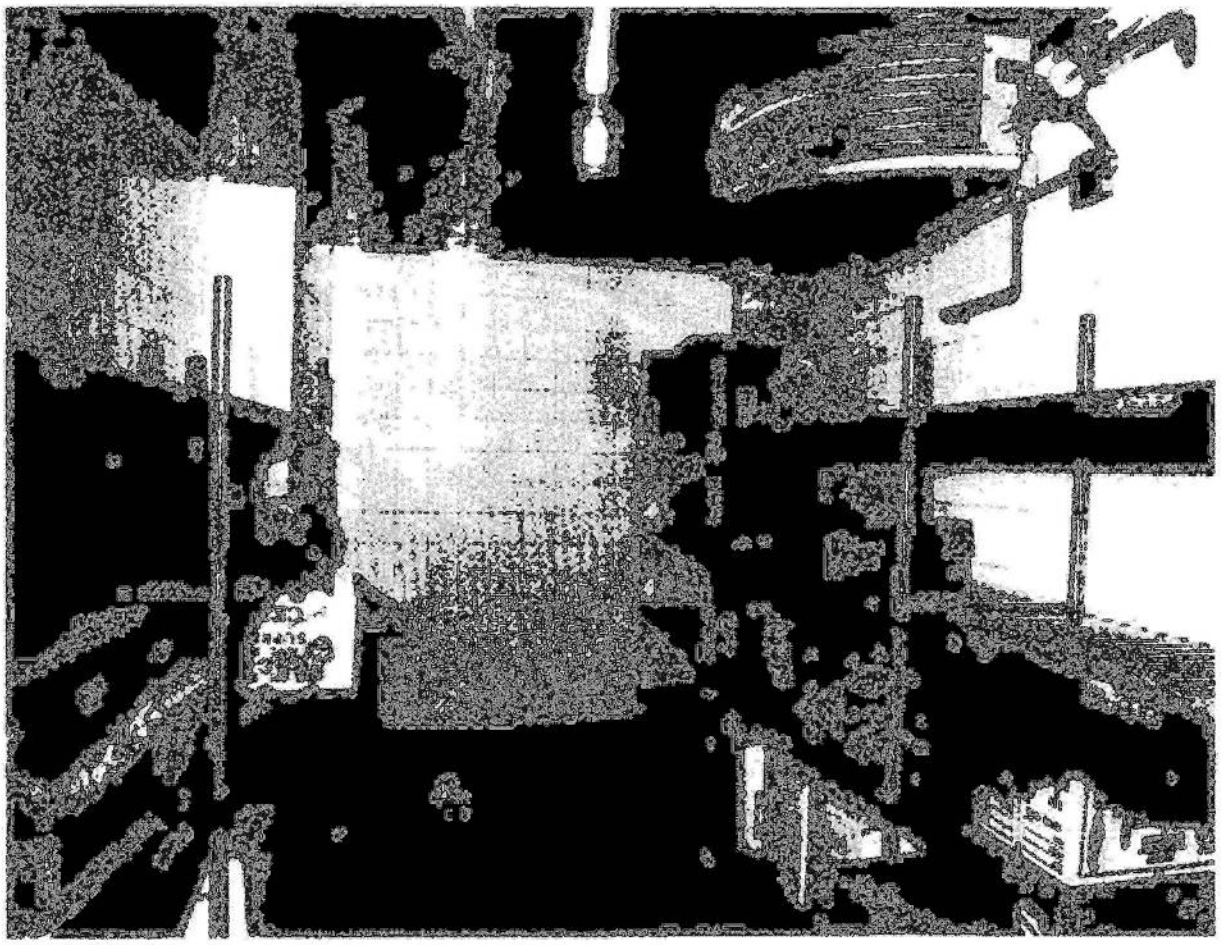
Variance: A measure of the variability of a set of observations that are subject to some chance variation, equal to the expected squared difference between a single observation and the average of all possible observations obtained in the same manner. The variance is the square of the standard error of estimate. For statistics presented in this report, the variance indicates the likely difference between the value computed from the CBECS sample and the average of the values that could have been computed from all possible samples that might have been obtained by the same sample selection process. (See Standard Error, Appendix B, "How the Survey was Conducted" and Appendix C, "Nonsampling and Sampling Errors.")

