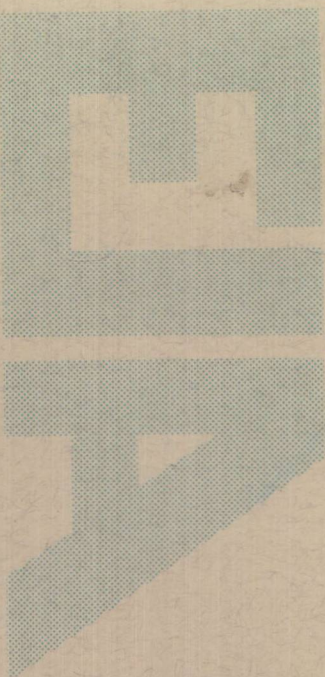


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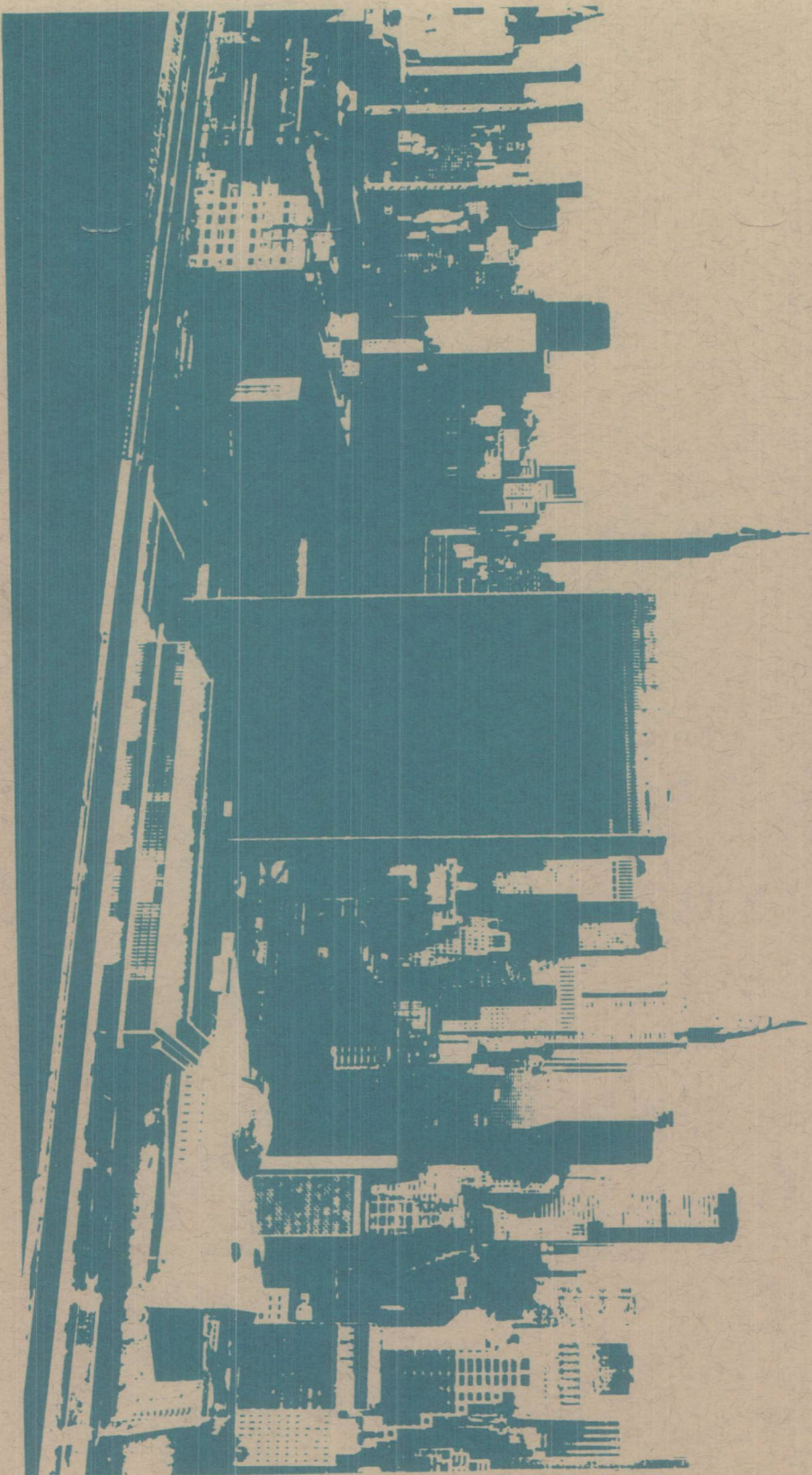
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Energy Information Administration

Nonresidential Buildings Energy
Consumption Survey:

**Characteristics of Commercial
Buildings
1986**



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Nonresidential Buildings
Energy Consumption Survey:
**Characteristics of Commercial
Buildings 1986**



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Contacts

General information concerning the contents of this report may be obtained from Lynda T. Carlson, Director of the Energy End Use Division (202/586-1112). Specific information regarding the contents or preparation of the publication may be obtained from Nancy L. Leach, Chief of the Residential and Commercial Branch (202/586-1114).

Detailed technical questions may be referred to the following members of the Energy End Use Division:

Eugene M. Burns	Nonresponse Adjustments, Data Imputations	202/586-1125
Miriam L. Goldberg	Nonresponse Adjustments, Data Imputations, Sampling Variances	202/586-1129
Julia D. Oliver	Survey Manager	202/586-5744
Paul M. Gargiullo	Sample Design, Sampling Variances	202/586-1137
Hattie M. Ramseur, Angela D. Renfrow	Related Statistical Publications	202/586-1124

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Executive Summary

A statistical profile of the population of commercial buildings in the United States, as of December 31, 1986, is presented in this report. The data were collected on the 1986 Nonresidential Buildings Energy Consumption Survey (NBECS). Compared to previous NBECS, the scope of this report has been expanded somewhat to include the entire (as opposed to contiguous) United States, but also has been restricted to exclude noncommercial buildings and buildings under 1,000 square feet.

As of December 31, 1986, there were 4.2 million commercial buildings in the United States containing approximately 58 billion square feet of floorspace. Seven percent of the buildings and 8 percent of the floorspace had been constructed since 1983. The South is the largest of the four census regions in terms of both the number of buildings and total floorspace. The rate of growth is also highest in the South, with 9 percent of both the buildings and the floorspace in this region constructed since 1983.

The proportion of commercial buildings using natural gas dropped from 60 percent in 1983 to 55 percent in 1986. The proportion using fuel oil after declining between 1979 and 1983, was stable between 1983 and 1986, at 13 percent. The proportion using electricity in 1986 was 97 percent, essentially unchanged from the 1979 and 1983 levels.

The mean floorspace per building for all commercial buildings in the United States was 14,000 square feet, while the median was 5,000 square feet. This differential indicates that although the majority of commercial buildings are small, substantial fractions of floorspace are contained in relatively few large buildings.

Introduction

Characteristics of Commercial Buildings 1986 is prepared by the Energy End Use Division, Office of Energy Markets and End Use, Energy Information Administration (EIA).

The data were collected on the 1986 Nonresidential Buildings Energy Consumption Survey (NBECS), Forms EIA-871A-G. EIA conducts this national sample survey of nonresidential buildings and their energy suppliers on a triennial basis. Previous NBECS were conducted in 1979 and in 1983. EIA also conducts energy consumption surveys in the residential, residential transportation, and industrial sectors.

The NBECS provides basic statistical information on the consumption of, and expenditures for, energy in commercial buildings and their energy-related characteristics. This survey is the only source of national-level data on commercial building characteristics and energy consumption. This report covers the descriptive characteristics of the commercial building stock that affect energy use. A second report will cover energy consumption and expenditures.

This report presents descriptions of commercial buildings at the national and Census region levels in terms of the following characteristics:

- Building use
- Building size
- Location
- Energy sources
- Energy end uses
- Conservation features
- Heating and cooling equipment and practices
- Lighting equipment and practices
- Roof and wall construction materials.

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 data presented in this report were collected and published by the EIA to fulfill its responsibilities as specified in the Federal Energy Administration Act of 1974 (Public Law 93-275), as amended.

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

Organization of This Report

The next section of this report, "Status of the Commercial Buildings Population, 1986," presents the energy-related characteristics of commercial buildings in the United States as of December 31, 1986. The third section, "Changes in Commercial Buildings Over Time," examines patterns of changes in energy use through an analysis of the construction year reported on the 1986 NBECS. Information collected for the first time on the 1986 NBECS appears in the fourth section, "New and Expanded Data Collected in 1986."

Two types of tables appear in this report. Extensive cross tabulations appear in the "Detailed Tables" section following the main text. Tables interspersed through the text (Tables 1 through 12) highlight information of special interest or summarize a finer breakdown given later in the detailed tables. To assist the reader in locating a specific combination of building characteristics, a Quick Reference Guide at the beginning of the detailed tables identifies the major building characteristics and the table(s) in which each appears as the main topic. Appendix H, "Cross-Classification Matrix for the Detailed Tables," gives a comprehensive list of table topics and their cross tabulations.

The findings of the survey are presented for a general audience of energy analysts. For more statistically oriented readers, information on the sample design and data collection procedures are provided in Appendix A, "How the Survey Was Conducted." Adjustments to collected data and factors affecting data quality are discussed in Appendix B, "Sampling and Nonsampling Errors."

A detailed description of the principal building activity categories is contained in Appendix C, "Building Types." Appendix D contains a map showing the Climate Zones by which the data are reported, while Appendix E is a map showing the Census regions and divisions used in this report.

All estimates in this report are based on data collected on Form EIA-871A, "Building Characteristics Questionnaire," found in Appendix F, "Survey Forms." A list of related energy-consumption publications appears in Appendix G for readers interested in earlier NBECS publications or consumption reports for the other sectors.

A glossary of terms has been included to assist users in understanding the statistical and engineering terminology used in this publication. Where a general term is used in a restricted sense for this report, both the general use and the restrictions are explained in the Glossary.

Status of the Commercial Buildings Population, 1986

As of December 31, 1986, there were 4.2 million commercial buildings in the United States, containing 58.2 billion square feet. These buildings were roofed and walled structures used predominantly for a nonresidential, non-agricultural, and nonindustrial purpose, and, as defined for this report, larger than 1,000 square feet. The definition of the commercial buildings population in this report differs somewhat from that in previous NBECS, as explained further in Appendix B, "Sampling and Nonsampling Errors."

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 December 31, 1986. As a result, all the numbers are estimates rather than exact measures for the population. As described in Appendix B, the accuracy of each estimate is indicated by the relative standard error (RSE). All the tables of estimates in this report include summaries of the corresponding RSE's.

The RSE for the total number of buildings is 3.5 percent, so that an approximate 95 percent confidence interval for this total is 4.2 ± 0.3 million. For the total floorspace, the RSE is 3.0 percent and the approximate 95 percent confidence interval is 58.2 ± 3.4 billion square feet. These two RSE's are lower than those for the corresponding aggregates from the 1979 and 1983 surveys, indicating that the 1986 survey estimates are somewhat more accurate than those from previous surveys.

Principal Building Activity

As in previous surveys, the 1986 NBECS classified commercial buildings on the basis of their principal activity; that is, the activity that was conducted in most of the building's floorspace. Definitions of the building classifications are given in Appendix C, "Building Types." The breakdown of numbers and square footage by principal building activity (Table 1) indicates the diversity of the commercial buildings population.

For certain building activity categories, the NBECS sample was too small to permit reliable estimates for breakdowns within the category. Thus,

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 Services...	201	4.8	1,281	2.2	8.48
Health Care					
Inpatient.....	14	.3	1,757	3.0	20.29
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.....					
Office.....	1,287	31.0	12,805	22.0	5.17
Public Order and Safety.....	614	14.8	9,546	16.4	5.76
Skilled Nursing.....	55	1.3	680	1.2	14.96
Warehouse Nonrefrigerated.....	13	.3	605	1.0	23.46
Refrigerated..	524	12.6	8,522	14.6	6.74
Other.....	25	.6	474	.8	24.12
Vacant	86	2.1	1,442	2.5	15.37
	238	5.7	2,931	5.0	8.94

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

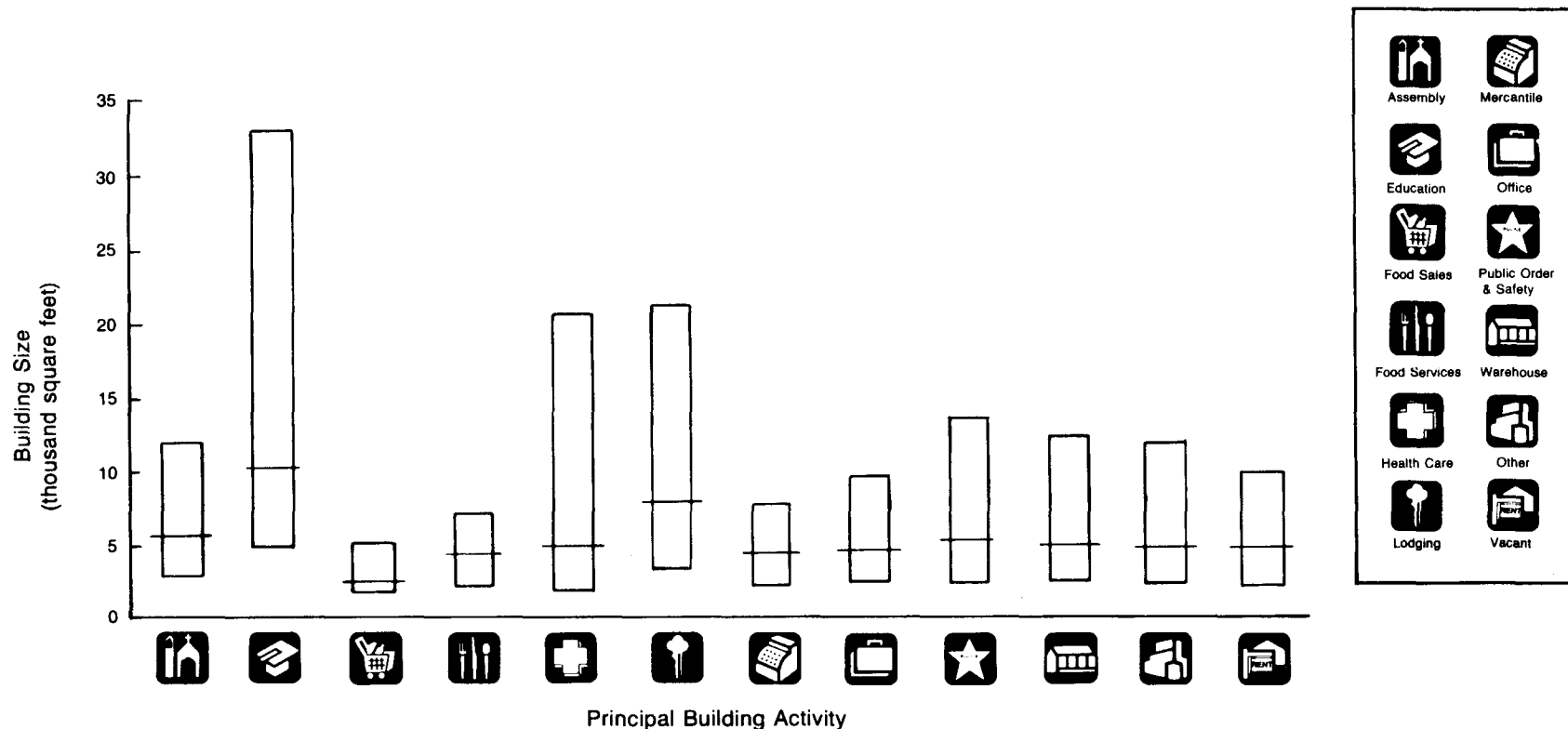
Note: To obtain a RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. See Glossary for explanation of abbreviations and definitions of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

several types of building activities have been combined in the detailed tables that follow the text. Table 1 provides the most detailed disaggregation of building activities found in this report. In all the other 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; and laboratory buildings have been included with those classified as "other." As with previous reports, skilled nursing buildings have been included in lodging. However, in a departure from previous reports, public order and safety buildings are presented in a separate category in the detailed tables instead of being included in the "other" category.

Figure 1 illustrates the range of building size both within the same building activity and across different building activities. The variation in the median square feet per building, from 2.5 thousand in food sales buildings to 10.0 thousand in education buildings, shows that the typical building size differs considerably across activity categories. Building sizes also vary considerably within each category, as indicated by the distance from the 25th to the 75th percentile; this range encompasses the middle 50 percent of the population in each building activity category. For example, 50 percent of the education buildings are between 4,850 and 33,500 square feet; 25 percent are smaller than 4,850 square feet and 25 percent are larger than 33,500 square feet. In contrast, mercantile and service buildings have a smaller size spread, with 50 percent of these buildings between 2,250 and 7,800 square feet.

Figure 1. Building Size Distribution by Principal Building Activity



Note: The bar for each principal building activity extends from the 25th to the 75th population percentile, with a horizontal line indicating the median.
Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

For most activity categories, the 75th percentile is two to three times the median, indicating the skewness of the distribution of building sizes. That is, buildings substantially larger than the median are much more common than are buildings substantially smaller.

Energy Sources and End Uses

One of the major objectives of the NBECS is to identify which energy sources are used for what end uses (Table 2). The breakdown of energy sources in Table 2 is finer than that given in other tables. The 1986 NBECS is used to collect information on all energy sources brought into the building. However, for certain types of energy sources (most notably wood, coal, and active solar), there were too few buildings in the sample to permit separate reporting. In other tables, wood and coal are grouped with active solar and other miscellaneous energy sources into a category called "Minor Fuels;"

purchased and nonpurchased steam and purchased and nonpurchased hot water are combined into "District Steam or Hot Water."

The finer energy source detail is of particular interest for space heating and water heating. The 1986 NBECS was the first to separate primary and secondary energy sources for these end uses, as discussed further in "New and Expanded Data Collected in 1986." Table 2 shows, in particular, that electricity was widely used as a secondary space-heating energy source. Twenty-seven percent of the commercial buildings using electricity for space-heating used it as a secondary energy source. One-third of the buildings using wood used it as a secondary space-heating fuel. For a few buildings, the same fuel was reported to be used for both primary and secondary heating. As a result, the total number of buildings using each fuel for heating is slightly smaller than the sum of the numbers for primary and secondary heating. See Tables 36 and 37 of the "Detailed Tables," section

Table 2. Energy Sources Used for Particular End Uses

Building Characteristics	All Buildings Using Energy	Energy End Use							RSE Row Factor
		Space Heating (primary)	Space Heating (secondary)	Water Heating (primary)	Water Heating (secondary)	Cooling	Cooking	Manufacturing	
RSE Column Factor:	0.575	0.686	1.049	0.708	1.636	0.954	1.000	2.188	
Number of Buildings (thousand)									
All Buildings.....	4,018	3,681	598	2,896	201	2,882	563	132	5.16
Energy Sources Used for Indicated End Use (Solely or in Combination)									
Electricity.....	4,013	863	351	1,310	108	2,737	233	107	6.49
Natural Gas.....	2,278	2,001	89	1,334	38	141	319	20	8.88
Fuel Oil.....	542	434	83	121	12	7	Q	Q	16.59
Propane.....	351	215	40	96	7	NC	67	Q	24.17
Steam (purchased).....	18	16	Q	6	Q	1	1	NC	45.12
Steam (nonpurchased).....	52	49	Q	22	Q	Q	2	Q	28.80
Hot Water.....	11	8	Q	6	Q	NC	Q	NC	34.61
Chilled Water.....	15	--	--	--	--	15	--	NC	38.01
Minor Fuels									
Wood.....	126	80	44	Q	Q	NC	Q	Q	21.30
Coal.....	22	19	Q	Q	Q	NC	NC	Q	43.93
Other.....	25	Q	Q	Q	Q	Q	NC	NC	41.06

See footnotes at end of table.

Table 2. Energy Sources Used for Particular End Uses (continued)

Building Characteristics	All Buildings Using Energy	Energy End Use							RSE Row Factor
		Space Heating (primary)	Space Heating (secondary)	Water Heating (primary)	Water Heating (secondary)	Cooling	Cooking	Manufacturing	
RSE Column Factor:	0.575	0.686	1.049	0.708	1.636	0.954	1.000	2.188	
Total Floorspace (million square feet)									
All Buildings.....	57,058	54,510	13,210	48,836	7,473	46,601	17,227	3,081	4.55
Energy Sources Used for Indicated End Use (Solely or in Combination)									
Electricity.....	57,036	12,313	6,994	18,669	3,119	42,564	7,286	2,247	6.60
Natural Gas.....	38,140	29,582	2,973	23,309	2,244	2,894	10,994	791	8.88
Fuel Oil.....	11,163	6,462	2,444	2,903	1,352	294	Q	Q	14.51
Propane.....	3,362	1,246	590	756	243	NC	967	Q	22.28
Steam (purchased).....	1,358	1,292	Q	1,082	Q	254	177	NC	30.71
Steam (nonpurchased).....	2,692	2,444	Q	1,601	Q	Q	366	Q	29.13
Hot Water.....	984	634	Q	638	Q	NC	Q	NC	33.61
Chilled Water.....	1,191	--	--	--	--	1,163	--	NC	27.24
Minor Fuels									
Wood.....	733	459	256	Q	Q	NC	Q	Q	30.00
Coal.....	449	281	Q	Q	Q	NC	NC	Q	49.43
Other.....	412	Q	Q	Q	Q	Q	NC	NC	40.17

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.

Note: 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.

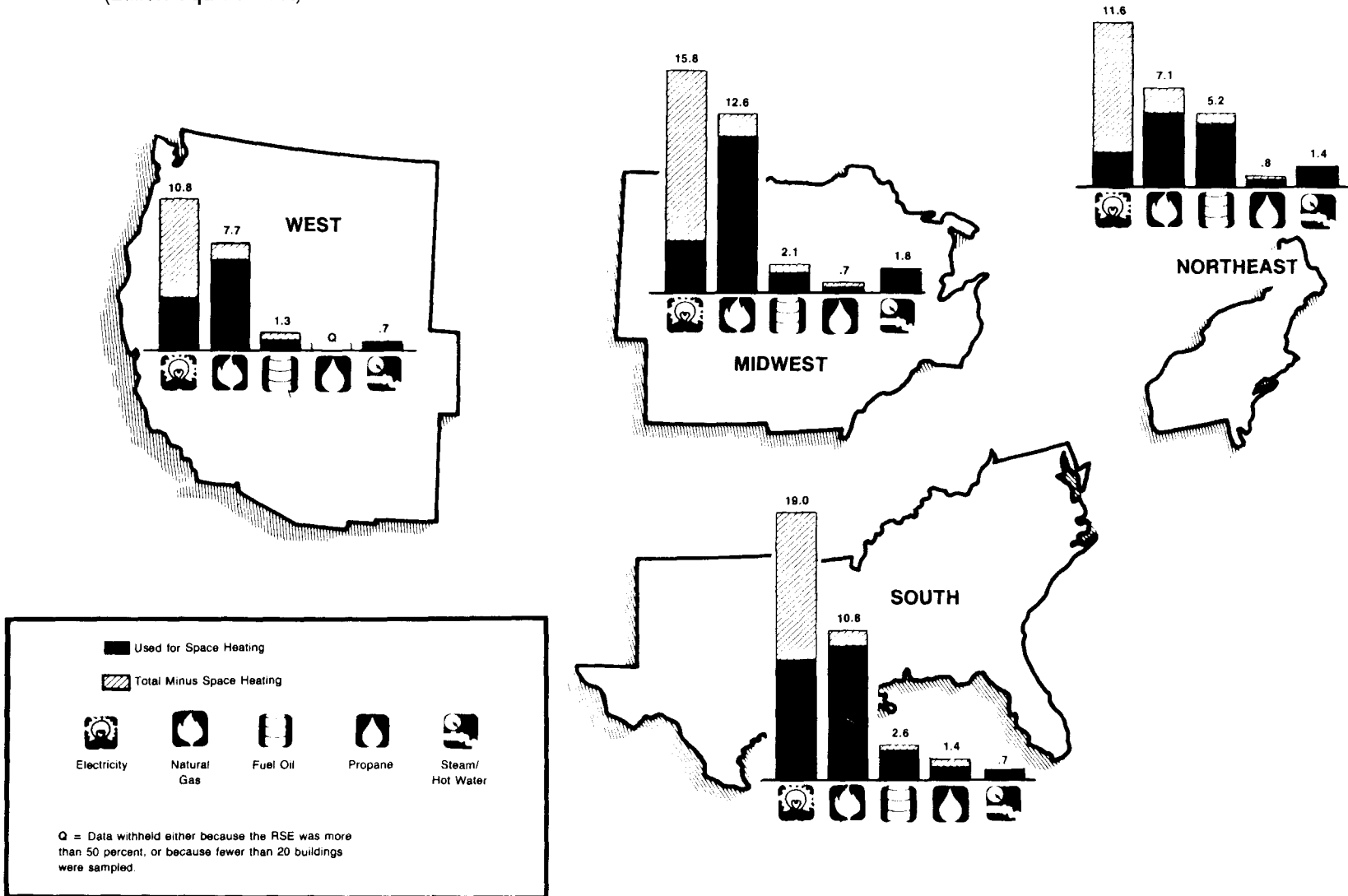
Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

for combined primary and secondary space heating, and Tables 39 and 40 for combined primary and secondary water heating.

As has been reported in previous NBECS, the types of energy sources used for different end uses varies by region of the country (Figure 2). Although

electricity is found in almost every building in the country, natural gas is the predominant energy source for space heating in all regions in terms of both numbers of buildings and floorspace. In the Northeast, however, fuel oil was used nearly as often as natural gas for space heating, while in the South, electricity was used nearly as often as natural gas.

Figure 2. Energy Sources Used in Buildings, Floorspace
(Billion Square Feet)



Note: The total height of each bar, indicated by the number at the top, represents the total floorspace in the region in buildings that use the energy source. The height of the solid portion represents the floorspace in buildings using the energy source for space heating.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

Changes in Commercial Buildings Over Time

Patterns of energy use have shown significant changes over time as well as across building location, size, and building activity type. As noted above and explained in more detail in Appendix B, "Sampling and Nonsampling Errors," the population effectively covered by the three completed surveys varies somewhat, complicating the comparisons across the 1979, 1983, and 1986 survey years.

Because of the difficulty of accounting for changes in coverage when comparing estimates for the three survey years, as well as the still limited length of this historical record, changes in the population over time may be better assessed through an analysis by building vintage (age) of the most recent, and apparently most complete, data for 1986. The limitation of such an analysis is that it provides a snapshot comparison among buildings surviv-

ing from different time periods, rather than a comparison over time of a complete cross section for each point in time.

The population of buildings existing in 1986 was divided into four groups according to the reported year of construction: 1920 or earlier, 1921 through 1960, 1961 through 1979, and 1980 through 1986 (Table 3). Trends suggested by comparisons across these four age groups were tested for statistical significance (at the 5 percent significance level) by a regression analysis, using finer age groupings. (See Appendix B for details on these regressions.) In this context, an age trend means that a particular building characteristic becomes less common (or more common) with increasing building age, across the commercial building population.

Table 3. Year Constructed

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	1920 or Before	1921 to 1960	1961 to 1979	1980 to 1986	All Buildings	1920 or Before	1921 to 1960	1961 to 1979	1980 to 1986	
RSE Column Factor:	0.623	1.447	0.966	0.844	1.134	0.590 <i>(4.0)</i>	1.642 <i>(3.6)</i>	1.017 <i>(2.7)</i>	0.856 <i>(5.3)</i>	1.422 <i>(4.7)</i>	
All Buildings.....	4,154	443	1,507	1,545	660	58,229	6,034	18,306	24,006	9,883	5.30
Census Region											
Northeast.....	663	135	245	199	84	11,830	2,245	4,117	4,032	1,437	11.42
Midwest.....	1,096	172	381	409	133	16,034	2,100	4,720	6,552	2,662	10.47
South.....	1,570	84	562	617	307	19,427	1,089	5,982	8,747	3,609	9.39
West.....	825	52	318	320	135	10,937	600	3,487	4,676	2,175	15.01
Building Floorspace (Square Feet)											
1,001 to 10,000.....	3,151	341	1,160	1,158	493	13,069	1,593	4,613	4,814	2,049	6.02
10,001 to 100,000.....	923	93	324	352	154	26,339	2,660	8,825	10,617	4,237	6.51
Over 100,000.....	80	9	23	35	13	18,821	1,780	4,868	8,575	3,597	12.03

See footnotes at end of table.

Table 3. Year Constructed (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	1920 or Before	1921 to 1960	1961 to 1979	1980 to 1986	All Buildings	1920 or Before	1921 to 1960	1961 to 1979	1980 to 1986	
RSE Column Factor:	0.623	1.447	0.966	0.844	1.134	0.590	1.642	1.017	0.856	1.422	
Principal Building Activity											
Assembly.....	575	77	225	210	63	7,339	1,328	2,613	2,668	730	10.57
Mercantile and Service.....	1,287	141	475	459	211	12,805	1,342	3,571	5,371	2,521	9.18
Office.....	614	63	199	237	115	9,546	1,031	2,282	3,723	2,510	10.37
Warehouse.....	549	42	201	208	98	8,996	620	3,283	3,750	1,343	11.94
Other Building Activities.....	1,128	119	407	430	173	19,544	1,714	6,557	8,495	2,778	8.26
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	421	1,446	1,516	630	57,036	5,844	17,572	23,904	9,716	5.32
Natural Gas.....	2,278	281	912	810	275	38,140	3,941	12,443	15,945	5,811	6.43
Fuel Oil.....	542	96	222	182	42	11,163	1,771	3,754	4,117	1,520	12.44
District Systems.....	85	14	31	29	10	4,815	688	1,701	2,123	303	20.42
Propane.....	351	34	116	136	66	3,362	351	983	1,453	575	18.72
Energy End Uses											
Space Heating.....	3,681	399	1,330	1,387	566	54,510	5,632	16,750	22,842	9,287	5.36
Cooling.....	2,882	260	1,015	1,137	469	46,601	4,205	13,281	20,459	8,655	5.63
Water Heating.....	2,896	291	1,034	1,118	452	48,836	4,997	14,606	20,732	8,501	5.52
Cooking.....	563	60	188	222	92	17,227	1,437	4,441	8,039	3,310	9.51
Manufacturing.....	132	14	47	48	23	3,081	359	871	1,290	561	18.35
Metropolitan Status											
Metropolitan.....	2,734	255	1,005	1,024	450	45,107	4,249	13,489	19,160	8,208	6.04
Nonmetropolitan.....	1,421	188	502	521	209	13,122	1,785	4,817	4,846	1,674	10.25
Workers											
Fewer than 9.....	2,875	336	1,110	1,001	427	19,705	3,076	7,584	6,582	2,462	6.22
10 to 19.....	587	60	185	241	102	7,895	1,047	2,448	3,185	1,215	11.08
20 to 49.....	434	30	145	190	68	8,847	683	3,162	3,747	1,255	9.72
50 or More.....	258	16	66	113	63	21,782	1,228	5,112	10,492	4,951	10.29
Floors											
One.....	2,688	102	946	1,131	508	23,776	718	7,700	10,784	4,574	8.03
Two.....	978	152	396	318	112	14,367	1,504	4,351	6,362	2,149	7.50
Three.....	324	116	114	69	25	7,921	1,541	2,992	2,688	700	11.88
Over Three.....	165	72	51	27	14	12,164	2,270	3,262	4,172	2,460	13.20

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Fuel Market Shares

Examination of the age trends shows a declining market share for natural gas in newer buildings. Across the 1986 commercial buildings population as a whole, this energy source was used in 2.3 million buildings, representing 55 percent of the buildings and 66 percent of the floorspace. This fraction is lower than the 1983 survey estimate of 60 percent (Table B1 in Appendix B). By vintage, the 1986 fraction dropped from 63 percent of buildings in the oldest age group to 42 percent in the newest, with a strongly statistically significant age trend. In terms of floorspace, the drop was less dramatic, but the age trend was still significant. The analysis by vintage indicates that the difference between cross sections is not simply due to the higher proportion of small buildings (which less commonly use natural gas) represented by the 1986 NBECS.

The share for fuel oil also dropped significantly across the four age groups, from 22 percent of buildings in the oldest to only 6 percent in the newest. Looking more closely at the newest group (buildings constructed in the period 1980 through 1986), the cross-sectional comparisons of the 1979, 1983, and 1986 surveys show a significant drop from the 1979 to 1983 surveys, but essentially no change between the 1983 and 1986 surveys. Across the entire population of commercial buildings surveyed in 1986, fuel

oil was used in 542,000 buildings, or 13 percent of the buildings and 19 percent of the floorspace.

Use of district heating and cooling also showed a statistically significant drop across age groups, from 3.2 percent of buildings in the oldest group to 1.5 percent in the newest, amounting to 2.1 percent overall. In terms of floorspace, the overall fraction was 8 percent, dropping from about 10 percent in each of the first three age groups to only 3 percent in the newest.

The only major fuel with a significant age trend toward increasing use among newer construction was electricity. Since the percentage of buildings and floorspace with this energy source was in the high 90's for each age group, though, this trend does not indicate a major shift. For propane, there was no significant age trend in the market share, the overall fractions being 9 percent of buildings and 6 percent of floorspace.

Energy sources used for space heating show age trends similar to those seen for energy sources used overall (Figure 3). This similarity reflects the fact that space heating is performed in 89 percent of the commercial buildings, representing 94 percent of the floorspace. The fraction of buildings with space heating shows no significant age trend, but the fraction of floorspace shows a weak increase for newer construction. Natural gas is the most common space heating fuel. Overall, use of natural gas for space



Strip shopping centers, such as this one in Maryland, are included in this survey under the building category "mercantile and service."

Figure 3. Primary Heating Source by Year Constructed



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

heating shows a decreasing age trend, while use of electricity shows an increase. Both trends may be leveling off, however, based on the most recently constructed buildings. For fuel oil, which is used for heating in almost all buildings that use it for any purpose, the age trend in heating use parallels that seen for overall use.

The end use with the strongest age trend (from oldest to newest) was cooling, which varied from 70 to 88 percent of floorspace, and from 59 to 71 percent of buildings. The fractions for the commercial population as a whole were 80 percent of floorspace, and 69 percent of buildings. Among buildings over 100,000 square feet in size, 86 percent had cooling. Electricity was the energy source for cooling in nearly all (95 percent) of the cooled buildings.

Patterns in water heating were similar to those seen for cooling, as most commercial buildings either have both these end uses or have neither. That is, the set of buildings with water heating is nearly the same as the set with cooling. Overall, 70 percent of buildings and 84 percent of floorspace have this end use. As was true for space heating, there is no significant age trend for the fraction of buildings with water heating, though there is a weak trend toward increasing floorspace fractions among newer buildings. As also observed for space heating, natural gas is the most common energy source for water heating, but the natural gas share is dropping while that of electricity is increasing.

Cooking also showed no age trend in the fraction of buildings, but a weak trend toward increasing floorspace fraction among newer buildings. Overall, cooking was performed in 14 percent of buildings, 30 percent of floorspace. These cross-sectional proportions are much smaller than those estimated from previous NBECS. (See Table B1 of Appendix B, "Sampling and Nonsampling Errors.") As discussed in Appendix B, the reason for the difference is probably the change in wording on the 1986 survey, which asked specifically for "commercial cooking."

Manufacturing end uses, which are covered by NBECS only when a predominantly commercial building has some manufacturing activity, showed no significant trend across building age groups.

New Construction

Overall, new construction (1980 through 1986) represented about one-sixth of both the number of commercial buildings (16 percent) and the floorspace (17 percent) in 1986. In the South, the fractions were somewhat higher, with new construction accounting for 20 percent of the buildings and 19 percent of the floorspace. These higher fractions for the most recent construction period reflect a statistically significant age trend toward higher fractions of all buildings and floorspace being located in the South.

The estimated fraction of floorspace located in metropolitan areas increased from 70 percent for the oldest age group to 83 percent for the newest, but this age trend was not statistically significant, either for the number of buildings or for floorspace. Across the commercial population as a whole, 77 percent of the floorspace and 66 percent of the buildings were in metropolitan areas.

In the commercial buildings population, a relatively small number of very large buildings account for substantial fractions of the total floorspace (Figure 4). There are several indicators that newer buildings tend to be somewhat larger than older ones. Most directly, 36 percent of the later two age groups' square footage is in buildings over 100,000 square feet, as compared with 30 percent and 27 percent for the earlier two. The difference is even more dramatic for very large buildings, with 14 percent of the newest group's square footage, as compared with only 1 percent of the oldest, in buildings over 500,000 square feet. The age trend for this size group was statistically significant.

Corresponding to the larger building sizes among newer buildings, the proportion of buildings and floorspace with 50 or more workers in the building increases significantly with each construction year. In terms of floorspace, the proportion changes from 20 percent for the oldest age group to 50 percent for the newest.

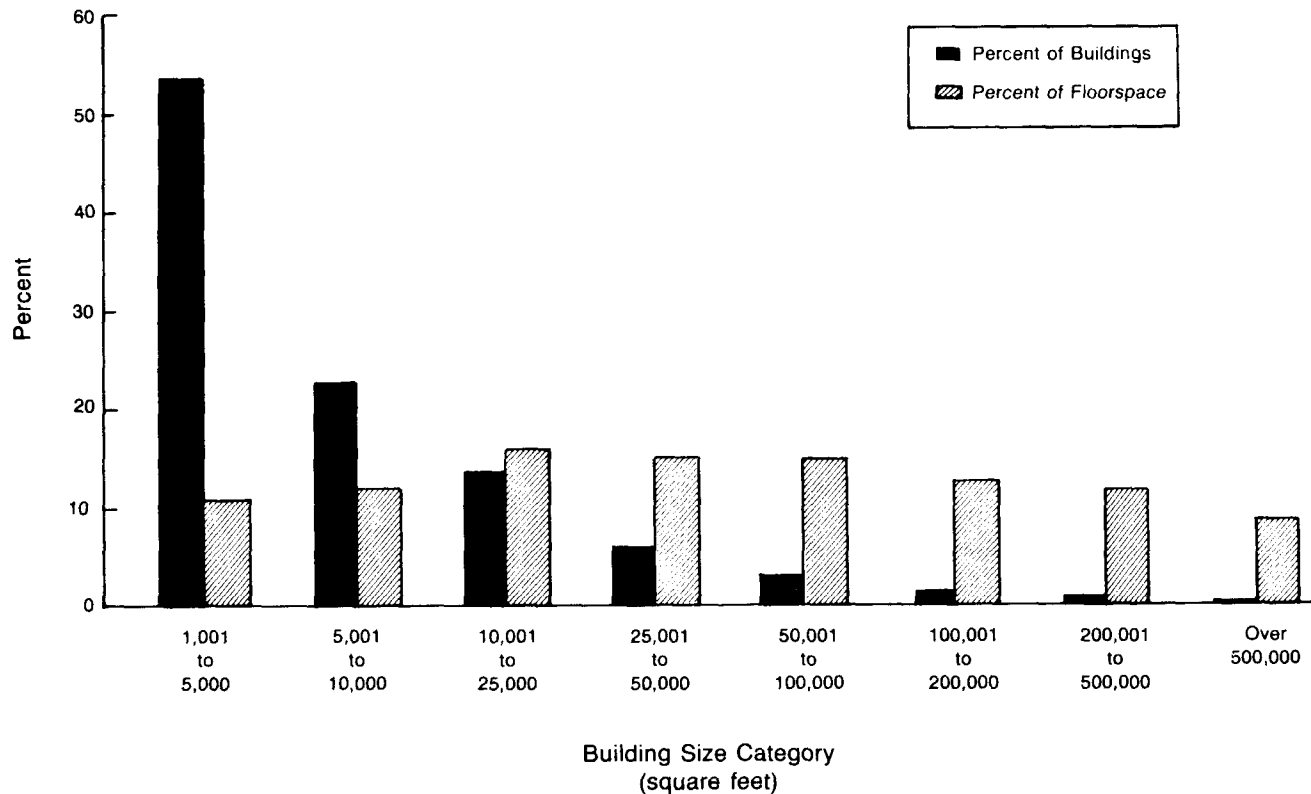
The simple cross-sectional comparisons of 1986 results with those from earlier NBECS (see Table B1 of Appendix B, "Sampling and Nonsampling Errors") show large increases in mercantile and service buildings. Looking across vintages, however, there is no significant change in the proportion

of buildings with this activity. Across the 1986 population as a whole, 31 percent of the buildings representing 22 percent of the floorspace were mercantile and service.

By contrast, office buildings, which show no change in terms of the cross-sectional comparisons, show a significant increase across age groups,

especially in terms of the floorspace proportion. While the proportion of office buildings in the overall population was 15 percent of the buildings and 16 percent of the floorspace, in the most recent construction group, the proportion was 17 percent in terms of buildings and 25 percent in terms of floorspace.

Figure 4. Building Size, Percent of Buildings and Floorspace



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

New and Expanded Data Collected in 1986

This chapter presents several types of data that were either not covered by previous NBECS or were expanded upon for the 1986 NBECS. The new and expanded data topics include:

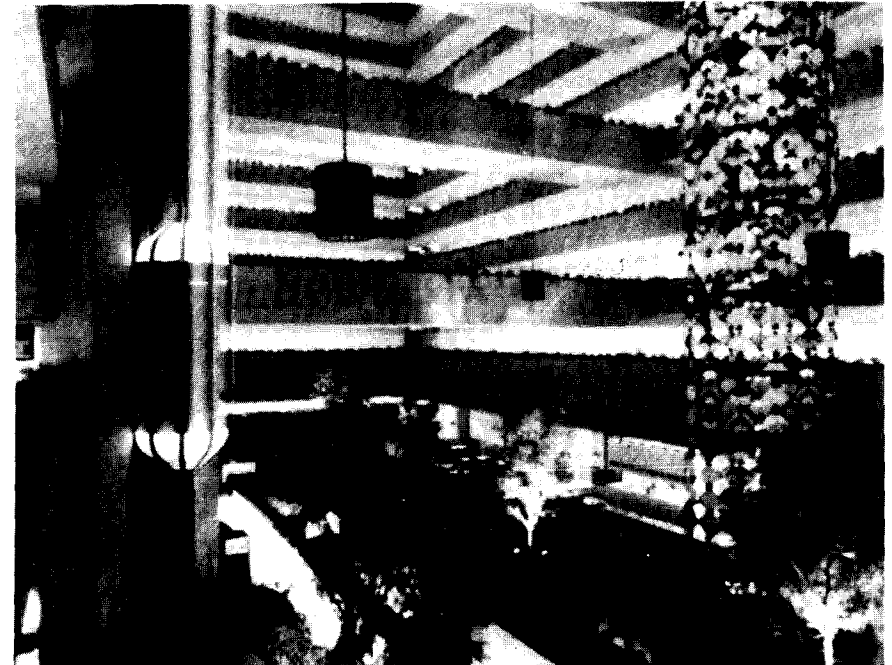
- Lighting equipment
- Primary and secondary energy sources used for space heating and water heating
- District heating and cooling systems
- Electricity generation and cogeneration
- Heating and cooling equipment
- Conservation features
- Building shell construction materials
- Special measures of occupancy
- Operating schedules
- Previous or intended use of currently vacant buildings
- Census division breakdowns.

Lighting

The 1986 survey was the first one for which the NBECS collected information on lighting equipment and its use. Data were collected not only on the types of lighting equipment present in the building, but also on the percent of the floorspace lit by each type, and on the percent of the total floorspace lit, both during usual operating hours and during off hours. From these data, the predominant lighting equipment in the building was defined as the type of equipment that lit the greatest fraction of the building's floorspace (Table 4).

Standard fluorescent bulbs were the predominant lighting equipment in about half the commercial buildings in 1986 (2.0 million out of 3.9 million lit buildings) followed in frequency of occurrence by energy-efficient fluorescents (0.83 million buildings) and standard incandescent bulbs (0.64 million buildings). For buildings with multiple predominant lighting equipment, that is, two or more types of equipment tied for the predominant type, standard

incandescent and standard fluorescent were the most common types included in the tie. While standard fluorescents outnumbered energy-efficient fluorescents as the predominant lighting type by a factor of over two to one in the commercial buildings population overall, among buildings over 100,000 square feet, buildings with energy-efficient fluorescent bulbs were more common (33,000 buildings versus 26,000). Incandescent bulbs, either standard or energy-efficient, were very rarely the predominant lighting equipment among buildings of this size. In terms of the floorspace of buildings with each type of predominant lighting (Table 5) energy-efficient and standard fluorescent lights each accounted for about one-third of the commercial total, with 19.0 billion and 22.6 billion square feet, respectively.



The lighting for this hotel includes high intensity discharge lamps, fluorescent and incandescent lighting, and natural daylight.

Table 4. Predominant Lighting Equipment, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	All Lit Buildings	Predominant Lighting Equipment							RSE Row Factor
			Standard Fluorescent	Energy-Efficient Fluorescent	Standard Incandescent	Energy-Efficient Incandescent	High-Intensity Discharge	Other	Multiple	
RSE Column Factor:	0.500	0.498	0.696	0.838	0.982	1.835	1.836	1.903	1.093	
All Buildings.....	4,154	3,928	1,958	830	643	111	77	19	295	6.92
Percent Lit - Open Hours										
Not Lit.....	231	Q	Q	Q	Q	Q	NC	NC	Q	22.68
1 to 50.....	624	624	306	82	151	13	6	Q	63	14.02
51 to 99.....	644	644	330	165	79	18	12	Q	39	13.69
100.....	2,655	2,655	1,322	581	408	78	59	Q	191	8.03
Percent of Floorspace Lit by Predominant Lighting Equipment										
1 to 50.....	369	369	28	17	27	Q	Q	Q	287	16.75
51 to 99.....	1,251	1,249	589	300	250	56	44	Q	Q	7.81
100.....	2,314	2,309	1,341	513	365	50	29	Q	Q	8.87
Lighting Equipment Types (Solely or in Combination)										
Standard Fluorescent.....	2,558	2,558	1,958	49	253	31	28	Q	233	9.19
Energy-Efficient Fluorescent....	1,064	1,062	55	830	35	29	19	Q	96	11.60
Standard Incandescent.....	1,636	1,632	560	185	643	17	14	Q	213	9.52
Energy-Efficient Incandescent...	399	398	69	136	15	111	6	Q	59	15.49
High-Intensity Discharge.....	251	251	66	56	15	Q	77	Q	29	17.09
Other.....	54	54	Q	10	Q	Q	Q	19	Q	33.45
Building Floorspace (Square Feet)										
1,001 to 10,000.....	3,151	2,952	1,537	555	515	72	36	Q	226	8.18
10,001 to 100,000.....	923	896	395	242	121	37	36	Q	63	7.99
Over 100,000.....	80	79	26	33	7	2	5	Q	5	16.34
Census Region										
Northeast.....	663	631	298	157	92	10	10	Q	66	12.85
Midwest.....	1,096	1,016	501	161	205	25	24	Q	94	12.99
South.....	1,570	1,497	825	262	240	49	33	Q	88	10.68
West.....	825	783	335	250	106	26	10	Q	47	16.03
Year Constructed										
1960 or Before.....	1,950	1,820	922	304	357	55	15	Q	164	9.33
1961 to 1986.....	2,205	2,108	1,036	526	286	56	62	Q	131	8.09

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 5. Predominant Lighting Equipment, Floorspace

(Million Square Feet)

Building Characteristics	All Buildings	All Lit Buildings	Predominant Lighting Equipment							RSE Row Factor
			Standard Fluorescent	Energy-Efficient Fluorescent	Standard Incandescent	Energy-Efficient Incandescent	High-Intensity Discharge	Other	Multiple	
RSE Column Factor:	0.458	0.457	0.646	0.812	1.079	1.845	1.964	1.920	1.212	
All Buildings.....	58,229	56,418	22,564	18,969	6,465	1,632	2,733	296	3,774	7.45
Percent Lit - Open Hours										
Not Lit.....	1,851	Q	Q	Q	Q	Q	NC	NC	Q	34.85
1 to 50.....	7,399	7,399	2,724	1,736	1,688	150	267	Q	806	17.25
51 to 99.....	9,416	9,416	4,181	3,302	825	259	244	Q	549	13.23
100.....	39,562	39,562	15,642	13,927	3,934	1,221	2,222	Q	2,405	8.47
Percent of Floorspace Lit by Predominant Lighting Equipment										
1 to 50.....	5,130	5,130	448	344	428	Q	Q	Q	3,629	21.56
51 to 99.....	25,713	25,709	8,996	10,478	3,184	905	1,953	Q	Q	9.75
100.....	25,590	25,578	13,120	8,147	2,853	578	656	Q	Q	9.59
Lighting Equipment Types (Solely or in Combination)										
Standard Fluorescent.....	32,266	32,266	22,564	2,329	3,111	506	852	Q	2,790	9.62
Energy-Efficient Fluorescent....	24,496	24,492	1,179	18,969	898	639	1,124	Q	1,686	12.50
Standard Incandescent.....	22,995	22,982	7,708	5,473	6,465	284	513	Q	2,509	9.98
Energy-Efficient Incandescent...	10,127	10,124	1,725	5,304	225	1,632	260	Q	937	15.09
High-Intensity Discharge.....	10,075	10,075	2,223	4,130	314	Q	2,733	Q	543	17.49
Other.....	1,266	1,266	Q	643	Q	Q	Q	296	Q	45.07
Building Floorspace (Square Feet)										
1,001 to 10,000.....	13,069	12,356	6,246	2,374	2,091	370	177	Q	1,042	8.32
10,001 to 100,000.....	26,339	25,507	10,737	7,865	2,999	892	1,197	Q	1,735	8.21
Over 100,000.....	18,821	18,555	5,581	8,731	1,375	371	1,359	Q	997	15.64
Census Region										
Northeast.....	11,830	11,429	4,022	4,489	1,101	137	Q	Q	1,180	13.99
Midwest.....	16,034	15,561	6,295	4,788	2,004	323	1,033	Q	1,052	12.34
South.....	19,427	18,789	8,418	5,363	2,336	778	859	Q	991	11.08
West.....	10,937	10,638	3,828	4,329	1,024	393	361	Q	552	16.49
Year Constructed										
1960 or Before.....	24,340	22,995	10,068	6,063	3,546	678	631	Q	1,921	10.73
1961 to 1986.....	33,889	33,422	12,497	12,906	2,918	954	2,102	Q	1,853	9.65

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

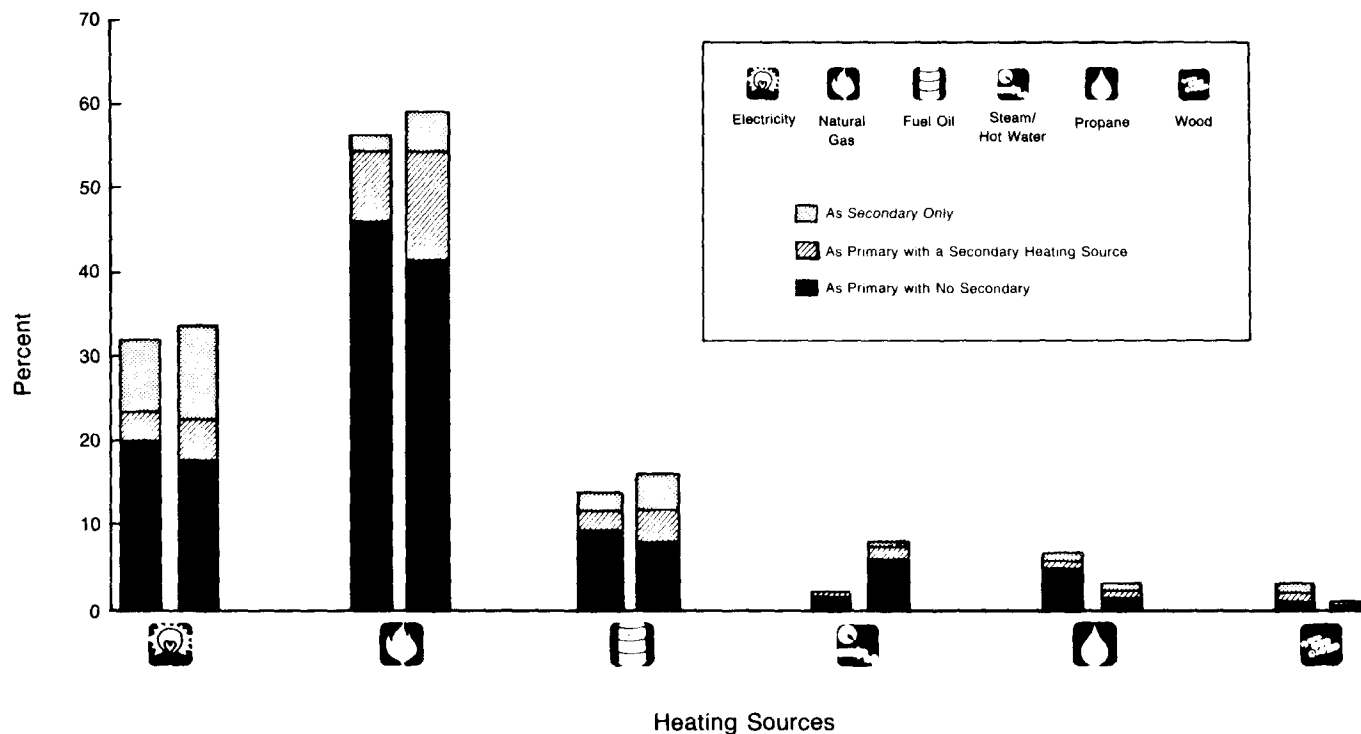
Primary and Secondary Heating Sources

For both space-heating and water-heating sources, the 1986 NBECS distinguished between primary and secondary heating use. Very few buildings reported secondary water-heating fuels. (See Table 2 above). For those that did have a secondary water heating source, the most common primary-secondary combination was natural gas with electricity.

As noted elsewhere, natural gas is the most common heating fuel. Among buildings using natural gas as a heating fuel, only a small fraction (3 per-

cent of the buildings, 8 percent of the floorspace) used this fuel only as a secondary, rather than primary, heating source (Figure 5). For electricity, a much larger fraction of the buildings using electricity for heat used it only for secondary heating (27 percent of the buildings, 33 percent of the floorspace). Fuel oil was the secondary heating fuel in a modest fraction (15 percent) of the buildings, where it was used for heat, and in a larger fraction of the floorspace (27 percent). District heat was the primary heat source in almost all of the buildings where it was supplied.

Figure 5. Primary and Secondary Heating Sources, Percent of Buildings and Floorspace



Note: The first bar for each heating source is for the percent of heated buildings using that source. The second bar is for the percent of floorspace in those buildings.
Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

District Heating and Cooling Systems

Previously, NBECS collected data on the use of purchased steam as an energy source. In 1986, questions on energy sources were expanded to cover more general district systems, including hot water and chilled water, as well as steam, and both purchased or nonpurchased district sources.

An estimated 85,000 commercial buildings in the United States used some form of district heating or cooling in 1986 (Table 6). About 80 percent of these

buildings (70,000) used district steam. District hot water and chilled water were used by 11,000 and 15,000 buildings, respectively. Most chilled water users also used either steam or hot water. Although only 2.1 percent of commercial buildings used some form of district heating or cooling, these buildings accounted for 8.3 percent of the commercial floorspace. District systems were most common in the Northeast Census region, and in metropolitan areas. Use of these systems was also more common among larger buildings, government-owned buildings, and inpatient health care and education buildings.

Table 6. District Heating and Cooling

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Using District Energy Sources				All Buildings	Using District Energy Sources				
		Any District Source	Steam	Hot Water	Chilled Water		Any District Source	Steam	Hot Water	Chilled Water	
RSE Column Factor:	0.331	1.140	1.250	1.708	1.856	0.312	0.900	0.999	1.566	1.523	
All Buildings.....	4,154	85	70	11	15	58,229	4,815	4,042	984	1,191	12.41
Building Floorspace (Square Feet)											
1,001 to 10,000.....	3,151	30	25	Q	Q	13,069	121	92	Q	Q	25.91
10,001 to 100,000.....	923	44	36	7	7	26,339	1,597	1,255	310	271	12.46
Over 100,000.....	80	11	9	3	3	18,821	3,098	2,695	662	889	16.96
Census Region											
Northeast.....	663	17	14	4	Q	11,830	1,388	1,141	361	200	19.84
Midwest.....	1,096	24	21	Q	7	16,034	1,838	1,767	Q	437	19.96
South.....	1,570	26	24	3	3	19,427	800	579	241	362	22.23
West.....	825	17	12	Q	Q	10,937	789	555	Q	Q	29.98
Year Constructed											
1960 or Before.....	1,950	45	38	7	7	24,340	2,389	2,119	498	421	16.16
1961 to 1986.....	2,205	39	32	4	8	33,889	2,426	1,923	486	770	17.78
Metropolitan Status											
Metropolitan.....	2,734	77	63	10	12	45,107	4,383	3,631	898	1,013	13.47
Nonmetropolitan.....	1,421	7	7	Q	Q	13,122	432	411	Q	Q	24.49
Ownership											
Nongovernment Owned.....	3,661	54	45	3	10	46,041	2,811	2,352	478	773	16.68
Government Owned.....	493	31	25	8	5	12,187	2,004	1,690	506	419	17.67

See footnotes at end of table.

Table 6. District Heating and Cooling (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Using District Energy Sources				All Buildings	Using District Energy Sources				
		Any District Source	Steam	Hot Water	Chilled Water		Any District Source	Steam	Hot Water	Chilled Water	
RSE Column Factor:	0.331	1.140	1.250	1.708	1.856	0.312	0.900	0.999	1.566	1.523	
Principal Building Activity											
Assembly.....	575	13	8	Q	Q	7,339	507	395	Q	Q	23.04
Education.....	241	9	7	Q	Q	7,321	824	690	Q	Q	24.20
Health Care (Inpatient).....	14	3	2	Q	1	1,757	543	404	Q	249	29.03
Mercantile and Service.....	1,287	11	11	Q	Q	12,805	178	153	Q	Q	26.42
Office.....	614	18	16	Q	4	9,546	1,522	1,294	Q	382	22.97
Warehouse.....	549	5	4	Q	Q	8,996	209	198	Q	Q	25.16
All Other Activities.....	873	25	22	Q	Q	10,465	1,031	908	Q	Q	19.62
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	85	70	11	15	57,036	4,815	4,042	984	1,191	12.40
Natural Gas.....	2,278	31	23	4	8	38,140	2,240	1,872	477	517	16.26
Fuel Oil.....	542	4	3	Q	Q	11,163	714	573	Q	Q	24.21
Propane.....	351	Q	Q	Q	NC	3,362	Q	Q	Q	NC	41.28
District Steam.....	70	70	70	3	6	4,042	4,042	4,042	381	723	18.89
District Hot Water.....	11	11	3	11	Q	984	984	381	984	354	26.15
District Chilled Water.....	15	15	6	Q	15	1,191	1,191	723	354	1,191	26.02

NC/ No cases in sample.

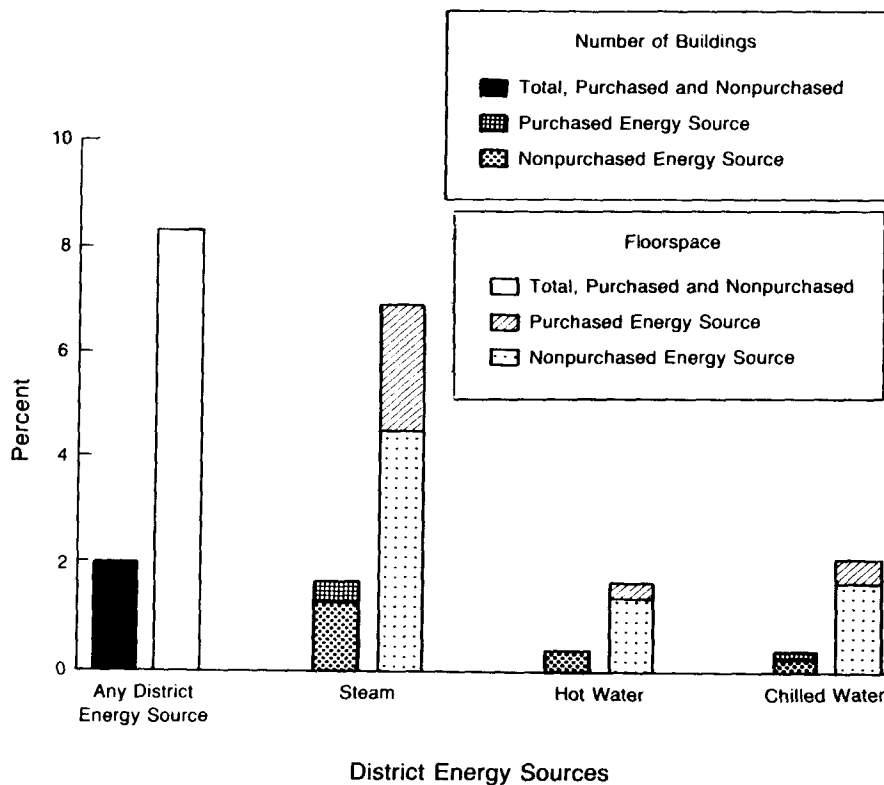
Q/ Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

For the majority of buildings using district hot water or chilled water, the energy source was not purchased (Figure 6). A nonpurchased supply is common if the steam, hot water, or chilled water is supplied by a central plant that is part of the same facility as the building. For steam, the fraction of buildings making payments for the energy source was higher than for the other district sources, but still only about one-quarter of the number of buildings using steam.

Figure 6. District Energy Sources, Percent of Buildings and Floorspace



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

Electricity Generation and Cogeneration

The 1986 NBECS included a new section on electricity generation designed to identify the primary way electric generators were used in commercial buildings, whether for emergency backup generation; during periods of high electricity demand; or for routine use. For buildings with routine or peaking electricity generation, a series of additional questions was designed to determine if the electricity generation was part of a cogeneration system, the amount of electricity generated during calendar year 1986, and the disposition of that electricity. Only a very limited number of buildings in the NBECS sample reported nonemergency electricity generation, with only one of these reporting the amount of electricity generated during the calendar year. (See Table 42 of the "Detailed Tables.")

Heating and Cooling Equipment

The 1986 NBECS included revised questions on heating and cooling production and distribution equipment. The main purpose of these revisions was to obtain more detail on features that previous NBECS had indicated could be distinguished by more appropriate question wording. The 1986 survey asked separately about the use of furnaces and boilers, which were treated as a single item in previous rounds. The current survey also collected more detailed information on cooling equipment, both production and distribution. Heat pumps were reported by many buildings under "other" heating equipment in earlier NBECS. For the 1986 NBECS, use of heat pumps was a specific questionnaire item.

The types of heating and cooling equipment used, and combinations of production with distribution and heating with cooling equipment are displayed in Tables 46 through 51 in "Detailed Tables." As was true in previous years, most heated buildings used furnaces or boilers. Nearly one-third of the heated buildings used individual space heaters or electric baseboards. Because the buildings using this type of equipment tend to be small, these buildings accounted for only about one-seventh of the total floorspace in heated buildings. For buildings that did not use stand-alone units, forced air was the most common type of distribution system for both heating and cooling.

The number of buildings with air-source heat pumps (319,000) was nearly twice the number estimated for all heat pumps in 1983 (169,000). The 1983 number was an underestimate, since it was based only on those buildings

also collected on the use of water-source heat pumps, but these data were determined to be unreliable, as discussed in Appendix B, "Sampling and Nonsampling Errors."

Energy Conservation Features

The 1986 NBECS included expanded questions on energy conservation features, to determine not only if each feature was present in the building, but also whether it was installed at the time of construction or added later. For features added after construction, information on when the feature was added was also obtained, and whether the addition was motivated by an energy audit or by cost savings.

The most common conservation features, in terms of both numbers of buildings (Table 7) and total floorspace (Table 8) were roof or ceiling insulation, weather stripping or caulking, regular maintenance of the HVAC system, and wall insulation. Each of these features was present in over 2 million buildings, representing over 40 billion square feet of floorspace for each of the first three features, and 29 billion square feet for wall insulation. As was true in earlier NBECS findings, conservation features were more common among larger buildings, so that the fraction of total floorspace of buildings having any particular feature is greater than the fraction of the number of buildings.

Features that were installed at the time of construction in over half the buildings where present included variable-air-volume HVAC systems, waste-heat recovery systems, natural lighting sensors, roof or ceiling insulation, wall insulation, storm windows, tinted or reflective glass, awnings or shades, and weather stripping. By contrast, high-efficiency ballasts, computerized energy management systems and delamping programs were added after construction in over half the buildings where these features were present. Saving money was reported as a reason for most additions of conservation features. In buildings that were audited, over half of the Energy Management and Control System (EMCS) and delamping programs were added in response to an audit; over one-quarter of the waste heat recovery systems, high-efficiency ballasts, other lighting controls, roof or ceiling insulation, and storm or multiple glazings were added in response to an audit.

As well as asking specifically about the presence of the conservation features listed in Tables 7 and 8, the 1986 NBECS asked respondents to identify any other conservation features that were present in the building. Responses to these open-ended questions are described in Appendix B, "Sampling and Nonsampling Errors."

Building Shell Construction Materials

One new feature in the 1986 NBECS was a group of questions on the building shell construction, including exterior wall materials, roof materials, and roof area. This topic area was added because the building shell can be an important determinant of total energy requirements in small buildings, which constitute the bulk of the commercial buildings population. Results from these question items are presented in Tables 29 through 32 of the "Detailed Tables."

Roughly three-quarters of all commercial buildings have exterior walls made of either masonry or siding, over a masonry or wood frame. Solid masonry walls enclose 1.5 million buildings, and wood frames are found in nearly another 1.5 million, about evenly split between masonry and siding exteriors. Steel frames, usually with masonry exterior, are found in only 300,000 buildings, only 7 percent of the total. In terms of floorspace, steel-framed buildings account for about 18 percent of the commercial total. In larger buildings, those over 200,000 square feet, steel frames are roughly as common as masonry. Wood frames are found mainly in smaller buildings.

The two most common types of roofs are built-up (1.8 million buildings) and shingled (1.1 million buildings). In terms of floorspace, built-up predominates; over half the total commercial square footage (32.9 billion) is in buildings with this type of roof.

The basic materials in the building shell are related to the presence of shell conservation features, as indicated in Tables 53 and 54 in the "Detailed Tables." For example, wall insulation is present in only 36 percent of the buildings with solid masonry walls (masonry over masonry frame) as compared with 56 percent of wood-frame and 57 percent of steel-frame buildings.

Table 7. Conservation Additions, Number of Buildings
(Thousand)

Building Characteristics	All Buildings With Feature	Installed at Time of Construction	Added After Construction	Added Before 1980	Added to 1980 to 1985	Added in 1986	Added to Save Money	Buildings That Were Audited			RSE Row Factor
								All Buildings with Feature	Added After Construction	Added in Response to Audit	
RSE Column Factor:	0.566	0.758	0.738	1.308	0.971	1.626	0.801	0.853	1.219	1.835	
HVAC Conservation Features											
VAV.....	547	374	173	61	85	26	118	115	43	13	12.09
Preventive Maintenance Program.....											
Waste Heat Recovery.....	2,076	1,258	818	318	375	124	564	409	167	37	6.44
EMCS.....	149	89	59	11	34	14	51	40	22	12	20.66
Other HVAC Features.....	205	66	139	8	94	37	132	78	62	37	12.51
	158	53	105	23	71	11	97	51	39	18	16.44
Lighting Conservation Features											
High-Efficiency Ballasts....	1,019	458	561	122	343	97	430	228	153	59	7.71
Delamping Program.....	331	104	227	56	134	37	207	123	89	50	10.41
Natural Lighting Control											
Sensors.....	156	86	70	11	46	13	48	37	20	6	19.42
Other Lighting Controls.....	421	229	191	59	108	25	159	134	68	30	11.24
Other Lighting Features.....	78	31	47	12	22	13	42	19	14	9	22.36
Building Shell Conservation Features											
Roof or Ceiling Insulation..	2,757	1,930	827	309	391	126	688	416	140	47	6.71
Wall Insulation.....	2,009	1,548	462	155	218	88	399	286	65	15	9.33
Storm or Multiple Glazing...	1,252	763	489	212	211	66	395	208	85	35	8.46
Tinted, Reflective or Shading Glass or Film.....	891	557	333	92	187	54	219	166	72	18	10.00
Exterior or Interior Shadings or Awnings.....											
Weather Stripping or Caulking.....	1,272	757	515	204	229	82	274	197	78	10	9.15
Other Shell Features.....	2,562	1,655	906	247	451	208	768	398	154	44	7.01
	112	50	61	15	33	Q	51	22	13	Q	21.81
Other Conservation Features...	90	41	48	15	26	8	48	27	14	9	19.30

Q/ Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.
 Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 8. Conservation Additions, Floorspace
(Million Square Feet)**

Building Characteristics	All Buildings With Feature	Installed at Time of Construction	Added After Construction	Added Before 1980	Added 1980 to 1985	Added in 1986	Added to Save Money	Buildings That Were Audited			RSE Row Factor
								All Buildings with Feature	Added After Construction	Added in Response to Audit	
RSE Column Factor:	0.572	0.828	0.735	1.284	0.977	1.808	0.813	0.848	1.088	1.687	
HVAC Conservation Features											
VAV.....	14,743	10,614	4,130	1,014	2,402	713	3,041	6,045	2,050	913	12.67
Preventive Maintenance Program.....	40,914	26,719	14,194	5,556	6,197	2,397	9,564	14,563	4,925	1,190	7.23
Waste Heat Recovery.....	6,492	4,414	2,079	419	1,322	337	1,934	3,248	1,154	629	17.33
EMCS.....	11,070	4,121	6,949	775	4,892	1,282	6,716	6,298	4,378	2,707	10.60
Other HVAC Features.....	6,025	2,406	3,618	770	2,570	278	3,471	3,148	2,011	1,012	15.60
Lighting Conservation Features											
High-Efficiency Ballasts....	24,431	10,284	14,147	3,276	8,556	2,315	12,147	9,503	6,680	2,265	8.50
Delamping Program.....	12,005	3,992	8,013	2,633	4,579	802	7,479	6,763	4,914	2,884	9.83
Natural Lighting Control Sensors.....	5,364	3,085	2,279	302	1,661	315	1,830	2,079	920	419	16.97
Other Lighting Controls.....	12,603	7,386	5,217	1,595	3,129	493	4,692	5,989	2,667	1,231	10.52
Other Lighting Features.....	2,074	660	1,415	463	672	280	1,359	1,038	840	508	20.35
Building Shell Conservation Features											
Roof or Ceiling Insulation..	42,356	30,980	11,376	3,419	6,352	1,606	9,027	13,393	3,978	1,011	7.87
Wall Insulation.....	29,232	24,078	5,155	1,817	2,659	679	4,616	8,655	1,296	278	11.33
Storm or Multiple Glazing...	21,757	14,796	6,961	2,826	3,388	747	6,053	6,417	2,258	755	10.03
Tinted, Reflective or Shading Glass or Film.....	20,526	14,187	6,339	1,515	3,852	972	4,621	7,625	2,895	700	11.24
Exterior or Interior Shadings or Awnings.....	20,651	13,785	6,865	2,588	3,320	958	4,243	6,594	2,299	316	9.12
Weather Stripping or Caulking.....	41,429	28,465	12,964	3,536	6,562	2,865	10,998	13,055	4,270	966	7.84
Other Shell Features.....	1,740	843	898	177	581	Q	786	518	323	Q	22.86
Other Conservation Features...	2,480	983	1,497	312	819	Q	1,475	1,459	913	469	21.65

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

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Special Measures of Occupancy

For five building activities, the 1986 NBECS collected information on a special measure relating to the intensity of use of the building; for example, classroom seating capacity was collected for education buildings (Table 9). The total seating capacity for the 241,000 buildings in which education was the principal building activity was 79,377,000 seats. This total excludes any educational seating capacity in buildings in which the principal building activity was not education, such as a library. For the other measures of size, the aggregates are similarly restricted to buildings with the relevant principal building activity. Conversely, the total floorspace for each principal activity category includes all floorspace in the building, including space used for other activities. Thus, for example, the aggregate ratio of 92 square feet per education seat includes all square footage in education buildings, not just classroom floorspace.

Operating Schedules

The 1986 NBECS collected data on opening and closing times of buildings, not just total hours open each day, as was collected in the previous NBECS. From the new data on operating schedules, buildings have been grouped into six categories based on the times open and closed during a typical week (Table 10). The percent of all commercial buildings open continuously (8 percent) was about the same as the percent that remained closed continuously. However, since larger buildings were more likely to be open continuously, 13 percent of the floorspace was contained in buildings that were open continuously, versus 5 percent in buildings that were closed continuously.

There were natural relationships between the principal building activity and operating schedules. For example, most mercantile and service buildings

Table 9. Special Measures of Occupancy

Building Characteristics	Number of Buildings (thousand)	Total Floorspace (million square feet)	Occupancy Measure (thousand)	Floorspace per Unit Occupancy Measure ^{a/}	RSE Row Factor
RSE Column Factor:	1.102	1.184	1.107	0.692	
Principal Building Activity					
Education.....	241	7,321	79,377 Classroom Seats	92 Square Feet per Classroom Seat	6.30
Food Services.....	201	1,281	24,163 Seating Capacity	53 Square Feet per Seat	9.34
Health Care (inpatient).....	14	1,757	1,690 Beds	1,040 Square Feet per Bed	14.87
Skilled Nursing.....	13	605	1,340 Beds	452 Square Feet per Bed	20.00
Lodging.....	123	2,179	4,210 Guest Rooms	518 Square Feet per Guest Room	8.93

^{a/} Floorspace per Unit Occupancy Measure was computed using all of the floorspace within the building, including floorspace not occupied by seats, beds or guests.

^{q/} Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

(51 percent) were open Monday through Saturday, while most office buildings (61 percent) were open Monday through Friday. Most lodging buildings and public order and safety buildings were open continuously (82 and 67 percent, respectively). By contrast, most vacant buildings (67 percent)

were continuously closed. Assembly buildings were the only type for which the majority of buildings (54 percent) fell in the "other schedule" category, rather than having a standard 5-, 6-, or 7-day per week schedule.

Table 10. Weekly Operating Schedules

Building Characteristics	All Buildings	Closed All Week	Open 1 to 23 Hours per Day			Open 24 Hours per Day All Week	Other Schedule	RSE Row Factor
			Monday to Friday	Monday to Saturday	Monday to Sunday			
RSE Column Factor:	0.511	1.441	0.825	0.909	1.120	1.148	1.409	
Number of Buildings (thousand)								
All Buildings.....	4,154	336	1,173	1,123	720	347	456	5.85
Principal Building Activity								
Assembly.....	575	34	40	40	125	23	313	13.85
Education.....	241	NC	192	16	10	Q	22	16.67
Food Sales.....	102	NC	Q	23	53	22	Q	21.78
Food Services.....	201	Q	Q	37	139	Q	Q	14.17
Health Care.....	52	Q	18	15	Q	12	Q	24.01
Lodging.....	137	Q	NC	NC	18	112	Q	17.44
Mercantile and Service.....	1,287	Q	244	651	267	56	51	9.87
Office.....	614	Q	375	164	45	12	Q	13.85
Public Order and Safety.....	55	Q	Q	Q	Q	37	NC	18.08
Warehouse.....	549	93	213	130	37	42	35	13.43
Other.....	103	Q	38	12	Q	18	Q	27.34
Vacant.....	238	159	34	32	Q	Q	Q	16.38
Building Floorspace (Square Feet)								
1,001 to 10,000.....	3,151	289	802	903	562	234	361	7.02
10,001 to 100,000.....	923	45	338	205	148	99	88	8.29
Over 100,000.....	80	2	33	14	11	14	7	14.64
Weekly Operating Hours								
39 or Fewer.....	870	336	140	46	35	--	314	12.07
40 to 48.....	1,086	--	785	235	25	--	41	10.27
49 to 60.....	919	--	185	597	91	--	46	10.28
61 to 84.....	556	--	52	204	279	--	22	11.59
85 to 167.....	375	--	11	40	291	--	33	15.80
168 (Open Continuously).....	347	--	--	--	--	347	--	9.02

See footnotes at end of table.

Table 10. Weekly Operating Schedules (continued)

Building Characteristics	All Buildings	Closed All Week	Open 1 to 23 Hours per Day			Open 24 Hours per Day All Week	Other Schedule	RSE Row Factor
			Monday to Friday	Monday to Saturday	Monday to Sunday			
RSE Column Factor:	0.511	1.441	0.825	0.909	1.120	1.148	1.409	
Total Floorspace (million square feet)								
All Buildings.....	58,229	2,856	21,274	12,068	9,256	7,696	5,079	6.42
Principal Building Activity								
Assembly.....	7,339	186	887	532	1,956	528	3,249	17.43
Education.....	7,321	NC	5,405	1,179	318	Q	334	17.65
Food Sales.....	712	NC	Q	144	324	185	Q	23.91
Food Services.....	1,281	Q	Q	122	840	Q	Q	16.26
Health Care.....	2,107	Q	178	64	Q	1,795	Q	29.96
Lodging.....	2,785	Q	NC	NC	195	2,525	Q	17.92
Mercantile and Service.....	12,805	Q	2,567	4,918	4,432	479	329	14.87
Office.....	9,546	Q	5,923	2,703	456	288	Q	14.73
Public Order and Safety.....	680	Q	Q	Q	Q	458	NC	27.38
Warehouse.....	8,996	477	4,848	1,771	425	586	889	18.01
Other.....	1,726	Q	725	284	Q	473	Q	31.22
Vacant.....	2,931	1,861	490	335	Q	Q	Q	19.67
Building Floorspace (Square Feet)								
1,001 to 10,000.....	13,069	1,049	3,472	3,680	2,350	942	1,575	7.06
10,001 to 100,000.....	26,339	1,229	10,334	5,206	4,153	3,029	2,387	8.79
Over 100,000.....	18,821	577	7,467	3,181	2,753	3,726	1,117	14.79
Weekly Operating Hours								
39 or Fewer.....	9,286	2,856	2,672	405	501	--	2,852	13.43
40 to 48.....	15,167	--	12,629	1,888	281	--	369	12.35
49 to 60.....	10,805	--	3,805	5,563	1,018	--	419	11.83
61 to 84.....	9,760	--	1,630	3,346	4,330	--	453	15.85
85 to 167.....	5,514	--	538	865	3,126	--	986	16.74
168 (Open Continuously).....	7,696	--	--	--	--	7,696	--	12.27

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Vacant Buildings

Buildings with more floorspace classified as vacant than was devoted to any other commercial activity were assigned to the vacant principal building activity category. There were 238,000 vacant commercial buildings in the United States at the close of 1986, and these buildings encompassed 2,931 million square feet, 5.0 percent of the total commercial floorspace. Of these buildings, 220,000, containing 2,706 million square feet, were predominantly vacant, that is, over 50 percent vacant.

For predominantly vacant buildings, the previous or intended use of the building was determined, in terms of the same activity categories used for nonvacant buildings. These uses were then grouped into five categories (Table 11): office, mercantile, warehouse, industrial, and other uses (including multiple uses).

In terms of the number of buildings, the mercantile and service group was the largest single category, accounting for almost one-third of the predominantly vacant buildings. In terms of floorspace in these buildings, mercantile and service, industrial and warehouse groups were comparable, each accounting for about one-quarter of the total, while the office group was a smaller fraction.

Compared to the number and floorspace of nonvacant buildings in the corresponding principal building activity categories, the mercantile and service, office, and warehouse groups were each about 5 percent as large; that is, of the buildings whose current, previous, or intended use is one of these three types, about 5 percent in each category were predominantly vacant.

Industrial buildings are covered by the NBECS only if predominantly vacant at the time of interview, so that a similar comparison is not possible for this group.

The designation of the principal building activity, including vacant, was based on the predominant activity in the building at the time of the interview. This definition of vacancy identifies the proportion of the building stock vacant at one point in time. The 1986 NBECS also ascertained whether any space had been vacant at least three months during 1986, and if so, what percent of the building had been vacant (Table 12). This determination was not made, however, for buildings that were neither heated or cooled. Part-year vacancy would affect energy consumption relatively little in such buildings. Buildings that were either heated or cooled, for which part-year vacancy data was determined, account for 90 percent of the total buildings and 94 percent of the total floorspace. Of these buildings, about 18 percent had some floorspace vacant for at least three months during 1986. Higher rates were observed for the most recently constructed buildings (24 percent of the 1984 to 1986 vintage buildings). Slightly lower rates were observed in the Northeast and slightly higher rates in the West, but those differences were not statistically significant.

Census Division

The 1986 NBECS sample was designed to permit publishing data at the Census division level. A map of the four Census regions and the nine Census divisions appears in Appendix E, "U.S. Census Regions and Divisions." The division-level data appear in Tables 13 and 14 of the "Detailed Tables."

Table 11. Previous or Intended Use of Predominantly Vacant Buildings

Building Characteristics	All Predominantly Vacant Buildings @/	Previous or Intended Use					RSE Row Factor
		Office	Mercantile	Industrial	Warehouse	All Other Uses	
RSE Column Factor:	0.599	1.004	0.977	1.148	1.443	1.027	
Number of Buildings (thousand)							
All Buildings.....	220	33	66	29	32	65	16.79
Building Floorspace (Square Feet)							
1,001 to 10,000.....	169	26	53	Q	Q	55	20.66
10,001 to 100,000.....	49	6	Q	11	11	10	23.19
Over 100,000.....	3	Q	Q	Q	Q	Q	51.38
Year Constructed							
1960 or Before.....	137	15	41	18	16	49	21.05
1961 to 1986.....	83	18	25	11	Q	Q	24.98
Census Region							
Northeast.....	25	Q	Q	Q	Q	Q	49.22
Midwest.....	66	Q	Q	Q	Q	23	33.96
South.....	80	Q	27	Q	Q	20	21.43
West.....	50	8	23	Q	Q	Q	40.80
Metropolitan Status							
Metropolitan.....	140	24	37	17	25	40	18.43
Nonmetropolitan.....	81	Q	29	Q	Q	25	32.96
Total Floorspace (million square feet)							
All Buildings.....	2,706	397	634	706	575	597	19.25
Building Floorspace (Square Feet)							
1,001 to 10,000.....	653	107	203	Q	Q	208	23.53
10,001 to 100,000.....	1,410	194	Q	371	330	290	25.28
Over 100,000.....	643	Q	Q	Q	Q	Q	49.17

See footnotes at end of table.

Table 11. Previous or Intended Use of Predominantly Vacant Buildings (continued)

Building Characteristics,	All Predominantly Vacant Buildings ^{a/}	Previous or Intended Use					RSE Row Factor
		Office	Mercantile	Industrial	Warehouse	All Other Uses	
RSE Column Factor:	0.599	1.004	0.977	1.148	1.443	1.027	
Total Floorspace (million square feet)							
Year Constructed							
1960 or Before.....	1,734	148	442	372	400	393	23.33
1961 to 1986.....	973	249	192	334	Q	Q	26.11
Census Region							
Northeast.....	532	Q	Q	Q	Q	Q	61.07
Midwest.....	698	Q	Q	Q	Q	170	33.49
South.....	868	Q	242	Q	Q	202	29.56
West.....	608	137	203	Q	Q	Q	35.11
Metropolitan Status							
Metropolitan.....	2,086	362	471	489	527	434	22.53
Nonmetropolitan.....	620	Q	163	Q	Q	162	31.94

^{a/} "Predominantly Vacant" refers to buildings in which more than 50 percent of the floorspace was vacant at time of interview.

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 12. Buildings Vacant at Least Three Months

Building Characteristics	All Buildings	All Buildings with Heating or Cooling Capability ^{a/}	Percent Vacant for at Least Three Months					RSE Row Factor
			None	1 to 25	26 to 50	51 to 99	100	
RSE Column Factor:	0.497	0.499	0.553	1.487	1.691	1.895	1.527	
Number of Buildings (thousand)								
All Buildings.....	4,154	3,727	3,067	185	128	79	267	6.37
Reduced Heating or Cooling in Vacant Portion								
Yes.....	--	--	--	130	89	67	236	8.09
No.....	--	--	--	55	39	12	31	9.24
Building Floorspace (Square Feet)								
1,001 to 10,000.....	3,151	2,773	2,344	89	92	32	217	8.43
10,001 to 100,000.....	923	876	670	85	32	42	47	7.73
Over 100,000.....	80	78	54	11	5	5	3	14.79
Principal Building Activity								
Assembly.....	575	547	489	22	Q	Q	19	14.82
Education.....	241	238	173	Q	Q	6	50	13.88
Health Care.....	52	52	45	6	Q	Q	Q	27.79
Mercantile and Service.....	1,287	1,230	1,068	55	44	Q	49	10.77
Office.....	614	614	487	62	36	12	16	12.09
Warehouse.....	549	346	286	18	14	10	19	14.96
Other Building Activities.....	597	554	483	15	Q	Q	38	11.93
Vacant.....	238	147	37	Q	Q	16	75	16.58
Year Constructed								
1960 or Before.....	1,950	1,751	1,424	75	82	46	124	8.97
1961 to 1983.....	1,895	1,714	1,444	98	36	23	114	8.94
1984 to 1986.....	309	261	199	12	10	10	29	14.65
Census Region								
Northeast.....	663	604	517	30	16	15	26	13.78
Midwest.....	1,096	973	798	50	36	23	67	12.73
South.....	1,570	1,433	1,190	60	50	28	104	10.50
West.....	825	717	563	44	26	13	71	16.58

See footnotes at end of table.

Table 12. Buildings Vacant at Least Three Months (continued)

Building Characteristics	All Buildings	All Buildings with Heating or Cooling Capability ^{a/}	Percent Vacant for at Least Three Months					RSE Row Factor
			None	1 to 25	26 to 50	51 to 99	100	
RSE Column Factor:	0.497	0.499	0.553	1.487	1.691	1.895	1.527	
Total Floorspace (million square feet)								
All Buildings.....	58,229	55,016	40,740	7,124	2,327	2,231	2,595	6.43
Reduced Heating or Cooling in Vacant Portion								
Yes.....	--	--	--	5,186	1,884	1,901	2,332	8.94
No.....	--	--	--	1,938	443	330	263	10.30
Building Floorspace (Square Feet)								
1,001 to 10,000.....	13,069	11,735	9,916	480	417	153	769	8.44
10,001 to 100,000.....	26,339	24,925	18,806	2,724	925	1,221	1,250	7.62
Over 100,000.....	18,821	18,356	12,018	3,919	985	858	577	13.68
Principal Building Activity								
Assembly.....	7,339	7,162	6,297	486	Q	Q	153	16.64
Education.....	7,321	7,316	6,001	Q	Q	430	578	14.77
Health Care.....	2,107	2,107	1,586	480	Q	Q	Q	31.42
Mercantile and Service.....	12,805	12,562	9,141	2,400	535	Q	253	14.15
Office.....	9,546	9,546	5,608	2,493	767	471	205	12.29
Warehouse.....	8,996	7,373	5,916	593	262	363	240	17.85
Other Building Activities.....	7,184	6,947	5,777	403	Q	Q	218	15.36
Vacant.....	2,931	2,003	413	Q	Q	428	942	19.00
Year Constructed								
1960 or Before.....	24,340	22,573	17,070	2,307	952	1,160	1,084	9.97
1961 to 1983.....	29,211	28,103	21,079	4,330	887	690	1,117	10.28
1984 to 1986.....	4,678	4,341	2,591	487	488	381	394	16.37
Census Region								
Northeast.....	11,830	11,356	8,731	1,607	334	315	368	13.54
Midwest.....	16,034	15,303	11,068	2,173	576	777	709	12.11
South.....	19,427	18,080	13,807	1,847	738	687	1,000	10.71
West.....	10,937	10,278	7,133	1,497	678	452	518	15.68

^{a/} Percent vacant for at least three months was determined only for buildings with heating or cooling capability.

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Detailed Tables

The tables that follow present detailed characteristics of commercial buildings based on the 1986 NBECS data. The Glossary contains the definitions of terms used in the tables.

Table Organization

The title of each table indicates what building characteristic is broken down across the table columns. This characteristic is crossed with several others, broken down across the table rows. There is one standard set of row categories (stubs), which is augmented with selected variables for some tables. These additional categories are always listed first, followed by the standard set of row stubs, always in the same order to facilitate comparisons among tables. Generally, there are two tables for each topic--the first represents the number of buildings by the indicated topic, and the second the floorspace in those buildings. For some smaller tables, both the number of buildings and floorspace appear in a single table.

Tables have been grouped together to make it easier to find related information. The following Quick Reference to the Detailed Tables indicates for each topic which tables feature that topic across the columns. 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 15, but not in the building size Tables 16 and 17. The topics followed by an asterisk (*) are part of the standard set of row categories and are found on all Tables 13 through 62. Other topics listed below may be included as a row item on some tables.

Quick Reference to the Detailed Tables

Data Item/Category	Table Numbers (Number of Buildings, Floorspace)
Location	
Census Division	13, 14
Census Region*	13, 14
Climate Zone	15
Building Size*	16, 17
Building Use	
Employment Size	18, 19
Number of Workers*	20
Weekly Operating Hours*	21, 22
Occupancy*	
Government	25
Nongovernment	23, 24
Structure	
Year Constructed*	26, 27
Floors	28
Wall and Frame Materials	29, 30
Roof Materials	31, 32
Energy Sources and End Uses	
Energy Sources Used*	33, 34
Energy End Uses*	35
Space-Heating Energy Sources	36, 37
Cooling Energy Sources	38
Water-Heating Energy Sources	39, 40

Data Item/Category	Table Numbers (Number of Buildings, Floorspace)
End Sources and End Uses (continued)	
Cooking Energy Sources	41
Electricity-Generation Capability	42
End Use Intensity	
Percent Heated	43
Percent Cooled	44
Percent Lit	45
End Use Equipment	
Heat Production	46, 47
Cooling Production	48, 49
Heating and Cooling Distribution	50, 51
Conservation Features	
Summary	52
Building Shell	53, 54
HVAC	55, 56

Conservation Features (continued)

Lighting	57, 58
Energy Audit	59, 60
Occupant Control	61
Reduced Heating and Cooling During Off Hours	62

For a detailed crosswalk of data items on all the tables, see Appendix H, "Cross-Classification Matrix for the Detailed Tables."

Row and Column Factors

These tables present estimates of building characteristics 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 relative standard error (RSE) for each of the estimates in the detailed tables, row and column factors are displayed on the top line and in the far right column of each table. To calculate the RSE for a specific estimate, multiply the row factor by the column factor. (See Figure B1 and the related discussion in Appendix B for more details).

Table 13. Census Region and Division, Number of Buildings
(Thousand)

Building Characteristics	Census Region and Division														RSE Row Factor
	Northeast				Midwest			South				West			
	All Buildings	All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.411	0.823	1.491	0.961	0.759	0.878	1.300	0.693	1.046	1.306	1.104	1.048	1.859	1.169	
All Buildings.....	4,154	663	189	475	1,076	738	358	1,570	659	349	562	825	277	548	9.11
Window Glass: Percent of Exterior Walls															
25 or Less.....	3,522	560	155	405	940	631	309	1,355	559	296	500	666	248	418	9.78
26 to 50.....	524	88	29	59	124	85	39	181	84	41	56	131	26	104	14.55
51 to 75.....	82	12	Q	8	23	16	Q	26	11	Q	5	22	Q	19	28.89
Over 75.....	26	4	Q	Q	8	6	Q	8	Q	Q	Q	7	Q	Q	40.72
Wall and Frame Materials															
Masonry Over --															
Wood Frame.....	722	102	15	87	157	86	72	257	97	56	104	206	32	174	17.46
Masonry Frame.....	1,518	275	72	202	445	318	127	567	293	136	138	231	137	94	11.14
Steel Frame.....	303	51	20	31	62	44	18	137	66	22	48	54	24	30	18.73
Siding Over --															
Wood Frame.....	727	151	56	95	201	147	54	202	76	48	79	173	23	150	18.26
Masonry Frame.....	91	Q	Q	Q	25	19	Q	47	Q	Q	23	Q	Q	Q	31.55
Metal Panels.....	499	38	Q	25	136	77	58	253	76	59	117	74	Q	36	21.65
Concrete Panels.....	137	20	7	13	19	15	3	37	16	Q	19	60	Q	52	29.29
Other.....	157	16	Q	12	52	31	21	70	23	Q	33	19	Q	9	27.70
Roof Square Footage															
5,000 or Less.....	2,433	361	104	257	638	431	207	961	379	225	356	473	164	309	11.38
5,001 to 10,000.....	859	158	43	115	240	159	80	292	122	59	111	169	57	113	11.46
10,001 to 25,000.....	527	89	28	61	128	83	45	188	93	45	50	121	35	86	12.09
25,001 to 50,000.....	185	34	8	23	44	33	11	68	31	14	23	40	13	27	16.51
50,001 to 100,000.....	99	12	4	8	29	20	9	43	23	4	15	16	6	10	22.00
100,001 to 200,000.....	39	7	Q	6	12	9	4	14	8	Q	4	5	Q	4	28.28
Over 200,000.....	13	2	Q	2	5	3	2	4	3	Q	Q	2	Q	1	36.43
Roof Materials															
Built-Up.....	1,761	306	91	215	441	296	145	615	271	130	214	399	127	272	9.64
Shingles (Not Wood).....	1,117	190	52	138	342	248	94	412	186	109	117	173	52	120	15.69
Metal Surfacing.....	853	81	23	58	214	152	82	430	141	87	202	128	53	76	17.87
Synthetic or Rubber.....	131	34	15	19	45	31	14	31	17	Q	Q	21	14	8	25.29
Slate or Tile.....	114	29	5	24	20	Q	Q	29	20	Q	Q	36	Q	29	28.61
Wood Shingles, Shakes or Other Wooden Materials.....	114	Q	Q	Q	22	Q	Q	29	Q	Q	Q	51	Q	37	32.57
Other.....	64	11	Q	10	13	10	Q	23	Q	Q	Q	17	Q	Q	30.59

See footnotes at end of table.

Table 13. Census Region and Division, Number of Buildings (continued)
(Thousand)

Building Characteristics	Census Region and Division														RSE Row Factor
	All Buildings	Northeast			Midwest			South			West				
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.411	0.823	1.491	0.961	0.759	0.878	1.300	0.693	1.046	1.306	1.104	1.048	1.859	1.169	
Floors															
One.....	2,688	307	78	229	612	404	208	1,196	459	257	480	573	197	376	12.03
Two.....	978	173	51	122	327	218	108	290	145	76	68	188	60	128	11.18
Three.....	324	109	38	71	120	89	31	58	39	10	9	37	9	28	19.58
Over Three.....	165	75	22	53	38	27	11	26	16	Q	5	27	11	16	21.38
Percent Heated															
Not Heated.....	470	61	Q	52	125	84	41	156	66	Q	65	129	Q	94	21.79
1 to 50.....	601	85	23	62	148	108	40	268	114	66	88	100	32	68	15.72
51 to 99.....	458	76	25	51	98	69	29	169	69	36	64	115	29	87	17.91
100.....	2,625	442	131	310	725	478	247	977	410	222	345	481	182	300	8.98
Percent Cooled															
Not Cooled.....	1,248	269	85	184	419	303	116	293	131	55	107	268	60	207	15.84
1 to 50.....	972	170	44	126	272	184	88	388	176	92	120	142	48	94	11.17
51 to 99.....	500	78	18	60	116	82	35	200	81	43	76	105	35	71	16.42
100.....	1,435	147	42	104	289	170	119	688	271	158	259	311	134	176	11.39
Percent Lit--Open Hours															
Not Lit.....	231	32	Q	27	83	52	31	74	29	Q	33	42	Q	Q	28.49
1 to 50.....	624	134	23	111	200	136	64	209	103	37	70	81	24	57	16.47
51 to 99.....	644	111	17	94	174	112	62	222	104	51	67	137	48	89	17.34
100.....	2,655	386	144	242	639	439	200	1,065	424	249	392	565	179	386	10.37
Building Floorspace (Square Feet)															
1,001 to 5,000.....	2,220	298	75	223	559	378	181	905	361	193	351	458	161	298	12.12
5,001 to 10,000.....	931	183	56	127	277	180	97	312	118	75	119	158	53	105	12.45
10,001 to 25,000.....	557	90	31	58	147	98	49	200	99	51	50	120	34	85	11.95
25,001 to 50,000.....	242	53	15	39	56	43	13	83	44	19	20	51	18	33	14.00
50,001 to 100,000.....	123	21	7	14	33	24	9	47	25	7	15	22	7	15	18.62
100,001 to 200,000.....	52	10	3	8	15	9	7	14	8	2	4	12	3	9	20.00
200,001 to 500,000.....	23	6	1	5	7	4	2	7	4	Q	2	3	1	2	22.87
Over 500,000.....	6	2	Q	1	2	1	Q	1	1	Q	*	1	Q	1	33.30

See footnotes at end of table.

Table 13. Census Region and Division, Number of Buildings (continued)
(Thousand)

Building Characteristics	Census Region and Division														RSE Row Factor
	Northeast				Midwest			South			West				
	All Buildings	All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.411	0.823	1.491	0.961	0.759	0.878	1.300	0.693	1.046	1.306	1.104	1.048	1.859	1.169	
Heat Production Equipment															
Warm-Air Furnaces.....	1,793	251	65	186	629	418	212	577	207	144	225	335	133	202	12.51
Boilers.....	627	253	89	163	184	140	44	115	67	27	20	75	36	39	14.62
Individual Space Heaters or Electric Baseboards.....	1,062	152	39	112	264	178	86	439	177	114	149	208	72	135	14.59
Packaged Heating Units.....	540	59	11	48	97	63	34	214	88	35	91	170	47	123	17.95
Air-Source Heat Pumps.....	319	37	Q	30	36	23	Q	194	120	50	24	53	17	36	21.58
Receives District Heat.....	76	17	5	12	22	12	10	25	11	Q	Q	11	6	6	34.11
Cooling Production Equipment															
Central Cooling.....	1,111	140	39	102	287	179	109	532	191	126	214	151	68	84	12.34
Individual Air Conditioners.....	923	181	46	135	254	165	89	373	164	100	109	115	31	84	14.31
Packaged Air-Conditioning Units.....	730	112	28	84	148	103	45	264	116	49	99	205	69	136	14.03
Air-Source Heat Pumps.....	319	37	Q	30	36	23	Q	194	120	50	24	53	17	36	21.58
Receives District Chilled Water.....	15	Q	Q	Q	6	Q	4	3	Q	Q	Q	Q	Q	Q	56.71
Heat Distribution Equipment															
Ducted Forced Air.....	2,522	356	91	265	655	439	217	1,016	435	230	351	494	176	319	9.14
Heating Only.....	597	139	41	98	242	186	56	109	57	25	27	106	25	81	19.04
Heating and Cooling.....	1,768	177	37	141	386	232	154	844	349	193	302	360	129	231	9.33
VAV Used.....	547	59	17	43	129	80	49	222	102	40	80	137	42	95	15.94
Steam Radiators or Baseboards.....	229	102	32	70	72	55	17	36	20	11	Q	19	12	7	22.47
Hot Water Radiators or Baseboards.....	271	120	48	71	89	66	23	37	31	Q	Q	25	14	11	19.93
Fan-Coil Units.....	411	87	25	62	93	70	23	142	63	25	55	89	35	54	16.97
Heating Only.....	195	51	15	35	54	47	7	49	24	Q	14	41	16	25	24.66
Heating and Cooling.....	166	26	9	18	35	20	15	73	25	14	35	32	12	20	21.48
Heating Panels.....	200	32	9	23	55	39	16	41	13	18	Q	72	24	48	23.00
Other.....	7	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	Q	Q	Q	56.39

See footnotes at end of table.

Table 13. Census Region and Division, Number of Buildings (continued)
(Thousand)

Building Characteristics	Census Region and Division														RSE Row Factor
	Northeast				Midwest			South				West			
	All Buildings	All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.411	0.823	1.491	0.961	0.759	0.878	1.300	0.693	1.046	1.306	1.104	1.048	1.859	1.169	
Cooling Distribution Equipment															
Ducted Forced Air.....	2,522	356	91	265	655	439	217	1,016	435	230	351	494	176	319	9.14
Cooling Only.....	157	39	12	27	27	20	7	63	30	Q	21	28	21	6	24.25
Heating and Cooling.....	1,768	177	37	141	386	232	154	844	349	193	302	360	129	231	9.33
VAV Used.....	547	59	17	43	129	80	49	222	102	40	80	137	42	95	15.94
Fan-Coil Units.....	411	87	25	62	93	70	23	142	63	25	55	89	35	54	16.97
Cooling Only.....	51	10	Q	Q	Q	Q	Q	20	Q	Q	Q	16	Q	Q	39.42
Heating and Cooling.....	166	26	9	18	35	20	15	73	25	14	35	32	12	20	21.48
Other.....	Q	Q	NC	Q	Q	Q	Q	Q	Q	NC	NC	Q	Q	NC	64.06
Lighting Equipment Types (Solely or in Combination)															
Standard Fluorescent.....	2,558	399	116	283	704	481	223	1,025	438	229	358	430	147	283	9.69
Energy Efficient Fluorescent.....	1,064	198	56	142	214	149	65	355	134	75	146	297	83	214	11.36
Standard Incandescent.....	1,636	259	70	190	510	352	158	580	247	128	205	287	92	194	11.41
Energy Efficient Incandescent.....	399	79	13	66	93	71	23	140	47	36	57	87	25	62	19.19
High-Intensity Discharge.....	251	36	9	27	63	40	22	101	34	23	44	51	16	35	21.85
Other.....	54	Q	Q	Q	Q	Q	Q	15	Q	Q	Q	20	Q	Q	51.13
Conservation Features															
Any Conservation Feature....	3,631	593	165	428	952	652	300	1,382	599	319	463	705	245	460	8.68
Building Shell.....	3,484	550	157	394	930	633	297	1,341	579	312	450	663	237	426	8.68
HVAC.....	2,155	442	121	320	546	380	166	726	341	158	227	442	165	277	9.08
Lighting.....	1,442	261	65	196	332	230	103	493	217	101	175	356	117	239	10.60
Metropolitan Status															
Metropolitan.....	2,734	519	142	377	592	469	122	1,005	415	203	387	618	133	485	9.65
Nonmetropolitan.....	1,421	144	47	98	504	269	235	565	244	145	175	207	144	Q	18.73
Climate Zone: 45 Year Average															
Under 2,000 CDD and --															
Over 7,000 HDD.....	419	75	75	NC	309	195	114	NC	NC	NC	NC	34	30	Q	30.20
5,500-7,000 HDD.....	930	328	113	214	509	425	83	NC	NC	NC	NC	93	93	NC	13.93
4,000-5,499 HDD.....	865	260	NC	260	266	Q	148	224	153	Q	NC	115	NC	115	34.13
Under 4,000 HDD.....	1,022	NC	NC	NC	Q	NC	Q	558	273	191	94	452	Q	391	32.10
2,000 CDD or More and --															
Under 4,000 HDD.....	919	NC	NC	NC	NC	NC	NC	788	234	86	468	131	Q	38	23.46

See footnotes at end of table.

Table 13. Census Region and Division, Number of Buildings (continued)
(Thousand)

Building Characteristics	Census Region and Division														RSE Row Factor
	Northeast			Midwest			South			West					
	All Buildings	All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.411	0.823	1.491	0.961	0.759	0.878	1.300	0.693	1.046	1.306	1.104	1.048	1.859	1.169	
Principal Building Activity															
Assembly.....	575	71	26	45	156	109	46	241	99	56	85	108	46	62	15.71
Education.....	241	29	6	23	42	23	19	80	30	16	34	90	19	71	18.11
Food Sales.....	102	Q	Q	Q	23	Q	Q	47	21	Q	Q	Q	Q	Q	32.11
Food Services.....	201	40	Q	35	63	43	Q	58	26	Q	Q	40	Q	28	18.63
Health Care.....	52	10	Q	9	9	8	Q	17	8	Q	Q	17	Q	12	32.49
Lodging.....	137	22	Q	15	30	17	13	53	32	10	11	31	Q	22	25.39
Mercantile and Service.....	1,287	227	74	153	349	224	125	481	196	101	184	231	80	150	11.57
Office.....	614	91	30	61	153	109	44	238	105	60	73	131	41	91	14.91
Public Order and Safety.....	55	13	Q	Q	Q	Q	Q	18	Q	Q	Q	Q	Q	Q	32.89
Warehouse.....	549	99	24	75	154	104	50	219	83	53	83	77	23	55	15.95
Other.....	103	17	Q	12	30	22	Q	31	16	Q	Q	24	Q	14	32.26
Vacant.....	238	27	Q	21	73	55	Q	87	33	Q	41	52	Q	28	22.56
Year Constructed															
1900 or Before.....	188	62	17	45	89	65	24	18	Q	Q	Q	18	Q	Q	29.46
1901 to 1920.....	255	73	25	48	82	53	30	66	24	Q	30	34	Q	18	25.48
1921 to 1945.....	629	118	35	84	178	126	52	201	91	49	61	131	39	92	13.78
1946 to 1960.....	878	127	28	99	203	142	61	361	145	57	159	187	49	138	15.43
1961 to 1970.....	730	103	29	73	191	133	58	284	121	72	91	152	56	96	15.61
1971 to 1973.....	243	29	Q	22	86	58	28	89	45	20	24	40	10	30	19.57
1974 to 1979.....	572	68	18	50	133	84	48	244	96	60	88	128	43	84	13.00
1980 to 1983.....	350	42	15	27	64	39	25	170	63	41	66	75	24	50	16.57
1984 to 1986.....	309	42	15	27	70	38	32	137	61	36	40	60	30	30	18.60
Ownership and Occupancy															
Nongovernment Owned.....	3,661	587	167	421	988	662	327	1,395	569	316	510	691	231	460	9.23
Owner Occupied.....	2,396	430	121	309	706	485	220	870	336	225	309	391	142	249	10.97
Nonowner Occupied.....	1,265	158	45	112	282	176	106	525	233	91	201	300	89	211	11.27
Government Owned.....	493	76	22	54	108	77	31	175	90	33	52	134	46	88	15.52
Workers															
Fewer than 5.....	2,033	275	75	200	606	408	198	789	297	160	331	364	137	227	13.13
5 to 9.....	842	136	34	101	192	131	61	324	144	78	101	191	59	132	11.76
10 to 19.....	587	118	31	87	139	91	48	205	96	47	62	126	41	85	14.77
20 to 49.....	434	87	30	56	102	71	31	159	72	47	40	86	27	59	13.71
50 to 99.....	152	27	11	16	31	23	8	58	29	7	21	35	9	27	19.23
100 to 249.....	73	14	5	9	18	10	8	27	16	7	3	14	Q	13	19.81
250 or More.....	33	7	2	5	8	5	3	10	5	2	3	8	2	6	23.52

See footnotes at end of table.

**Table 13. Census Region and Division, Number of Buildings (continued)
(Thousand)**

Building Characteristics	Census Region and Division															RSE Row Factor
	All Buildings	Northeast			Midwest			South			West					
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific		
RSE Column Factor:	0.411	0.823	1.491	0.961	0.759	0.878	1.300	0.693	1.046	1.306	1.104	1.048	1.859	1.169		
Weekly Operating Hours																
39 or fewer.....	870	102	26	77	269	188	81	339	134	76	129	160	67	93	18.54	
40 to 48.....	1,086	146	44	103	239	164	75	464	193	106	164	238	81	157	11.33	
49 to 60.....	919	179	62	117	245	158	87	323	126	77	120	171	50	121	11.37	
61 to 84.....	556	117	29	89	148	103	45	197	78	40	80	94	29	65	15.59	
85 to 167.....	375	67	19	48	117	79	38	109	61	19	29	82	25	57	17.70	
168 (Open Continuously).....	347	50	10	41	78	46	32	138	68	31	40	80	25	55	18.86	
Energy Sources Used (Solely or in Combination)																
Electricity.....	4,013	645	185	459	1,042	706	336	1,524	642	338	544	802	265	537	9.16	
Natural Gas.....	2,278	297	49	247	736	502	234	745	194	181	370	501	190	311	11.59	
Fuel Oil.....	542	264	110	153	109	89	20	136	105	26	Q	33	10	24	21.42	
District Steam or																
Hot Water.....	78	17	5	12	22	12	10	25	11	Q	Q	13	7	7	33.25	
District Chilled Water.....	15	Q	Q	Q	7	Q	5	3	Q	Q	Q	Q	Q	Q	55.90	
Propane.....	351	55	17	38	99	55	Q	146	96	37	Q	Q	Q	Q	33.63	
Minor Fuels.....	163	32	Q	20	50	30	Q	57	34	Q	Q	25	Q	Q	26.50	
No Energy Sources Used.....	136	18	Q	15	53	31	Q	43	Q	Q	Q	22	Q	Q	33.21	
Energy End Uses																
Space Heating.....	3,681	609	180	429	970	654	317	1,409	591	325	493	692	238	455	9.01	
Cooling.....	2,882	392	102	290	672	430	242	1,268	524	290	454	550	213	337	8.85	
Water Heating.....	2,896	490	144	345	786	536	250	1,010	426	237	348	611	203	407	8.92	
Cooking.....	563	108	24	84	149	106	43	188	78	43	67	118	33	85	12.27	
Manufacturing.....	132	19	Q	13	35	25	Q	52	15	Q	26	26	Q	22	28.81	

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 14. Census Region and Division, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace by Census Region and Division														RSE Row Factor
	Total Floorspace of All Buildings	Northeast			Midwest			South				West			
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.420	0.376	1.566	0.965	0.763	0.882	1.319	0.703	0.979	1.515	1.062	1.014	1.434	1.260	
All Buildings.....	58,229	11,830	3,374	8,456	16,034	11,002	5,033	19,427	9,392	4,164	5,871	10,937	3,145	7,792	8.16
Window Glass: Percent of Exterior Walls															
25 or Less.....	43,239	8,495	2,412	6,083	12,212	8,035	4,176	14,953	7,169	3,250	4,533	7,579	2,515	5,064	9.70
26 to 50.....	10,825	2,599	748	1,850	2,497	1,852	645	3,342	1,678	628	1,037	2,386	535	1,852	13.61
51 to 75.....	2,836	463	Q	341	876	784	Q	707	360	Q	186	791	Q	726	27.82
Over 75.....	1,329	273	Q	Q	450	330	Q	426	Q	Q	Q	181	Q	Q	35.64
Wall and Frame Materials															
Masonry Over --															
Wood Frame.....	7,578	1,411	201	1,210	1,566	905	660	2,347	1,248	382	717	2,254	301	1,954	19.56
Masonry Frame.....	22,567	4,578	1,173	3,404	7,409	5,019	2,391	7,819	4,364	1,529	1,926	2,761	1,574	1,187	10.58
Steel Frame.....	10,237	2,700	886	1,814	2,617	1,908	709	3,511	1,617	908	986	1,409	603	806	16.98
Siding Over --															
Wood Frame.....	4,535	1,043	351	692	1,034	795	239	1,174	354	446	374	1,284	107	1,176	20.61
Masonry Frame.....	900	Q	Q	Q	262	198	Q	360	Q	Q	153	Q	Q	Q	33.90
Metal Panels.....	4,970	560	Q	459	1,376	861	514	2,448	930	592	926	586	266	320	19.73
Concrete Panels.....	4,624	843	Q	306	759	548	211	954	453	Q	415	2,068	Q	1,881	32.21
Other.....	2,818	483	Q	388	1,013	767	245	813	332	Q	374	509	Q	Q	25.74
Roof Square Footage															
5,000 or Less.....	9,621	1,763	534	1,229	2,666	1,735	931	3,580	1,428	1,048	1,105	1,612	502	1,110	12.38
5,001 to 10,000.....	9,141	2,467	900	1,566	2,343	1,553	790	2,663	1,266	499	898	1,668	532	1,136	12.82
10,001 to 25,000.....	12,309	2,246	694	1,552	2,786	1,853	933	4,087	2,045	906	1,137	3,189	852	2,338	10.62
25,001 to 50,000.....	8,835	1,974	413	1,560	2,156	1,489	667	2,818	1,229	740	849	1,887	514	1,373	14.98
50,001 to 100,000.....	8,678	1,114	414	700	2,832	2,165	717	3,202	1,703	400	1,099	1,481	473	1,008	19.24
100,001 to 200,000.....	5,395	1,262	Q	1,009	1,468	924	544	2,018	982	Q	566	648	Q	484	25.49
Over 200,000.....	4,250	1,005	Q	840	1,734	1,283	451	1,059	739	Q	217	452	Q	343	31.36
Roof Materials															
Built-Up.....	32,887	6,990	1,623	5,367	8,646	5,878	2,768	10,778	5,464	2,117	3,197	6,473	1,904	4,569	10.07
Shingles (Not Wood).....	8,805	1,432	391	1,041	2,897	2,147	749	3,073	1,291	904	877	1,404	385	1,019	12.13
Metal Surfacing.....	7,283	811	222	589	1,892	1,018	874	3,607	1,496	860	1,251	973	337	636	16.08
Synthetic or Rubber.....	4,574	1,084	533	552	1,862	1,465	397	855	468	Q	246	772	267	504	20.46
Slate or Tile.....	1,980	718	Q	467	312	Q	Q	482	328	Q	Q	467	Q	420	31.09
Wood Shingles, Shakes or Other Wooden Materials.....	833	Q	Q	Q	148	Q	Q	167	Q	Q	Q	388	Q	335	34.60
Other.....	1,866	664	Q	334	277	212	Q	465	Q	Q	Q	460	Q	Q	36.07

See footnotes at end of table.

Table 14. Census Region and Division, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Census Region and Division													RSE Row Factor	
		Northeast			Midwest			South			West					
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific		
RSE Column Factor:	0.420	0.876	1.566	0.965	0.763	0.882	1.319	0.703	0.979	1.515	1.062	1.014	1.434	1.260		
Heat Production Equipment																
Marm-Air Furnaces.....	17,966	2,789	617	2,172	6,051	3,996	2,055	5,626	2,458	1,036	2,132	3,500	1,175	2,325	12.49	
Boilers.....	19,459	6,197	2,139	4,058	5,870	4,478	1,392	4,550	2,321	1,179	1,050	2,842	890	1,952	14.76	
Individual Space Heaters or Electric Baseboards.....	13,985	2,734	832	1,902	4,265	2,983	1,282	4,684	2,110	1,288	1,286	2,301	655	1,646	13.48	
Packaged Heating Units.....	12,309	1,794	Q	1,182	2,931	1,958	973	4,549	1,974	999	1,577	3,034	830	2,204	18.61	
Air-Source Heat Pumps.....	5,090	853	Q	789	607	435	Q	2,467	1,602	626	239	1,163	396	767	21.16	
Receives District Heat.....	4,434	1,367	321	1,045	1,776	1,031	745	684	440	Q	188	607	161	446	25.17	
Cooling Production Equipment																
Central Cooling.....	21,734	4,012	1,222	2,789	6,454	4,286	2,168	8,029	3,647	1,686	2,696	3,240	1,100	2,140	11.85	
Individual Air Conditioners.....	14,433	3,768	1,021	2,748	4,663	3,518	1,144	4,034	1,938	1,167	929	1,968	489	1,479	13.02	
Packaged Air-Conditioning Units.....	17,889	3,645	1,141	2,504	4,702	3,312	1,390	6,133	2,829	1,283	2,021	3,409	1,056	2,353	14.28	
Air-Source Heat Pumps.....	5,090	853	Q	789	607	435	Q	2,467	1,602	626	239	1,163	396	767	21.16	
Receives District Chilled Water.....	1,163	200	Q	Q	409	Q	341	362	Q	Q	Q	Q	Q	Q	46.08	
Heat Distribution Equipment																
Ducted Forced Air.....	40,038	7,040	1,725	5,314	10,995	7,511	3,484	14,563	7,090	2,973	4,500	7,440	2,174	5,267	9.53	
Heating Only.....	5,650	1,385	269	1,117	2,172	1,714	458	895	584	129	183	1,198	208	990	19.28	
Heating and Cooling.....	31,109	4,565	1,207	3,358	7,951	5,231	2,720	12,698	5,916	2,685	4,097	5,894	1,763	4,131	10.77	
VAV Used.....	14,743	2,544	926	1,618	4,387	3,039	1,348	4,957	2,380	1,207	1,370	2,855	961	1,894	14.36	
Steam Radiators or Baseboards.....	7,997	3,411	903	2,508	2,529	1,736	793	1,148	592	404	Q	909	322	586	23.69	
Hot Water Radiators or Baseboards.....	7,842	2,727	989	1,738	3,721	2,522	799	1,161	820	Q	Q	633	240	393	19.86	
Fan-Coil Units.....	14,490	3,678	1,092	2,586	4,631	3,434	1,197	3,699	1,751	976	973	2,482	791	1,691	16.64	
Heating Only.....	5,260	1,658	Q	1,020	1,895	1,479	417	797	509	Q	152	910	329	581	24.44	
Heating and Cooling.....	7,934	1,599	410	1,189	2,519	1,855	664	2,501	1,043	804	653	1,315	406	909	19.47	
Heating Panels.....	3,361	995	289	706	1,181	853	328	533	238	184	Q	652	213	438	24.92	
Other.....	259	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	Q	Q	Q	49.88	

See footnotes at end of table.

Table 14. Census Region and Division, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Census Region and Division													RSE Row Factor
		Northeast			Midwest			South			West				
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.420	0.876	1.566	0.965	0.763	0.882	1.319	0.703	0.979	1.515	1.062	1.014	1.434	1.260	
Cooling Distribution Equipment															
Ducted Forced Air.....	40,038	7,040	1,725	5,314	10,995	7,511	3,484	14,563	7,090	2,973	4,500	7,440	2,174	5,267	9.53
Cooling Only.....	3,279	1,089	250	839	872	567	306	970	590	Q	221	348	202	146	26.36
Heating and Cooling.....	31,109	4,565	1,207	3,358	7,951	5,231	2,720	12,698	5,916	2,685	4,097	5,894	1,763	4,131	10.77
VAV Used.....	14,743	2,544	926	1,618	4,387	3,039	1,348	4,957	2,380	1,207	1,370	2,855	961	1,894	14.36
Fan-Coil Units.....	14,490	3,678	1,092	2,586	4,631	3,434	1,197	3,699	1,751	976	973	2,482	791	1,691	16.64
Cooling Only.....	1,296	421	Q	Q	Q	Q	Q	401	Q	Q	Q	257	Q	Q	39.57
Heating and Cooling.....	7,934	1,599	410	1,189	2,519	1,855	664	2,501	1,043	804	653	1,315	406	909	19.47
Other.....	Q	Q	NC	Q	Q	Q	Q	Q	Q	NC	NC	Q	Q	NC	67.55
Lighting Equipment Types (Solely or in Combination)															
Standard Fluorescent.....	32,266	6,166	1,643	4,523	9,276	6,050	3,226	11,438	5,892	2,235	3,311	5,387	1,638	3,749	9.03
Energy Efficient Fluorescent.....	24,496	5,689	1,801	3,887	6,316	4,709	1,606	7,228	3,111	1,489	2,628	5,264	1,334	3,929	12.39
Standard Incandescent.....	22,995	4,655	1,213	3,443	7,140	5,027	2,113	7,070	3,337	1,645	2,088	4,129	1,180	2,949	10.27
Energy Efficient Incandescent.....	10,127	2,386	537	1,849	2,859	2,264	595	3,146	1,214	647	1,285	1,735	394	1,341	15.58
High-Intensity Discharge....	10,075	2,209	309	1,900	3,136	2,205	931	3,200	1,256	916	1,027	1,530	453	1,077	19.26
Other.....	1,266	Q	Q	Q	264	Q	Q	277	Q	Q	Q	230	Q	Q	45.87
Conservation Features															
Any Conservation Feature....	54,567	11,069	3,144	7,925	15,302	10,561	4,740	17,972	8,975	3,701	5,296	10,225	2,996	7,228	8.25
Building Shell.....	52,029	10,092	2,931	7,161	14,920	10,291	4,629	17,377	8,688	3,481	5,208	9,640	2,904	6,736	7.98
HVAC.....	41,974	9,740	2,701	7,039	11,728	8,156	3,571	12,590	6,367	2,588	3,635	7,917	2,441	5,476	8.82
Lighting.....	33,112	6,871	1,914	4,957	9,141	6,307	2,834	10,386	5,081	2,115	3,190	6,714	1,772	4,943	10.15
Metropolitan Status															
Metropolitan.....	45,107	9,845	2,862	6,984	11,833	8,994	2,840	13,984	6,740	2,756	4,487	9,444	2,189	7,255	9.48
Non-Metropolitan.....	13,122	1,985	512	1,472	4,201	2,008	2,193	5,444	2,651	1,409	1,384	1,493	956	Q	16.23
Average															
.....	4,897	881	881	NC	3,639	1,810	1,829	NC	NC	NC	NC	377	293	Q	17.93
.....	16,250	5,615	2,493	3,122	9,154	7,884	1,270	NC	NC	NC	NC	1,481	1,481	NC	12.49
.....	13,904	5,334	NC	5,334	3,178	1,308	1,871	3,658	2,846	Q	NC	1,734	NC	1,734	25.49
.....	13,792	NC	NC	NC	Q	NC	Q	7,741	3,878	2,434	1,429	5,987	Q	5,642	32.77
nd --	9,386	NC	NC	NC	NC	NC	NC	8,028	2,668	Q	4,443	1,357	1,025	332	20.32

nd of table.

Table 14. Census Region and Division, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Census Region and Division												RSE Row Factor	
		Northeast			Midwest			South			West				
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain		Pacific
RSE Column Factor:	0.420	0.876	1.566	0.965	0.763	0.882	1.319	0.703	0.979	1.515	1.062	1.014	1.434	1.260	
Floors															
One.....	23,776	3,083	602	2,481	5,477	3,655	1,822	10,547	5,008	2,054	3,485	4,669	1,485	3,184	12.36
Two.....	14,367	2,920	830	2,091	4,470	3,179	1,291	4,448	2,095	1,069	1,284	2,529	785	1,743	11.54
Three.....	7,921	1,837	633	1,204	2,903	1,970	933	1,494	893	251	351	1,688	334	1,354	17.61
Over Three.....	12,164	3,990	1,310	2,680	3,184	2,198	986	2,938	1,396	791	751	2,052	541	1,511	19.57
Percent Heated															
Not Heated.....	3,635	477	Q	404	741	451	290	1,569	707	428	434	847	193	654	25.94
1 to 50.....	8,579	1,393	288	1,104	1,934	1,220	714	2,967	1,567	616	783	2,285	477	1,808	20.77
51 to 99.....	7,061	1,387	Q	812	1,634	1,174	461	2,215	1,136	400	679	1,825	364	1,462	20.12
100.....	38,941	8,573	2,438	6,135	11,719	8,151	3,568	12,676	5,981	2,720	3,975	5,972	2,111	3,861	8.66
Percent Cooled															
Not Cooled.....	11,057	2,904	863	2,041	3,464	2,612	852	2,299	1,065	575	658	2,390	447	1,943	19.21
1 to 50.....	18,641	4,392	1,207	3,185	5,656	3,897	1,758	5,576	3,079	1,141	1,356	3,017	813	2,205	13.39
51 to 99.....	9,982	1,781	Q	1,131	2,971	2,210	761	3,328	1,723	580	1,024	1,902	490	1,412	16.98
100.....	18,543	2,753	654	2,099	3,939	2,277	1,662	8,224	3,524	1,867	2,832	3,627	1,395	2,232	11.77
Percent Lit--Open Hours															
Not Lit.....	1,851	401	Q	Q	496	321	175	655	200	Q	250	299	142	Q	35.62
1 to 50.....	7,399	1,698	313	1,386	2,686	1,989	697	2,154	1,143	333	677	861	266	595	21.57
51 to 99.....	9,416	1,903	352	1,551	2,889	1,755	1,134	2,595	1,475	362	758	2,029	732	1,297	15.57
100.....	39,562	7,827	2,667	5,159	9,963	6,936	3,027	14,024	6,573	3,264	4,187	7,748	2,005	5,743	10.71
Building Floorspace (Square Feet)															
1,001 to 5,000.....	6,209	855	222	633	1,565	1,075	489	2,528	1,000	569	959	1,261	430	830	12.26
5,001 to 10,000.....	6,861	1,358	417	941	2,033	1,289	744	2,314	885	538	892	1,156	380	776	12.66
10,001 to 25,000.....	9,119	1,443	487	955	2,431	1,582	849	3,291	1,647	802	842	1,955	539	1,416	12.24
25,001 to 50,000.....	8,661	1,922	547	1,375	1,959	1,515	444	2,938	1,574	683	681	1,842	643	1,199	14.05
50,001 to 100,000.....	8,559	1,525	508	1,018	2,333	1,647	686	3,208	1,766	479	963	1,491	487	1,004	18.47
100,001 to 200,000.....	7,191	1,429	417	1,012	2,151	1,237	914	2,011	1,069	318	624	1,599	412	1,187	19.95
200,001 to 500,000.....	6,737	1,764	255	1,508	2,084	1,405	679	2,038	1,004	Q	588	852	175	677	22.31
Over 500,000.....	4,893	1,535	Q	1,014	1,479	1,252	Q	1,097	445	Q	321	782	Q	703	33.06

See footnotes at end of table.

Table 14. Census Region and Division, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Census Region and Division													RSE Row Factor
		Northeast			Midwest			South			West				
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.420	0.876	1.566	0.965	0.763	0.882	1.319	0.703	0.979	1.515	1.062	1.014	1.434	1.260	
Principal Building Activity															
Assembly.....	7,339	1,229	468	761	2,004	1,483	520	2,724	1,182	529	1,014	1,382	440	943	15.91
Education.....	7,321	1,603	467	1,136	2,212	1,576	636	2,174	1,052	430	692	1,332	333	999	16.82
Food Sales.....	712	Q	Q	Q	219	Q	Q	192	89	Q	Q	Q	Q	Q	36.12
Food Services.....	1,281	219	Q	192	445	325	Q	391	173	Q	Q	226	Q	181	26.42
Health Care.....	2,107	328	Q	244	559	398	Q	806	333	Q	Q	415	Q	281	30.15
Lodging.....	2,785	602	Q	374	636	419	217	949	437	184	Q	597	Q	448	26.37
Mercantile and Service.....	12,805	2,785	872	1,913	3,525	2,216	1,309	4,487	2,251	847	1,389	2,008	573	1,435	14.73
Office.....	9,546	1,782	535	1,247	2,535	1,901	634	2,838	1,305	620	914	2,390	671	1,720	14.66
Public Order and Safety.....	680	289	Q	Q	Q	Q	Q	147	Q	Q	Q	Q	Q	Q	46.20
Warehouse.....	8,996	1,905	409	1,496	2,246	1,448	797	3,458	1,737	862	859	1,387	337	1,050	19.66
Other.....	1,726	354	Q	Q	622	381	Q	357	253	Q	Q	392	Q	216	33.51
Vacant.....	2,931	555	Q	448	853	571	Q	904	487	Q	348	620	199	421	25.83
Year Constructed															
1900 or Before.....	2,368	886	353	533	1,121	820	Q	211	Q	Q	Q	150	Q	Q	33.95
1901 to 1920.....	3,665	1,359	346	1,013	978	668	310	878	458	Q	301	450	Q	Q	27.57
1921 to 1945.....	8,594	2,349	621	1,728	2,513	1,596	917	2,019	984	415	620	1,713	341	1,372	15.68
1946 to 1960.....	9,712	1,768	249	1,519	2,207	1,767	440	3,963	1,677	615	1,672	1,774	531	1,242	17.33
1961 to 1970.....	11,469	2,018	580	1,438	3,059	2,307	752	4,200	2,168	1,015	1,017	2,192	741	1,451	16.50
1971 to 1973.....	4,307	696	Q	557	1,224	722	503	1,527	1,072	192	264	859	135	724	21.05
1974 to 1979.....	8,230	1,318	414	904	2,268	1,522	746	3,019	1,315	744	960	1,625	345	1,280	16.13
1980 to 1983.....	5,205	834	Q	326	1,258	818	440	1,904	667	609	628	1,209	403	806	24.93
1984 to 1986.....	4,678	603	165	438	1,404	781	623	1,705	909	401	395	966	433	534	22.12
Ownership and Occupancy															
Nongovernment Owned.....	46,041	8,730	2,650	6,080	13,000	8,932	4,068	15,668	7,325	3,491	4,853	8,642	2,518	6,125	8.96
Owner Occupied.....	28,962	5,867	1,747	4,120	8,663	6,275	2,387	9,640	4,093	2,602	2,945	4,792	1,566	3,226	9.44
Nonowner Occupied.....	17,080	2,863	903	1,960	4,338	2,657	1,681	6,029	3,232	889	1,908	3,851	952	2,898	14.06
Government Owned.....	12,187	3,100	724	2,376	3,034	2,069	965	3,759	2,067	674	1,018	2,295	627	1,667	15.10
Workers															
Fewer than 5.....	13,129	1,998	569	1,429	4,149	2,806	1,342	4,718	1,940	1,017	1,761	2,264	817	1,447	12.92
5 to 9.....	6,576	1,091	210	881	2,010	1,283	727	2,227	1,049	461	716	1,249	357	892	13.04
10 to 19.....	7,895	1,362	520	1,343	1,706	1,130	577	2,730	1,348	485	897	1,596	556	1,040	17.28
20 to 49.....	8,847	1,776	468	1,308	2,119	1,440	679	3,414	1,739	855	820	1,538	437	1,101	12.94
50 to 99.....	6,510	1,443	457	986	1,595	1,244	351	1,870	952	255	663	1,602	456	1,145	19.41
100 to 249.....	6,445	1,362	437	924	1,892	1,193	699	1,948	1,159	439	350	1,243	Q	1,100	18.09
250 or More.....	8,828	2,298	713	1,585	2,564	1,906	658	2,521	1,204	Q	664	1,446	378	1,068	21.41

See footnotes at end of table.

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Table 14. Census Region and Division, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Census Region and Division													RSE Row Factor
		Northeast			Midwest			South			West				
		All North-east	New England	Middle Atlantic	All Mid-west	East North Central	West North Central	All South	South Atlantic	East South Central	West South Central	All West	Mountain	Pacific	
RSE Column Factor:	0.420	0.876	1.566	0.965	0.763	0.882	1.319	0.703	0.979	1.515	1.062	1.014	1.434	1.260	
Weekly Operating Hours															
39 or Fewer.....	9,286	1,615	514	1,101	2,904	2,204	700	3,312	1,509	599	1,204	1,455	565	889	17.29
40 to 48.....	15,167	2,682	689	1,993	3,864	2,963	901	5,806	2,656	1,490	1,661	2,815	802	2,012	13.31
49 to 60.....	10,805	2,344	771	1,573	2,795	1,869	926	3,210	1,469	617	1,124	2,456	720	1,737	13.46
61 to 84.....	9,760	2,281	753	1,528	2,954	1,905	1,049	2,725	1,359	522	845	1,799	483	1,316	18.30
85 to 167.....	5,514	1,438	301	1,138	1,425	883	542	1,657	966	232	459	994	212	782	18.64
168 (Open Continuously).....	7,696	1,470	346	1,123	2,092	1,177	914	2,716	1,433	705	578	1,418	363	1,055	19.23
Energy Sources Used (Solely or in Combination)															
Electricity.....	57,036	11,561	3,336	8,226	15,756	10,827	4,929	18,968	9,244	3,968	5,756	10,751	3,093	7,658	8.21
Natural Gas.....	38,140	7,107	1,673	5,434	12,579	8,824	3,756	10,793	3,927	2,488	4,378	7,661	2,235	5,425	9.85
Fuel Oil.....	11,163	5,158	2,108	3,050	2,101	1,680	422	2,583	2,205	205	Q	1,321	132	1,188	17.96
District Steam or															
Hot Water.....	4,645	1,379	321	1,058	1,799	1,038	761	729	485	Q	188	738	182	556	24.32
District Chilled Water.....	1,191	200	Q	Q	437	Q	345	362	Q	Q	Q	Q	Q	Q	45.91
Propane.....	3,362	818	304	514	679	471	208	1,381	950	247	Q	485	Q	441	29.80
Minor Fuels.....	1,557	358	Q	240	423	290	Q	517	366	Q	Q	260	Q	196	32.96
No Energy Sources Used.....	1,171	Q	Q	Q	273	169	Q	447	Q	Q	Q	Q	Q	Q	44.28
Energy End Uses															
Space Heating.....	54,510	11,390	3,303	8,087	15,288	10,545	4,743	17,767	8,662	3,706	5,399	10,065	2,931	7,134	8.13
Cooling.....	46,601	8,643	2,415	6,227	12,544	8,363	4,181	16,956	8,196	3,550	5,210	8,458	2,637	5,821	8.60
Water Heating.....	48,836	10,069	3,066	7,004	14,109	9,729	4,381	15,040	7,369	3,319	4,353	9,618	2,661	6,956	8.44
Cooking.....	17,227	4,088	1,311	2,777	4,656	3,339	1,316	5,412	2,565	1,337	1,510	3,072	741	2,331	13.91
Manufacturing.....	3,081	578	Q	325	973	736	Q	973	370	Q	439	558	Q	427	23.99

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 15. Climate Zone, Number of Buildings and Floorspace

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)					
		Under 2,000 CDD and --				2,000 CDD or More		Under 2,000 CDD and --				2,000 CDD or More	
		Over 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Under 4,000 HDD	Under 4,000 HDD		Over 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Under 4,000 HDD	Under 4,000 HDD	
(Zone 1)	(Zone 2)	(Zone 3)	(Zone 4)	(Zone 5)	(Zone 1)	(Zone 2)	(Zone 3)	(Zone 4)	(Zone 5)				
RSE Column Factor:	0.438	1.680	0.860	1.250	1.162	1.183	0.459	1.554	0.893	1.071	1.217	1.109	
All Buildings.....	4,154	419	930	865	1,022	919	58,229	4,897	16,250	13,904	13,792	9,386	9.12
Building Floorspace (Square Feet)													
1,001 to 5,000.....	2,220	210	427	462	564	556	6,209	588	1,250	1,276	1,569	1,526	13.36
5,001 to 10,000.....	931	114	251	178	192	196	6,861	816	1,861	1,309	1,438	1,435	12.15
10,001 to 25,000.....	557	66	118	118	162	93	9,119	1,081	1,882	1,953	2,658	1,545	11.65
25,001 to 50,000.....	242	12	75	55	57	44	8,661	408	2,760	1,954	2,000	1,538	11.90
50,001 to 100,000.....	123	11	33	30	28	22	8,559	874	2,279	2,003	1,951	1,452	14.90
100,001 to 200,000.....	52	3	18	12	14	5	7,191	413	2,507	1,751	1,863	657	16.90
200,001 to 500,000.....	23	Q	6	8	4	3	6,737	Q	1,792	2,337	1,245	868	20.55
Over 500,000.....	6	Q	2	2	1	*	4,893	Q	1,917	1,320	1,068	366	26.60
Principal Building Activity													
Assembly.....	575	56	131	116	154	118	7,339	511	2,042	1,839	1,747	1,201	15.81
Education.....	241	8	40	50	81	62	7,321	511	2,471	1,765	1,676	898	15.57
Food Sales.....	102	Q	24	21	Q	27	712	Q	235	151	Q	129	28.16
Food Services.....	201	23	57	45	40	36	1,281	191	336	297	227	230	19.22
Health Care.....	52	Q	11	10	20	7	2,107	Q	587	399	787	209	28.60
Lodging.....	137	19	20	29	39	30	2,785	356	561	560	759	549	19.93
Mercantile and Service.....	1,287	136	298	295	287	272	12,805	1,199	3,136	3,596	2,666	2,208	12.03
Office.....	614	55	140	106	164	148	9,546	634	2,825	2,038	2,501	1,548	12.88
Public Order and Safety.....	55	Q	Q	Q	Q	Q	680	Q	Q	Q	Q	Q	31.76
Warehouse.....	549	55	129	113	126	127	8,996	599	2,542	1,792	2,309	1,753	14.88
Other.....	103	27	18	22	22	13	1,726	354	563	409	277	122	28.41
Vacant.....	238	Q	49	46	55	66	2,931	211	758	865	648	450	22.17
Census Region													
Northeast.....	663	75	328	260	NC	NC	11,830	881	5,615	5,334	NC	NC	11.88
Midwest.....	1,096	309	509	266	Q	NC	16,034	3,639	9,154	3,178	Q	NC	21.95
South.....	1,570	NC	NC	224	558	788	19,427	NC	NC	3,658	7,741	8,028	13.99
West.....	825	34	93	115	452	131	10,937	377	1,481	1,734	5,987	1,357	19.48

See footnotes at end of table.

Table 15. Climate Zone, Number of Buildings and Floorspace (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)						
	Under 2,000 CDD and --					2,000 CDD or More	Under 2,000 CDD and --					2,000 CDD or More	
	Over 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Under 4,000 HDD	Under 4,000 HDD	Under 4,000 HDD	All Buildings	Over 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Under 4,000 HDD	Under 4,000 HDD	
All Buildings	(Zone 1)	(Zone 2)	(Zone 3)	(Zone 4)	(Zone 5)	All Buildings	(Zone 1)	(Zone 2)	(Zone 3)	(Zone 4)	(Zone 5)		
RSE Column Factor:	0.438	1.680	0.860	1.250	1.162	1.183	0.459	1.554	0.893	1.071	1.217	1.109	
Year Constructed													
1900 or Before.....	188	34	82	52	Q	Q	2,368	368	1,107	723	Q	Q	29.47
1901 to 1920.....	255	32	83	62	38	40	3,665	284	1,182	1,367	393	440	20.96
1921 to 1945.....	629	54	197	124	147	106	8,594	656	3,018	2,425	1,638	857	14.14
1946 to 1960.....	878	75	160	198	233	212	9,712	549	2,345	2,387	2,601	1,830	15.45
1961 to 1970.....	730	70	148	159	185	168	11,469	936	2,895	2,881	2,588	2,169	14.02
1971 to 1973.....	243	40	46	51	55	50	4,307	615	810	996	1,397	489	18.61
1974 to 1979.....	572	55	109	101	166	141	8,230	724	2,345	1,263	2,511	1,386	14.28
1980 to 1983.....	350	26	46	63	101	115	5,205	362	1,369	820	1,510	1,143	17.29
1984 to 1986.....	309	31	58	56	83	82	4,678	403	1,179	1,041	1,043	1,012	18.14
Ownership and Occupancy													
Nongovernment Owned.....	3,661	374	824	771	883	810	46,041	3,917	12,831	10,508	11,097	7,689	9.48
Owner Occupied.....	2,396	277	594	508	545	472	28,962	2,556	8,632	6,684	6,792	4,298	10.68
Nonowner Occupied.....	1,265	96	231	263	337	338	17,080	1,361	4,199	3,824	4,305	3,391	11.74
Government Owned.....	493	45	106	94	139	109	12,187	981	3,419	3,396	2,695	1,697	14.22
Workers													
Fewer than 5.....	2,033	232	445	412	476	468	13,129	1,383	3,359	3,027	3,052	2,308	13.84
5 to 9.....	842	66	183	177	224	191	6,576	592	1,733	1,599	1,394	1,258	11.55
10 to 19.....	587	59	130	139	127	131	7,895	692	2,244	1,596	1,667	1,695	13.81
20 to 49.....	434	38	107	89	119	81	8,847	512	2,263	2,135	2,355	1,582	11.55
50 to 99.....	152	12	40	23	41	35	6,510	496	2,065	1,451	1,451	1,047	15.68
100 to 249.....	73	10	14	16	25	8	6,445	889	1,452	1,650	1,780	673	15.58
250 or More.....	33	1	10	8	10	4	8,828	334	3,134	2,446	2,092	823	17.58
Weekly Operating Hours													
39 or Fewer.....	870	79	194	183	222	192	9,286	668	2,848	2,146	2,223	1,402	17.75
40 to 48.....	1,086	94	244	184	282	283	15,167	1,121	4,450	2,895	3,760	2,941	11.71
49 to 60.....	919	118	193	215	206	188	10,805	1,086	2,729	2,883	2,277	1,831	11.32
61 to 84.....	556	46	136	139	118	117	9,760	887	3,065	2,554	1,877	1,376	14.29
85 to 167.....	375	42	104	74	97	58	5,514	394	1,464	1,604	1,398	655	15.53
168 (Open Continuously).....	347	39	58	72	96	81	7,696	741	1,695	1,823	2,257	1,181	15.81

See footnotes at end of table.

Table 15. Climate Zone, Number of Buildings and Floorspace (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)						
	Under 2,000 CDD and --					2,000 CDD	Under 2,000 CDD and --					2,000 CDD	
	Over 7,000	5,500 to 7,000	4,000 to 5,499	Under 4,000	Under 2,000	or More and Under 2,000	Over 7,000	5,500 to 7,000	4,000 to 5,499	Under 4,000	Under 2,000	or More and Under 2,000	
	All Buildings	(Zone 1)	(Zone 2)	(Zone 3)	(Zone 4)	(Zone 5)	All Buildings	(Zone 1)	(Zone 2)	(Zone 3)	(Zone 4)	(Zone 5)	
RSE Column Factor:	0.438	1.680	0.860	1.250	1.162	1.183	0.459	1.554	0.893	1.071	1.217	1.109	
Energy Sources Used (Solely or in Combination)													
Electricity.....	4,013	402	900	830	988	893	57,036	4,831	16,054	13,462	13,461	9,227	9.07
Natural Gas.....	2,278	187	645	402	596	447	38,140	2,831	12,457	8,553	9,393	4,906	9.69
Fuel Oil.....	542	115	153	195	62	16	11,163	1,135	3,517	4,678	1,448	385	15.97
District Steam or													
Hot Water.....	78	8	24	21	7	Q	4,645	577	1,645	1,588	511	323	24.16
District Chilled Water.....	15	Q	Q	Q	Q	Q	1,191	Q	344	285	Q	235	46.63
Propane.....	351	49	53	103	98	48	3,362	426	695	896	848	496	27.42
Minor Fuels.....	163	34	30	48	42	Q	1,557	255	319	527	384	Q	28.22
No Energy Sources Used.....	136	Q	29	32	34	25	1,171	Q	194	429	330	150	29.56
Energy End Uses													
Space Heating.....	3,681	366	863	783	897	773	54,510	4,641	15,727	13,222	12,725	8,195	8.99
Cooling.....	2,882	194	608	562	758	700	46,601	3,338	12,429	10,824	11,707	8,303	8.38
Water Heating.....	2,896	296	719	618	702	562	48,836	4,303	14,272	12,045	11,723	6,492	8.79
Cooking.....	563	44	151	137	127	105	17,227	1,279	5,418	4,755	3,606	2,170	12.50
Manufacturing.....	132	13	31	24	29	36	3,081	192	1,027	671	681	511	22.35

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 16. Building Size, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	Building Size Category								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:	0.425	0.726	0.800	0.830	0.955	1.138	1.307	1.526	2.255	
All Buildings.....	4,154	2,220	931	557	242	123	52	23	6	6.53
Roof Square Footage										
5,000 or Less.....	2,433	2,071	299	47	9	Q	Q	Q	Q	23.24
5,001 to 10,000.....	859	104	583	133	27	8	Q	Q	Q	16.46
10,001 to 25,000.....	527	33	36	352	76	19	7	3	*	14.07
25,001 to 50,000.....	185	Q	Q	15	122	25	8	2	1	21.70
50,001 to 100,000.....	99	Q	Q	Q	5	62	9	5	1	25.15
100,001 to 200,000.....	39	Q	Q	Q	Q	Q	23	4	1	34.74
Over 200,000.....	13	NC	NC	Q	Q	NC	Q	8	2	28.71
Principal Building Activity										
Assembly.....	575	274	138	106	33	16	4	2	Q	16.49
Education.....	241	72	50	44	37	21	11	4	Q	16.49
Food Sales.....	102	76	Q	Q	Q	Q	NC	Q	Q	36.11
Food Services.....	201	128	57	13	Q	Q	Q	Q	NC	34.50
Health Care.....	52	27	Q	Q	6	Q	2	1	1	29.43
Lodging.....	137	48	29	31	16	9	2	Q	Q	21.98
Mercantile and Service.....	1,287	757	309	142	46	23	6	3	1	12.72
Office.....	614	343	133	74	35	15	8	5	2	13.40
Public Order and Safety.....	55	26	Q	13	Q	Q	Q	Q	Q	40.15
Warehouse.....	549	274	123	72	44	21	12	4	Q	14.98
Other.....	103	58	Q	18	Q	5	Q	1	Q	29.77
Vacant.....	238	136	47	30	15	8	Q	Q	Q	25.07
Census Region										
Northeast.....	663	298	183	90	53	21	10	6	2	13.15
Midwest.....	1,096	559	277	147	56	33	15	7	2	12.85
South.....	1,570	905	312	200	83	47	14	7	1	10.38
West.....	825	458	158	120	51	22	12	3	1	16.43
Year Constructed										
1900 or Before.....	188	83	67	19	12	Q	Q	Q	Q	25.67
1901 to 1920.....	255	126	65	34	17	7	5	Q	Q	21.59
1921 to 1945.....	629	333	131	103	35	16	7	4	1	15.24
1946 to 1960.....	878	517	180	105	42	24	8	3	*	14.31
1961 to 1970.....	730	370	161	101	52	27	13	4	1	12.16
1971 to 1973.....	243	117	66	31	14	7	4	3	*	18.21
1974 to 1979.....	572	315	128	67	34	20	4	3	1	14.39
1980 to 1983.....	350	202	66	52	14	10	4	1	1	18.38
1984 to 1986.....	309	157	67	47	23	9	4	2	*	17.28

See footnotes at end of table.

Table 16. Building Size, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Building Size Category								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:	0.425	0.726	0.800	0.830	0.955	1.138	1.307	1.526	2.255	
Ownership and Occupancy										
Nongovernment Owned.....	3,661	2,024	828	471	188	94	36	16	4	7.20
Owner Occupied.....	2,396	1,338	546	301	120	59	20	9	3	8.71
Nonowner Occupied.....	1,265	686	282	170	69	35	16	6	1	10.74
Government Owned.....	493	196	104	86	54	29	16	7	2	12.73
Workers										
Fewer than 5.....	2,033	1,414	390	158	44	20	7	Q	Q	15.68
5 to 9.....	842	503	208	89	29	10	Q	Q	Q	18.28
10 to 19.....	587	221	173	125	44	19	5	Q	Q	16.68
20 to 49.....	434	70	137	130	68	20	6	2	Q	13.55
50 to 99.....	152	Q	20	44	41	24	9	2	Q	20.11
100 to 249.....	73	NC	Q	12	15	26	12	6	Q	20.12
250 or More.....	33	NC	NC	Q	Q	6	11	9	4	20.18
Weekly Operating Hours										
39 or Fewer.....	870	524	180	94	40	19	9	3	Q	16.86
40 to 48.....	1,086	578	221	162	74	33	13	6	1	11.16
49 to 60.....	919	473	244	129	41	20	8	3	1	11.77
61 to 84.....	556	271	132	78	42	20	7	5	2	13.94
85 to 167.....	375	207	87	38	18	16	7	2	Q	17.31
168 (Open Continuously).....	347	168	66	55	28	16	8	5	1	15.16
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	2,126	906	543	239	118	52	23	6	6.55
Natural Gas.....	2,278	1,089	554	350	150	75	39	18	4	7.50
Fuel Oil.....	542	249	143	71	40	21	9	7	2	13.81
District Steam or										
Hot Water.....	78	21	Q	19	12	11	6	4	1	22.07
District Chilled Water.....	15	Q	Q	Q	Q	Q	1	1	*	45.90
Propane.....	351	221	66	36	16	10	Q	Q	Q	24.97
Minor Fuels.....	163	101	35	16	Q	Q	Q	Q	Q	31.43
No Energy Sources Used.....	136	91	23	Q	Q	Q	NC	NC	Q	34.44

See footnotes at end of table.

Table 16. Building Size, Number of Buildings (continued)
 (Thousand)

Building Characteristics	All Buildings	Building Size Category								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:	0.425	0.726	0.800	0.830	0.955	1.138	1.307	1.526	2.255	
Energy End Uses										
Space Heating.....	3,681	1,884	859	518	228	114	50	22	6	6.48
Cooling.....	2,882	1,412	677	430	194	99	44	21	5	6.64
Water Heating.....	2,896	1,345	707	456	212	104	45	22	5	6.68
Cooking.....	563	244	111	83	50	39	21	12	4	10.38
Manufacturing.....	132	50	28	32	11	5	4	2	Q	22.28

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 17. Building Size, Floorspace

Building Characteristics	Total Floorspace (million square feet)	Mean Square Feet per Building (thousand square feet)	Median Square Feet per Building (thousand square feet)	Million Square Feet of Floorspace by Building Size Category								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	
				0.816	0.870	0.923	1.043	1.216	1.393	1.630	2.320	
RSE Column Factor:	0.527	0.433	a/	0.816	0.870	0.923	1.043	1.216	1.393	1.630	2.320	
All Buildings.....	58,229	14.0	5.0	6,209	6,861	9,119	8,661	8,559	7,191	6,737	4,893	5.99
Roof Square Footage												
5,000 or Less.....	9,621	4.0	2.9	5,694	2,166	673	341	Q	Q	Q	Q	19.12
5,001 to 10,000.....	9,141	10.6	7.3	390	4,290	2,067	957	541	Q	Q	Q	15.08
10,001 to 25,000.....	12,309	23.4	16.0	80	301	5,870	2,725	1,305	986	814	227	11.89
25,001 to 50,000.....	8,835	47.7	35.0	Q	Q	311	4,357	1,741	1,093	740	535	18.15
50,001 to 100,000.....	8,678	87.7	64.1	Q	Q	Q	191	4,326	1,361	1,473	1,113	22.19
100,001 to 200,000.....	5,395	139.2	123.9	Q	Q	Q	Q	Q	3,149	1,195	740	29.42
Over 200,000.....	4,250	316.4	250.0	NC	NC	Q	Q	NC	Q	2,254	1,685	24.61
Building Floorspace (Square Feet)												
1,001 to 5,000.....	6,209	2.8	2.5	6,209	--	--	--	--	--	--	--	5.24
5,001 to 10,000.....	6,861	7.4	7.2	--	6,861	--	--	--	--	--	--	4.12
10,001 to 25,000.....	9,119	16.4	15.0	--	--	9,119	--	--	--	--	--	4.62
25,001 to 50,000.....	8,661	35.7	34.5	--	--	--	8,661	--	--	--	--	5.32
50,001 to 100,000.....	8,559	69.3	65.0	--	--	--	--	8,559	--	--	--	5.76
100,001 to 200,000.....	7,191	139.4	130.0	--	--	--	--	--	7,191	--	--	7.32
200,001 to 500,000.....	6,737	298.9	279.7	--	--	--	--	--	--	6,737	--	8.70
Over 500,000.....	4,893	834.0	700.0	--	--	--	--	--	--	--	4,893	12.73
Principal Building Activity												
Assembly.....	7,339	12.8	5.6	798	1,020	1,750	1,181	1,040	529	721	Q	15.53
Education.....	7,321	30.3	10.0	200	375	749	1,424	1,454	1,650	1,170	Q	15.40
Food Sales.....	712	7.0	2.5	185	Q	Q	Q	Q	NC	Q	Q	33.37
Food Services.....	1,281	6.4	4.4	381	428	200	Q	Q	Q	Q	NC	30.28
Health Care.....	2,107	40.5	5.0	63	Q	Q	197	Q	343	445	775	29.75
Lodging.....	2,785	20.4	8.0	138	208	508	546	606	354	Q	Q	18.96
Mercantile and Service.....	12,805	9.9	4.5	2,062	2,260	2,284	1,622	1,700	813	761	1,306	12.54
Office.....	9,546	15.5	4.7	1,003	989	1,284	1,227	1,047	1,081	1,540	1,375	12.50
Public Order and Safety.....	680	12.4	5.4	78	Q	218	Q	Q	Q	Q	Q	38.82
Warehouse.....	8,996	16.4	5.1	774	920	1,143	1,574	1,446	1,685	1,077	Q	14.69
Other.....	1,726	16.8	4.9	162	Q	279	Q	352	Q	321	Q	28.93
Vacant.....	2,931	12.3	4.8	365	355	458	531	503	Q	Q	Q	22.49

See footnotes at end of table.

Table 17. Building Size, Floorspace (continued)

Building Characteristics	Total Floorspace (million square feet)	Mean Square Feet per Building (thousand square feet)	Median Square Feet per Building (thousand square feet)	Million Square Feet of Floorspace by Building Size Category								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:	0.527	0.433	a/	0.816	0.870	0.923	1.043	1.216	1.393	1.630	2.320	
Census Region												
Northeast.....	11,830	17.8	6.0	855	1,358	1,443	1,922	1,525	1,429	1,764	1,535	12.38
Midwest.....	16,034	14.6	5.0	1,565	2,033	2,431	1,959	2,333	2,151	2,084	1,479	11.72
South.....	19,427	12.4	4.6	2,528	2,314	3,291	2,938	3,208	2,011	2,038	1,097	9.62
West.....	10,937	13.3	4.8	1,261	1,156	1,955	1,842	1,491	1,599	852	782	15.15
Year Constructed												
1900 or Before.....	2,368	12.6	6.0	254	490	301	433	Q	Q	Q	Q	24.36
1901 to 1920.....	3,665	14.4	5.0	361	489	539	616	469	705	Q	Q	20.27
1921 to 1945.....	8,594	13.7	5.0	922	948	1,753	1,312	1,078	966	1,059	556	14.30
1946 to 1960.....	9,712	11.1	4.6	1,408	1,335	1,694	1,459	1,529	1,188	714	385	13.72
1961 to 1970.....	11,469	15.7	5.0	1,027	1,160	1,639	1,850	1,813	1,764	1,185	1,031	10.88
1971 to 1973.....	4,307	17.7	5.4	332	466	463	528	535	574	1,044	364	17.15
1974 to 1979.....	8,230	14.4	4.8	852	978	1,142	1,155	1,492	603	854	1,155	13.31
1980 to 1983.....	5,205	14.9	4.8	611	487	803	503	730	568	448	1,055	18.96
1984 to 1986.....	4,678	15.1	5.0	442	509	785	804	611	558	687	281	16.69
Ownership and Occupancy												
Nongovernment Owned.....	46,041	12.6	4.8	5,644	6,109	7,661	6,607	6,490	4,948	4,768	3,813	6.69
Owner Occupied.....	28,962	12.1	4.8	3,699	3,981	4,904	4,196	4,083	2,789	2,884	2,425	7.85
Nonowner Occupied.....	17,080	13.5	5.0	1,945	2,128	2,757	2,411	2,407	2,160	1,884	1,389	10.23
Government Owned.....	12,187	24.7	7.0	565	752	1,458	2,053	2,068	2,242	1,969	1,079	11.85
Workers												
Fewer than 5.....	13,129	6.5	3.2	3,658	2,835	2,545	1,514	1,256	876	Q	Q	13.67
5 to 9.....	6,576	7.8	4.5	1,466	1,491	1,321	989	689	Q	Q	Q	16.42
10 to 19.....	7,895	13.4	6.9	777	1,287	2,051	1,531	1,233	637	Q	Q	15.45
20 to 49.....	8,847	20.4	11.3	253	1,049	2,150	2,423	1,336	862	738	Q	12.40
50 to 99.....	6,510	42.9	25.5	Q	169	836	1,547	1,636	1,217	469	Q	18.57
100 to 249.....	6,445	87.9	63.0	NC	Q	213	565	1,929	1,701	1,590	Q	17.60
250 or More.....	8,828	264.5	160.0	NC	NC	Q	Q	478	1,628	3,136	3,488	18.69
Weekly Operating Hours												
39 or Fewer.....	9,286	10.7	4.3	1,448	1,333	1,542	1,459	1,279	1,234	785	Q	15.15
40 to 48.....	15,167	14.0	5.0	1,623	1,656	2,671	2,624	2,215	1,787	1,838	752	10.56
49 to 60.....	10,805	11.8	5.0	1,302	1,770	2,121	1,468	1,360	1,111	838	834	10.98
61 to 84.....	9,760	17.5	5.4	777	950	1,245	1,510	1,477	985	1,333	1,482	13.67
85 to 167.....	5,514	14.7	4.9	582	685	597	634	1,108	967	492	Q	15.93
168 (Open Continuously).....	7,696	22.2	5.4	476	466	943	967	1,119	1,106	1,452	1,168	14.99

See footnotes at end of table.

Table 17. Building Size, Floorspace (continued)

Building Characteristics	Total Floorspace (million square feet)	Mean Square Feet per Building (thousand square feet)	Median Square Feet per Building (thousand square feet)	Million Square Feet of Floorspace by Building Size Category								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:	0.527	0.433	a/	0.816	0.870	0.923	1.043	1.216	1.393	1.630	2.320	
Energy Sources Used (Solely or in Combination)												
Electricity.....	57,036	14.2	5.0	5,970	6,674	8,901	8,553	8,241	7,191	6,737	4,769	6.02
Natural Gas.....	38,140	16.7	5.6	3,108	4,132	5,779	5,388	5,279	5,423	5,287	3,744	6.83
Fuel Oil.....	11,163	20.6	6.0	711	1,038	1,138	1,462	1,431	1,247	2,174	1,962	13.16
District Steam or Hot Water.....	4,645	59.5	19.0	66	Q	316	436	747	778	1,299	966	21.13
District Chilled Water.....	1,191	79.7	19.5	Q	Q	Q	Q	Q	150	477	261	41.54
Propane.....	3,362	9.6	4.0	614	473	586	555	597	Q	Q	Q	22.69
Minor Fuels.....	1,557	9.6	3.2	227	245	251	Q	Q	Q	Q	Q	29.55
No Energy Sources Used.....	1,171	8.6	3.2	229	174	Q	Q	Q	NC	NC	Q	35.06
Energy End Uses												
Space Heating.....	54,510	14.8	5.0	5,315	6,335	8,490	8,150	7,900	6,944	6,621	4,755	5.97
Cooling.....	46,601	16.2	5.3	4,031	5,014	7,061	6,879	6,864	6,194	6,296	4,261	6.19
Water Heating.....	48,836	16.9	5.9	3,893	5,248	7,507	7,563	7,252	6,395	6,485	4,493	6.23
Cooking.....	17,227	30.6	6.2	729	814	1,378	1,802	2,673	3,055	3,656	3,119	9.99
Manufacturing.....	3,081	23.3	7.0	122	202	585	394	374	539	567	Q	20.02

a/ Relative Standard Error (RSE) row and column factors do not apply to medians. RSE's for medians were unavailable at time of publication.

NC/ No cases in sample.

Q/ Data withheld because the RSE was greater than 50 percent, or fewer than 20 buildings were sampled.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 18. Employment Size Category, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	Number of Buildings by Number of Workers in Building							RSE Row Factor
		Fewer 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:	0.470	0.744	0.874	1.008	0.938	1.384	1.497	1.671	
All Buildings.....	4,154	2,033	842	587	434	152	73	33	5.97
Occupant Control of:									
Heating Only.....	646	431	107	65	30	9	Q	Q	19.80
Cooling Only.....	84	30	19	19	8	4	Q	Q	27.17
Heating and Cooling.....	2,009	823	502	334	233	66	35	16	8.05
Reduced Use--Off-Hours									
Heating Only.....	759	510	130	64	40	13	Q	Q	18.67
Cooling Only.....	106	45	23	21	9	6	Q	Q	27.34
Heating and Cooling.....	2,331	904	541	406	302	101	52	26	6.76
Metropolitan Status									
Metropolitan.....	2,734	1,144	608	411	349	123	66	31	6.45
Nonmetropolitan.....	1,421	889	233	176	84	28	7	2	13.79
Percent Heated									
Not Heated.....	470	387	46	29	Q	Q	Q	Q	31.54
1 to 50.....	601	342	132	70	41	10	Q	2	15.64
51 to 99.....	458	165	109	97	53	21	8	5	13.57
100.....	2,625	1,139	555	391	332	120	60	27	6.58
Percent Cooled									
Not Cooled.....	1,248	954	159	80	42	11	Q	Q	18.83
1 to 50.....	972	370	242	182	112	43	16	6	9.42
51 to 99.....	500	158	119	97	70	28	18	9	12.42
100.....	1,435	551	321	228	210	70	37	18	8.21
Percent Lit--Open Hours									
Not Lit.....	231	219	Q	Q	Q	NC	NC	NC	38.56
1 to 50.....	624	386	128	68	32	7	Q	Q	17.65
51 to 99.....	644	258	136	114	93	27	12	5	12.40
100.....	2,655	1,171	570	403	306	119	60	28	7.05

See footnotes at end of table.

Table 18. Employment Size Category, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Number of Buildings by Number of Workers in Building							RSE Row Factor
		Fewer 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:	0.470	0.744	0.874	1.008	0.938	1.384	1.497	1.671	
Building Floorspace (Square Feet)									
1,001 to 5,000.....	2,220	1,414	503	221	70	Q	NC	NC	11.56
5,001 to 10,000.....	931	390	208	173	137	20	Q	NC	13.62
10,001 to 25,000.....	557	158	89	125	130	44	12	Q	13.52
25,001 to 50,000.....	242	44	29	44	68	41	15	Q	13.92
50,001 to 100,000.....	123	20	10	19	20	24	26	6	15.12
100,001 to 200,000.....	52	7	Q	5	6	9	12	11	19.65
200,001 to 500,000.....	23	Q	Q	Q	2	2	6	9	25.65
Over 500,000.....	6	Q	Q	Q	Q	Q	Q	4	44.08
Principal Building Activity									
Assembly.....	575	389	92	54	28	9	Q	Q	17.01
Education.....	241	68	35	46	53	28	10	2	15.22
Food Sales.....	102	33	38	Q	Q	Q	Q	Q	30.95
Food Services.....	201	38	45	50	58	Q	Q	Q	24.38
Health Care.....	52	Q	Q	Q	Q	Q	Q	5	29.10
Lodging.....	137	81	21	14	9	6	5	Q	21.11
Mercantile and Service.....	1,287	645	315	189	96	25	12	5	10.24
Office.....	614	124	170	125	113	41	26	15	11.77
Public Order and Safety.....	55	Q	Q	Q	Q	Q	Q	Q	35.18
Warehouse.....	549	357	75	62	34	12	6	2	15.17
Other.....	103	61	Q	11	10	Q	Q	Q	28.61
Vacant.....	238	205	13	Q	9	Q	Q	Q	33.74
Census Region									
Northeast.....	663	275	136	118	87	27	14	7	11.53
Midwest.....	1,096	606	192	139	102	31	18	8	11.85
South.....	1,570	789	324	205	159	58	27	10	10.37
West.....	825	364	191	126	86	35	14	8	14.73
Year Constructed									
1900 or Before.....	188	108	32	34	9	Q	Q	Q	27.35
1901 to 1920.....	255	154	42	26	21	7	4	Q	19.98
1921 to 1945.....	629	323	147	69	63	15	8	3	13.09
1946 to 1960.....	878	473	167	116	82	27	8	5	13.68
1961 to 1970.....	730	310	152	125	85	33	19	6	11.63
1971 to 1973.....	243	99	53	34	36	12	6	4	15.93
1974 to 1979.....	572	256	131	81	70	18	10	6	11.25
1980 to 1983.....	350	166	62	51	37	19	10	5	16.34
1984 to 1986.....	309	145	54	51	31	18	7	3	15.52

See footnotes at end of table.

Table 18. Employment Size Category, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Number of Buildings by Number of Workers in Building							RSE Row Factor
		Fewer 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:	0.470	0.744	0.874	1.008	0.938	1.384	1.497	1.671	
Ownership and Occupancy									
Nongovernment Owned.....	3,661	1,842	766	509	353	113	52	26	6.55
Owner Occupied.....	2,396	1,224	504	332	228	65	27	16	8.02
Nonowner Occupied.....	1,265	618	262	177	125	48	25	10	9.17
Government Owned.....	493	192	76	78	81	39	21	7	11.09
Weekly Operating Hours									
39 or Fewer.....	870	678	94	42	39	15	2	Q	16.96
40 to 48.....	1,086	472	220	172	147	46	22	8	9.44
49 to 60.....	919	398	250	165	65	23	11	7	10.76
61 to 84.....	556	198	120	99	92	29	13	6	11.96
85 to 167.....	375	135	83	65	57	20	13	2	15.83
168 (Open Continuously).....	347	153	75	44	34	19	12	8	14.64
Energy Sources Used (Solely or in Combination)									
Electricity.....	4,013	1,896	839	585	434	152	73	33	5.96
Natural Gas.....	2,278	942	502	362	298	101	47	25	7.16
Fuel Oil.....	542	246	122	71	58	20	13	12	13.04
District Steam or									
Hot Water.....	78	21	9	11	18	4	9	5	24.21
District Chilled Water.....	15	Q	Q	Q	Q	Q	2	2	51.76
Propane.....	351	220	42	51	24	10	3	Q	22.24
Minor Fuels.....	163	114	24	Q	Q	Q	Q	Q	26.83
No Energy Sources Used.....	136	132	Q	Q	NC	NC	NC	NC	45.56
Energy End Uses									
Space Heating.....	3,681	1,648	795	556	425	151	73	33	5.98
Cooling.....	2,882	1,067	677	505	391	138	71	33	6.01
Water Heating.....	2,896	1,108	666	481	396	142	72	32	6.19
Cooking.....	563	116	115	116	126	45	27	18	9.89
Manufacturing.....	132	54	18	24	22	8	4	2	21.69

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 19. Employment Size Category, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Number of Workers in Building							RSE Row Factor
		Fewer 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:	0.466	0.794	0.994	1.104	0.939	1.273	1.378	1.494	
All Buildings.....	58,229	13,129	6,576	7,895	8,847	6,510	6,445	8,828	6.01
Occupant Control of:									
Heating Only.....	5,974	2,348	1,017	1,185	692	347	Q	Q	21.11
Cooling Only.....	1,845	280	122	277	387	222	Q	Q	28.47
Heating and Cooling.....	25,297	4,850	3,232	3,869	4,181	2,454	2,590	4,121	8.91
Reduced Use--Off-Hours									
Heating Only.....	7,649	3,072	1,186	1,161	967	826	Q	Q	21.45
Cooling Only.....	1,463	292	168	263	285	184	Q	Q	30.38
Heating and Cooling.....	36,652	5,704	3,953	5,037	6,048	4,350	4,684	6,875	6.93
Metropolitan Status									
Metropolitan.....	45,107	8,088	4,759	5,408	7,364	5,219	5,901	8,368	6.89
Nonmetropolitan.....	13,122	5,041	1,817	2,487	1,483	1,290	544	460	12.15
Percent Heated									
Not Heated.....	3,635	2,702	272	435	Q	Q	Q	Q	35.12
1 to 50.....	8,579	2,575	1,723	1,347	1,279	519	Q	303	17.79
51 to 99.....	7,061	814	772	1,216	1,088	820	730	1,622	16.12
100.....	38,941	7,033	3,808	4,890	6,299	5,167	4,860	6,884	6.61
Percent Cooled									
Not Cooled.....	11,057	6,136	1,334	1,509	1,076	712	Q	Q	21.57
1 to 50.....	18,641	3,206	2,807	3,023	3,388	2,565	2,151	1,501	10.85
51 to 99.....	9,982	830	657	1,231	1,395	949	1,511	3,408	13.15
100.....	18,543	2,951	1,778	2,131	2,987	2,283	2,555	3,858	8.67
Percent Lit--Open Hours									
Not Lit.....	1,851	1,721	Q	Q	Q	NC	NC	NC	42.43
1 to 50.....	7,399	2,931	1,378	1,349	738	363	Q	Q	20.15
51 to 99.....	9,416	1,332	1,132	1,509	1,946	1,222	995	1,282	12.87
100.....	39,562	7,145	3,973	5,011	6,151	4,925	5,283	7,072	7.65

See footnotes at end of table.