VAV: See Variable Air-Volume (VAV) System.

Vintage: The year of origin or age. Used in this report, the year of construction for the building, as in "building vintage."

Walk-In Refrigeration Units: Refrigeration/freezer units within a building that are large enough to walk into. They may be portable or permanent, such as a meat storage locker in a butcher store. Walk-in units may or may not have a door, plastic strips, or other flexible covers.





Wall Insulation: A building shell conservation feature consisting of insulation placed between the exterior and interior walls of a building. (See Insulation and Building Shell Conservation Features.)

Warm-Air Furnace: See Furnace.

Waste-Heat Recovery: Any conservation system whereby some space heating or water heating is done by actively capturing byproduct heat that would otherwise be ejected into the environment. In commercial buildings, sources of waste-heat recovery include refrigeration/air-conditioner compressors, manufacturing or other processes, data processing centers, lighting fixtures, ventilation exhaust air, and the occupants themselves. Not to be considered is the passive use of radiant heat from lighting, workers, motors, ovens, etc., when there are no special systems for collecting and redistributing heat.

Waste Incineration to Produce Energy: The use of a special boiler that requires custom engineering and installation to burn garbage or other waste for heat.

Water Heating: The use of energy to heat water for purposes other than space heating. This is one of the six end uses of energy specifically asked for in this survey. (See Energy End Use .)

Water-Heating DSM Programs: These are DSM programs designed to promote increased efficiency in water heating, including water-heater insulation wraps. In Appendix A, "Detailed Tables," this is included in the "Other Program" under the DSM Program category. (See DSM Programs.)

Water-Heating Equipment: Automatically controlled, thermal insulated equipment designed for heating and storing heated water at temperatures less than 180 degrees Fahrenheit for other than space heating purposes. This survey collected data to distinguish between two types of water heating equipment: centralized and distributed/point-of-use.

Weekly Operating Hours: The number of hours per week that a building is used, excluding hours when the building is occupied only by maintenance, security, or other support personnel. For buildings with a schedule that varied during the year, "weekly operating hours" refers to the total weekly hours for the schedule most often followed. If operating hours varied throughout a building, the usual operating hours of the largest business in the building (based on square footage) determined the operating hours for the building.

Weight: The number of buildings in the United States that a particular sample building represents. To estimate the total value of an attribute (such as square footage) in the U.S. commercial buildings population as a whole, each sample building's value is multiplied by the building's weight. Summing the weighted sample values provides an estimate of the nationwide total. (See **Multistage Area Probability Sample, Total Square Footage**, and Appendix C, "Nonsampling and Sampling Errors.")

Well Water for Cooling: Cooling that uses water from a well drilled specifically for that purpose. The subterranean temperature of the water stays at a relatively constant temperature; therefore, it provides a means of obtaining 55-degree fahrenheit water with no mechanical cooling. Used usually for heat rejection in a water source heat pump.

Wind Generation: The conversion of wind energy into mechanical energy. The mechanical energy is then in turn used to generate electricity. Wind energy generators are distinguished by a propeller which rotates with the wind and a tall tower on which the propeller and generator is mounted.

Window or Vision Glass: An exterior wall construction material made of glass that can be seen through from the inside of the building--the glass especially found in windows. Walls that are glass covered or constructed of glass material, but cannot be seen through, are excluded from this category. (See **Decorative** or **Construction Glass**.)

Windows that Open: Windows that can be opened from the inside of the building to assist in ventilation. In Appendix A, "Detailed Tables," this is included under the "Building Shell Conservation Features" category. (See **Building Shell Conservation Features**.)

Wood: As an energy source, wood logs, chips, or wood products that are used as fuel. In this survey, information about the use of wood as fuel in commercial buildings was obtained from the building respondent. This is included in the "Any Other" energy sources category. (See **Energy Source**.)

Wooden Materials: Wood shingles, wood shakes, or other wooden materials used as roofing materials. (The questionnaire also includes wood siding and shingles under exterior wall construction.) (See **Shingles** and **Shakes**.)

Workers (Main Shift): The number of people working in a building during the main shift on a typical workday during the year. The main shift is when most people are in the building. (See **Number of Workers in the Building**).

Year Constructed: The year in which the major part or the largest portion of a building was constructed.

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