Table 19. Employment Size Category, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Number of Workers in Building							RSE Row Factor
		Fewer 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:	0.466	0.794	0.994	1.104	0.939	1.273	1.378	1.494	
Ownership and Occupancy									
Nongovernment Owned.....	46,041	11,648	5,812	6,624	6,384	4,280	4,093	7,200	6.93
Owner Occupied.....	28,962	7,515	3,801	4,357	4,223	2,400	2,212	4,453	8.06
Nonowner Occupied.....	17,080	4,133	2,011	2,267	2,161	1,880	1,882	2,746	10.79
Government Owned.....	12,187	1,481	764	1,271	2,463	2,229	2,351	1,628	12.41
Weekly Operating Hours									
39 or Fewer.....	9,286	4,852	1,022	930	964	931	431	Q	17.89
40 to 48.....	15,167	2,693	1,713	2,291	3,007	1,959	1,589	1,916	10.60
49 to 60.....	10,805	2,354	1,670	1,994	1,382	893	917	1,594	11.39
61 to 84.....	9,760	1,143	910	1,376	1,604	896	1,531	2,299	15.38
85 to 167.....	5,514	745	561	684	835	1,073	960	655	16.63
168 (Open Continuously).....	7,696	1,342	699	621	1,055	757	1,016	2,205	17.12
Energy Sources Used (Solely or in Combination)									
Electricity.....	57,036	11,962	6,561	7,883	8,847	6,510	6,445	8,828	6.03
Natural Gas.....	38,140	6,638	4,145	4,343	6,095	4,944	4,611	6,864	7.18
Fuel Oil.....	11,163	1,567	1,028	1,006	1,414	1,134	1,598	3,416	14.84
District Steam or Hot Water.....	4,645	326	193	425	583	293	935	1,891	22.71
District Chilled Water.....	1,191	Q	Q	Q	Q	Q	380	525	49.17
Propane.....	3,362	1,012	281	767	475	347	269	Q	22.15
Minor Fuels.....	1,557	391	388	Q	Q	Q	Q	Q	33.41
No Energy Sources Used.....	1,171	1,148	Q	Q	NC	NC	NC	NC	55.95
Energy End Uses									
Space Heating.....	54,510	10,378	6,310	7,434	8,663	6,498	6,418	8,808	6.16
Cooling.....	46,601	6,868	5,109	6,397	7,720	5,703	6,180	8,625	6.35
Water Heating.....	48,836	8,017	5,558	6,377	8,041	6,101	6,331	8,410	6.49
Cooking.....	17,227	1,022	977	1,449	2,373	2,718	3,153	5,534	11.94
Manufacturing.....	3,081	309	207	371	541	415	444	794	21.44

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 20. Employment Size Category, Total Workers

Building Characteristics	Total Workers in All Buildings (thousand)	Aggregate Square Feet per Worker	Median Square Feet per Worker	Thousands of Workers by Number of Workers in Building							RSE Row Factor
				Fewer 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:	0.663	0.521	a/	0.836	0.915	1.053	0.968	1.441	1.588	1.622	
All Buildings.....	73,436	792.9	1000.9	3,678	5,501	7,454	12,558	9,848	10,148	24,248	5.59
Occupant Control of:											
Heating Only.....	4,648	1285.3	1450.7	828	669	829	832	665	Q	Q	18.27
Cooling Only.....	2,928	630.2	860.2	74	119	242	246	281	Q	Q	34.77
Heating and Cooling.....	35,252	717.6	762.0	1,867	3,310	4,189	6,668	4,199	4,725	10,295	7.54
Reduced Use--Off-Hours											
Heating Only.....	5,146	1486.3	1500.7	947	803	814	1,198	913	Q	Q	16.79
Cooling Only.....	1,693	863.9	763.5	109	138	277	234	335	Q	Q	25.77
Heating and Cooling.....	51,955	705.4	769.2	2,048	3,579	5,144	8,819	6,586	7,274	18,505	6.33
Metropolitan Status											
Metropolitan.....	61,580	732.5	875.9	2,116	3,999	5,223	10,172	7,984	9,142	22,943	6.16
Nonmetropolitan.....	11,856	1106.8	1341.1	1,562	1,501	2,231	2,386	1,863	1,006	1,305	12.47
Percent Heated											
Not Heated.....	1,231	2953.0	b/	257	285	366	Q	Q	Q	Q	31.87
1 to 50.....	5,516	1555.4	1450.3	711	848	891	1,139	645	Q	622	14.49
51 to 99.....	10,171	694.2	701.0	405	715	1,242	1,534	1,377	1,104	3,795	12.55
100.....	56,517	689.0	861.1	2,305	3,653	4,955	9,663	7,797	8,344	19,800	6.43
Percent Cooled											
Not Cooled.....	5,824	1898.5	2275.6	1,274	1,001	1,014	1,188	799	Q	Q	18.54
1 to 50.....	16,429	1134.7	1051.2	844	1,586	2,318	3,241	2,746	2,190	3,504	9.58
51 to 99.....	17,840	559.5	677.3	387	801	1,239	2,062	1,759	2,593	8,999	11.80
100.....	33,343	556.1	625.8	1,173	2,113	2,884	6,067	4,543	5,126	11,437	7.99
Percent Lit--Open Hours											
Not Lit.....	182	10172.8	b/	51	Q	Q	Q	NC	NC	NC	49.08
1 to 50.....	4,728	1565.0	1600.4	750	823	844	887	406	Q	Q	17.81
51 to 99.....	12,887	730.7	800.0	566	932	1,452	2,618	1,779	1,757	3,782	11.59
100.....	55,639	711.0	862.6	2,311	3,701	5,129	8,997	7,662	8,130	19,709	6.61

See footnotes at end of table.

Table 20. Employment Size Category, Total Workers (continued)

Building Characteristics	Total Workers in All Buildings (thousand)	Aggregate Square Feet per Worker	Median Square Feet per Worker	Thousands of Workers by Number of Workers in Building							RSE Row Factor
				Fewer 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:	0.663	0.521	a/	0.836	0.915	1.053	0.968	1.441	1.588	1.622	
Building Floorspace (Square Feet)											
1,001 to 5,000.....	11,035	562.6	775.6	2,471	3,270	2,699	1,875	Q	NC	NC	10.28
5,001 to 10,000.....	9,794	700.5	1200.7	742	1,372	2,217	3,754	1,282	Q	NC	13.33
10,001 to 25,000.....	10,753	848.1	1459.4	351	576	1,641	3,888	2,895	1,317	Q	13.03
25,001 to 50,000.....	8,716	993.7	1750.5	79	196	566	2,133	2,638	1,983	Q	13.88
50,001 to 100,000.....	8,153	1049.7	1689.4	23	66	244	642	1,507	3,608	2,063	15.88
100,001 to 200,000.....	7,783	923.9	1600.3	10	Q	71	182	635	1,822	5,047	21.12
200,001 to 500,000.....	8,940	753.6	1722.4	Q	Q	Q	81	110	932	7,795	24.76
Over 500,000.....	8,261	592.2	1000.7	Q	Q	Q	Q	Q	Q	8,138	40.05
Principal Building Activity											
Assembly.....	4,303	1705.7	2901.9	599	587	668	764	571	Q	Q	18.50
Education.....	6,833	1071.5	932.5	182	234	598	1,644	1,844	1,385	946	14.21
Food Sales.....	1,511	471.1	480.3	86	246	Q	Q	Q	Q	Q	28.20
Food Services.....	3,562	359.7	375.1	103	319	639	1,679	Q	Q	Q	23.07
Health Care.....	5,050	417.3	422.7	Q	Q	Q	Q	Q	Q	3,941	25.97
Lodging.....	2,277	1223.2	2001.3	178	135	173	239	373	669	Q	20.93
Mercantile and Service.....	15,870	806.9	900.7	1,544	2,048	2,385	2,741	1,692	1,555	3,906	11.27
Office.....	25,010	381.7	437.9	349	1,141	1,557	3,312	2,631	3,741	12,279	10.53
Public Order and Safety.....	1,367	497.8	875.3	Q	Q	Q	Q	Q	Q	Q	35.96
Warehouse.....	5,343	1683.6	3001.8	403	473	799	1,026	739	821	1,084	16.75
Other.....	1,566	1102.2	1601.3	80	Q	152	292	Q	Q	Q	25.86
Vacant.....	745	3933.8	b/	86	85	Q	255	Q	Q	Q	35.96
Census Region											
Northeast.....	16,183	731.0	1000.5	511	909	1,488	2,510	1,755	1,979	7,032	12.18
Midwest.....	17,636	909.2	1251.9	1,034	1,252	1,778	2,988	1,982	2,559	6,041	11.26
South.....	25,099	774.0	975.8	1,452	2,098	2,586	4,610	3,887	3,645	6,821	10.25
West.....	14,518	753.4	833.9	681	1,242	1,602	2,451	2,223	1,965	4,354	12.46
Year Constructed											
1900 or Before.....	1,584	1495.6	1874.1	182	206	426	250	Q	Q	Q	26.10
1901 to 1920.....	3,517	1042.2	1501.6	264	283	346	612	493	570	Q	22.56
1921 to 1945.....	8,069	1065.1	1121.9	572	993	859	1,781	1,030	938	1,895	12.64
1946 to 1960.....	11,302	859.3	1066.3	877	1,079	1,451	2,403	1,698	1,178	2,617	12.18
1961 to 1970.....	16,098	712.5	861.3	587	997	1,578	2,426	2,133	2,702	5,676	11.22
1971 to 1973.....	6,781	635.2	960.7	160	354	424	1,007	718	878	3,240	16.17
1974 to 1979.....	11,089	742.2	900.3	468	833	1,039	2,036	1,149	1,369	4,193	10.41
1980 to 1983.....	8,238	631.9	850.5	310	409	673	1,064	1,288	1,299	3,195	16.19
1984 to 1986.....	6,759	692.1	895.7	258	348	658	980	1,153	1,075	2,286	15.32

See footnotes at end of table.

Table 20. Employment Size Category, Total Workers (continued)

Building Characteristics	Total Workers in All Buildings (thousand)	Aggregate Square Feet per Worker	Median Square Feet per Worker	Thousands of Workers by Number of Workers in Building							RSE Row Factor
				Fewer 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:	0.663	0.521	a/	0.836	0.915	1.053	0.968	1.441	1.588	1.622	
Ownership and Occupancy											
Nongovernment Owned.....	57,505	800.6	1000.9	3,328	4,987	6,433	10,123	7,338	7,025	18,272	6.12
Owner Occupied.....	35,691	811.5	1000.9	2,320	3,267	4,195	6,547	4,293	3,501	11,567	7.13
Nonowner Occupied.....	21,814	783.0	1033.3	1,008	1,720	2,237	3,576	3,045	3,524	6,705	8.90
Government Owned.....	15,931	765.0	1000.1	350	514	1,022	2,436	2,509	3,123	5,976	11.18
Workers											
Fewer than 5.....	3,678	3569.7	2425.8	3,678	--	--	--	--	--	--	8.33
5 to 9.....	5,501	1195.4	640.8	--	5,501	--	--	--	--	--	6.48
10 to 19.....	7,454	1059.1	525.9	--	--	7,454	--	--	--	--	8.02
20 to 49.....	12,558	704.5	410.5	--	--	--	12,558	--	--	--	6.47
50 to 99.....	9,848	661.0	435.6	--	--	--	--	9,848	--	--	10.64
100 to 249.....	10,148	635.0	454.9	--	--	--	--	--	10,148	--	11.25
250 or More.....	24,248	364.1	354.0	--	--	--	--	--	--	24,248	8.72
Weekly Operating Hours											
39 or Fewer.....	4,310	2154.6	5006.6	649	600	512	1,090	924	315	Q	16.26
40 to 48.....	20,667	733.9	800.3	1,079	1,450	2,220	4,397	2,865	3,018	5,637	9.77
49 to 60.....	14,961	722.2	900.3	940	1,612	2,058	1,841	1,569	1,576	5,365	10.03
61 to 84.....	14,329	681.1	720.8	449	789	1,280	2,630	1,916	1,743	5,520	12.80
85 to 167.....	7,757	710.9	700.2	279	550	831	1,676	1,347	1,764	1,310	14.80
168 (Open Continuously).....	11,413	674.4	1121.7	282	499	553	924	1,227	1,732	6,197	14.23
Energy Sources Used (Solely or in Combination)											
Electricity.....	73,355	777.5	1000.1	3,643	5,489	7,421	12,558	9,848	10,148	24,248	5.55
Natural Gas.....	49,924	764.0	900.8	1,962	3,297	4,626	8,580	6,494	6,647	18,318	6.73
Fuel Oil.....	16,305	684.6	975.9	535	806	882	1,681	1,359	1,865	9,177	12.13
District Steam or Hot Water.....	8,076	575.1	1167.0	36	59	152	534	268	1,246	5,781	21.28
District Chilled Water.....	2,079	573.1	840.4	Q	Q	Q	Q	Q	405	1,482	27.48
Propane.....	3,751	896.3	1166.6	433	271	665	735	690	511	Q	20.49
Minor Fuels.....	1,255	1240.8	1300.8	214	153	Q	Q	Q	Q	Q	24.89
No Energy Sources Used.....	Q	Q	b/	23	Q	Q	NC	NC	NC	NC	90.23

See footnotes at end of table.

Table 20. Employment Size Category, Total Workers (continued)

Building Characteristics	Total Workers in All Buildings (thousand)	Aggregate Square Feet per Worker	Median Square Feet per Worker	Thousands of Workers by Number of Workers in Building							RSE Row Factor
				Fewer 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:	0.663	0.521	a/	0.836	0.915	1.053	0.968	1.441	1.588	1.622	
Energy End Uses											
Space Heating.....	72,106	756.0	906.9	3,429	5,202	7,049	12,325	9,798	10,086	24,217	5.65
Cooling.....	66,227	703.6	750.8	2,396	4,470	6,401	11,330	8,910	9,873	22,846	5.68
Water Heating.....	65,785	742.4	800.9	2,411	4,389	6,131	11,482	9,227	9,960	22,186	5.91
Cooking.....	26,805	642.7	600.5	278	767	1,501	3,645	3,001	3,796	13,817	8.94
Manufacturing.....	3,963	777.6	1000.3	110	113	315	662	482	623	1,657	20.47

a/ Relative Standard Error (RSE) row and column factors do not apply to medians. RSE's for medians were unavailable at time of publication.

b/ Median square feet per worker is undefined because the median number of workers is zero.

NC/ No cases in sample.

Q/ Data withheld because the RSE was greater than 50 percent, or fewer than 20 buildings were sampled.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 21. Weekly Operating Hours, Number of Buildings

Building Characteristics	All Buildings (thousand)	Median Number of Hours per Week	Mean Number of Hours per Week	Thousands of Buildings by Weekly Operating Hours Category						Open Continuously	RSE Row Factor
				39 or Fewer Hours	40 to 48 Hours	49 to 60 Hours	61 to 84 Hours	85 to 167 Hours			
RSE Column Factor:	0.725	a/	0.247	1.387	1.015	1.095	1.350	1.559	1.720		
All Buildings.....	4,154	49	59	870	1,086	919	556	375	347		4.78
Occupant Control of:											
Heating Only.....	646	49	55	140	164	174	82	49	37		11.99
Cooling Only.....	84	50	64	16	23	16	11	9	9		22.85
Heating and Cooling.....	2,009	50	62	318	595	479	282	166	168		6.19
Reduced Use--Off-Hours											
Heating Only.....	759	49	53	197	174	194	99	58	36		11.26
Cooling Only.....	106	54	70	9	29	24	14	18	11		20.38
Heating and Cooling.....	2,331	50	58	401	694	550	342	212	132		5.65
Metropolitan Status											
Metropolitan.....	2,734	50	62	469	740	611	413	259	241		5.23
Nonmetropolitan.....	1,421	48	54	401	346	308	143	116	106		9.75
Percent Heated											
Not Heated.....	470	43	43	208	82	73	33	37	37		13.95
1 to 50.....	601	50	58	72	189	182	87	38	33		9.20
51 to 99.....	458	51	65	65	136	98	76	38	45		11.12
100.....	2,625	50	61	525	680	566	360	262	232		5.18
Percent Cooled											
Not Cooled.....	1,248	48	50	406	246	279	137	91	89		9.86
1 to 50.....	972	50	62	106	310	265	143	77	71		7.34
51 to 99.....	500	52	65	71	132	115	84	57	41		10.44
100.....	1,435	50	63	287	399	260	193	151	145		6.80
Percent Lit--Open Hours											
Not Lit.....	231	0	25	161	21	9	9	9	9		25.08
1 to 50.....	624	50	60	104	180	161	77	51	51		9.49
51 to 99.....	644	50	60	108	190	152	88	63	42		9.99
100.....	2,655	50	62	498	694	585	383	257	237		6.01

See footnotes at end of table.

Table 21. Weekly Operating Hours, Number of Buildings (continued)

Building Characteristics	All Buildings (thousand)	Median Number of Hours per Week	Mean Number of Hours per Week	Thousands of Buildings by Weekly Operating Hours Category						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:	0.725	a/	0.247	1.387	1.015	1.095	1.350	1.559	1.720	
Building Floorspace (Square Feet)										
1,001 to 5,000.....	2,220	49	57	524	578	473	271	207	168	6.81
5,001 to 10,000.....	931	50	59	180	221	244	132	87	66	7.78
10,001 to 25,000.....	557	50	62	94	162	129	78	38	55	8.18
25,001 to 50,000.....	242	50	64	40	74	41	42	18	28	10.84
50,001 to 100,000.....	123	53	69	19	33	20	20	16	16	13.70
100,001 to 200,000.....	52	53	72	9	13	8	7	7	8	14.52
200,001 to 500,000.....	23	59	79	3	6	3	5	2	5	16.63
Over 500,000.....	6	69	86	Q	1	1	2	Q	1	30.26
Principal Building Activity										
Assembly.....	575	25	39	331	63	49	52	58	23	10.99
Education.....	241	42	46	90	81	38	23	7	Q	13.04
Food Sales.....	102	84	97	Q	Q	Q	29	29	22	23.71
Food Services.....	201	82	82	22	Q	Q	68	83	Q	16.38
Health Care.....	52	51	77	Q	18	Q	Q	Q	12	27.71
Lodging.....	137	168	152	Q	Q	Q	Q	Q	112	29.38
Mercantile and Service.....	1,287	54	63	71	322	471	253	114	56	7.41
Office.....	614	45	51	41	338	151	57	15	12	10.79
Public Order and Safety.....	55	168	126	Q	Q	Q	Q	NC	37	30.47
Warehouse.....	549	48	53	111	181	136	45	35	42	11.46
Other.....	103	50	69	Q	28	20	Q	Q	18	22.55
Vacant.....	238	0	21	163	31	22	Q	Q	Q	22.45
Census Region										
Northeast.....	663	53	62	102	146	179	117	67	50	10.60
Midwest.....	1,096	49	57	269	239	245	148	117	78	8.99
South.....	1,570	48	58	339	464	323	197	109	138	8.17
West.....	825	49	62	160	238	171	94	82	80	12.25
Year Constructed										
1900 or Before.....	188	48	52	62	37	39	21	19	Q	17.87
1901 to 1920.....	255	48	50	71	64	62	29	18	11	15.35
1921 to 1945.....	629	48	54	149	170	161	61	46	42	9.17
1946 to 1960.....	878	49	56	200	223	203	125	74	53	9.65
1961 to 1970.....	730	50	63	134	189	154	105	71	77	9.21
1971 to 1973.....	243	50	62	46	67	41	43	22	23	13.36
1974 to 1979.....	572	50	65	102	156	117	69	63	66	9.87
1980 to 1983.....	350	50	62	56	100	82	53	31	29	11.99
1984 to 1986.....	309	51	65	52	80	60	51	31	36	12.49

See footnotes at end of table.

Table 21. Weekly Operating Hours, Number of Buildings (continued)

Building Characteristics	All Buildings (thousand)	Median Number of Hours per Week	Mean Number of Hours per Week	Thousands of Buildings by Weekly Operating Hours Category						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:	0.725	a/	0.247	1.387	1.015	1.095	1.350	1.559	1.720	
Ownership and Occupancy										
Nongovernment Owned.....	3,661	50	59	733	908	870	512	350	288	5.06
Owner Occupied.....	2,396	50	60	485	579	561	333	237	201	6.20
Nonowner Occupied.....	1,265	50	57	248	329	309	179	113	87	7.58
Government Owned.....	493	44	59	138	179	49	44	25	59	10.36
Workers										
Fewer than 5.....	2,033	45	50	678	472	398	198	135	153	7.25
5 to 9.....	842	53	66	94	220	250	120	83	75	8.05
10 to 19.....	587	53	65	42	172	165	99	65	44	9.48
20 to 49.....	434	53	69	39	147	65	92	57	34	8.80
50 to 99.....	152	55	73	15	46	23	29	20	19	13.83
100 to 249.....	73	65	82	2	22	11	13	13	12	16.96
250 or More.....	33	64	86	Q	8	7	6	2	8	16.53
Weekly Operating Hours										
39 or Fewer.....	870	5	12	870	--	--	--	--	--	10.66
40 to 48.....	1,086	45	44	--	1,086	--	--	--	--	2.69
49 to 60.....	919	54	54	--	--	919	--	--	--	3.00
61 to 84.....	556	71	72	--	--	--	556	--	--	4.50
85 to 167.....	375	101	104	--	--	--	--	375	--	5.20
168 (Open Continuously).....	347	168	168	--	--	--	--	--	347	b/
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	50	60	770	1,071	909	555	372	337	4.79
Natural Gas.....	2,278	50	61	397	628	511	355	222	165	5.60
Fuel Oil.....	542	50	61	99	124	155	74	49	41	11.40
District Steam or Hot Water.....	78	54	82	10	19	17	6	6	21	22.03
District Chilled Water.....	15	112	109	Q	Q	Q	Q	Q	6	43.43
Propane.....	351	54	67	80	49	74	43	61	45	16.70
Minor Fuels.....	163	49	59	35	39	41	Q	Q	11	18.62
No Energy Sources Used.....	136	0	23	99	Q	Q	Q	Q	Q	34.29

See footnotes at end of table.

Table 21. Weekly Operating Hours, Number of Buildings (continued)

Building Characteristics	All Buildings (thousand)	Median Number of Hours per Week	Mean Number of Hours per Week	Thousands of Buildings by Weekly Operating Hours Category						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:	0.725	a/	0.247	1.387	1.015	1.095	1.350	1.559	1.720	
Energy End Uses										
Space Heating.....	3,681	50	61	661	1,002	849	522	337	310	4.75
Cooling.....	2,882	50	63	451	832	639	419	283	258	5.03
Water Heating.....	2,896	50	64	475	780	613	429	318	281	4.77
Cooking.....	563	76	81	90	66	62	125	139	81	8.89
Manufacturing.....	132	50	59	10	43	50	16	6	8	20.67

a/ Relative Standard Error (RSE) row and column factors do not apply to medians. RSE's for medians were unavailable at time of publication.

b/ The median and mean hours per week are identically 168 by definition in this category. The RSE for the number of buildings in the category (347 thousand) is 6.9 percent.

NC/ No cases in sample.

g/ Data withheld because the RSE was greater than 50 percent, or fewer than 20 buildings were sampled.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 22. Weekly Operating Hours, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Weekly Operating Hours Category						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:	0.488	1.168	0.919	0.920	1.267	1.272	1.288	
All Buildings.....	58,229	9,286	15,167	10,805	9,760	5,514	7,696	6.18
Occupant Control of:								
Heating Only.....	5,974	1,102	1,619	1,301	864	597	492	18.59
Cooling Only.....	1,845	269	427	237	470	Q	324	29.24
Heating and Cooling.....	25,297	3,057	6,823	5,203	4,468	2,340	3,405	8.45
Reduced Use--Off-Hours								
Heating Only.....	7,649	1,843	2,088	1,460	945	804	508	17.16
Cooling Only.....	1,463	Q	325	266	257	126	358	30.24
Heating and Cooling.....	36,652	5,126	10,476	7,564	7,034	3,282	3,170	7.04
Metropolitan Status								
Metropolitan.....	45,107	6,210	11,846	8,421	7,944	4,443	6,243	7.21
Nonmetropolitan.....	13,122	3,077	3,321	2,384	1,816	1,072	1,453	12.03
Percent Heated								
Not Heated.....	3,635	1,489	766	512	283	162	422	22.02
1 to 50.....	8,579	905	2,723	2,356	1,427	525	643	16.29
51 to 99.....	7,061	837	2,098	1,385	1,449	530	762	17.03
100.....	38,941	6,055	9,573	6,551	6,600	4,293	5,869	6.84
Percent Cooled								
Not Cooled.....	11,057	3,199	2,303	2,136	1,330	968	1,121	14.98
1 to 50.....	18,641	2,601	5,874	3,969	2,781	1,698	1,718	10.64
51 to 99.....	9,982	1,124	2,504	1,711	2,203	726	1,633	14.05
100.....	18,543	2,362	4,487	2,988	3,365	2,116	3,225	9.22
Percent Lit--Open Hours								
Not lit.....	1,851	1,363	Q	Q	Q	Q	Q	34.89
1 to 50.....	7,399	1,171	1,986	1,794	1,194	486	769	16.38
51 to 99.....	9,416	1,134	2,618	2,026	1,620	856	1,162	11.99
100.....	39,562	5,618	10,313	6,876	6,925	4,150	5,680	7.67

See footnotes at end of table.

Table 22. Weekly Operating Hours, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Weekly Operating Hours Category						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:	0.488	1.168	0.919	0.920	1.267	1.272	1.288	
Building Floorspace (Square Feet)								
1,001 to 5,000.....	6,209	1,448	1,623	1,302	777	582	476	8.28
5,001 to 10,000.....	6,861	1,333	1,656	1,770	950	685	466	9.05
10,001 to 25,000.....	9,119	1,542	2,671	2,121	1,245	597	943	9.92
25,001 to 50,000.....	8,661	1,459	2,624	1,468	1,510	634	967	12.72
50,001 to 100,000.....	8,559	1,279	2,215	1,360	1,477	1,108	1,119	15.36
100,001 to 200,000.....	7,191	1,234	1,787	1,111	985	967	1,106	16.80
200,001 to 500,000.....	6,737	785	1,838	838	1,333	492	1,452	19.14
Over 500,000.....	4,893	Q	752	834	1,482	Q	1,168	33.31
Principal Building Activity								
Assembly.....	7,339	3,088	913	756	803	1,251	528	15.44
Education.....	7,321	2,363	2,255	885	1,143	589	Q	17.76
Food Sales.....	712	Q	Q	Q	204	235	185	33.96
Food Services.....	1,281	166	Q	Q	492	453	Q	26.02
Health Care.....	2,107	Q	141	Q	Q	Q	1,795	41.11
Lodging.....	2,785	Q	Q	Q	Q	Q	2,525	39.73
Mercantile and Service.....	12,805	372	2,387	3,963	4,387	1,217	479	12.94
Office.....	9,546	321	4,727	2,522	1,434	254	288	14.60
Public Order and Safety.....	680	Q	Q	Q	Q	NC	458	37.18
Warehouse.....	8,996	849	3,626	1,884	987	1,064	586	16.76
Other.....	1,726	Q	606	282	Q	Q	473	29.76
Vacant.....	2,931	1,891	362	307	Q	Q	Q	27.41
Census Region								
Northeast.....	11,830	1,615	2,682	2,344	2,281	1,438	1,470	13.64
Midwest.....	16,034	2,904	3,864	2,795	2,954	1,425	2,092	10.49
South.....	19,427	3,312	5,806	3,210	2,725	1,657	2,716	10.31
West.....	10,937	1,455	2,815	2,456	1,799	994	1,418	14.76
Year Constructed								
1900 or Before.....	2,368	674	460	506	394	154	Q	24.66
1901 to 1920.....	3,665	857	1,087	609	450	353	310	21.08
1921 to 1945.....	8,594	1,872	2,331	1,831	950	568	1,043	15.94
1946 to 1960.....	9,712	1,844	2,661	1,957	1,460	938	852	13.29
1961 to 1970.....	11,469	1,890	3,125	1,931	1,938	956	1,630	11.76
1971 to 1973.....	4,307	474	1,030	462	775	615	951	17.86
1974 to 1979.....	8,230	804	2,299	1,412	1,426	1,057	1,232	14.43
1980 to 1983.....	5,205	391	1,200	1,177	1,369	391	677	21.15
1984 to 1986.....	4,678	482	976	920	998	481	821	16.69

See footnotes at end of table.

Table 22. Weekly Operating Hours, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Weekly Operating Hours Category						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:	0.488	1.168	0.919	0.920	1.267	1.272	1.288	
Ownership and Occupancy								
Nongovernment Owned.....	46,041	6,545	11,555	9,418	8,121	4,496	5,906	6.74
Owner Occupied.....	28,962	4,275	7,354	5,897	4,523	2,796	4,118	7.62
Nonowner Occupied.....	17,080	2,270	4,201	3,522	3,598	1,700	1,788	10.15
Government Owned.....	12,187	2,741	3,612	1,387	1,638	1,019	1,790	13.58
Workers								
Fewer than 5.....	13,129	4,852	2,693	2,354	1,143	745	1,342	9.77
5 to 9.....	6,576	1,022	1,713	1,670	910	561	699	13.07
10 to 19.....	7,895	930	2,291	1,994	1,376	684	621	15.16
20 to 49.....	8,647	964	3,007	1,382	1,604	835	1,055	11.70
50 to 99.....	6,510	931	1,959	893	896	1,073	757	15.42
100 to 249.....	6,445	431	1,589	917	1,531	960	1,016	18.03
250 or More.....	8,828	Q	1,916	1,594	2,299	655	2,205	18.71
Energy Sources Used (Solely or in Combination)								
Electricity.....	57,036	8,384	14,971	10,758	9,758	5,501	7,664	6.22
Natural Gas.....	38,140	5,560	9,979	6,799	6,913	3,824	5,064	6.92
Fuel Oil.....	11,163	1,508	2,246	2,122	2,227	949	2,111	12.64
District Steam or								
Hot Water.....	4,645	181	1,053	795	520	546	1,549	20.95
District Chilled Water.....	1,191	Q	Q	125	Q	Q	571	43.27
Propane.....	3,362	807	498	506	508	451	592	20.59
Minor Fuels.....	1,557	293	453	310	Q	Q	260	29.04
No Energy Sources Used.....	1,171	899	Q	Q	Q	Q	Q	48.26
Energy End Uses								
Space Heating.....	54,510	7,723	14,382	10,322	9,472	5,344	7,267	6.24
Cooling.....	46,601	5,858	12,717	8,621	8,293	4,537	6,574	6.70
Water Heating.....	48,836	6,733	12,470	8,827	8,648	5,084	7,075	6.51
Cooking.....	17,227	2,615	3,032	1,914	3,563	2,228	3,874	11.44
Manufacturing.....	3,081	239	1,115	704	419	291	312	20.42

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.
 Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 23. Occupancy of Nongovernment Owned Buildings, Number of Buildings
(Thousand)

Building Characteristics	Nongovernment Owned Buildings									RSE Row Factor
	All Buildings	All Nongovernment Owned Buildings	Owner Occupied			Nonowner Occupied			Vacant	
			All Buildings	Single Establishment	Multiple Establishment	All Buildings	Single Establishment	Multiple Establishment		
RSE Column Factor:	0.524	0.568	0.682	0.739	1.523	0.840	1.023	1.551	3.287	
All Buildings.....	4,154	3,661	2,396	2,105	274	1,265	880	288	97	5.72
Reduced Use--Off-Hours										
Heating Only.....	759	645	450	418	30	195	152	34	Q	13.29
Cooling Only.....	106	96	63	50	14	33	21	11	Q	23.49
Heating and Cooling.....	2,331	2,076	1,350	1,153	192	726	520	187	19	6.86
Occupant Control of:										
Heating Only.....	646	566	416	383	31	150	116	29	Q	15.14
Cooling Only.....	84	67	43	32	11	24	14	Q	Q	28.21
Heating and Cooling.....	2,009	1,828	1,108	938	166	720	486	209	24	7.43
Metropolitan Status										
Metropolitan.....	2,734	2,428	1,527	1,319	198	901	607	237	57	5.98
Nonmetropolitan.....	1,421	1,233	869	786	76	364	273	51	40	12.73
Percent Heated										
Not Heated.....	470	413	244	226	Q	169	93	18	58	14.35
1 to 50.....	601	543	348	309	38	195	149	36	Q	11.44
51 to 99.....	458	419	271	225	46	148	104	40	Q	12.88
100.....	2,625	2,286	1,533	1,345	181	753	534	194	25	6.36
Percent Cooled										
Not Cooled.....	1,248	1,071	729	679	40	343	231	43	68	11.21
1 to 50.....	972	858	573	482	89	285	212	63	Q	8.88
51 to 99.....	500	445	285	240	46	160	107	50	Q	12.65
100.....	1,435	1,287	809	705	99	478	329	131	17	8.35
Percent Lit--Open Hours										
Not Lit.....	231	207	108	93	Q	99	33	Q	60	19.23
1 to 50.....	624	561	386	340	46	175	128	42	Q	11.55
51 to 99.....	644	562	361	300	60	201	148	49	Q	12.40
100.....	2,655	2,331	1,541	1,372	163	790	570	190	30	7.11

See footnotes at end of table.

Table 23. Occupancy of Nongovernment Owned Buildings, Number of Buildings (continued)
(Thousand)

Building Characteristics	Nongovernment Owned Buildings									RSE Row Factor
	All Buildings	All Nongovernment Owned Buildings	Owner Occupied			Nonowner Occupied			Vacant	
			All Buildings	Single Establishment	Multiple Establishment	All Buildings	Single Establishment	Multiple Establishment		
RSE Column Factor:	0.524	0.568	0.682	0.739	1.523	0.840	1.023	1.551	3.287	
Building Floorspace (Square Feet)										
1,001 to 5,000.....	2,220	2,024	1,338	1,228	100	686	524	97	65	8.52
5,001 to 10,000.....	931	828	546	456	86	282	181	82	Q	8.69
10,001 to 25,000.....	557	471	301	250	51	170	106	57	Q	8.69
25,001 to 50,000.....	242	188	120	98	19	69	42	25	Q	11.85
50,001 to 100,000.....	123	94	59	50	9	35	20	13	Q	13.98
100,001 to 200,000.....	52	36	20	16	4	16	5	10	Q	19.53
200,001 to 500,000.....	23	16	9	6	3	6	2	4	Q	19.18
Over 500,000.....	6	4	3	2	1	1	1	1	Q	29.54
Principal Building Activity										
Assembly.....	575	498	396	369	27	102	96	Q	Q	14.92
Education.....	241	80	59	54	Q	22	20	Q	NC	25.73
Food Sales.....	102	100	71	65	Q	30	28	Q	NC	25.80
Food Services.....	201	191	133	127	Q	58	52	Q	NC	18.59
Health Care.....	52	44	32	28	Q	11	10	Q	NC	31.80
Lodging.....	137	127	89	86	Q	38	34	Q	NC	21.41
Mercantile and Service.....	1,287	1,242	754	660	94	488	349	138	NC	8.29
Office.....	614	559	378	281	97	180	104	76	NC	10.90
Public Order and Safety.....	55	Q	Q	Q	Q	Q	Q	Q	Q	48.11
Warehouse.....	549	509	360	337	22	149	112	37	NC	11.83
Other.....	103	71	52	45	Q	19	16	Q	NC	28.98
Vacant.....	238	219	55	37	Q	164	56	13	94	16.43
Census Region										
Northeast.....	663	587	430	364	62	158	92	57	Q	11.62
Midwest.....	1,096	988	706	609	90	282	201	53	28	10.83
South.....	1,570	1,395	870	796	71	525	388	101	36	9.30
West.....	825	691	391	336	51	300	198	77	25	16.63
Year Constructed										
1900 or Before.....	188	181	131	102	26	50	32	Q	Q	19.86
1901 to 1920.....	255	221	136	115	19	85	50	15	21	16.67
1921 to 1945.....	629	538	326	271	50	212	149	47	17	10.37
1946 to 1960.....	878	763	492	446	46	271	196	58	Q	12.26
1961 to 1970.....	730	635	430	386	41	204	156	39	Q	10.46
1971 to 1973.....	243	210	140	123	17	70	45	19	Q	16.22
1974 to 1979.....	572	509	343	314	27	167	118	40	Q	10.89
1980 to 1983.....	350	315	208	180	27	107	70	34	Q	12.92
1984 to 1986.....	309	289	190	168	21	99	65	27	Q	13.92

See footnotes at end of table.

Table 23. Occupancy of Nongovernment Owned Buildings, Number of Buildings (continued)
(Thousand)

Building Characteristics	Nongovernment Owned Buildings									RSE Row Factor
	All Buildings	Nongovernment Owned Buildings	Owner Occupied			Nonowner Occupied			Vacant	
			All Buildings	Single Establishment	Multiple Establishment	All Buildings	Single Establishment	Multiple Establishment		
RSE Column Factor:	0.524	0.568	0.682	0.739	1.523	0.840	1.023	1.551	3.287	
Workers										
Fewer than 5.....	2,033	1,842	1,224	1,128	82	618	461	62	94	8.39
5 to 9.....	842	766	504	440	62	262	206	53	Q	10.30
10 to 19.....	587	509	332	274	58	177	102	75	NC	9.97
20 to 49.....	434	353	228	183	45	125	69	56	Q	10.95
50 to 99.....	152	113	65	52	13	48	26	22	NC	16.19
100 to 249.....	73	52	27	19	8	25	12	13	NC	18.34
250 or More.....	33	26	16	9	6	10	4	7	NC	16.60
Weekly Operating Hours										
39 or Fewer.....	870	733	485	447	23	248	142	15	90	12.46
40 to 48.....	1,086	908	579	483	95	329	228	99	Q	8.80
49 to 60.....	919	870	561	476	83	309	212	95	Q	9.52
61 to 84.....	556	512	333	295	38	179	131	46	Q	13.32
85 to 167.....	375	350	237	215	22	113	89	23	Q	15.36
168 (Open Continuously).....	347	288	201	188	13	87	77	Q	NC	15.96
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	3,536	2,335	2,056	273	1,200	864	283	53	5.84
Natural Gas.....	2,278	1,995	1,280	1,095	179	715	519	168	27	7.21
Fuel Oil.....	542	467	346	295	51	121	83	35	Q	13.80
District Steam or										
Hot Water.....	78	48	43	38	5	5	Q	1	Q	37.05
District Chilled Water.....	15	10	9	8	Q	Q	Q	Q	NC	52.23
Propane.....	351	319	240	220	19	79	63	12	Q	23.52
Minor Fuels.....	163	146	108	99	Q	38	37	Q	Q	25.33
No Energy Sources Used.....	136	120	59	47	Q	62	Q	Q	44	24.82
Energy End Uses										
Space Heating.....	3,681	3,245	2,155	1,884	264	1,090	790	266	34	5.98
Cooling.....	2,882	2,570	1,658	1,419	232	912	648	239	25	6.28
Water Heating.....	2,896	2,529	1,661	1,422	232	868	599	239	30	6.14
Cooking.....	563	478	313	278	34	165	116	46	Q	10.94
Manufacturing.....	132	126	91	75	16	34	23	9	Q	21.14

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.
 Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 24. Occupancy of Nongovernment Owned Buildings, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Nongovernment Owned Buildings	Owner Occupied			Nonowner Occupied				RSE Row Factor
			All Buildings	Single Establishment	Multiple Establishment	All Buildings	Single Establishment	Multiple Establishment	Vacant	
RSE Column Factor:	0.520	0.578	0.656	0.751	1.543	0.910	1.085	1.580	2.807	
All Buildings.....	58,229	46,041	28,962	23,016	5,739	17,080	9,277	6,990	812	5.54
Reduced Use--Off-Hours										
Heating Only.....	7,649	5,447	3,429	3,109	296	2,018	1,317	582	Q	15.42
Cooling Only.....	1,463	1,268	747	486	261	521	281	230	Q	28.97
Heating and Cooling.....	36,652	29,158	18,572	13,924	4,534	10,586	5,405	5,033	147	6.59
Occupant Control of:										
Heating Only.....	5,974	4,821	3,256	2,931	316	1,565	1,112	416	Q	17.39
Cooling Only.....	1,845	973	555	314	241	418	212	Q	Q	27.81
Heating and Cooling.....	25,297	22,107	12,379	9,028	3,257	9,728	4,558	5,032	137	8.03
Metropolitan Status										
Metropolitan.....	45,107	35,716	21,814	16,833	4,812	13,901	7,071	6,311	520	6.52
Nonmetropolitan.....	13,122	10,325	7,147	6,183	927	3,178	2,206	680	292	11.40
Percent Heated										
Not Heated.....	3,635	3,080	1,885	1,746	Q	1,196	549	183	463	17.79
1 to 50.....	8,579	7,606	4,554	3,631	839	3,053	2,046	916	Q	14.51
51 to 99.....	7,061	5,798	3,299	2,199	1,097	2,499	1,136	1,346	Q	15.73
100.....	38,941	29,549	19,224	15,441	3,723	10,325	5,539	4,546	241	6.19
Percent Cooled										
Not Cooled.....	11,057	8,392	5,570	5,230	281	2,822	1,793	455	573	13.09
1 to 50.....	18,641	14,683	9,538	7,395	2,042	5,144	3,347	1,727	Q	10.26
51 to 99.....	9,982	7,730	4,648	3,044	1,604	3,083	1,260	1,805	Q	14.75
100.....	18,543	15,237	9,206	7,348	1,813	6,031	2,877	3,002	151	8.22
Percent Lit--Open Hours										
Not Lit.....	1,851	1,520	760	637	Q	759	174	Q	558	25.85
1 to 50.....	7,399	6,448	4,481	3,343	1,112	1,967	1,268	676	Q	15.54
51 to 99.....	9,416	7,077	4,449	3,491	913	2,628	1,432	1,185	Q	11.02
100.....	39,562	30,997	19,271	15,545	3,667	11,725	6,404	5,102	219	7.36

See footnotes at end of table.

Table 24. Occupancy of Nongovernment Owned Buildings, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Nongovernment Owned Buildings	Owner Occupied			Nonowner Occupied				RSE Row Factor
			All Buildings	Single Establishment	Multiple Establishment	All Buildings	Single Establishment	Multiple Establishment	Vacant	
RSE Column Factor:	0.520	0.578	0.656	0.751	1.543	0.910	1.085	1.580	2.807	
Building Floorspace (Square Feet)										
1,001 to 5,000.....	6,209	5,644	3,699	3,373	304	1,945	1,455	314	176	8.60
5,001 to 10,000.....	6,861	6,109	3,981	3,327	627	2,128	1,358	619	Q	8.58
10,001 to 25,000.....	9,119	7,661	4,904	4,061	837	2,757	1,716	916	Q	9.08
25,001 to 50,000.....	8,661	6,607	4,196	3,481	654	2,411	1,513	827	Q	11.65
50,001 to 100,000.....	8,559	6,490	4,083	3,434	617	2,407	1,348	910	Q	13.81
100,001 to 200,000.....	7,191	4,948	2,789	2,157	574	2,160	737	1,375	Q	18.65
200,001 to 500,000.....	6,737	4,768	2,884	1,789	1,096	1,884	636	1,169	Q	19.20
Over 500,000.....	4,893	3,813	2,425	1,394	1,031	1,389	515	860	Q	30.72
Principal Building Activity										
Assembly.....	7,339	5,921	4,669	4,271	398	1,252	1,115	Q	Q	17.29
Education.....	7,321	1,394	1,081	1,034	Q	313	273	Q	NC	24.30
Food Sales.....	712	696	448	358	Q	248	178	Q	NC	28.17
Food Services.....	1,281	1,184	904	774	Q	280	234	Q	NC	23.20
Health Care.....	2,107	1,547	1,271	1,073	Q	276	221	Q	NC	35.11
Lodging.....	2,785	2,446	1,497	1,408	Q	948	866	Q	NC	19.97
Mercantile and Service.....	12,805	12,123	6,675	5,201	1,475	5,447	2,387	3,060	NC	11.13
Office.....	9,546	8,360	5,334	3,064	2,270	3,026	1,086	1,940	NC	11.68
Public Order and Safety.....	680	Q	Q	Q	Q	Q	Q	Q	Q	52.22
Warehouse.....	8,996	8,466	5,401	4,572	829	3,065	1,874	1,191	NC	14.64
Other.....	1,726	1,258	724	634	Q	534	346	Q	NC	34.59
Vacant.....	2,931	2,499	846	520	Q	1,652	668	204	780	17.46
Census Region										
Northeast.....	11,830	8,730	5,867	4,430	1,401	2,863	1,206	1,538	Q	13.59
Midwest.....	16,034	13,000	8,663	6,754	1,821	4,338	2,268	1,833	237	10.48
South.....	19,427	15,668	9,640	8,162	1,460	6,029	3,464	2,253	311	9.22
West.....	10,937	8,642	4,792	3,670	1,057	3,851	2,338	1,367	145	14.32
Year Constructed										
1900 or Before.....	2,368	2,142	1,744	1,351	375	398	265	Q	Q	22.68
1901 to 1920.....	3,665	2,861	1,793	1,426	311	1,068	473	403	193	17.59
1921 to 1945.....	8,594	6,067	3,848	2,802	999	2,219	1,314	685	220	13.56
1946 to 1960.....	9,712	7,538	4,756	4,048	697	2,782	1,798	853	Q	13.99
1961 to 1970.....	11,469	8,435	5,541	4,635	880	2,894	1,778	1,063	Q	11.13
1971 to 1973.....	4,307	3,164	2,031	1,531	500	1,133	494	615	Q	18.22
1974 to 1979.....	8,230	6,916	4,485	3,645	821	2,431	1,383	1,009	Q	13.95
1980 to 1983.....	5,295	4,614	2,429	1,838	568	2,185	863	1,302	Q	22.01
1984 to 1986.....	4,678	4,303	2,334	1,741	587	1,969	910	984	Q	16.31

See footnotes at end of table.

Table 24. Occupancy of Nongovernment Owned Buildings, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Nongovernment Owned Buildings	Owner Occupied			Nonowner Occupied				RSE Row Factor
			All Buildings	Single Establishment	Multiple Establishment	All Buildings	Single Establishment	Multiple Establishment	Vacant	
RSE Column Factor:	0.520	0.578	0.656	0.751	1.543	0.910	1.085	1.580	2.807	
Workers										
Fewer than 5.....	13,129	11,648	7,515	6,834	520	4,133	2,782	584	768	9.32
5 to 9.....	6,576	5,812	3,801	3,287	491	2,011	1,617	359	Q	12.69
10 to 19.....	7,895	6,624	4,357	3,544	813	2,267	1,426	841	NC	12.32
20 to 49.....	8,847	6,384	4,223	3,304	919	2,161	1,185	966	Q	12.69
50 to 99.....	6,510	4,280	2,400	1,921	480	1,880	785	1,095	NC	14.12
100 to 249.....	6,445	4,093	2,212	1,727	484	1,882	808	1,074	NC	17.62
250 or More.....	8,828	7,200	4,453	2,399	2,032	2,746	674	2,072	NC	16.69
Weekly Operating Hours										
39 or Fewer.....	9,286	6,545	4,275	3,742	367	2,270	1,161	Q	774	13.32
40 to 48.....	15,167	11,555	7,354	5,613	1,726	4,201	2,312	1,878	Q	10.18
49 to 60.....	10,805	9,418	5,897	4,525	1,369	3,522	1,759	1,748	Q	11.30
61 to 84.....	9,760	8,121	4,523	3,264	1,236	3,598	1,445	2,148	Q	15.93
85 to 167.....	5,514	4,496	2,796	2,403	392	1,700	1,043	651	Q	16.17
168 (Open Continuously).....	7,696	5,906	4,118	3,469	648	1,788	1,557	Q	NC	18.61
Energy Sources Used (Solely or in Combination)										
Electricity.....	57,036	45,115	28,428	22,579	5,716	16,687	9,232	6,971	484	5.84
Natural Gas.....	38,140	29,686	18,289	14,139	4,082	11,397	6,270	4,903	224	6.76
Fuel Oil.....	11,163	7,933	5,264	3,761	1,503	2,668	1,332	1,308	Q	15.42
District Steam or										
Hot Water.....	4,645	2,660	2,245	1,530	715	415	229	165	Q	22.98
District Chilled Water.....	1,191	773	659	439	Q	Q	Q	Q	NC	38.45
Propane.....	3,362	2,809	1,998	1,757	232	810	552	228	Q	19.96
Minor Fuels.....	1,557	1,172	811	693	Q	360	348	Q	Q	33.84
No Energy Sources Used.....	1,171	904	520	423	Q	384	Q	Q	328	32.57
Energy End Uses										
Space Heating.....	54,510	42,870	27,033	21,264	5,636	15,837	8,736	6,790	310	5.93
Cooling.....	46,601	37,379	23,298	17,743	5,422	14,081	7,402	6,484	196	6.36
Water Heating.....	48,836	38,046	23,974	18,672	5,202	14,072	7,544	6,255	273	6.17
Cooking.....	17,227	12,014	6,948	5,086	1,860	5,066	2,099	2,902	Q	12.04
Manufacturing.....	3,081	2,842	1,884	1,496	378	958	363	534	Q	16.68

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 25. Occupancy of Government Owned Buildings, Number of Buildings and Floorspace

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:	0.374	0.770	2.383	1.499	0.913	0.393	0.807	2.149	1.500	1.041	
All Buildings.....	4,154	493	51	100	359	58,229	12,187	1,121	3,205	8,331	8.07
Conservation Features											
Any Conservation Feature....	3,631	433	45	90	312	54,567	11,534	1,045	3,150	7,791	7.81
Building Shell.....	3,484	405	43	85	291	52,029	10,659	861	2,820	7,430	7.62
HVAC.....	2,155	339	35	71	242	41,974	10,204	916	2,797	6,871	8.07
Lighting.....	1,442	228	21	57	161	33,112	8,032	637	2,156	5,662	9.94
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	196	27	35	144	6,209	565	75	98	418	13.88
5,001 to 10,000.....	931	104	Q	18	77	6,861	752	Q	127	560	15.76
10,001 to 25,000.....	557	86	7	16	66	9,119	1,458	109	266	1,136	13.80
25,001 to 50,000.....	242	54	Q	15	36	8,661	2,053	Q	534	1,399	14.46
50,001 to 100,000.....	123	29	Q	8	20	8,559	2,068	Q	566	1,401	15.56
100,001 to 200,000.....	52	16	Q	5	10	7,191	2,242	Q	761	1,381	19.73
200,001 to 500,000.....	23	7	Q	2	5	6,737	1,969	Q	601	1,433	22.58
Over 500,000.....	6	2	Q	Q	Q	4,893	1,079	Q	Q	Q	37.35
Principal Building Activity											
Assembly.....	575	77	Q	12	64	7,339	1,417	Q	446	958	18.73
Education.....	241	161	Q	37	121	7,321	5,927	Q	1,359	4,724	13.70
Food Sales.....	102	Q	Q	Q	Q	712	Q	Q	Q	Q	64.07
Food Services.....	201	10	NC	Q	Q	1,281	97	NC	Q	Q	27.02
Health Care.....	52	8	Q	3	5	2,107	560	Q	209	317	32.18
Lodging.....	137	10	Q	5	Q	2,785	339	Q	185	Q	32.30
Mercantile and Service.....	1,287	45	11	Q	26	12,805	682	293	Q	Q	25.44
Office.....	614	55	8	8	39	9,546	1,185	261	362	597	18.14
Public Order and Safety.....	55	33	Q	Q	27	680	533	Q	Q	309	30.03
Warehouse.....	549	40	Q	10	28	8,996	530	Q	151	341	23.51
Other.....	103	32	Q	Q	21	1,726	468	Q	Q	302	24.76
Vacant.....	238	20	Q	Q	Q	2,931	433	Q	Q	Q	39.53

See footnotes at end of table.

Table 25. Occupancy of Government Owned Buildings, Number of Buildings and Floorspace (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			RSE Column Factor:		
		All Government Owned Buildings	Federal	State		Local	All Government Owned Buildings	Federal		State		Local
RSE Column Factor:	0.374	0.770	2.383	1.499	0.913	0.393	0.807	2.149	1.500	1.041	
Census Region											
Northeast.....	663	76	Q	12	52	11,830	3,100	Q	782	2,068	18.09
Midwest.....	1,096	108	9	17	91	16,034	3,034	241	850	2,184	15.75
South.....	1,570	175	15	30	134	19,427	3,759	352	630	2,901	13.61
West.....	825	134	16	41	81	10,937	2,295	266	943	1,178	19.11
Year Constructed											
1900 or Before.....	188	7	Q	Q	Q	2,368	226	Q	Q	Q	42.17
1901 to 1920.....	255	34	Q	Q	23	3,665	804	Q	Q	655	27.61
1921 to 1945.....	629	91	9	18	64	8,594	2,527	172	740	1,623	15.09
1946 to 1960.....	878	115	Q	21	92	9,712	2,174	Q	410	1,728	16.17
1961 to 1970.....	730	95	7	26	65	11,469	3,034	409	818	1,866	15.17
1971 to 1973.....	243	34	Q	5	29	4,307	1,143	Q	349	873	25.56
1974 to 1979.....	572	63	Q	15	44	8,230	1,314	Q	421	826	16.22
1980 to 1983.....	350	35	Q	8	23	5,205	591	Q	178	390	21.03
1984 to 1986.....	309	20	Q	Q	15	4,678	375	Q	Q	245	29.93
Workers											
Fewer than 5.....	2,033	192	22	37	140	13,129	1,481	221	306	985	15.64
5 to 9.....	842	76	Q	17	54	6,576	764	Q	243	524	16.11
10 to 19.....	587	78	Q	13	60	7,895	1,271	Q	305	1,010	16.26
20 to 49.....	434	81	Q	16	59	8,847	2,463	Q	594	1,762	12.92
50 to 99.....	152	39	Q	9	28	6,510	2,229	Q	543	1,646	18.77
100 to 249.....	73	21	Q	5	15	6,445	2,351	Q	519	1,795	18.68
250 or More.....	33	7	1	3	3	8,828	1,628	360	695	609	22.54
Weekly Operating Hours											
39 or fewer.....	870	138	Q	14	115	9,286	2,741	Q	457	2,319	19.24
40 to 48.....	1,086	179	12	37	134	15,167	3,612	203	651	2,810	12.56
49 to 60.....	919	49	10	15	27	10,805	1,387	238	541	677	16.64
61 to 84.....	556	44	Q	9	28	9,760	1,638	Q	389	1,068	20.08
85 to 167.....	375	25	Q	8	16	5,514	1,019	Q	423	550	22.98
168 (Open Continuously).....	347	59	7	16	38	7,696	1,790	163	743	907	17.27

See footnotes at end of table.

Table 25. Occupancy of Government Owned Buildings, Number of Buildings and Floorspace (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:	0.374	0.770	2.383	1.499	0.913	0.393	0.807	2.149	1.500	1.041	
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	478	48	96	347	57,036	11,921	1,078	3,193	8,115	7.97
Natural Gas.....	2,278	283	19	54	220	38,140	8,454	692	2,016	6,082	9.92
Fuel Oil.....	542	75	10	10	55	11,163	3,230	162	764	2,364	16.75
District Steam or											
Hot Water.....	78	30	Q	17	8	4,645	1,985	244	1,116	664	22.20
District Chilled Water.....	15	5	Q	Q	Q	1,191	419	Q	Q	Q	43.56
Propane.....	351	32	Q	Q	22	3,362	554	Q	Q	411	27.39
Minor Fuels.....	163	17	Q	Q	9	1,557	386	Q	Q	142	33.65
No Energy Sources Used.....	136	Q	Q	Q	Q	1,171	Q	Q	Q	Q	44.90
Energy End Uses											
Space Heating.....	3,681	436	44	90	315	54,510	11,640	1,042	3,123	7,940	7.83
Cooling.....	2,882	312	28	66	230	46,601	9,221	751	2,653	6,275	8.78
Water Heating.....	2,896	368	35	81	265	48,836	10,790	832	2,980	7,429	7.84
Cooking.....	563	85	Q	21	64	17,227	5,213	366	1,278	3,881	13.54
Manufacturing.....	132	6	Q	Q	Q	3,081	239	Q	Q	Q	39.32

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 26. Year Constructed, Number of Buildings
(Thousand Feet)

Building Characteristics	All Buildings	Year Constructed Category									Median Age of Buildings (years)	RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986		
RSE Column Factor:	0.456	1.683	1.412	0.885	0.879	0.811	1.219	0.894	1.109	1.209	a/	
All Buildings.....	4,154	188	255	629	878	730	243	572	350	309	21.5	6.75
Window Glass: Percent of Exterior Walls												
25 or Less.....	3,522	161	220	551	725	599	201	492	311	262	21.5	7.19
26 to 50.....	524	26	33	66	129	110	31	59	30	39	22.5	13.60
51 to 75.....	82	Q	Q	9	21	14	Q	15	6	4	18.5	30.62
Over 75.....	26	NC	Q	Q	Q	6	Q	Q	Q	Q	14.5	47.49
Wall and Frame Materials												
Masonry Over --												
Wood Frame.....	722	44	53	125	198	92	33	89	45	42	28.5	14.78
Masonry Frame.....	1,518	78	102	250	353	325	70	165	89	86	26.5	9.93
Steel Frame.....	303	Q	15	42	45	63	21	50	36	28	18.0	18.64
Siding Over --												
Wood Frame.....	727	54	65	143	130	98	37	89	56	55	26.5	15.65
Masonry Frame.....	91	Q	Q	Q	22	Q	Q	Q	Q	Q	16.5	36.14
Metal Panels.....	499	Q	Q	23	57	91	53	112	85	75	12.5	21.21
Concrete Panels.....	137	NC	Q	16	29	28	13	22	12	11	14.5	26.29
Other.....	157	Q	Q	16	44	22	11	30	13	5	17.5	28.24
Roof Square Footage												
5,000 or less.....	2,433	136	167	382	542	392	120	328	203	162	26.5	9.21
5,001 to 10,000.....	859	27	53	116	178	159	73	116	67	70	23.5	10.49
10,001 to 25,000.....	527	15	19	85	99	101	29	75	56	48	19.5	13.30
25,001 to 50,000.....	185	Q	6	30	32	44	11	29	11	19	19.5	18.46
50,001 to 100,000.....	99	Q	Q	10	18	21	5	17	10	6	18.5	24.00
100,001 to 200,000.....	39	Q	Q	4	6	10	4	4	3	Q	17.5	29.72
Over 200,000.....	13	Q	Q	Q	2	3	Q	3	Q	Q	18.0	39.00
Roof Materials												
Built-Up.....	1,761	73	122	287	434	347	97	215	119	68	22.5	9.14
Shingles (Not Wood).....	1,117	67	70	196	250	189	52	130	79	86	26.5	12.60
Metal Surfacing.....	853	17	27	64	121	131	79	170	125	119	13.5	13.65
Synthetic or Rubber.....	131	Q	Q	25	26	21	6	14	10	17	17.5	25.22
Slate or Tile.....	114	11	22	33	13	10	Q	Q	Q	Q	50.5	31.23
Wood Shingles, Shakes or Other Wooden Materials.....	114	Q	Q	Q	22	Q	Q	Q	Q	Q	24.5	29.77
Other.....	64	Q	Q	Q	11	18	Q	9	Q	Q	20.5	38.24

See footnotes at end of table.

Table 26. Year Constructed, Number of Buildings (continued)
(Thousand Feet)

Building Characteristics	All Buildings	Year Constructed Category									Median Age of Buildings (years)	RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986		
RSE Column Factor:	0.456	1.683	1.412	0.885	0.879	0.811	1.219	0.894	1.109	1.209	a/	
Heat Production Equipment												
Warm-Air Furnaces.....	1,793	86	101	274	383	335	111	255	136	112	21.5	9.69
Boilers.....	627	62	71	120	147	115	22	41	28	20	26.5	13.09
Individual Space Heaters or Electric Baseboards.....												
Packaged Heating Units.....	1,062	51	67	171	249	170	59	148	85	63	21.5	12.57
Air-Source Heat Pumps.....	540	Q	11	45	91	94	52	102	73	65	14.5	16.87
Receives District Heat.....	319	Q	Q	28	38	49	25	76	45	43	12.5	21.25
	76	Q	10	16	12	17	3	8	Q	Q	27.5	32.07
Cooling Production Equipment												
Central Cooling.....	1,111	44	57	151	213	227	73	171	96	79	19.5	10.82
Individual												
Air Conditioners.....	923	66	68	201	242	153	35	80	42	35	29.5	12.59
Packaged Air-Conditioning Units.....												
Air-Source Heat Pumps.....	730	15	20	72	141	143	64	126	82	67	15.5	13.91
Receives District Chilled Water.....	319	Q	Q	28	38	49	25	76	45	43	12.5	21.25
	15	Q	Q	Q	Q	2	Q	Q	Q	Q	19.5	56.03
Heat Distribution Equipment												
Ducted Forced Air.....	2,522	103	113	336	483	491	172	395	224	204	18.5	7.50
Heating Only.....	597	47	41	117	144	118	30	55	Q	29	29.5	16.71
Heating and Cooling.....	1,768	44	59	197	303	335	133	323	202	172	15.5	8.79
VAV Used.....	547	15	24	63	98	105	39	89	64	50	15.5	14.57
Steam Radiators or Baseboards.....												
Hot Water Radiators or Baseboards.....	229	32	55	67	42	18	Q	Q	Q	Q	50.5	23.39
Fan-Coil Units.....												
Heating Only.....	271	38	20	49	57	53	14	21	12	7	25.5	19.30
Heating and Cooling.....	411	17	21	59	100	87	28	50	31	16	21.5	16.57
Heating Panels.....	195	Q	11	32	50	43	12	18	15	Q	25.5	24.46
Other.....	166	Q	7	19	34	35	16	26	14	10	18.5	24.18
Heating Panels.....	200	Q	Q	24	52	34	5	31	19	14	21.5	25.15
Other.....	7	Q	NC	Q	Q	Q	Q	Q	Q	Q	21.5	78.50

See footnotes at end of table.

Table 26. Year Constructed, Number of Buildings (continued)
(Thousand Feet)

Building Characteristics	All Buildings	Year Constructed Category									Median Age of Buildings (years)	RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1975	1974 to 1979	1980 to 1983	1984 to 1986		
RSE Column Factor:	0.456	1.683	1.412	0.885	0.879	0.811	1.219	0.894	1.109	1.209	a/	
Cooling Distribution Equipment												
Ducted Forced Air.....	2,522	103	113	336	483	491	172	395	224	204	18.5	7.50
Cooling Only.....	157	Q	13	22	36	38	10	17	7	Q	24.5	26.44
Heating and Cooling.....	1,768	44	59	197	303	335	133	323	202	172	15.5	8.79
VAV Used.....	547	15	24	63	98	105	39	89	64	50	15.5	14.57
Fan-Coil Units.....	411	17	21	59	100	87	28	50	31	16	21.5	16.57
Cooling Only.....	51	Q	Q	Q	Q	10	Q	Q	Q	Q	24.5	44.35
Heating and Cooling.....	166	Q	7	19	34	35	16	26	14	10	18.5	24.18
Other.....	Q	NC	NC	NC	Q	Q	Q	Q	NC	NC	26.5	81.95
Lighting Equipment Types (Solely or in Combination)												
Standard Fluorescent.....	2,558	128	162	390	579	443	142	375	194	146	23.5	7.77
Energy Efficient Fluorescent.....	1,064	28	45	143	196	197	74	151	111	120	17.5	10.91
Standard Incandescent.....	1,636	116	130	284	372	285	86	188	92	84	26.5	9.36
Energy Efficient Incandescent.....	399	28	22	69	65	65	27	42	47	34	18.5	17.16
High-Intensity Discharge....	251	Q	Q	33	44	42	15	37	45	24	15.5	20.32
Other.....	54	Q	Q	Q	Q	12	Q	Q	Q	Q	16.0	45.92
Conservation Features												
Any Conservation Feature....	3,631	161	206	516	738	660	222	526	317	286	20.5	6.84
Building Shell.....	3,484	154	195	487	696	636	217	504	312	282	20.5	6.84
HVAC.....	2,155	100	114	297	434	400	145	312	192	161	19.5	8.06
Lighting.....	1,442	55	58	185	254	276	99	218	158	140	18.0	9.98
Metropolitan Status												
Metropolitan.....	2,734	102	152	425	580	503	156	365	234	216	20.5	7.60
Nonmetropolitan.....	1,421	85	103	203	299	227	87	207	116	93	24.5	12.88
Climate Zone: 45 Year Average												
Under 2,000 CDD and --												
Over 7,000 HDD.....	419	34	32	54	75	70	40	55	26	31	22.5	26.74
5,500-7,000 HDD.....	930	82	83	197	160	148	46	109	46	58	25.5	13.86
4,000-5,499 HDD.....	865	52	62	124	198	159	51	101	63	56	24.5	20.12
Under 4,000 HDD.....	1,022	Q	38	147	233	185	55	166	101	83	18.5	18.19
2,000 CDD or More and --												
Under 4,000 HDD.....	919	Q	40	106	212	168	50	141	115	82	18.5	19.00

See footnotes at end of table.

Table 26. Year Constructed, Number of Buildings (continued)
(Thousand Feet)

Building Characteristics	All Buildings	Year Constructed Category									Median Age of Buildings (years)	RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986		
RSE Column Factor:	0.456	1.683	1.412	0.885	0.879	0.811	1.219	0.894	1.109	1.209	a/	
Floors												
One.....	2,688	24	78	318	628	537	171	424	270	239	18.5	9.41
Two.....	978	62	91	193	202	145	57	116	59	53	23.5	10.21
Three.....	324	58	58	82	32	35	10	24	15	10	34.0	17.90
Over Three.....	165	44	28	36	16	14	5	8	7	7	23.5	19.85
Percent Heated												
Not Heated.....	470	Q	30	74	91	78	28	56	46	51	21.5	17.37
1 to 50.....	601	40	49	101	143	67	29	85	44	44	26.5	14.08
51 to 99.....	458	32	32	72	94	77	27	60	40	24	21.5	16.41
100.....	2,625	100	145	381	551	508	159	371	220	190	20.5	7.60
Percent Cooled												
Not Cooled.....	1,248	69	113	187	285	199	69	136	91	99	28.5	12.09
1 to 50.....	972	63	63	187	212	133	51	130	72	61	26.5	11.05
51 to 99.....	500	27	42	68	100	97	28	66	44	28	19.5	14.80
100.....	1,435	28	38	187	281	300	95	240	144	121	17.5	10.60
Percent Lit--Open Hours												
Not Lit.....	231	Q	24	44	51	Q	Q	26	24	21	34.5	23.54
1 to 50.....	624	52	57	117	132	91	28	81	29	38	28.5	15.70
51 to 99.....	644	41	47	112	124	113	33	82	53	40	22.5	14.52
100.....	2,655	83	128	356	571	506	173	384	244	211	19.5	8.34
Building Floorspace (Square Feet)												
1,001 to 5,000.....	2,220	83	126	333	517	370	117	315	202	157	24.5	9.71
5,001 to 10,000.....	931	67	65	131	180	161	66	128	66	67	24.5	11.27
10,001 to 25,000.....	557	19	34	103	105	101	31	67	52	47	22.5	11.98
25,001 to 50,000.....	242	12	17	35	42	52	14	34	14	23	21.5	15.34
50,001 to 100,000.....	123	Q	7	16	24	27	7	20	10	9	19.5	19.82
100,001 to 200,000.....	52	Q	5	7	8	13	4	4	4	4	19.5	22.47
200,001 to 500,000.....	23	Q	Q	4	3	4	3	3	1	2	17.5	24.92
Over 500,000.....	6	Q	Q	1	*	1	*	1	1	*	14.5	34.16

See footnotes at end of table.

Table 26. Year Constructed, Number of Buildings (continued)
(Thousand Feet)

Building Characteristics	All Buildings	Year Constructed Category									Median Age of Buildings (years)	RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986		
RSE Column Factor:	0.456	1.683	1.412	0.885	0.879	0.811	1.219	0.894	1.109	1.209	a/	
Principal Building Activity												
Assembly.....	575	41	36	94	131	103	36	72	35	28	27.5	14.19
Education.....	241	Q	10	34	68	58	16	21	20	12	24.5	19.84
Food Sales.....	102	Q	Q	Q	22	18	Q	25	Q	Q	22.5	35.41
Food Services.....	201	Q	Q	37	31	36	Q	32	Q	Q	23.0	22.39
Health Care.....	52	Q	Q	8	8	14	6	3	Q	Q	18.5	41.05
Lodging.....	137	Q	Q	12	32	42	Q	14	10	9	20.5	25.42
Mercantile and Service.....	1,287	55	86	193	282	203	76	181	111	101	20.5	10.34
Office.....	614	27	36	92	107	104	40	93	64	50	16.5	13.99
Public Order and Safety.....	55	Q	Q	Q	Q	Q	Q	Q	Q	Q	21.5	42.96
Warehouse.....	549	19	23	79	122	92	29	87	53	46	20.5	15.17
Other.....	103	Q	Q	13	24	17	Q	16	Q	11	18.5	35.01
Vacant.....	238	20	41	48	41	29	Q	Q	Q	22	36.5	21.75
Census Region												
Northeast.....	663	62	73	118	127	103	29	68	42	42	28.5	13.86
Midwest.....	1,096	89	82	178	203	191	86	133	64	70	23.5	13.09
South.....	1,570	18	66	201	361	284	89	244	170	137	19.5	11.71
West.....	825	18	34	131	187	152	40	128	75	60	18.5	17.28
Year Constructed												
1900 or Before.....	188	188	--	--	--	--	--	--	--	--	99.5	13.86
1901 to 1920.....	255	--	255	--	--	--	--	--	--	--	75.6	11.22
1921 to 1945.....	629	--	--	629	--	--	--	--	--	--	53.5	8.44
1946 to 1960.....	878	--	--	--	878	--	--	--	--	--	31.5	11.56
1961 to 1970.....	730	--	--	--	--	730	--	--	--	--	20.5	9.41
1971 to 1973.....	243	--	--	--	--	--	243	--	--	--	14.5	10.70
1974 to 1979.....	572	--	--	--	--	--	--	572	--	--	9.5	8.92
1980 to 1983.....	350	--	--	--	--	--	--	--	350	--	4.5	8.94
1984 to 1986.....	309	--	--	--	--	--	--	--	--	309	1.5	10.68
Ownership and Occupancy												
Nongovernment Owned.....	3,661	181	221	538	763	635	210	509	315	289	20.5	7.13
Owner Occupied.....	2,396	131	136	326	492	430	140	343	208	190	21.5	8.50
Nonowner Occupied.....	1,265	50	85	212	271	204	70	167	107	99	19.0	10.61
Government Owned.....	493	7	34	91	115	95	34	63	35	20	24.5	15.11

See footnotes at end of table.

Table 26. Year Constructed, Number of Buildings (continued)
(Thousand Feet)

Building Characteristics	All Buildings	Year Constructed Category									Median Age of Buildings (years)	RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986		
RSE Column Factor:	0.456	1.683	1.412	0.885	0.879	0.811	1.219	0.894	1.109	1.209	a/	
Workers												
Fewer than 5.....	2,033	108	154	323	473	310	99	256	166	145	26.5	9.77
5 to 9.....	842	32	42	147	167	152	53	131	62	54	24.5	11.97
10 to 19.....	587	34	26	69	116	125	34	81	51	51	21.5	14.25
20 to 49.....	434	9	21	63	82	85	36	70	37	31	22.5	13.64
50 to 99.....	152	Q	7	15	27	33	12	18	19	18	18.5	18.63
100 to 249.....	73	Q	4	8	8	19	6	10	10	7	18.5	21.53
250 or More.....	33	Q	Q	3	5	6	4	6	5	3	14.5	25.24
Weekly Operating Hours												
39 or Fewer.....	870	62	71	149	200	134	46	102	56	52	28.0	13.45
40 to 48.....	1,086	37	64	170	223	189	67	156	100	80	21.5	10.43
49 to 60.....	919	39	62	161	203	154	41	117	82	60	21.5	10.80
61 to 84.....	556	21	29	61	125	105	43	69	53	51	18.5	14.66
85 to 167.....	375	19	18	46	74	71	22	63	31	31	19.5	17.68
168 (Open Continuously).....	347	Q	11	42	53	77	23	66	29	36	18.5	18.44
Energy Sources Used (Solely or in Combination)												
Electricity.....	4,013	182	239	600	846	720	239	557	342	288	21.5	6.75
Natural Gas.....	2,278	122	159	390	523	417	131	262	148	126	22.5	8.63
Fuel Oil.....	542	47	49	96	126	96	26	60	21	21	26.5	16.73
District Steam or Hot Water.....	78	Q	10	17	12	17	3	8	Q	Q	27.5	31.42
District Chilled Water.....	15	Q	Q	Q	Q	2	Q	Q	Q	Q	19.0	55.11
Propane.....	351	Q	Q	42	73	73	21	42	35	31	19.5	24.34
Minor Fuels.....	163	Q	Q	37	30	Q	Q	Q	18	Q	28.5	27.80
No Energy Sources Used.....	136	Q	Q	28	32	Q	Q	Q	Q	20	34.5	32.01
Energy End Uses												
Space Heating.....	3,681	173	225	550	780	658	215	514	308	258	21.5	6.83
Cooling.....	2,882	119	141	430	585	530	174	433	260	209	19.5	7.36
Water Heating.....	2,896	135	157	442	592	546	160	412	240	212	21.5	7.27
Cooking.....	563	37	23	90	98	112	35	76	49	43	19.5	13.04
Manufacturing.....	132	Q	13	25	22	26	Q	14	9	14	20.5	28.30

a/ Relative Standard Error (RSE) row and column factors do not apply to medians. RSE's for medians were unavailable at time of publication.

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 27. Year Constructed, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Year Constructed									RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986	
RSE Column Factor:	0.407	1.691	1.395	0.947	0.870	0.783	1.178	0.930	1.295	1.139	
All Buildings.....	58,229	2,368	3,665	8,594	9,712	11,469	4,307	8,230	5,205	4,678	7.89
Window Glass: Percent of Exterior Walls											
25 or Less.....	43,239	1,912	2,761	6,437	7,066	8,223	3,084	6,453	3,924	3,379	9.26
26 to 50.....	10,825	409	847	1,627	2,127	2,288	911	1,086	643	887	15.27
51 to 75.....	2,836	Q	Q	336	387	649	Q	450	502	251	32.27
Over 75.....	1,329	NC	Q	Q	Q	309	Q	Q	Q	Q	41.79
Wall and Frame Materials											
Masonry Over --											
Wood Frame.....	7,578	435	735	1,556	1,718	1,248	330	750	366	439	19.13
Masonry Frame.....	22,567	1,231	1,540	3,835	4,337	4,991	1,497	2,585	1,201	1,350	11.09
Steel Frame.....	10,237	Q	637	1,622	1,273	1,826	757	1,692	1,334	921	17.73
Siding Over --											
Wood Frame.....	4,535	445	404	941	767	594	128	646	267	341	20.07
Masonry Frame.....	900	Q	Q	Q	186	Q	Q	Q	Q	Q	37.74
Metal Panels.....	4,970	Q	Q	136	498	1,122	523	1,063	792	810	23.18
Concrete Panels.....	4,624	NC	Q	210	553	937	759	1,034	727	328	31.24
Other.....	2,818	Q	Q	192	380	616	228	316	383	408	31.01
Roof Square Footage											
5,000 or Less.....	9,621	740	931	1,531	1,869	1,521	432	1,300	737	562	11.25
5,001 to 10,000.....	9,141	432	844	1,277	1,600	1,674	656	1,100	913	646	13.32
10,001 to 25,000.....	12,309	438	605	2,078	2,147	2,238	819	1,627	1,068	1,289	12.47
25,001 to 50,000.....	8,835	Q	496	1,492	1,342	1,922	597	1,444	547	800	17.22
50,001 to 100,000.....	8,678	Q	Q	1,189	1,170	1,721	670	1,385	1,052	661	21.75
100,001 to 200,000.....	5,395	Q	Q	481	953	1,320	613	666	665	Q	26.94
Over 200,000.....	4,250	Q	Q	Q	632	1,073	Q	707	Q	Q	35.23
Roof Materials											
Built-Up.....	32,887	781	2,056	4,909	6,331	7,193	2,679	4,552	2,625	1,761	10.68
Shingles (Not Wood).....	8,805	669	701	1,503	1,445	1,689	380	1,126	520	772	14.79
Metal Surfacing.....	7,283	173	233	499	723	1,345	655	1,663	821	1,171	16.41
Synthetic or Rubber.....	4,574	Q	Q	567	564	724	410	411	712	730	24.20
Slate or Tile.....	1,980	325	357	682	207	153	Q	Q	Q	Q	33.14
Wood Shingles, Shakes or Other Wooden Materials.....	833	Q	Q	Q	124	Q	Q	Q	Q	Q	33.17
Other.....	1,866	Q	Q	Q	317	283	Q	Q	Q	Q	44.26

See footnotes at end of table.

Table 27. Year Constructed, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Year Constructed									RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986	
RSE Column Factor:	0.407	1.691	1.395	0.947	0.870	0.783	1.178	0.930	1.295	1.139	
Heat Production Equipment											
Warm-Air Furnaces.....	17,966	665	992	2,540	3,374	3,454	1,046	3,002	1,440	1,453	11.48
Boilers.....	19,459	1,211	1,537	3,206	3,572	4,028	1,367	1,826	1,836	876	13.54
Individual Space Heaters or Electric Baseboards.....	13,985	747	914	1,655	1,870	2,633	1,319	2,878	1,060	909	13.96
Packaged Heating Units.....	12,309	Q	403	768	1,476	2,195	1,437	2,425	1,863	1,651	18.12
Air-Source Heat Pumps.....	5,090	Q	Q	444	621	895	378	1,088	703	642	23.27
Receives District Heat.....	4,434	140	539	994	508	1,044	545	417	Q	Q	25.92
Cooling Production Equipment											
Central Cooling.....	21,734	560	913	2,489	3,106	5,139	2,033	3,730	2,135	1,629	11.95
Individual Air Conditioners.....	14,433	1,101	1,251	2,901	2,741	2,607	882	1,809	570	573	13.34
Packaged Air-Conditioning Units.....	17,889	334	726	1,588	2,502	3,544	1,784	3,401	2,238	1,772	15.17
Air-Source Heat Pumps.....	5,090	Q	Q	444	621	895	378	1,088	703	642	23.27
Receives District Chilled Water.....	1,163	Q	Q	Q	Q	184	Q	Q	Q	Q	44.09
Heat Distribution Equipment											
Ducted Forced Air.....	40,038	1,030	1,815	4,634	6,288	8,151	3,431	6,819	4,156	3,713	9.80
Heating Only.....	5,650	320	429	1,158	1,505	1,243	188	414	Q	224	19.92
Heating and Cooling.....	31,109	562	1,028	2,863	4,269	6,394	2,944	5,873	3,845	3,330	11.01
VAV Used.....	14,743	265	504	1,185	1,593	3,061	1,674	2,560	2,291	1,611	15.79
Steam Radiators or Baseboards.....	7,997	649	1,324	2,790	1,373	883	Q	Q	Q	Q	23.27
Hot Water Radiators or Baseboards.....	7,842	730	482	1,149	1,338	1,856	713	835	345	394	18.60
Fan-Coil Units.....	14,490	419	827	1,915	2,178	3,357	1,445	1,991	1,674	685	16.51
Heating Only.....	5,260	Q	310	747	1,058	1,210	219	702	Q	Q	27.07
Heating and Cooling.....	7,934	Q	360	852	1,004	1,893	1,088	1,179	976	483	22.07
Heating Panels.....	3,361	Q	Q	259	496	665	261	547	263	338	25.74
Other.....	250	Q	NC	Q	Q	Q	Q	Q	Q	Q	76.56

See footnotes at end of table.

Table 27. Year Constructed, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Year Constructed									RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986	
RSE Column Factor:	0.407	1.691	1.395	0.947	0.870	0.783	1.178	0.930	1.295	1.139	
Cooling Distribution Equipment											
Ducted Forced Air.....	40,038	1,030	1,815	4,634	6,288	8,151	3,431	6,819	4,156	3,713	9.80
Cooling Only.....	3,279	Q	358	613	515	514	299	532	141	Q	26.32
Heating and Cooling.....	31,109	562	1,028	2,863	4,269	6,394	2,944	5,873	3,845	3,330	11.01
VAV Used.....	14,743	265	504	1,185	1,593	3,061	1,674	2,560	2,291	1,611	15.79
Fan-Coil Units.....	14,490	419	827	1,915	2,178	3,357	1,445	1,991	1,674	685	16.51
Cooling Only.....	1,296	Q	Q	Q	Q	254	Q	Q	Q	Q	41.47
Heating and Cooling.....	7,934	Q	360	852	1,004	1,893	1,088	1,179	976	483	22.07
Other.....	Q	NC	NC	NC	Q	Q	Q	Q	NC	NC	95.71
Lighting Equipment Types (Solely or in Combination)											
Standard Fluorescent.....	32,266	1,587	2,133	4,915	6,103	6,152	2,230	4,546	2,484	2,117	9.54
Energy Efficient Fluorescent.....	24,496	669	1,171	2,922	3,466	5,072	2,127	3,918	2,657	2,494	12.28
Standard Incandescent.....	22,995	1,542	1,797	3,965	4,021	4,269	1,603	2,985	1,528	1,285	10.97
Energy Efficient Incandescent.....	10,127	426	821	1,483	1,322	1,772	964	1,368	934	1,038	16.83
High-Intensity Discharge....	10,075	Q	Q	1,154	1,398	1,608	1,069	1,897	1,494	1,117	20.78
Other.....	1,266	Q	Q	Q	Q	178	Q	Q	Q	Q	43.43
Conservation Features											
Any Conservation Feature....	54,567	2,180	3,232	7,588	8,927	10,799	4,238	8,026	5,026	4,550	8.22
Building Shell.....	52,029	2,009	2,915	6,992	8,485	10,199	4,156	7,767	4,987	4,520	8.22
HVAC.....	41,974	1,445	2,333	5,596	6,812	8,537	3,506	6,123	4,154	3,468	9.30
Lighting.....	33,112	1,104	1,425	3,779	4,827	6,775	3,019	5,132	3,632	3,418	10.50
Metropolitan Status											
Metropolitan.....	45,107	1,582	2,666	6,403	7,087	9,368	3,272	6,521	4,321	3,888	9.28
Nonmetropolitan.....	13,122	786	999	2,192	2,625	2,101	1,035	1,709	884	790	13.79
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	4,897	368	284	656	549	936	615	724	362	403	25.32
5,500-7,000 HDD.....	16,250	1,107	1,182	3,018	2,345	2,895	810	2,345	1,369	1,179	16.09
4,000-5,499 HDD.....	13,904	723	1,367	2,425	2,387	2,881	996	1,263	820	1,041	17.17
Under 4,000 HDD.....	13,792	Q	393	1,638	2,601	2,588	1,397	2,511	1,510	1,043	20.91
2,000 CDD or More and --											
Under 4,000 HDD.....	9,386	Q	440	857	1,830	2,169	489	1,386	1,143	1,012	19.37

See footnotes at end of table.

Table 27. Year Constructed, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Year Constructed									RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986	
RSE Column Factor:	0.407	1.691	1.395	0.947	0.870	0.783	1.178	0.930	1.295	1.139	
Floors											
One.....	23,776	150	568	2,574	5,126	5,220	1,612	3,952	2,212	2,362	11.81
Two.....	14,367	595	908	1,990	2,361	3,318	1,046	1,998	1,040	1,109	12.14
Three.....	7,921	581	960	1,891	1,101	1,168	547	973	423	277	17.99
Over Three.....	12,164	1,041	1,229	2,139	1,123	1,762	1,103	1,307	1,531	929	17.57
Percent Heated											
Not Heated.....	3,635	Q	276	830	628	598	142	413	232	373	23.40
1 to 50.....	8,579	665	643	1,479	1,763	1,230	329	1,255	700	516	20.57
51 to 99.....	7,061	393	507	796	936	1,329	744	805	1,019	534	20.04
100.....	38,941	1,169	2,241	5,490	6,385	8,306	3,092	5,757	3,249	3,254	8.70
Percent Cooled											
Not Cooled.....	11,057	589	1,164	2,420	2,240	2,105	370	951	522	695	15.18
1 to 50.....	18,641	1,264	1,304	3,313	3,374	3,042	993	2,996	1,242	1,112	13.73
51 to 99.....	9,982	291	445	1,051	1,251	2,087	1,321	1,445	1,250	841	17.30
100.....	18,543	223	752	1,811	2,847	4,235	1,622	2,838	2,185	2,029	12.70
Percent Lit--Open Hours											
Not Lit.....	1,851	Q	245	627	393	Q	Q	92	98	140	29.72
1 to 50.....	7,399	731	872	1,408	1,306	1,114	206	852	274	636	20.24
51 to 99.....	9,416	460	666	1,589	1,462	1,727	543	1,342	769	859	15.01
100.....	39,562	1,068	1,882	4,971	6,552	8,508	3,529	5,944	4,065	3,042	10.06
Building Floorspace (Square Feet)											
1,001 to 5,000.....	6,209	254	361	922	1,408	1,027	332	852	611	442	10.25
5,001 to 10,000.....	6,861	490	489	948	1,335	1,160	466	978	487	509	11.15
10,001 to 25,000.....	9,119	301	539	1,753	1,694	1,639	463	1,142	803	785	12.29
25,001 to 50,000.....	8,661	433	616	1,312	1,459	1,850	528	1,155	503	804	15.33
50,001 to 100,000.....	8,559	Q	469	1,078	1,529	1,813	535	1,492	730	611	19.42
100,001 to 200,000.....	7,191	Q	705	966	1,188	1,764	574	603	568	558	22.09
200,001 to 500,000.....	6,737	Q	Q	1,059	714	1,185	1,044	854	448	687	25.25
Over 500,000.....	4,893	Q	Q	556	385	1,031	364	1,155	1,055	281	33.07

See footnotes at end of table.

Table 27. Year Constructed, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Year Constructed									RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986	
RSE Column Factor:	0.407	1.691	1.395	0.947	0.870	0.783	1.178	0.930	1.295	1.139	
Principal Building Activity											
Assembly.....	7,339	728	600	1,281	1,332	1,158	607	903	376	353	17.43
Education.....	7,321	Q	347	1,228	1,648	2,045	776	692	395	141	21.15
Food Sales.....	712	Q	Q	Q	112	173	Q	151	Q	Q	41.10
Food Services.....	1,281	Q	Q	212	184	330	Q	143	Q	Q	26.58
Health Care.....	2,107	Q	Q	316	352	224	380	319	Q	Q	39.94
Lodging.....	2,785	Q	Q	386	365	803	Q	316	190	309	28.13
Mercantile and Service.....	12,805	521	821	1,507	2,064	2,337	728	2,306	1,325	1,196	16.09
Office.....	9,546	343	688	1,279	1,003	1,729	672	1,322	1,414	1,096	15.83
Public Order and Safety.....	680	Q	Q	Q	Q	Q	Q	Q	Q	Q	47.08
Warehouse.....	8,996	318	301	1,304	1,979	1,652	614	1,484	621	722	18.90
Other.....	1,726	Q	Q	137	198	369	Q	385	Q	190	37.20
Vacant.....	2,931	178	651	752	342	452	Q	Q	Q	201	25.56
Census Region											
Northeast.....	11,830	886	1,359	2,349	1,768	2,018	696	1,318	834	603	17.74
Midwest.....	16,034	1,121	978	2,513	2,207	3,059	1,224	2,268	1,258	1,404	14.53
South.....	19,427	211	878	2,019	3,963	4,200	1,527	3,019	1,904	1,705	14.14
West.....	10,937	150	450	1,713	1,774	2,192	859	1,625	1,209	966	19.38
Ownership and Occupancy											
Nongovernment Owned.....	46,041	2,142	2,861	6,067	7,538	8,435	3,164	6,916	4,614	4,303	8.70
Owner Occupied.....	28,962	1,744	1,793	3,848	4,756	5,541	2,031	4,485	2,429	2,334	9.85
Nonowner Occupied.....	17,080	398	1,068	2,219	2,782	2,894	1,133	2,431	2,185	1,969	13.63
Government Owned.....	12,187	226	804	2,527	2,174	3,034	1,143	1,314	591	375	15.98
Workers											
Fewer than 5.....	13,129	976	1,189	2,564	2,622	2,121	452	1,466	876	862	11.14
5 to 9.....	6,576	372	538	1,264	1,134	1,081	376	1,087	375	348	14.86
10 to 19.....	7,895	481	566	906	1,542	1,718	454	1,013	548	667	17.87
20 to 49.....	8,847	258	425	1,456	1,705	1,890	601	1,256	600	655	15.17
50 to 99.....	6,510	Q	218	966	1,177	1,487	616	830	580	547	18.17
100 to 249.....	6,445	Q	423	691	673	1,605	724	943	673	603	23.19
250 or More.....	8,828	Q	Q	747	858	1,569	1,083	1,635	1,553	995	23.09
Weekly Operating Hours											
39 or Fewer.....	9,286	674	857	1,872	1,844	1,890	474	804	391	482	16.67
40 to 48.....	15,167	460	1,087	2,331	2,661	3,125	1,030	2,299	1,200	976	13.66
49 to 60.....	10,805	506	609	1,831	1,957	1,931	462	1,412	1,177	920	13.98
61 to 84.....	9,760	394	450	950	1,460	1,938	775	1,426	1,369	998	20.13
85 to 167.....	5,514	154	353	568	938	956	615	1,057	391	481	18.96
168 (Open Continuously).....	7,696	Q	310	1,043	852	1,630	951	1,232	677	821	21.01

See footnotes at end of table.

Table 27. Year Constructed, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Year Constructed									RSE Row Factor
		1900 or Before	1901 to 1920	1921 to 1945	1946 to 1960	1961 to 1970	1971 to 1973	1974 to 1979	1980 to 1983	1984 to 1986	
RSE Column Factor:	0.407	1.691	1.395	0.947	0.870	0.783	1.178	0.930	1.295	1.139	
Energy Sources Used (Solely or in Combination)											
Electricity.....	57,036	2,319	3,525	8,148	9,424	11,428	4,297	8,179	5,179	4,537	8.02
Natural Gas.....	38,140	1,429	2,512	5,580	6,863	7,957	2,862	5,126	3,056	2,755	9.89
Fuel Oil.....	11,163	869	902	1,859	1,895	1,959	834	1,325	1,093	427	17.52
District Steam or Hot Water.....	4,645	140	548	1,086	533	1,107	545	427	Q	Q	25.08
District Chilled Water.....	1,191	Q	Q	Q	Q	184	Q	Q	Q	Q	43.48
Propane.....	3,362	Q	Q	429	554	572	258	624	316	259	25.98
Minor Fuels.....	1,557	Q	Q	592	237	Q	Q	Q	211	Q	34.01
No Energy Sources Used.....	1,171	Q	Q	447	288	Q	Q	Q	Q	136	40.11
Energy End Uses											
Space Heating.....	54,510	2,255	3,377	7,702	9,048	10,879	4,160	7,803	4,992	4,295	8.18
Cooling.....	46,601	1,779	2,425	5,862	7,419	9,226	3,930	7,303	4,683	3,973	8.67
Water Heating.....	48,836	1,978	3,019	6,805	7,801	9,989	3,732	7,011	4,562	3,939	8.55
Cooking.....	17,227	714	724	2,187	2,254	3,945	1,834	2,260	2,106	1,204	14.44
Manufacturing.....	3,081	Q	322	400	472	649	Q	480	263	299	26.18

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 28. Floors, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	One Floor	Two Floors	Three Floors	More than Three Floors	All Buildings	One Floor	Two Floors	Three Floors	More than Three Floors	
RSE Column Factor:	0.562	0.821	0.899	1.418	1.544	0.589	0.930	0.990	1.438	1.414	
All Buildings.....	4,154	2,688	978	324	165	58,229	23,776	14,367	7,921	12,164	5.34
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	1,702	408	88	22	6,209	4,629	1,229	276	76	10.26
5,001 to 10,000.....	931	544	262	97	28	6,861	4,003	1,928	711	219	8.98
10,001 to 25,000.....	557	277	188	62	30	9,119	4,548	3,007	1,036	528	9.12
25,001 to 50,000.....	242	91	75	44	33	8,661	3,217	2,628	1,586	1,230	10.11
50,001 to 100,000.....	123	55	27	19	22	8,559	3,731	1,903	1,308	1,616	11.38
100,001 to 200,000.....	52	15	13	9	14	7,191	1,963	1,776	1,420	2,031	14.33
200,001 to 500,000.....	23	4	4	3	11	6,737	1,161	963	1,025	3,589	17.26
Over 500,000.....	6	Q	1	Q	3	4,893	Q	935	560	2,875	30.12
Principal Building Activity											
Assembly.....	575	296	199	56	24	7,339	2,150	2,565	1,444	1,180	11.86
Education.....	241	151	55	24	12	7,321	2,297	2,121	1,798	1,106	12.31
Food Sales.....	102	78	17	Q	Q	712	372	239	Q	Q	29.87
Food Services.....	201	128	53	16	Q	1,281	620	486	146	Q	18.61
Health Care.....	52	31	11	Q	7	2,107	276	165	Q	1,538	26.00
Lodging.....	137	51	46	21	19	2,785	447	688	500	1,150	17.23
Mercantile and Service.....	1,287	932	259	78	19	12,805	7,298	3,496	1,254	757	11.71
Office.....	614	322	176	71	45	9,546	2,020	1,790	1,285	4,451	9.73
Public Order and Safety.....	55	36	Q	Q	Q	680	284	Q	Q	Q	29.14
Warehouse.....	549	442	79	18	10	8,996	6,281	1,650	514	550	13.85
Other.....	103	74	15	6	7	1,726	597	184	201	742	24.61
Vacant.....	238	146	58	18	15	2,931	1,133	910	496	392	17.22
Census Region											
Northeast.....	663	307	173	109	75	11,830	3,083	2,920	1,837	3,990	10.63
Midwest.....	1,096	612	327	120	38	16,034	5,477	4,470	2,903	3,184	9.71
South.....	1,570	1,196	290	58	26	19,427	10,547	4,448	1,494	2,938	9.03
West.....	825	573	188	37	27	10,937	4,669	2,529	1,688	2,052	15.76

See footnotes at end of table.

Table 28. Floors, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	One Floor	Two Floors	Three Floors	More than Three Floors	All Buildings	One Floor	Two Floors	Three Floors	More than Three Floors	
RSE Column Factor:	0.562	0.821	0.899	1.418	1.544	0.589	0.930	0.990	1.438	1.414	
Year Constructed											
1900 or Before.....	188	24	62	58	44	2,368	150	595	581	1,041	19.99
1901 to 1920.....	255	78	91	58	28	3,665	568	908	960	1,229	15.30
1921 to 1945.....	629	318	193	82	36	8,594	2,574	1,990	1,891	2,139	10.13
1946 to 1960.....	878	628	202	32	16	9,712	5,126	2,361	1,101	1,123	12.06
1961 to 1970.....	730	537	145	35	14	11,469	5,220	3,318	1,168	1,762	9.99
1971 to 1973.....	243	171	57	10	5	4,307	1,612	1,046	547	1,103	15.81
1974 to 1979.....	572	424	116	24	8	8,230	3,952	1,998	973	1,307	11.82
1980 to 1983.....	350	270	59	15	7	5,205	2,212	1,040	423	1,531	14.57
1984 to 1986.....	309	239	53	10	7	4,678	2,362	1,109	277	929	15.18
Ownership and Occupancy											
Nongovernment Owned.....	3,661	2,381	863	280	137	46,041	20,065	11,386	5,444	9,147	5.73
Owner Occupied.....	2,396	1,517	571	216	92	28,962	11,664	7,654	3,915	5,728	6.63
Nonowner Occupied.....	1,265	864	292	64	44	17,080	8,401	3,732	1,529	3,418	8.97
Government Owned.....	493	306	115	44	28	12,187	3,711	2,981	2,478	3,018	10.26
Workers											
Fewer than 5.....	2,033	1,452	430	118	33	13,129	7,147	3,650	1,370	962	9.16
5 to 9.....	842	561	196	55	29	6,576	3,608	1,695	619	655	10.20
10 to 19.....	587	361	142	51	33	7,895	4,323	1,818	839	914	11.52
20 to 49.....	434	217	139	56	21	8,847	3,939	2,626	1,430	852	9.06
50 to 99.....	152	68	47	24	13	6,510	2,170	2,161	1,289	888	13.29
100 to 249.....	73	24	18	15	17	6,445	1,526	1,472	1,544	1,902	13.22
250 or More.....	33	5	5	4	19	8,828	1,062	945	831	5,991	15.79
Weekly Operating Hours											
39 or Fewer.....	870	562	220	60	29	9,286	4,152	2,703	1,404	1,027	11.60
40 to 48.....	1,086	711	249	88	39	15,167	6,988	3,566	1,832	2,780	8.62
49 to 60.....	919	608	216	66	29	10,805	4,639	2,723	1,503	1,940	9.43
61 to 84.....	556	355	133	45	24	9,760	3,850	2,592	1,181	2,136	12.44
85 to 167.....	375	251	85	28	11	5,514	2,500	1,320	1,016	678	12.82
168 (Open Continuously).....	347	201	75	37	34	7,696	1,647	1,462	984	3,603	13.00

See footnotes at end of table.

Table 28. Floors, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	One Floor	Two Floors	Three Floors	More than Three Floors	All Buildings	One Floor	Two Floors	Three Floors	More than Three Floors	
RSE Column Factor:	0.562	0.821	0.899	1.418	1.544	0.589	0.930	0.990	1.438	1.414	
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	2,575	961	320	158	57,036	23,125	14,098	7,865	11,947	5.33
Natural Gas.....	2,278	1,355	614	205	105	38,140	13,840	10,227	5,794	8,278	6.48
Fuel Oil.....	542	264	148	84	47	11,163	2,854	2,184	1,836	4,288	11.68
District Steam or Hot Water.....	78	25	15	15	23	4,645	333	405	816	3,091	19.84
District Chilled Water.....	15	Q	Q	2	8	1,191	Q	Q	Q	788	38.95
Propane.....	351	225	96	19	11	3,362	1,735	930	369	329	18.18
Minor Fuels	163	110	35	15	Q	1,557	620	456	249	Q	23.13
No Energy Sources Used.....	136	108	17	Q	Q	1,171	633	Q	Q	Q	31.95
Energy End Uses											
Space Heating.....	3,681	2,296	919	313	153	54,510	21,292	13,820	7,669	11,730	5.34
Cooling.....	2,882	1,770	741	240	130	46,601	17,652	11,763	6,338	10,849	5.49
Water Heating.....	2,896	1,698	785	269	144	48,836	17,663	12,651	7,262	11,259	5.61
Cooking.....	563	295	156	62	50	17,227	4,229	3,993	2,800	6,206	8.89
Manufacturing.....	132	87	35	6	5	3,081	1,397	818	327	539	20.00

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

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 29. Wall and Frame Materials, Number of Buildings
(Thousand)**

Building Characteristics	All Buildings	Wall and Frame Materials								RSE Row Factor
		Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.400	0.897	0.551	0.975	1.030	2.026	1.188	1.407	1.487	
All Buildings.....	4,154	722	1,518	303	727	91	499	137	157	7.70
Roof Materials										
Built-Up.....	1,761	325	881	195	137	28	31	88	76	10.08
Shingles (Not Wood).....	1,117	285	348	42	372	Q	Q	14	43	16.51
Metal Surfacing.....	853	34	99	32	144	50	459	16	20	17.16
Synthetic or Rubber.....	131	16	75	15	Q	Q	Q	5	3	28.27
Slate or Tile.....	114	22	58	12	Q	Q	NC	Q	Q	30.56
Wood Shingles, Shakes or Other Wooden Materials.....	114	30	28	Q	49	NC	Q	Q	Q	37.99
Other.....	64	Q	29	Q	Q	Q	Q	Q	Q	40.79
Window Glass: Percent of Exterior Walls										
25 or Less.....	3,522	600	1,261	228	635	89	475	113	121	8.32
26 to 50.....	524	110	206	62	79	Q	22	21	23	16.96
51 to 75.....	82	Q	39	9	Q	Q	Q	2	11	31.34
Over 75.....	26	Q	12	4	Q	NC	Q	Q	3	48.08
Percent Heated										
Not Heated.....	470	43	116	16	116	Q	133	12	Q	19.60
1 to 50.....	601	74	194	30	114	Q	121	36	18	15.07
51 to 99.....	458	99	182	29	75	Q	33	15	18	19.06
100.....	2,625	505	1,025	229	423	52	213	74	104	8.38
Percent Cooled										
Not Cooled.....	1,248	161	365	49	321	37	233	34	49	14.20
1 to 50.....	972	131	402	68	117	22	156	43	33	11.11
51 to 99.....	500	108	199	47	71	Q	28	19	23	17.04
100.....	1,435	322	551	140	219	27	83	41	52	10.69
Climate Zone: 45 Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD.....	419	52	137	11	109	Q	64	Q	25	31.04
5,500-7,000 HDD.....	930	118	420	77	174	21	60	25	35	14.74
4,000-5,499 HDD.....	865	171	330	54	165	14	80	24	26	21.55
Under 4,000 HDD.....	1,022	249	304	78	162	Q	135	52	27	20.34
2,000 CDD or More and --										
Under 4,000 HDD.....	919	132	326	84	116	29	160	26	45	17.83

See footnotes at end of table.

Table 29. Wall and Frame Materials, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Wall and Frame Materials								RSE Row Factor
		Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.400	0.897	0.551	0.975	1.030	2.026	1.188	1.407	1.487	
Floors										
One.....	2,688	420	945	170	442	70	440	89	111	9.72
Two.....	978	215	360	74	194	17	56	31	31	11.78
Three.....	324	60	140	31	72	Q	Q	10	Q	23.09
Over Three.....	165	28	72	28	20	Q	2	7	8	21.91
Building Floorspace (Square Feet)										
1,001 to 5,000.....	2,220	416	729	94	510	54	282	48	88	10.25
5,001 to 10,000.....	931	146	371	69	136	20	121	28	40	13.00
10,001 to 25,000.....	557	104	228	55	55	11	64	26	13	13.82
25,001 to 50,000.....	242	32	107	41	16	Q	20	14	8	17.19
50,001 to 100,000.....	123	15	51	24	Q	Q	8	10	Q	20.92
100,001 to 200,000.....	52	6	22	12	Q	Q	2	8	Q	27.90
200,001 to 500,000.....	23	Q	7	7	Q	Q	1	3	2	26.71
Over 500,000.....	6	Q	2	2	Q	Q	Q	1	1	39.00
Principal Building Activity										
Assembly.....	575	140	195	35	135	Q	33	11	19	15.94
Education.....	241	51	93	42	36	Q	Q	6	Q	22.08
Food Sales.....	102	21	43	Q	Q	Q	Q	Q	Q	37.67
Food Services.....	201	47	77	Q	46	Q	Q	Q	Q	24.59
Health Care.....	52	Q	15	10	Q	Q	Q	Q	Q	39.22
Lodging.....	137	31	51	13	33	Q	Q	Q	Q	31.28
Mercantile and Service.....	1,287	211	510	71	151	31	196	47	70	12.07
Office.....	614	143	214	58	115	Q	32	19	23	14.52
Public Order and Safety.....	55	Q	29	Q	Q	Q	Q	NC	Q	41.85
Warehouse.....	549	28	151	21	114	22	166	31	16	15.83
Other.....	103	Q	36	10	Q	Q	23	3	Q	32.61
Vacant.....	238	26	104	13	45	Q	31	11	Q	25.67
Census Region										
Northeast.....	663	102	275	51	151	Q	38	20	16	17.43
Midwest.....	1,096	157	445	62	201	25	136	19	52	14.82
South.....	1,570	257	567	137	202	47	253	37	70	12.06
West.....	825	206	231	54	173	Q	74	60	19	19.62

See footnotes at end of table.

Table 29. Wall and Frame Materials, Number of Buildings (continued)
(Thousand)

Building Characteristics	Wall and Frame Materials									RSE Row Factor
	All Buildings	Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.400	0.897	0.551	0.975	1.030	2.026	1.188	1.407	1.487	
Year Constructed										
1900 or Before.....	188	44	78	Q	54	Q	Q	NC	Q	32.54
1901 to 1920.....	255	53	102	15	65	Q	Q	Q	Q	28.99
1921 to 1945.....	629	125	250	42	143	Q	23	16	16	15.90
1946 to 1960.....	878	198	353	45	130	22	57	29	44	15.33
1961 to 1970.....	730	92	325	63	98	Q	91	28	22	15.01
1971 to 1973.....	243	33	70	21	37	Q	53	13	11	22.36
1974 to 1979.....	572	89	165	50	89	Q	112	22	30	14.82
1980 to 1983.....	350	45	89	36	56	Q	85	12	13	17.45
1984 to 1986.....	309	42	86	28	55	Q	75	11	5	18.94
Ownership and Occupancy										
Nongovernment Owned.....	3,661	654	1,322	239	654	84	445	118	145	8.01
Owner Occupied.....	2,396	416	841	146	465	67	307	59	96	9.17
Nonowner Occupied.....	1,265	238	481	94	189	17	137	59	49	11.72
Government Owned.....	493	68	196	64	73	Q	55	19	12	15.79
Workers										
Fewer than 5.....	2,033	347	647	82	480	51	294	47	85	11.15
5 to 9.....	842	163	346	52	118	Q	96	21	30	12.83
10 to 19.....	587	95	232	55	89	Q	62	26	21	15.68
20 to 49.....	434	88	189	54	27	Q	31	20	11	14.26
50 to 99.....	152	20	67	31	10	Q	9	8	Q	22.46
100 to 249.....	73	7	28	16	Q	Q	6	8	Q	23.60
250 or More.....	33	Q	9	12	Q	Q	2	6	3	27.46
Weekly Operating Hours										
39 or Fewer.....	870	159	303	54	206	Q	95	14	26	16.23
40 to 48.....	1,086	201	381	76	162	31	150	40	44	10.81
49 to 60.....	919	145	333	67	149	24	130	32	40	11.79
61 to 84.....	556	104	210	51	89	Q	54	22	19	15.91
85 to 167.....	375	68	145	23	71	Q	36	19	Q	20.49
168 (Open Continuously).....	347	45	146	33	51	Q	34	10	18	18.92

See footnotes at end of table.

Table 29. Wall and Frame Materials, Number of Buildings (continued)
(Thousand)

Building Characteristics	Wall and Frame Materials									RSE Row Factor
	All Buildings	Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.400	0.897	0.551	0.975	1.030	2.026	1.188	1.407	1.487	
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	712	1,475	295	692	83	468	134	153	7.65
Natural Gas.....	2,278	457	925	190	297	44	193	79	92	9.48
Fuel Oil.....	542	75	236	37	106	Q	42	12	25	17.76
District Steam or										
Hot Water.....	78	8	32	12	Q	Q	7	7	8	33.26
District Chilled Water.....	15	Q	7	4	NC	Q	Q	Q	Q	58.19
Propane.....	351	61	98	11	114	Q	45	Q	Q	26.51
Minor Fuels	163	20	45	Q	53	Q	29	Q	Q	31.30
No Energy Sources Used.....	136	Q	42	Q	32	Q	31	Q	Q	32.55
Energy End Uses										
Space Heating.....	3,681	679	1,392	286	612	72	375	125	140	7.71
Cooling.....	2,882	556	1,142	251	405	54	267	102	106	7.97
Water Heating.....	2,896	542	1,131	252	463	53	244	106	105	8.24
Cooking.....	563	121	224	64	97	Q	16	17	15	14.37
Manufacturing.....	132	Q	44	9	Q	Q	29	6	Q	29.14

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 30. Wall and Frame Materials, Floorspace
(Million Square Feet)**

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Wall and Frame Materials								RSE Row Factor
		Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.383	1.005	0.533	0.884	1.215	1.850	1.076	1.507	1.510	
All Buildings.....	58,229	7,578	22,567	10,237	4,535	900	4,970	4,624	2,818	8.28
Roof Materials										
Built-Up.....	32,887	4,138	14,446	7,441	1,428	354	833	2,817	1,429	12.18
Shingles (Not Wood).....	8,805	2,382	3,348	530	1,926	Q	Q	125	347	18.46
Metal Surfacing.....	7,283	247	1,009	615	554	409	3,893	294	261	18.90
Synthetic or Rubber.....	4,574	259	1,840	1,036	Q	Q	Q	531	582	26.87
Slate or Tile.....	1,980	229	987	455	Q	Q	NC	Q	Q	34.47
Wood Shingles, Shakes or Other Wooden Materials.....	833	168	184	Q	350	NC	Q	Q	Q	43.75
Other.....	1,866	Q	753	Q	Q	Q	Q	Q	Q	41.90
Window Glass: Percent of Exterior Walls										
25 or Less.....	43,239	5,950	16,732	6,685	3,861	829	4,557	3,381	1,244	9.55
26 to 50.....	10,825	1,465	4,695	2,418	528	Q	313	887	500	16.71
51 to 75.....	2,836	Q	786	731	Q	Q	Q	269	669	32.82
Over 75.....	1,329	Q	353	403	Q	NC	Q	Q	405	44.77
Percent Heated										
Not Heated.....	3,635	253	1,028	230	805	Q	998	146	Q	22.79
1 to 50.....	8,579	1,468	2,675	798	861	Q	1,040	1,094	545	19.61
51 to 99.....	7,061	825	2,641	1,439	473	Q	389	828	360	19.79
100.....	38,941	5,032	16,223	7,769	2,396	621	2,543	2,548	1,809	9.41
Percent Cooled										
Not Cooled.....	11,057	1,744	3,612	963	1,875	204	1,739	495	425	17.76
1 to 50.....	18,641	1,887	7,993	2,837	1,066	353	1,552	1,760	783	14.37
51 to 99.....	9,532	1,180	3,813	2,193	522	Q	384	1,125	669	19.30
100.....	18,543	2,767	7,149	4,244	1,072	246	885	1,244	936	11.32
Climate Zone: 45 Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD.....	4,897	500	2,254	372	580	Q	547	282	318	26.35
5,500-7,000 HDD.....	16,250	1,488	6,982	3,512	1,058	268	756	1,231	954	15.66
4,000-5,499 HDD.....	13,904	2,250	5,223	2,794	1,321	296	1,043	483	494	18.31
Under 4,000 HDD.....	13,792	2,409	4,236	2,142	975	Q	1,298	2,031	572	22.30
2,000 CDD or More and --										
Under 4,000 HDD.....	9,386	930	3,872	1,416	600	163	1,326	597	481	17.25

See footnotes at end of table.

Table 30. Wall and Frame Materials, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Wall and Frame Materials								RSE Row Factor
		Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
		0.383	1.005	0.533	0.884	1.215	1.850	1.076	1.507		1.510
Floors										
One.....	23,776	3,313	8,873	2,833	2,228	560	3,683	1,395	891	12.02
Two.....	14,367	2,657	5,602	2,036	1,446	183	816	1,098	528	13.84
Three.....	7,921	1,047	3,725	1,465	526	Q	Q	767	Q	24.31
Over Three.....	12,164	561	4,367	3,903	335	Q	328	1,364	1,241	20.10
Building Floorspace (Square Feet)										
1,001 to 5,000.....	6,209	1,214	2,092	271	1,308	142	795	141	247	10.56
5,001 to 10,000.....	6,861	1,089	2,753	519	973	138	898	209	281	12.97
10,001 to 25,000.....	9,119	1,667	3,787	922	877	172	1,030	424	241	14.29
25,001 to 50,000.....	8,661	1,138	3,809	1,517	569	Q	720	509	292	17.33
50,001 to 100,000.....	8,559	976	3,562	1,738	Q	Q	559	708	Q	21.15
100,001 to 200,000.....	7,191	785	3,097	1,636	Q	Q	349	1,023	Q	27.45
200,001 to 500,000.....	6,737	Q	2,183	2,216	Q	Q	389	882	484	25.50
Over 500,000.....	4,893	Q	1,284	1,418	Q	Q	Q	Q	727	39.11
Principal Building Activity										
Assembly.....	7,339	1,884	2,858	888	788	Q	349	283	215	18.80
Education.....	7,321	862	3,800	1,681	192	Q	Q	553	Q	21.55
Food Sales.....	712	147	260	Q	Q	Q	Q	Q	Q	43.79
Food Services.....	1,281	247	565	Q	219	Q	Q	Q	Q	32.81
Health Care.....	2,107	Q	870	866	Q	Q	Q	Q	Q	39.37
Lodging.....	2,785	467	1,177	630	302	Q	Q	Q	Q	31.18
Mercantile and Service.....	12,805	1,932	4,768	1,909	912	224	1,388	974	699	16.53
Office.....	9,546	887	2,973	2,337	554	Q	430	983	1,292	14.36
Public Order and Safety.....	680	Q	462	Q	Q	Q	Q	NC	Q	48.41
Warehouse.....	8,996	614	2,881	872	852	328	2,019	1,166	263	19.92
Other.....	1,726	Q	767	378	Q	Q	219	215	Q	33.75
Vacant.....	2,931	335	1,185	372	449	Q	324	183	Q	26.17
Census Region										
Northeast.....	11,830	1,411	4,578	2,700	1,043	Q	560	843	483	15.50
Midwest.....	16,034	1,566	7,409	2,617	1,034	262	1,376	759	1,013	14.76
South.....	19,427	2,347	7,819	3,511	1,174	360	2,448	954	813	13.29
West.....	10,937	2,254	2,761	1,409	1,284	Q	586	2,068	509	21.05

See footnotes at end of table.

Table 30. Wall and Frame Materials, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Wall and Frame Materials								RSE Row Factor
		Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.383	1.005	0.533	0.884	1.215	1.850	1.076	1.507	1.510	
Year Constructed										
1900 or Before.....	2,368	435	1,231	Q	445	Q	Q	NC	Q	37.36
1901 to 1920.....	3,665	735	1,540	637	404	Q	Q	Q	Q	30.63
1921 to 1945.....	8,594	1,556	3,835	1,622	941	Q	136	210	192	19.65
1946 to 1960.....	9,712	1,718	4,337	1,273	767	186	498	553	380	18.32
1961 to 1970.....	11,469	1,248	4,991	1,826	594	Q	1,122	937	616	15.67
1971 to 1973.....	4,307	330	1,497	757	128	Q	523	759	228	22.77
1974 to 1979.....	8,230	750	2,585	1,692	646	Q	1,063	1,034	316	17.80
1980 to 1983.....	5,205	366	1,201	1,334	267	Q	792	727	383	22.59
1984 to 1986.....	4,678	439	1,350	921	341	Q	810	328	408	20.73
Ownership and Occupancy										
Nongovernment Owned.....	46,041	6,303	16,747	7,666	4,012	805	4,472	3,494	2,543	8.99
Owner Occupied.....	28,962	3,851	10,791	4,746	2,970	534	2,931	1,697	1,441	9.92
Nonowner Occupied.....	17,080	2,452	5,956	2,920	1,041	271	1,541	1,796	1,102	14.16
Government Owned.....	12,187	1,275	5,820	2,571	523	Q	498	1,130	276	17.68
Workers										
Fewer than 5.....	13,129	2,346	4,652	1,002	2,458	209	1,643	379	439	12.46
5 to 9.....	6,576	1,107	2,866	588	677	Q	741	187	293	17.31
10 to 19.....	7,895	1,283	3,020	1,000	808	Q	819	572	281	19.33
20 to 49.....	8,847	1,356	4,177	1,330	291	Q	638	531	321	15.41
50 to 99.....	6,510	723	3,254	1,264	205	Q	316	524	Q	22.33
100 to 249.....	6,445	483	2,390	1,656	Q	Q	313	1,054	Q	23.39
250 or More.....	8,828	Q	2,208	3,398	Q	Q	500	1,376	954	26.76
Weekly Operating Hours										
39 or Fewer.....	9,286	1,372	4,226	1,207	1,268	Q	625	290	228	17.94
40 to 48.....	15,167	1,958	5,938	2,439	1,007	326	1,572	1,224	703	13.94
49 to 60.....	10,805	1,244	3,775	1,804	997	252	1,007	1,003	725	14.43
61 to 84.....	9,760	1,401	3,247	2,023	582	Q	661	998	771	20.90
85 to 167.....	5,514	953	1,970	825	320	Q	695	456	Q	20.53
168 (Open Continuously).....	7,696	651	3,411	1,939	362	Q	412	652	200	21.75

See footnotes at end of table.

**Table 30. Wall and Frame Materials, Floorspace (continued)
(Million Square Feet)**

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Wall and Frame Materials								RSE Row Factor
		Masonry Over --			Siding Over --		Metal Panels	Concrete Panels	Other	
		Wood Frame	Masonry Frame	Steel Frame	Wood Frame	Masonry Frame				
RSE Column Factor:	0.383	1.005	0.533	0.884	1.215	1.850	1.076	1.507	1.510	
Energy Sources Used (Solely or in Combination)										
Electricity.....	57,036	7,513	22,207	10,134	4,114	872	4,803	4,602	2,790	8.33
Natural Gas.....	38,140	5,241	15,331	7,582	1,740	552	2,444	3,424	1,825	9.60
Fuel Oil.....	11,163	1,295	4,526	2,581	734	Q	417	815	672	19.29
District Steam or										
Hot Water.....	4,645	191	1,951	1,287	Q	Q	182	525	Q	29.10
District Chilled Water.....	1,191	Q	602	279	NC	Q	Q	Q	Q	42.70
Propane.....	3,362	529	1,401	228	638	Q	367	Q	Q	27.07
Minor Fuels	1,557	300	644	Q	223	Q	184	Q	Q	35.82
No Energy Sources Used.....	1,171	Q	356	Q	411	Q	167	Q	Q	40.10
Energy End Uses										
Space Heating.....	54,510	7,330	21,434	9,984	3,740	821	4,005	4,470	2,726	8.37
Cooling.....	46,601	5,573	18,776	9,119	2,655	696	3,249	4,151	2,382	8.79
Water Heating.....	48,836	6,216	19,415	9,438	3,068	747	3,211	4,197	2,543	8.79
Cooking.....	17,227	1,956	7,063	4,668	700	Q	423	1,377	845	15.86
Manufacturing.....	3,081	Q	1,186	601	Q	Q	474	371	Q	26.23

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 31. Roof Materials, Number of Buildings
(Thousand)**

Building Characteristics	Roof Materials								RSE Row Factor
	All Buildings	Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.399	0.486	0.800	0.895	1.322	1.577	1.847	1.873	
All Buildings.....	4,154	1,761	1,117	853	131	114	114	64	7.45
Roof Square Footage									
5,000 or less.....	2,433	921	796	509	40	55	82	31	10.66
5,001 to 10,000.....	859	389	197	182	35	27	20	Q	11.47
10,001 to 25,000.....	527	255	83	113	33	22	Q	11	13.92
25,001 to 50,000.....	185	108	24	30	11	7	Q	5	17.78
50,001 to 100,000.....	99	55	14	12	8	Q	Q	Q	25.53
100,001 to 200,000.....	39	25	Q	5	3	Q	Q	Q	36.23
Over 200,000.....	13	10	Q	Q	1	Q	NC	Q	38.96
Climate Zone: 45 Year Average									
Under 2,000 CDD and --									
Over 7,000 HDD.....	419	134	150	94	20	Q	Q	Q	27.70
5,500-7,000 HDD.....	930	455	248	121	47	26	22	10	14.65
4,000-5,499 HDD.....	865	358	278	143	25	28	20	12	21.52
Under 4,000 HDD.....	1,022	451	254	210	25	32	38	12	19.09
2,000 CDD or More and --									
Under 4,000 HDD.....	919	362	187	285	14	25	23	23	20.91
Percent Heated									
Not Heated.....	470	122	89	211	Q	Q	24	Q	21.90
1 to 50.....	601	238	129	202	14	Q	Q	6	17.86
51 to 99.....	458	212	131	66	19	8	Q	Q	18.71
100.....	2,625	1,188	769	373	96	84	70	44	8.19
Percent Cooled									
Not Cooled.....	1,248	392	336	404	23	33	44	17	14.50
1 to 50.....	972	450	197	240	33	22	Q	15	11.91
51 to 99.....	500	266	132	47	25	7	Q	9	17.39
100.....	1,435	653	452	162	50	51	43	24	10.53

See footnotes at end of table.

Table 31. Roof Materials, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Roof Materials							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.399	0.486	0.800	0.895	1.322	1.577	1.847	1.873	
Building Floorspace (Square Feet)									
1,001 to 5,000.....	2,220	814	724	511	31	41	71	29	11.79
5,001 to 10,000.....	931	414	223	193	35	32	26	Q	12.60
10,001 to 25,000.....	557	263	114	103	25	23	14	16	13.35
25,001 to 50,000.....	242	140	36	28	18	11	Q	9	16.26
50,001 to 100,000.....	123	73	15	13	13	5	Q	Q	20.25
100,001 to 200,000.....	52	37	4	Q	4	Q	Q	Q	27.31
200,001 to 500,000.....	23	15	Q	Q	3	Q	NC	Q	28.01
Over 500,000.....	6	4	Q	Q	1	Q	NC	Q	42.16
Principal Building Activity									
Assembly.....	575	139	288	68	14	39	20	Q	15.94
Education.....	241	128	54	24	13	13	Q	Q	20.81
Food Sales.....	102	61	21	Q	Q	Q	Q	Q	38.15
Food Services.....	201	100	52	Q	Q	Q	Q	Q	26.18
Health Care.....	52	25	Q	Q	Q	Q	Q	Q	41.20
Lodging.....	137	46	66	Q	Q	10	Q	Q	27.49
Mercantile and Service.....	1,287	629	255	313	36	Q	Q	20	13.25
Office.....	614	298	199	47	29	10	27	Q	16.23
Public Order and Safety.....	55	26	Q	Q	Q	Q	Q	Q	41.42
Warehouse.....	549	176	74	269	12	Q	Q	Q	20.94
Other.....	103	28	25	34	Q	Q	Q	4	30.93
Vacant.....	238	105	54	52	Q	Q	Q	Q	25.81
Census Region									
Northeast.....	663	306	190	81	34	29	Q	11	15.97
Midwest.....	1,096	441	342	214	45	20	22	13	14.07
South.....	1,570	615	412	430	31	29	29	23	13.21
West.....	825	399	173	128	21	36	51	17	19.37

See footnotes at end of table.

Table 31. Roof Materials, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Roof Materials							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.399	0.486	0.800	0.895	1.322	1.577	1.847	1.873	
Year Constructed									
1900 or Before.....	188	73	67	17	Q	11	Q	Q	26.05
1901 to 1920.....	255	122	70	27	Q	22	Q	Q	23.79
1921 to 1945.....	629	287	196	64	25	33	Q	Q	14.39
1946 to 1960.....	878	434	250	121	26	13	22	11	15.88
1961 to 1970.....	730	347	189	131	21	10	Q	18	14.69
1971 to 1973.....	243	97	52	79	6	Q	Q	Q	23.07
1974 to 1979.....	572	215	130	170	14	Q	Q	9	16.57
1980 to 1983.....	350	119	79	125	10	Q	Q	Q	20.06
1984 to 1986.....	309	68	86	119	17	Q	Q	Q	25.03
Ownership and Occupancy									
Nongovernment Owned.....	3,661	1,533	1,015	762	110	89	103	50	7.96
Owner Occupied.....	2,396	907	729	516	80	64	65	35	9.49
Nonowner Occupied.....	1,265	625	285	246	30	25	38	14	12.29
Government Owned.....	493	228	103	91	21	25	Q	15	16.27
Workers									
Fewer than 5.....	2,033	658	664	541	30	58	55	27	11.53
5 to 9.....	842	404	214	136	21	21	32	Q	12.58
10 to 19.....	587	291	134	100	26	13	Q	Q	15.42
20 to 49.....	434	238	80	54	26	17	Q	8	14.06
50 to 99.....	152	98	18	13	12	Q	Q	Q	22.87
100 to 249.....	73	48	6	5	10	Q	Q	Q	27.87
250 or More.....	33	24	Q	Q	5	Q	NC	1	28.71
Weekly Operating Hours									
39 or Fewer.....	870	265	319	192	17	38	29	11	15.94
40 to 48.....	1,086	498	236	247	39	26	24	17	11.53
49 to 60.....	919	420	217	199	33	19	19	13	13.17
61 to 84.....	556	256	136	105	23	Q	Q	9	16.48
85 to 167.....	375	173	111	54	12	Q	Q	Q	20.23
168 (Open Continuously).....	347	149	98	56	7	15	Q	10	18.43

See footnotes at end of table.

Table 31. Roof Materials, Number of Buildings (continued)
(Thousand)

Building Characteristics	Roof Materials								RSE Row Factor
	All Buildings	Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.399	0.486	0.800	0.895	1.322	1.577	1.847	1.873	
Energy Sources Used (Solely or in Combination)									
Electricity.....	4,013	1,710	1,094	798	131	109	107	64	7.31
Natural Gas.....	2,278	1,115	604	313	84	69	58	35	9.20
Fuel Oil.....	542	235	157	86	25	21	Q	9	17.59
District Steam or Hot Water.....	78	46	8	8	5	10	NC	Q	24.89
District Chilled Water.....	15	7	Q	Q	2	Q	NC	Q	63.16
Propane.....	351	70	154	94	Q	Q	Q	Q	26.54
Minor Fuels.....	163	47	42	60	Q	Q	Q	Q	31.06
No Energy Sources Used.....	136	50	24	49	NC	Q	Q	Q	33.28
Energy End Uses									
Space Heating.....	3,681	1,626	1,030	647	129	97	96	58	7.31
Cooling.....	2,882	1,352	776	449	108	78	70	48	7.61
Water Heating.....	2,896	1,336	824	411	112	88	79	45	7.43
Cooking.....	563	279	150	51	31	19	20	14	13.71
Manufacturing.....	132	58	24	37	7	Q	Q	Q	31.92

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 32. Roof Materials, Floorspace
(Million Square Feet)**

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Roof Materials							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.385	0.495	0.793	0.887	1.189	1.605	1.886	2.078	
All Buildings.....	58,229	32,887	8,805	7,283	4,574	1,980	833	1,866	7.74
Roof Square Footage									
5,000 or Less.....	9,621	4,210	2,934	1,596	212	282	298	90	11.39
5,001 to 10,000.....	9,141	4,668	1,766	1,287	440	328	189	Q	13.65
10,001 to 25,000.....	12,309	6,583	1,619	1,790	1,142	609	Q	398	12.71
25,001 to 50,000.....	8,835	5,195	1,001	948	735	443	Q	465	18.75
50,001 to 100,000.....	8,678	5,240	841	912	1,157	Q	Q	Q	23.89
100,001 to 200,000.....	5,395	3,838	Q	489	498	Q	Q	Q	31.47
Over 200,000.....	4,250	3,152	Q	Q	390	Q	NC	Q	37.36
Climate Zone: 45 Year Average									
Under 2,000 CDD and --									
Over 7,000 HDD.....	4,897	2,437	906	803	524	Q	Q	Q	24.06
5,500-7,000 HDD.....	16,250	9,388	2,453	1,007	2,010	582	182	Q	16.05
4,000-5,499 HDD.....	13,904	8,356	2,044	1,575	957	522	155	295	15.87
Under 4,000 HDD.....	13,792	7,682	2,139	1,802	798	562	327	482	19.48
2,000 CDD or More and --									
Under 4,000 HDD.....	9,386	5,024	1,263	2,097	285	249	115	353	20.50
Percent Heated									
Not Heated.....	3,635	1,362	370	1,361	Q	Q	222	Q	27.41
1 to 50.....	8,579	4,525	1,268	1,611	610	Q	Q	392	21.66
51 to 99.....	7,061	3,968	1,152	805	538	90	Q	Q	20.53
100.....	38,941	23,025	6,016	3,508	3,347	1,725	438	883	8.52
Percent Cooled									
Not Cooled.....	11,057	4,988	2,047	2,627	455	326	297	316	17.65
1 to 50.....	18,641	10,561	2,337	3,012	1,265	667	Q	649	13.84
51 to 99.....	9,982	6,215	1,332	489	1,178	164	Q	Q	19.55
100.....	18,543	11,123	3,090	1,155	1,675	822	284	394	11.42

See footnotes at end of table.

Table 32. Roof Materials, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Roof Materials							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.385	0.495	0.793	0.887	1.189	1.605	1.886	2.078	
Building Floorspace (Square Feet)									
1,001 to 5,000.....	6,209	2,343	1,977	1,429	94	117	187	62	11.92
5,001 to 10,000.....	6,861	3,066	1,640	1,406	266	232	202	Q	12.83
10,001 to 25,000.....	9,119	4,317	1,794	1,628	470	396	223	292	14.10
25,001 to 50,000.....	8,661	5,008	1,240	990	652	386	Q	319	16.41
50,001 to 100,000.....	8,559	5,100	1,023	971	905	316	Q	Q	20.18
100,001 to 200,000.....	7,191	5,126	570	Q	635	Q	Q	Q	26.67
200,001 to 500,000.....	6,737	4,473	Q	Q	977	Q	NC	Q	28.30
Over 500,000.....	4,893	3,454	Q	Q	573	Q	NC	Q	41.61
Principal Building Activity									
Assembly.....	7,339	2,481	2,799	649	363	786	171	Q	17.54
Education.....	7,321	4,963	757	200	831	318	Q	Q	21.23
Food Sales.....	712	438	86	Q	Q	Q	Q	Q	45.80
Food Services.....	1,281	641	307	Q	Q	Q	Q	Q	32.31
Health Care.....	2,107	1,554	Q	Q	276	Q	Q	Q	40.35
Lodging.....	2,785	1,373	720	Q	Q	225	Q	Q	28.88
Mercantile and Service.....	12,805	7,482	1,609	2,323	589	Q	Q	Q	18.19
Office.....	9,546	6,018	1,147	386	1,496	Q	170	Q	17.14
Public Order and Safety.....	680	431	Q	Q	Q	Q	Q	Q	46.74
Warehouse.....	8,996	4,957	666	2,743	364	Q	Q	Q	23.63
Other.....	1,726	776	124	294	Q	Q	Q	268	32.35
Vacant.....	2,931	1,772	367	416	Q	Q	Q	Q	27.80
Census Region									
Northeast.....	11,830	6,990	1,432	811	1,084	718	Q	664	18.16
Midwest.....	16,034	8,646	2,897	1,892	1,862	312	148	277	12.61
South.....	19,427	10,778	3,073	3,607	855	482	167	465	12.71
West.....	10,937	6,473	1,404	973	772	467	388	460	18.89

See footnotes at end of table.

Table 32. Roof Materials, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Roof Materials							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.385	0.495	0.793	0.887	1.189	1.605	1.886	2.078	
Year Constructed									
1900 or Before.....	2,368	781	669	173	Q	325	Q	Q	31.60
1901 to 1920.....	3,665	2,056	701	233	Q	357	Q	Q	28.57
1921 to 1945.....	8,594	4,909	1,503	499	567	682	Q	Q	17.89
1946 to 1960.....	9,712	6,331	1,445	723	564	207	124	317	16.82
1961 to 1970.....	11,469	7,193	1,689	1,345	724	153	Q	283	16.11
1971 to 1973.....	4,307	2,679	380	655	410	Q	Q	Q	26.45
1974 to 1979.....	8,230	4,552	1,126	1,663	411	Q	Q	Q	17.65
1980 to 1983.....	5,205	2,625	520	821	712	Q	Q	Q	25.49
1984 to 1986.....	4,678	1,761	772	1,171	730	Q	Q	Q	23.52
Ownership and Occupancy									
Nongovernment Owned.....	46,041	24,922	7,634	6,443	3,480	1,390	769	1,402	8.54
Owner Occupied.....	28,962	14,637	5,344	4,381	2,356	916	484	845	9.43
Nonowner Occupied.....	17,080	10,286	2,290	2,062	1,124	474	286	Q	14.84
Government Owned.....	12,187	7,965	1,171	840	1,094	589	Q	465	15.80
Workers									
Fewer than 5.....	13,129	5,210	3,587	2,769	448	419	389	307	12.83
5 to 9.....	6,576	3,229	1,439	1,106	211	280	175	Q	16.82
10 to 19.....	7,895	4,005	1,402	1,326	412	378	Q	Q	18.04
20 to 49.....	8,847	5,303	1,128	1,056	635	475	Q	150	15.94
50 to 99.....	6,510	4,415	710	505	476	Q	Q	Q	24.29
100 to 249.....	6,445	4,236	332	333	1,112	Q	Q	Q	27.42
250 or More.....	8,828	6,489	Q	Q	1,279	Q	NC	Q	29.18
Weekly Operating Hours									
39 or Fewer.....	9,286	4,438	2,470	928	358	559	321	211	17.67
40 to 48.....	15,167	9,221	1,776	2,207	1,254	381	154	174	14.26
49 to 60.....	10,805	5,857	1,436	1,680	1,088	273	109	362	15.31
61 to 84.....	9,760	5,240	1,315	1,287	1,005	Q	Q	Q	21.33
85 to 167.....	5,514	3,390	827	660	295	Q	Q	Q	19.36
168 (Open Continuously).....	7,696	4,741	980	522	573	399	Q	417	19.10

See footnotes at end of table.

Table 32. Roof Materials, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace by Roof Materials							RSE Row Factor
		Built-Up	Shingles (Not Wood)	Metal Surfacing	Synthetic or Rubber Roofing	Slate or Tile	Wood Shingles, Shakes, or Other Wooden Materials	Other	
RSE Column Factor:	0.385	0.495	0.793	0.887	1.189	1.605	1.886	2.078	
Energy Sources Used (Solely or in Combination)									
Electricity.....	57,036	32,208	8,701	7,033	4,574	1,938	734	1,847	7.54
Natural Gas.....	38,140	23,017	5,552	3,449	3,242	1,348	417	1,115	9.22
Fuel Oil.....	11,163	6,503	1,203	825	1,337	618	Q	Q	18.66
District Steam or Hot Water.....	4,645	3,260	253	158	466	391	NC	Q	28.02
District Chilled Water.....	1,191	777	Q	Q	188	Q	NC	Q	52.15
Propane.....	3,362	1,355	905	646	Q	Q	Q	Q	26.15
Minor Fuels.....	1,557	673	421	284	Q	Q	Q	Q	36.29
No Energy Sources Used.....	1,171	679	105	228	NC	Q	Q	Q	44.80
Energy End Uses									
Space Heating.....	54,510	31,398	8,438	5,945	4,497	1,879	638	1,715	7.52
Cooling.....	46,601	27,520	6,628	4,674	4,095	1,598	536	1,550	8.42
Water Heating.....	48,836	28,609	7,374	4,604	4,291	1,814	540	1,605	8.10
Cooking.....	17,227	11,121	2,106	511	1,857	689	163	780	16.10
Manufacturing.....	3,081	1,937	165	524	272	Q	Q	Q	29.69

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 33. Energy Sources, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (Solely or in Combination)								RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	District Chilled Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.412	0.413	0.413	0.505	0.910	1.594	2.962	1.414	2.036	2.280	
All Buildings.....	4,154	4,018	4,013	2,278	542	78	15	351	126	47	8.49
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	419	402	402	187	115	8	Q	49	28	Q	31.96
5,500-7,000 HDD.....	930	901	900	645	153	24	Q	53	23	10	16.11
4,000-5,499 HDD.....	865	833	830	402	195	21	Q	103	35	15	24.07
Under 4,000 HDD.....	1,022	988	988	596	62	7	Q	98	33	Q	22.13
2,000 CDD or More and --											
Under 4,000 HDD.....	919	894	893	447	16	Q	Q	48	Q	Q	29.35
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	2,129	2,126	1,089	249	21	Q	221	87	22	13.99
5,001 to 10,000.....	931	908	906	554	143	Q	Q	66	28	Q	13.15
10,001 to 25,000.....	557	543	543	350	71	19	Q	36	Q	Q	13.98
25,001 to 50,000.....	242	239	239	150	40	12	Q	16	Q	Q	14.86
50,001 to 100,000.....	123	118	118	75	21	11	Q	10	Q	Q	17.70
100,001 to 200,000.....	52	52	52	39	9	6	1	Q	NC	Q	19.00
200,001 to 500,000.....	23	23	23	18	7	4	1	Q	Q	Q	22.77
Over 500,000.....	6	6	6	4	2	1	*	Q	NC	Q	28.20
Principal Building Activity											
Assembly.....	575	574	572	339	73	9	Q	76	Q	Q	16.31
Education.....	241	241	241	165	34	9	Q	14	Q	Q	18.96
Food Sales.....	102	102	102	57	Q	Q	Q	Q	Q	Q	34.48
Food Services.....	201	201	201	145	Q	Q	NC	35	Q	Q	20.16
Health Care.....	52	52	52	33	10	4	2	Q	Q	Q	29.59
Lodging.....	137	137	137	70	17	8	Q	35	Q	Q	23.22
Mercantile and Service.....	1,287	1,284	1,284	761	210	11	Q	92	60	Q	13.08
Office.....	614	612	612	359	75	18	4	Q	Q	Q	16.90
Public Order and Safety.....	55	55	53	32	Q	Q	NC	Q	NC	Q	33.64
Warehouse.....	549	498	496	182	54	4	Q	31	Q	Q	17.18
Other.....	103	94	94	31	19	4	Q	Q	Q	Q	30.67
Vacant.....	238	169	169	105	Q	Q	NC	Q	Q	NC	25.32
Census Region											
Northeast.....	663	645	645	297	264	17	Q	55	27	Q	15.58
Midwest.....	1,096	1,043	1,042	736	109	22	7	99	40	14	15.95
South.....	1,570	1,527	1,524	745	136	25	3	146	41	19	13.44
West.....	825	803	802	501	33	13	Q	Q	Q	Q	24.94

See footnotes at end of table.

Table 33. Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (Solely or in Combination)								RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	District Chilled Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.412	0.413	0.413	0.505	0.910	1.594	2.962	1.414	2.036	2.280	
Year Constructed											
1900 or Before.....	188	182	182	122	47	Q	Q	Q	Q	Q	28.16
1901 to 1920.....	255	241	239	159	49	10	Q	Q	Q	Q	21.12
1921 to 1945.....	629	600	600	390	96	17	Q	42	31	Q	13.99
1946 to 1960.....	878	846	846	523	126	12	Q	73	24	Q	15.94
1961 to 1970.....	730	720	720	417	96	17	2	73	Q	Q	15.79
1971 to 1973.....	243	239	239	131	26	3	Q	21	Q	Q	19.32
1974 to 1979.....	572	559	557	262	60	8	Q	42	Q	Q	16.87
1980 to 1983.....	350	342	342	148	21	Q	Q	35	Q	Q	18.85
1984 to 1986.....	309	289	288	126	21	Q	Q	31	Q	Q	23.77
Ownership and Occupancy											
Nongovernment Owned.....	3,661	3,541	3,536	1,995	467	48	10	319	118	36	9.55
Owner Occupied.....	2,396	2,338	2,335	1,280	346	43	9	240	90	19	11.36
Nonowner Occupied.....	1,265	1,203	1,200	715	121	5	Q	79	28	Q	13.41
Government Owned.....	493	478	478	283	75	30	5	32	Q	11	14.59
Workers											
Fewer than 5.....	2,033	1,901	1,896	942	246	21	Q	220	100	24	13.64
5 to 9.....	842	840	839	502	122	9	Q	42	Q	Q	13.96
10 to 19.....	587	585	585	362	71	11	Q	51	Q	Q	16.55
20 to 49.....	434	434	434	298	58	18	Q	24	Q	Q	14.47
50 to 99.....	152	152	152	101	20	4	Q	10	NC	Q	19.55
100 to 249.....	73	73	73	47	13	9	2	3	NC	Q	18.75
250 or More.....	33	33	33	25	12	5	2	Q	Q	Q	20.34
Weekly Operating Hours											
39 or Fewer.....	870	771	770	397	99	10	Q	80	Q	Q	18.03
40 to 48.....	1,086	1,071	1,071	628	124	19	Q	49	29	11	12.40
49 to 60.....	919	912	909	511	155	17	Q	74	33	Q	12.37
61 to 84.....	556	555	555	355	74	6	Q	43	Q	Q	17.13
85 to 167.....	375	373	372	222	49	6	Q	61	Q	Q	19.09
168 (Open Continuously).....	347	337	337	165	41	21	6	45	Q	Q	17.25

See footnotes at end of table.

Table 33. Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings Using Any Energy Source	Energy Sources Used (Solely or in Combination)								RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	District Chilled Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.412	0.413	0.413	0.505	0.910	1.594	2.962	1.414	2.036	2.280	
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	4,013	4,013	2,278	540	78	15	349	125	45	8.53
Natural Gas.....	2,278	2,278	2,278	2,278	100	26	8	18	30	15	11.12
Fuel Oil.....	542	542	540	100	542	4	Q	55	24	Q	16.13
District Steam or											
Hot Water.....	78	78	78	26	4	78	8	Q	Q	Q	26.58
District Chilled Water.....	15	15	15	8	Q	8	15	NC	NC	Q	40.20
Propane.....	351	351	349	18	55	Q	NC	351	29	Q	24.88
Minor Fuels.....	163	163	162	45	34	Q	Q	33	126	47	21.39
Energy End Uses											
Space Heating.....	3,681	3,681	3,678	2,244	537	78	15	333	125	47	8.39
Cooling.....	2,882	2,882	2,882	1,845	321	61	15	217	31	26	9.19
Water Heating.....	2,896	2,896	2,896	1,859	402	71	13	247	60	30	8.93
Cooking.....	563	563	563	415	85	12	4	77	Q	7	13.17
Manufacturing.....	132	132	132	82	17	3	Q	13	Q	Q	28.73

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 34. Energy Sources, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Total Floorspace by Energy Sources Used (Solely or in Combination)								RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	District Chilled Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.419	0.420	0.421	0.500	0.920	1.342	2.575	1.404	2.548	2.372	
All Buildings.....	58,229	57,058	57,036	38,140	11,163	4,645	1,191	3,362	733	861	7.50
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	4,897	4,831	4,831	2,831	1,135	577	Q	426	166	Q	25.55
5,500-7,000 HDD.....	16,250	16,056	16,054	12,457	3,517	1,645	344	695	126	204	15.21
4,000-5,499 HDD.....	13,904	13,475	13,462	8,553	4,678	1,588	285	896	Q	335	17.85
Under 4,000 HDD.....	13,792	13,461	13,461	9,393	1,448	511	Q	848	216	Q	23.04
2,000 CDD or More and --											
Under 4,000 HDD.....	9,386	9,235	9,227	4,906	385	323	235	496	Q	Q	20.81
Building Floorspace (Square Feet)											
1,001 to 5,000.....	6,209	5,980	5,970	3,108	711	66	Q	614	196	50	14.26
5,001 to 10,000.....	6,861	6,687	6,674	4,132	1,038	Q	Q	473	192	Q	13.34
10,001 to 25,000.....	9,119	8,901	8,901	5,779	1,138	316	Q	586	Q	Q	14.18
25,001 to 50,000.....	8,661	8,553	8,553	5,388	1,462	436	Q	555	Q	Q	15.33
50,001 to 100,000.....	8,559	8,241	8,241	5,279	1,431	747	Q	597	Q	Q	17.91
100,001 to 200,000.....	7,191	7,191	7,191	5,423	1,247	778	150	Q	NC	Q	18.97
200,001 to 500,000.....	6,737	6,737	6,737	5,287	2,174	1,299	477	Q	Q	Q	22.14
Over 500,000.....	4,893	4,769	4,769	3,744	1,962	966	261	Q	NC	Q	27.60
Principal Building Activity											
Assembly.....	7,339	7,309	7,305	5,075	1,514	471	Q	576	Q	Q	19.28
Education.....	7,321	7,321	7,321	5,627	1,728	823	Q	396	Q	Q	18.59
Food Sales.....	712	712	712	491	Q	Q	Q	Q	Q	Q	36.62
Food Services.....	1,281	1,281	1,277	927	Q	Q	NC	200	Q	Q	24.49
Health Care.....	2,107	2,107	2,107	1,626	992	557	253	Q	Q	Q	26.28
Lodging.....	2,785	2,785	2,785	1,894	551	446	Q	381	Q	Q	24.32
Mercantile and Service.....	12,805	12,787	12,787	8,879	2,443	172	Q	636	265	Q	17.56
Office.....	9,546	9,543	9,543	5,960	1,792	1,454	382	Q	Q	Q	16.44
Public Order and Safety.....	680	680	675	445	Q	Q	NC	Q	NC	Q	43.24
Warehouse.....	8,996	8,600	8,590	4,954	1,156	198	Q	484	Q	Q	19.91
Other.....	1,726	1,707	1,707	871	448	161	Q	Q	Q	Q	35.56
Vacant.....	2,931	2,224	2,224	1,392	Q	175	NC	Q	Q	NC	25.98

See footnotes at end of table.

Table 34. Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Total Floorspace by Energy Sources Used (Solely or in Combination)								RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	District Chilled Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.419	0.420	0.421	0.500	0.920	1.342	2.575	1.404	2.548	2.372	
Census Region											
Northeast.....	11,830	11,561	11,561	7,107	5,158	1,379	200	818	126	Q	14.96
Midwest.....	16,034	15,761	15,756	12,579	2,101	1,799	437	679	202	233	13.75
South.....	19,427	18,980	18,968	10,793	2,583	729	362	1,381	271	259	13.49
West.....	10,937	10,756	10,751	7,661	1,321	738	Q	485	Q	Q	20.87
Year Constructed											
1900 or Before.....	2,368	2,323	2,319	1,429	869	140	Q	Q	Q	Q	30.20
1901 to 1920.....	3,665	3,528	3,525	2,512	902	548	Q	Q	Q	Q	23.65
1921 to 1945.....	8,594	8,148	8,148	5,580	1,859	1,086	Q	429	330	Q	16.29
1946 to 1960.....	9,712	9,424	9,424	6,863	1,895	533	Q	554	108	Q	15.84
1961 to 1970.....	11,469	11,428	11,428	7,957	1,959	1,107	184	572	Q	Q	14.61
1971 to 1973.....	4,307	4,297	4,297	2,862	834	545	Q	258	Q	Q	22.80
1974 to 1979.....	8,230	8,189	8,179	5,126	1,325	427	Q	624	Q	Q	17.71
1980 to 1983.....	5,205	5,179	5,179	3,056	1,093	Q	Q	316	Q	Q	22.86
1984 to 1986.....	4,678	4,542	4,537	2,755	427	Q	Q	259	Q	Q	23.73
Ownership and Occupancy											
Nongovernment Owned.....	46,041	45,137	45,115	29,686	7,933	2,660	773	2,809	671	522	8.78
Owner Occupied.....	28,962	28,442	28,428	18,289	5,264	2,245	659	1,998	451	366	9.09
Nonowner Occupied.....	17,080	16,695	16,687	11,397	2,668	415	Q	810	220	Q	14.94
Government Owned.....	12,187	11,921	11,921	8,454	3,230	1,985	419	554	Q	339	13.15
Workers											
Fewer than 5.....	13,129	11,981	11,962	6,638	1,567	326	Q	1,012	330	91	14.06
5 to 9.....	6,576	6,565	6,561	4,145	1,028	193	Q	281	Q	Q	18.57
10 to 19.....	7,895	7,883	7,883	4,843	1,006	425	Q	767	Q	Q	18.54
20 to 49.....	8,847	8,847	8,847	6,095	1,414	583	Q	475	Q	Q	16.27
50 to 99.....	6,510	6,510	6,510	4,944	1,134	293	Q	347	NC	Q	19.51
100 to 249.....	6,445	6,445	6,445	4,611	1,598	935	380	269	NC	Q	18.61
250 or More.....	8,828	8,828	8,828	6,864	3,416	1,891	525	Q	Q	Q	19.16
Weekly Operating Hours											
39 or Fewer.....	9,286	8,387	8,384	5,560	1,508	181	Q	807	Q	Q	18.25
40 to 48.....	15,167	14,973	14,971	9,979	2,246	1,053	Q	498	206	251	15.34
49 to 60.....	10,805	10,771	10,758	6,799	2,122	795	125	506	227	Q	12.98
61 to 84.....	9,760	9,758	9,758	6,913	2,227	520	Q	508	Q	Q	20.34
85 to 167.....	5,514	5,505	5,501	3,824	949	546	Q	451	Q	Q	18.36
168 (Open Continuously).....	7,696	7,664	7,664	5,064	2,111	1,549	571	592	Q	Q	16.34

See footnotes at end of table.

Table 34. Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Using Any Energy Source	Total Floorspace by Energy Sources Used (Solely or in Combination)								RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	District Chilled Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.419	0.420	0.421	0.500	0.920	1.342	2.575	1.404	2.548	2.372	
Energy Sources Used (Solely or in Combination)											
Electricity.....	57,036	57,036	57,036	38,136	11,150	4,645	1,191	3,352	730	858	7.49
Natural Gas.....	38,140	38,140	38,136	38,140	6,128	2,109	517	478	244	556	10.00
Fuel Oil.....	11,163	11,163	11,150	6,128	11,163	683	Q	975	222	Q	15.09
District Steam or Hot Water.....	4,645	4,645	4,645	2,109	683	4,645	1,021	Q	Q	Q	21.91
District Chilled Water.....	1,191	1,191	1,191	517	Q	1,021	1,191	NC	NC	Q	32.52
Propane.....	3,362	3,362	3,352	478	975	Q	NC	3,362	142	Q	24.37
Minor Fuels.....	1,557	1,557	1,554	794	432	Q	Q	203	733	861	26.09
Energy End Uses											
Space Heating.....	54,510	54,510	54,496	37,878	11,112	4,624	1,191	3,176	731	861	7.55
Cooling.....	46,601	46,601	46,601	32,874	9,011	4,018	1,191	2,588	216	684	8.52
Water Heating.....	48,836	48,836	48,832	34,690	10,354	4,432	1,156	2,730	506	795	8.08
Cooking.....	17,227	17,227	17,223	13,741	5,431	1,812	763	1,400	Q	312	13.19
Manufacturing.....	3,081	3,081	3,081	2,451	820	264	Q	203	Q	Q	23.30

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 35. Energy End Uses, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Energy Used For:					All Buildings	Energy Used For:					
		Space Heating	Cooling	Water Heating	Cooking	Manu- facturing		Space Heating	Cooling	Water Heating	Cooking	Manu- facturing	
RSE Column Factor:	0.699	0.705	0.751	0.731	1.233	2.770	0.727	0.738	0.786	0.769	1.335	2.498	
All Buildings.....	4,154	3,681	2,882	2,896	563	132	58,229	54,510	46,601	48,836	17,227	3,081	4.28
Building Floorspace (Square Feet)													
1,001 to 5,000.....	2,220	1,884	1,412	1,345	244	50	6,209	5,315	4,031	3,893	729	122	7.22
5,001 to 10,000.....	931	859	677	707	111	28	6,861	6,335	5,014	5,248	814	202	7.08
10,001 to 25,000.....	557	518	430	456	83	32	9,119	8,490	7,061	7,507	1,378	585	7.03
25,001 to 50,000.....	242	228	194	212	50	11	8,661	8,150	6,879	7,563	1,802	394	7.98
50,001 to 100,000.....	123	114	99	104	39	5	8,559	7,900	6,864	7,252	2,673	374	9.05
100,001 to 200,000.....	52	50	44	45	21	4	7,191	6,944	6,194	6,395	3,055	539	10.03
200,001 to 500,000.....	23	22	21	22	12	2	6,737	6,621	6,296	6,485	3,656	567	11.92
Over 500,000.....	6	6	5	5	4	Q	4,893	4,755	4,261	4,493	3,119	Q	20.00
Principal Building Activity													
Assembly.....	575	542	407	446	90	Q	7,339	7,138	5,697	6,565	2,407	Q	10.43
Education.....	241	238	172	186	67	Q	7,321	7,316	5,895	6,965	4,050	Q	10.87
Food Sales.....	102	101	96	92	45	Q	712	710	698	678	353	Q	20.30
Food Services.....	201	188	180	194	186	NC	1,281	1,233	1,145	1,262	1,204	NC	10.67
Health Care.....	52	52	50	49	12	Q	2,107	2,086	2,092	2,099	1,736	Q	21.74
Lodging.....	137	131	101	134	38	Q	2,785	2,733	2,300	2,776	1,523	Q	15.94
Mercantile and Service.....	1,287	1,211	891	825	73	46	12,805	12,482	10,479	10,008	2,743	489	8.56
Office.....	614	609	579	537	20	8	9,546	9,527	9,377	8,973	2,318	533	9.21
Public Order and Safety.....	55	53	37	46	Q	Q	680	678	507	625	Q	Q	25.14
Warehouse.....	549	342	215	212	Q	47	8,996	7,155	5,719	5,918	Q	1,189	12.68
Other.....	103	76	49	58	Q	11	1,726	1,522	1,285	1,285	Q	240	21.10
Vacant.....	238	140	105	116	12	10	2,931	1,931	1,406	1,682	192	235	14.80
Census Region													
Northeast.....	663	609	392	490	108	19	11,830	11,390	8,643	10,069	4,088	578	8.84
Midwest.....	1,096	970	672	786	149	35	16,034	15,288	12,544	14,109	4,656	973	8.18
South.....	1,570	1,409	1,268	1,010	188	52	19,427	17,767	16,986	15,040	5,412	973	7.42
West.....	825	692	550	611	118	26	10,937	10,065	8,458	9,618	3,072	558	12.55

See footnotes at end of table.

Table 35. Energy End Uses, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Energy Used For:					All Buildings	Energy Used For:					
		Space Heating	Cooling	Water Heating	Cooking	Manu- facturing		Space Heating	Cooling	Water Heating	Cooking	Manu- facturing	
RSE Column Factor:	0.699	0.705	0.751	0.731	1.233	2.770	0.727	0.738	0.786	0.769	1.335	2.498	
Year Constructed													
1900 or Before.....	188	173	119	135	37	Q	2,368	2,255	1,779	1,978	714	Q	18.15
1901 to 1920.....	255	225	141	157	23	13	3,665	3,377	2,425	3,019	724	322	14.78
1921 to 1945.....	629	550	430	442	90	25	8,594	7,702	5,862	6,805	2,187	400	9.03
1946 to 1960.....	878	780	585	592	98	22	9,712	9,048	7,419	7,801	2,254	472	9.74
1961 to 1970.....	730	658	530	546	112	26	11,469	10,879	9,226	9,989	3,945	649	7.85
1971 to 1973.....	243	215	174	160	35	Q	4,307	4,160	3,930	3,732	1,834	Q	12.88
1974 to 1979.....	572	514	433	412	76	14	8,230	7,803	7,303	7,011	2,260	480	9.39
1980 to 1983.....	350	308	260	240	49	9	5,205	4,992	4,683	4,562	2,106	263	13.12
1984 to 1986.....	309	258	209	212	43	14	4,678	4,295	3,973	3,939	1,204	299	12.07
Ownership and Occupancy													
Nongovernment Owned.....	3,661	3,245	2,570	2,529	478	126	46,041	42,870	37,379	38,046	12,014	2,842	4.59
Owner Occupied.....	2,396	2,155	1,658	1,661	313	91	28,962	27,033	23,298	23,974	6,948	1,884	5.27
Nonowner Occupied.....	1,265	1,090	912	868	165	34	17,080	15,837	14,081	14,072	5,066	958	7.37
Government Owned.....	493	436	312	368	85	6	12,187	11,640	9,221	10,790	5,213	239	8.74
Workers													
Fewer than 5.....	2,033	1,648	1,067	1,108	116	54	13,129	10,378	6,868	8,017	1,022	309	8.18
5 to 9.....	842	795	677	666	115	18	6,576	6,310	5,109	5,558	977	207	8.37
10 to 19.....	587	556	505	481	116	24	7,895	7,434	6,397	6,377	1,449	371	8.77
20 to 49.....	434	425	391	396	126	22	8,847	8,663	7,720	8,041	2,373	541	7.00
50 to 99.....	152	151	138	142	45	8	6,510	6,498	5,703	6,101	2,718	415	10.64
100 to 249.....	73	73	71	72	27	4	6,445	6,418	6,180	6,331	3,153	444	10.64
250 or More.....	33	33	33	32	18	2	8,828	8,808	8,625	8,410	5,534	794	11.37
Weekly Operating Hours													
39 or Fewer.....	870	661	451	475	90	10	9,286	7,723	5,858	6,733	2,615	239	11.06
40 to 48.....	1,086	1,002	832	780	66	43	15,167	14,382	12,717	12,470	3,032	1,115	7.21
49 to 60.....	919	849	639	613	62	50	10,805	10,322	8,621	8,827	1,914	704	7.29
61 to 84.....	556	522	419	429	125	16	9,760	9,472	8,293	8,648	3,563	419	9.68
85 to 167.....	375	337	283	318	139	6	5,514	5,344	4,537	5,084	2,228	291	9.74
168 (Open Continuously).....	347	310	258	281	81	8	7,696	7,267	6,574	7,075	3,874	312	11.78

See footnotes at end of table.

Table 35. Energy End Uses, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	Energy Used For:					All Buildings	Energy Used For:					
		Space Heating	Cooling	Water Heating	Cooking	Manufacturing		Space Heating	Cooling	Water Heating	Cooking	Manufacturing	
RSE Column Factor:	0.699	0.705	0.751	0.731	1.233	2.770	0.727	0.738	0.786	0.769	1.335	2.498	
Energy Sources Used (Solely or in Combination)													
Electricity.....	4,013	3,678	2,882	2,896	563	132	57,036	54,496	46,601	48,832	17,223	3,081	4.27
Natural Gas.....	2,278	2,244	1,845	1,859	415	82	38,140	37,878	32,874	34,690	13,741	2,451	5.19
Fuel Oil.....	542	537	321	402	85	17	11,163	11,112	9,011	10,354	5,431	820	9.94
District Steam or													
Hot Water.....	78	78	61	71	12	3	4,645	4,624	4,018	4,432	1,812	264	16.45
District Chilled Water.....	15	15	15	13	4	Q	1,191	1,191	1,191	1,156	763	Q	31.19
Propane.....	351	333	217	247	77	13	3,362	3,176	2,588	2,730	1,400	203	16.17
Minor Fuels.....	163	162	55	86	23	Q	1,557	1,555	888	1,281	553	Q	20.03
Energy End Uses													
Space Heating.....	3,681	3,681	2,834	2,839	544	120	54,510	54,510	46,154	48,297	17,078	2,980	4.31
Cooling.....	2,882	2,834	2,882	2,345	485	93	46,601	46,154	46,601	42,060	15,571	2,593	4.44
Water Heating.....	2,896	2,839	2,345	2,896	545	94	48,836	48,297	42,060	48,836	17,030	2,821	4.37
Cooking.....	563	544	485	545	563	10	17,227	17,078	15,571	17,030	17,227	673	7.20
Manufacturing.....	132	120	93	94	10	132	3,081	2,980	2,593	2,821	673	3,081	12.89

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 36. Space-Heating Energy Sources, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.407	0.412	0.666	0.561	0.961	1.650	1.780	2.111	2.677	
All Buildings.....	4,154	3,681	1,175	2,072	513	76	252	119	36	8.01
Primary Space Heating Fuel										
Electricity.....	863	863	863	57	Q	Q	15	Q	Q	20.84
Natural Gas.....	2,001	2,001	230	2,001	47	Q	Q	Q	Q	16.93
Fuel Oil.....	434	434	55	9	434	NC	Q	Q	Q	23.02
District Steam or										
Hot Water.....	73	73	7	Q	Q	73	NC	Q	NC	40.76
Propane.....	215	215	Q	Q	NC	NC	215	Q	NC	37.27
Minor Fuels.....	107	107	Q	Q	Q	Q	Q	87	29	27.04
Wall and Frame Materials										
Masonry Over --										
Wood Frame.....	722	679	222	407	73	8	51	Q	Q	17.02
Masonry Frame.....	1,518	1,392	391	852	226	31	67	30	15	9.87
Steel Frame.....	303	286	105	169	34	11	Q	Q	Q	21.29
Siding Over --										
Wood Frame.....	727	612	198	269	104	Q	74	50	Q	18.91
Masonry Frame.....	91	72	24	42	Q	Q	Q	Q	NC	30.37
Metal Panels.....	499	375	154	177	37	7	37	Q	Q	18.47
Concrete Panels.....	137	125	46	72	11	7	Q	Q	Q	31.01
Other.....	157	140	36	83	22	8	Q	Q	Q	26.53
Roof Materials										
Built-Up.....	1,761	1,626	501	1,005	225	45	35	28	16	9.59
Shingles (Not Wood).....	1,117	1,030	310	562	148	8	122	32	Q	12.80
Metal Surfacing.....	853	647	242	289	80	8	76	50	Q	15.57
Synthetic or Rubber.....	131	129	39	76	23	5	Q	Q	Q	25.02
Slate or Tile.....	114	97	23	57	19	10	Q	Q	Q	27.62
Wood Shingles, Shakes or										
Other Wooden Materials.....	114	96	38	54	Q	NC	Q	Q	NC	30.83
Other.....	64	58	22	30	Q	Q	Q	Q	Q	28.73
Heat Production Equipment										
Warm-Air Furnaces.....	1,793	1,793	382	1,256	242	Q	137	42	Q	13.52
Boilers.....	627	627	111	373	232	Q	17	Q	11	15.69
Individual Space Heaters or										
Electric Baseboards.....	1,062	1,060	463	526	130	4	127	87	Q	13.17
Packaged Heating Units.....	540	540	240	346	11	5	13	Q	Q	22.97
Air-Source Heat Pumps.....	319	319	259	80	17	Q	Q	Q	Q	25.06
Receives District Heat.....	76	76	8	5	Q	76	NC	Q	Q	40.09

See footnotes at end of table.

Table 36. Space-Heating Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.407	0.412	0.666	0.561	0.961	1.650	1.780	2.111	2.677	
Heat Distribution Equipment										
Ducted Forced Air.....	2,522	2,500	820	1,536	296	39	125	35	9	9.24
Heating Only.....	597	597	73	378	157	5	42	24	Q	18.68
Heating and Cooling.....	1,768	1,767	709	1,079	109	26	82	Q	Q	11.31
VAV Used.....	547	536	213	328	56	11	Q	Q	Q	17.04
Steam Radiators or Baseboards.....	229	229	35	117	82	30	Q	Q	Q	20.58
Hot Water Radiators or Baseboards.....	271	271	52	143	108	16	Q	Q	Q	18.38
Fan-Coil Units.....	411	404	109	235	81	29	22	Q	Q	17.36
Heating Only.....	195	195	41	113	47	12	Q	Q	Q	21.89
Heating and Cooling.....	166	166	56	100	21	15	Q	NC	Q	25.56
Heating Panels.....	200	200	117	100	22	1	Q	Q	Q	24.74
Other.....	7	7	Q	Q	Q	Q	Q	NC	NC	72.75
Occupant Control of:										
Heating Only.....	646	640	139	300	156	12	74	65	Q	15.63
Cooling Only.....	84	50	7	23	21	5	Q	Q	NC	35.82
Heating and Cooling.....	2,009	2,000	734	1,203	175	32	110	Q	Q	11.46
Reduced Use--Off-Hours										
Heating Only.....	759	756	151	361	186	10	80	75	Q	15.22
Cooling Only.....	106	63	15	36	Q	3	Q	Q	Q	31.26
Heating and Cooling.....	2,331	2,326	803	1,419	251	35	136	Q	15	9.33
Conservation Features										
Any Conservation Feature....	3,631	3,444	1,115	1,944	483	73	230	92	32	8.29
Building Shell.....	3,484	3,318	1,092	1,872	455	70	221	88	31	8.28
HVAC.....	2,155	2,130	698	1,216	337	57	123	30	17	8.67
Lighting.....	1,442	1,384	495	816	177	37	48	36	17	10.91
HVAC Conservation Features										
Preventive Maintenance Program.....	2,076	2,053	671	1,168	331	56	114	29	16	8.77
Waste Heat Recovery.....	149	147	46	76	25	5	Q	Q	Q	22.74
EMCS.....	205	202	69	125	24	13	Q	Q	Q	22.57
Time-Clock Thermostat.....	64	64	21	46	4	4	Q	NC	Q	36.34
Economizer Cycle.....	17	17	7	11	Q	Q	NC	NC	Q	49.13
Other HVAC Features.....	76	76	33	41	8	2	Q	NC	Q	33.83

See footnotes at end of table.

Table 36. Space-Heating Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.407	0.412	0.666	0.561	0.961	1.650	1.780	2.111	2.677	
Building Shell Conservation Features										
Roof or Ceiling Insulation..	2,757	2,647	910	1,462	348	56	186	71	21	8.94
Wall Insulation.....	2,009	1,940	724	1,033	241	32	154	59	17	10.50
Storm or Multiple Glazing...	1,252	1,230	397	702	199	21	85	31	13	11.21
Tinted, Reflective or Shading Glass or Film.....	891	862	366	506	62	13	35	Q	Q	13.58
Exterior or Interior Shadings or Awnings.....	1,272	1,244	458	726	151	22	63	Q	Q	11.88
Weather Stripping or Caulking.....	2,562	2,468	853	1,384	333	51	158	62	23	9.21
Other Shell Features.....	112	110	38	63	15	Q	Q	Q	Q	31.21
Climate Zone: 45 Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD.....	419	366	58	182	110	8	Q	28	Q	29.60
5,500-7,000 HDD.....	930	863	163	606	144	24	32	22	Q	15.80
4,000-5,499 HDD.....	865	783	253	347	185	21	72	33	13	22.83
Under 4,000 HDD.....	1,022	897	320	535	60	7	80	29	Q	21.32
2,000 CDD or More and --										
Under 4,000 HDD.....	919	773	381	403	14	Q	32	Q	NC	28.74
Percent Heated										
Not Heated.....	470	Q	Q	Q	Q	Q	Q	Q	NC	52.87
1 to 50.....	601	592	225	298	83	Q	43	37	Q	15.06
51 to 99.....	458	458	165	267	58	4	41	Q	Q	18.25
100.....	2,625	2,608	777	1,499	365	66	164	69	28	8.34
Building Floorspace (Square Feet)										
1,001 to 5,000.....	2,220	1,884	586	1,000	241	21	179	80	Q	12.03
5,001 to 10,000.....	931	859	268	511	135	Q	41	28	Q	12.67
10,001 to 25,000.....	557	518	171	315	69	18	21	Q	Q	13.11
25,001 to 50,000.....	242	228	78	135	38	11	Q	Q	Q	16.48
50,001 to 100,000.....	123	114	48	62	16	10	Q	Q	Q	18.69
100,001 to 200,000.....	52	50	16	32	7	6	Q	NC	Q	21.22
200,001 to 500,000.....	23	22	7	14	6	3	Q	Q	Q	24.96
Over 500,000.....	6	6	2	3	1	1	Q	NC	Q	35.27

See footnotes at end of table.

Table 36. Space-Heating Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.407	0.412	0.666	0.561	0.961	1.650	1.780	2.111	2.677	
Principal Building Activity										
Assembly.....	575	542	160	314	71	8	66	Q	Q	15.39
Education.....	241	238	74	148	32	9	Q	Q	Q	19.97
Food Sales.....	102	101	43	50	Q	Q	Q	Q	Q	36.78
Food Services.....	201	188	53	112	Q	Q	Q	Q	Q	22.30
Health Care.....	52	52	20	29	9	3	Q	Q	Q	33.88
Lodging.....	137	131	66	45	15	8	Q	Q	NC	22.82
Mercantile and Service.....	1,287	1,211	315	719	206	11	76	60	Q	11.36
Office.....	614	609	240	338	69	17	Q	Q	Q	16.65
Public Order and Safety.....	55	53	17	31	Q	Q	Q	NC	NC	34.27
Warehouse.....	549	342	123	167	49	4	24	Q	Q	17.10
Other.....	103	76	30	28	18	4	Q	Q	Q	30.71
Vacant.....	238	140	35	90	Q	Q	Q	Q	NC	26.34
Census Region										
Northeast.....	663	609	129	254	252	17	25	25	Q	14.51
Midwest.....	1,096	970	167	698	100	22	81	40	Q	15.06
South.....	1,570	1,409	616	685	131	25	120	41	Q	13.05
West.....	825	692	263	434	30	11	Q	Q	Q	25.86
Year Constructed										
1900 or Before.....	188	173	36	108	46	Q	Q	Q	Q	28.20
1901 to 1920.....	255	225	30	141	49	10	Q	Q	Q	21.52
1921 to 1945.....	629	550	110	362	91	16	23	27	Q	13.79
1946 to 1960.....	878	780	204	486	119	12	55	Q	Q	15.42
1961 to 1970.....	730	658	201	377	90	17	56	Q	Q	15.64
1971 to 1973.....	243	215	74	119	26	3	Q	Q	Q	19.05
1974 to 1979.....	572	514	240	236	53	8	29	Q	Q	16.39
1980 to 1983.....	350	308	152	135	19	Q	26	Q	Q	19.01
1984 to 1986.....	309	258	126	107	20	Q	23	Q	Q	21.79
Ownership and Occupancy										
Nongovernment Owned.....	3,661	3,245	1,053	1,819	442	47	233	111	31	8.78
Owner Occupied.....	2,396	2,155	655	1,171	330	42	182	88	16	10.58
Nonowner Occupied.....	1,265	1,090	397	648	112	5	51	Q	Q	12.65
Government Owned.....	493	436	122	253	71	29	19	Q	Q	13.79

See footnotes at end of table.

Table 36. Space-Heating Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.407	0.412	0.666	0.561	0.961	1.650	1.780	2.111	2.677	
Workers										
Fewer than 5.....	2,033	1,648	455	867	238	21	177	94	Q	11.70
5 to 9.....	842	795	274	466	116	9	29	Q	Q	12.82
10 to 19.....	587	556	193	335	69	11	32	Q	Q	15.87
20 to 49.....	434	425	149	256	54	18	13	Q	Q	13.73
50 to 99.....	152	151	61	88	19	4	Q	NC	Q	21.02
100 to 249.....	73	73	30	40	10	8	Q	NC	NC	22.03
250 or More.....	33	33	12	20	7	5	Q	Q	Q	22.22
Weekly Operating Hours										
39 or Fewer.....	870	661	195	357	95	10	70	Q	Q	15.65
40 to 48.....	1,086	1,002	352	599	119	18	42	28	Q	11.99
49 to 60.....	919	849	231	479	145	17	55	33	Q	11.56
61 to 84.....	556	522	155	311	71	5	33	Q	Q	16.09
85 to 167.....	375	337	95	194	48	6	32	Q	NC	16.18
168 (Open Continuously).....	347	310	147	133	34	20	Q	Q	Q	19.45
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	3,678	1,175	2,072	512	76	251	118	34	8.06
Natural Gas.....	2,278	2,244	402	2,072	86	25	Q	26	Q	11.62
Fuel Oil.....	542	537	86	67	513	3	Q	22	Q	17.79
District Steam or Hot Water.....	78	78	8	6	Q	76	NC	Q	Q	38.04
District Chilled Water.....	15	15	Q	Q	Q	8	NC	NC	Q	53.32
Propane.....	351	333	78	13	48	Q	252	Q	Q	23.60
Minor Fuels.....	163	162	21	34	32	Q	Q	119	36	20.52
Energy End Uses										
Space Heating.....	3,681	3,681	1,175	2,072	513	76	252	119	36	7.98
Cooling.....	2,882	2,834	1,008	1,690	303	59	152	29	17	8.97
Water Heating.....	2,896	2,839	943	1,669	377	69	154	52	19	8.82
Cooking.....	563	544	183	340	74	11	23	Q	Q	14.09
Manufacturing.....	132	120	39	75	13	3	Q	Q	Q	29.23

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 37. Space-Heating Energy Sources, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.401	0.407	0.718	0.561	0.894	1.356	1.812	2.487	2.783	
All Buildings.....	58,229	54,510	18,354	32,142	8,846	4,434	1,832	686	517	7.78
Primary Space Heating Fuel										
Electricity.....	12,313	12,313	12,313	1,477	Q	Q	163	Q	Q	22.60
Natural Gas.....	29,582	29,582	4,384	29,582	2,084	Q	Q	Q	Q	17.22
Fuel Oil.....	6,462	6,462	1,113	715	6,462	NC	Q	Q	Q	22.57
District Steam or Hot Water.....	4,315	4,315	339	Q	Q	4,315	NC	Q	NC	32.52
Propane.....	1,246	1,246	Q	Q	NC	NC	1,246	Q	NC	41.54
Minor Fuels.....	853	853	Q	Q	Q	Q	Q	482	397	38.70
Wall and Frame Materials										
Masonry Over --										
Wood Frame.....	7,578	7,330	2,262	4,516	1,143	191	365	Q	Q	20.48
Masonry Frame.....	22,567	21,434	6,407	13,271	4,005	1,859	577	199	340	10.88
Steel Frame.....	10,237	9,984	3,736	5,665	1,829	1,200	Q	Q	Q	20.15
Siding Over --										
Wood Frame.....	4,535	3,740	1,509	1,556	719	Q	386	212	Q	22.31
Masonry Frame.....	900	821	234	504	Q	Q	Q	Q	NC	34.43
Metal Panels.....	4,970	4,005	1,893	2,051	334	176	276	Q	Q	19.07
Concrete Panels.....	4,624	4,470	1,585	2,985	384	512	1,585	Q	Q	32.38
Other.....	2,818	2,726	728	1,594	325	Q	Q	Q	Q	30.81
Roof Materials										
Built-Up.....	32,887	31,398	10,429	19,012	5,385	3,067	418	147	314	10.71
Shingles (Not Wood).....	8,805	8,438	2,631	4,941	1,028	246	713	261	Q	13.91
Metal Surfacing.....	7,283	5,945	2,430	3,143	726	158	505	196	Q	17.00
Synthetic or Rubber.....	4,574	4,497	1,616	2,677	805	461	Q	Q	Q	23.07
Slate or Tile.....	1,980	1,879	411	1,010	572	386	Q	Q	Q	30.53
Wood Shingles, Shakes or Other Wooden Materials.....	833	638	272	383	Q	NC	Q	Q	NC	32.90
Other.....	1,866	1,715	565	975	Q	Q	Q	Q	Q	40.45

See footnotes at end of table.

Table 37. Space-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.401	0.407	0.718	0.561	0.894	1.356	1.812	2.487	2.783	
Heat Production Equipment										
Warm-Air Furnaces.....	17,966	17,966	4,841	13,675	2,268	Q	834	266	Q	14.61
Boilers.....	19,459	19,459	4,052	13,641	6,555	Q	255	Q	357	16.12
Individual Space Heaters or Electric Baseboards.....	13,985	13,980	7,581	7,832	2,116	450	852	499	Q	13.92
Packaged Heating Units.....	12,309	12,307	5,727	8,065	740	506	355	Q	Q	21.44
Air-Source Heat Pumps.....	5,090	5,090	3,765	1,975	253	Q	Q	Q	Q	23.79
Receives District Heat.....	4,434	4,434	394	455	Q	4,434	NC	Q	Q	31.64
Heat Distribution Equipment										
Ducted Forced Air.....	40,038	39,778	14,430	24,536	5,247	2,963	1,210	305	224	10.35
Heating Only.....	5,650	5,650	943	3,642	1,297	304	193	206	Q	21.42
Heating and Cooling.....	31,109	31,095	12,802	19,254	3,376	2,198	942	Q	Q	11.16
VAV Used.....	14,743	14,610	6,067	8,491	2,054	1,616	Q	Q	Q	15.17
Steam Radiators or Baseboards.....	7,997	7,997	1,181	4,125	2,728	1,966	Q	Q	Q	20.46
Hot Water Radiators or Baseboards.....	7,842	7,842	1,123	4,695	2,622	1,423	Q	Q	Q	18.80
Fan-Coil Units.....	14,490	14,323	3,944	8,749	3,460	2,045	236	Q	Q	16.35
Heating Only.....	5,260	5,260	1,032	3,222	1,365	618	Q	Q	Q	25.05
Heating and Cooling.....	7,934	7,934	2,504	4,820	1,671	1,307	Q	NC	Q	19.59
Heating Panels.....	3,361	3,361	1,701	1,965	660	193	Q	Q	Q	24.39
Other.....	259	259	Q	Q	Q	Q	Q	NC	NC	67.14
Occupant Control of:										
Heating Only.....	5,974	5,958	1,383	3,292	1,283	382	307	344	Q	18.71
Cooling Only.....	1,845	1,528	284	883	502	180	Q	Q	NC	35.34
Heating and Cooling.....	25,297	25,245	9,795	15,605	3,265	1,347	780	Q	Q	12.38
Reduced Use--Off-Hours										
Heating Only.....	7,649	7,620	1,913	3,966	1,944	319	352	402	Q	17.39
Cooling Only.....	1,463	1,031	256	622	Q	113	Q	Q	Q	36.76
Heating and Cooling.....	36,652	36,599	13,123	22,423	5,247	2,702	1,275	Q	337	9.49

See footnotes at end of table.

Table 37. Space-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.401	0.407	0.718	0.561	0.894	1.356	1.812	2.487	2.783	
Conservation Features										
Any Conservation Feature....	54,567	52,805	17,735	31,311	8,575	4,377	1,729	604	459	8.12
Building Shell.....	52,029	50,584	17,176	30,112	7,989	4,207	1,626	593	336	8.18
HVAC.....	41,974	41,698	14,095	24,594	7,528	4,008	1,059	165	381	9.28
Lighting.....	33,112	32,382	11,832	19,265	5,395	2,964	666	206	293	11.15
HVAC Conservation Features										
Preventive Maintenance										
Program.....	40,914	40,642	13,787	23,824	7,479	3,920	969	154	363	9.72
Waste Heat Recovery.....	6,492	6,489	2,166	3,493	1,576	923	Q	Q	Q	21.45
EMCS.....	11,070	11,015	3,868	6,020	1,895	1,905	Q	Q	Q	19.40
Time-Clock Thermostat.....	2,121	2,109	579	1,568	222	241	Q	NC	Q	31.91
Economizer Cycle.....	1,111	1,090	410	717	Q	Q	NC	NC	Q	40.00
Other HVAC Features.....	2,793	2,788	897	1,780	480	Q	Q	NC	Q	38.51
Building Shell Conservation Features										
Roof or Ceiling Insulation..	42,356	41,435	14,397	24,733	5,994	3,260	1,443	514	254	9.02
Wall Insulation.....	29,232	28,662	11,514	16,491	3,954	1,727	1,220	396	155	10.40
Storm or Multiple Glazing...	21,757	21,582	7,752	12,762	3,920	1,657	679	237	190	11.69
Tinted, Reflective or Shading Glass or Film.....	20,526	20,235	8,325	12,071	2,411	1,570	536	Q	Q	15.81
Exterior or Interior Shadings or Awnings.....	20,651	20,341	7,234	12,226	3,385	1,637	492	Q	Q	11.67
Weather Stripping or Caulking.....	41,429	40,578	14,512	24,179	6,302	3,246	1,162	453	213	8.66
Other Shell Features.....	1,740	1,731	653	1,010	231	Q	Q	Q	Q	31.14
Climate Zone: 45 Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD.....	4,897	4,641	1,143	2,500	1,040	562	Q	166	Q	24.73
5,500-7,000 HDD.....	16,250	15,727	3,593	10,679	2,595	1,612	327	123	Q	15.88
4,000-5,499 HDD.....	13,904	13,222	4,193	6,521	4,065	1,495	448	Q	267	17.68
Under 4,000 HDD.....	13,792	12,725	5,032	8,210	951	474	622	180	Q	23.28
2,000 CDD or More and --										
Under 4,000 HDD.....	9,386	8,195	4,393	4,232	195	292	243	Q	NC	22.53

See footnotes at end of table.

Table 37. Space-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Energy Source Used for Space Heating (Solely or in Combination)							Minor Fuels Excluding Wood	RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood			
RSE Column Factor:	0.401	0.407	0.718	0.561	0.894	1.356	1.812	2.487	2.783		
Percent Heated											
Not Heated.....	3,635	Q	Q	Q	Q	Q	Q	Q	NC	51.60	
1 to 50.....	8,579	8,484	3,763	4,863	929	150	318	299	Q	19.17	
51 to 99.....	7,061	7,055	2,695	4,171	1,004	558	569	Q	Q	20.32	
100.....	38,941	38,830	11,837	23,064	6,891	3,726	935	285	454	8.63	
Building Floorspace (Square Feet)											
1,001 to 5,000.....	6,209	5,315	1,705	2,860	688	66	488	176	Q	12.31	
5,001 to 10,000.....	6,861	6,335	1,955	3,809	988	Q	299	192	Q	12.88	
10,001 to 25,000.....	9,119	8,490	2,821	5,228	1,101	303	345	Q	Q	13.65	
25,001 to 50,000.....	8,661	8,150	2,804	4,817	1,368	424	Q	Q	Q	16.75	
50,001 to 100,000.....	8,559	7,900	3,327	4,403	1,057	726	Q	Q	Q	18.85	
100,001 to 200,000.....	7,191	6,944	2,213	4,361	1,055	772	Q	NC	Q	21.27	
200,001 to 500,000.....	6,737	6,621	1,946	4,176	1,812	1,202	Q	Q	Q	24.69	
Over 500,000.....	4,893	4,755	1,585	2,489	775	905	Q	NC	Q	34.46	
Principal Building Activity											
Assembly.....	7,339	7,138	2,098	4,282	1,387	452	456	Q	Q	19.21	
Education.....	7,321	7,316	1,621	4,659	1,675	815	Q	Q	Q	18.46	
Food Sales.....	712	710	335	433	Q	Q	Q	Q	Q	39.16	
Food Services.....	1,281	1,233	438	740	Q	Q	Q	Q	Q	28.34	
Health Care.....	2,107	2,086	587	1,317	737	507	Q	Q	Q	33.99	
Lodging.....	2,785	2,733	1,315	1,112	402	446	Q	Q	NC	24.80	
Mercantile and Service.....	12,805	12,482	4,073	8,027	1,819	156	454	265	Q	15.47	
Office.....	9,546	9,527	3,598	5,073	918	1,371	Q	Q	Q	17.07	
Public Order and Safety.....	680	678	162	350	Q	Q	Q	NC	NC	45.01	
Warehouse.....	8,996	7,155	2,645	4,519	1,119	165	315	Q	Q	19.77	
Other.....	1,726	1,522	843	594	302	161	Q	Q	Q	35.85	
Vacant.....	2,931	1,931	639	1,038	Q	175	Q	Q	NC	26.76	
Census Region											
Northeast.....	11,830	11,390	2,480	5,217	4,515	1,367	331	123	Q	15.18	
Midwest.....	16,034	15,288	3,748	11,036	1,426	1,776	411	202	Q	14.87	
South.....	19,427	17,767	8,354	9,466	2,140	684	929	271	Q	13.56	
West.....	10,937	10,065	3,772	6,423	765	607	Q	Q	Q	23.96	

See footnotes at end of table.

Table 37. Space-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.401	0.407	0.718	0.561	0.894	1.356	1.812	2.487	2.783	
Year Constructed										
1900 or Before.....	2,368	2,255	766	1,146	814	140	Q	Q	Q	29.33
1901 to 1920.....	3,665	3,377	458	2,046	793	539	Q	Q	Q	25.47
1921 to 1945.....	8,594	7,702	1,600	4,626	1,658	994	204	297	Q	16.25
1946 to 1960.....	9,712	9,048	2,187	6,092	1,766	508	277	Q	Q	16.78
1961 to 1970.....	11,469	10,879	3,326	6,677	1,597	1,044	251	Q	Q	15.98
1971 to 1973.....	4,307	4,160	1,544	2,460	661	545	Q	Q	Q	23.77
1974 to 1979.....	8,230	7,803	3,824	4,080	946	417	373	Q	Q	18.73
1980 to 1985.....	5,205	4,992	2,451	2,745	343	Q	151	Q	Q	23.00
1984 to 1986.....	4,678	4,295	2,198	2,269	269	Q	149	Q	Q	22.97
Ownership and Occupancy										
Nongovernment Owned.....	46,041	42,870	15,515	25,539	5,874	2,556	1,692	624	305	8.92
Owner Occupied.....	28,962	27,033	9,301	15,614	4,282	2,161	1,277	447	209	9.90
Nonowner Occupied.....	17,080	15,837	6,214	9,925	1,591	395	416	Q	Q	14.56
Government Owned.....	12,187	11,640	2,839	6,603	2,972	1,878	139	Q	Q	13.82
Workers										
Fewer than 5.....	13,129	10,378	3,076	5,819	1,537	326	723	288	Q	12.41
5 to 9.....	6,576	6,310	2,502	3,726	909	186	189	Q	Q	17.67
10 to 19.....	7,895	7,434	2,363	4,362	981	407	554	Q	Q	18.51
20 to 49.....	8,847	8,663	2,881	5,300	1,341	583	211	Q	Q	15.30
50 to 99.....	6,510	6,498	2,178	4,078	1,063	290	Q	NC	Q	21.63
100 to 249.....	6,445	6,418	2,261	3,799	1,193	912	Q	NC	NC	19.58
250 or More.....	8,828	8,808	3,094	5,058	1,821	1,731	Q	Q	Q	22.79
Weekly Operating Hours										
39 or Fewer.....	9,286	7,723	2,269	4,715	1,427	181	587	Q	Q	17.05
40 to 48.....	15,167	14,382	5,140	8,955	1,832	1,034	341	201	Q	15.60
49 to 60.....	10,805	10,322	3,034	6,071	1,800	717	280	227	Q	12.71
61 to 84.....	9,760	9,472	3,468	5,838	1,274	490	319	Q	Q	19.29
85 to 167.....	5,514	5,344	1,697	2,929	895	546	196	Q	NC	18.19
168 (Open Continuously).....	7,696	7,267	2,747	3,634	1,616	1,466	Q	Q	Q	19.16

See footnotes at end of table.

Table 37. Space-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Energy Source Used for Space Heating (Solely or in Combination)							RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	Wood	Minor Fuels Excluding Wood	
RSE Column Factor:	0.401	0.407	0.718	0.561	0.894	1.356	1.812	2.487	2.783	
Energy Sources Used (Solely or in Combination)										
Electricity.....	57,036	54,496	18,354	32,138	8,842	4,434	1,825	682	514	7.77
Natural Gas.....	38,140	37,878	8,964	32,142	4,222	1,943	Q	209	Q	11.42
Fuel Oil.....	11,163	11,112	2,263	4,176	8,846	520	Q	217	Q	16.67
District Steam or Hot Water.....	4,645	4,624	429	622	230	4,434	NC	Q	Q	30.73
District Chilled Water.....	1,191	1,191	221	Q	Q	1,012	NC	NC	Q	45.13
Propane.....	3,362	3,176	1,038	430	899	Q	1,832	Q	Q	24.27
Minor Fuels.....	1,557	1,555	367	614	319	Q	Q	686	517	24.91
Energy End Uses										
Space Heating.....	54,510	54,510	18,354	32,142	8,846	4,434	1,832	686	517	7.79
Cooling.....	46,601	46,154	16,659	27,834	6,836	3,813	1,388	210	394	8.91
Water Heating.....	48,836	48,297	16,471	28,879	8,093	4,221	1,300	459	451	8.59
Cooking.....	17,227	17,078	5,592	10,459	3,754	1,657	374	Q	Q	14.95
Manufacturing.....	3,081	2,980	975	2,075	761	228	Q	Q	Q	24.48

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used for Cooling						Energy Source Used for Cooling						
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
RSE Column Factor:	0.435	0.448	0.483	1.480	2.828	2.934	0.439	0.464	0.507	1.589	2.230	2.361	
All Buildings.....	4,154	2,882	2,737	141	15	11	58,229	46,601	42,564	2,894	1,163	833	7.89
Cooling Energy Sources													
Electricity.....	2,737	2,737	2,737	16	Q	Q	42,564	42,564	42,564	354	190	173	11.18
Natural Gas.....	141	141	16	141	NC	Q	2,894	2,894	354	2,894	NC	Q	24.13
District Chilled Water.....	15	15	Q	NC	15	Q	1,163	1,163	190	NC	1,163	Q	40.05
Fuel Oil, District Steam, Propane, and Minor Fuels...	11	11	Q	Q	Q	11	833	833	173	Q	Q	833	43.42
Window Glass: Percent of Exterior Walls													
25 or Less.....	3,522	2,405	2,287	114	11	7	43,239	33,719	31,044	1,962	774	485	9.64
26 to 50.....	524	393	374	19	4	3	10,825	9,041	8,096	589	324	245	12.84
51 to 75.....	82	60	56	Q	Q	Q	2,836	2,545	2,301	Q	Q	Q	25.75
Over 75.....	26	24	20	Q	Q	Q	1,329	1,296	1,123	Q	Q	Q	28.70
Wall and Frame Materials													
Masonry Over --													
Wood Frame.....	722	556	524	38	Q	Q	7,578	5,573	5,162	452	Q	Q	19.87
Masonry Frame.....	1,518	1,142	1,085	50	7	8	22,567	18,776	16,802	1,210	602	567	10.74
Steel Frame.....	303	251	237	12	Q	1	10,237	9,119	8,406	537	256	165	16.19
Siding Over --													
Wood Frame.....	727	405	385	Q	NC	NC	4,535	2,655	2,546	Q	NC	NC	18.86
Masonry Frame.....	91	54	52	Q	Q	NC	900	696	666	Q	Q	NC	32.68
Metal Panels.....	499	267	261	Q	Q	Q	4,970	3,249	3,151	Q	Q	Q	23.28
Concrete Panels.....	137	102	94	7	Q	Q	4,624	4,151	3,626	Q	Q	Q	29.13
Other.....	157	106	100	Q	Q	Q	2,818	2,382	2,205	Q	Q	Q	25.97
Roof Materials													
Built-Up.....	1,761	1,352	1,286	67	7	6	32,887	27,520	24,907	1,960	751	560	9.66
Shingles (Not Wood).....	1,117	776	743	37	Q	Q	8,805	6,628	6,298	376	Q	Q	17.43
Metal Surfacing.....	853	449	441	Q	Q	Q	7,283	4,674	4,504	Q	Q	Q	22.73
Synthetic or Rubber.....	131	108	99	Q	Q	Q	4,574	4,095	3,594	Q	Q	Q	20.78
Slate or Tile.....	114	78	68	Q	Q	Q	1,980	1,598	1,419	Q	Q	Q	26.36
Wood Shingles, Shakes or Other Wooden Materials.....	114	70	60	Q	NC	NC	833	536	431	Q	NC	NC	28.98
Other.....	64	48	41	Q	Q	NC	1,866	1,550	1,410	Q	Q	NC	36.51

See footnotes at end of table.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	All Cooled Buildings	Energy Source Used for Cooling				All Buildings	All Cooled Buildings	Energy Source Used for Cooling				
			Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels			Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
RSE Column Factor:	0.435	0.448	0.483	1.480	2.828	2.934	0.439	0.464	0.507	1.589	2.230	2.361	
Cooling Production Equipment													
Central Cooling.....	1,111	1,111	1,052	65	Q	7	21,734	21,723	19,849	1,626	Q	584	13.01
Individual													
Air Conditioners.....	923	916	894	25	Q	5	14,433	14,121	13,219	741	Q	387	13.13
Packaged Air-Conditioning Units.....	730	729	681	51	Q	1	17,889	17,888	16,401	1,324	Q	361	14.26
Air-Source Heat Pumps.....	319	315	308	8	Q	Q	5,090	5,071	4,747	353	Q	Q	22.68
Receives District Chilled Water.....	15	15	Q	NC	15	Q	1,163	1,163	190	NC	1,163	Q	40.05
Cooling Distribution Equipment													
Ducted Forced Air.....	2,522	2,189	2,058	126	12	8	40,038	36,864	33,320	2,664	906	589	8.99
Cooling Only.....	157	157	151	Q	Q	Q	3,279	3,279	2,936	Q	Q	Q	28.72
Heating and Cooling.....	1,768	1,767	1,644	121	12	6	31,109	31,095	27,941	2,355	838	535	9.26
VAV Used.....	547	499	464	32	5	5	14,743	14,106	12,460	1,049	619	406	14.00
Fan-Coil Units.....	411	321	303	15	5	4	14,490	12,998	11,317	869	763	574	14.29
Cooling Only.....	51	49	46	Q	Q	NC	1,296	1,281	1,149	Q	Q	NC	34.72
Heating and Cooling.....	166	166	154	8	4	3	7,934	7,932	6,696	501	633	538	17.08
Other.....	Q	Q	Q	NC	Q	Q	Q	Q	Q	NC	Q	Q	72.81
Occupant Control of:													
Heating Only.....	646	75	70	Q	Q	NC	5,974	1,204	1,147	Q	Q	NC	32.14
Cooling Only.....	84	83	82	Q	Q	Q	1,845	1,707	1,635	Q	Q	Q	32.33
Heating and Cooling.....	2,009	1,994	1,898	99	Q	7	25,297	25,160	23,422	1,515	477	235	11.27
Reduced Use--Off-Hours													
Heating Only.....	759	72	71	Q	Q	NC	7,649	1,201	1,195	Q	Q	NC	33.57
Cooling Only.....	106	106	105	Q	Q	Q	1,463	1,463	1,445	Q	Q	Q	32.12
Heating and Cooling.....	2,331	2,321	2,191	122	11	8	36,652	36,526	33,498	2,310	700	490	8.31
Conservation Features													
Any Conservation Feature....	3,631	2,758	2,616	138	15	11	54,567	45,575	41,614	2,817	1,163	833	7.98
Building Shell.....	3,484	2,678	2,538	135	15	10	52,029	44,126	40,246	2,747	1,163	804	7.99
HVAC.....	2,155	1,763	1,658	100	14	11	41,974	36,871	33,263	2,478	1,135	833	8.21
Lighting.....	1,442	1,175	1,109	58	9	8	33,112	29,071	26,349	1,756	877	681	10.14

See footnotes at end of table.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used for Cooling						Energy Source Used for Cooling						
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
RSE Column Factor:	0.435	0.448	0.483	1.480	2.828	2.934	0.439	0.464	0.507	1.589	2.230	2.361	
HVAC Conservation Features													
Preventive Maintenance													
Program.....	2,076	1,699	1,597	97	14	11	40,914	35,933	32,385	2,421	1,126	825	8.37
Waste Heat Recovery.....	149	134	125	6	*	Q	6,492	6,054	5,396	357	144	247	19.84
EMCS.....	205	188	171	12	6	2	11,070	10,476	9,210	632	632	326	15.10
Time-Clock Thermostat.....	64	60	56	Q	Q	Q	2,121	2,025	1,855	Q	Q	Q	29.50
Economizer Cycle.....	17	17	16	Q	Q	Q	1,111	1,111	952	Q	Q	Q	45.37
Other HVAC Features.....	76	63	61	Q	Q	Q	2,793	2,623	2,526	Q	Q	Q	29.62
Lighting Conservation Features													
High-Efficiency Ballasts....													
Delamping Program.....	1,019	826	777	43	5	7	24,431	21,536	19,573	1,337	446	555	12.00
Natural Lighting Control	331	268	248	14	5	Q	12,005	10,672	9,491	660	494	232	13.70
Sensors.....													
Other Lighting Controls.....	156	131	124	6	Q	Q	5,364	5,128	4,740	355	Q	Q	25.55
Other Lighting Features.....	421	376	353	18	Q	4	12,603	11,672	10,554	762	291	278	14.82
	78	63	58	Q	Q	Q	2,074	1,813	1,625	Q	Q	Q	26.62
Building Shell Conservation Features													
Roof or Ceiling Insulation..													
Wall Insulation.....	2,757	2,137	2,026	101	14	10	42,356	36,332	33,182	2,169	1,046	663	8.50
Storm or Multiple Glazing...	2,009	1,570	1,483	82	8	8	29,232	25,470	23,757	1,155	596	387	10.97
Tinted, Reflective or	1,252	1,015	943	68	5	9	21,757	19,153	17,658	1,084	396	356	10.83
Shading Glass or Film.....	891	817	772	43	4	3	20,526	19,545	17,789	1,072	614	411	12.24
Exterior or Interior													
Shadings or Awnings.....	1,272	1,120	1,062	52	7	8	20,651	19,173	17,676	1,001	555	280	11.06
Weather Stripping or													
Caulking.....	2,562	2,030	1,917	105	14	9	41,429	36,076	33,002	2,189	992	586	8.88
Other Shell Features.....	112	83	78	Q	Q	Q	1,740	1,533	1,429	Q	Q	Q	27.24

See footnotes at end of table.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used for Cooling						Energy Source Used for Cooling						
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
RSE Column Factor:	0.392	0.431	0.449	1.401	3.059	3.246	0.404	0.446	0.469	1.580	2.581	2.747	
Climate Zone: 45 Year Average													
Under 2,000 CDD and --													
Over 7,000 HDD.....	419	194	179	13	Q	Q	4,897	3,338	2,859	285	Q	Q	25.71
5,500-7,000 HDD.....	930	608	553	53	Q	4	16,250	12,429	11,137	923	320	232	15.12
4,000-5,499 HDD.....	865	562	539	22	Q	4	13,904	10,824	9,717	731	281	402	19.94
Under 4,000 HDD.....	1,022	758	719	44	Q	Q	13,792	11,707	10,836	784	Q	Q	23.51
2,000 CDD or More and --													
Under 4,000 HDD.....	919	760	747	Q	Q	NC	9,386	8,303	8,014	Q	235	NC	23.63
Percent Cooled													
Not Cooled.....	1,248	Q	Q	Q	NC	NC	11,057	Q	Q	Q	NC	NC	71.24
1 to 50.....	972	959	920	45	Q	Q	18,641	18,246	16,951	1,203	Q	Q	12.50
51 to 99.....	500	497	459	34	4	Q	9,982	9,971	8,915	622	539	315	15.40
100.....	1,435	1,424	1,356	61	10	7	18,543	18,323	16,654	1,052	591	256	10.33
Percent Lit--Open Hours													
Not Lit.....	231	15	15	NC	NC	NC	1,851	171	171	NC	NC	NC	56.67
1 to 50.....	624	414	397	18	Q	Q	7,399	5,302	5,021	294	Q	Q	21.30
51 to 99.....	644	523	489	33	Q	Q	9,416	8,280	7,417	647	Q	Q	16.48
100.....	2,655	1,930	1,835	90	11	8	39,562	32,847	29,956	1,953	906	684	9.90
Building floorspace (Square Feet)													
1,001 to 5,000.....	2,220	1,412	1,353	58	Q	Q	6,209	4,031	3,869	161	Q	Q	15.57
5,001 to 10,000.....	931	677	643	36	Q	Q	6,861	5,014	4,752	273	Q	Q	14.23
10,001 to 25,000.....	557	430	404	26	Q	Q	9,119	7,061	6,613	445	Q	Q	15.57
25,001 to 50,000.....	242	194	182	11	Q	Q	8,661	6,879	6,412	445	Q	Q	13.98
50,001 to 100,000.....	123	99	94	Q	Q	Q	8,559	6,864	6,496	Q	Q	Q	17.49
100,001 to 200,000.....	52	44	39	4	1	Q	7,191	6,194	5,471	512	146	Q	18.44
200,001 to 500,000.....	23	21	18	2	1	Q	6,737	6,296	5,213	534	476	Q	20.08
Over 500,000.....	6	5	4	Q	*	*	4,893	4,261	3,739	Q	261	218	24.82

See footnotes at end of table.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used for Cooling						Energy Source Used for Cooling						
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
Principal Building Activity													
Assembly.....	575	407	381	25	Q	Q	7,339	5,697	5,143	455	Q	Q	16.84
Education.....	241	172	164	7	Q	Q	7,321	5,895	5,256	361	Q	Q	19.34
Food Sales.....	102	96	95	Q	Q	NC	712	698	673	Q	Q	NC	35.33
Food Services.....	201	180	166	Q	NC	Q	1,281	1,145	1,072	Q	NC	Q	22.25
Health Care.....	52	50	47	Q	Q	Q	2,107	2,092	1,813	Q	227	Q	28.74
Lodging.....	137	101	96	Q	Q	Q	2,785	2,300	2,013	Q	Q	Q	27.05
Mercantile and Service.....	1,287	891	861	34	Q	Q	12,805	10,479	10,102	445	Q	Q	16.79
Office.....	614	579	542	31	4	5	9,546	9,377	8,473	404	379	252	13.96
Public Order and Safety.....	55	37	34	Q	NC	NC	680	507	455	Q	NC	NC	39.75
Warehouse.....	549	215	202	14	Q	Q	8,996	5,719	5,156	589	Q	Q	22.46
Other.....	103	49	48	Q	Q	Q	1,726	1,285	1,103	Q	Q	Q	36.65
Vacant.....	238	105	103	Q	NC	Q	2,931	1,406	1,306	Q	NC	Q	29.62
Census Region													
Northeast.....	663	392	369	23	Q	4	11,830	8,643	7,752	509	200	368	15.85
Midwest.....	1,096	672	621	45	6	3	16,034	12,544	11,139	892	409	419	13.47
South.....	1,570	1,268	1,234	35	3	Q	19,427	16,956	16,088	767	362	Q	13.59
West.....	825	550	512	38	Q	Q	10,937	8,458	7,584	725	Q	Q	21.11
Year Constructed													
1900 or Before.....	188	119	115	Q	Q	Q	2,368	1,779	1,699	Q	Q	Q	32.64
1901 to 1920.....	255	141	133	Q	Q	Q	3,665	2,425	2,086	Q	Q	Q	26.51
1921 to 1945.....	629	430	404	22	Q	Q	8,594	5,862	5,207	331	Q	Q	17.12
1946 to 1960.....	878	585	551	38	Q	Q	9,712	7,419	6,931	452	Q	Q	15.26
1961 to 1970.....	730	530	505	25	2	Q	11,469	9,226	8,461	611	184	128	13.40
1971 to 1973.....	243	174	165	8	Q	Q	4,307	3,930	3,327	347	Q	Q	21.93
1974 to 1979.....	572	433	415	20	Q	Q	8,230	7,303	6,498	684	Q	Q	16.05
1980 to 1983.....	350	260	248	Q	Q	Q	5,205	4,683	4,548	Q	Q	Q	23.11
1984 to 1986.....	309	209	201	Q	Q	Q	4,678	3,973	3,806	Q	Q	Q	23.57

See footnotes at end of table.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used for Cooling						Energy Source Used for Cooling						
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
RSE Column Factor:	0.392	0.431	0.449	1.401	3.059	3.246	0.404	0.446	0.469	1.580	2.581	2.747	
Ownership and Occupancy													
Nongovernment Owned.....	3,661	2,570	2,444	127	9	6	46,041	37,379	34,515	2,314	744	446	8.83
Owner Occupied.....	2,396	1,658	1,567	87	9	5	28,962	23,298	21,288	1,386	657	375	9.77
Nonowner Occupied.....	1,265	912	876	40	Q	Q	17,080	14,081	13,227	928	Q	Q	14.31
Government Owned.....	493	312	293	13	5	5	12,187	9,221	8,048	579	419	387	15.83
Workers													
Fewer than 5.....	2,033	1,067	1,036	35	Q	Q	13,129	6,868	6,528	365	Q	Q	17.34
5 to 9.....	842	677	641	35	Q	Q	6,576	5,109	4,681	405	Q	Q	17.21
10 to 19.....	587	505	468	35	Q	Q	7,895	6,397	5,856	504	Q	Q	15.71
20 to 49.....	434	391	369	21	Q	Q	8,847	7,720	7,238	445	Q	Q	15.64
50 to 99.....	152	138	127	10	Q	Q	6,510	5,703	5,248	423	Q	Q	18.68
100 to 249.....	73	71	67	Q	2	Q	6,445	6,180	5,468	Q	358	Q	19.14
250 or More.....	33	33	29	2	2	1	8,828	8,625	7,544	447	519	438	17.51
Weekly Operating Hours													
39 or Fewer.....	870	451	434	20	Q	Q	9,286	5,858	5,365	446	Q	Q	20.90
40 to 48.....	1,086	832	788	45	Q	Q	15,167	12,717	11,738	791	Q	Q	13.16
49 to 60.....	919	639	608	28	Q	Q	10,805	8,621	8,052	422	125	Q	14.52
61 to 84.....	556	419	395	29	Q	Q	9,760	8,293	7,746	389	Q	Q	17.64
85 to 167.....	375	283	269	11	Q	Q	5,514	4,537	4,120	379	Q	Q	17.77
168 (Open Continuously).....	347	258	244	8	6	Q	7,696	6,574	5,542	467	545	Q	17.60
Energy Sources Used (Solely or in Combination)													
Electricity.....	4,013	2,882	2,737	141	15	11	57,036	46,601	42,564	2,894	1,163	833	7.88
Natural Gas.....	2,278	1,845	1,712	141	8	3	38,140	32,874	29,730	2,894	490	435	9.62
Fuel Oil.....	542	321	314	3	Q	7	11,163	9,011	8,253	450	Q	339	17.57
District Steam or Hot Water.....	78	61	50	Q	8	2	4,645	4,018	2,714	Q	1,016	519	23.04
District Chilled Water.....	15	15	1	NC	15	Q	1,191	1,191	218	NC	1,163	Q	38.47
Propane.....	351	217	217	Q	NC	Q	3,362	2,588	2,549	Q	NC	Q	32.86
Minor Fuels.....	163	55	54	Q	Q	Q	1,557	888	813	Q	Q	Q	35.19

See footnotes at end of table.

Table 38. Cooling Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used for Cooling						Energy Source Used for Cooling						
	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	All Buildings	All Cooled Buildings	Electricity	Natural Gas	District Chilled Water	Fuel Oil, District Steam, Propane, and Minor Fuels	
RSE Column Factor:	0.392	0.431	0.449	1.401	3.059	3.246	0.404	0.446	0.469	1.580	2.581	2.747	
Energy End Uses													
Space Heating.....	3,681	2,834	2,689	141	15	11	54,510	46,154	42,117	2,894	1,163	833	7.90
Cooling.....	2,882	2,882	2,737	141	15	11	46,601	46,601	42,564	2,894	1,163	833	7.89
Water Heating.....	2,896	2,345	2,210	130	13	10	48,836	42,060	38,202	2,749	1,128	809	7.98
Cooking.....	563	485	453	31	4	2	17,227	15,571	14,166	693	736	492	12.43
Manufacturing.....	132	93	88	Q	Q	Q	3,081	2,593	2,369	Q	Q	Q	26.63

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 39. Water-Heating Energy Sources, Number of Buildings
(Thousand)

Building Characteristics	All Buildings	All Buildings that Heat Water	Energy Source Used for Water Heating (Solely or in Combination)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	
RSE Column Factor:	0.461	0.483	0.748	0.686	1.583	2.112	2.619	
All Buildings.....	4,154	2,896	1,393	1,356	132	35	103	7.06
Primary Water-Heating Fuel								
Electricity.....	1,310	1,310	1,310	20	Q	Q	Q	17.86
Natural Gas.....	1,334	1,334	68	1,334	10	Q	Q	14.63
Fuel Oil.....	121	121	12	2	121	NC	Q	25.21
District Steam or Hot Water.....	35	35	1	Q	Q	35	Q	32.29
Propane.....	96	96	Q	NC	NC	NC	96	36.57
Space-Heating Energy Sources (Solely or in Combination)								
Electricity.....	1,175	943	697	254	14	2	28	11.97
Natural Gas.....	2,072	1,669	530	1,212	15	Q	Q	11.86
Fuel Oil.....	513	377	215	48	127	Q	15	14.56
District Steam or Hot Water.....	76	69	22	17	Q	34	Q	30.04
Propane.....	252	154	92	Q	Q	NC	61	32.71
Other.....	146	69	46	Q	Q	Q	Q	31.53
Building Floorspace (Square Feet)								
1,001 to 5,000.....	2,220	1,345	666	597	41	Q	62	12.08
5,001 to 10,000.....	931	707	350	326	34	Q	20	13.48
10,001 to 25,000.....	557	456	211	233	22	8	14	11.35
25,001 to 50,000.....	242	212	92	105	20	7	Q	12.45
50,001 to 100,000.....	123	104	48	54	7	8	Q	15.28
100,001 to 200,000.....	52	45	18	26	4	4	Q	16.40
200,001 to 500,000.....	23	22	6	13	4	3	Q	17.99
Over 500,000.....	6	5	3	2	*	1	Q	28.75

See footnotes at end of table.

Table 39. Water-Heating Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings that Heat Water	Energy Source Used for Water Heating (Solely or in Combination)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	
RSE Column Factor:	0.461	0.483	0.748	0.686	1.583	2.112	2.619	
Principal Building Activity								
Assembly.....	575	446	213	216	18	5	Q	13.07
Education.....	241	186	64	115	16	5	Q	14.35
Food Sales.....	102	92	45	43	Q	Q	Q	27.95
Food Services.....	201	194	59	120	Q	Q	Q	17.27
Health Care.....	52	49	20	26	2	3	Q	23.68
Lodging.....	137	134	44	63	10	6	22	19.15
Mercantile and Service.....	1,287	825	450	350	34	Q	Q	13.28
Office.....	614	537	286	225	29	5	Q	12.70
Public Order and Safety.....	55	46	19	25	Q	Q	NC	28.41
Warehouse.....	549	212	129	83	Q	Q	Q	22.18
Other.....	103	58	25	23	Q	Q	Q	25.51
Vacant.....	238	116	40	67	Q	Q	Q	22.02
Census Region								
Northeast.....	663	490	217	180	99	7	16	11.89
Midwest.....	1,096	786	309	448	9	13	Q	15.04
South.....	1,570	1,010	622	372	20	7	30	13.16
West.....	825	611	246	356	5	8	Q	21.48
Year Constructed								
1900 or Before.....	188	135	50	74	Q	Q	Q	22.03
1901 to 1920.....	255	157	50	90	16	5	Q	19.32
1921 to 1945.....	629	442	172	230	29	9	Q	13.48
1946 to 1960.....	878	592	257	306	28	6	23	13.37
1961 to 1970.....	730	546	237	286	22	8	18	13.06
1971 to 1973.....	243	160	91	69	6	2	Q	20.34
1974 to 1979.....	572	412	247	151	11	Q	Q	15.17
1980 to 1983.....	350	240	154	81	Q	Q	Q	15.09
1984 to 1986.....	309	212	135	69	Q	Q	Q	20.12
Ownership and Occupancy								
Nongovernment Owned.....	3,661	2,529	1,240	1,166	109	18	94	7.71
Owner Occupied.....	2,396	1,661	798	755	78	15	72	9.32
Nonowner Occupied.....	1,265	868	442	411	31	2	22	11.90
Government Owned.....	493	368	154	190	24	18	9	12.07

See footnotes at end of table.

Table 39. Water-Heating Energy Sources, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings that Heat Water	Energy Source Used for Water Heating (Solely or in Combination)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	
RSE Column Factor:	0.461	0.483	0.748	0.686	1.583	2.112	2.619	
Workers								
Fewer than 5.....	2,033	1,108	554	473	36	5	57	11.64
5 to 9.....	842	666	332	307	33	5	Q	12.20
10 to 19.....	587	481	223	242	18	5	Q	13.58
20 to 49.....	434	396	170	212	24	7	Q	11.91
50 to 99.....	152	142	69	70	11	2	Q	19.46
100 to 249.....	73	72	31	35	6	7	Q	16.65
250 or More.....	33	32	14	17	5	4	Q	17.31
Weekly Operating Hours								
39 or Fewer.....	870	475	219	227	24	Q	18	15.73
40 to 48.....	1,086	780	417	355	24	6	Q	11.13
49 to 60.....	919	613	311	261	41	7	Q	11.32
61 to 84.....	556	429	191	224	22	4	Q	12.71
85 to 167.....	375	318	133	163	Q	4	29	14.55
168 (Open Continuously).....	347	281	122	127	15	12	21	14.21
Energy Sources Used (Solely or in Combination)								
Electricity.....	4,013	2,896	1,393	1,355	132	35	103	7.05
Natural Gas.....	2,278	1,859	567	1,356	22	10	Q	9.75
Fuel Oil.....	542	402	225	58	132	3	17	13.18
District Steam or Hot Water.....	78	71	22	18	Q	35	Q	27.89
District Chilled Water.....	15	13	1	7	Q	6	NC	38.34
Propane.....	351	247	129	13	17	Q	103	23.58
Minor Fuels.....	163	86	52	20	Q	Q	Q	28.36
Energy End Uses								
Space Heating.....	3,681	2,839	1,366	1,336	130	35	96	7.10
Cooling.....	2,882	2,345	1,126	1,146	88	25	68	7.17
Water Heating.....	2,896	2,896	1,393	1,356	132	35	103	7.03
Cooking.....	563	545	186	336	34	8	32	9.77
Manufacturing.....	132	94	49	48	Q	Q	Q	21.75

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.
Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 40. Water-Heating Energy Sources, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings that Heat Water	Total Floorspace by Energy Source Used for Water Heating (Solely or in Combination)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	
RSE Column Factor:	0.466	0.493	0.814	0.718	1.499	1.944	2.556	
All Buildings.....	58,229	48,836	21,140	24,942	4,084	3,500	996	6.51
Primary Water-Heating Fuel								
Electricity.....	18,669	18,669	18,669	1,163	Q	Q	Q	19.52
Natural Gas.....	23,309	23,309	2,013	23,309	1,199	Q	Q	14.17
Fuel Oil.....	2,903	2,903	327	462	2,903	NC	Q	23.31
District Steam or Hot Water.....	3,320	3,320	188	Q	Q	3,320	Q	27.56
Propane.....	756	756	Q	NC	NC	NC	756	35.85
Space-Heating Energy Sources (Solely or in Combination)								
Electricity.....	18,354	16,471	11,364	5,770	486	302	288	12.95
Natural Gas.....	32,142	28,879	9,363	21,913	1,621	Q	Q	10.89
Fuel Oil.....	8,846	8,093	3,139	2,974	3,935	Q	133	13.53
District Steam or Hot Water.....	4,434	4,221	673	747	Q	3,387	Q	24.19
Propane.....	1,832	1,300	747	Q	Q	NC	572	28.85
Other.....	1,175	898	529	Q	Q	Q	Q	38.98
Building Floorspace (Square Feet)								
1,001 to 5,000.....	6,209	3,893	1,936	1,716	140	Q	178	12.08
5,001 to 10,000.....	6,861	5,248	2,597	2,435	238	Q	139	13.56
10,001 to 25,000.....	9,119	7,507	3,456	3,826	363	131	233	11.42
25,001 to 50,000.....	8,661	7,563	3,217	3,825	735	256	Q	12.65
50,001 to 100,000.....	8,559	7,252	3,338	3,741	401	568	Q	14.99
100,001 to 200,000.....	7,191	6,395	2,421	3,661	627	558	Q	16.24
200,001 to 500,000.....	6,737	6,485	1,761	3,768	1,225	1,072	Q	17.83
Over 500,000.....	4,893	4,493	2,414	1,968	355	901	Q	28.15

See footnotes at end of table.

Table 40. Water-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings that Heat Water	Total Floorspace by Energy Source Used for Water Heating (Solely or in Combination)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	
RSE Column Factor:	0.466	0.493	0.814	0.718	1.499	1.944	2.556	
Principal Building Activity								
Assembly.....	7,339	6,565	2,702	3,665	426	366	Q	16.35
Education.....	7,321	6,965	1,675	4,520	1,005	556	Q	14.00
Food Sales.....	712	678	326	359	Q	Q	Q	31.15
Food Services.....	1,281	1,262	362	785	Q	Q	Q	20.65
Health Care.....	2,107	2,099	Q	1,269	615	446	Q	28.09
Lodging.....	2,785	2,776	507	1,698	371	412	232	18.42
Mercantile and Service.....	12,805	10,008	6,194	4,267	423	Q	Q	14.95
Office.....	9,546	8,973	4,085	3,916	584	1,170	Q	13.73
Public Order and Safety.....	680	625	133	320	Q	Q	NC	36.25
Warehouse.....	8,996	5,918	3,361	2,656	Q	Q	Q	23.21
Other.....	1,726	1,285	703	506	Q	Q	Q	29.12
Vacant.....	2,931	1,682	577	980	Q	Q	Q	25.08
Census Region								
Northeast.....	11,830	10,069	3,906	3,714	2,641	1,115	141	12.93
Midwest.....	16,034	14,109	5,280	8,480	474	1,414	281	13.57
South.....	19,427	15,040	8,530	6,850	709	427	395	12.24
West.....	10,937	9,618	3,423	5,898	259	543	179	18.48
Year Constructed								
1900 or Before.....	2,368	1,978	778	899	Q	Q	Q	26.20
1901 to 1920.....	3,665	3,019	1,066	1,605	414	409	Q	23.65
1921 to 1945.....	8,594	6,805	2,200	3,687	811	773	Q	15.23
1946 to 1960.....	9,712	7,801	2,924	4,621	617	324	272	13.12
1961 to 1970.....	11,469	9,989	3,470	5,596	835	956	109	13.37
1971 to 1973.....	4,307	3,732	1,472	2,036	354	472	Q	20.75
1974 to 1979.....	8,230	7,011	3,836	3,319	477	272	Q	15.64
1980 to 1983.....	5,205	4,562	2,921	1,673	Q	Q	Q	22.24
1984 to 1986.....	4,678	3,939	2,472	1,505	Q	Q	Q	22.07
Ownership and Occupancy								
Nongovernment Owned.....	46,041	38,046	17,927	18,890	2,431	2,037	819	7.61
Owner Occupied.....	28,962	23,974	10,621	11,836	1,767	1,721	625	8.19
Nonowner Occupied.....	17,080	14,072	7,306	7,054	664	316	194	11.74
Government Owned.....	12,187	10,790	3,213	6,052	1,653	1,463	176	11.34

See footnotes at end of table.

Table 40. Water-Heating Energy Sources, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings (Buildings)	Total Floorspace of All Buildings that Heat Water	Total Floorspace by Energy Source Used for Water Heating (Solely or in Combination)					RSE Row Factor
			Electricity	Natural Gas	Fuel Oil	District Steam or Hot Water	Propane	
RSE Column Factor:	0.466	0.493	0.814	0.718	1.499	1.944	2.556	
Workers								
Fewer than 5.....	13,129	8,017	3,738	3,911	400	157	265	13.28
5 to 9.....	6,576	5,558	2,959	2,427	275	116	Q	16.14
10 to 19.....	7,895	6,377	2,894	3,039	318	304	Q	15.40
20 to 49.....	8,847	8,041	3,166	4,276	620	382	Q	12.34
50 to 99.....	6,510	6,101	2,388	3,669	534	182	Q	18.17
100 to 249.....	6,445	6,331	2,305	3,411	713	774	Q	15.29
250 or More.....	8,828	8,410	3,689	4,209	1,224	1,586	Q	17.40
Weekly Operating Hours								
39 or Fewer.....	9,286	6,733	2,466	3,735	816	Q	256	16.78
40 to 48.....	15,167	12,470	5,766	6,408	661	798	Q	12.75
49 to 60.....	10,805	8,827	4,630	3,763	650	469	Q	12.11
61 to 84.....	9,760	8,648	4,117	4,432	569	449	Q	15.60
85 to 167.....	5,514	5,084	2,109	2,856	Q	380	200	15.33
168 (Open Continuously).....	7,696	7,075	2,052	3,748	1,189	1,350	274	15.05
Energy Sources Used (Solely or in Combination)								
Electricity.....	57,036	48,832	21,140	24,938	4,084	3,500	996	6.51
Natural Gas.....	38,140	34,690	10,999	24,942	2,325	1,502	Q	8.64
Fuel Oil.....	11,163	10,354	4,351	4,143	4,084	510	163	12.30
District Steam or Hot Water.....	4,645	4,432	710	851	Q	3,500	Q	21.77
District Chilled Water.....	1,191	1,156	127	255	Q	920	NC	33.90
Propane.....	3,362	2,730	1,334	369	433	Q	996	21.48
Minor Fuels.....	1,557	1,281	602	623	Q	Q	Q	31.99
Energy End Uses								
Space Heating.....	54,510	46,297	20,863	24,766	4,062	3,479	910	6.60
Cooling.....	46,601	42,060	18,221	21,959	3,441	3,046	805	6.93
Water Heating.....	48,836	48,836	21,140	24,942	4,084	3,500	996	6.54
Cooking.....	17,227	17,030	5,671	10,562	2,379	1,404	521	10.57
Manufacturing.....	3,081	2,821	1,237	1,692	Q	Q	Q	19.26

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 41. Cooking Energy Sources, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	All Buildings	All Buildings with Cooking	Energy Source Used for Cooking (Solely or in Combination)				All Buildings	All Buildings with Cooking	Energy Source Used for Cooking (Solely or in Combination)				
			Electricity	Natural Gas	Propane	District Steam or Hot Water, Fuel Oil, and Minor Fuels			Electricity	Natural Gas	Propane	District Steam or Hot Water, Fuel Oil, and Minor Fuels	
RSE Column Factor:	0.347	0.613	0.933	0.772	2.160	2.899	0.361	0.664	0.951	0.831	2.189	2.513	
All Buildings.....	4,154	563	233	319	67	6	58,229	17,227	7,286	10,994	967	619	8.85
Building Floorspace (Square Feet)													
1,001 to 5,000.....	2,220	244	106	133	34	Q	6,209	729	322	383	104	Q	15.06
5,001 to 10,000.....	931	111	43	60	Q	NC	6,861	814	322	458	Q	NC	17.24
10,001 to 25,000.....	557	83	33	50	Q	Q	9,119	1,378	540	823	Q	Q	17.83
25,001 to 50,000.....	242	50	17	30	Q	Q	8,661	1,802	626	1,070	Q	Q	16.56
50,001 to 100,000.....	123	39	17	23	Q	Q	8,559	2,673	1,160	1,627	Q	Q	18.98
100,001 to 200,000.....	52	21	11	12	Q	Q	7,191	3,055	1,523	1,744	Q	Q	19.55
200,001 to 500,000.....	23	12	5	8	Q	Q	6,737	3,656	1,372	2,439	Q	Q	22.05
Over 500,000.....	6	4	2	3	Q	Q	4,893	3,119	1,421	2,450	Q	Q	26.08
Principal Building Activity													
Assembly.....	575	90	42	43	Q	Q	7,339	2,407	880	1,437	Q	Q	21.32
Education.....	241	67	33	38	Q	Q	7,321	4,050	1,742	2,620	Q	Q	19.83
Food Sales.....	102	45	Q	24	Q	Q	712	353	Q	209	Q	Q	31.69
Food Services.....	201	186	62	117	32	Q	1,281	1,204	415	783	186	Q	18.06
Health Care.....	52	12	2	9	Q	2	2,107	1,736	638	1,254	Q	236	27.57
Lodging.....	137	38	11	24	Q	Q	2,785	1,523	376	1,090	Q	Q	23.09
Mercantile and Service.....	1,287	73	40	32	Q	NC	12,805	2,743	1,294	1,793	Q	NC	21.19
Office.....	614	20	11	12	Q	Q	9,546	2,318	1,453	1,204	Q	Q	24.84
Public Order and Safety.....	55	Q	Q	Q	Q	Q	680	Q	Q	Q	Q	Q	47.15
Warehouse.....	549	Q	Q	Q	Q	NC	8,996	Q	Q	Q	Q	NC	43.69
Other.....	103	Q	Q	Q	NC	NC	1,726	Q	Q	Q	Q	NC	54.01
Vacant.....	238	12	Q	Q	Q	NC	2,931	192	Q	Q	Q	NC	40.31
Census Region													
Northeast.....	663	108	42	55	20	Q	11,830	4,088	1,508	2,690	329	Q	15.22
Midwest.....	1,096	149	59	95	Q	1	16,034	4,656	1,696	3,440	185	334	17.55
South.....	1,570	188	95	92	16	Q	19,427	5,412	2,864	2,910	314	Q	15.96
West.....	825	118	36	77	Q	Q	10,937	3,072	1,218	1,953	Q	Q	22.33

See footnotes at end of table.

Table 41. Cooking Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used For Cooking (Solely or in Combination)						Energy Source Used for Cooking (Solely or in Combination)						
	All Buildings	All Buildings with Cooking	Electricity	Natural Gas	Propane	District Steam or Hot Water, Fuel Oil, and Minor Fuels	All Buildings	All Buildings with Cooking	Electricity	Natural Gas	Propane	District Steam or Hot Water, Fuel Oil, and Minor Fuels	
RSE Column Factor:	0.347	0.613	0.933	0.772	2.160	2.899	0.361	0.664	0.951	0.831	2.189	2.513	
Year Constructed													
1900 or Before.....	188	37	Q	24	Q	NC	2,368	714	Q	416	Q	NC	33.00
1901 to 1920.....	255	23	Q	14	Q	Q	3,665	724	Q	505	Q	Q	34.90
1921 to 1945.....	629	90	34	52	Q	Q	8,594	2,187	791	1,299	Q	Q	19.91
1946 to 1960.....	878	98	41	59	Q	Q	9,712	2,254	924	1,619	Q	Q	16.04
1961 to 1970.....	730	112	39	66	14	Q	11,469	3,945	1,475	2,636	217	Q	15.77
1971 to 1973.....	243	35	15	19	Q	Q	4,307	1,834	744	1,109	Q	Q	26.05
1974 to 1979.....	572	76	37	41	Q	Q	8,230	2,260	1,309	1,334	Q	Q	20.54
1980 to 1983.....	350	49	30	22	Q	Q	5,205	2,106	1,100	1,260	Q	Q	27.75
1984 to 1986.....	309	43	15	22	Q	Q	4,678	1,204	492	815	Q	Q	26.51
Ownership and Occupancy													
Nongovernment Owned.....	3,661	478	196	267	61	Q	46,041	12,014	5,210	7,488	799	254	10.06
Owner Occupied.....	2,396	313	123	173	46	Q	28,962	6,948	3,236	4,048	570	181	11.79
Nonowner Occupied.....	1,265	165	73	95	15	Q	17,080	5,066	1,973	3,440	229	Q	15.87
Government Owned.....	493	85	37	52	6	3	12,187	5,213	2,077	3,506	168	365	14.83
Workers													
Fewer than 5.....	2,033	116	55	52	Q	Q	13,129	1,022	550	474	Q	Q	19.61
5 to 9.....	842	115	49	66	Q	Q	6,576	977	453	492	Q	Q	20.59
10 to 19.....	587	116	49	56	Q	Q	7,895	1,449	530	746	Q	Q	21.88
20 to 49.....	434	126	46	90	Q	Q	8,847	2,373	1,051	1,584	Q	Q	15.17
50 to 99.....	152	45	15	27	Q	Q	6,510	2,718	865	1,874	Q	Q	20.88
100 to 249.....	73	27	10	17	Q	Q	6,445	3,153	1,213	2,171	Q	Q	18.75
250 or More.....	33	18	8	11	Q	1	8,828	5,534	2,625	3,652	Q	277	18.57
Weekly Operating Hours													
39 or Fewer.....	870	90	43	44	Q	NC	9,286	2,615	1,192	1,474	Q	NC	21.17
40 to 48.....	1,086	66	27	41	Q	Q	15,167	3,032	1,398	1,913	Q	Q	19.58
49 to 60.....	919	62	25	31	Q	Q	10,805	1,914	841	1,094	Q	Q	20.25
61 to 84.....	556	125	62	72	Q	Q	9,760	3,563	1,882	2,235	Q	Q	19.80
85 to 167.....	375	139	52	83	24	Q	5,514	2,228	815	1,448	153	Q	18.68
168 (Open Continuously).....	347	81	23	47	13	2	7,696	3,874	1,158	2,829	221	325	16.54

See footnotes at end of table.

Table 41. Cooking Energy Sources, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)						Total Floorspace (million square feet)						RSE Row Factor
	Energy Source Used For Cooking (Solely or in Combination)						Energy Source Used for Cooking (Solely or in Combination)						
	All Buildings	All Buildings with Cooking	Electricity	Natural Gas	Propane	District Steam or Hot Water, Fuel Oil, and Minor Fuels	All Buildings	All Buildings with Cooking	Electricity	Natural Gas	Propane	District Steam or Hot Water, Fuel Oil, and Minor Fuels	
RSE Column Factor:	0.347	0.613	0.933	0.772	2.160	2.899	0.361	0.664	0.951	0.831	2.189	2.513	
Energy Sources Used (Solely or in Combination)													
Electricity.....	4,013	563	233	319	67	6	57,036	17,223	7,286	10,990	967	619	8.84
Natural Gas.....	2,278	415	143	319	Q	3	38,140	13,741	4,832	10,994	Q	326	12.08
Fuel Oil.....	542	85	43	25	24	Q	11,163	5,431	2,314	3,604	453	Q	16.78
District Steam or Hot Water.....	78	12	5	6	Q	3	4,645	1,812	927	937	Q	572	25.74
District Chilled Water.....	15	4	1	3	NC	Q	1,191	763	393	363	NC	Q	42.46
Propane.....	351	77	15	Q	67	Q	3,362	1,400	381	Q	967	Q	25.91
Minor Fuels.....	163	23	Q	Q	Q	Q	1,557	553	Q	Q	Q	Q	38.20
Energy End Uses													
Space Heating.....	3,681	544	227	313	57	5	54,510	17,078	7,253	10,954	915	591	8.99
Cooling.....	2,882	485	203	289	43	5	46,601	15,571	6,712	10,018	726	601	9.20
Water Heating.....	2,896	545	225	312	64	6	48,836	17,030	7,250	10,881	919	619	8.98
Cooking.....	563	563	233	319	67	6	17,227	17,227	7,286	10,994	967	619	9.62
Manufacturing.....	132	10	6	4	NC	Q	3,081	673	323	470	NC	Q	39.51

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 42. Electricity Generation Capability, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Buildings Capable of Generating Electricity		All Buildings	Buildings Capable of Generating Electricity		
		For All Uses	For Emergency Backup Only		For All Uses	For Emergency Backup Only	
RSE Column Factor:	0.514	1.369	1.401	0.539	1.362	1.383	
All Buildings.....	4,154	204	194	58,229	10,260	9,966	6.03
Building Floorspace (Square Feet)							
1,001 to 5,000.....	2,220	63	60	6,209	166	158	10.87
5,001 to 10,000.....	931	39	36	6,861	279	250	11.99
10,001 to 25,000.....	557	29	28	9,119	508	498	10.43
25,001 to 50,000.....	242	26	23	8,661	938	866	11.30
50,001 to 100,000.....	123	26	26	8,559	1,841	1,810	10.29
100,001 to 200,000.....	52	12	12	7,191	1,623	1,623	13.18
200,001 to 500,000.....	23	7	6	6,737	2,127	2,027	14.07
Over 500,000.....	6	3	3	4,893	2,778	2,733	20.31
Principal Building Activity							
Assembly.....	575	19	19	7,339	763	750	17.05
Education.....	241	12	12	7,321	1,056	1,056	12.49
Food Sales.....	102	Q	Q	712	Q	Q	30.36
Food Services.....	201	Q	Q	1,281	Q	Q	27.73
Health Care.....	52	13	13	2,107	1,724	1,625	18.85
Lodging.....	137	18	18	2,705	953	943	15.48
Mercantile and Service.....	1,287	37	35	12,805	1,514	1,484	14.17
Office.....	614	32	32	9,546	2,609	2,565	11.04
Public Order and Safety.....	55	15	15	680	207	207	22.98
Warehouse.....	549	25	20	8,996	471	386	16.24
Other.....	103	19	19	1,726	748	748	22.20
Vacant.....	238	Q	Q	2,931	Q	Q	31.50
Census Region							
Northeast.....	607	40	40	11,830	2,687	2,624	11.85
Midwest.....	1,096	47	45	16,034	2,556	2,533	12.01
South.....	1,570	60	58	19,427	2,554	2,421	11.76
West.....	825	57	52	10,937	2,462	2,388	13.27

See footnotes at end of table.

Table 42. Electricity Generation Capability, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Buildings Capable of Generating Electricity		All Buildings	Buildings Capable of Generating Electricity		
		For All Uses	For Emergency Backup Only		For All Uses	For Emergency Backup Only	
RSE Column Factor:	0.514	1.369	1.401	0.539	1.362	1.383	
Year Constructed							
1900 or Before.....	188	Q	Q	2,368	Q	Q	34.72
1901 to 1920.....	255	Q	Q	3,665	Q	Q	23.58
1921 to 1945.....	629	24	22	8,594	1,049	1,008	12.09
1946 to 1960.....	878	35	34	9,712	877	837	12.55
1961 to 1970.....	730	40	39	11,469	1,650	1,633	9.79
1971 to 1973.....	243	11	11	4,307	1,234	1,135	15.86
1974 to 1979.....	572	45	42	8,230	2,061	2,012	12.29
1980 to 1983.....	350	22	21	5,205	1,808	1,784	17.95
1984 to 1986.....	309	16	16	4,678	1,223	1,205	16.74
Ownership and Occupancy							
Nongovernment Owned.....	3,661	150	142	46,041	7,373	7,216	7.31
Owner Occupied.....	2,396	109	104	28,962	4,502	4,388	8.19
Nonowner Occupied.....	1,265	41	38	17,080	2,870	2,828	11.44
Government Owned.....	493	54	52	12,187	2,887	2,750	9.09
Workers							
Fewer than 5.....	2,033	50	46	13,129	415	349	13.17
5 to 9.....	842	39	35	6,576	471	428	14.59
10 to 19.....	587	21	20	7,895	555	541	17.39
20 to 49.....	434	31	31	8,847	673	670	11.29
50 to 99.....	152	29	29	6,510	1,385	1,385	12.31
100 to 249.....	73	19	19	6,445	2,019	1,996	11.98
250 or More.....	33	15	15	8,828	4,742	4,598	11.78
Weekly Operating Hours							
39 or Fewer.....	870	14	13	9,286	602	598	19.53
40 to 48.....	1,086	50	46	15,167	1,935	1,830	9.80
49 to 60.....	919	42	40	10,805	1,445	1,402	10.26
61 to 84.....	556	24	24	9,760	1,866	1,866	14.87
85 to 167.....	375	19	16	5,514	1,050	1,019	16.34
168 (Open Continuously).....	347	56	55	7,696	3,360	3,251	11.45

See footnotes at end of table.

Table 42. Electricity Generation Capability, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)			Total Floorspace (million square feet)			RSE Row Factor
	All Buildings	Buildings Capable of Generating Electricity		All Buildings	Buildings Capable of Generating Electricity		
		For All Uses	For Emergency Backup Only		For All Uses	For Emergency Backup Only	
RSE Column Factor:	0.514	1.369	1.401	0.539	1.362	1.383	
Energy Sources Used (Solely or in Combination)							
Electricity.....	4,013	201	192	57,036	10,239	9,954	6.08
Natural Gas.....	2,278	104	99	38,140	7,426	7,211	6.41
Fuel Oil.....	542	46	44	11,163	4,172	4,007	10.35
District Steam or Hot Water.....	78	14	14	4,645	1,463	1,457	14.97
District Chilled Water.....	15	4	4	1,191	521	521	25.72
Propane.....	351	47	44	3,362	955	906	18.40
Minor Fuels	163	8	7	1,557	238	196	22.66
No Energy Sources Used.....	136	Q	Q	1,171	Q	Q	55.20
Energy End Uses							
Space Heating.....	3,681	186	179	54,510	10,089	9,857	6.18
Cooling.....	2,882	156	148	46,601	9,406	9,140	6.23
Water Heating.....	2,896	173	166	48,836	9,839	9,607	6.16
Cooking.....	563	59	58	17,227	6,559	6,424	8.05
Manufacturing.....	132	9	9	3,081	631	589	22.47

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

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 43. Percent Heated, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Heated	1 to 50 Percent of Floorspace Heated	51 to 99 Percent of Floorspace Heated	100 Percent of Floorspace Heated	All Buildings	Not Heated	1 to 50 Percent of Floorspace Heated	51 to 99 Percent of Floorspace Heated	100 Percent of Floorspace Heated	
RSE Column Factor:	0.514	1.744	1.167	1.207	0.578	0.532	2.117	1.473	1.379	0.598	
All Buildings.....	4,154	470	601	458	2,625	58,229	3,635	8,579	7,061	38,941	5.66
Percent Cooled											
Not Cooled.....	1,248	427	177	75	570	11,057	3,213	1,848	671	5,318	11.82
1 to 50.....	972	20	389	84	479	18,641	248	6,228	1,660	10,505	10.37
51 to 99.....	500	Q	11	279	207	9,982	Q	276	4,471	5,219	17.21
100.....	1,435	20	25	21	1,369	18,543	158	228	258	17,899	13.70
Window Glass: Percent of Exterior Walls											
25 or Less.....	3,522	440	545	372	2,165	43,239	3,332	7,631	4,864	27,399	6.22
26 to 50.....	524	25	49	73	377	10,825	234	653	1,554	8,383	12.20
51 to 75.....	82	Q	Q	11	59	2,836	Q	Q	414	2,088	27.03
Over 75.....	26	Q	Q	3	23	1,329	Q	Q	230	1,071	38.08
Occupant Control of:											
Heating Only.....	646	NC	144	63	438	5,974	NC	1,519	653	3,795	14.85
Cooling Only.....	84	31	Q	Q	40	1,845	308	Q	Q	1,219	25.32
Heating and Cooling.....	2,009	NC	318	285	1,405	25,297	NC	4,331	3,858	17,103	8.21
Reduced Use--Off-Hours											
Heating Only.....	759	NC	151	77	531	7,649	NC	1,743	890	5,008	14.19
Cooling Only.....	106	40	Q	Q	55	1,463	414	Q	Q	873	26.54
Heating and Cooling.....	2,331	NC	366	314	1,651	36,652	NC	5,516	5,241	25,895	6.60
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	419	56	53	42	268	4,897	268	612	532	3,484	24.31
5,500-7,000 HDD.....	930	69	132	84	645	16,250	535	2,063	1,820	11,827	12.19
4,000-5,499 HDD.....	865	83	108	103	571	13,904	675	1,416	1,636	10,178	16.07
Under 4,000 HDD.....	1,022	123	145	127	627	13,792	1,008	2,536	1,881	8,360	14.84
2,000 CDD or More and --											
Under 4,000 HDD.....	919	140	163	102	514	9,386	1,148	1,953	1,192	5,092	14.48
Percent Lit--Open Hours											
Not Lit.....	231	190	Q	NC	36	1,851	1,485	Q	NC	287	24.32
1 to 50.....	624	59	261	46	258	7,399	629	2,808	572	3,391	12.09
51 to 99.....	644	31	49	177	387	9,416	142	801	2,552	5,921	11.88
100.....	2,655	191	285	236	1,944	39,562	1,379	4,892	3,937	29,342	7.71

See footnotes at end of table.

Table 43. Percent Heated, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Heated	1 to 50	51 to 99	100	All Buildings	Not Heated	1 to 50	51 to 99	100	
			Percent of Floorspace Heated	Percent of Floorspace Heated	Percent of Floorspace Heated			Percent of Floorspace Heated	Percent of Floorspace Heated		
RSE Column Factor:	0.514	1.744	1.167	1.207	0.578	0.532	2.117	1.473	1.379	0.598	
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	334	300	223	1,362	6,209	887	851	615	3,855	7.33
5,001 to 10,000.....	931	76	146	107	602	6,861	551	1,072	772	4,466	8.33
10,001 to 25,000.....	557	35	85	82	356	9,119	568	1,329	1,289	5,933	9.36
25,001 to 50,000.....	242	13	39	22	169	8,661	458	1,334	803	6,066	12.87
50,001 to 100,000.....	123	10	18	14	81	8,559	665	1,275	946	5,673	14.78
100,001 to 200,000.....	52	Q	9	6	35	7,191	Q	1,190	791	4,963	17.29
200,001 to 500,000.....	23	Q	3	3	15	6,737	Q	920	997	4,687	20.03
Over 500,000.....	6	Q	Q	1	4	4,893	Q	Q	849	3,298	32.51
Principal Building Activity											
Assembly.....	575	33	37	51	454	7,339	211	533	856	5,738	13.86
Education.....	241	Q	Q	25	207	7,321	Q	Q	747	6,451	21.28
Food Sales.....	102	Q	Q	25	67	712	Q	Q	129	526	29.15
Food Services.....	201	Q	Q	32	144	1,281	Q	Q	176	881	20.63
Health Care.....	52	Q	Q	6	42	2,107	Q	Q	305	1,768	35.06
Lodging.....	137	Q	Q	15	112	2,785	Q	Q	292	2,371	23.13
Mercantile and Service.....	1,287	75	223	170	820	12,805	317	2,224	1,930	8,334	9.73
Office.....	614	Q	59	77	477	9,546	Q	820	1,480	7,233	15.13
Public Order and Safety.....	55	Q	Q	Q	43	680	Q	Q	Q	568	36.24
Warehouse.....	549	214	181	29	125	8,996	1,816	3,448	563	3,161	11.93
Other.....	103	30	21	Q	41	1,726	211	534	Q	661	23.65
Vacant.....	238	92	37	16	94	2,931	938	493	250	1,250	17.35
Census Region											
Northeast.....	663	61	85	76	442	11,830	477	1,393	1,387	8,573	13.57
Midwest.....	1,096	125	148	98	725	16,034	741	1,934	1,634	11,719	10.22
South.....	1,570	156	268	169	977	19,427	1,569	2,967	2,215	12,676	9.39
West.....	825	129	100	115	481	10,937	847	2,285	1,825	5,972	14.12
Year Constructed											
1900 or Before.....	188	Q	40	32	100	2,368	Q	665	393	1,169	20.15
1901 to 1920.....	255	30	49	32	145	3,665	276	643	507	2,241	16.86
1921 to 1945.....	629	74	101	72	381	8,594	830	1,479	796	5,490	11.11
1946 to 1960.....	878	91	143	94	551	9,712	628	1,763	936	6,385	11.99
1961 to 1970.....	730	78	67	77	508	11,469	598	1,230	1,329	8,306	11.31
1971 to 1973.....	243	28	29	27	159	4,307	142	329	744	3,092	16.70
1974 to 1979.....	572	56	85	60	371	8,230	413	1,255	805	5,757	11.26
1980 to 1983.....	350	46	44	40	220	5,205	232	700	1,019	3,249	16.04
1984 to 1986.....	309	51	44	24	190	4,678	373	516	534	3,254	15.62

See footnotes at end of table.

Table 43. Percent Heated, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Heated	1 to 50 Percent of Floorspace Heated	51 to 99 Percent of Floorspace Heated	100 Percent of Floorspace Heated	All Buildings	Not Heated	1 to 50 Percent of Floorspace Heated	51 to 99 Percent of Floorspace Heated	100 Percent of Floorspace Heated	
RSE Column Factor:	0.514	1.744	1.167	1.207	0.578	0.532	2.117	1.473	1.379	0.598	
Ownership and Occupancy											
Nongovernment Owned.....	3,661	413	543	419	2,286	46,041	3,080	7,606	5,798	29,549	5.92
Owner Occupied.....	2,396	244	348	271	1,533	28,962	1,885	4,554	3,299	19,224	6.79
Nonowner Occupied.....	1,265	169	195	148	753	17,080	1,196	3,053	2,499	10,325	8.79
Government Owned.....	493	57	58	39	339	12,187	554	973	1,263	9,392	11.81
Workers											
Fewer than 5.....	2,033	387	342	165	1,139	13,129	2,702	2,575	814	7,033	8.27
5 to 9.....	842	46	132	109	555	6,576	272	1,723	772	3,808	9.87
10 to 19.....	587	29	70	97	391	7,895	435	1,347	1,216	4,890	12.15
20 to 49.....	434	Q	41	53	332	8,847	Q	1,279	1,088	6,299	12.35
50 to 79.....	152	Q	10	21	120	6,510	Q	519	820	5,167	20.52
100 to 249.....	73	Q	Q	8	60	6,445	Q	Q	730	4,860	21.43
250 or More.....	33	Q	2	5	27	8,828	Q	303	1,622	6,884	21.53
Weekly Operating Hours											
39 or Fewer.....	870	208	72	65	525	9,286	1,489	905	837	6,055	11.94
40 to 48.....	1,086	82	189	136	680	15,167	766	2,723	2,098	9,573	8.88
49 to 60.....	919	73	182	98	566	10,805	512	2,356	1,385	6,551	9.15
61 to 84.....	556	33	87	76	360	9,760	283	1,427	1,449	6,600	14.06
85 to 167.....	375	37	38	38	262	5,514	162	525	530	4,293	14.13
168 (Open Continuously).....	347	37	33	45	232	7,696	422	643	762	5,869	14.61
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	347	597	458	2,611	57,036	2,564	8,538	7,055	38,865	5.75
Natural Gas.....	2,278	40	310	291	1,638	38,140	316	5,238	4,817	27,762	7.67
Fuel Oil.....	542	Q	86	61	384	11,163	Q	1,231	1,706	8,154	15.61
District Steam or											
Hot Water.....	78	Q	Q	5	67	4,645	Q	221	587	3,816	29.37
District Chilled Water.....	15	NC	Q	2	13	1,191	NC	Q	260	901	42.18
Propane.....	351	22	53	47	229	3,362	197	387	734	2,045	18.87
Minor Fuels.....	163	Q	42	Q	103	1,557	Q	347	Q	1,048	23.76
No Energy Sources Used.....	136	121	Q	Q	Q	1,171	1,062	Q	Q	Q	40.07

See footnotes at end of table.

Table 43. Percent Heated, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Heated	1 to 50 Percent of Floorspace Heated	51 to 99 Percent of Floorspace Heated	100 Percent of Floorspace Heated	All Buildings	Not Heated	1 to 50 Percent of Floorspace Heated	51 to 99 Percent of Floorspace Heated	100 Percent of Floorspace Heated	
RSE Column Factor:	0.514	1.744	1.167	1.207	0.578	0.532	2.117	1.473	1.379	0.598	
Energy End Uses											
Space Heating.....	3,681	Q	592	458	2,608	54,510	Q	8,484	7,055	38,830	7.08
Cooling.....	2,882	43	421	383	2,034	46,601	445	6,616	6,384	33,151	7.50
Water Heating.....	2,896	59	366	375	2,097	48,836	573	6,524	6,244	35,482	6.85
Cooking.....	563	Q	39	79	427	17,227	Q	1,135	2,778	13,169	12.70
Manufacturing.....	132	Q	31	19	69	3,081	Q	584	362	2,050	19.87

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 44. Percent Cooled, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	
RSE Column Factor:	0.573	1.284	0.935	1.244	0.906	0.594	1.545	1.057	1.391	0.956	
All Buildings.....	4,154	1,248	972	500	1,435	58,229	11,057	18,641	9,982	18,543	5.26
Percent Heated											
Not Heated.....	470	427	20	Q	20	3,635	3,213	248	Q	158	23.54
1 to 50.....	601	177	389	11	25	8,579	1,848	6,228	276	228	14.94
51 to 99.....	458	75	84	279	21	7,061	671	1,660	4,471	258	14.44
100.....	2,625	570	479	207	1,369	38,941	5,318	10,505	5,219	17,899	6.12
Window Glass: Percent of Exterior Walls											
25 or Less.....	3,522	1,101	831	407	1,183	43,239	9,165	14,146	6,733	13,190	5.91
26 to 50.....	524	125	113	78	207	10,825	1,618	3,243	2,101	3,863	9.54
51 to 75.....	82	20	25	9	28	2,836	247	881	798	911	21.47
Over 75.....	26	Q	Q	5	17	1,329	Q	Q	350	580	30.43
Occupant Control of:											
Heating Only.....	646	569	37	23	18	5,974	4,580	937	273	184	17.15
Cooling Only.....	84	NC	51	9	24	1,845	NC	1,212	224	409	22.75
Heating and Cooling.....	2,009	Q	654	343	1,009	25,297	Q	9,600	5,555	10,105	10.15
Reduced Use--Off-Hours											
Heating Only.....	759	683	34	14	28	7,649	6,178	919	313	239	16.58
Cooling Only.....	106	NC	50	9	47	1,463	NC	810	127	526	22.46
Heating and Cooling.....	2,331	Q	782	414	1,135	36,652	Q	14,545	7,989	14,089	8.62
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	419	225	86	27	80	4,897	1,539	1,627	611	1,120	19.33
5,500-7,000 HDD.....	930	315	243	120	252	16,250	3,676	5,559	3,402	3,608	10.79
4,000-5,499 HDD.....	865	297	221	101	245	13,904	2,755	4,834	2,000	4,315	14.22
Under 4,000 HDD.....	1,022	256	214	134	417	13,792	2,003	3,918	2,410	5,461	14.29
2,000 CDD or More and --											
Under 4,000 HDD.....	919	155	207	117	439	9,386	1,084	2,703	1,560	4,040	14.11
Percent Lit--Open Hours											
Not Lit.....	231	209	Q	Q	Q	1,851	1,618	Q	Q	Q	31.29
1 to 50.....	624	210	277	28	108	7,399	2,104	3,470	674	1,152	13.32
51 to 99.....	644	119	123	189	213	9,416	1,087	2,887	2,795	2,647	10.26
100.....	2,655	709	564	282	1,099	39,562	6,248	12,162	6,512	14,634	6.60

See footnotes at end of table.

Table 44. Percent Cooled, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	
RSE Column Factor:	0.573	1.284	0.935	1.244	0.906	0.594	1.545	1.057	1.391	0.956	
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	797	388	228	807	6,209	2,142	1,174	660	2,232	7.22
5,001 to 10,000.....	931	251	246	117	317	6,861	1,820	1,813	856	2,372	7.05
10,001 to 25,000.....	557	122	174	84	178	9,119	1,980	2,838	1,409	2,892	8.72
25,001 to 50,000.....	242	46	87	37	71	8,661	1,701	3,153	1,264	2,542	10.63
50,001 to 100,000.....	123	22	46	20	35	8,559	1,543	3,199	1,342	2,474	12.62
100,001 to 200,000.....	52	7	21	7	17	7,191	940	2,896	987	2,369	15.68
200,001 to 500,000.....	23	2	8	5	8	6,737	435	2,434	1,625	2,238	18.08
Over 500,000.....	6	0	2	2	2	4,893	0	1,134	1,838	1,425	26.97
Principal Building Activity											
Assembly.....	575	167	88	54	267	7,339	1,545	1,928	926	2,939	11.39
Education.....	241	67	51	34	89	7,321	1,307	2,738	1,399	1,878	12.54
Food Sales.....	102	0	16	27	52	712	0	207	148	343	24.81
Food Services.....	201	21	33	42	106	1,281	136	290	217	638	16.95
Health Care.....	52	0	0	11	33	2,107	0	0	854	1,025	30.73
Lodging.....	137	36	13	15	73	2,785	485	462	431	1,407	18.85
Mercantile and Service.....	1,287	389	397	159	342	12,805	2,181	4,305	2,400	3,919	9.24
Office.....	614	30	99	113	371	9,546	124	1,670	2,646	5,106	10.60
Public Order and Safety.....	55	18	20	0	0	680	178	236	0	0	28.34
Warehouse.....	549	333	183	14	20	8,996	3,216	5,055	330	394	14.30
Other.....	103	53	24	0	19	1,726	441	725	0	269	23.81
Vacant.....	238	127	42	18	51	2,931	1,420	806	216	488	18.23
Census Region											
Northeast.....	663	269	170	78	147	11,830	2,904	4,392	1,781	2,753	10.97
Midwest.....	1,096	419	272	116	289	16,034	3,464	5,656	2,971	3,939	9.92
South.....	1,570	293	388	200	688	19,427	2,299	5,576	3,328	8,224	8.31
West.....	825	268	142	105	311	10,937	2,390	3,017	1,902	3,627	14.13
Year Constructed											
1900 or Before.....	188	69	63	27	28	2,368	589	1,264	291	223	19.65
1901 to 1920.....	255	113	63	42	38	3,665	1,164	1,304	445	752	16.13
1921 to 1945.....	629	187	187	68	187	8,594	2,420	3,313	1,051	1,811	10.19
1946 to 1960.....	878	285	212	100	281	9,712	2,240	3,374	1,251	2,847	10.78
1961 to 1970.....	730	199	133	97	300	11,469	2,105	3,042	2,087	4,235	9.35
1971 to 1973.....	243	69	51	28	95	4,307	370	993	1,321	1,622	14.13
1974 to 1979.....	572	136	130	66	240	8,230	951	2,996	1,445	2,838	10.78
1980 to 1983.....	350	91	72	44	144	5,205	522	1,242	1,250	2,185	14.40
1984 to 1986.....	309	99	61	28	121	4,678	695	1,112	841	2,029	13.60

See footnotes at end of table.

Table 44. Percent Cooled, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	
RSE Column Factor:	0.573	1.284	0.935	1.244	0.906	0.594	1.545	1.057	1.391	0.956	
Ownership and Occupancy											
Nongovernment Owned.....	3,661	1,071	858	445	1,287	46,041	8,392	14,683	7,730	15,237	5.54
Owner Occupied.....	2,396	729	573	285	809	28,962	5,570	9,538	4,648	9,206	6.19
Nonowner Occupied.....	1,265	343	285	160	478	17,080	2,822	5,144	3,083	6,031	8.49
Government Owned.....	493	177	114	55	148	12,187	2,665	3,959	2,252	3,307	10.17
Workers											
Fewer than 5.....	2,033	954	370	158	551	13,129	6,136	3,206	830	2,951	8.15
5 to 9.....	842	159	242	119	321	6,576	1,334	2,807	657	1,778	8.37
10 to 19.....	587	80	182	97	228	7,895	1,509	3,023	1,231	2,131	10.43
20 to 49.....	434	42	112	70	210	8,847	1,076	3,388	1,395	2,987	9.64
50 to 99.....	152	11	43	28	70	6,510	712	2,565	949	2,283	14.27
100 to 249.....	73	Q	16	18	37	6,445	Q	2,151	1,511	2,555	15.32
250 or More.....	33	Q	6	9	18	8,828	Q	1,501	3,408	3,858	19.65
Weekly Operating Hours											
39 or Fewer.....	870	406	106	71	287	9,286	3,199	2,601	1,124	2,362	11.30
40 to 48.....	1,086	246	310	132	399	15,167	2,303	5,874	2,504	4,487	8.24
49 to 60.....	919	279	265	115	260	10,805	2,136	3,969	1,711	2,988	8.50
61 to 84.....	556	137	143	84	193	9,760	1,330	2,781	2,283	3,365	11.31
85 to 167.....	375	91	77	57	151	5,514	968	1,698	726	2,116	12.04
168 (Open Continuously).....	347	89	71	41	145	7,696	1,121	1,718	1,633	3,225	13.22
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	1,117	970	499	1,427	57,036	9,944	18,612	9,976	18,498	5.30
Natural Gas.....	2,278	425	614	351	889	38,140	5,012	13,122	7,341	12,664	6.64
Fuel Oil.....	542	216	160	56	110	11,163	1,961	4,042	2,813	2,347	11.84
District Steam or Hot Water.....	78	17	26	11	24	4,645	595	1,405	1,326	1,318	19.76
District Chilled Water.....	15	NC	Q	5	10	1,191	NC	Q	564	595	36.88
Propane.....	351	134	79	40	99	3,362	774	1,185	557	846	18.17
Minor Fuels.....	163	106	27	Q	21	1,557	550	670	Q	207	21.94
No Energy Sources Used.....	136	126	Q	Q	Q	1,171	1,091	Q	Q	Q	41.17

See footnotes at end of table.

Table 44. Percent Cooled, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	All Buildings	Not Cooled	1 to 50 Percent of Floorspace Cooled	51 to 99 Percent of Floorspace Cooled	100 Percent of Floorspace Cooled	
RSE Column Factor:	0.573	1.284	0.935	1.244	0.906	0.594	1.545	1.057	1.391	0.956	
Energy End Uses											
Space Heating.....	3,681	834	947	496	1,404	54,510	7,891	18,332	9,960	18,321	5.45
Cooling.....	2,882	Q	959	497	1,424	46,601	Q	18,246	9,971	18,323	7.76
Water Heating.....	2,896	539	762	424	1,172	48,836	6,466	16,335	9,262	16,768	5.66
Cooking.....	563	76	122	108	257	17,227	1,517	4,252	4,960	6,499	9.38
Manufacturing.....	132	39	52	21	20	3,081	466	1,492	474	650	18.66

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.
 Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 45. Percent Lit, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Lit	1-50	51-99	100	All Buildings	Not Lit	1-50	51-99	100	
			Percent of Floorspace Lit	Percent of Floorspace Lit	Percent of Floorspace Lit			Percent of Floorspace Lit	Percent of Floorspace Lit		
RSE Column Factor:	0.490	2.422	1.129	1.010	0.605	0.501	2.818	1.388	0.974	0.640	
All Buildings.....	4,154	231	624	644	2,655	58,229	1,851	7,399	9,416	39,562	6.18
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	419	27	73	63	255	4,897	141	568	848	3,340	20.08
5,500-7,000 HDD.....	930	49	172	136	572	16,250	433	2,544	2,658	10,615	11.84
4,000-5,499 HDD.....	865	56	143	146	521	13,904	535	1,873	2,447	9,048	17.19
Under 4,000 HDD.....	1,022	38	119	163	701	13,792	424	1,217	1,925	10,225	17.71
2,000 CDD or More and --											
Under 4,000 HDD.....	919	61	118	135	605	9,386	317	1,198	1,539	6,332	16.24
Lighting Equipment Types (Solely or in Combination)											
Standard Fluorescent.....	2,558	Q	429	423	1,703	32,266	Q	4,598	5,894	21,733	9.05
Energy Efficient											
Fluorescent.....	1,064	Q	121	210	730	24,496	Q	2,517	4,190	17,771	12.38
Standard Incandescent.....	1,636	Q	323	308	998	22,995	Q	4,164	4,307	14,488	9.68
Energy Efficient											
Incandescent.....	399	Q	49	95	254	10,127	Q	1,049	2,027	7,048	16.78
High-Intensity Discharge....	251	Q	28	37	186	10,075	Q	1,033	1,641	7,386	21.44
Other.....	54	NC	Q	12	34	1,266	NC	Q	203	920	40.83
Percent Lit--Off Hours											
Not Lit.....	2,108	227	365	247	1,270	18,867	1,811	3,334	2,005	11,716	8.41
1 to 50.....	1,853	Q	258	364	1,228	34,890	Q	3,992	6,753	24,108	9.47
51 to 99.....	63	NC	Q	29	33	2,259	NC	Q	582	1,638	36.51
100.....	130	Q	Q	Q	124	2,213	Q	Q	Q	2,100	37.26
Window Glass: Percent of Exterior Walls											
25 or Less.....	3,522	217	547	548	2,210	43,239	1,668	5,980	6,968	28,622	6.84
26 to 50.....	524	10	68	81	364	10,825	131	1,078	1,805	7,811	11.64
51 to 75.....	82	Q	7	13	59	2,836	Q	204	429	2,152	26.65
Over 75.....	26	NC	Q	2	22	1,329	NC	Q	215	977	35.09

See footnotes at end of table.

Table 45. Percent Lit, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Lit	1-50	51-99	100	All Buildings	Not Lit	1-50	51-99	100	
			Percent of Floorspace Lit	Percent of Floorspace Lit	Percent of Floorspace Lit			Percent of Floorspace Lit	Percent of Floorspace Lit	Percent of Floorspace Lit	
RSE Column Factor:	0.490	2.422	1.129	1.010	0.605	0.501	2.818	1.388	0.974	0.640	
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	161	321	315	1,422	6,209	421	890	888	4,009	8.51
5,001 to 10,000.....	931	41	155	145	590	6,861	304	1,137	1,100	4,320	8.40
10,001 to 25,000.....	557	17	95	104	341	9,119	250	1,654	1,709	5,506	10.06
25,001 to 50,000.....	242	Q	33	44	160	8,661	Q	1,134	1,560	5,803	12.81
50,001 to 100,000.....	123	Q	10	23	83	8,559	Q	725	1,652	5,749	16.28
100,001 to 200,000.....	52	Q	7	7	37	7,191	Q	963	996	5,183	19.28
200,001 to 500,000.....	23	Q	Q	4	17	6,737	Q	Q	1,053	5,144	22.68
Over 500,000.....	6	Q	Q	1	5	4,893	Q	Q	458	3,849	28.56
Principal Building Activity											
Assembly.....	575	Q	96	104	365	7,339	Q	1,510	1,167	4,599	12.74
Education.....	241	NC	11	41	190	7,321	NC	177	1,675	5,469	16.28
Food Sales.....	102	NC	Q	Q	81	712	NC	Q	Q	580	31.36
Food Services.....	201	NC	25	31	145	1,281	NC	177	187	918	19.10
Health Care.....	52	NC	Q	16	29	2,107	NC	Q	473	1,601	29.93
Lodging.....	137	NC	24	13	100	2,785	NC	443	435	1,908	21.42
Mercantile and Service.....	1,287	Q	182	209	835	12,805	Q	1,651	2,159	8,975	11.81
Office.....	614	Q	74	141	398	9,546	Q	708	2,050	6,785	15.74
Public Order and Safety.....	55	Q	Q	Q	34	680	Q	Q	Q	457	31.07
Warehouse.....	549	97	133	35	285	8,996	635	1,777	607	5,977	12.85
Other.....	103	Q	22	17	51	1,726	Q	220	306	1,160	24.58
Vacant.....	238	96	32	17	93	2,931	1,083	539	174	1,135	17.38
Census Region											
Northeast.....	663	32	134	111	386	11,830	401	1,698	1,903	7,827	12.61
Midwest.....	1,096	83	200	174	639	16,034	496	2,686	2,889	9,963	11.17
South.....	1,570	74	209	222	1,065	19,427	655	2,154	2,595	14,024	11.20
West.....	825	42	81	137	565	10,937	299	861	2,029	7,748	16.80

See footnotes at end of table.

Table 45. Percent Lit, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Lit	1-50 Percent of Floorspace Lit	51-99 Percent of Floorspace Lit	100 Percent of Floorspace Lit	All Buildings	Not Lit	1-50 Percent of Floorspace Lit	51-99 Percent of Floorspace Lit	100 Percent of Floorspace Lit	
RSE Column Factor:	0.490	2.422	1.129	1.010	0.605	0.501	2.818	1.388	0.974	0.640	
Year Constructed											
1900 or Before.....	188	Q	52	41	83	2,368	Q	731	460	1,068	21.90
1901 to 1920.....	255	24	57	47	128	3,665	245	872	666	1,882	16.55
1921 to 1945.....	629	44	117	112	356	8,594	627	1,408	1,589	4,971	11.84
1946 to 1960.....	878	51	132	124	571	9,712	393	1,306	1,462	6,552	12.36
1961 to 1970.....	730	Q	91	113	506	11,469	Q	1,114	1,727	8,508	11.19
1971 to 1973.....	243	Q	28	33	173	4,307	Q	206	543	3,529	18.05
1974 to 1979.....	572	26	81	82	384	8,230	92	852	1,342	5,944	12.99
1980 to 1983.....	350	24	29	53	244	5,205	98	274	769	4,065	15.99
1984 to 1986.....	309	21	38	40	211	4,678	140	636	859	3,042	15.75
Ownership and Occupancy											
Nongovernment Owned.....	3,661	207	561	562	2,331	46,041	1,520	6,448	7,077	30,997	6.40
Owner Occupied.....	2,396	108	386	361	1,541	28,962	760	4,481	4,449	19,271	7.37
Nonowner Occupied.....	1,265	99	175	201	790	17,080	759	1,967	2,628	11,725	8.85
Government Owned.....	493	24	63	82	324	12,187	Q	952	2,339	8,565	12.65
Workers											
Fewer than 5.....	2,033	219	386	258	1,171	13,129	1,721	2,931	1,332	7,145	9.01
5 to 9.....	842	Q	128	136	570	6,576	Q	1,378	1,132	3,973	11.29
10 to 19.....	587	Q	68	114	403	7,895	Q	1,349	1,509	5,011	14.72
20 to 49.....	434	Q	32	93	306	8,847	Q	738	1,946	6,151	13.97
50 to 99.....	152	NC	7	27	119	6,510	NC	363	1,222	4,925	16.69
100 to 249.....	73	NC	Q	12	60	6,445	NC	Q	995	5,283	20.23
250 or More.....	33	NC	Q	5	28	8,828	NC	Q	1,282	7,072	21.09
Weekly Operating Hours											
39 or Fewer.....	870	161	104	108	498	9,286	1,363	1,171	1,134	5,618	11.68
40 to 48.....	1,086	21	180	190	694	15,167	Q	1,986	2,618	10,313	10.78
49 to 60.....	919	Q	161	152	585	10,805	Q	1,794	2,026	6,876	9.84
61 to 84.....	556	Q	77	88	383	9,760	Q	1,194	1,620	6,925	14.63
85 to 167.....	375	Q	51	63	257	5,514	Q	486	856	4,150	16.01
168 (Open Continuously).....	347	Q	51	42	237	7,696	Q	769	1,162	5,680	15.97

See footnotes at end of table.

Table 45. Percent Lit, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	Not Lit	1-50	51-99	100	All Buildings	Not Lit	1-50	51-99	100	
			Percent of Floorspace Lit	Percent of Floorspace Lit	Percent of Floorspace Lit			Percent of Floorspace Lit	Percent of Floorspace Lit		
RSE Column Factor:	0.490	2.422	1.129	1.010	0.605	0.501	2.818	1.388	0.974	0.640	
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	99	623	643	2,648	57,036	741	7,381	9,408	39,506	6.50
Natural Gas.....	2,278	27	338	394	1,518	38,140	210	4,618	6,324	26,989	8.45
Fuel Oil.....	542	NC	105	87	349	11,163	NC	1,361	1,933	7,869	13.91
District Steam or											
Hot Water.....	78	Q	9	15	53	4,645	Q	405	976	3,199	24.79
District Chilled Water.....	15	NC	Q	Q	12	1,191	NC	Q	202	931	55.96
Propane.....	351	Q	56	60	230	3,362	Q	392	645	2,273	22.18
Minor Fuels.....	163	Q	39	23	97	1,557	Q	394	270	881	25.08
No Energy Sources Used.....	136	129	Q	NC	Q	1,171	1,102	Q	NC	Q	34.40
Energy End Uses											
Space Heating.....	3,681	35	571	613	2,462	54,510	293	6,791	9,279	38,148	6.96
Cooling.....	2,882	15	414	523	1,930	46,601	171	5,302	8,280	32,847	7.69
Water Heating.....	2,896	18	409	521	1,949	48,836	225	5,766	8,435	34,411	7.58
Cooking.....	563	Q	59	102	401	17,227	Q	1,180	2,961	13,058	14.58
Manufacturing.....	132	Q	21	22	89	3,081	Q	284	475	2,318	24.16

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 46. Heat Production Equipment, Number of Buildings
(Thousand)**

Building Characteristics	Heat Production Equipment Used								RSE Row Factor
	All Buildings	All Heated Buildings	Warm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.548	0.561	0.858	0.920	0.996	1.228	1.560	2.159	
All Buildings.....	4,154	3,684	1,793	627	1,062	540	319	76	6.26
Heat Distribution Equipment									
Ducted Forced Air.....	2,522	2,503	1,534	297	413	512	297	39	6.59
Heating Only.....	597	597	528	59	110	28	Q	5	15.69
Heating and Cooling.....	1,768	1,768	977	180	254	476	282	26	7.21
VAV Used.....	547	539	233	109	105	149	68	11	11.35
Steam Radiators or Baseboards.....	229	229	41	180	43	9	9	30	15.82
Hot Water Radiators or Baseboards.....	271	271	45	232	52	16	11	16	13.31
Fan-Coil Units.....	411	404	133	164	114	56	25	29	12.86
Heating Only.....	195	195	74	85	56	17	10	12	17.04
Heating and Cooling.....	166	166	46	66	39	33	15	15	17.34
Heating Panels.....	200	200	82	36	126	22	10	1	17.96
Other.....	7	7	Q	Q	Q	Q	Q	Q	54.75
Cooling Production Equipment									
Central Cooling.....	1,111	1,099	685	213	210	120	107	29	9.00
Individual Air Conditioners.....	923	907	383	222	407	67	52	25	9.64
Packaged Air-Conditioning Units.....	730	721	255	109	117	485	46	9	10.19
Air-Source Heat Pumps.....	319	319	73	31	52	36	319	Q	15.52
Receives District Chilled Water.....	15	15	Q	Q	Q	Q	Q	8	49.44
HVAC Conservation Features									
Preventive Maintenance Program.....	2,076	2,056	992	481	430	367	202	56	6.15
Waste Heat Recovery.....	149	147	57	49	28	35	19	5	17.19
EMCS.....	205	204	75	54	35	54	21	13	13.07
Time-Clock Thermostat.....	64	64	20	20	12	17	12	4	25.38
Economizer Cycle.....	17	17	Q	7	Q	9	Q	Q	36.32
Other HVAC Features.....	76	76	32	18	26	17	Q	2	24.45

See footnotes at end of table.

Table 46. Heat Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Heated Buildings	Heat Production Equipment Used						RSE Row Factor
			Warm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.548	0.561	0.858	0.920	0.996	1.228	1.560	2.159	
Reduced Use--Off-Hours									
Heating Only.....	759	759	393	142	316	21	Q	10	15.15
Cooling Only.....	106	67	27	15	22	Q	Q	3	24.12
Heating and Cooling.....	2,331	2,331	1,173	368	610	409	241	35	6.96
Occupant Control of:									
Heating Only.....	646	646	347	97	293	18	Q	12	16.33
Heating and Cooling.....	2,009	2,009	1,016	252	529	359	232	32	8.51
Climate Zone: 45 Year Average									
Under 2,000 CDD and --									
Over 7,000 HDD.....	419	363	215	99	103	24	Q	8	23.88
5,500-7,000 HDD.....	930	861	500	241	217	95	36	24	10.73
4,000-5,499 HDD.....	865	782	377	172	253	83	84	21	17.33
Under 4,000 HDD.....	1,022	899	430	71	261	184	106	7	16.15
2,000 CDD or More and --									
Under 4,000 HDD.....	919	779	271	44	228	154	83	Q	19.87
Percent Heated									
Not Heated.....	470	--	--	--	--	--	--	--	26.97
1 to 50.....	601	601	269	42	269	55	55	Q	13.42
51 to 99.....	458	458	213	82	141	92	41	4	12.13
100.....	2,625	2,625	1,311	502	652	393	223	66	6.49
Percent Cooled									
Not Cooled.....	1,248	821	413	155	344	14	Q	16	15.93
1 to 50.....	972	952	471	191	308	116	90	25	8.68
51 to 99.....	500	496	245	113	127	98	48	11	10.50
100.....	1,435	1,414	664	168	283	312	178	24	8.74
Building Floorspace (Square Feet)									
1,001 to 5,000.....	2,220	1,886	992	151	579	199	146	21	10.61
5,001 to 10,000.....	931	855	437	175	237	149	72	Q	9.15
10,001 to 25,000.....	557	523	240	133	144	100	55	18	8.54
25,001 to 50,000.....	242	230	73	91	54	42	24	11	10.87
50,001 to 100,000.....	123	113	34	40	29	28	15	10	11.84
100,001 to 200,000.....	52	50	13	22	12	13	6	6	13.96
200,001 to 500,000.....	23	22	4	12	5	6	1	3	17.20
Over 500,000.....	6	6	1	3	1	2	Q	1	23.68

See footnotes at end of table.

Table 46. Heat Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	Heat Production Equipment Used								RSE Row Factor
	All Buildings	All Heated Buildings	Warm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.548	0.561	0.858	0.920	0.996	1.228	1.560	2.159	
Principal Building Activity									
Assembly.....	575	542	300	118	167	50	38	8	11.67
Education.....	241	238	86	87	50	38	13	9	13.91
Food Sales.....	102	101	40	Q	28	22	Q	Q	27.65
Food Services.....	201	189	101	19	32	66	Q	Q	15.89
Health Care.....	52	52	21	12	8	10	Q	3	24.80
Lodging.....	137	130	35	33	59	10	12	8	16.85
Mercantile and Service.....	1,287	1,213	653	170	377	171	80	11	9.86
Office.....	614	612	291	98	117	108	99	17	10.98
Public Order and Safety.....	55	53	28	14	18	Q	Q	Q	26.14
Warehouse.....	549	335	150	33	141	42	28	4	13.49
Other.....	103	73	32	13	29	5	Q	4	24.38
Vacant.....	238	146	56	28	37	16	Q	Q	21.47
Census Region									
Northeast.....	663	603	251	253	152	59	37	17	11.51
Midwest.....	1,096	971	629	184	264	97	36	22	11.30
South.....	1,570	1,414	577	115	439	214	194	25	11.10
West.....	825	696	335	75	208	170	53	11	15.55
Year Constructed									
1900 or Before.....	188	172	86	62	51	Q	Q	Q	23.38
1901 to 1920.....	255	225	101	71	67	11	Q	10	17.07
1921 to 1945.....	629	554	274	120	171	45	28	16	11.63
1946 to 1960.....	878	788	383	147	249	91	38	12	11.36
1961 to 1970.....	730	652	335	115	170	94	49	17	11.24
1971 to 1973.....	243	215	111	22	59	52	25	3	14.10
1974 to 1979.....	572	516	255	41	148	102	76	8	11.40
1980 to 1983.....	350	304	136	28	85	73	45	Q	14.55
1984 to 1986.....	309	258	112	20	63	65	43	Q	16.75
Ownership and Occupancy									
Nongovernment Owned.....	3,661	3,248	1,619	499	950	493	286	47	6.92
Owner Occupied.....	2,396	2,152	1,076	364	633	285	181	42	8.16
Nonowner Occupied.....	1,265	1,096	542	135	317	208	105	5	9.70
Government Owned.....	493	436	174	128	112	47	34	29	10.78

See footnotes at end of table.

Table 46. Heat Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	Heat Production Equipment Used								RSE Row Factor
	All Buildings	All Heated Buildings	Warm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.548	0.561	0.858	0.920	0.996	1.228	1.560	2.159	
Workers									
Fewer than 5.....	2,033	1,646	857	173	621	104	84	21	10.68
5 to 9.....	842	796	410	129	176	115	91	9	9.70
10 to 19.....	587	558	297	103	135	115	53	11	10.56
20 to 49.....	434	426	168	121	83	121	62	18	9.59
50 to 99.....	152	151	43	55	25	52	15	4	14.01
100 to 249.....	73	73	14	29	16	24	11	8	13.78
250 or More.....	33	33	4	17	8	9	4	5	14.19
Weekly Operating Hours									
39 or Fewer.....	870	662	322	114	194	55	33	10	13.00
40 to 48.....	1,086	1,004	506	146	280	150	121	18	9.19
49 to 60.....	919	846	430	132	263	113	64	17	9.05
61 to 84.....	556	523	241	112	148	104	37	5	12.17
85 to 167.....	375	338	192	50	85	70	35	6	12.29
168 (Open Continuously).....	347	310	102	74	92	48	29	20	13.04
Energy Sources Used (Solely or in Combination)									
Electricity.....	4,013	3,666	1,792	626	1,059	540	319	76	6.26
Natural Gas.....	2,278	2,239	1,303	408	567	387	99	25	7.85
Fuel Oil.....	542	531	249	242	140	14	18	3	13.74
District Steam or Hot Water.....	78	78	Q	Q	4	5	Q	76	33.32
District Chilled Water.....	15	15	Q	Q	Q	Q	Q	8	48.14
Propane.....	351	329	164	39	158	21	27	Q	21.72
Minor Fuels.....	163	159	55	25	100	Q	Q	Q	23.74
No Energy Sources Used.....	136	--	--	--	--	--	--	--	41.23
Energy End Uses									
Space Heating.....	3,681	3,658	1,793	627	1,060	540	319	76	6.24
Cooling.....	2,882	2,838	1,371	470	716	526	315	59	6.50
Water Heating.....	2,896	2,837	1,420	555	717	464	283	69	6.12
Cooking.....	563	545	244	132	130	134	47	11	9.19
Manufacturing.....	132	119	60	18	54	21	9	3	20.93

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

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

**Table 47. Heat Production Equipment, Floorspace
(Million Square Feet)**

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Heat Production Equipment Used						RSE Row Factor
			Harm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.555	0.565	0.901	0.958	1.024	1.277	1.587	1.779	
All Buildings.....	58,229	54,594	17,966	19,459	13,985	12,309	5,090	4,434	5.63
Heat Distribution Equipment									
Ducted Forced Air.....	40,038	39,803	15,711	12,115	8,606	11,669	4,737	2,963	6.77
Heating Only.....	5,650	5,650	4,064	1,316	1,322	509	Q	304	17.85
Heating and Cooling.....	31,109	31,109	11,157	9,260	6,583	10,923	4,432	2,198	7.50
VAV Used.....	14,743	14,643	3,090	6,297	3,738	4,905	1,383	1,616	10.24
Steam Radiators or Baseboards.....	7,997	7,997	980	5,834	1,716	929	470	1,966	15.22
Hot Water Radiators or Baseboards.....	7,842	7,842	937	6,201	1,563	1,100	562	1,423	12.95
Fan-Coil Units.....	14,490	14,333	2,281	9,080	3,764	3,354	1,043	2,045	11.11
Heating Only.....	5,260	5,260	1,186	3,483	1,109	977	269	618	18.70
Heating and Cooling.....	7,934	7,934	925	4,853	2,340	2,262	760	1,307	14.22
Heating Panels.....	3,367	3,361	866	1,393	2,079	854	311	193	18.22
Other.....	259	259	Q	Q	Q	Q	Q	Q	50.16
Cooling Production Equipment									
Central Cooling.....	21,734	21,537	7,616	9,840	5,344	4,120	1,817	1,785	8.82
Individual									
Air Conditioners.....	14,433	14,296	4,258	6,536	5,445	2,773	1,101	1,380	8.93
Packaged Air-Conditioning Units.....	17,889	17,788	4,703	6,145	4,423	11,273	1,596	1,096	9.94
Air-Source Heat Pumps.....	5,090	5,090	1,307	1,241	1,333	1,256	5,090	Q	14.28
Receives District Chilled Water.....	1,163	1,163	Q	Q	Q	Q	Q	1,011	42.10
HVAC Conservation Features									
Preventive Maintenance Program									
Program.....	40,914	40,687	11,665	17,072	8,966	10,007	3,954	3,920	6.58
Waste Heat Recovery.....	6,492	6,489	952	3,464	1,910	2,084	681	923	15.94
EMCS.....	11,070	11,035	1,592	5,500	2,397	3,271	758	1,905	13.03
Time-Clock Thermostat.....	2,121	2,109	571	983	501	713	315	241	21.81
Economizer Cycle.....	1,111	1,090	Q	703	Q	355	Q	Q	27.42
Other HVAC Features.....	2,793	2,788	478	1,550	702	958	Q	Q	30.05
Reduced Use--Off-Hours									
Heating Only.....	7,649	7,649	2,919	3,030	2,752	359	Q	319	16.50
Cooling Only.....	1,463	1,049	336	407	253	Q	Q	113	27.46
Heating and Cooling.....	36,652	36,652	12,125	12,777	9,250	9,434	4,129	2,702	6.43

See footnotes at end of table.

Table 47. Heat Production Equipment, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Heat Production Equipment Used						RSE Row Factor
			Warm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.555	0.565	0.901	0.958	1.024	1.277	1.587	1.779	
Occupant Control of:									
Heating Only.....	5,974	5,974	2,805	1,752	2,428	272	Q	382	18.44
Heating and Cooling.....	25,297	25,297	9,417	7,233	6,606	7,125	3,129	1,347	8.09
Climate Zone: 45 Year Average									
Under 2,000 CDD and --									
Over 7,000 HDD.....	4,897	4,629	1,684	2,002	1,444	603	Q	562	19.56
5,500-7,000 HDD.....	16,250	15,715	5,357	7,280	3,940	3,111	858	1,612	11.53
4,000-5,499 HDD.....	13,904	13,229	4,095	5,292	3,474	2,304	1,256	1,495	12.49
Under 4,000 HDD.....	13,792	12,784	4,527	3,493	3,288	3,755	1,821	474	16.58
2,000 CDD or More and --									
Under 4,000 HDD.....	9,386	8,237	2,302	1,393	1,839	2,536	919	292	15.28
Percent Heated									
Not Heated.....	3,635	--	--	--	--	--	--	--	19.02
1 to 50.....	8,579	8,579	3,647	1,335	3,162	1,453	1,124	150	15.82
51 to 99.....	7,061	7,061	2,039	2,591	1,964	2,083	543	558	14.67
100.....	38,941	38,941	12,279	15,533	8,846	8,774	3,423	3,726	6.15
Percent Cooled									
Not Cooled.....	11,057	7,844	2,979	2,720	2,660	309	Q	590	18.42
1 to 50.....	18,641	18,393	6,953	6,556	5,676	3,425	2,074	1,311	9.26
51 to 99.....	9,982	9,966	2,384	4,235	2,726	3,209	673	1,267	12.73
100.....	18,543	18,385	5,649	5,948	2,918	5,367	2,324	1,267	8.50
Building Floorspace (Square Feet)									
1,001 to 5,000.....	6,209	5,321	2,812	485	1,540	609	445	66	11.09
5,001 to 10,000.....	6,861	6,310	3,230	1,291	1,726	1,135	528	Q	9.28
10,001 to 25,000.....	9,119	8,551	3,900	2,193	2,354	1,640	816	303	8.77
25,001 to 50,000.....	8,661	8,203	2,524	3,304	1,991	1,512	794	424	10.84
50,001 to 100,000.....	8,559	7,894	2,363	2,798	2,096	1,891	1,102	726	11.63
100,001 to 200,000.....	7,191	6,944	1,651	3,169	1,628	1,902	836	772	13.58
200,001 to 500,000.....	6,737	6,617	1,022	3,579	1,670	1,699	420	1,202	16.87
Over 500,000.....	4,893	4,755	464	2,640	980	1,921	Q	905	23.70

See footnotes at end of table.

Table 47. Heat Production Equipment, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated Buildings	Total Floorspace by Heat Production Equipment Used						RSE Row Factor
			Warm-Air Furnaces	Boilers	Individual Space Heaters or Electric Baseboards	Packaged Heating Units	Air-Source Heat Pumps	Receives District Heat	
RSE Column Factor:	0.555	0.565	0.901	0.958	1.024	1.277	1.587	1.779	
Workers									
Fewer than 5.....	13,129	10,427	5,072	1,958	3,609	702	532	325	10.52
5 to 9.....	6,576	6,304	2,996	1,624	1,791	834	640	186	12.85
10 to 19.....	7,895	7,460	3,626	1,823	2,099	1,262	902	407	12.65
20 to 49.....	8,847	8,666	3,090	3,126	1,701	2,153	1,029	583	10.06
50 to 99.....	6,510	6,505	1,339	3,181	1,054	2,254	557	290	13.74
100 to 249.....	6,445	6,424	1,135	3,048	1,622	2,194	717	912	13.95
250 or More.....	8,828	8,808	707	4,699	2,108	2,911	712	1,731	14.57
Weekly Operating Hours									
39 or Fewer.....	9,286	7,797	2,917	3,296	2,086	977	475	181	14.00
40 to 48.....	15,167	14,401	4,786	4,935	3,876	2,758	1,913	1,034	9.86
49 to 60.....	10,805	10,292	4,130	2,815	2,621	2,087	846	717	9.82
61 to 84.....	9,760	9,476	2,762	3,427	2,518	3,180	737	490	14.95
85 to 167.....	5,514	5,353	2,088	1,637	1,114	1,514	576	546	12.56
168 (Open Continuously).....	7,696	7,274	1,283	3,349	1,770	1,794	543	1,466	14.87
Energy Sources Used (Solely or in Combination)									
Electricity.....	57,036	54,471	17,961	19,455	13,971	12,309	5,090	4,434	5.63
Natural Gas.....	38,140	37,824	14,252	15,695	9,452	9,479	2,446	1,943	6.65
Fuel Oil.....	11,163	11,091	2,468	7,854	2,801	1,679	449	520	12.97
District Steam or									
Hot Water.....	4,645	4,624	Q	Q	461	570	Q	4,434	24.69
District Chilled Water.....	1,191	1,191	Q	Q	Q	Q	Q	1,012	41.14
Propane.....	3,362	3,166	1,155	917	1,314	681	360	Q	20.62
Minor Fuels.....	1,557	1,536	442	628	607	Q	Q	Q	26.70
No Energy Sources Used.....	1,171	--	--	--	--	--	--	--	57.81
Energy End Uses									
Space Heating.....	54,510	54,382	17,966	19,459	13,980	12,307	5,090	4,434	5.64
Cooling.....	46,601	46,156	14,815	16,462	11,229	12,004	5,071	3,813	5.98
Water Heating.....	48,836	48,263	15,720	18,468	11,925	11,386	4,706	4,221	5.81
Cooking.....	17,227	17,082	3,530	9,242	3,959	5,260	1,300	1,657	10.04
Manufacturing.....	3,081	2,996	1,204	1,175	1,171	910	236	228	15.85

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

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 48. Cooling Production Equipment, Number of Buildings (Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.507	0.555	0.820	0.882	0.913	1.455	3.704	
All Buildings.....	4,154	2,906	1,111	923	730	319	15	6.56
Cooling Distribution Equipment								
Ducted Forced Air.....	2,522	2,197	1,012	434	675	297	12	7.04
Cooling Only.....	157	157	90	33	54	Q	Q	20.19
Heating and Cooling.....	1,768	1,767	904	205	604	282	12	7.54
VAV Used.....	547	502	227	116	180	68	5	12.34
Fan-Coil Units.....	411	323	159	139	83	25	5	12.18
Cooling Only.....	51	49	16	27	6	Q	Q	32.47
Heating and Cooling.....	166	166	106	51	50	15	4	14.76
Other.....	Q	Q	Q	Q	Q	Q	Q	68.66
Heat Production Equipment								
Warm-Air Furnaces.....	1,793	1,380	685	383	255	73	Q	10.17
Boilers.....	627	472	213	222	109	31	Q	11.21
Individual Space Heaters or Electric Baseboards.....	1,062	718	210	407	117	52	Q	12.63
Packaged Heating Units.....	540	526	120	67	485	36	Q	13.14
Air-Source Heat Pumps.....	319	315	107	52	46	319	Q	14.88
Receives District Heat.....	76	60	29	25	9	Q	8	26.20
HVAC Conservation Features								
Preventive Maintenance								
Program.....	2,076	1,706	728	476	508	202	14	6.74
Waste Heat Recovery.....	149	134	72	39	45	19	*	17.08
EMCS.....	205	192	91	37	78	21	6	13.86
Time-Clock Thermostat.....	64	60	22	15	26	12	Q	25.22
Economizer Cycle.....	17	17	7	Q	12	Q	Q	38.57
Other HVAC Features.....	76	63	32	19	22	Q	Q	25.94
Reduced Use--Off-Hours								
Heating Only.....	759	77	17	32	15	Q	Q	26.21
Cooling Only.....	106	106	28	52	25	Q	Q	23.31
Heating and Cooling.....	2,331	2,331	912	746	563	241	11	7.57
Occupant Control of:								
Cooling Only.....	84	84	23	56	12	Q	Q	29.28
Heating and Cooling.....	2,009	2,007	731	654	483	232	Q	8.54

See footnotes at end of table.

Table 48. Cooling Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Malls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.507	0.555	0.820	0.882	0.913	1.455	3.704	
Window Glass: Percent of Exterior Walls								
25 or Less.....	3,522	2,421	923	777	564	270	11	7.18
26 to 50.....	524	399	159	119	135	38	4	10.65
51 to 75.....	82	62	19	22	19	Q	Q	22.36
Over 75.....	26	24	10	4	12	Q	Q	29.67
Climate Zone: 45 Year Average								
Under 2,000 CDD and --								
Over 7,000 HDD.....	419	194	63	85	48	Q	Q	21.47
5,500-7,000 HDD.....	930	615	229	220	151	36	Q	12.85
4,000-5,499 HDD.....	865	568	241	220	126	84	Q	18.49
Under 4,000 HDD.....	1,022	765	273	192	223	106	Q	17.41
2,000 CDD or More and --								
Under 4,000 HDD.....	919	764	306	204	182	83	Q	17.83
Percent Heated								
Not Heated.....	470	43	13	16	Q	NC	NC	36.84
1 to 50.....	601	424	135	167	71	55	Q	14.03
51 to 99.....	458	384	152	107	110	41	Q	13.05
100.....	2,625	2,055	812	633	540	223	12	7.02
Percent Cooled								
Not Cooled.....	1,248	--	--	--	--	--	--	40.96
1 to 50.....	972	972	289	465	182	90	Q	9.80
51 to 99.....	500	500	222	142	138	48	4	11.03
100.....	1,435	1,435	601	316	410	178	10	8.60
Percent Lit--Open Hours								
Not Lit.....	231	21	Q	Q	Q	NC	NC	50.15
1 to 50.....	624	414	157	172	52	50	Q	14.26
51 to 99.....	644	525	235	153	156	63	Q	13.89
100.....	2,655	1,946	717	592	517	206	11	7.66

See footnotes at end of table.

Table 48. Cooling Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.507	0.555	0.820	0.882	0.913	1.455	3.704	
Building Floorspace (Square Feet)								
1,001 to 5,000.....	2,220	1,423	504	475	254	146	Q	11.64
5,001 to 10,000.....	931	680	259	205	205	72	Q	10.03
10,001 to 25,000.....	557	435	190	136	133	55	Q	10.20
25,001 to 50,000.....	242	196	79	59	68	24	Q	11.24
50,001 to 100,000.....	123	101	43	25	38	15	Q	13.14
100,001 to 200,000.....	52	45	21	15	19	6	1	14.22
200,001 to 500,000.....	23	21	12	6	10	1	1	16.27
Over 500,000.....	6	5	3	2	3	Q	*	21.86
Principal Building Activity								
Assembly.....	575	408	196	131	74	38	Q	13.44
Education.....	241	174	53	67	44	13	Q	15.53
Food Sales.....	102	96	37	Q	28	Q	Q	27.15
Food Services.....	201	180	55	48	84	Q	NC	16.94
Health Care.....	52	50	21	13	16	Q	Q	24.46
Lodging.....	137	101	29	64	10	12	Q	18.54
Mercantile and Service.....	1,287	898	314	313	217	80	Q	10.55
Office.....	614	584	282	127	149	99	4	11.40
Public Order and Safety.....	55	37	13	Q	Q	Q	NC	32.65
Warehouse.....	549	217	58	76	64	28	Q	16.11
Other.....	103	49	21	20	8	Q	Q	28.21
Vacant.....	238	112	32	29	26	Q	NC	23.33
Census Region								
Northeast.....	663	395	140	181	112	37	Q	13.34
Midwest.....	1,096	677	287	254	148	36	6	11.22
South.....	1,570	1,277	532	373	264	194	3	9.86
West.....	825	557	151	115	205	53	Q	18.03
Year Constructed								
1900 or Before.....	188	119	44	66	15	Q	Q	26.65
1901 to 1920.....	255	142	57	68	20	Q	Q	20.60
1921 to 1945.....	629	442	151	201	72	28	Q	12.70
1946 to 1960.....	878	593	213	242	141	38	Q	12.63
1961 to 1970.....	730	531	227	153	143	49	2	11.40
1971 to 1973.....	243	174	73	35	64	25	Q	15.03
1974 to 1979.....	572	435	171	80	126	76	Q	12.26
1980 to 1983.....	350	260	96	42	82	45	Q	14.97
1984 to 1986.....	309	210	79	35	67	43	Q	17.47

See footnotes at end of table.

Table 48. Cooling Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.507	0.555	0.820	0.882	0.913	1.455	3.704	
Ownership and Occupancy								
Nongovernment Owned.....	3,661	2,590	993	805	670	286	9	7.03
Owner Occupied.....	2,396	1,668	653	537	394	181	9	8.57
Nonowner Occupied.....	1,265	922	340	269	275	105	Q	9.43
Government Owned.....	493	316	118	117	60	34	5	12.92
Workers								
Fewer than 5.....	2,033	1,079	374	429	144	84	Q	11.93
5 to 9.....	842	682	258	198	150	91	Q	11.13
10 to 19.....	587	507	194	149	139	53	Q	11.32
20 to 49.....	434	392	172	88	175	62	Q	10.66
50 to 99.....	152	140	58	34	72	15	Q	14.43
100 to 249.....	73	71	34	17	36	11	2	13.99
250 or More.....	33	33	20	8	14	4	2	14.45
Weekly Operating Hours								
39 or Fewer.....	870	464	176	148	80	33	Q	15.37
40 to 48.....	1,086	840	340	232	213	121	Q	9.90
49 to 60.....	919	640	243	234	139	64	Q	10.86
61 to 84.....	556	419	156	130	130	37	Q	13.17
85 to 167.....	375	285	104	70	98	35	Q	13.85
168 (Open Continuously).....	347	258	92	108	69	29	6	13.50
Energy Sources Used (Solely or in Combination)								
Electricity.....	4,013	2,896	1,111	923	730	319	15	6.55
Natural Gas.....	2,278	1,853	758	552	530	99	8	8.50
Fuel Oil.....	542	326	130	178	48	18	Q	13.41
District Steam or Hot Water.....	78	61	30	25	10	Q	8	25.27
District Chilled Water.....	15	15	Q	Q	Q	Q	15	41.41
Propane.....	351	217	65	104	33	27	NC	24.24
Minor Fuels.....	163	57	18	27	Q	Q	Q	30.65
No Energy Sources Used.....	136	--	--	--	--	--	--	44.76

See footnotes at end of table.

Table 48. Cooling Production Equipment, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Cooled Buildings	Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Malls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.507	0.555	0.820	0.882	0.913	1.455	3.704	
Energy End Uses								
Space Heating.....	3,681	2,847	1,097	906	720	319	15	6.60
Cooling.....	2,882	2,881	1,111	916	729	315	15	6.53
Water Heating.....	2,896	2,358	945	710	656	283	13	6.39
Cooking.....	563	487	185	147	184	47	4	10.13
Manufacturing.....	132	93	35	36	26	9	0	23.93

NC/ No cases in sample.

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

Note: 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.

* Value rounds to zero in the units displayed.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 49. Cooling Production Equipment, Floorspace
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Cooled Buildings	Total Floorspace by Cooling Production Equipment Used					Receives District Chilled Water	RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps			
RSE Column Factor:	0.520	0.569	0.841	0.904	0.957	1.480	3.138		
All Buildings.....	58,229	47,172	21,734	14,433	17,889	5,090	1,163		5.74
Cooling Distribution Equipment									
Ducted Forced Air.....	40,038	37,064	19,075	8,090	16,387	4,737	906		7.11
Cooling Only.....	3,279	3,279	1,888	742	1,446	Q	Q		22.48
Heating and Cooling.....	31,109	31,076	16,920	5,593	14,644	4,432	838		7.56
VAV Used.....	14,743	14,156	7,991	3,475	6,790	1,383	619		10.45
Fan-Coil Units.....	14,490	13,055	8,122	5,481	5,437	1,043	763		10.86
Cooling Only.....	1,296	1,281	535	648	251	Q	Q		29.09
Heating and Cooling.....	7,934	7,929	5,697	2,844	3,647	760	633		13.45
Other.....	Q	Q	Q	Q	Q	Q	Q		71.47
Heat Production Equipment									
Warm-Air Furnaces.....	17,966	14,986	7,616	4,258	4,703	1,307	Q		10.68
Boilers.....	19,459	16,739	9,840	6,536	6,145	1,241	Q		11.02
Individual Space Heaters or Electric Baseboards.....	13,985	11,325	5,344	5,445	4,423	1,333	Q		11.19
Packaged Heating Units.....	12,309	12,000	4,120	2,773	11,273	1,256	Q		13.53
Air-Source Heat Pumps.....	5,090	5,071	1,817	1,101	1,596	5,090	Q		14.49
Receives District Heat.....	4,434	3,844	1,785	1,380	1,096	Q	1,011		19.77
HVAC Conservation Features									
Preventive Maintenance									
Program.....	40,914	36,259	18,162	10,365	14,789	3,954	1,126		6.52
Waste Heat Recovery.....	6,492	6,054	3,958	1,988	3,203	681	144		16.36
EMCS.....	11,070	10,548	6,351	2,521	5,236	758	632		12.42
Time-Clock Thermostat.....	2,121	2,021	989	643	1,140	315	Q		22.58
Economizer Cycle.....	1,111	1,111	743	Q	484	Q	Q		29.41
Other HVAC Features.....	2,793	2,641	1,971	518	1,123	Q	Q		27.67
Reduced Use--Off-Hours									
Heating Only.....	7,649	1,471	246	696	231	Q	Q		26.21
Cooling Only.....	1,463	1,463	554	697	457	Q	Q		26.91
Heating and Cooling.....	36,652	36,623	17,591	10,815	14,112	4,129	700		6.27
Occupant Control of:									
Cooling Only.....	1,845	1,845	486	1,384	250	Q	Q		29.68
Heating and Cooling.....	25,297	25,265	10,738	7,665	10,047	3,129	477		8.66

See footnotes at end of table.

Table 49. Cooling Production Equipment, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Cooled Buildings	Total Floorspace by Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.520	0.569	0.841	0.904	0.957	1.480	3.138	
Window Glass: Percent of Exterior Walls								
25 or Less.....	43,239	34,074	15,044	10,155	12,868	3,788	774	7.31
26 to 50.....	10,825	9,206	4,373	3,223	3,652	953	324	10.47
51 to 75.....	2,836	2,590	1,550	627	841	Q	Q	21.35
Over 75.....	1,329	1,302	767	428	528	Q	Q	26.52
Climate Zone: 45 Year Average								
Under 2,000 CDD and --								
Over 7,000 HDD.....	4,897	3,358	1,472	1,113	1,323	Q	Q	18.32
5,500-7,000 HDD.....	16,250	12,574	5,979	4,746	4,940	858	320	13.30
4,000-5,499 HDD.....	13,904	11,149	5,547	3,983	3,871	1,256	281	13.35
Under 4,000 HDD.....	13,792	11,789	5,057	2,749	4,559	1,821	Q	16.08
2,000 CDD or More and --								
Under 4,000 HDD.....	9,386	8,302	3,679	1,842	3,196	919	235	16.39
Percent Heated								
Not Heated.....	3,635	422	Q	137	Q	NC	NC	43.83
1 to 50.....	8,579	6,731	2,489	2,218	1,906	1,124	Q	17.53
51 to 99.....	7,061	6,390	2,890	1,711	2,688	543	Q	16.99
100.....	38,941	33,623	16,157	10,362	13,194	3,423	874	6.26
Percent Cooled								
Not Cooled.....	11,057	--	--	--	--	--	--	39.91
1 to 50.....	18,641	18,641	6,352	8,484	6,143	2,074	Q	9.61
51 to 99.....	9,982	9,982	5,868	2,754	4,468	673	539	12.60
100.....	18,543	18,543	9,514	3,190	7,261	2,324	591	8.59
Percent Lit--Open Hours								
Not Lit.....	1,851	234	Q	Q	Q	NC	NC	54.01
1 to 50.....	7,399	5,296	2,382	2,110	1,345	682	Q	19.95
51 to 99.....	9,416	8,329	4,011	2,582	3,083	1,134	Q	11.91
100.....	39,562	33,313	15,302	9,694	13,397	3,274	906	7.16

See footnotes at end of table.

Table 49. Cooling Production Equipment, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Cooled Buildings	Total Floorspace by Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.520	0.569	0.841	0.904	0.957	1.480	3.138	
Building Floorspace (Square Feet)								
1,001 to 5,000.....	6,209	4,066	1,455	1,325	769	445	Q	11.80
5,001 to 10,000.....	6,861	5,041	1,906	1,520	1,550	528	Q	10.19
10,001 to 25,000.....	9,119	7,139	3,178	2,204	2,200	816	Q	10.25
25,001 to 50,000.....	8,661	6,960	2,833	2,181	2,383	794	Q	11.38
50,001 to 100,000.....	8,559	7,015	3,023	1,786	2,649	1,102	Q	12.93
100,001 to 200,000.....	7,191	6,251	2,809	2,122	2,648	836	146	13.88
200,001 to 500,000.....	6,737	6,302	3,637	1,850	3,139	420	476	16.15
Over 500,000.....	4,893	4,397	2,893	1,446	2,552	Q	261	21.24
Principal Building Activity								
Assembly.....	7,339	5,793	3,074	1,759	1,418	486	Q	13.29
Education.....	7,321	6,015	2,552	2,588	2,141	321	Q	15.72
Food Sales.....	712	698	313	Q	279	Q	Q	28.87
Food Services.....	1,281	1,145	532	360	593	Q	NC	24.30
Health Care.....	2,107	2,098	1,163	977	1,222	Q	227	23.02
Lodging.....	2,785	2,300	874	1,315	574	311	Q	20.65
Mercantile and Service.....	12,805	10,624	4,154	3,016	5,016	1,022	Q	15.68
Office.....	9,546	9,421	5,625	1,588	3,403	1,393	379	11.32
Public Order and Safety.....	680	502	290	Q	Q	Q	NC	36.11
Warehouse.....	8,996	5,779	1,952	1,933	2,486	986	Q	17.27
Other.....	1,726	1,285	662	273	291	Q	Q	30.36
Vacant.....	2,931	1,511	545	397	319	Q	NC	23.57
Census Region								
Northeast.....	11,830	8,926	4,012	3,768	3,645	853	200	14.11
Midwest.....	16,034	12,571	6,454	4,663	4,702	607	409	11.16
South.....	19,427	17,128	8,029	4,034	6,133	2,467	362	9.86
West.....	10,937	8,547	3,240	1,968	3,409	1,163	Q	13.89
Year Constructed								
1900 or Before.....	2,368	1,779	560	1,101	334	Q	Q	28.34
1901 to 1920.....	3,665	2,501	913	1,251	726	Q	Q	23.12
1921 to 1945.....	8,594	6,174	2,489	2,901	1,588	444	Q	14.53
1946 to 1960.....	9,712	7,472	3,106	2,741	2,502	621	Q	12.72
1961 to 1970.....	11,469	9,365	5,139	2,607	3,544	895	184	11.42
1971 to 1973.....	4,307	3,936	2,033	882	1,784	378	Q	15.99
1974 to 1979.....	8,230	7,279	3,730	1,809	3,401	1,088	Q	12.58
1980 to 1983.....	5,205	4,683	2,135	570	2,238	703	Q	20.04
1984 to 1986.....	4,678	3,982	1,629	573	1,772	642	Q	17.74

See footnotes at end of table.

Table 49. Cooling Production Equipment, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Cooled Buildings	Total Floorspace by Cooling Production Equipment Used					Receives District Chilled Water	RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Walls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps			
RSE Column Factor:	0.520	0.569	0.841	0.904	0.957	1.480	3.138		
Ownership and Occupancy									
Nongovernment Owned.....	46,041	37,650	17,077	10,550	15,059	4,355	744	6.62	
Owner Occupied.....	28,962	23,392	10,750	7,280	8,689	2,885	657	7.17	
Nonowner Occupied.....	17,080	14,258	6,327	3,271	6,371	1,470	Q	10.76	
Government Owned.....	12,187	9,522	4,657	3,883	2,829	735	419	12.29	
Workers									
Fewer than 5.....	13,129	6,993	2,750	2,699	1,007	532	Q	13.22	
5 to 9.....	6,576	5,242	1,936	1,635	1,159	640	Q	14.99	
10 to 19.....	7,895	6,386	2,300	1,950	1,770	902	Q	13.15	
20 to 49.....	8,847	7,771	3,505	2,176	3,170	1,029	Q	11.42	
50 to 99.....	6,510	5,797	2,400	1,982	2,962	557	Q	15.07	
100 to 249.....	6,445	6,217	3,185	1,571	3,408	717	358	14.27	
250 or More.....	8,828	8,766	5,659	2,420	4,413	712	519	13.50	
Weekly Operating Hours									
39 or Fewer.....	9,286	6,088	2,702	2,064	1,498	475	Q	16.99	
40 to 48.....	15,167	12,865	5,604	3,483	4,997	1,913	Q	10.64	
49 to 60.....	10,805	8,669	4,124	2,495	2,802	846	125	11.79	
61 to 84.....	9,760	8,429	4,201	2,121	3,763	737	Q	16.60	
85 to 167.....	5,514	4,546	1,783	1,176	2,283	576	Q	13.76	
168 (Open Continuously).....	7,696	6,576	3,319	3,094	2,545	543	545	13.82	
Energy Sources Used (Solely or in Combination)									
Electricity.....	57,036	47,092	21,734	14,433	17,889	5,090	1,163	5.74	
Natural Gas.....	38,140	33,128	16,682	10,637	13,943	2,446	490	6.88	
Fuel Oil.....	11,163	9,202	5,469	4,162	3,259	449	Q	13.44	
District Steam or Hot Water.....	4,645	4,049	1,932	1,420	1,189	Q	1,016	19.04	
District Chilled Water.....	1,191	1,191	Q	Q	Q	Q	1,163	35.64	
Propane.....	3,362	2,588	942	981	901	360	NC	22.53	
Minor Fuels.....	1,557	1,008	349	450	Q	Q	Q	33.01	
No Energy Sources Used.....	1,171	--	--	--	--	--	--	63.26	

See footnotes at end of table.

Table 49. Cooling Production Equipment, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Cooled Buildings	Total Floorspace by Cooling Production Equipment Used					RSE Row Factor
			Central Cooling System	Individual Air Conditioners in Malls or Windows	Packaged Air-Conditioning Units	Air-Source Heat Pumps	Receives District Chilled Water	
RSE Column Factor:	0.520	0.569	0.841	0.904	0.957	1.480	3.138	
Energy End Uses								
Space Heating.....	54,510	46,619	21,538	14,286	17,776	5,090	1,163	5.72
Cooling.....	46,601	46,545	21,723	14,121	17,888	5,071	1,163	5.83
Water Heating.....	48,836	42,370	20,009	12,973	16,979	4,706	1,128	5.73
Cooking.....	17,227	15,711	8,140	5,068	7,831	1,300	736	9.96
Manufacturing.....	3,081	2,615	1,302	906	1,219	236	q	19.47

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 50. Heating and Cooling Distribution Systems, Number of Buildings (Thousand)

Building Characteristics	Heating and Cooling Distribution Systems Used												RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units				
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling	Heating Panels	
RSE Column Factor:	0.422	0.433	1.038	1.529	0.567	0.928	1.113	1.047	1.300	2.335	1.307	1.415	
All Buildings.....	4,154	3,727	597	157	1,768	461	229	271	195	51	166	200	7.59
HVAC Conservation Features													
Preventive Maintenance Program.....	2,076	2,071	300	102	1,136	336	177	205	122	31	124	114	7.99
Waste Heat Recovery.....	149	149	17	6	92	48	12	16	15	Q	18	17	22.59
EMCS.....	205	205	14	13	143	65	25	18	17	5	20	15	17.22
Time-Clock Thermostat.....	64	64	Q	Q	44	13	7	5	5	Q	8	Q	31.20
Economizer Cycle.....	17	17	Q	Q	14	7	Q	Q	Q	Q	1	Q	37.28
Other HVAC Features.....	76	76	Q	Q	45	17	6	8	Q	Q	3	Q	32.97
Occupant Control of:													
Heating Only.....	646	646	249	Q	17	30	41	55	63	Q	Q	52	22.24
Cooling Only.....	84	84	12	19	Q	8	13	12	6	11	Q	Q	30.07
Heating and Cooling.....	2,009	2,009	191	83	1,257	265	80	110	63	17	108	87	10.15
Reduced Use--Off-Hours													
Heating Only.....	759	759	298	Q	20	35	69	69	71	Q	Q	60	21.06
Cooling Only.....	106	106	Q	24	20	12	5	8	Q	Q	Q	Q	28.46
Heating and Cooling.....	2,331	2,331	216	112	1,455	349	110	152	83	28	131	111	8.64
Climate Zone: 45 Year Average													
Under 2,000 CDD and --													
Over 7,000 HDD.....	419	365	112	13	97	29	34	62	18	Q	8	23	25.70
5,500-7,000 HDD.....	930	861	220	24	321	84	96	115	63	Q	40	51	12.90
4,000-5,499 HDD.....	865	785	136	40	327	99	75	69	59	Q	30	56	18.88
Under 4,000 HDD.....	1,022	911	104	24	523	132	19	14	41	Q	43	52	21.68
2,000 CDD or More and --													
Under 4,000 HDD.....	919	805	25	56	499	116	6	12	14	13	45	19	23.86
Percent Heated													
Not Heated.....	470	43	NC	19	NC	Q	NC	NC	NC	Q	NC	NC	30.32
1 to 50.....	601	601	92	15	227	45	11	19	15	Q	17	32	18.06
51 to 99.....	458	458	60	27	235	55	25	42	24	Q	20	33	17.24
100.....	2,625	2,625	444	96	1,305	355	194	210	156	25	128	136	7.81

See footnotes at end of table.

Table 50. Heating and Cooling Distribution Systems, Number of Buildings (continued)
(Thousand)

Building Characteristics	Heating and Cooling Distribution Systems Used												RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units			Heating Panels	
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling		
RSE Column Factor:	0.422	0.433	1.038	1.529	0.567	0.928	1.113	1.047	1.300	2.335	1.307	1.415	
Percent Cooled													
Not Cooled.....	1,248	821	324	NC	Q	27	70	74	86	Q	Q	63	24.44
1 to 50.....	972	972	158	55	432	108	90	83	60	25	42	44	10.58
51 to 99.....	500	500	42	35	306	76	32	60	16	Q	36	28	14.79
100.....	1,435	1,435	73	67	1,029	249	37	54	33	17	88	65	11.27
Building Floorspace (Square Feet)													
1,001 to 5,000.....	2,220	1,915	355	63	832	180	51	68	70	Q	46	94	12.79
5,001 to 10,000.....	931	857	146	37	424	116	56	81	40	Q	31	51	12.98
10,001 to 25,000.....	557	529	55	25	277	77	54	59	33	Q	36	28	13.35
25,001 to 50,000.....	242	233	21	22	123	36	34	31	29	Q	20	15	14.13
50,001 to 100,000.....	123	114	12	7	64	27	17	18	12	Q	16	6	15.54
100,001 to 200,000.....	52	50	5	Q	29	13	11	8	8	Q	7	4	17.97
200,001 to 500,000.....	23	22	Q	2	16	8	5	4	2	Q	7	2	19.96
Over 500,000.....	6	6	Q	Q	4	3	1	1	1	Q	2	*	29.49
Principal Building Activity													
Assembly.....	575	547	96	23	275	66	52	55	20	Q	22	35	15.11
Education.....	241	238	47	9	86	40	34	37	31	Q	20	25	17.42
Food Sales.....	102	101	Q	Q	62	Q	Q	Q	Q	Q	Q	Q	41.15
Food Services.....	201	193	20	Q	120	36	Q	Q	Q	Q	Q	Q	24.37
Health Care.....	52	52	Q	Q	39	9	5	5	Q	Q	4	*	30.90
Lodging.....	137	131	Q	Q	33	14	6	22	Q	Q	16	15	23.35
Mercantile and Service.....	1,287	1,230	259	42	492	118	54	65	73	Q	37	47	12.62
Office.....	614	614	39	32	453	114	30	50	15	Q	36	26	15.42
Public Order and Safety.....	55	53	Q	Q	21	Q	Q	Q	Q	Q	Q	Q	41.65
Warehouse.....	549	346	59	22	112	22	8	10	24	Q	8	24	19.72
Other.....	103	75	Q	Q	30	10	8	Q	Q	Q	Q	Q	35.60
Vacant.....	238	147	18	Q	46	14	14	Q	Q	Q	Q	Q	28.66
Census Region													
Northeast.....	663	604	139	39	177	48	102	120	51	10	26	32	14.23
Midwest.....	1,096	973	242	27	386	100	72	89	54	Q	35	55	12.70
South.....	1,570	1,433	109	63	844	195	36	37	49	20	73	41	13.87
West.....	825	717	106	28	360	117	19	25	41	16	32	72	19.68

See footnotes at end of table.

Table 50. Heating and Cooling Distribution Systems, Number of Buildings (continued)
(Thousand)

Building Characteristics	Heating and Cooling Distribution Systems Used												RSE Row Factor	
	All Buildings	All Heated or Cooled Buildings	Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units					
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling	Heating Panels		
														RSE Column Factor:	0.422	0.433	1.038	1.529	0.567	0.928	1.113	1.047	1.300	2.335	1.307	1.415
Year Constructed														
1900 or Before.....	188	173	47	Q	44	13	32	38	Q	Q	Q	Q	26.15	
1901 to 1920.....	255	225	41	13	59	20	55	20	11	Q	7	Q	22.62	
1921 to 1945.....	629	558	117	22	197	51	67	49	32	Q	19	24	14.30	
1946 to 1960.....	878	795	144	36	303	75	42	57	50	Q	34	52	14.70	
1961 to 1970.....	730	661	118	38	335	87	18	53	43	10	35	34	13.56	
1971 to 1973.....	243	217	30	10	133	35	Q	14	12	Q	16	5	21.87	
1974 to 1979.....	572	525	55	17	323	78	Q	21	18	Q	26	31	17.25	
1980 to 1983.....	350	311	Q	7	202	58	Q	12	15	Q	14	19	22.56	
1984 to 1986.....	309	261	29	Q	172	44	Q	7	Q	Q	10	14	24.70	
Ownership and Occupancy														
Nongovernment Owned.....	3,661	3,290	524	138	1,597	398	176	220	150	43	130	161	8.10	
Owner Occupied.....	2,396	2,177	380	83	1,024	257	137	168	95	24	87	117	9.58	
Nonowner Occupied.....	1,265	1,112	143	55	573	141	39	52	55	19	44	43	12.57	
Government Owned.....	493	437	73	19	170	63	53	51	45	Q	35	40	13.24	
Workers														
Fewer than 5.....	2,033	1,666	335	52	537	117	72	79	77	Q	49	97	12.73	
5 to 9.....	842	804	141	24	422	95	42	72	37	Q	26	35	12.98	
10 to 19.....	587	569	82	33	335	97	31	42	21	Q	21	32	14.32	
20 to 49.....	434	430	27	32	288	77	52	39	37	Q	28	25	13.58	
50 to 99.....	152	152	9	8	108	40	16	20	15	Q	18	5	18.24	
100 to 249.....	73	73	Q	6	52	20	10	13	6	Q	14	4	18.28	
250 or More.....	33	33	Q	2	25	15	7	6	2	1	10	2	19.14	
Weekly Operating Hours														
39 or Fewer.....	870	668	116	25	272	63	48	53	28	Q	32	42	15.62	
40 to 48.....	1,086	1,018	140	38	552	127	51	59	56	13	46	38	11.77	
49 to 60.....	919	856	165	38	352	106	52	63	49	9	19	48	12.36	
61 to 84.....	556	527	77	22	254	75	39	36	30	Q	26	27	15.23	
85 to 167.....	375	346	61	19	186	43	18	22	17	Q	8	20	18.38	
168 (Open Continuously).....	347	313	39	15	143	47	21	38	15	14	34	25	17.19	

See footnotes at end of table.

Table 50. Heating and Cooling Distribution Systems, Number of Buildings (continued)
(Thousand)

Building Characteristics	Heating and Cooling Distribution Systems Used												RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units				
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling	Heating Panels	
RSE Column Factor:	0.422	0.433	1.038	1.529	0.567	0.928	1.113	1.047	1.300	2.335	1.307	1.415	
Energy Sources Used (Solely or in Combination)													
Electricity.....	4,013	3,709	597	157	1,767	460	229	271	194	51	166	200	7.59
Natural Gas.....	2,278	2,246	394	96	1,163	320	139	163	123	28	115	109	9.10
Fuel Oil.....	542	532	162	31	119	48	86	112	51	12	27	24	15.60
District Steam or													
Hot Water.....	78	78	5	9	27	10	32	16	12	Q	16	1	27.08
District Chilled Water.....	15	15	Q	Q	12	4	Q	Q	Q	Q	5	Q	44.54
Propane.....	351	333	52	Q	111	23	11	20	21	Q	9	23	27.33
Minor Fuels.....	163	159	31	Q	18	13	11	Q	Q	Q	Q	Q	32.10
No Energy Sources Used.....	136	--	--	--	--	--	--	--	--	--	--	--	85.87
Energy End Uses													
Space Heating.....	3,681	3,658	597	136	1,767	453	229	271	195	43	166	200	7.68
Cooling.....	2,882	2,881	264	157	1,767	433	156	195	106	49	166	136	7.68
Water Heating.....	2,896	2,852	442	122	1,508	398	195	252	159	43	152	158	7.75
Cooking.....	563	551	67	25	312	100	52	61	35	15	42	27	11.20
Manufacturing.....	132	121	13	Q	59	9	9	3	13	Q	6	Q	29.31

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 51. Heating and Cooling Distribution Systems, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated or Cooled Buildings	Total Floorspace by Heating and Cooling Distribution Systems Used										RSE Row Factor
			Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units				
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling	Heating Panels	
RSE Column Factor:	0.423	0.438	1.160	1.527	0.598	0.920	1.104	0.986	1.425	2.223	1.180	1.361	
Percent Cooled													
Not Cooled.....	11,057	7,844	2,941	NC	Q	342	1,552	1,250	1,415	Q	Q	555	27.19
1 to 50.....	18,641	18,641	1,889	1,675	9,193	3,089	3,643	2,709	2,485	580	1,889	1,344	11.94
51 to 99.....	9,982	9,982	408	678	7,291	3,658	1,286	2,035	687	Q	2,809	511	16.81
100.....	18,543	18,543	412	925	14,586	5,661	1,516	1,848	672	456	3,231	951	11.97
Building Floorspace (Square Feet)													
1,001 to 5,000.....	6,209	5,404	1,018	176	2,453	547	168	230	200	Q	140	258	13.08
5,001 to 10,000.....	6,861	6,330	1,071	268	3,161	870	416	588	299	Q	243	364	13.14
10,001 to 25,000.....	9,119	8,660	863	417	4,589	1,275	897	978	503	Q	595	450	13.29
25,001 to 50,000.....	8,661	8,310	749	793	4,314	1,337	1,267	1,159	1,112	Q	709	591	13.95
50,001 to 100,000.....	8,559	7,955	812	481	4,516	1,916	1,191	1,257	854	Q	1,163	425	15.24
100,001 to 200,000.....	7,191	6,975	704	Q	4,060	1,794	1,613	1,168	1,095	Q	966	525	17.65
200,001 to 500,000.....	6,737	6,624	Q	536	4,529	2,556	1,684	1,303	512	Q	2,132	527	19.62
Over 500,000.....	4,893	4,758	Q	Q	3,486	2,458	762	1,159	Q	Q	1,984	222	29.44
Principal Building Activity													
Assembly.....	7,339	7,162	974	565	3,615	1,391	1,540	1,524	472	Q	870	435	17.31
Education.....	7,321	7,316	1,089	301	2,887	1,213	2,018	1,965	1,699	Q	1,589	716	16.15
Food Sales.....	712	711	Q	Q	538	Q	Q	Q	Q	Q	Q	Q	43.96
Food Services.....	1,281	1,246	123	Q	837	411	Q	Q	Q	Q	Q	Q	29.22
Health Care.....	2,107	2,107	Q	Q	1,728	1,088	630	690	Q	Q	1,139	134	32.31
Lodging.....	2,785	2,774	Q	Q	1,201	411	323	674	Q	Q	600	218	23.84
Mercantile and Service.....	12,805	12,562	1,337	570	7,487	2,610	890	587	1,185	Q	833	457	17.18
Office.....	9,546	9,546	242	775	7,281	3,608	1,345	1,503	336	338	2,141	469	15.32
Public Order and Safety.....	680	678	Q	Q	329	Q	Q	Q	Q	Q	Q	Q	45.24
Warehouse.....	8,996	7,373	1,012	587	3,624	918	463	317	677	Q	230	527	20.46
Other.....	1,726	1,538	Q	Q	890	516	182	Q	Q	Q	Q	Q	36.31
Vacant.....	2,931	2,003	377	Q	691	302	251	Q	Q	Q	Q	Q	29.88
Census Region													
Northeast.....	11,830	11,356	1,385	1,089	4,565	2,160	3,411	2,727	1,658	421	1,599	995	14.25
Midwest.....	16,034	15,303	2,172	872	7,951	3,553	2,529	3,321	1,895	Q	2,519	1,181	14.11
South.....	19,427	18,080	895	970	12,698	4,549	1,148	1,161	797	401	2,501	533	14.18
West.....	10,937	10,278	1,198	348	5,894	2,488	909	633	910	257	1,315	652	17.97

See footnotes at end of table.

Table 51. Heating and Cooling Distribution Systems, Floorspace (continued)
 (Million Square Feet)

Building Characteristics	Total Floorspace by Heating and Cooling Distribution Systems Used												RSE Row Factor
	Total Floorspace of All Buildings	Total Floorspace of All Heated or Cooled Buildings	Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units				
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling	Heating Panels	
RSE Column Factor:	0.423	0.438	1.160	1.527	0.598	0.920	1.104	0.986	1.425	2.223	1.180	1.361	
Year Constructed													
1900 or Before.....	2,368	2,229	320	Q	562	224	649	730	Q	Q	Q	Q	27.33
1901 to 1920.....	3,665	3,402	429	358	1,028	437	1,324	482	310	Q	360	Q	25.21
1921 to 1945.....	8,594	7,785	1,158	613	2,863	969	2,790	1,149	747	Q	852	259	16.84
1946 to 1960.....	9,712	9,157	1,505	515	4,269	1,179	1,373	1,338	1,058	Q	1,004	496	15.20
1961 to 1970.....	11,469	10,950	1,243	514	6,394	2,537	883	1,856	1,210	254	1,893	665	14.12
1971 to 1973.....	4,307	4,210	188	299	2,944	1,377	Q	713	219	Q	1,088	261	23.00
1974 to 1979.....	8,230	7,909	414	532	5,873	2,367	Q	835	702	Q	1,179	547	18.25
1980 to 1983.....	5,205	5,033	Q	141	3,845	2,178	Q	345	Q	Q	976	263	27.29
1984 to 1986.....	4,678	4,341	224	Q	3,330	1,483	Q	394	Q	Q	483	338	23.82
Ownership and Occupancy													
Nongovernment Owned.....	46,041	43,332	4,268	2,712	26,008	10,657	4,872	5,167	3,377	974	5,422	2,174	8.56
Owner Occupied.....	28,962	27,217	2,621	1,591	16,013	6,951	3,537	4,026	1,817	557	3,769	1,655	9.09
Nonowner Occupied.....	17,080	16,115	1,647	1,122	9,995	3,706	1,335	1,142	1,561	417	1,653	519	14.78
Government Owned.....	12,187	11,684	1,382	567	5,101	2,094	3,126	2,674	1,883	Q	2,511	1,187	13.09
Workers													
Fewer than 5.....	13,129	10,563	1,921	297	3,558	894	927	927	763	Q	492	729	15.28
5 to 9.....	6,576	6,365	1,201	426	2,808	977	710	773	567	Q	278	373	17.82
10 to 19.....	7,895	7,552	980	535	3,941	1,179	749	799	541	Q	437	444	16.29
20 to 49.....	8,847	8,763	665	602	5,349	1,640	1,391	1,062	962	Q	905	404	13.59
50 to 99.....	6,510	6,510	571	394	4,079	1,635	1,046	1,182	930	Q	863	389	19.19
100 to 249.....	6,445	6,445	Q	478	4,304	1,582	1,258	1,305	717	Q	1,775	380	17.89
250 or More.....	8,828	8,818	Q	548	7,069	4,844	1,915	1,794	779	432	3,184	644	18.87
Weekly Operating Hours													
39 or Fewer.....	9,286	7,833	1,224	365	3,284	1,106	1,349	1,430	913	Q	1,047	741	17.74
40 to 48.....	15,167	14,525	1,436	942	8,800	3,472	2,002	1,828	1,229	364	1,690	709	13.86
49 to 60.....	10,805	10,398	1,318	739	5,390	2,064	1,238	1,196	813	221	936	576	13.12
61 to 84.....	9,760	9,496	734	457	5,935	2,694	1,206	1,110	956	Q	1,557	532	18.32
85 to 167.....	5,514	5,369	510	284	3,409	1,133	777	717	728	Q	365	284	18.86
168 (Open Continuously).....	7,696	7,397	428	493	4,292	2,282	1,425	1,561	621	370	2,339	520	18.43

See footnotes at end of table.

Table 51. Heating and Cooling Distribution Systems, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Heated or Cooled Buildings	Total Floorspace by Heating and Cooling Distribution Systems Used										RSE Row Factor
			Ducted Forced Air				Radiators or Baseboards		Fan-Coil Units				
			Heating Only	Cooling Only	Heating and Cooling	Variable Air Volume Used	Steam	Hot Water	Heating Only	Cooling Only	Heating and Cooling	Heating Panels	
RSE Column Factor:	0.423	0.438	1.160	1.527	0.598	0.920	1.104	0.986	1.425	2.223	1.180	1.361	
Energy Sources Used (Solely or in Combination)													
Electricity.....	57,036	54,893	5,650	3,279	31,095	12,737	7,993	7,842	5,259	1,296	7,934	3,361	7.51
Natural Gas.....	38,140	37,849	4,045	2,293	22,198	9,214	5,847	5,678	3,950	872	6,054	2,391	8.59
Fuel Oil.....	11,163	11,118	1,427	633	5,009	3,088	3,154	3,037	1,708	483	2,714	820	13.26
District Steam or													
Hot Water.....	4,645	4,644	304	483	2,374	1,366	2,008	1,530	618	Q	1,420	197	22.59
District Chilled Water.....	1,191	1,191	Q	Q	844	460	Q	359	Q	Q	659	Q	38.77
Propane.....	3,362	3,284	299	Q	1,570	482	290	481	293	Q	286	270	25.63
Minor Fuels	1,557	1,536	303	Q	331	230	400	Q	Q	Q	Q	Q	34.21
No Energy Sources Used.....	1,171	--	--	--	--	--	--	--	--	--	--	--	100.75
Energy End Uses													
Space Heating.....	54,510	54,392	5,650	3,033	31,095	12,645	7,997	7,842	5,260	1,129	7,934	3,361	7.58
Cooling.....	46,601	46,578	2,491	3,279	31,095	12,386	6,111	6,563	3,785	1,281	7,932	2,805	7.67
Water Heating.....	48,836	48,391	4,733	2,782	28,512	11,912	7,283	7,642	4,927	1,157	7,726	3,079	7.69
Cooking.....	17,227	17,155	1,250	831	10,717	5,554	3,381	3,898	2,110	614	4,560	1,073	12.32
Manufacturing.....	3,081	3,031	244	Q	1,919	715	484	413	354	Q	379	Q	25.24

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 52. Conservation Features as of December 31, 1986, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conservation Feature	Any HVAC Conservation Feature	Any Lighting Conservation Feature	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conservation Feature	Any HVAC Conservation Feature	Any Lighting Conservation Feature	
RSE Column Factor:	0.882	0.904	0.912	1.004	1.228	0.918	0.944	0.950	1.087	1.246	
All Buildings.....	4,154	3,631	3,484	2,155	1,442	58,229	54,567	52,029	41,974	33,112	3.51
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	419	362	352	217	109	4,897	4,617	4,447	3,567	2,460	15.57
5,500-7,000 HDD.....	930	833	797	545	348	16,250	15,546	15,025	12,810	9,719	6.99
4,000-5,499 HDD.....	865	768	736	484	295	13,904	12,973	12,069	10,482	8,010	11.22
Under 4,000 HDD.....	1,022	903	858	519	397	13,792	13,085	12,416	9,504	8,173	11.90
2,000 CDD or More and --											
Under 4,000 HDD.....	919	765	741	390	293	9,386	8,347	8,072	5,611	4,750	10.33
Percent Heated											
Not Heated.....	470	187	163	21	57	3,635	1,680	1,371	230	685	15.34
1 to 50.....	601	518	486	234	177	8,579	7,759	7,230	4,522	4,196	8.17
51 to 99.....	458	436	432	278	203	7,061	6,976	6,885	5,668	4,886	8.84
100.....	2,625	2,490	2,404	1,622	1,005	38,941	38,140	36,542	31,548	23,332	3.62
Percent Cooled											
Not Cooled.....	1,248	854	786	384	261	11,057	8,444	7,517	4,776	3,882	9.72
1 to 50.....	972	914	865	536	379	18,641	17,849	16,751	13,187	10,694	5.22
51 to 99.....	500	482	479	328	227	9,982	9,914	9,884	8,614	7,071	7.15
100.....	1,435	1,381	1,353	907	575	18,543	18,355	17,876	15,391	11,461	5.08
Percent Lit--Open Hours											
Not Lit.....	231	78	76	Q	Q	1,851	736	684	Q	Q	24.07
1 to 50.....	624	551	525	288	191	7,399	6,811	6,301	4,467	3,701	8.59
51 to 99.....	644	612	590	411	273	9,416	9,216	8,958	7,747	5,885	6.75
100.....	2,655	2,391	2,293	1,446	971	39,562	37,805	36,086	29,622	23,473	4.57
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	1,837	1,762	927	572	6,209	5,206	4,987	2,714	1,643	5.60
5,001 to 10,000.....	931	849	817	529	347	6,861	6,239	6,001	3,897	2,579	5.12
10,001 to 25,000.....	557	524	504	365	256	9,119	8,608	8,277	6,102	4,264	5.30
25,001 to 50,000.....	242	228	218	174	136	8,661	8,083	7,728	6,171	4,859	6.49
50,001 to 100,000.....	123	116	111	92	72	8,559	8,050	7,717	6,465	5,091	7.51
100,001 to 200,000.....	52	50	47	43	36	7,191	6,960	6,594	6,047	5,097	8.67
200,001 to 500,000.....	23	22	21	20	18	6,737	6,653	6,254	6,085	5,304	10.31
Over 500,000.....	6	6	5	5	5	4,893	4,769	4,470	4,494	4,275	16.12

See footnotes at end of table.

Table 52. Conservation Features as of December 31, 1986, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conservation Feature	Any HVAC Conservation Feature	Any Lighting Conservation Feature	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conservation Feature	Any HVAC Conservation Feature	Any Lighting Conservation Feature	
RSE Column Factor:	0.882	0.904	0.912	1.004	1.228	0.918	0.944	0.950	1.087	1.246	
Principal Building Activity											
Assembly.....	575	539	518	328	166	7,339	7,199	6,870	5,254	3,548	7.56
Education.....	241	233	218	203	133	7,321	7,249	6,901	6,660	5,335	7.40
Food Sales.....	102	94	90	53	37	712	690	669	480	408	15.21
Food Services.....	201	188	187	129	74	1,281	1,238	1,237	956	651	10.51
Health Care.....	52	51	49	43	21	2,107	2,105	2,068	2,045	1,677	16.70
Lodging.....	137	132	129	103	47	2,785	2,730	2,664	2,291	1,398	11.05
Mercantile and Service.....	1,287	1,137	1,089	598	471	12,805	12,118	11,583	8,246	7,013	6.48
Office.....	614	600	597	407	249	9,546	9,494	9,305	8,408	6,408	6.57
Public Order and Safety.....	55	51	48	42	26	680	667	652	573	419	17.91
Warehouse.....	549	361	330	149	134	8,996	7,362	6,690	4,809	4,235	8.86
Other.....	103	80	68	51	39	1,726	1,615	1,435	1,301	1,169	17.33
Vacant.....	238	166	160	50	45	2,931	2,100	1,957	950	851	11.27
Census Region											
Northeast.....	663	593	550	442	261	11,830	11,069	10,092	9,740	6,871	6.96
Midwest.....	1,096	952	930	546	332	16,034	15,302	14,920	11,728	9,141	6.33
South.....	1,570	1,382	1,341	726	493	19,427	17,972	17,377	12,590	10,386	6.23
West.....	825	705	663	442	356	10,937	10,225	9,640	7,917	6,714	9.71
Year Constructed											
1900 or Before.....	188	161	154	100	55	2,368	2,180	2,009	1,445	1,104	14.55
1901 to 1920.....	255	206	195	114	58	3,665	3,232	2,915	2,333	1,425	11.05
1921 to 1945.....	629	516	487	297	185	8,594	7,588	6,992	5,596	3,779	7.54
1946 to 1960.....	878	738	696	434	254	9,712	8,927	8,485	6,812	4,827	8.23
1961 to 1970.....	730	660	636	400	276	11,469	10,799	10,199	8,537	6,775	6.19
1971 to 1973.....	242	222	217	145	99	4,307	4,238	4,156	3,506	3,019	9.61
1974 to 1979.....	572	526	504	312	218	8,230	8,026	7,767	6,123	5,132	6.66
1980 to 1983.....	350	317	312	192	158	5,205	5,026	4,987	4,154	3,632	10.05
1984 to 1986.....	309	286	282	161	140	4,678	4,550	4,520	3,468	3,418	9.51
Ownership and Occupancy											
Nongovernment Owned.....	3,661	3,198	3,079	1,816	1,214	46,041	43,033	41,370	31,770	25,081	3.87
Owner Occupied.....	2,396	2,110	2,029	1,248	798	28,962	26,997	25,977	20,387	15,940	4.23
Nonowner Occupied.....	1,265	1,089	1,050	568	416	17,080	16,036	15,392	11,383	9,140	5.86
Government Owned.....	493	433	405	339	228	12,187	11,534	10,659	10,204	8,032	5.81

See footnotes at end of table.

Table 52. Conservation Features as of December 31, 1986, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conserva- tion Feature	Any HVAC Conserva- tion Feature	Any Lighting Conserva- tion Feature	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conserva- tion Feature	Any HVAC Conserva- tion Feature	Any Lighting Conserva- tion Feature	
RSE Column Factor:	0.882	0.904	0.912	1.004	1.228	0.918	0.944	0.950	1.087	1.246	
Workers											
Fewer than 5.....	2,033	1,601	1,517	743	475	13,129	10,571	9,642	5,165	4,045	6.09
5 to 9.....	842	782	757	464	310	6,576	6,075	5,889	4,006	2,869	5.70
10 to 19.....	587	566	548	369	249	7,895	7,506	7,294	5,223	3,756	6.83
20 to 49.....	434	426	412	348	225	8,847	8,696	8,247	7,250	5,114	5.64
50 to 99.....	152	151	147	131	98	6,510	6,485	6,270	5,815	4,666	8.61
100 to 249.....	73	73	71	67	57	6,445	6,407	6,220	5,822	5,273	8.96
250 or More.....	33	33	32	33	27	8,828	8,828	8,467	8,692	7,390	9.44
Weekly Operating Hours											
39 or Fewer.....	870	681	654	345	191	9,286	7,914	7,569	4,956	3,618	8.60
40 to 48.....	1,086	976	933	596	402	15,167	14,283	13,378	10,782	8,804	5.62
49 to 60.....	919	820	784	452	327	10,805	10,198	9,818	7,233	5,793	5.64
61 to 84.....	556	504	488	314	220	9,760	9,281	8,864	7,936	6,473	7.84
85 to 167.....	375	342	330	223	154	5,514	5,383	5,195	4,559	3,328	7.70
168 (Open Continuously).....	347	309	295	226	149	7,696	7,508	7,205	6,509	5,097	8.87
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	3,586	3,438	2,150	1,438	57,036	54,225	51,687	41,940	33,071	3.50
Natural Gas.....	2,278	2,133	2,053	1,344	928	38,140	37,057	35,515	29,727	23,659	4.24
Fuel Oil.....	542	508	480	355	190	11,163	10,869	10,283	9,714	7,331	7.83
District Steam or											
Hot Water.....	78	75	72	59	38	4,645	4,588	4,418	4,213	3,142	13.02
District Chilled Water.....	15	15	15	14	9	1,191	1,191	1,191	1,163	883	24.19
Propane.....	351	321	308	184	81	3,362	3,225	3,069	2,348	1,549	14.43
Minor Fuels.....	163	133	128	57	56	1,557	1,420	1,286	852	771	15.48
No Energy Sources Used.....	136	44	44	q	q	1,171	332	332	q	q	31.04

See footnotes at end of table.

Table 52. Conservation Features as of December 31, 1986, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conserva- tion Feature	Any HVAC Conserva- tion Feature	Any Lighting Conserva- tion Feature	All Buildings	All Buildings with Any Energy Conservation Feature	Any Building Shell Conserva- tion Feature	Any HVAC Conserva- tion Feature	Any Lighting Conserva- tion Feature	
		Conservation Feature	Conservation Feature	Conservation Feature	Conservation Feature		Conservation Feature	Conservation Feature	Conservation Feature	Conservation Feature		Conservation Feature
RSE Column Factor:	0.882	0.904	0.912	1.004	1.228	0.918	0.944	0.950	1.087	1.246	
Energy End Uses											
Space Heating.....	3,681	3,444	3,318	2,130	1,384	54,510	52,805	50,584	41,698	32,382	3.47
Cooling.....	2,882	2,758	2,678	1,763	1,175	46,601	45,575	44,126	36,871	29,071	3.59
Water Heating.....	2,896	2,777	2,688	1,811	1,186	48,836	47,710	45,931	38,616	30,082	3.50
Cooking.....	563	539	525	393	250	17,227	17,088	16,575	15,122	12,588	5.81
Manufacturing.....	132	119	113	54	48	3,081	2,975	2,737	2,314	1,996	11.11

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

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 53. Building Shell Conservation Features as of December 31, 1986, Number of Buildings (Thousand)

Building Characteristics	All Buildings	Buildings with Building Shell Conservation Features								RSE Row Factor
		Any Building Shell Conservation Features	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.699	0.719	0.780	0.905	1.014	1.117	1.027	0.804	3.016	
All Buildings.....	4,154	3,484	2,757	2,009	1,252	891	1,272	2,562	112	4.61
Building Shell Conservation Features										
Roof or Ceiling Insulation..	2,757	2,757	2,757	1,815	1,058	716	997	2,071	91	4.88
Wall Insulation.....	2,009	2,009	1,815	2,009	861	559	761	1,563	78	5.48
Storm or Multiple Glazing...	1,252	1,252	1,058	861	1,252	387	533	1,083	72	5.70
Tinted, Reflective or Shading Glass or Film.....	891	891	716	559	387	891	406	725	30	6.21
Exterior or Interior Shadings or Awnings.....	1,272	1,272	997	761	533	406	1,272	1,031	60	5.98
Weather Stripping or Caulking.....	2,562	2,562	2,071	1,563	1,083	725	1,031	2,562	94	4.90
Other Shell Features.....	112	112	91	78	72	30	60	94	112	14.34
HVAC Conservation Features										
Preventive Maintenance Program.....										
Waste Heat Recovery.....	149	145	116	92	70	58	68	128	10	14.47
EMCS.....	205	203	179	131	106	84	103	158	12	10.48
Time-Clock Thermostat.....	64	63	57	39	28	29	29	57	0	20.08
Economizer Cycle.....	17	17	15	11	10	9	6	14	0	32.02
Other HVAC Features.....	76	74	61	41	32	20	38	64	9	18.55
Lighting Conservation Features										
High-Efficiency Ballasts....	1,019	963	812	621	399	335	431	785	43	6.60
Delamping Program.....	331	321	270	188	133	126	150	276	22	8.66
Natural Lighting Control										
Sensors.....	156	148	118	94	67	59	61	117	5	14.53
Other Lighting Controls.....	421	401	335	240	167	156	195	330	17	8.35
Other Lighting Features.....	78	73	64	53	40	29	33	64	0	18.72

See footnotes at end of table.

Table 53. Building Shell Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	Buildings with Building Shell Conservation Features									RSE Row Factor
	All Buildings	Any Building Shell Conservation Features	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.699	0.719	0.780	0.905	1.014	1.117	1.027	0.804	3.016	
Mall and Frame Materials										
Masonry Over --										
Wood Frame.....	722	620	496	402	238	175	252	478	16	9.09
Masonry Frame.....	1,518	1,316	1,007	548	455	345	487	988	41	5.73
Steel Frame.....	303	280	237	172	114	101	126	217	7	10.13
Siding Over --										
Wood Frame.....	727	576	438	405	251	91	204	410	Q	10.93
Masonry Frame.....	91	76	62	59	23	17	22	45	Q	19.90
Metal Panels.....	499	371	328	312	97	76	93	258	Q	12.64
Concrete Panels.....	137	115	96	46	32	44	40	80	Q	15.70
Other.....	157	131	93	64	43	41	48	86	Q	15.70
Window Glass: Percent of Exterior Walls										
25 or Less.....	3,522	2,911	2,329	1,736	1,027	696	995	2,137	101	4.94
26 to 50.....	524	477	362	223	201	149	229	350	9	8.03
51 to 75.....	82	71	46	32	17	30	35	54	Q	16.62
Over 75.....	26	26	19	17	8	16	13	20	Q	23.25
Roof Materials										
Built-Up.....	1,761	1,535	1,155	715	490	461	611	1,147	44	5.04
Shingles (Not Wood).....	1,117	971	806	613	455	203	338	728	34	8.33
Metal Surfacing.....	853	623	522	480	152	119	182	417	21	10.14
Synthetic or Rubber.....	131	122	105	71	67	44	54	98	Q	12.58
Slate or Tile.....	114	95	65	39	39	28	41	74	Q	17.65
Wood Shingles, Shakes or Other Wooden Materials.....	114	88	71	64	33	28	33	60	Q	19.28
Other.....	64	50	33	26	17	9	14	38	Q	23.36
Roof Square Footage										
5,000 or Less.....	2,433	1,952	1,514	1,133	681	399	684	1,385	53	6.52
5,001 to 10,000.....	859	760	614	443	295	228	283	560	28	6.30
10,001 to 25,000.....	527	466	384	266	170	154	179	370	18	7.87
25,001 to 50,000.....	185	166	138	90	57	56	67	134	Q	10.55
50,001 to 100,000.....	99	92	70	51	28	33	41	73	Q	12.80
100,001 to 200,000.....	39	35	27	19	16	14	14	30	Q	14.88
Over 200,000.....	13	12	11	7	5	6	4	10	Q	20.78

See footnotes at end of table.

Table 53. Building Shell Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Buildings with Building Shell Conservation Features								RSE Row Factor
		Any Building Shell Conservation Features	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.699	0.719	0.780	0.905	1.014	1.117	1.027	0.804	3.016	
Floors										
One.....	2,688	2,173	1,744	1,279	599	554	755	1,559	64	6.76
Two.....	978	872	700	517	381	222	339	648	33	5.94
Three.....	324	297	219	151	187	71	115	234	12	10.61
Over Three.....	165	142	94	62	85	44	63	121	Q	11.90
Percent Heated										
Not Heated.....	470	163	105	71	22	25	24	90	Q	22.98
1 to 50.....	601	486	360	286	142	110	162	330	Q	9.30
51 to 99.....	458	432	348	233	158	136	174	330	16	9.91
100.....	2,625	2,404	1,943	1,419	930	621	912	1,812	82	4.70
Percent Cooled										
Not Cooled.....	1,248	786	606	430	233	69	146	518	29	12.79
1 to 50.....	972	865	633	467	328	211	334	632	23	6.72
51 to 99.....	500	479	391	261	203	173	221	386	22	7.83
100.....	1,435	1,353	1,126	850	489	437	571	1,025	38	5.94
Percent Lit--Open Hours										
Not Lit.....	231	76	59	32	Q	Q	Q	45	NC	27.10
1 to 50.....	624	525	384	280	215	108	182	390	22	9.67
51 to 99.....	644	590	463	349	238	178	259	468	24	9.18
100.....	2,655	2,293	1,851	1,348	784	593	821	1,658	65	5.58
Building Floorspace (Square Feet)										
1,001 to 5,000.....	2,220	1,762	1,369	1,040	568	372	603	1,239	51	6.92
5,001 to 10,000.....	931	817	655	477	324	207	325	604	28	7.18
10,001 to 25,000.....	557	504	404	271	193	157	180	390	23	7.32
25,001 to 50,000.....	242	218	179	115	91	74	85	178	Q	8.98
50,001 to 100,000.....	123	111	91	68	44	45	46	89	Q	10.03
100,001 to 200,000.....	52	47	37	23	19	20	22	41	Q	12.17
200,001 to 500,000.....	23	21	17	13	10	12	10	17	*	13.78
Over 500,000.....	6	5	5	2	3	3	2	4	Q	19.75

See footnotes at end of table.

Table 53. Building Shell Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	Buildings with Building Shell Conservation Features									RSE Row Factor
	All Buildings	Any Building Shell Conservation Features	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.699	0.719	0.780	0.905	1.014	1.117	1.027	0.804	3.016	
Principal Building Activity										
Assembly.....	575	518	415	308	212	141	140	395	23	8.96
Education.....	241	218	170	109	62	50	98	165	10	10.72
Food Sales.....	102	90	78	48	25	28	40	61	Q	20.03
Food Services.....	201	187	149	107	82	59	84	135	Q	11.27
Health Care.....	52	49	44	35	25	15	22	39	Q	20.43
Lodging.....	137	129	102	83	64	27	63	111	Q	13.84
Mercantile and Service.....	1,287	1,089	833	566	310	248	368	759	33	6.56
Office.....	614	597	500	399	310	218	290	484	21	8.25
Public Order and Safety.....	55	48	38	34	17	Q	20	37	Q	24.13
Warehouse.....	549	330	258	205	77	53	68	225	6	10.90
Other.....	103	68	56	45	28	10	20	47	Q	22.17
Vacant.....	238	160	114	71	41	31	59	104	Q	16.93
Census Region										
Northeast.....	663	550	421	299	288	87	178	423	27	9.45
Midwest.....	1,096	930	749	554	496	156	311	693	32	9.17
South.....	1,570	1,341	1,073	780	324	400	516	989	43	7.75
West.....	825	663	514	376	144	248	268	457	10	13.64
Year Constructed										
1900 or Before.....	188	154	104	65	96	19	54	119	Q	16.79
1901 to 1920.....	255	195	117	76	87	24	78	131	Q	14.02
1921 to 1945.....	629	487	331	205	167	90	169	323	17	9.33
1946 to 1960.....	878	696	509	331	193	161	263	496	18	9.79
1961 to 1970.....	730	636	523	359	183	153	226	455	17	8.39
1971 to 1973.....	243	217	179	141	65	58	80	160	Q	12.29
1974 to 1979.....	572	504	445	353	189	169	177	383	15	8.73
1980 to 1983.....	350	312	282	244	124	113	112	256	Q	9.67
1984 to 1986.....	309	282	266	235	147	104	114	241	19	10.23
Ownership and Occupancy										
Nongovernment Owned.....	3,661	3,079	2,451	1,800	1,115	804	1,112	2,255	92	4.83
Owner Occupied.....	2,396	2,029	1,645	1,239	805	505	699	1,501	69	5.68
Nonowner Occupied.....	1,265	1,050	806	561	309	299	414	754	23	6.91
Government Owned.....	493	405	306	209	138	87	160	307	20	8.49

See footnotes at end of table.

Table 53. Building Shell Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	Buildings with Building Shell Conservation Features									RSE Row Factor
	All Buildings	Any Building Shell Conservation Features	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.699	0.719	0.780	0.905	1.014	1.117	1.027	0.804	3.016	
Workers										
Fewer than 5.....	2,033	1,517	1,163	852	474	277	438	1,048	43	7.87
5 to 9.....	842	757	598	448	269	210	285	563	19	6.89
10 to 19.....	587	548	438	313	217	144	235	405	23	8.30
20 to 49.....	434	412	343	244	185	143	188	331	17	7.15
50 to 99.....	152	147	128	83	57	63	73	123	9	10.97
100 to 249.....	73	71	59	48	34	34	36	62	Q	12.89
250 or More.....	33	32	28	21	16	20	17	28	*	12.23
Weekly Operating Hours										
39 or Fewer.....	870	654	511	351	213	143	192	444	22	10.57
40 to 48.....	1,086	933	739	560	348	271	380	689	29	6.61
49 to 60.....	919	784	618	458	266	176	283	589	28	7.15
61 to 84.....	556	488	388	269	200	136	175	363	17	8.77
85 to 167.....	375	330	254	181	103	82	127	251	Q	10.84
168 (Open Continuously).....	347	295	247	190	122	83	115	225	7	11.16
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	3,438	2,721	1,989	1,241	881	1,263	2,531	112	4.58
Natural Gas.....	2,278	2,053	1,597	1,136	771	560	798	1,519	67	5.55
Fuel Oil.....	542	480	368	260	211	69	157	352	15	12.26
District Steam or Hot Water.....	78	72	58	34	21	14	23	53	Q	18.81
District Chilled Water.....	15	15	14	9	5	4	7	14	Q	36.41
Propane.....	351	308	250	205	122	51	101	228	Q	18.00
Minor Fuels.....	163	128	100	80	48	11	31	89	Q	18.39
No Energy Sources Used.....	136	44	35	18	Q	Q	Q	29	NC	30.40

See footnotes at end of table.

Table 53. Building Shell Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Buildings with Building Shell Conservation Features								RSE Row Factor
		Any Building Shell Conservation Features	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.699	0.719	0.780	0.905	1.014	1.117	1.027	0.804	3.016	
Energy End Uses										
Space Heating.....	3,681	3,318	2,647	1,940	1,230	862	1,244	2,468	110	4.53
Cooling.....	2,882	2,678	2,137	1,570	1,015	817	1,120	2,030	83	4.45
Water Heating.....	2,896	2,688	2,175	1,588	1,085	764	1,071	2,036	95	4.66
Cooking.....	563	525	419	305	217	171	222	398	13	7.08
Manufacturing.....	132	113	94	71	39	26	36	87	Q	18.20

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 54. Building Shell Conservation Features as of December 31, 1986, Floorspace (Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with Building Shell Conservation Features									RSE Row Factor
	Total Floorspace of All Buildings	Any Building Shell Conservation Feature	Roof or Ceiling Insulation	Mall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.696	0.715	0.782	0.944	1.058	1.243	0.960	0.784	2.755	
All Buildings.....	58,229	52,029	42,356	29,232	21,757	20,526	20,651	41,429	1,740	4.55
Building Shell Conservation Features										
Roof or Ceiling Insulation..	42,356	42,356	42,356	27,012	18,373	17,214	17,293	34,285	1,445	4.81
Mall Insulation.....	29,232	29,232	27,012	29,232	14,245	13,363	12,236	24,886	1,167	5.96
Storm or Multiple Glazing...	21,757	21,757	18,373	14,245	21,757	10,528	9,920	19,623	1,089	6.26
Tinted, Reflective or Shading Glass or Film.....	20,526	20,526	17,214	13,363	10,528	20,526	9,689	17,361	611	8.07
Exterior or Interior Shadings or Awnings.....	20,651	20,651	17,293	12,236	9,920	9,689	20,651	18,026	967	5.50
Weather Stripping or Caulking.....	41,429	41,429	34,285	24,886	19,623	17,361	18,026	41,429	1,545	4.82
Other Shell Features.....	1,740	1,740	1,445	1,167	1,089	611	967	1,545	1,740	14.35
HVAC Conservation Features										
Preventive Maintenance Program										
Maste Heat Recovery.....	6,492	6,469	5,621	4,551	3,474	3,767	2,918	5,541	322	13.67
EMCS.....	11,070	10,979	9,945	7,321	5,700	6,314	5,136	9,343	374	9.61
Time-Clock Thermostat.....	2,121	2,102	1,880	1,325	1,038	1,149	1,007	2,015	Q	16.79
Economizer Cycle.....	1,111	1,111	932	717	396	729	620	876	Q	20.63
Other HVAC Features.....	2,793	2,764	2,270	1,539	1,285	1,753	1,167	2,319	181	23.19
Lighting Conservation Features										
High-Efficiency Ballasts....	24,431	23,245	19,698	14,513	10,907	11,433	9,875	19,984	1,019	6.65
Delamping Program.....	12,005	11,804	10,300	6,658	5,390	6,276	5,122	9,989	519	8.99
Natural Lighting Control										
Sensors.....	5,364	5,251	4,269	3,432	2,648	3,066	2,019	4,470	226	16.50
Other Lighting Controls.....	12,603	12,234	10,683	7,870	5,876	6,780	5,831	10,246	485	8.80
Other Lighting Features.....	2,074	1,936	1,744	1,196	1,020	1,045	1,097	1,803	Q	16.39

See footnotes at end of table.

Table 54. Building Shell Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with Building Shell Conservation Features									RSE Row Factor
	Total Floorspace of All Buildings	Any Building Shell Conservation Feature	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.696	0.715	0.782	0.944	1.058	1.243	0.960	0.784	2.755	
Wall and Frame Materials										
Masonry Over --										
Wood Frame.....	7,578	6,839	5,618	4,198	2,687	2,271	2,386	5,043	149	11.58
Masonry Frame.....	22,567	20,759	16,139	8,887	8,363	7,499	8,166	16,596	860	6.33
Steel Frame.....	10,237	9,482	7,934	5,955	4,566	4,652	4,670	8,310	263	9.59
Siding Over --										
Wood Frame.....	4,535	3,416	2,567	2,411	1,645	697	1,297	2,655	Q	13.92
Masonry Frame.....	900	832	771	664	305	254	349	597	Q	20.87
Metal Panels.....	4,970	3,962	3,557	3,270	1,525	1,417	1,054	3,004	Q	10.89
Concrete Panels.....	4,624	4,160	3,555	2,331	1,327	2,287	1,476	3,304	Q	17.29
Other.....	2,818	2,580	2,216	1,517	1,340	1,448	1,253	1,920	Q	18.08
Window Glass: Percent of Exterior Walls										
25 or Less.....	43,239	37,973	30,980	22,289	15,280	13,559	13,598	29,943	1,453	5.69
26 to 50.....	10,825	10,016	8,111	4,815	4,532	4,402	4,941	8,116	211	7.81
51 to 75.....	2,836	2,722	2,220	1,283	1,146	1,720	1,348	2,123	Q	18.43
Over 75.....	1,329	1,318	1,046	845	799	845	764	1,247	Q	21.24
Roof Materials										
Built-Up.....	32,887	29,913	23,735	15,057	11,253	13,125	12,667	23,903	976	5.96
Shingles (Not Wood).....	8,805	8,078	6,784	4,894	4,200	2,184	2,994	6,190	214	7.42
Metal Surfacing.....	7,283	5,823	5,120	4,499	1,821	1,520	1,495	4,340	186	9.84
Synthetic or Rubber.....	4,574	4,390	3,813	2,683	2,818	2,280	2,326	3,977	Q	11.35
Slate or Tile.....	1,980	1,611	1,127	695	757	663	547	1,233	Q	18.32
Wood Shingles, Shakes or Other Wooden Materials.....										
Other.....	833	557	406	384	249	169	212	374	Q	19.98
Other.....	1,866	1,657	1,372	1,020	660	Q	411	1,411	Q	30.76
Roof Square Footage										
5,000 or Less.....	9,621	7,933	5,945	4,452	3,098	1,788	2,649	5,837	209	7.95
5,001 to 10,000.....	9,141	8,093	6,525	4,527	3,434	3,039	3,015	6,197	343	8.88
10,001 to 25,000.....	12,309	11,235	9,219	6,365	4,713	4,401	4,575	9,003	356	6.61
25,001 to 50,000.....	8,835	7,883	6,629	4,361	3,330	3,307	3,625	6,564	Q	9.03
50,001 to 100,000.....	8,678	8,129	6,790	4,728	3,006	3,546	3,895	6,340	304	10.59
100,001 to 200,000.....	5,395	4,986	3,890	2,618	2,288	2,369	1,766	4,243	Q	14.52
Over 200,000.....	4,250	3,770	3,358	2,181	1,888	2,075	1,125	3,246	Q	18.97

See footnotes at end of table.

Table 54. Building Shell Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with Building Shell Conservation Features									RSE Row Factor
	Total Floorspace of All Buildings	Any Building Shell Conservation Feature	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.696	0.715	0.782	0.944	1.058	1.243	0.960	0.784	2.755	
Floors										
One.....	23,776	20,376	16,845	11,853	6,393	6,797	7,528	15,745	843	7.90
Two.....	14,367	13,171	10,899	7,515	5,959	4,603	5,175	10,361	495	6.70
Three.....	7,921	7,420	5,953	3,721	3,488	2,707	2,626	5,907	167	10.19
Over Three.....	12,164	11,062	8,660	6,143	5,918	6,420	5,321	9,417	236	9.84
Percent Heated										
Not Heated.....	3,635	1,371	843	547	160	258	283	804	Q	23.74
1 to 50.....	8,579	7,230	5,425	3,690	2,675	2,492	2,499	5,340	Q	12.94
51 to 99.....	7,061	6,885	5,814	4,108	2,604	3,181	3,088	5,668	309	12.24
100.....	38,941	36,542	30,273	20,888	16,319	14,596	14,780	29,618	1,216	4.71
Percent Cooled										
Not Cooled.....	11,057	7,517	5,729	3,530	2,446	930	1,413	5,038	207	13.83
1 to 50.....	18,641	16,751	12,722	8,483	7,190	5,749	6,408	13,366	624	7.97
51 to 99.....	9,982	9,884	8,665	6,154	4,316	5,497	4,663	8,269	406	9.26
100.....	18,543	17,876	15,239	11,066	7,805	8,350	8,167	14,756	504	6.94
Percent Lit--Open Hours										
Not Lit.....	1,851	684	472	292	Q	Q	Q	398	NC	29.89
1 to 50.....	7,399	6,301	4,751	3,267	3,090	1,870	2,220	4,906	240	13.41
51 to 99.....	9,416	8,958	7,381	5,496	3,971	3,529	4,189	7,499	642	8.18
100.....	39,562	36,086	29,752	20,178	14,562	14,967	14,112	28,627	858	5.85
Building Floorspace (Square Feet)										
1,001 to 5,000.....	6,209	4,987	3,918	2,985	1,659	1,097	1,753	3,542	159	7.05
5,001 to 10,000.....	6,861	6,001	4,805	3,497	2,342	1,548	2,408	4,428	204	7.14
10,001 to 25,000.....	9,119	8,277	6,689	4,457	3,273	2,626	2,965	6,409	404	7.52
25,001 to 50,000.....	8,661	7,728	6,411	4,138	3,268	2,618	2,991	6,314	Q	8.76
50,001 to 100,000.....	8,559	7,717	6,364	4,798	3,125	3,138	3,266	6,241	Q	10.09
100,001 to 200,000.....	7,191	6,594	5,206	3,161	2,683	2,768	2,993	5,626	Q	11.60
200,001 to 500,000.....	6,737	6,254	5,014	3,878	3,049	3,700	2,822	5,123	131	13.56
Over 500,000.....	4,893	4,470	3,950	2,319	2,358	3,030	1,453	3,747	Q	19.48

See footnotes at end of table.

Table 54. Building Shell Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with Building Shell Conservation Features									RSE Row Factor
	Total Floorspace of All Buildings	Any Building Shell Conservation Feature	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.696	0.715	0.782	0.944	1.058	1.243	0.960	0.784	2.755	
Principal Building Activity										
Assembly.....	7,339	6,870	5,779	3,988	3,067	2,484	1,632	5,488	226	9.58
Education.....	7,321	6,901	5,531	3,151	2,258	2,102	2,677	5,618	299	10.45
Food Sales.....	712	669	598	381	257	349	424	479	Q	22.93
Food Services.....	1,281	1,237	906	599	529	382	564	939	Q	15.22
Health Care.....	2,107	2,068	1,849	1,418	1,492	1,306	1,096	1,818	Q	22.02
Lodging.....	2,785	2,664	2,169	1,847	1,369	1,007	1,436	2,407	Q	15.10
Mercantile and Service.....	12,805	11,583	9,452	6,452	4,174	4,151	4,141	8,873	393	10.18
Office.....	9,546	9,305	8,032	5,815	4,964	5,531	5,276	7,792	252	8.56
Public Order and Safety.....	680	652	393	397	282	Q	193	482	Q	28.32
Warehouse.....	8,996	6,690	5,167	3,611	2,108	1,811	1,841	5,068	260	12.99
Other.....	1,726	1,435	998	673	660	709	582	1,174	Q	26.39
Vacant.....	2,931	1,957	1,480	900	597	536	788	1,292	Q	15.90
Census Region										
Northeast.....	11,830	10,092	7,890	5,312	5,414	3,161	3,601	8,114	508	10.45
Midwest.....	16,034	14,920	12,174	8,387	8,589	5,328	5,431	12,237	585	7.79
South.....	19,427	17,377	14,355	10,498	5,403	7,313	7,771	14,150	526	8.12
West.....	10,937	9,640	7,937	5,036	2,351	4,724	3,849	6,929	121	11.41
Year Constructed										
1900 or Before.....	2,368	2,009	1,446	876	1,413	343	666	1,638	Q	19.77
1901 to 1920.....	3,665	2,915	1,988	1,126	1,173	575	1,144	1,940	Q	16.70
1921 to 1945.....	8,594	6,992	4,900	3,021	2,657	1,353	2,437	4,897	256	11.87
1946 to 1960.....	9,712	8,485	6,332	3,592	2,382	2,412	3,467	6,611	295	11.06
1961 to 1970.....	11,469	10,199	8,487	5,313	2,997	3,832	3,829	8,077	354	7.99
1971 to 1973.....	4,307	4,156	3,696	2,513	1,578	2,238	1,502	3,341	Q	13.47
1974 to 1979.....	8,230	7,767	6,646	5,198	3,544	3,882	3,063	6,338	247	9.45
1980 to 1983.....	5,205	4,987	4,564	3,954	2,998	3,351	2,402	4,595	Q	15.43
1984 to 1986.....	4,678	4,520	4,298	3,640	3,015	2,540	2,141	3,991	325	12.52
Ownership and Occupancy										
Nongovernment Owned.....	46,041	41,370	34,029	24,003	17,776	16,933	16,759	33,128	1,325	5.20
Owner Occupied.....	28,962	25,977	21,987	15,641	11,797	10,034	10,118	20,720	930	5.37
Nonowner Occupied.....	17,080	15,392	12,042	8,362	5,980	6,899	6,641	12,409	394	8.01
Government Owned.....	12,187	10,659	8,328	5,230	3,981	3,592	3,892	8,301	416	8.63

See footnotes at end of table.

Table 54. Building Shell Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with Building Shell Conservation Features									RSE Row Factor
	Total Floorspace of All Buildings	Any Building Shell Conservation Feature	Roof or Ceiling Insulation	Wall Insulation	Storm or Multiple Glazing	Tinted, Reflective or Shading Glass or Film	Exterior or Interior Shadings or Awnings	Weather Stripping or Caulking	Other Building Shell Conservation Features	
RSE Column Factor:	0.696	0.715	0.782	0.944	1.058	1.243	0.960	0.784	2.755	
Workers										
Fewer than 5.....	13,129	9,642	7,348	4,981	3,527	2,208	2,798	6,766	240	7.85
5 to 9.....	6,576	5,889	4,668	3,386	2,038	1,863	1,828	4,578	266	9.12
10 to 19.....	7,895	7,294	5,822	4,018	2,925	2,017	2,769	5,582	344	10.82
20 to 49.....	8,847	8,247	6,592	4,546	3,357	2,897	3,348	6,755	253	8.11
50 to 99.....	6,510	6,270	5,442	3,250	2,436	2,548	2,760	5,139	296	10.87
100 to 249.....	6,445	6,220	5,219	3,636	3,006	3,072	2,953	5,344	Q	11.53
250 or More.....	8,828	8,467	7,264	5,416	4,469	5,921	4,195	7,266	173	11.23
Weekly Operating Hours										
39 or Fewer.....	9,286	7,569	5,983	3,801	2,635	2,274	2,227	5,672	271	11.12
40 to 48.....	15,167	13,378	11,257	7,565	5,643	5,317	6,032	10,512	524	7.31
49 to 60.....	10,805	9,818	7,925	5,490	4,083	3,363	3,782	7,850	290	8.09
61 to 84.....	9,760	8,864	7,177	5,226	4,108	4,313	3,423	7,401	332	11.29
85 to 167.....	5,514	5,195	4,480	2,813	1,631	1,917	2,068	3,845	Q	10.34
168 (Open Continuously).....	7,696	7,205	5,535	4,339	3,657	3,342	3,119	6,149	197	13.38
Energy Sources Used (Solely or in Combination)										
Electricity.....	57,036	51,687	42,122	29,077	21,677	20,415	20,539	41,229	1,740	4.57
Natural Gas.....	38,140	35,515	29,101	19,639	15,342	14,512	14,352	28,650	1,141	5.12
Fuel Oil.....	11,163	10,283	7,924	5,417	5,174	3,961	4,405	8,395	264	9.94
District Steam or Hot Water.....	4,645	4,418	3,407	1,844	1,707	1,662	1,771	3,421	Q	15.04
District Chilled Water.....	1,191	1,191	1,052	624	398	643	558	1,020	Q	27.86
Propane.....	3,362	3,069	2,509	1,888	1,457	973	1,150	2,401	Q	17.14
Minor Fuels.....	1,557	1,286	1,043	802	650	330	308	937	Q	21.35
No Energy Sources Used.....	1,171	332	229	149	Q	Q	Q	192	NC	34.94
Energy End Uses										
Space Heating.....	54,510	50,584	41,435	28,662	21,582	20,235	20,341	40,578	1,731	4.58
Cooling.....	46,601	44,126	36,332	25,470	19,153	19,545	19,173	36,076	1,533	4.90
Water Heating.....	48,836	45,931	37,770	26,079	20,182	19,013	19,014	37,172	1,506	4.60
Cooking.....	17,227	16,575	13,860	9,865	7,936	8,391	7,585	14,341	387	7.71
Manufacturing.....	3,081	2,737	2,166	1,591	1,379	1,274	1,145	2,121	Q	14.46

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 55. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Number of Buildings (Thousand)

Building Characteristics	Buildings with HVAC Conservation Features								RSE Row Factor
	All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.402	0.449	0.454	1.327	1.036	1.787	2.729	1.819	
All Buildings.....	4,154	2,155	2,076	149	205	64	17	76	8.07
HVAC Conservation Features									
Preventive Maintenance Program.....	2,076	2,076	2,076	117	182	57	16	53	8.00
Waste Heat Recovery.....	149	149	117	149	23	8	2	10	19.07
EMCS.....	205	205	182	23	205	8	4	11	15.07
Time-Clock Thermostat.....	64	64	57	8	8	64	NC	NC	26.55
Economizer Cycle.....	17	17	16	2	4	NC	17	NC	38.38
Other HVAC Features.....	76	76	53	10	11	NC	NC	76	24.43
Lighting Conservation Features									
High-Efficiency Ballasts....	1,019	763	742	83	101	30	6	31	11.28
Delamping Program.....	331	280	272	31	68	17	7	15	13.85
Natural Lighting Control Sensors.....	156	120	116	14	23	7	Q	5	24.41
Other Lighting Controls.....	421	344	333	37	66	12	5	17	14.54
Other Lighting Features.....	78	57	55	3	16	Q	Q	Q	26.02
Occupant Control of:									
Heating Only.....	646	288	278	Q	Q	Q	NC	Q	28.82
Cooling Only.....	84	47	47	Q	4	Q	Q	Q	32.29
Heating and Cooling.....	2,009	1,156	1,115	68	83	32	6	41	10.94
Reduced Use--Off-Hours									
Heating Only.....	759	360	346	13	17	7	Q	14	22.47
Cooling Only.....	106	54	52	Q	Q	Q	Q	Q	28.37
Heating and Cooling.....	2,331	1,419	1,366	107	156	54	13	49	9.02
Climate Zone: 45 Year Average									
Under 2,000 CDD and --									
Over 7,000 HDD.....	419	217	211	27	16	Q	Q	Q	30.47
5,500-7,000 HDD.....	930	545	523	43	63	14	4	18	14.50
4,000-5,499 HDD.....	865	484	465	30	41	12	Q	19	20.73
Under 4,000 HDD.....	1,022	519	495	32	49	21	6	19	20.30
2,000 CDD or More and --									
Under 4,000 HDD.....	919	390	382	17	37	13	Q	11	23.64

See footnotes at end of table.

Table 55. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Number of Buildings (continued) (Thousand)

Building Characteristics	All Buildings	Buildings with HVAC Conservation Features							RSE Row Factor
		Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.402	0.449	0.454	1.327	1.036	1.787	2.729	1.819	
Percent Heated									
Not Heated.....	470	21	20	Q	Q	Q	Q	Q	49.85
1 to 50.....	601	234	225	10	15	Q	Q	Q	21.40
51 to 99.....	458	278	260	35	20	10	Q	15	17.63
100.....	2,625	1,622	1,571	102	170	52	13	54	8.56
Percent Cooled									
Not Cooled.....	1,248	384	369	15	13	Q	NC	14	23.16
1 to 50.....	972	536	510	33	45	16	Q	24	13.23
51 to 99.....	500	328	311	40	30	13	5	11	15.63
100.....	1,435	907	885	61	117	31	9	28	11.10
Percent Lit--Open Hours									
Not Lit.....	231	Q	Q	Q	Q	NC	Q	NC	57.90
1 to 50.....	624	288	279	13	23	Q	Q	Q	19.08
51 to 99.....	644	411	391	35	41	16	Q	19	15.45
100.....	2,655	1,446	1,396	101	141	44	15	47	10.08
Building Floorspace (Square Feet)									
1,001 to 5,000.....	2,220	927	884	51	61	Q	Q	34	13.80
5,001 to 10,000.....	931	529	515	35	35	14	Q	Q	16.43
10,001 to 25,000.....	557	365	351	22	31	14	Q	20	12.66
25,001 to 50,000.....	242	174	169	12	33	9	Q	3	14.48
50,001 to 100,000.....	123	92	89	16	21	5	Q	Q	15.49
100,001 to 200,000.....	52	43	42	7	13	4	Q	Q	16.78
200,001 to 500,000.....	23	20	20	5	9	1	1	2	17.64
Over 500,000.....	6	5	5	2	3	Q	*	1	22.45

See footnotes at end of table.

Table 55. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Number of Buildings (continued) (Thousand)

Building Characteristics	Buildings with HVAC Conservation Features								RSE Row Factor
	All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.402	0.449	0.454	1.327	1.036	1.787	2.729	1.819	
Principal Building Activity									
Assembly.....	575	328	318	21	18	7	Q	Q	16.71
Education.....	241	203	196	16	35	15	Q	6	18.82
Food Sales.....	102	53	47	Q	Q	Q	NC	Q	35.67
Food Services.....	201	129	126	Q	16	Q	Q	Q	25.62
Health Care.....	52	43	41	7	5	Q	Q	1	27.20
Lodging.....	137	103	101	Q	11	Q	Q	Q	27.81
Mercantile and Service.....	1,287	598	568	43	38	15	Q	27	14.74
Office.....	614	407	396	20	54	18	4	15	13.78
Public Order and Safety.....	55	42	42	Q	Q	Q	NC	Q	40.69
Warehouse.....	549	149	144	5	8	4	Q	Q	21.88
Other.....	103	51	49	7	3	Q	Q	Q	32.30
Vacant.....	238	50	48	Q	Q	NC	Q	Q	33.34
Census Region									
Northeast.....	663	442	427	32	43	9	Q	16	15.36
Midwest.....	1,096	546	521	49	56	14	3	26	14.35
South.....	1,570	726	703	39	64	21	6	20	15.29
West.....	825	442	425	29	42	21	7	14	18.52
Year Constructed									
1900 or Before.....	188	100	95	Q	Q	Q	Q	Q	34.82
1901 to 1920.....	255	114	113	Q	7	Q	NC	Q	29.92
1921 to 1945.....	629	297	286	23	22	8	Q	9	18.26
1946 to 1960.....	878	434	423	25	33	12	Q	17	17.77
1961 to 1970.....	730	400	385	20	46	11	Q	17	14.10
1971 to 1973.....	243	145	139	14	16	6	Q	Q	22.66
1974 to 1979.....	572	312	298	18	38	10	Q	10	16.83
1980 to 1983.....	350	192	182	13	21	6	Q	14	19.00
1984 to 1986.....	309	161	154	25	19	Q	Q	6	21.97
Ownership and Occupancy									
Nongovernment Owned.....	3,661	1,816	1,748	115	148	41	13	68	8.77
Owner Occupied.....	2,396	1,248	1,189	87	112	28	9	49	10.87
Nonowner Occupied.....	1,265	568	559	29	37	13	4	18	13.34
Government Owned.....	493	339	328	33	57	24	Q	9	14.74

See footnotes at end of table.

Table 55. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Number of Buildings (continued) (Thousand)

Building Characteristics	Buildings with HVAC Conservation Features								RSE Row Factor
	All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.402	0.449	0.454	1.327	1.036	1.787	2.729	1.819	
Workers									
Fewer than 5.....	2,033	743	713	40	37	Q	Q	22	17.32
5 to 9.....	842	464	446	26	29	14	Q	20	15.72
10 to 19.....	587	369	353	20	30	10	Q	Q	16.59
20 to 49.....	434	348	339	30	48	18	Q	11	13.68
50 to 99.....	152	131	127	13	28	8	Q	4	18.00
100 to 249.....	73	67	66	10	18	4	Q	3	17.35
250 or More.....	33	33	32	8	16	1	2	3	15.86
Weekly Operating Hours									
39 or Fewer.....	870	345	335	15	17	10	Q	11	19.67
40 to 48.....	1,086	596	574	29	66	31	Q	23	12.70
49 to 60.....	919	452	436	32	28	9	2	15	13.74
61 to 84.....	556	314	300	25	40	8	Q	13	16.26
85 to 167.....	375	223	212	29	28	Q	Q	Q	20.05
168 (Open Continuously).....	347	226	219	19	27	2	Q	7	17.94
Energy Sources Used (Solely or in Combination)									
Electricity.....	4,013	2,150	2,071	149	204	64	17	76	8.08
Natural Gas.....	2,278	1,344	1,291	88	150	47	11	44	9.84
Fuel Oil.....	542	355	350	28	30	4	2	9	17.02
District Steam or Hot Water.....	78	59	58	5	13	4	Q	2	25.17
District Chilled Water.....	15	14	14	Q	6	Q	Q	Q	48.08
Propane.....	351	184	174	21	4	Q	Q	Q	31.61
Minor Fuels.....	163	57	56	9	Q	Q	Q	Q	38.39
No Energy Sources Used.....	136	Q	Q	NC	Q	NC	NC	NC	90.17

See footnotes at end of table.

Table 55. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Number of Buildings (continued) (Thousand)

Building Characteristics	Buildings with HVAC Conservation Features								RSE Row Factor
	All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.402	0.449	0.454	1.327	1.036	1.787	2.729	1.819	
Energy End Uses									
Space Heating.....	3,681	2,130	2,053	147	202	64	17	76	8.09
Cooling.....	2,882	1,763	1,699	134	188	60	17	63	8.29
Water Heating.....	2,896	1,811	1,752	126	191	56	17	64	7.85
Cooking.....	563	393	378	40	58	9	7	15	13.20
Manufacturing.....	132	54	49	6	4	Q	Q	Q	26.62

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.
 Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 56. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Floorspace (Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with HVAC Conservation Features								RSE Row Factor
	Total Floorspace of All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.424	0.493	0.504	1.314	1.007	1.608	2.233	1.992	
All Buildings.....	58,229	41,974	40,914	6,492	11,070	2,121	1,111	2,793	7.83
HVAC Conservation Features									
Preventive Maintenance Program.....	40,914	40,914	40,914	6,035	10,710	1,962	1,080	2,574	8.29
Waste Heat Recovery.....	6,492	6,492	6,035	6,492	3,414	379	357	857	16.58
EMCS.....	11,070	11,070	10,710	3,414	11,070	626	383	1,214	13.27
Time-Clock Thermostat.....	2,121	2,121	1,962	379	626	2,121	NC	NC	20.14
Economizer Cycle.....	1,111	1,111	1,080	357	383	NC	1,111	NC	24.13
Other HVAC Features.....	2,793	2,793	2,574	857	1,214	NC	NC	2,793	30.78
Lighting Conservation Features									
High-Efficiency Ballasts....	24,431	21,425	21,020	4,619	7,397	1,274	523	1,811	10.70
Delamping Program.....	12,005	11,197	10,982	2,916	5,109	677	464	1,399	12.85
Natural Lighting Control Sensors.....	5,364	4,836	4,787	1,593	2,385	372	Q	686	24.78
Other Lighting Controls.....	12,603	11,381	11,152	3,175	4,852	615	561	976	13.61
Other Lighting Features.....	2,074	1,839	1,817	476	967	Q	Q	Q	23.03
Occupant Control of:									
Heating Only.....	5,974	3,372	3,319	Q	Q	Q	NC	Q	25.12
Cooling Only.....	1,845	1,509	1,475	Q	364	Q	Q	Q	29.13
Heating and Cooling.....	25,297	18,272	17,744	2,668	3,571	861	447	1,569	12.40
Reduced Use--Off-Hours									
Heating Only.....	7,649	4,874	4,746	530	661	126	Q	184	24.84
Cooling Only.....	1,463	947	913	Q	Q	Q	Q	Q	33.03
Heating and Cooling.....	36,652	29,059	28,280	4,834	8,535	1,815	995	2,212	8.23
Climate Zone: 45 Year Average									
Under 2,000 CDD and --									
Over 7,000 HDD.....	4,897	3,567	3,419	634	897	Q	Q	Q	21.04
5,500-7,000 HDD.....	16,250	12,810	12,457	2,486	4,205	877	220	1,028	15.15
4,000-5,499 HDD.....	13,904	10,482	10,247	1,697	2,352	327	Q	416	16.12
Under 4,000 HDD.....	13,792	9,504	9,241	1,183	2,276	431	541	781	19.18
2,000 CDD or More and --									
Under 4,000 HDD.....	9,386	5,611	5,550	492	1,340	350	Q	312	19.24

See footnotes at end of table.

Table 56. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Floorspace (continued) (Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with HVAC Conservation Features								RSE Row Factor
	Total Floorspace of All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.424	0.493	0.504	1.314	1.007	1.608	2.233	1.992	
Percent Heated									
Not Heated.....	3,635	230	227	Q	Q	Q	Q	Q	49.74
1 to 50.....	8,579	4,522	4,441	483	598	Q	Q	Q	22.73
51 to 99.....	7,061	5,668	5,517	1,366	1,734	294	Q	Q	22.48
100.....	38,941	31,548	30,724	4,640	8,703	1,600	899	1,707	8.01
Percent Cooled									
Not Cooled.....	11,057	4,776	4,655	Q	522	Q	NC	152	27.73
1 to 50.....	18,641	13,187	12,731	1,852	2,408	765	Q	940	12.89
51 to 99.....	9,982	8,614	8,406	2,178	3,370	423	422	985	16.14
100.....	18,543	15,391	15,117	2,023	4,770	832	552	716	9.74
Percent Lit--Open Hours									
Not Lit.....	1,851	Q	Q	Q	Q	NC	Q	NC	64.69
1 to 50.....	7,399	4,467	4,357	698	766	Q	Q	Q	27.63
51 to 99.....	9,416	7,747	7,583	1,298	2,153	439	Q	343	12.69
100.....	39,562	29,622	28,835	4,570	8,137	1,481	878	2,198	9.65
Building Floorspace (Square Feet)									
1,001 to 5,000.....	6,209	2,714	2,590	161	180	Q	Q	89	14.62
5,001 to 10,000.....	6,861	3,897	3,797	255	259	104	Q	Q	16.32
10,001 to 25,000.....	9,119	6,102	5,824	373	498	246	Q	350	12.85
25,001 to 50,000.....	8,661	6,171	6,014	418	1,177	333	Q	121	14.36
50,001 to 100,000.....	8,559	6,465	6,234	1,068	1,541	362	Q	Q	15.85
100,001 to 200,000.....	7,191	6,047	5,968	863	1,810	540	Q	Q	16.49
200,001 to 500,000.....	6,737	6,085	6,006	1,716	2,877	344	357	645	17.50
Over 500,000.....	4,893	4,494	4,482	1,638	2,729	Q	229	988	22.76

See footnotes at end of table.

**Table 56. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)**

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of Buildings with HVAC Conservation Features							RSE Row Factor
		Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.424	0.493	0.504	1.314	1.007	1.608	2.233	1.992	
Principal Building Activity									
Assembly.....	7,339	5,254	5,168	654	748	199	Q	Q	19.66
Education.....	7,321	6,660	6,527	695	2,406	609	Q	197	15.51
Food Sales.....	712	480	445	Q	Q	Q	NC	Q	37.83
Food Services.....	1,281	956	926	Q	141	Q	Q	Q	32.88
Health Care.....	2,107	2,045	1,996	786	1,212	Q	Q	Q	26.73
Lodging.....	2,785	2,291	2,238	Q	524	Q	Q	Q	28.78
Mercantile and Service.....	12,805	8,246	7,876	1,203	1,903	358	Q	Q	19.98
Office.....	9,546	8,408	8,309	1,572	3,001	368	510	843	13.59
Public Order and Safety.....	680	573	573	Q	Q	Q	NC	Q	45.81
Warehouse.....	8,996	4,809	4,640	414	428	314	Q	Q	22.32
Other.....	1,726	1,301	1,296	329	347	Q	Q	Q	33.53
Vacant.....	2,931	950	919	Q	Q	NC	Q	Q	29.09
Census Region									
Northeast.....	11,830	9,740	9,566	1,638	2,652	349	Q	Q	16.78
Midwest.....	16,034	11,728	11,337	2,139	3,394	609	182	861	13.33
South.....	19,427	12,590	12,321	1,574	3,390	707	433	704	13.93
West.....	10,937	7,917	7,689	1,141	1,634	456	366	561	15.96
Year Constructed									
1900 or Before.....	2,368	1,445	1,415	Q	Q	Q	Q	Q	36.33
1901 to 1920.....	3,665	2,333	2,324	Q	392	Q	NC	Q	27.83
1921 to 1945.....	8,594	5,596	5,460	858	1,053	Q	Q	125	19.83
1946 to 1960.....	9,712	6,812	6,666	643	976	314	Q	389	17.45
1961 to 1970.....	11,469	8,537	8,324	1,074	2,413	352	Q	704	14.67
1971 to 1973.....	4,307	3,506	3,370	558	1,229	172	Q	Q	21.81
1974 to 1979.....	8,230	6,123	5,865	1,256	2,072	332	Q	279	15.07
1980 to 1983.....	5,205	4,154	4,092	839	1,444	250	Q	Q	25.06
1984 to 1986.....	4,678	3,468	3,397	869	1,252	Q	Q	312	19.68
Ownership and Occupancy									
Nongovernment Owned.....	46,041	31,770	30,909	4,764	7,656	1,362	778	2,400	8.88
Owner Occupied.....	28,962	20,387	19,714	3,294	5,156	871	481	1,353	9.37
Nonowner Occupied.....	17,080	11,383	11,195	1,470	2,501	491	296	1,047	14.93
Government Owned.....	12,187	10,204	10,005	1,728	3,414	758	Q	393	12.60

See footnotes at end of table.

Table 56. Heating, Ventilation, and Air-Conditioning (HVAC) Conservation Features as of December 31, 1986, Floorspace (continued) (Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with HVAC Conservation Features								RSE Row Factor
	Total Floorspace of All Buildings	Any HVAC Conservation Features	Preventive Maintenance Program	Waste Heat Recovery Equipment	Energy Management And Control System (EMCS)	Time-Clock Thermostat	Economizer Cycle	Other HVAC Conservation Features	
RSE Column Factor:	0.424	0.493	0.504	1.314	1.007	1.608	2.233	1.992	
Workers									
Fewer than 5.....	13,129	5,165	5,024	253	406	Q	Q	120	18.33
5 to 9.....	6,576	4,006	3,866	267	386	Q	Q	218	21.23
10 to 19.....	7,895	5,223	5,002	414	629	180	Q	Q	19.92
20 to 49.....	8,847	7,250	7,087	712	1,007	461	Q	304	14.59
50 to 99.....	6,510	5,815	5,641	751	1,393	436	Q	189	16.71
100 to 249.....	6,445	5,822	5,683	1,030	2,194	408	Q	449	16.16
250 or More.....	8,828	8,692	8,611	3,064	5,055	356	631	1,231	15.44
Weekly Operating Hours									
39 or Fewer.....	9,286	4,956	4,861	477	952	267	Q	334	20.25
40 to 48.....	15,167	10,782	10,544	1,232	2,631	663	Q	628	14.82
49 to 60.....	10,805	7,233	7,055	928	1,405	283	260	306	12.41
61 to 84.....	9,760	7,936	7,667	1,326	2,512	461	Q	851	18.42
85 to 167.....	5,514	4,559	4,416	1,036	1,287	Q	Q	Q	18.32
168 (Open Continuously).....	7,696	6,509	6,371	1,493	2,284	189	Q	512	19.19
Energy Sources Used (Solely or in Combination)									
Electricity.....	57,036	41,940	40,880	6,492	11,058	2,121	1,111	2,793	7.83
Natural Gas.....	38,140	29,727	28,869	4,806	8,338	1,725	799	2,131	8.72
Fuel Oil.....	11,163	9,714	9,642	2,582	3,232	249	424	1,105	15.66
District Steam or									
Hot Water.....	4,645	4,213	4,125	973	1,948	241	Q	Q	21.40
District Chilled Water.....	1,191	1,163	1,154	166	637	Q	Q	Q	31.13
Propane.....	3,362	2,348	2,195	521	261	Q	Q	Q	26.45
Minor Fuels.....	1,557	852	822	199	Q	Q	Q	Q	34.21
No Energy Sources Used.....	1,171	Q	Q	NC	Q	NC	NC	NC	95.98
Energy End Uses									
Space Heating.....	54,510	41,698	40,642	6,489	11,015	2,109	1,090	2,788	7.80
Cooling.....	46,601	36,871	35,933	6,054	10,476	2,025	1,111	2,623	8.07
Water Heating.....	48,836	38,616	37,673	6,156	10,656	2,043	1,076	2,733	7.87
Cooking.....	17,227	15,122	14,819	3,470	6,091	774	632	1,551	12.48
Manufacturing.....	3,081	2,314	2,225	526	591	Q	Q	Q	22.25

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

CONSERVATION FEATURES

Table 57. Lighting Conservation Features as of December 31, 1986, Number of Buildings (Thousand)

Building Characteristics	All Buildings	Buildings With Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.488	0.671	0.771	1.081	1.645	1.021	2.184	
All Buildings.....	4,154	1,442	1,019	331	156	421	78	6.71
Lighting Conservation Features								
High-Efficiency Ballasts....	1,019	1,019	1,019	174	75	194	38	8.55
Delamping Program.....	331	331	174	331	28	95	18	10.41
Natural Lighting Control Sensors.....	156	156	75	28	156	58	5	16.71
Other Lighting Controls.....	421	421	194	95	58	421	15	9.61
Other Lighting Features.....	78	78	38	18	5	15	78	21.32
Lighting Equipment Types (Solely or in Combination)								
Standard Fluorescent.....	2,558	737	479	169	73	201	41	8.23
Energy Efficient Fluorescent.....	1,064	701	558	177	76	209	31	8.28
Standard Incandescent.....	1,636	470	301	96	60	162	32	9.31
Energy Efficient Incandescent.....	399	240	172	64	34	96	12	13.14
High-Intensity Discharge....	251	162	118	42	28	54	11	13.53
Other.....	54	28	15	7	Q	12	Q	34.19
Percent Lit--Open Hours								
Not Lit.....	231	Q	Q	Q	Q	Q	Q	63.84
1 to 50.....	624	191	136	32	15	50	16	13.78
51 to 99.....	644	273	196	80	19	87	16	13.52
100.....	2,655	971	683	218	120	282	44	7.95
Percent Lit--Off Hours								
Not Lit.....	2,108	518	375	113	52	98	27	10.09
1 to 50.....	1,853	834	574	202	87	291	49	7.76
51 to 99.....	63	34	29	9	6	10	Q	31.89
100.....	130	56	41	8	11	21	Q	25.43
Window Glass: Percent of Exterior Walls								
25 or Less.....	3,522	1,156	822	257	121	319	64	7.36
26 to 50.....	524	230	156	56	26	81	12	10.64
51 to 75.....	82	39	28	14	Q	11	Q	22.03
Over 75.....	26	17	13	4	Q	9	Q	34.57

See footnotes at end of table.

Table 57. Lighting Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Buildings With Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.488	0.671	0.771	1.081	1.645	1.021	2.184	
Building Floorspace (Square Feet)								
1,001 to 5,000.....	2,220	572	396	113	64	142	31	11.22
5,001 to 10,000.....	931	347	252	64	35	101	Q	11.74
10,001 to 25,000.....	557	256	174	64	20	88	19	10.67
25,001 to 50,000.....	242	136	99	42	15	40	Q	11.23
50,001 to 100,000.....	123	72	51	24	11	24	4	13.53
100,001 to 200,000.....	52	36	29	15	7	16	3	13.39
200,001 to 500,000.....	23	18	15	6	3	8	1	16.18
Over 500,000.....	6	5	3	3	2	2	*	20.73
Principal Building Activity								
Assembly.....	575	166	119	36	12	45	12	14.32
Education.....	241	133	97	45	10	39	5	15.10
Food Sales.....	102	37	31	Q	Q	Q	NC	26.44
Food Services.....	201	74	45	Q	Q	21	Q	19.79
Health Care.....	52	21	16	4	2	8	Q	24.96
Lodging.....	137	47	28	12	12	20	Q	21.77
Mercantile and Service.....	1,287	471	336	84	41	145	23	11.24
Office.....	614	249	165	76	27	86	14	11.96
Public Order and Safety.....	55	26	18	Q	Q	Q	Q	35.63
Warehouse.....	549	134	100	27	19	20	7	15.75
Other.....	103	39	32	6	Q	7	Q	30.86
Vacant.....	238	45	31	Q	Q	11	Q	25.02
Census Region								
Northeast.....	663	261	180	60	27	86	15	13.69
Midwest.....	1,096	332	229	83	32	99	18	12.43
South.....	1,570	493	358	99	62	122	29	11.36
West.....	825	356	253	89	35	113	16	15.37
Year Constructed								
1900 or Before.....	188	55	42	8	Q	11	Q	28.91
1901 to 1920.....	255	58	31	11	Q	21	Q	23.32
1921 to 1945.....	629	185	133	45	14	51	12	15.07
1946 to 1960.....	878	254	188	68	31	60	6	14.60
1961 to 1970.....	730	276	187	86	26	84	15	11.58
1971 to 1973.....	243	99	70	31	12	32	4	17.83
1974 to 1979.....	572	218	147	40	30	70	7	13.87
1980 to 1983.....	350	158	110	23	16	48	15	15.62
1984 to 1986.....	309	140	111	20	17	43	Q	15.62

See footnotes at end of table.

CONSERVATION FEATURES

Table 57. Lighting Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Buildings With Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.488	0.671	0.771	1.081	1.645	1.021	2.164	
Ownership and Occupancy								
Nongovernment Owned.....	3,661	1,214	857	252	135	367	65	7.07
Owner Occupied.....	2,396	798	568	165	94	229	39	8.79
Nonowner Occupied.....	1,265	416	289	87	42	138	26	10.32
Government Owned.....	493	228	162	79	20	54	13	12.51
Workers								
Fewer than 5.....	2,033	475	328	73	49	104	35	11.70
5 to 9.....	842	310	216	71	31	91	9	12.37
10 to 19.....	587	249	178	54	29	73	12	12.13
20 to 49.....	434	225	163	62	24	81	11	12.11
50 to 99.....	152	98	71	37	9	39	7	13.83
100 to 249.....	73	57	43	21	9	21	9	16.56
250 or More.....	33	27	21	13	4	13	3	12.80
Weekly Operating Hours								
39 or Fewer.....	870	191	139	40	17	52	13	14.95
40 to 48.....	1,086	402	280	102	36	112	19	10.66
49 to 60.....	919	327	241	67	31	88	17	11.33
61 to 84.....	556	220	156	62	26	63	9	14.22
85 to 167.....	375	154	100	31	16	55	10	15.32
168 (Open Continuously).....	347	149	104	30	30	51	9	13.56
Energy Sources Used (Solely or in Combination)								
Electricity.....	4,013	1,438	1,016	329	156	419	78	6.69
Natural Gas.....	2,278	928	635	219	108	282	50	8.15
Fuel Oil.....	542	190	149	52	13	48	14	14.49
District Steam or								
Hot Water.....	78	38	28	17	2	6	1	23.69
District Chilled Water.....	15	9	5	5	Q	Q	Q	43.98
Propane.....	351	81	58	19	Q	15	Q	26.46
Minor Fuels.....	163	56	43	22	Q	Q	Q	31.08
No Energy Sources Used.....	136	Q	Q	Q	NC	Q	NC	71.51

See footnotes at end of table.

Table 57. Lighting Conservation Features as of December 31, 1986, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	Buildings With Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.488	0.671	0.771	1.081	1.645	1.021	2.184	
Energy End Uses								
Space Heating.....	3,681	1,384	990	319	148	403	71	6.62
Cooling.....	2,882	1,175	826	268	131	376	63	6.61
Water Heating.....	2,896	1,186	833	284	133	359	66	6.76
Cooking.....	563	250	171	67	39	79	19	10.29
Manufacturing.....	132	48	39	10	8	13	Q	22.55

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

CONSERVATION FEATURES

Table 58. Lighting Conservation Features as of December 31, 1986, Floorspace (Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of Buildings with Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.505	0.675	0.792	1.093	1.719	1.033	1.907	
All Buildings.....	58,229	33,112	24,431	12,005	5,364	12,603	2,074	6.56
Lighting Conservation Features								
High-Efficiency Ballasts....	24,431	24,431	24,431	8,025	3,819	7,642	1,228	8.20
Delamping Program.....	12,005	12,005	8,025	12,005	2,292	5,015	832	10.19
Natural Lighting Control								
Sensors.....	5,364	5,364	3,819	2,292	5,364	3,138	255	17.22
Other Lighting Controls.....	12,603	12,603	7,642	5,015	3,138	12,603	917	9.44
Other Lighting Features.....	2,074	2,074	1,228	832	255	917	2,074	17.43
Lighting Equipment Types								
(Solely or in Combination)								
Standard Fluorescent.....	32,266	15,737	10,249	4,939	2,369	5,902	883	8.30
Energy Efficient								
Fluorescent.....	24,496	19,752	16,210	8,221	3,341	7,717	1,392	8.48
Standard Incandescent.....	22,995	11,864	7,869	4,017	1,661	4,896	849	9.31
Energy Efficient								
Incandescent.....	10,127	7,864	5,948	2,878	1,424	3,752	545	10.18
High-Intensity Discharge....	10,075	8,322	6,589	3,361	1,999	3,723	743	14.40
Other.....	1,266	1,059	857	Q	Q	690	Q	42.81
Percent Lit--Open Hours								
Not Lit.....	1,851	Q	Q	Q	Q	Q	Q	58.59
1 to 50.....	7,399	3,701	2,815	1,020	730	1,424	267	20.12
51 to 99.....	9,416	5,885	4,675	2,371	657	2,151	446	10.97
100.....	39,562	23,473	16,903	8,601	3,960	9,014	1,356	8.55
Percent Lit--Off Hours								
Not Lit.....	18,867	7,316	5,430	2,445	574	1,756	498	11.86
1 to 50.....	34,890	22,715	16,462	8,468	3,767	9,624	1,436	7.83
51 to 99.....	2,259	1,713	1,440	788	Q	638	Q	29.24
100.....	2,213	1,368	1,099	304	285	584	Q	23.95
Window Glass: Percent of								
Exterior Walls								
25 or less.....	43,239	22,899	17,030	7,837	3,924	7,964	1,168	8.43
26 to 50.....	10,825	7,233	5,228	2,680	1,156	3,315	640	10.83
51 to 75.....	2,836	2,121	1,566	1,163	Q	873	Q	20.91
Over 75.....	1,329	860	608	326	Q	450	Q	20.55

See footnotes at end of table.

Table 58. Lighting Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of Buildings with Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.505	0.675	0.792	1.093	1.719	1.033	1.907	
Building Floorspace (Square Feet)								
1,001 to 5,000.....	6,209	1,643	1,104	361	192	425	95	11.72
5,001 to 10,000.....	6,861	2,579	1,874	476	246	735	Q	11.79
10,001 to 25,000.....	9,119	4,264	2,903	1,090	338	1,411	320	10.81
25,001 to 50,000.....	8,661	4,859	3,549	1,602	521	1,459	Q	10.93
50,001 to 100,000.....	8,559	5,091	3,628	1,654	828	1,754	296	13.59
100,001 to 200,000.....	7,191	5,097	4,001	2,050	946	2,293	376	13.13
200,001 to 500,000.....	6,737	5,304	4,279	1,996	794	2,248	438	16.16
Over 500,000.....	4,893	4,275	3,093	2,776	1,498	2,278	276	20.56
Principal Building Activity								
Assembly.....	7,339	3,548	2,381	1,178	274	1,357	318	18.72
Education.....	7,321	5,335	4,056	2,248	528	1,488	244	13.76
Food Sales.....	712	408	345	Q	Q	Q	NC	28.40
Food Services.....	1,281	651	442	Q	Q	243	Q	28.36
Health Care.....	2,107	1,677	1,417	863	Q	687	Q	28.05
Lodging.....	2,785	1,398	888	490	325	821	Q	22.99
Mercantile and Service.....	12,805	7,013	5,352	2,032	1,524	3,342	210	16.35
Office.....	9,546	6,408	4,356	3,031	706	2,838	739	10.05
Public Order and Safety.....	680	419	315	Q	Q	Q	Q	36.48
Warehouse.....	8,996	4,235	3,237	1,309	694	1,027	221	16.54
Other.....	1,726	1,169	995	340	Q	250	Q	31.79
Vacant.....	2,931	851	649	Q	Q	245	Q	27.78
Census Region								
Northeast.....	11,830	6,871	5,400	2,555	1,140	2,834	418	13.37
Midwest.....	16,034	9,141	6,950	3,099	1,429	2,977	353	11.54
South.....	19,427	10,386	7,615	3,351	2,154	3,871	868	11.94
West.....	10,937	6,714	4,466	3,001	640	2,920	435	12.82
Year Constructed								
1900 or Before.....	2,368	1,104	798	231	Q	230	Q	30.01
1901 to 1920.....	3,665	1,425	1,020	504	Q	548	Q	23.31
1921 to 1945.....	8,594	3,779	2,822	1,411	382	1,239	217	14.83
1946 to 1960.....	9,712	4,827	3,733	1,742	604	1,395	367	14.87
1961 to 1970.....	11,469	6,775	4,854	2,811	840	2,481	476	11.44
1971 to 1973.....	4,307	3,019	2,120	1,265	577	1,298	221	16.49
1974 to 1979.....	8,230	5,132	3,560	1,723	1,106	2,488	280	14.14
1980 to 1983.....	5,205	3,632	2,872	1,436	1,001	1,454	274	23.03
1984 to 1986.....	4,678	3,418	2,652	882	597	1,470	Q	15.43

See footnotes at end of table.

Table 58. Lighting Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of Buildings with Lighting Conservation Features						RSE Row Factor
		Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.505	0.675	0.792	1.093	1.719	1.033	1.907	
Ownership and Occupancy								
Nongovernment Owned.....	46,041	25,081	18,500	8,726	4,447	10,393	1,530	7.51
Owner Occupied.....	28,962	15,940	11,737	5,710	2,961	6,603	960	8.52
Nonowner Occupied.....	17,080	9,140	6,763	3,016	1,486	3,790	571	11.59
Government Owned.....	12,187	8,032	5,931	3,279	916	2,209	544	11.55
Workers								
Fewer than 5.....	13,129	4,045	2,693	596	337	1,102	320	13.17
5 to 9.....	6,576	2,869	2,039	660	547	782	Q	16.04
10 to 19.....	7,895	3,756	2,697	822	559	1,107	192	14.61
20 to 49.....	8,847	5,114	3,857	1,703	698	1,688	226	12.60
50 to 99.....	6,510	4,666	3,312	1,921	454	1,881	332	14.33
100 to 249.....	6,445	5,273	4,056	2,026	917	1,935	Q	14.25
250 or More.....	8,828	7,390	5,777	4,278	1,850	4,108	776	13.74
Weekly Operating Hours								
39 or Fewer.....	9,286	3,618	2,732	886	368	1,069	292	17.07
40 to 48.....	15,167	8,804	6,422	3,100	856	2,730	530	11.25
49 to 60.....	10,805	5,793	4,009	2,076	608	2,243	417	10.70
61 to 84.....	9,760	6,473	5,052	2,775	1,639	2,959	247	15.97
85 to 167.....	5,514	3,328	2,356	1,278	487	1,467	244	15.08
168 (Open Continuously).....	7,696	5,097	3,881	1,891	1,406	2,134	345	17.41
Energy Sources Used (Solely or in Combination)								
Electricity.....	57,036	33,071	24,407	11,991	5,364	12,577	2,074	6.57
Natural Gas.....	38,140	23,659	17,019	8,627	3,953	9,427	1,573	7.30
Fuel Oil.....	11,163	7,331	5,702	3,716	1,427	3,317	470	13.27
District Steam or Hot Water.....	4,645	3,142	2,297	1,796	351	806	281	18.09
District Chilled Water.....	1,191	883	447	498	Q	296	Q	30.02
Propane.....	3,362	1,549	1,202	560	Q	487	Q	23.44
Minor Fuels.....	1,557	771	646	190	Q	Q	Q	29.56
No Energy Sources Used.....	1,171	Q	Q	Q	NC	Q	NC	69.96

See footnotes at end of table.

Table 58. Lighting Conservation Features as of December 31, 1986, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of Buildings with Lighting Conservation Features							RSE Row Factor
	Total Floorspace of All Buildings	Any Lighting Conservation Features	High-Efficiency Ballasts	Delamping Program	Natural Lighting Control Sensors	Other Lighting Controls	Other Lighting Conservation Features	
RSE Column Factor:	0.505	0.675	0.792	1.093	1.719	1.033	1.907	
Energy End Uses								
Space Heating.....	54,510	32,382	24,037	11,819	5,265	12,379	2,039	6.62
Cooling.....	46,601	29,071	21,536	10,672	5,128	11,672	1,813	6.69
Water Heating.....	48,836	30,082	22,224	11,260	5,065	11,754	1,919	6.74
Cooking.....	17,227	12,588	9,368	5,685	2,711	5,662	1,009	11.05
Manufacturing.....	3,081	1,996	1,612	637	332	787	Q	17.95

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.
 Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 59. Conservation Features Added in Response to Energy Audits, Number of Buildings (Thousand)

Building Characteristics	All Buildings	All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.366	0.653	1.322	0.773	2.009	0.924	1.317	1.313	1.275	
All Buildings.....	4,154	531	137	351	43	218	88	102	112	7.59
Conservation Features										
Any Conservation Feature....	3,631	516	134	339	42	218	88	102	112	7.55
Building Shell.....	3,484	496	129	328	39	213	86	102	108	7.64
HVAC.....	2,155	427	106	283	39	193	88	83	102	7.90
Lighting.....	1,442	327	75	221	31	157	63	59	112	9.11
Climate Zone: 45 Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD.....	419	48	16	26	Q	22	9	12	8	22.58
5,500-7,000 HDD.....	930	123	27	86	10	49	17	25	25	16.14
4,000-5,499 HDD.....	865	104	25	67	13	52	28	25	30	20.47
Under 4,000 HDD.....	1,022	162	45	105	12	65	22	28	35	17.19
2,000 CDD or More and --										
Under 4,000 HDD.....	919	95	24	67	Q	31	12	12	14	23.31
Percent Heated										
Not Heated.....	470	27	Q	18	Q	Q	NC	NC	Q	40.06
1 to 50.....	601	37	15	19	Q	18	Q	Q	9	26.33
51 to 99.....	458	77	23	48	Q	30	15	13	13	19.72
100.....	2,625	390	93	266	32	165	70	78	85	8.54
Percent Cooled										
Not Cooled.....	1,248	108	30	67	11	38	15	16	21	20.37
1 to 50.....	972	108	27	73	7	49	13	28	24	13.77
51 to 99.....	500	91	20	65	6	41	18	18	24	16.14
100.....	1,435	224	60	145	19	91	41	41	43	12.73
Percent Lit--Open Hours										
Not Lit.....	231	Q	NC	Q	Q	NC	NC	NC	NC	68.04
1 to 50.....	624	59	15	39	Q	23	12	14	11	20.79
51 to 99.....	644	105	29	67	9	50	18	25	27	16.94
100.....	2,655	363	93	243	28	145	57	64	74	9.47

See footnotes at end of table.

Table 59. Conservation Features Added in Response to Energy Audits, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.366	0.653	1.322	0.773	2.009	0.924	1.317	1.313	1.275	
Building Floorspace (Square Feet)										
1,001 to 5,000.....	2,220	184	57	115	Q	72	27	39	33	13.81
5,001 to 10,000.....	931	120	37	76	Q	50	Q	27	25	17.47
10,001 to 25,000.....	557	95	17	65	Q	35	13	13	18	15.56
25,001 to 50,000.....	242	62	14	42	6	29	14	12	16	14.24
50,001 to 100,000.....	123	37	6	28	Q	17	10	7	9	14.82
100,001 to 200,000.....	52	20	3	15	Q	10	5	3	6	17.75
200,001 to 500,000.....	23	10	1	7	1	6	4	2	4	21.45
Over 500,000.....	6	3	*	2	Q	1	1	Q	1	25.67
Principal Building Activity										
Assembly.....	575	83	21	56	Q	23	8	15	9	17.75
Education.....	241	102	21	68	13	44	20	16	23	16.47
Food Sales.....	102	Q	Q	Q	Q	Q	Q	Q	Q	48.96
Food Services.....	201	27	Q	16	Q	Q	Q	Q	Q	31.32
Health Care.....	52	11	2	8	Q	5	2	1	3	28.49
Lodging.....	137	30	Q	14	Q	8	Q	Q	4	28.52
Mercantile and Service.....	1,287	114	37	70	Q	50	14	24	25	17.05
Office.....	614	102	20	77	5	51	22	24	29	16.59
Public Order and Safety.....	55	Q	Q	Q	Q	Q	Q	Q	Q	51.44
Warehouse.....	549	21	Q	16	Q	7	Q	Q	5	27.93
Other.....	103	12	Q	10	Q	5	Q	Q	Q	45.26
Vacant.....	238	Q	Q	Q	Q	Q	Q	Q	Q	53.53
Census Region										
Northeast.....	663	107	26	71	10	45	18	21	31	17.19
Midwest.....	1,096	114	31	71	12	50	21	32	15	16.34
South.....	1,570	166	40	113	14	66	22	30	32	15.51
West.....	825	143	41	95	7	57	26	20	33	16.75
Year Constructed										
1900 or Before.....	188	20	Q	19	Q	8	Q	Q	Q	36.48
1901 to 1920.....	255	27	Q	17	Q	13	Q	Q	Q	32.33
1921 to 1945.....	629	72	25	40	Q	35	13	22	12	19.43
1946 to 1960.....	878	122	32	79	11	51	14	28	24	16.32
1961 to 1970.....	730	117	28	82	6	56	24	23	34	13.51
1971 to 1973.....	243	36	7	24	4	16	6	7	7	26.60
1974 to 1979.....	572	78	14	52	12	28	14	9	15	19.55
1980 to 1983.....	350	35	13	22	Q	10	Q	Q	7	31.79
1984 to 1986.....	309	24	9	15	Q	Q	Q	Q	Q	37.07

See footnotes at end of table.

Table 59. Conservation Features Added in Response to Energy Audits, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.366	0.653	1.322	0.773	2.009	0.924	1.317	1.313	1.275	
Ownership and Occupancy										
Nongovernment Owned.....	3,661	387	110	254	23	155	56	75	79	9.43
Owner Occupied.....	2,396	277	80	177	20	112	42	54	55	11.30
Nonowner Occupied.....	1,265	110	30	76	Q	43	13	22	24	17.72
Government Owned.....	493	144	27	97	20	64	32	27	32	13.84
Workers										
Fewer than 5.....	2,033	159	54	96	Q	50	15	32	22	17.02
5 to 9.....	842	110	28	75	Q	42	16	18	23	18.24
10 to 19.....	587	82	20	55	Q	40	17	21	17	17.90
20 to 49.....	434	91	17	63	11	41	14	17	24	15.45
50 to 99.....	152	48	10	32	Q	22	12	6	11	18.81
100 to 249.....	73	26	5	19	Q	16	9	6	11	18.20
250 or More.....	33	17	4	11	2	7	5	3	5	17.40
Weekly Operating Hours										
39 or Fewer.....	870	97	26	58	13	29	9	16	14	19.45
40 to 48.....	1,086	144	29	105	10	62	24	24	38	13.65
49 to 60.....	919	99	26	69	5	50	18	26	22	17.18
61 to 84.....	556	78	23	49	Q	35	17	18	18	17.82
85 to 167.....	375	56	19	30	6	20	11	7	9	23.91
168 (Open Continuously).....	347	58	13	40	4	22	9	11	10	20.52
Energy Sources Used (Solely or in Combination)										
Electricity.....	4,013	529	135	351	43	217	88	100	112	7.53
Natural Gas.....	2,278	332	86	219	27	144	62	74	69	9.96
Fuel Oil.....	542	78	17	54	7	39	15	17	23	18.27
District Steam or Hot Water.....	78	23	4	15	4	13	8	7	8	21.30
District Chilled Water.....	15	4	Q	3	Q	2	1	Q	2	42.86
Propane.....	351	37	Q	20	Q	11	Q	Q	Q	38.62
Minor Fuels.....	163	17	Q	Q	Q	Q	Q	Q	Q	41.31
No Energy Sources Used.....	136	Q	Q	NC	NC	Q	NC	Q	NC	80.28

See footnotes at end of table.

Table 59. Conservation Features Added in Response to Energy Audits, Number of Buildings (continued)
(Thousand)

Building Characteristics	All Buildings	All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.366	0.653	1.322	0.773	2.009	0.924	1.317	1.313	1.275	
Energy End Uses										
Space Heating.....	3,681	502	128	333	42	212	88	100	107	7.61
Cooling.....	2,882	417	104	281	32	179	72	84	90	8.47
Water Heating.....	2,896	467	114	320	34	196	81	93	103	7.97
Cooking.....	563	109	29	72	8	51	31	20	24	14.31
Manufacturing.....	132	15	Q	13	Q	6	3	Q	2	32.17

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 60. Conservation Features Added in Response to Energy Audits, Floorspace (Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.385	0.697	1.262	0.852	1.743	0.938	1.322	1.333	1.202	
All Buildings.....	58,229	16,411	2,979	11,812	1,621	7,780	4,330	2,602	4,745	7.62
Conservation Features										
Any Conservation Feature....	54,567	16,282	2,929	11,735	1,618	7,780	4,330	2,602	4,745	7.69
Building Shell.....	52,029	15,638	2,795	11,276	1,568	7,507	4,111	2,602	4,664	7.76
HVAC.....	41,974	14,910	2,582	10,774	1,554	7,412	4,330	2,390	4,560	8.07
Lighting.....	33,112	13,001	2,203	9,445	1,352	6,790	3,884	1,921	4,745	8.61
Climate Zone: 45 Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD.....	4,897	984	247	614	Q	533	349	269	212	27.31
5,500-7,000 HDD.....	16,250	5,071	839	3,809	423	2,482	1,396	813	1,546	16.76
4,000-5,499 HDD.....	13,904	4,089	708	2,820	561	2,155	1,195	786	1,364	16.06
Under 4,000 HDD.....	13,792	4,394	723	3,269	402	1,918	988	595	1,261	17.32
2,000 CDD or More and --										
Under 4,000 HDD.....	9,386	1,873	463	1,299	Q	691	401	139	362	20.15
Percent Heated										
Not Heated.....	3,635	224	Q	156	Q	Q	NC	NC	Q	47.34
1 to 50.....	8,579	1,185	197	859	Q	451	Q	Q	263	28.06
51 to 99.....	7,061	2,584	296	2,000	Q	1,197	724	272	758	18.86
100.....	38,941	12,419	2,420	8,798	1,201	6,070	3,475	2,074	3,661	8.38
Percent Cooled										
Not Cooled.....	11,057	1,856	452	1,213	192	822	484	220	361	22.32
1 to 50.....	18,641	4,375	634	3,358	383	1,959	860	853	1,050	13.28
51 to 99.....	9,982	4,457	553	3,509	395	2,387	1,392	723	1,709	16.22
100.....	18,543	5,723	1,340	3,731	651	2,612	1,593	806	1,625	11.48
Percent Lit--Open Hours										
Not Lit.....	1,851	Q	NC	Q	Q	NC	NC	NC	NC	75.84
1 to 50.....	7,399	1,324	181	1,013	Q	663	258	259	Q	29.59
51 to 99.....	9,416	3,139	643	2,151	345	1,931	1,077	779	1,122	15.98
100.....	39,562	11,937	2,155	8,646	1,136	5,186	2,995	1,564	3,105	9.20

See footnotes at end of table.

Table 60. Conservation Features Added in Response to Energy Audits, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.385	0.697	1.262	0.852	1.743	0.938	1.322	1.333	1.202	
Building Floorspace (Square Feet)										
1,001 to 5,000.....	6,209	529	176	326	Q	190	72	106	90	14.86
5,001 to 10,000.....	6,861	907	280	581	Q	372	Q	208	187	18.14
10,001 to 25,000.....	9,119	1,570	287	1,082	Q	599	218	226	308	16.66
25,001 to 50,000.....	8,661	2,266	511	1,509	246	1,045	529	433	567	14.21
50,001 to 100,000.....	8,559	2,623	457	2,000	Q	1,217	730	456	686	15.31
100,001 to 200,000.....	7,191	2,907	550	2,053	Q	1,404	752	497	807	17.79
200,001 to 500,000.....	6,737	2,960	400	2,259	302	1,744	1,251	527	1,114	20.19
Over 500,000.....	4,893	2,648	319	2,001	Q	1,208	690	Q	986	25.38
Principal Building Activity										
Assembly.....	7,339	2,044	368	1,516	Q	717	317	421	425	18.27
Education.....	7,321	3,980	766	2,738	477	1,955	1,158	666	1,044	15.18
Food Sales.....	712	Q	Q	Q	Q	Q	Q	Q	Q	54.84
Food Services.....	1,281	229	Q	145	Q	Q	Q	Q	Q	33.99
Health Care.....	2,107	1,158	120	816	Q	698	486	262	456	23.76
Lodging.....	2,785	845	Q	607	Q	392	Q	Q	Q	32.55
Mercantile and Service.....	12,805	2,509	515	1,827	Q	865	273	216	593	21.99
Offices.....	9,546	3,505	751	2,480	274	2,138	1,286	649	1,552	15.82
Public Order and Safety.....	680	Q	Q	Q	Q	Q	Q	Q	Q	55.41
Warehouse.....	8,996	1,287	Q	998	Q	443	Q	Q	272	24.97
Other.....	1,726	325	Q	259	Q	187	Q	Q	Q	36.81
Vacant.....	2,931	Q	Q	Q	Q	Q	Q	Q	Q	48.61
Census Region										
Northeast.....	11,830	4,158	883	2,826	448	1,660	942	473	1,012	14.81
Midwest.....	16,034	3,821	614	2,835	372	2,190	1,213	884	1,225	16.46
South.....	19,427	5,085	829	3,656	600	2,426	1,404	737	1,571	12.49
West.....	10,937	3,347	653	2,494	Q	1,504	770	508	936	20.01
Year Constructed										
1900 or Before.....	2,368	533	Q	499	Q	200	Q	Q	Q	35.78
1901 to 1920.....	3,665	889	Q	595	Q	604	Q	Q	Q	29.58
1921 to 1945.....	8,594	2,082	521	1,376	Q	1,074	513	548	516	21.03
1946 to 1960.....	9,712	2,572	395	1,937	239	1,238	619	531	772	15.39
1961 to 1970.....	11,469	3,941	699	2,795	448	2,244	1,436	711	1,458	14.90
1971 to 1973.....	4,307	1,757	276	1,239	243	840	474	259	599	23.81
1974 to 1979.....	8,230	2,851	407	2,060	384	1,104	570	179	756	18.97
1980 to 1983.....	5,205	1,257	223	995	Q	275	Q	Q	180	34.14
1984 to 1986.....	4,678	529	197	315	Q	Q	Q	Q	Q	31.28

See footnotes at end of table.

Table 60. Conservation Features Added in Response to Energy Audits, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.385	0.697	1.262	0.852	1.743	0.938	1.322	1.333	1.202	
Ownership and Occupancy										
Nongovernment Owned.....	46,041	10,625	1,975	7,726	925	4,887	2,626	1,516	3,131	9.06
Owner Occupied.....	28,962	7,400	1,300	5,352	748	3,491	1,981	1,054	2,340	10.91
Nonowner Occupied.....	17,080	3,225	675	2,374	Q	1,397	644	462	791	16.43
Government Owned.....	12,187	5,786	1,004	4,086	696	2,892	1,704	1,086	1,614	13.10
Workers										
Fewer than 5.....	13,129	1,318	349	849	Q	493	241	164	197	20.40
5 to 9.....	6,576	1,162	233	893	Q	521	216	242	251	20.90
10 to 19.....	7,895	1,277	198	913	Q	572	325	316	242	20.31
20 to 49.....	8,847	2,478	483	1,723	271	994	341	392	600	15.99
50 to 99.....	6,510	2,298	469	1,625	Q	1,000	617	340	504	19.65
100 to 249.....	6,445	2,867	416	2,209	Q	1,635	987	520	1,051	18.71
250 or More.....	8,828	5,011	831	3,600	581	2,565	1,604	628	1,901	15.73
Weekly Operating Hours										
39 or Fewer.....	9,286	2,167	469	1,471	227	963	415	533	526	20.06
40 to 48.....	15,167	4,108	786	2,962	360	2,203	1,343	437	1,405	15.10
49 to 60.....	10,805	2,495	634	1,703	158	1,254	606	568	833	16.79
61 to 84.....	9,760	3,198	417	2,545	Q	1,266	705	329	785	20.20
85 to 167.....	5,514	1,701	363	1,059	279	606	307	240	294	18.66
168 (Open Continuously).....	7,696	2,742	310	2,071	360	1,489	953	494	902	16.57
Energy Sources Used (Solely or in Combination)										
Electricity.....	57,036	16,399	2,967	11,812	1,621	7,768	4,330	2,590	4,745	7.63
Natural Gas.....	38,140	12,133	2,028	8,867	1,238	5,701	3,193	1,988	3,306	9.03
Fuel Oil.....	11,163	4,713	664	3,567	483	2,601	1,422	798	1,800	16.11
District Steam or Hot Water.....	4,645	2,530	379	1,644	508	1,411	918	463	1,095	21.46
District Chilled Water.....	1,191	618	Q	406	Q	251	205	Q	218	35.59
Propane.....	3,362	744	Q	435	Q	377	Q	Q	Q	30.39
Minor Fuels.....	1,557	283	Q	Q	Q	Q	Q	Q	Q	34.37
No Energy Sources Used.....	1,171	Q	Q	NC	NC	Q	NC	Q	NC	87.87

See footnotes at end of table.

Table 60. Conservation Features Added in Response to Energy Audits, Floorspace (continued)
(Million Square Feet)

Building Characteristics	Total Floorspace of All Buildings	Total Floorspace of All Buildings Having an Audit	Year of Most Recent Energy Audit			Conservation Features Added in Response to Energy Audits				RSE Row Factor
			1986	1980 to 1985	Before 1980	Any Features	HVAC	Building Shell	Lighting	
RSE Column Factor:	0.385	0.697	1.262	0.852	1.743	0.938	1.322	1.333	1.202	
Energy End Uses										
Space Heating.....	54,510	16,176	2,902	11,656	1,618	7,705	4,330	2,590	4,682	7.71
Cooling.....	46,601	14,306	2,510	10,367	1,429	6,924	3,843	2,350	4,377	7.80
Water Heating.....	48,836	15,420	2,692	11,197	1,532	7,491	4,245	2,535	4,544	7.86
Cooking.....	17,227	7,380	1,206	5,495	679	3,915	2,327	1,119	2,428	12.24
Manufacturing.....	3,081	1,014	Q	894	Q	536	306	Q	285	26.67

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 61. Occupant Control of Heating and Cooling, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Occupant Control of:			All Buildings	All Heated or Cooled Buildings	Occupant Control of:			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.541	0.551	1.513	2.441	0.761	0.563	0.576	1.720	2.499	0.856	
All Buildings.....	4,154	3,727	646	84	2,009	58,229	55,016	5,974	1,845	25,297	5.73
HVAC Conservation Features											
Preventive Maintenance Program.....	2,076	2,071	278	47	1,115	40,914	40,890	3,319	1,475	17,744	6.28
Waste Heat Recovery.....	149	149	Q	Q	68	6,492	6,492	Q	Q	2,668	21.70
EMCS.....	205	205	Q	4	83	11,070	11,070	Q	364	3,571	16.15
Time-Clock Thermostat.....	64	64	Q	Q	32	2,121	2,121	Q	Q	861	24.11
Economizer Cycle.....	17	17	NC	Q	6	1,111	1,111	NC	Q	447	31.70
Other HVAC Features.....	76	76	Q	Q	41	2,793	2,793	Q	Q	1,569	28.24
Reduced Use--Off-Hours											
Heating Only.....	759	759	530	Q	26	7,649	7,649	4,508	Q	380	17.46
Cooling Only.....	106	106	Q	44	36	1,463	1,463	Q	516	463	24.64
Heating and Cooling.....	2,331	2,331	42	35	1,731	36,652	36,652	565	1,081	20,725	6.68
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	1,915	378	36	1,084	6,209	5,404	1,046	104	3,094	8.24
5,001 to 10,000.....	931	857	155	Q	471	6,861	6,330	1,112	Q	3,516	8.22
10,001 to 25,000.....	557	529	69	15	277	9,119	8,660	1,136	259	4,541	9.35
25,001 to 50,000.....	242	233	26	10	100	8,661	8,310	887	345	3,520	11.13
50,001 to 100,000.....	123	114	12	5	44	8,559	7,955	835	357	3,104	12.26
100,001 to 200,000.....	52	50	5	Q	22	7,191	6,975	675	Q	3,032	16.80
200,001 to 500,000.....	23	22	Q	Q	9	6,737	6,624	Q	Q	2,609	20.07
Over 500,000.....	6	6	Q	Q	2	4,893	4,758	Q	Q	1,882	29.83

See footnotes at end of table.

Table 61. Occupant Control of Heating and Cooling, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Occupant Control of:			All Buildings	All Heated or Cooled Buildings	Occupant Control of:			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.541	0.551	1.513	2.441	0.761	0.563	0.576	1.720	2.499	0.856	
Principal Building Activity											
Assembly.....	575	547	87	Q	251	7,339	7,162	930	Q	2,718	11.97
Education.....	241	238	48	NC	96	7,321	7,316	856	592	1,598	12.24
Food Sales.....	102	101	Q	NC	56	712	711	Q	NC	318	24.43
Food Services.....	201	193	Q	Q	99	1,281	1,246	Q	Q	609	14.68
Health Care.....	52	52	Q	Q	30	2,107	2,107	Q	Q	1,126	29.33
Lodging.....	137	131	24	Q	74	2,785	2,774	348	Q	1,402	18.12
Mercantile and Service.....	1,287	1,230	284	34	672	12,805	12,562	1,687	323	7,370	9.72
Office.....	614	614	29	Q	442	9,546	9,546	227	148	4,896	12.80
Public Order and Safety.....	55	53	Q	Q	26	680	678	Q	Q	298	29.15
Warehouse.....	549	346	100	9	143	8,996	7,373	1,258	318	3,344	13.78
Other.....	103	75	14	Q	29	1,726	1,538	182	Q	551	26.47
Vacant.....	238	147	26	Q	90	2,931	2,003	264	Q	1,067	17.07
Census Region											
Northeast.....	663	604	156	19	235	11,830	11,356	1,776	710	4,096	12.28
Midwest.....	1,096	973	223	13	457	16,034	15,303	1,844	442	6,429	10.26
South.....	1,570	1,433	140	27	932	19,427	18,080	937	413	10,029	9.73
West.....	825	717	128	25	384	10,937	10,278	1,417	280	4,744	15.16
Year Constructed											
1900 or Before.....	188	173	40	Q	77	2,368	2,229	299	Q	858	19.94
1901 to 1920.....	255	225	57	Q	107	3,665	3,402	737	Q	1,553	15.35
1921 to 1945.....	629	558	93	13	315	8,594	7,785	1,092	404	2,981	10.50
1946 to 1960.....	878	795	158	26	405	9,712	9,157	1,306	372	4,025	10.83
1961 to 1970.....	730	661	109	16	359	11,469	10,950	1,189	388	4,813	11.03
1971 to 1973.....	243	217	38	Q	98	4,307	4,210	202	Q	1,977	15.39
1974 to 1979.....	572	525	66	Q	306	8,230	7,909	522	Q	4,060	12.06
1980 to 1983.....	350	311	41	Q	192	5,205	5,033	289	Q	2,936	17.53
1984 to 1986.....	309	261	42	Q	150	4,678	4,341	338	Q	2,094	15.56
Ownership and Occupancy											
Nongovernment Owned.....	3,661	3,290	566	67	1,828	46,041	43,332	4,821	973	22,107	6.43
Owner Occupied.....	2,396	2,177	416	43	1,108	28,962	27,217	3,256	555	12,379	6.95
Nonowner Occupied.....	1,265	1,112	150	24	720	17,080	16,115	1,565	418	9,728	9.37
Government Owned.....	493	437	80	17	181	12,187	11,684	1,153	872	3,191	10.02

See footnotes at end of table.

Table 61. Occupant Control of Heating and Cooling, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Occupant Control of:			All Buildings	All Heated or Cooled Buildings	Occupant Control of:			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.541	0.551	1.513	2.441	0.761	0.563	0.576	1.720	2.499	0.856	
Workers											
Fewer than 5.....	2,033	1,666	431	30	823	13,129	10,563	2,348	280	4,850	8.62
5 to 9.....	842	804	107	19	502	6,576	6,365	1,017	122	3,232	8.89
10 to 19.....	587	569	65	19	334	7,895	7,552	1,185	277	3,869	10.51
20 to 49.....	434	430	30	8	233	8,847	8,763	692	387	4,181	10.48
50 to 99.....	152	152	9	4	66	6,510	6,510	347	222	2,454	15.25
100 to 249.....	73	73	Q	Q	35	6,445	6,445	Q	Q	2,590	17.46
250 or More.....	33	33	Q	Q	16	8,828	8,818	Q	Q	4,121	18.83
Weekly Operating Hours											
39 or Fewer.....	870	668	140	16	318	9,286	7,833	1,102	269	3,057	11.63
40 to 48.....	1,086	1,018	164	23	595	15,167	14,525	1,619	427	6,823	8.35
49 to 60.....	919	856	174	16	479	10,805	10,398	1,301	237	5,203	9.48
61 to 84.....	555	527	82	11	282	9,760	9,496	864	470	4,468	13.05
85 to 167.....	375	346	49	Q	166	5,514	5,369	597	Q	2,340	13.45
168 (Open Continuously).....	347	313	37	9	168	7,696	7,397	492	324	3,405	14.40
Energy Sources Used (Solaly or in Combination)											
Electricity.....	4,013	3,709	641	84	2,001	57,036	54,893	5,956	1,845	25,258	5.73
Natural Gas.....	2,278	2,246	320	33	1,295	38,140	37,849	3,646	1,199	17,937	6.90
Fuel Oil.....	542	532	161	22	182	11,163	11,118	1,409	530	4,680	11.75
District Steam or Hot Water.....	78	78	12	5	33	4,645	4,644	389	201	1,383	21.30
District Chilled Water.....	15	15	Q	Q	Q	1,191	1,191	Q	Q	482	44.77
Propane.....	351	333	87	Q	144	3,362	3,284	491	Q	1,274	18.75
Minor Fuels.....	163	159	76	Q	33	1,557	1,536	462	Q	406	21.67
No Energy Sources Used.....	136	--	--	--	--	1,171	--	--	--	--	54.68

See footnotes at end of table.

Table 61. Occupant Control of Heating and Cooling, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Total Floorspace (million square feet)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Occupant Control of:			All Buildings	All Heated or Cooled Buildings	Occupant Control of:			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.541	0.551	1.513	2.441	0.761	0.563	0.576	1.720	2.499	0.856	
Energy End Uses											
Space Heating.....	3,681	3,658	640	50	2,000	54,510	54,392	5,958	1,528	25,245	5.85
Cooling.....	2,882	2,881	75	83	1,994	46,601	46,578	1,204	1,707	25,160	6.38
Water Heating.....	2,896	2,852	395	57	1,617	48,836	48,391	4,568	1,435	22,514	6.00
Cooking.....	563	551	53	13	287	17,227	17,155	968	675	7,842	9.52
Manufacturing.....	132	121	21	Q	67	3,081	3,031	337	Q	1,544	18.00

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Table 62. Reduced Heating and Cooling During Off-Hours, Number of Building and Total Floorspace

Building Characteristics	Number of Buildings (thousand)					Number of Buildings (thousand)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.586	0.593	1.433	2.391	0.709	0.601	0.612	1.689	2.720	0.699	
All Buildings.....	4,154	3,729	759	106	2,331	58,229	54,957	7,649	1,463	36,652	5.27
Occupant Control of:											
Heating Only.....	646	640	530	Q	42	5,974	5,958	4,508	Q	565	17.23
Cooling Only.....	84	84	Q	44	35	1,845	1,845	Q	516	1,081	22.33
Heating and Cooling.....	2,009	2,001	26	36	1,731	25,297	25,247	380	463	20,725	8.88
Climate Zone: 45 Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD.....	419	368	152	Q	146	4,897	4,650	1,111	Q	2,298	19.88
5,500-7,000 HDD.....	930	863	227	27	481	16,250	15,728	3,065	329	9,751	9.98
4,000-5,499 HDD.....	865	786	200	15	451	13,904	13,227	2,026	306	8,558	16.15
Under 4,000 HDD.....	1,022	910	134	22	633	13,792	12,828	1,060	274	9,572	15.76
2,000 CDD or More and --											
Under 4,000 HDD.....	919	803	46	32	620	9,386	8,524	387	439	6,473	15.52
Building Floorspace (Square Feet)											
1,001 to 5,000.....	2,220	1,918	434	57	1,147	6,209	5,411	1,191	152	3,282	7.31
5,001 to 10,000.....	931	862	177	15	572	6,861	6,355	1,274	114	4,261	7.45
10,001 to 25,000.....	557	525	90	21	334	9,119	8,601	1,479	331	5,442	8.77
25,001 to 50,000.....	242	232	36	9	148	8,661	8,268	1,295	291	5,317	10.14
50,001 to 100,000.....	123	115	15	Q	75	8,559	7,961	1,093	Q	5,225	12.12
100,001 to 200,000.....	52	50	5	Q	34	7,191	6,975	776	Q	4,701	15.33
200,001 to 500,000.....	23	22	Q	Q	17	6,737	6,628	Q	Q	5,039	19.01
Over 500,000.....	6	6	Q	Q	4	4,893	4,758	Q	Q	3,385	28.47

See footnotes at end of table.

Table 62. Reduced Heating and Cooling During Off-Hours, Number of Buildings and Total Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Number of Buildings (thousand)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.586	0.593	1.433	2.391	0.709	0.601	0.612	1.689	2.720	0.699	
Principal Building Activity											
Assembly.....	575	547	130	Q	356	7,339	7,172	1,432	Q	4,898	11.19
Education.....	241	238	70	Q	156	7,321	7,316	1,626	Q	5,201	12.14
Food Sales.....	102	101	Q	Q	59	712	711	Q	Q	325	25.73
Food Services.....	201	192	Q	Q	135	1,281	1,245	Q	Q	901	15.48
Health Care.....	52	52	Q	Q	38	2,107	2,107	Q	Q	965	29.96
Lodging.....	137	133	26	Q	69	2,785	2,776	429	Q	1,171	18.28
Mercantile and Service.....	1,287	1,232	302	43	726	12,805	12,587	1,861	344	8,789	9.13
Office.....	614	611	28	12	501	9,546	9,539	124	163	8,208	11.07
Public Order and Safety.....	55	53	Q	Q	19	680	678	Q	Q	305	27.21
Warehouse.....	549	352	106	15	163	8,996	7,349	1,188	440	4,063	13.08
Other.....	103	78	20	Q	29	1,726	1,545	304	Q	704	24.74
Vacant.....	238	140	40	Q	81	2,931	1,931	519	Q	1,121	16.84
Census Region											
Northeast.....	663	611	194	15	318	11,830	11,393	2,359	295	6,902	10.87
Midwest.....	1,096	972	260	22	529	16,034	15,298	2,451	294	9,257	9.59
South.....	1,570	1,430	147	37	1,044	19,427	17,998	1,110	510	13,421	9.06
West.....	825	716	158	32	440	10,937	10,269	1,729	364	7,072	13.75
Year Constructed											
1900 or Before.....	188	175	51	Q	93	2,368	2,258	471	Q	1,452	18.52
1901 to 1920.....	255	225	73	Q	118	3,665	3,389	906	Q	1,955	15.48
1921 to 1945.....	629	554	126	18	359	8,594	7,723	1,812	269	4,420	10.25
1946 to 1960.....	878	788	191	19	512	9,712	9,124	1,641	219	6,108	11.78
1961 to 1970.....	730	670	110	24	423	11,469	10,972	1,328	376	7,439	9.84
1971 to 1973.....	243	217	43	Q	132	4,307	4,205	243	Q	2,897	14.00
1974 to 1979.....	572	523	80	Q	325	8,230	7,903	579	Q	5,736	11.01
1980 to 1983.....	350	316	45	14	209	5,205	5,052	423	169	3,577	14.99
1984 to 1986.....	309	261	40	Q	160	4,678	4,331	245	Q	3,068	14.97
Ownership and Occupancy											
Nongovernment Owned.....	3,661	3,290	645	96	2,076	46,041	43,257	5,447	1,268	29,158	5.78
Owner Occupied.....	2,396	2,183	450	63	1,350	28,962	27,187	3,429	747	18,572	6.23
Nonowner Occupied.....	1,265	1,107	195	33	726	17,080	16,070	2,018	521	10,586	8.82
Government Owned.....	493	439	114	10	255	12,187	11,700	2,202	195	7,494	9.70

See footnotes at end of table.

Table 62. Reduced Heating and Cooling During Off-Hours, Number of Buildings and Total Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Number of Buildings (thousand)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.586	0.593	1.433	2.391	0.709	0.601	0.612	1.689	2.720	0.699	
Workers											
Fewer than 5.....	2,033	1,670	510	45	904	13,129	10,528	3,072	292	5,704	7.89
5 to 9.....	842	804	130	23	541	6,576	6,367	1,186	168	3,953	8.81
10 to 19.....	587	567	64	21	406	7,895	7,526	1,161	263	5,037	10.40
20 to 49.....	434	430	40	9	302	8,847	8,763	967	285	6,048	9.97
50 to 99.....	152	152	13	6	101	6,510	6,510	826	184	4,350	14.63
100 to 249.....	73	73	Q	Q	52	6,445	6,445	Q	Q	4,684	15.87
250 or More.....	33	33	Q	Q	26	8,828	8,818	Q	Q	6,875	20.08
Weekly Operating Hours											
39 or Fewer.....	870	667	197	Q	401	9,286	7,759	1,843	Q	5,126	12.64
40 to 48.....	1,086	1,017	174	29	694	15,167	14,520	2,088	325	10,476	8.18
49 to 60.....	919	859	194	24	550	10,805	10,416	1,460	266	7,564	8.66
61 to 84.....	556	527	99	14	342	9,760	9,496	945	257	7,034	11.84
85 to 167.....	375	345	58	18	212	5,514	5,368	804	126	3,282	12.05
168 (Open Continuously).....	347	314	36	11	132	7,696	7,399	508	358	3,170	13.90
Energy Sources Used (Solely or in Combination)											
Electricity.....	4,013	3,726	754	106	2,326	57,036	54,943	7,622	1,463	36,622	5.26
Natural Gas.....	2,278	2,254	384	47	1,537	38,140	37,915	4,756	821	26,295	6.41
Fuel Oil.....	542	538	190	11	263	11,163	11,140	2,182	285	6,960	11.85
District Steam or Hot Water.....	78	78	10	3	36	4,645	4,645	319	134	2,859	19.45
District Chilled Water.....	15	15	Q	Q	11	1,191	1,191	Q	Q	706	40.04
Propane.....	351	337	100	Q	179	3,362	3,294	672	Q	1,950	17.32
Minor Fuels.....	163	162	90	Q	42	1,557	1,555	568	Q	681	19.51
No Energy Sources Used.....	136	NC	Q	NC	Q	1,171	NC	Q	NC	Q	51.31

See footnotes at end of table.

Table 62. Reduced Heating and Cooling During Off-Hours, Number of Buildings and Total Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)					Number of Buildings (thousand)					RSE Row Factor
	All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			All Buildings	All Heated or Cooled Buildings	Reduction During Off-Hours			
			Heating Only	Cooling Only	Heating and Cooling			Heating Only	Cooling Only	Heating and Cooling	
RSE Column Factor:	0.586	0.593	1.433	2.391	0.709	0.601	0.612	1.689	2.720	0.699	
Energy End Uses											
Space Heating.....	3,681	3,681	756	63	2,326	54,510	54,510	7,620	1,031	36,599	5.28
Cooling.....	2,882	2,882	72	106	2,321	46,601	46,601	1,201	1,463	36,526	6.01
Water Heating.....	2,896	2,858	473	72	1,885	48,836	48,441	6,001	1,121	33,206	5.41
Cooking.....	563	550	76	16	360	17,227	17,154	1,933	404	11,681	9.14
Manufacturing.....	132	122	24	Q	77	3,081	3,015	402	Q	2,020	17.14

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.

Note: 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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.



Appendix A

How the Survey was Conducted



Data for this report were collected through personal interviews with over 7,000 buildings owners or managers.



Appendix A

How the Survey Was Conducted

Introduction

The Nonresidential Buildings Energy Consumption Survey (NBECS) was designed by the Energy Information Administration (EIA) to provide basic statistical information on the consumption of and expenditures for energy in U.S. nonresidential buildings, along with data on energy-related characteristics of these buildings. To obtain this information, a sample of nonresidential buildings was selected according to the sample design described in the "Sample Design" section below.

The NBECS was conducted in two stages. In the first stage, information about the selected buildings was collected in the Building Characteristics Survey through voluntary personal interviews with the buildings' owners, managers, or tenants.

In the second stage, the Energy Supplier Survey, data concerning the actual consumption of energy were obtained from records maintained by energy suppliers to the building. This information was obtained by means of a mail survey conducted under EIA's mandatory data collection authority. A survey research firm conducted both the personal interviews for the Building Characteristics survey and the mail survey of energy suppliers under EIA's direction.

The data presented in this report are from the Building Characteristics Survey only. These data were collected on Form EIA-871A, which consists of the Building Characteristics Questionnaire together with the Authorization Form. The Authorization Form was used to secure the release of the buildings' energy consumption records to the data collection contractor during the Energy Supplier Survey (Form EIA-871B-F). A companion volume to this report, scheduled for release in the spring of 1989, will cover data on consumption and expenditures for these buildings.

In addition to describing the sample design, this appendix describes the procedures used to collect the building characteristics data, the authorization forms, and a special data collection form for the Bureau of the Census, Form EIA-871G, the Construction Improvements and Maintenance and Repairs Supplement (Census Supplement). The Building Characteristics Questionnaire, the Authorization Form, and the Census Supplement are shown in Appendix F.

Sample Design

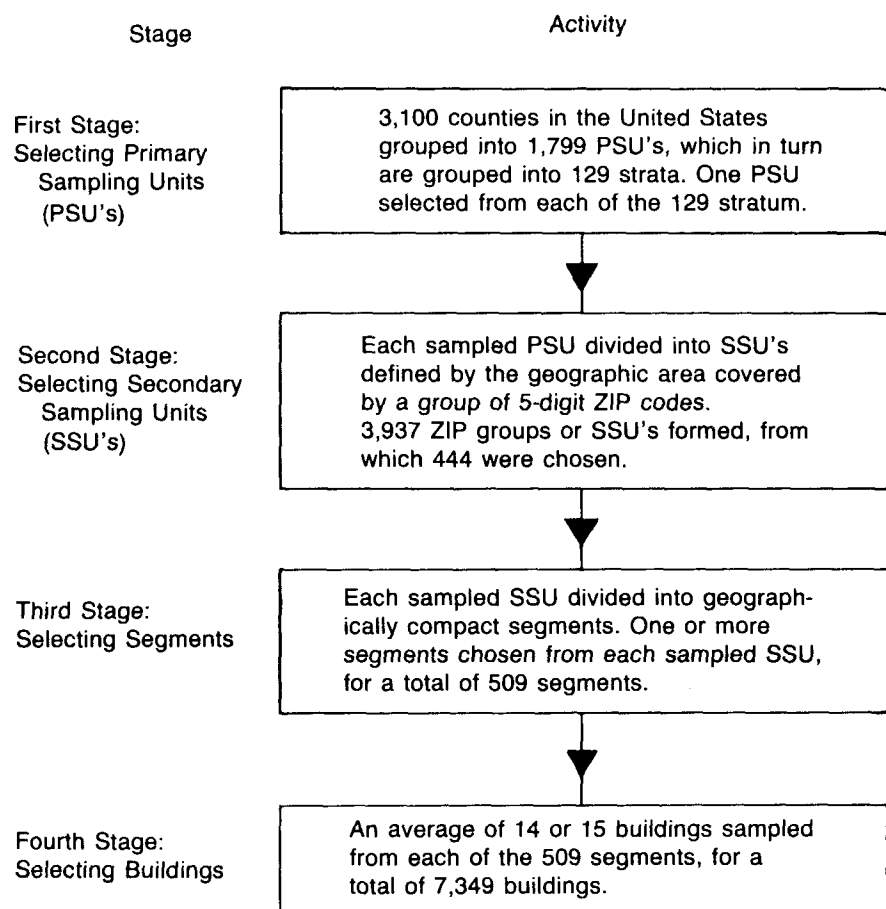
In the NBECS, the individual building is the basic sample unit. (See the Glossary for the definition of a building in this survey.) The sample design for the 1986 NBECS was similar to the design of the 1979 and 1983 NBECS. However, while the 1979/1983 sample was drawn from a previously existing frame developed for other purposes, the 1986 sample was drawn from a new frame developed specifically for the NBECS. For the 1986 sample, a total of 7,349 sample buildings were selected by use of multistage area probability methods. A supplementary sample of 1,840 buildings was obtained by sampling from lists of large and specialized buildings. Because "large" buildings had a higher probability of being selected into the sample than "small" buildings, certain very large buildings that were included in the 1986 NBECS were also included in previous NBECS. Except for these few buildings, the 1986 sample did not overlap with the earlier survey rounds.

Multistage Area Probability Sample

The area component of the 1986 NBECS sample used a four-stage cluster sampling design (Figure A1). In the first stage, 129 primary sampling units (PSU's) were selected. A PSU typically consists of one or more contiguous

counties, such as a metropolitan area with surrounding suburban counties, or a set of one or more rural counties. Essentially, the same PSU's were selected for both the 1986 NBECS and the 1984 Residential Energy Consumption Survey (RECS) (Energy Information Administration, May 1987). The two survey designs diverged at the second and subsequent stages.

Figure A1. Multistage Area Probability Sample Stages and Activities



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

To prepare for the first stage sample, the approximately 3,100 counties and independent cities of the United States were grouped into 1,799 PSU's. PSU's with similar characteristics were grouped to form 129 strata. Characteristics used to define the strata were Census division, Metropolitan Statistical Area (MSA) or nonMSA status, the predominant residential heating fuel in 1980, and climate zone (Energy Information Administration, May 1987). Within each stratum, one PSU was selected with probability proportional to its 1980 Census population.

Probability-proportional-to-size sampling (PPS) is commonly used to take advantage of knowledge about the sample units, that is, knowledge about measures of size (MOS) such as population, to improve the reliability of survey estimates. For quantities roughly proportional to these MOS's, estimates based on PPS sampling have lower variances than estimates based on equal-probability sampling. Despite being a measure of people rather than of buildings, 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 that each of these PSU's formed a stratum by itself, so that each was selected with certainty. For the noncertainty PSU's, the Keyfitz method (Hansen, Hurwitz, and Madow, 1953) was used to assign selection probabilities. This method enhanced the probability of inclusion of specific PSU's that had been selected for the previous RECS, while, at the same time, ensuring that the current 1984 RECS selection probabilities were still proportional to 1980 population levels. Finally, controlled selection (Groves and Hess, 1975) was used to improve the geographic coverage of the sample by maximizing the number of different States represented by the sampled PSU's.

To form second-stage sampling units for NBECS, each sampled PSU was divided into areas corresponding to 5-digit ZIP Codes (Energy Information Administration, April 1987 and December 1986). ZIP Codes covering small areas or representing individual buildings or post office boxes were grouped together with larger area ZIP Codes. All second-stage sample units are, thus, referred to as ZIP groups. A total of 3,937 ZIP groups were formed within the sampled PSU's. Of these, 444 were selected, using probabilities proportional to a second-stage MOS. This MOS, designed to reflect the level of commercial activity, was the estimated number of buildings in the ZIP group, expressed as an integer multiple of 100. This MOS was computed for each ZIP group using employment data from the U.S. Department of Commerce, Bureau of the Census' 1983 County Business Patterns (CBP) reports, and employee occupancy rates in different building types obtained from the 1979 NBECS.

The ZIP group MOS's were 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/nonMSA status. A size for each cell was defined as the sum of the PSU-weighted MOS's of all ZIP groups in the PSU's of that cell. The desired number of third-stage sample units (prior to selection) 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's.

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's 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 large MOS's were selected two or more times. A total of 509 selections occurred, representing 444 unique ZIP groups. The number of times that a ZIP group was selected corresponded to the number of third-stage sample units to be drawn into the sample from that ZIP group.

The third-stage sample 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 mapping and rough counting of nonresidential buildings. 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.

Once segments were selected, preparations were made on the fourth stage of sampling, selecting nonresidential buildings from within segments. With a few exceptions, a nonresidential building is defined as a structure totally enclosed by walls extending from the foundation to the roof. A nonresidential building was one that housed some type of nonresidential activity. (See the Glossary for a complete definition of a nonresidential building.) Field

workers canvassed each sampled segment on foot, identifying and listing the addresses of all nonresidential buildings. Field workers also estimated the square footage and apparent principal usage of listed buildings, information that was subsequently used to assign buildings to strata for sampling.

Buildings were sampled within these 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 with less than 10,000 square feet was sampled at an overall rate of only 1 in 1,360, the stratum of office buildings with 50,000 square feet or more was sampled at a rate of 1 in 204. This stratified sampling is similar to PPS sampling in that each uses MOS's (but in a different way) to increase the reliability of estimates of square footage and energy consumption.

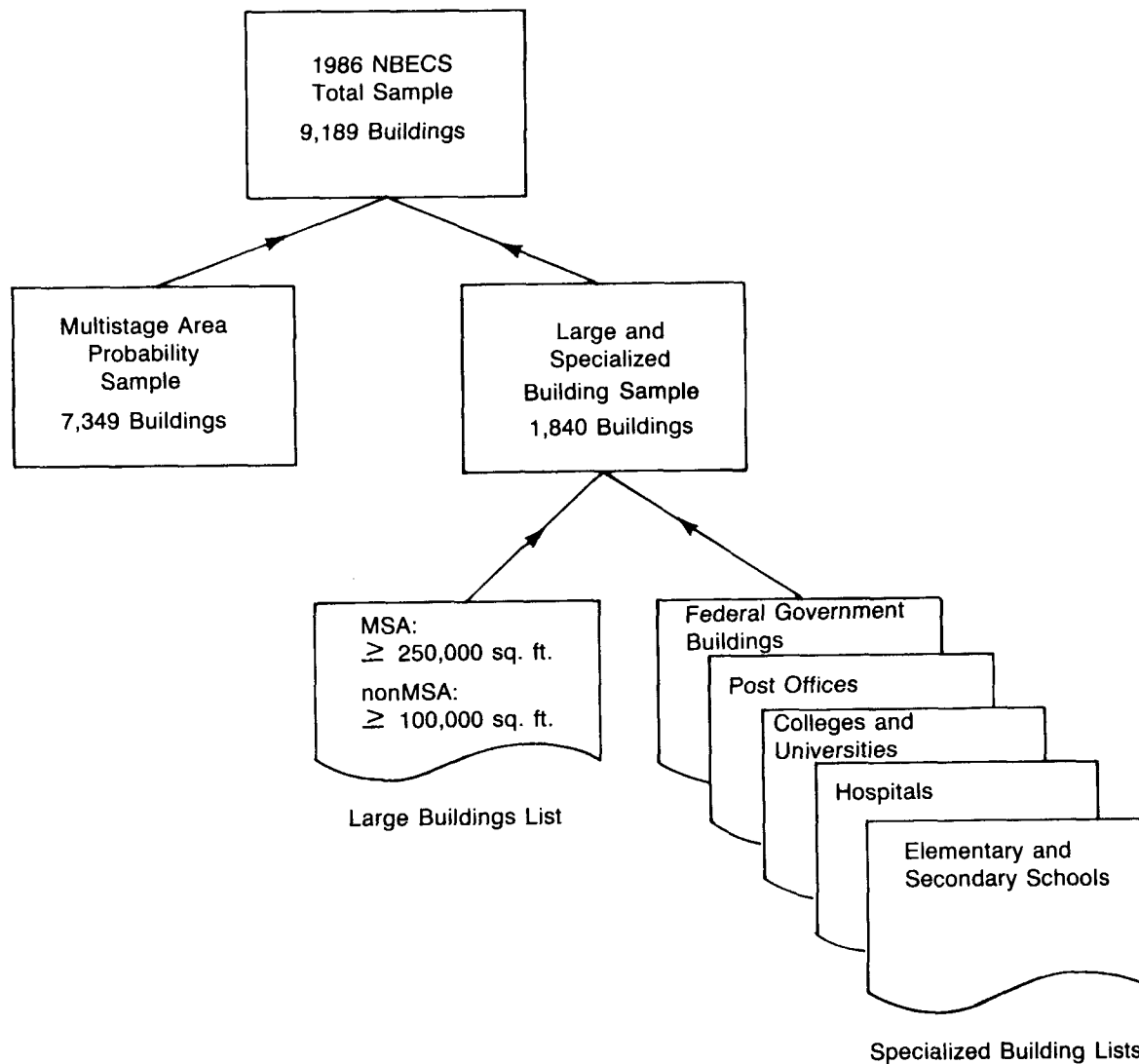
An average of 14 or 15 buildings were sampled from each segment. If during the interview a sample selection turned out to be a facility (for example, campus or complex) of two or three buildings rather than a single building, all buildings in the facility were taken into the sample. Facilities of four or more buildings were subsampled. A final total of 7,349 buildings was selected into the multistage area probability sample.

Supplementary Sample from Lists of Large and Specialized Buildings

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 also drawn from five lists of specialized buildings (Figure A2).

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 contained buildings of 100,000 square feet or more. The list was compiled through inquiries with Chambers of Commerce, other local sources, and special directories.

Figure A2. 1986 NBECS Sample Design



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

The five lists of specialized buildings were limited to certain types of buildings or facilities with 50,000 square feet or more. These lists were (1) hospitals, (2) colleges and universities, (3) elementary and secondary schools, (4) post offices, and (5) Federal Government buildings. These lists of specialized buildings were used for three reasons. First, they contained many large buildings and, thus, helped ensure adequate coverage of significant energy users. Second, they ensured good coverage for certain building types that are distinguished separately in NBECS reports, such as health care and education. Third, they compensated for inadequacies in the MOS's developed for ZIP groups using the 1983 CBP reports. The CBP reports do not cover employees exempt from the Social Security System, such as the majority of the Federal workforce. The weighting 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 is.

The lists within each sampled PSU were stratified by building size and general usage, and buildings were sampled with equal probability within strata. (In many cases, 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 probability 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 six lists (large building list and five 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. 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. For example, if a given building was present on the hospitals list, its selection from another list was disregarded (Energy Information Administration, December 1986).

There was also a problem of overlap between the 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 (Chu, 1987).

A total of 1,468 list entries were sampled. Because some entries were multibuilding facilities, the final list sample comprised 1,840 individual buildings.

Description of the Target Population

To be eligible for the survey and to be included in this report, a building had to satisfy three criteria: (1) it had to meet the 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 report was evaluated at three points in the survey: during the initial listing of the sample, during the interviewing of the building owner or manager, and during the analysis of the data.

The first criterion, the building definition, has been used consistently in the 1979, 1983, and 1986 NBECS. The second criterion, of commercial activity, has been tightened in the successive surveys, to restrict attention to a well-defined population that does not overlap with a group covered by other EIA surveys. The third criterion, size, has been added to eliminate a large inherently ill-defined group of marginal buildings; those buildings contribute minimally to total commercial floorspace and energy consumption, yet different reasonable decisions on how to identify these buildings could lead to substantial variations in building counts.

The definition of a building was the same one used in previous NBECS: a structure totally enclosed by walls that extend from the foundation to the roof. Thus, buildings such as water, radio and television towers were excluded from the survey. Also excluded were partially open structures, such as lumber yards; enclosed structures that people usually do not enter, such as pumping stations and cooling towers at electric power plants; enclosed structures that are not buildings, such as oil tanks, statues, and monuments; and dilapidated or incompletely built buildings missing a roof or a wall. Structures that were included in the survey by specific exception despite not being "totally enclosed by walls", were parking garages and structures on pillars.

The second criterion was that a building had to be primarily used for some commercial purpose; that is over 50 percent of the building's floorspace must be devoted to activities that are neither residential nor industrial nor agricultural. Buildings that were 100 percent residential were out of scope for the 1986 survey (as in previous surveys) and should not have been included during the listing stage. During the interviewing stage, screening questions instructed the interviewer to terminate the interview if the respondent indicated no nonresidential activities took place in the building.

However, buildings between 50 to 99 percent residential were interviewed. Approximately 80 interviews were terminated because the building was used exclusively for residential purposes. In a major change from previous NBECS reports, during the analysis of the data, the scope of this report was restricted to eliminate the interviewed buildings that were 50 to 99 percent residential. This change was made so that all noncommercial uses would be treated the same way for this report. As a result of this additional restriction, 176 residential buildings were classified as out of scope for this report.

Buildings for manufacturing or for processing of agricultural products were included at the listing stage. However, in a change from previous surveys, the interview was terminated if 50 percent or more of the building was used for industrial or agricultural purposes. This change was made because results from the earlier NBECS indicated that this type of survey cannot cover industrial and agricultural activities reliably. In the 1986 survey, approximately 1,100 interviews were terminated because the activities were predominantly industrial or agricultural.

The third criterion was that a commercial building had to measure 1,001 square feet or more to be considered in scope for this report. There were 775 buildings 1,000 square feet or less that did not meet this criterion. Six of these buildings were also between 50 and 99 percent residential.

After weighting, the 775 buildings 1000 square feet or less would represent an additional 1,057,000 buildings and, thus, increase the estimate of the building stock in the United States as of December 31, 1986, by approximately 25 percent. However, these buildings would add less than 1 percent to total floorspace and, based on consumption data from the 1979 and 1983 surveys, only 2 percent to total energy consumption. In addition, obtaining meaningful counts of buildings 1,000 square feet or less is difficult since in many instances it is difficult to distinguish some very small commercial buildings from nonbuildings during the listing stage.

Thus, buildings 1,000 square feet or less, like those between 50 and 99 percent residential, are considered out of scope for this report. All other interviewed buildings remained in scope for the report.

Response Rates

As mentioned in the Sample Design section, the total sample of the 1986 NBECS consisted of 9,189 buildings, 7,349 from the area sample and 1,840 from the list sample (Table A1). Of these, 7,539 buildings were

eligible for interviewing, 6,169 from the area sample and 1,370 from the list sample. Of the total number of buildings eligible for interview, interviews were completed at 93.2 percent, or 7,024 buildings.

Data Collection

Data Collection Procedures

Initial contact with the building representative was made through an introductory letter sent to each building in the survey sample. The letter, signed by the Director of the Energy End Use Division of the EIA, was addressed to the building 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 NBECS data in setting national energy policies. To protect confidentiality, the letter was addressed by the survey contractor after it was signed at EIA.

The data were collected by personal interview over a three-and-one-half month period from January 12 through April 24, 1987. Interviewers visited all sampled buildings in person to ascertain if the structure met the eligibility requirements of the survey and to identify the individual meeting the criteria for a building representative or 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.

A limited number of interviews were conducted by telephone. This occurred as part of the nonresponse conversion effort, or if a knowledgeable building respondent was not located in the same PSU as the sampled building. However, in all cases, an interviewer had first visited and observed the sampled building.

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 content of the 1986

Table A1. Number and Distribution of 1986 NBECS Sample Buildings By Building Disposition

Building Disposition	Number of Buildings	Percent of All Buildings	Percent of Eligible Buildings	Percent of Interviewed Buildings
Total Sample				
Total	9,189	100.0	---	---
Eligible for				
Interview	7,539	82.0	100.0	---
Interviewed	7,024	---	93.2	100.0
In Scope for Report	6,073	---	---	86.5
Out of Scope for Report	951	---	---	13.5
Not Interviewed	515	---	6.8	---
Not Eligible for Interview	1,650	18.0	---	---
Area Sample				
Total	7,349	100.0	---	---
Eligible for				
Interview	6,169	83.9	100.0	---
Interviewed	5,745	---	93.1	100.0
In Scope for Report	4,854	---	---	84.5
Out of Scope for Report	891	---	---	15.5
Not Interviewed	424	---	6.9	---
Not Eligible for Interview	1,180	16.1	---	---
List Sample				
Total	1,840	100.0	---	---
Eligible for				
Interview	1,370	74.5	100.0	---
Interviewed	1,279	---	93.4	100.0
In Scope for Report	1,219	---	---	95.3
Out of Scope for Report	60	---	---	4.7
Not interviewed	91	---	6.6	---
Not Eligible for Interview	470	25.5	---	---

"— —" = Not applicable.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

NBECS questionnaire was similar to that used in the 1979 and 1983 surveys, with some wording and structural changes made to improve data quality. Experience with the prior surveys resulted in major changes being made to resolve ambiguities, and permit better description of the characteristics of the building. The questionnaire is shown in Appendix F.

Approximately one-half of the buildings in the sample were preselected to be asked the questions on Form EIA-871G, the Census Supplement, which collected data on expenditures for construction improvements and maintenance and repairs during 1986. For more information about the Census Supplement, see the section at the end of this appendix on "Special Data Collection for the Bureau of the Census."

The average completed building interview lasted 37 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. On the average, it took an additional 6 minutes to complete the Census Supplement. Thus, for the 4,591 buildings with the Census Supplement, the average total time per completed interview was 43 minutes. The average time for each completed case (including interviewer preparation, travel, callbacks, interviewing, and editing time) was 4 hours and 22 minutes.

Minimizing Nonresponse

Several approaches were employed in the effort to minimize nonresponse. As previously mentioned, before the initial contact with the building was made, a letter was sent to the owner or manager of each building from the Director of the Energy End Use Division. Then, during the field period, the interviewer assigned to the building made up to four callbacks at different times of the day throughout the week to minimize the number of uncontacted buildings. Approximately 400 interviews were initially refused. Reasons for refusals included being too busy, not believing in surveys, and seeing no value in participating in the NBECS itself.

In May and June 1987, each of the nonresponse cases was reviewed to determine if it was a candidate for conversion. Reasons given for the refusal and the history of the case were reviewed first by the regional supervisor and then by the central office staff. No attempts were made to convert respondents who reported policies against participating in surveys, were unwilling to spend time answering questions, or refused due to the subject of the survey. Cases where the respondent was located outside of a sample PSU or was unavailable during the field data collection period were among

those targeted for conversion. Individualized letters explaining the importance of the survey were mailed to the 377 cases selected for nonresponse conversion. The cases were assigned to telephone interviewers with special training and experience in refusal conversion strategies. The non-response conversion effort resulted in 174 of the 377 cases (or 46.2 percent) being turned into completed interviews.

Interviewer Training and Supervision

The data were collected by the contractor's field staff consisting of 146 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 an assistant field director. The six regional supervisors and their assistants were trained at a four-day supervisor training session. They were trained in data collection, field office procedures, and quality control. The supervisors were also trained to serve as small-group leaders at the interviewer training sessions.

Three-and-a-half-day interviewer training sessions were held at two locations during January 1987. All interviewers working on NBECS were trained at one of these sessions or at a replacement interviewer training course held in February. Twenty-four of the interviewing staff had worked on the field listing for NBECS. Of the remainder, 103 had prior interviewing experience, and 19 had no prior interviewing experience.

Each training session was conducted by the contractor's central office staff with the assistance of the regional supervisors. EIA personnel observed both sessions. The sessions covered general interviewing techniques, the background of the NBECS, the definition of a building, finding the sampled building, a question-by-question review of the questionnaire, and administrative information. A variety of training techniques were used including lectures, slide presentations, and small-group sessions to practice interviewing and administering the questionnaire. 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. Every interviewer was provided with an *NBECS Interviewers Manual*, which included step-by-step instructions for planning, conducting, and recording interviews; and question-by-question specifications describing the intent of each question, definitions of terms used in the survey, and how each question was to be asked.

Several steps were taken to ensure that the interviews were conducted as intended. Questionnaires were 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 the following section on "Data Editing."

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 cases would be checked. The regional supervisors telephoned the respondents identified on the interview to confirm that the interview had been conducted and to verify several of the 15 key data items.

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 problems and, as a last resort, firing the interviewer.

Each interviewer conducted an average of 48 interviews: 19 interviewers each completed 10 or fewer interviews, while five interviewers each completed over 100. Over half of the 7,024 completed interviews were conducted by 54 interviewers.

Data Editing

Data editing for the Building Characteristics Survey occurred at several points during data collection and processing. 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 "Supervisor Scan Edit Form" to check a set of 15 specified data items. The purpose of this field edit was to provide the supervisor, the data collection contractor, and the interviewer with continuous feedback on the quality of the data being collected. The supervisor discussed the results of these edits in weekly telephone conferences with each interviewer and mailed a copy of the scan edit form with each questionnaire to the contractor's central office.

After the contractor received the questionnaire, it was manually edited and prepared for data entry. The scan edit checked for completeness and logical consistency and identified cases with missing data. Certain information was designated as a key data item. These key data items required telephone data retrieval if missing from the questionnaire. If retrieval of missing data for one or more items failed, or if it was not performed because the data was not a key data item, data values were supplied by imputation. For a description of the imputation process, see Appendix B, "Sampling and Nonsampling Errors." Cases proceeded to coding and data entry after telephone data retrieval was completed. Preparation for data entry involved checking the accuracy of the questionnaire skip patterns and that only allowable values or codes were entered. All data entry was performed with 100 percent verification of all keystrokes.

The contractor took several steps to resolve inconsistencies or ambiguities in the data. First, answers to other parts of the questionnaire were reviewed to see if they might help explain the problem. The interviewers had been asked to write comments after the interview or to explain any special cases in the margin of the questionnaire. These notes were relied upon extensively in this part of the review and were very helpful in explaining some of the inconsistencies. EIA personnel helped review some of the hard-to-resolve cases and provided technical guidance on how to reconcile some questionnaire responses. When these efforts failed to resolve a problem, especially if it concerned the energy sources or heating and cooling equipment, the contractor contacted the respondent by telephone.

Telephone contacts to clarify both questionable or missing information were made to the respondents for 1,330 buildings. 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.

Finally, the data were machine edited to further ensure 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 determine how to correct it. 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.

Special Data Collection for the Bureau of Census

For the 1986 NBECS, the EIA administered for the Bureau of the Census, U.S. Department of Commerce, a supplemental questionnaire (Form EIA-871G) on expenditures for construction improvements and for maintenance and repairs. Approximately one-half of the buildings sampled for the NBECS were randomly preselected for the supplement.

Any respondent who did not have access to the construction improvement and maintenance and repair data 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 followup study. Of the 4,591 buildings selected for the supplement, 826 cases had to be dropped from the sample when it was determined that the building was not eligible to be interviewed for the Building Characteristics survey. Before the followup study was conducted, responses were obtained from 3,262 of the 3,765 remaining cases for a response rate of 86.6 percent.

In the fall of 1987, a three-part followup study was conducted with 884 owner and tenant representatives from a subsample of the original buildings selected for the Census Supplement. This followup was done to reduce both total and partial nonresponse to the supplement, as well as to verify independently the data that were obtained during the original interview. The building owners and tenant representatives were first sent a letter explaining the purpose of the survey, along with worksheets and definitions. 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. Then, several weeks later, specially trained telephone interviewers called to obtain the data.

In the first phase of the followup study, a subsample of 34 buildings of 100,000 square feet or over were selected for nonresponse conversion.

These cases were selected from buildings for which no data had been obtained for the supplemental questionnaire at the time of the building characteristics interview. The principal reason for having no supplement data for these 34 buildings was because of refusals. A total of 26 responses were obtained from this followup effort, bringing the overall response rate for the Census Supplement to 87.3 percent.

In the second phase of the followup study, data retrieval for item non-response was conducted. A subsample of 138 buildings selected from those for which the respondents provided a "don't know" response to one or both of the Census Supplement questions, and, instead, provided the name, address, and telephone number of the person or persons who would have the information. Referrals such as these were often to management companies not located in the same city as the sampled buildings. Followup for the 138 buildings required contact with 253 building owners or tenants, of which 181 or 72.4 percent provided additional information, covering 112 of the 138 sampled buildings.

In the third and final phase of the followup study, a sample of 596 buildings were selected to verify independently the data obtained in the original interview. 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 Supplement. The respondents were then telephoned to obtain the data. Of the 596 original supplement respondents to the Census Supplement, 519 or 87.1 percent resubmitted the data.

The results of the followup study are being evaluated by the Bureau of the Census and will be used in the design of future surveys. The data from the construction improvements and maintenance and repairs will be published by the Bureau of the Census in a supplement to the Current Construction Reports, C-30 Series, *Value of New Construction Put in Place*.

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Sampling and Nonsampling Errors



At the Albany County Airport in New York State, this skylight solar court provides 40 percent of the lighting and 20 percent of the heating for the passenger terminal.



Appendix B

Sampling and Nonsampling Errors

Introduction

The quality of data collection and processing affects the accuracy of estimates based on the survey. All the statistics published in this report are estimates of population values, such as the total floorspace in U. S. commercial buildings. These estimates are based on observations from a randomly chosen subset of the entire population of commercial buildings. As a result, the estimates always differ from the true population values.

Differences that would be expected to occur in all possible samples, or in the average of all estimates from all possible samples, are known as systematic errors, or biases. The four sections that follow this introduction describe some of the sources of this nonsampling error, and how the survey is designed and conducted to minimize such errors. Random differences between the survey estimate and the population value, which occur because of the particular sample that was selected by chance, are known as sampling errors. The average sampling error, averaged over all possible samples, would be zero. Although the sampling error is nonzero and unknown for the particular sample chosen, the sample design permits sampling errors to be estimated. The final section, "Computation of Standard Errors," describes how the magnitude of the sampling error is estimated and presented for statistics given in this report.

Unlike the sampling error, the systematic 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.

The effects of changes in the survey design on comparisons among the three completed NBECS are discussed in the first section below, "NBECS Comparisons Over Time." Also discussed in this context is a special type of analysis done to assess changes over time in the commercial buildings population.

A different source of bias is poorly worded questions. The section "Question Wording" discusses some of the difficulties encountered in trying to obtain meaningful data on questionnaire items that were new in the 1986 survey.

Another potential source of bias is nonresponse, either for an entire sampled building (unit nonresponse) or for a particular question from a responding building (item nonresponse). Most unit nonresponse cases were caused by a representative's refusing to cooperate or being unavailable. Item nonresponse resulted when the building representative did not know, or, less frequently, refused to give, the answer to a particular question. The sections "Unit Nonresponse Adjustments" and "Item Nonresponse Adjustments" present in detail the procedures used to handle these two types of nonresponse.

As in previous surveys, the 1986 NBECS design also provides a basis for estimating the magnitude of random sampling errors, described in the final section, "Computation of Standard Errors."

NBECS Comparisons Over Time

Comparisons Across Three NBECS Surveys

The 1986 NBECS sample was drawn using a new, special-purpose design, as described in Appendix A, "How the Survey Was Conducted." Field procedures for implementing the new sample design were also revised, building on the experiences from the 1979 survey. (The only new sampling done in 1983 was for new construction since 1979.) An additional change from previous NBECS is that the buildings population described in this report excludes those of 1,000 square feet or less, and those whose primary use is residential. To facilitate comparison of the current survey with the previous ones, the number of buildings and aggregate square footage have been recomputed (Table B1) from the 1979 and 1983 NBECS data according to the 1986 population definition. That is, for the recomputed aggregates, buildings 1,000 square feet and under and those formerly classified as residential have been eliminated from the data for 1979 and 1983.

Comparison of the 1986 totals with those for 1979 and 1983 indicates that the 1986 survey covered the target population much more efficiently than did the previous surveys. That is, the 1979/83 design apparently resulted in a general undercount. This undercount is evident in that the increase between the 1983 and 1986 surveys, amounting to 30 percent of the number of buildings and 18 percent of the floorspace, is far greater than the total new construction between 1984 and 1986, based on the 1986 data. That total new construction accounts for only 7 percent of all buildings and 8 percent of all floorspace existing in 1986.

Similarly, for both the number of buildings and floorspace, the 1979 survey estimate is about 25 percent lower than the 1986 total, even though construction during the intervening years (1980 through 1986) accounts for only 16 to 17 percent of this total. Indeed, whereas the actual number of buildings in each pre-1984 construction year period could only have decreased between 1979 (or 1983) and 1986, comparison of the 1979 (or 1983) and 1986 estimates shows increases in all periods since 1920.

The improved coverage is primarily among smaller buildings, those under 10,000 square feet. Even within this size group, smaller buildings showed greater percent increases. The increased coverage of small buildings is reflected also in high percent changes for buildings with fewer than 10 workers, and to a lesser extent for those with 10 to 20, as well as for buildings of one or two floors.

Geographically, the change in coverage was most dramatic in the West. Part of this change reflects the expansion of the 1986 target population to include the entire United States, as compared with the contiguous United States in 1979 and 1983. Virtually all the coverage increase was in metropolitan areas.

The building activity categories showing the greatest coverage increases were assembly, mercantile and service, and warehouse.

Trend Analysis by Building Vintage

As described in the text, because of the difficulties of cross-sectional comparisons, special analysis was done to assess differences across building vintages. The object of this analysis was to determine if the proportion of buildings or of floorspace in a particular category tended to increase or decrease with building age. The types of categories studied included a specific Census region (such as the South) a size range (such as, over 100,000 square feet) or use of an energy source (such as natural gas).

Buildings built before 1900 were excluded from this analysis, since these very old buildings are rare, and may not follow the same pattern that describes the bulk of the commercial buildings population. The remaining buildings were sorted by construction year, then divided into groups of 75. Within each of the 79 resulting groups, the construction date varied by only one or two years. The mean construction year was computed for each group.

For a particular category of interest, the population proportion of buildings falling in that category was estimated within each of the 79 construction-year groups. This proportion was then regressed against the mean construction year, each construction-year group being one observation in the regression. The age trend was considered statistically significant if the construction-year coefficient had a t-statistic (ratio of the coefficient to its standard error) greater than 2.0.

Population proportions were computed in terms of floorspace as well as number of buildings. For both floorspace and numbers, regressions were performed using the group proportions directly, and also using the logistic transformation of the proportions. In most cases, similar significance levels were obtained from the original and the transformed scales. A trend that was significant on only one of the two scales was considered only weakly significant.

↓
What are the results?

Table B1. Comparison of 1979, 1983, and 1986 NBECS, Number of Buildings and Floorspace

Building Characteristics	Number of Buildings (thousand)			Floorspace (million square feet)			RSE ROW Factor
	1979	1983	1986	1979	1983	1986	
RSE Column Factor:	1.174	1.083	0.788	1.109	1.179	0.764	
All Buildings.....	3,073	3,185	4,154	43,546	49,471	58,229	4.62
Year Constructed							
1920 or before.....	561	536	443	7,505	7,240	6,034	9.28
1921 to 1960.....	1,321	1,300	1,507	17,037	17,080	18,306	6.08
1961 to 1979.....	1,192	1,219	1,545	19,004	19,528	24,006	5.96
1980 to 1983.....	--	131	350	--	5,623	5,205	13.38
1984 to 1986.....	--	--	309	--	--	4,678	11.53
Building Floorspace (Square Feet)							
1,001 to 10,000.....	2,239	2,278	3,151	9,215	9,264	13,069	4.87
10,001 to 100,000.....	773	831	923	20,893	22,351	26,339	5.55
Over 100,000.....	61	76	80	13,437	17,856	18,821	7.19
Census Region							
Northeast.....	530	525	663	9,531	10,253	11,830	9.26
Midwest.....	977	987	1,096	14,197	15,248	16,034	8.11
South.....	1,094	1,183	1,570	13,661	16,611	19,427	8.34
West.....	472	490	825	6,156	7,359	10,937	13.23
Principal Building Activity							
Assembly.....	425	420	575	5,329	5,460	7,339	8.99
Mercantile/Service.....	968	900	1,287	9,959	10,322	12,805	7.58
Office.....	455	501	614	6,986	8,311	9,546	7.25
Warehouse.....	367	357	549	6,007	6,763	8,996	8.35
All Other.....	858	1,007	1,128	15,265	18,617	19,544	6.34
Energy Sources Used (Solely or in Combination)							
Electricity.....	3,001	3,052	4,013	43,153	48,327	57,036	4.69
Natural Gas.....	1,864	1,904	2,278	30,477	33,935	38,140	5.80
Fuel Oil.....	641	441	542	11,397	9,409	11,163	8.53
District Systems.....	54	68	85	3,949	4,777	4,815	15.40
Propane.....	214	191	351	2,797	2,562	3,362	16.07
Energy End Uses							
Space Heating.....	2,814	2,808	3,681	41,424	45,685	54,510	4.64
Cooling.....	2,051	2,194	2,882	34,236	40,183	46,601	5.06
Water Heating.....	2,147	2,414	2,896	35,819	43,080	48,836	4.97
Cooking.....	988	1,153	563	20,706	25,443	17,227	6.55
Manufacturing.....	250	322	132	4,769	5,826	3,081	11.18

See footnotes at end of table.

Table B1. Comparison of 1979, 1983, and 1986 NBECS, Number of Buildings and Floorspace (continued)

Building Characteristics	Number of Buildings (thousand)			Floorspace (million square feet)			RSE Row Factor
	1979	1983	1986	1979	1983	1986	
RSE Column Factor:	1.174	1.083	0.788	1.109	1.179	0.764	
Metropolitan Status							
Non-Metropolitan.....	1,273	1,312	1,421	12,616	14,025	13,122	9.50
Metropolitan.....	1,800	1,873	2,734	30,929	35,447	45,107	5.16
Workers							
0 to 9.....	2,067	1,951	2,875	13,668	13,411	19,705	5.34
10 to 19.....	440	490	587	5,119	5,795	7,895	7.94
20 to 49.....	361	487	434	8,417	9,762	8,847	6.55
50 or more.....	206	257	258	16,342	20,503	21,782	7.23
Floors							
One.....	1,702	1,815	2,688	13,583	17,110	23,776	6.49
Two.....	797	800	978	11,149	11,611	14,367	6.57
Three.....	384	379	324	7,365	7,642	7,921	9.72
More than three.....	190	191	165	11,448	13,109	12,164	7.45

Note: For consistency with the population definition used in this report, buildings of 1,000 square feet or less, and those that were predominantly residential are excluded from the totals for all three survey years. As a result, the totals shown for the 1979 and 1983 survey years differ from those published previously. To obtain a Relative Standard Error (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, Energy End Use Division, 1979, 1983, and 1986 Nonresidential Buildings Energy Consumption Surveys.

Question Wording

Even though the interviewer was instructed to conduct the interview with the person most knowledgeable about the building, there is a great deal of variation in how much NBECS respondents know about their buildings. Some respondents will not know some of the information requested; some will be able to provide certain information only if the questions are expressed in the particular terms they understand. This has presented a special challenge to the NBECS questionnaire designers: with such a diverse population of respondents, it is difficult to construct standard wording with concepts that are understood by all respondents. The questionnaire is reproduced in Appendix F.

Following is a summary of some difficulties that EIA staff has identified with the questionnaire wording. The extent of these comments should not be viewed as a failure of the questionnaire; the basic questionnaire worked well. Rather, these comments indicate areas that require further refinements to improve overall data quality.

Square Footage

Nearly one-third of the respondents did not know the square footage of their buildings. However, all but about 100 (less than 2 percent) were able to give the size range. For buildings with the range reported, but not the exact square footage, the range was used as a basis for imputing the exact value. For buildings with no range reported, the imputation was based on other building characteristics, such as number of workers and building activity, and on the rough estimates of building size used in sampling (see Appendix A).

Principal Building Activity

The principal building activity refers to the primary function that takes place in the particular building sampled. In some cases, though, the respondent apparently reported instead the overall function of the facility or establishment to which the building belonged. For instance, a library is an assembly building, but a library on a university campus may have been reported instead as an education building (academic or technical instruction). Another difficulty with identifying principal activities is that buildings with the same title may, in fact, have different primary functions. For example, space in a courthouse may be devoted primarily to office space, to

jail cells (public order and safety) or to hearing rooms (assembly). The principal activities of respondent buildings were checked by EIA staff against interviewer observations, and recoded if an obvious assignment error was made. 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. 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.

Construction Materials

The questions on wall construction were designed to determine the composition of both the structural frame of the building and the exterior wall covering. For some types of wall construction, one material, such as concrete panels, serves both functions. For other types, the covering and frame are separate. In the latter case, some respondents knew only the covering or only the frame, hence had difficulty choosing among responses that specified both.

Roof Area

The area of the roof helps to characterize the heat loss potential of a building. However, this area is not commonly dealt with by building managers in the way that the building floorspace is. In addition, complicated shapes and slopes make it hard to estimate the area of many roofs. The number of respondents who were unable to choose the category of roof area for their buildings was more than twice the number who could not choose the category of floorspace. While the total number of nonrespondents for the roof area was still less than 4 percent of the sample, 8 percent of the responses that were given failed consistency checks that compared the roof area to the building floorspace and number of floors. Thus, the response errors for the roof area appear to be somewhat higher than for some more straightforward items.

Roof Materials

Concrete was not included in the list of possible roof surface materials, since prior to collecting the data for this report concrete roofs were thought to be rare. However, a number of respondents reported this type of roof under "other." Future survey questions on roof materials should include concrete as a specific option.

Percent Heated/Percent Cooled

These percentages were intended to be fractions of the reported building floorspace, including basements, hallways, and enclosed stairwells. However, some respondents may have reported percents relative to the rentable floorspace only, or relative to the portion of the building occupied by the major establishment. In addition, the questions on percent heated and cooled were phrased in the present tense. Although interviewers were instructed to interpret these questions to refer to the portion designed to be heated or cooled, respondents may have reported the percentages as of the time of the interview.

Differences between the designed heating or cooling, and what actually was done in the building during 1986 occasionally resulted in some apparent inconsistencies. For a few buildings, it was reported that heating (or cooling) was not performed in the building, yet the percent heated (or cooled) was reported to be greater than zero. For some other buildings, the opposite occurred, with an energy source reported used for heating (cooling) while the percent heated (cooled) was reported as zero.

If both the percent heated and the percent cooled were reported as zero, a related series of questions was skipped. This series included questions on equipment, occupant control, reduced use off-hours, and reduced use in any portion of the building that was vacant for three months or more. In the tables that summarize the responses to these questions, "heated buildings" and "cooled buildings," respectively, are those buildings for which the percent heated or cooled was greater than zero. The totals for these buildings differ somewhat from the totals for buildings reporting heating or cooling as end uses performed in the building.

Heating and Cooling Equipment

These questions were intended to cover only equipment actually used in the building during 1986, but in some cases equipment present, but not used, may have been reported. In addition, it appears that the terminology for different types of equipment was not consistently interpreted by respondents.

Boilers are often called furnaces, but in NBECS only warm-air furnaces were to be reported as furnaces. The question on presence of boilers specifically asked for boilers inside the building, to avoid reporting of boilers in a central plant that provide steam or hot water to the building; this qualification caused confusion in cases where the boiler that served a particular building, and only that building, was located outside the building itself.

The question that was intended to cover all types of free-standing heating units was a long phrase beginning with "electric baseboards;" nonelectric stand-alone units may not have been reported in response.

Packaged heating and cooling units were asked for as "packaged rooftop units;" packaged units located beside the building were reported under other and recoded after the interview into the same category as rooftop units.

Water-source heat pumps were reported for a number of small buildings where this type of equipment is unlikely to be used. Respondents may have known the building had a heat pump, but not known if it had an air or water cycle, or may have confused a hydronic heating system with a water-source heat pump.

Chillers were referred to only parenthetically in the question on central cooling, which could have been variously interpreted.

Percent Lit

The reference area for the percent lit by each type of lighting equipment was intended to be only the floorspace ordinarily lit, not the entire building floorspace if part of the building was not ordinarily lit. Since all the reference floorspace had to be lit by some type of equipment, and some floorspace could be lit by more than one type, the total of the percents lit by the different types of equipment should have been at least 100. In some cases, though, the total was less than 100 percent, indicating that the respondent misunderstood or gave an incomplete response.

As noted in the text with reference to Tables 4 and 5, the predominant lighting equipment was defined from the questionnaire responses as the type of equipment that lit the greatest fraction of the building's floorspace. For

the majority of buildings, the predominant lighting equipment lit 100 percent of the lit floorspace. For most buildings where the predominant type covered less than 100 percent, the coverage was still over 50 percent. Only a small fraction of buildings had two or more types of light that each covered over half the lit floorspace. Thus, characterizing buildings in terms of the predominant lighting equipment, as defined here, provides a good basis for summarizing the use of the various types of equipment.

Conservation

Many terms for conservation features are technical, and may not have been understood or known about by the respondent. In addition, many features that help conserve energy may be present in the building for other reasons. Finally, with the variety of conservation devices available, covering all major possibilities in mutually exclusive, easily described categories is difficult.

A number of features appeared frequently in response to the open-ended questions about other conservation features not specifically mentioned in the survey. Responses to the open-ended questions included time-clock thermostats, economizer cycles, various kinds of lighting controls, structural features such as dropped ceilings and air-lock doors, and behavioral measures including load shifting (which, technically, is not an energy-conservation feature). Responses that occurred frequently and consistently were coded into categories, as a basis for estimating the number of buildings and floorspace with some of these additional features (Table B2). In general, these estimates probably represent undercounts, since these features would not necessarily have been reported even if present. In addition, since respondents describe their devices in different terms, it is likely that some reported cases of a feature were not included in the appropriate grouping when the open-ended responses were categorized.

In some cases, items reported under "other" appeared to belong to categories that the survey asked for specifically in another conservation question. In such cases, the specific item was coded as being present. Storm doors reported under "other" were coded with storm windows, which were specifically requested.

Particularly confusing was the concept of a computerized energy management and control system (EMCS). This term was intended to refer to a computerized control system for heating, cooling, and often lighting, but may have been interpreted to apply also to a simple time-clock thermostat. Some devices that are conservation features by themselves, such as certain lighting controls, may also have been part of an EMCS; thus, some kinds of fea-

tures may have been counted twice. Lighting controls are particularly likely to have been counted more than once, since there were several opportunities to report them: as daylighting controls, as other lighting controls, as other lighting system conservation features, as part of an EMCS, and as any other energy conservation feature.

Table B2. Conservation Features Classified from Verbal Description of "Other"

Building Characteristics	Number of Buildings (thousand)	Total Floorspace (million square feet)	RSE Row Factor
RSE Column Factor:	1.083	0.923	
All Buildings.....	4,154	58,229	3.24
Other HVAC Conservation Features.....	158	6,025	10.81
Equipment Time Clocks.....	64	2,121	14.74
Economizer.....	17	1,111	21.07
Load Management Program.....	10	449	43.10
Other Lighting Conservation Features..	78	2,074	13.76
Daylighting.....	21	310	28.87
Relamping.....	23	619	21.72
Recircuiting and Adding Switches....	11	415	29.90
Other Building Shell Conservation Features.....	112	1,740	12.49

Note: To obtain a Relative Standard Error (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, Energy End Use Division, Form EIA-871A, "Building Questionnaire" of the 1986 Nonresidential Buildings Energy Consumption Survey.

Unit Nonresponse Adjustments

The response rate for the 1986 NBECS, as reported in Appendix A, was 93.2 percent. That is, of the 7,539 buildings eligible for interview, 6.8 percent did not respond at all to the Building Characteristics questionnaire. This rate was similar to that for the 1983 NBECS, and represents a low unit nonresponse rate for a survey of this length and complexity.

Weight adjustment was the method used to reduce unit nonresponse bias in the survey statistics. The NBECS sample was designed so that survey responses could be used to estimate characteristics of the entire stock of nonresidential buildings in the United States. The method of estimation was to calculate basic sampling weights (base weights) that related the sampled buildings to the entire stock of nonresidential 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 for 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

$$A = \frac{W}{R}$$

where W is the sum of the base weights over all buildings selected for the sample, and R is 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 123 subgroups created by sorting according to characteristics known for both responding and nonresponding buildings from the sampling stage. These characteristics included the general building activity, the rough size of the building, Census region, and metropolitan location.

Item Nonresponse Adjustments

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. What characteristics were used to define "similar" depended on the nature of the item to be imputed. The most frequently used characteristics were: principal activity, square-footage category, year-constructed category, and Census region. Other characteristics (such as type of heating fuel and presence of furnace or boilers) 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.

In a departure from practices for previous NBECS, the 1986 NBECS 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. Without the imposition of some kind of consistency constraints, the hot-deck procedure can contribute to spurious results for some small cells.

Table B3 contains item nonresponse rates for some of the building characteristics presented in this report. "Eligible" in this context refers to interviewed, in-scope buildings to which the question item applied; certain sequences of responses to previous questions would make some question items not applicable for some respondents. All missing items were imputed.

Table B3. Item Nonresponse Percentages for Selected Building Characteristics

Building Characteristic	Eligible Buildings	Number Missing	Percent Nonresponse	Building Characteristic	Eligible Buildings	Number Missing	Percent Nonresponse
Square Footage	6,073	1,749	28.8	Heat Pump (air source) Used	5,612	47	0.8
Square Footage Category	6,073	100	1.6	Central Cooling Used	5,612	28	0.5
Occupied By Owner	6,073	102	1.7	Self-Contained Units Used	5,612	29	0.5
Number of Workers	6,073	717	11.8	Air Conditioners (walls/window) used	5,612	27	0.5
Number of Workers Category	6,073	93	1.5	Packaged rooftop units for heating	5,612	27	0.5
Total Weekly Hours Open	6,073	88	1.4	Packaged Rooftop Units for Cooling	5,612	19	0.3
Year Constructed Category	6,073	149	2.5	Evaporative Coolers Used	5,612	37	0.7
Number of Floors	6,073	3	0.0	Percent of Interior Lit Electrically	6,073	71	1.2
Percent Glass of Exterior Category	6,073	53	0.9	Energy Audit Ever Performed	6,073	658	10.8
Wall Construction Material	6,073	28	0.5	Capability of Generating Electric Power	6,073	21	0.3
Roof Square Footage Category	6,073	254	4.2	Number of Establishments in Building	6,073	41	0.7
Roof Construction Material	6,073	95	1.6				
Percent Heated	6,073	31	0.5				
Percent Cooled	6,073	82	1.4				
Boilers Used	5,612	25	0.4				
Furnaces that Heat Air Used	5,612	32	0.6				

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

Computation of Standard Errors

Sampling error, as described in the introduction to this appendix, is the random difference between the survey estimate and the true population value. 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 nonnegligible biases.

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 by 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 must, therefore, incorporate all random components of the estimation process.

Estimating Standard Errors

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 NBECS used a list-supplemented, multistage area sample design (see Appendix A, "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 NBECS 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 (National Center for Health Statistics 1966, 1969). 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 pairing first-stage sampling units, such that the two units in each pair represent two independent draws from the same pool of first-stage units, and draws for different pairs are also independent. This pairing of first-stage sampling units must be done in accordance with the way the sampling was actually conducted.

For the 1986 NBECS, 44 pairs of first-stage sampling units were created in this way. The jackknife method was applied to the 44 pairs. This approach was a departure from previous NBECS rounds, where the method of Balanced Repeated Replications was used to obtain variance estimates from the same kind of pairing. The two methods are equivalent for linear statistics, and agree up to terms of second order for ratio estimates and regression estimates. Limited empirical work indicates, however, that the jackknife tends to have lower bias for the variance of nonlinear statistics, that is, for any statistic that is not a simple weighted sum (Rao and Wu, 1985). In addition, this method is simpler computationally than is Balanced Repeated Replications.

The k th jackknife pseudoreplicate sample set is obtained by deleting all observations from one of the two members in the k th pair, and multiplying the weights on all cases in the other pair member by 2. Observations in all other pairs are unaffected. The k th 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 k th 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:

$$S_{X'} = (S_{X'}^2)^{1/2}$$

The relative standard error (percent) of X' is obtained from this standard error as:

$$RSE(X') = (S_{X'} / X') \times 100.$$

Effects of Missing Data on Error Estimation

The preceding two sections of this appendix described the procedures used to adjust for unit and item nonresponse. Because the missing cases and the responding cases used to adjust for them arise randomly (within adjustment groups) nonresponse contributes to the estimation variance, even when appropriate adjustment procedures are used to remove the nonresponse bias. Half-sample replication estimates of variance account for this component of variance only if adjustments are made separately for each replicate.

To capture the effect of random nonresponse on the variance of estimates, a separate unit nonresponse adjustment factor, as described in the section on "Unit Nonresponse Adjustment," was computed for each pseudoreplicate sample. Thus, each pseudoestimate was computed using a slightly different set of adjusted weights.

As noted above, each pseudoestimate should ideally be constructed by repeating for the pseudoreplicate sample all the estimation steps performed on the full sample. For item nonresponse, however, replicate imputations were not practical. In essence, creating replicate item imputations would entail the construction of an entire survey data set for each of the 44 replicates. The omission of this refinement is not expected to affect the accuracy of the variance estimates substantially.

Generalized Variances

For every estimate in this report, the relative standard error was computed by the methods described above. This was the relative standard error used for any statistical tests or confidence intervals given in the text, or to determine if the estimate was too inaccurate to publish (relative standard error 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 i th 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 Figure B1, for a portion of Table 1 of the text. Using the row of the table labeled "Mercantile and Service," and 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:

$$\begin{aligned} RSE(\text{Mercantile and Service, Total Floorspace}) \\ = (5.17)(1.096) = 5.67 \text{ percent.} \end{aligned}$$

Figure B1. 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

$R(\text{Mercantile and Service}) = 5.17$
 $C(\text{Total Floorspace}) = 1.096$
 Approximate RSE(Mercantile and Service, Total Floorspace)
 $= (5.17) \cdot (1.096) = 5.67 \text{ percent.}$
 Approximate Standard Error(Mercantile and Service, Total Floorspace)
 $= (.0567) \cdot (12,805) = 726 \text{ million square feet.}$

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1986 Nonresidential Buildings Energy Consumption Survey.

The approximate standard error for the estimate is thus:

$$\begin{aligned} &\text{Standard Error(Mercantile and Service, Total Floorspace)} \\ &= (.0567) (12,805) = 726 \text{ million square feet.} \end{aligned}$$

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 half-sample method is actually 6.7, not 5.7.

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

$$\log \text{RSE}(i,j) = m + a(i) + b(j).$$

The least-squares estimates for this model are given (Cochran and Cox, 1957) by

$$\begin{aligned} m &= \overline{(\log \text{RSE})} \\ a(i) &= \overline{(\log \text{RSE})}_i - \overline{(\log \text{RSE})} \\ b(j) &= \overline{(\log \text{RSE})}_j - \overline{(\log \text{RSE})}, \end{aligned}$$

where $\overline{(\log \text{RSE})}$ is the mean of $\log \text{RSE}(i,j)$ over all rows i and columns j ,

$\overline{(\log \text{RSE})}_i$ is the mean over all columns j for a particular row i , and

$\overline{(\log \text{RSE})}_j$ is the mean over all rows i for a particular column j . The row and column RSE factors are then computed as

$$R(i) = \text{antilog}(m + a(i)) = \text{antilog} \overline{(\log \text{RSE})}_i$$

$$C(j) = \text{antilog} b(j) = \text{antilog} (\overline{(\log \text{RSE})}_j - \overline{(\log \text{RSE})}).$$

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 $\text{RSE}(i,j)$ 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 (Cochran and Cox, 1957 p. 110). In cases where a statistic was not publishable, because of a high RSE or small cell sample size, the value of $\text{RSE}(i,j)$ was set to missing, so that the computed row and column factors are based only on published cases.

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Appendix C Types of Buildings

Parking garages (as illustrated here) and structures on pillars are included in this survey by special exception, as they do not fit the definition of "building" used for this survey.





Appendix C

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 housed 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.

- **Assembly** signifies buildings used for the gathering of people for social, recreational, or religious activities. Included in this category are the following types of buildings:

Entertainment Building:

- Archive/art gallery/exhibit hall/library/museum
- Coliseum/arena (enclosed)
- Concert hall
- Observatory/planetarium
- Nightclub
- 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)

Religious Assembly:

- Chapel
- Church
- Mosque
- Synagogue

Social/Public/Civic Assembly (fixed seating):

- Assembly hall
- Auditorium
- Convention hall
- Funeral home
- Lecture hall
- Lodge hall
- Meeting hall
- Student union
- Town hall

Other Enclosed Assembly Building:

- Armory
- Passenger terminal

Nonenclosed or Partial Structure:

- Grandstand
- Stadium

- **Education** refers to buildings that house academic or technical instruction. This category includes the following:

Schools:

Preschool
Elementary
Junior high
Senior high
College or university
Vocational school

Excluded are the following specific types of buildings on school campuses:

Administration (see Office)
Auditorium (see Assembly)
Dormitory (see Lodging)
Gymnasium (see Assembly)
Infirmary (see Health Care)
Library (see Assembly)
Museum (see Assembly)
School for the Mentally Retarded (see Health Care)
Stadium (see Assembly)
Student Union (see Assembly)

- **Food Sales** includes buildings such as the following:

Convenience Store or Market
Farmer's Market, Fruit/Vegetable Market
Meat/Seafood Store
Retail Bakery
Specialty Food Store
Supermarket/Grocery Store

- **Food Services** include buildings such as 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

- **Health Care** covers 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 type of building 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

Outpatient care may be medical, dental, or psychiatric. A building housing outpatient veterinary practices also falls into this category. Buildings of this type include:

Dental Clinic

Medical Clinic:

Abortion/birth control
Ear, eye, nose, and throat
Emergency walk-in
General
Mental health/psychiatric clinic
Veterinary

Excluded are skilled nursing or other residential care facilities (nursing homes). These buildings are classified as "Lodging" buildings.

- **Industrial/Manufacturing:** See **Other**.
- **Laboratory activities** utilize equipment for experimental testing or for analysis. Included are:

Mechanical/Electrical Laboratory
Medical/Dental Laboratory
Agricultural Laboratory

Laboratory buildings are included in the "Other" category in all tables except those appearing in the section on "Status of Commercial Buildings Population, 1986."

- **Lodging** refers to buildings that offer multiple accommodations for short-term or long-term residents (including nursing homes). The following types are included:

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 all tables except those appearing in the section on "Status of Commercial Buildings Population, 1986."

- **Mercantile and Service** means buildings containing sales and displays of goods or services (excluding food). The category includes the following:

Automotive Sales and Service:

Automobile dealers
Gasoline stations
Motor vehicle repair/service

Retail Sales:

Building materials, garden supply, hardware stores
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)

- **Office** means buildings used for general office space, professional offices, and administrative offices. The category includes the following:

Data Processing:
Computer center

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

- **Other** covers buildings that do not fit into any of the previously named categories. This category includes the following:

Crematorium
Hangar
Parking Garage
Public Restrooms/Showers
Telephone Exchange

Also included in the "Other" category are buildings that are 50 percent or more commercial, but whose principal activity is agricultural, industrial/manufacturing or residential.

- **Public Order and Safety** describes buildings used in the preservation of law and order or in public safety: The following are included:

Courthouse
Fire Station
Jail/Prison
Penitentiary
Police Station
Reformatory
Sheriff's Office

- **Residential:** See **Other**.

- **Skilled Nursing/Other Residential Care** facilities refers to buildings offering 24-hour nursing/medical care.

Skilled Nursing/Other Residential Care:
Homes for the aged
Nursing homes

Skilled nursing homes are included in the "Lodging" category in all tables except those appearing in the section on "Status of Commercial Buildings Population, 1986.

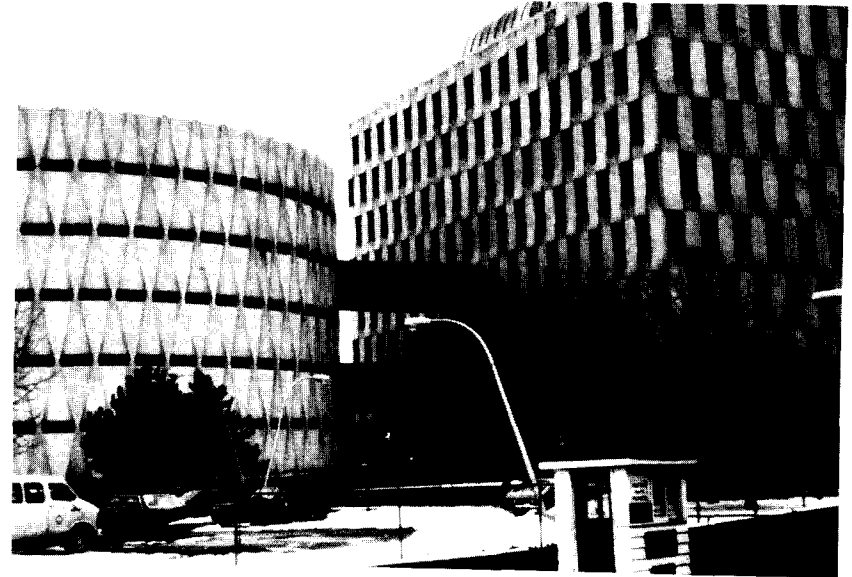
- **Warehouse and Storage** describes buildings used to store goods, manufactured products, merchandise, or raw materials. This category includes the following:

Refrigerated Storage
Nonrefrigerated Warehouse

- **Vacant** designates buildings in which more floorspace was vacant than was dedicated to any single activity (as defined above) at the time of interview. A vacant building, thus, may have some occupied floorspace.

Appendix D

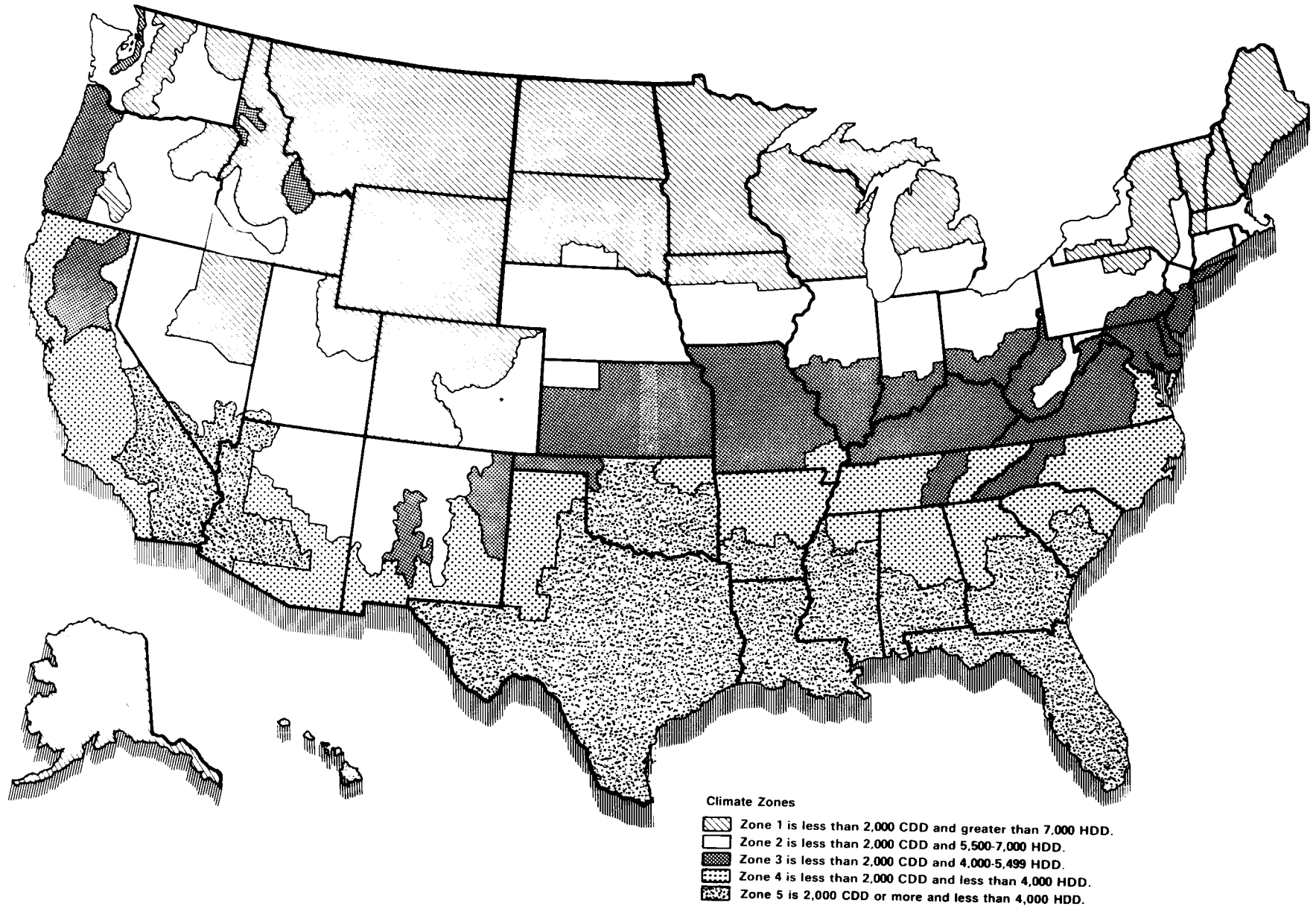
U.S. Climate Zone Map



About three-quarters of all commercial buildings have exterior walls made of masonry (as in the buildings shown here) and/or siding.

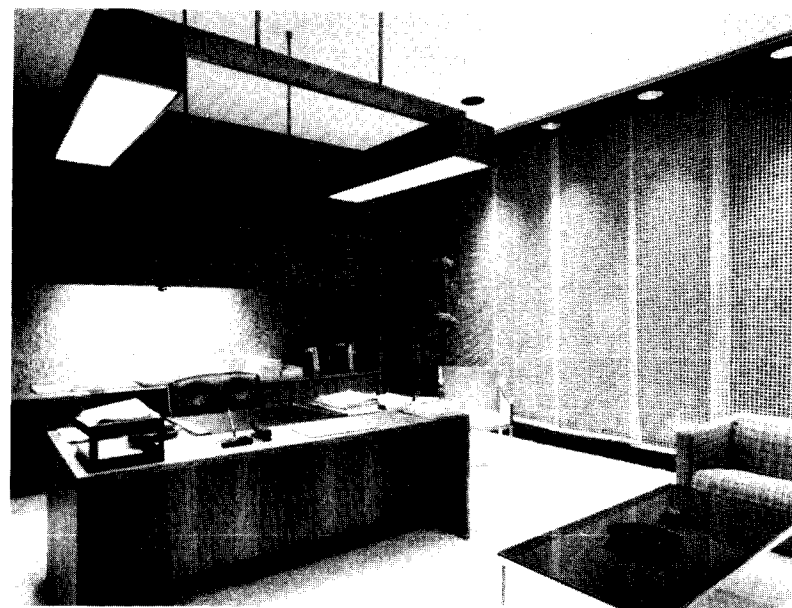


Appendix D
U.S. Climate Zone Map





U.S. Census Regions and Divisions

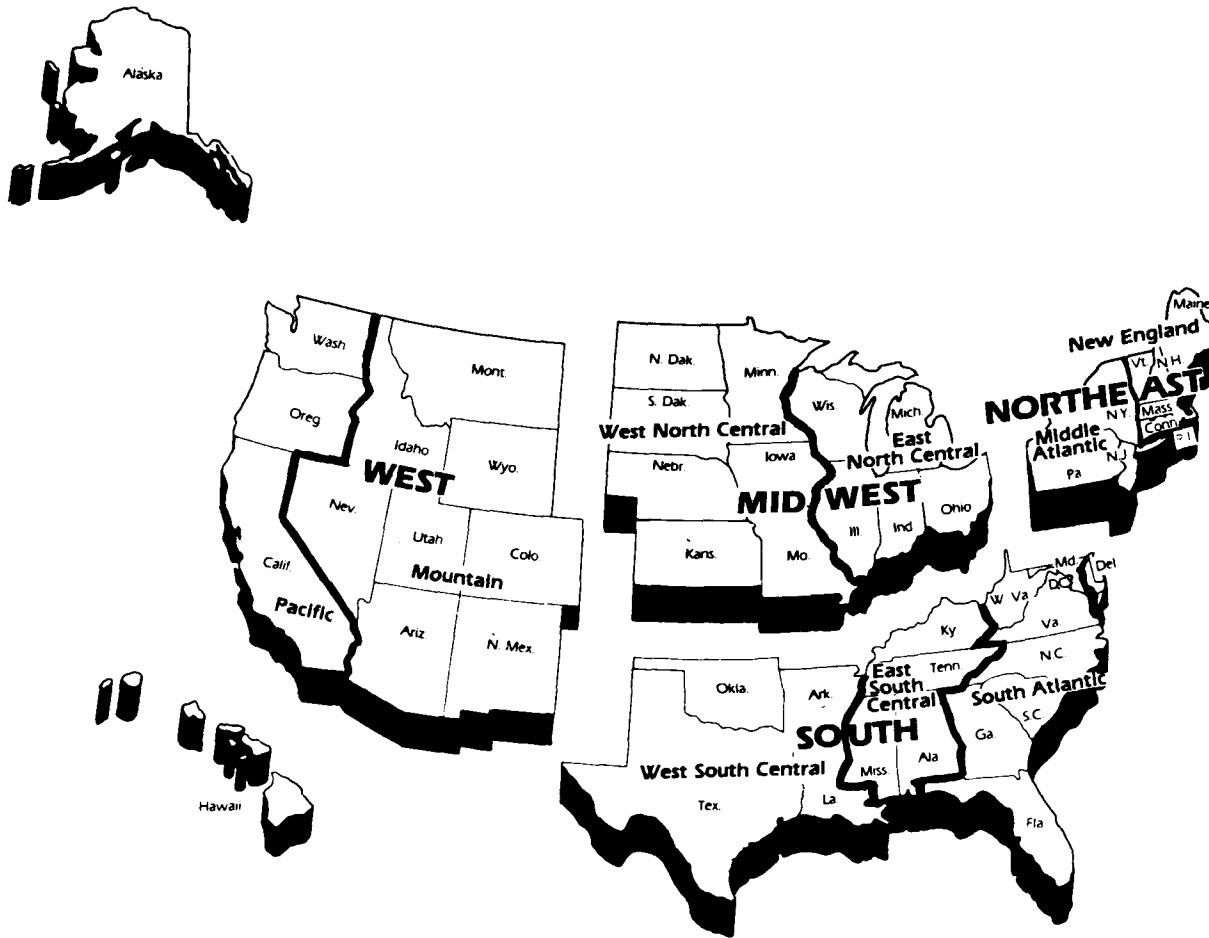


Office buildings, as illustrated by this office interior, account for 15 percent of the commercial buildings and 16 percent of the commercial floorspace in the United States.



Appendix E

U.S. Census Regions and Divisions



Appendix F

Survey Forms



Such vacant buildings accounted for 5 percent of the total commercial floorspace in the United States at the end of 1986.



This appendix contains the following data collection forms used in the 1986 NBECS:

- Form EIA-871A--Building Questionnaire
- Form EIA-871A--Authorization Form
- Form EIA-871G--Construction Improvements and Maintenance and Repairs Supplement (collected for the U.S. Bureau of the Census)

A-3. The questions I will be asking you will all be about this building. By this building, I am referring to the structure(s) at (READ NUMBER(S) OR NAME)/the entire shopping center or mall at (READ NUMBER(S) OR NAME).

(IF NAME OF BUILDING IS NOT KNOWN, ASK): What is the correct name and address of this building? RECORD BELOW. (IF BUILDING HAS NO NAME, ASK NAME OF MAJOR ESTABLISHMENT THAT OCCUPIES BUILDING AND RECORD BELOW.)

(IF NAME ON LABEL): Is the correct name and address of the building: (MENTION NAME AND ADDRESS)? RECORD VERIFIED NAME AND ADDRESS BELOW.

(CHECK ONE)

VERIFIED NAME: _____ NAME OF BUILDING

NAME OF MAJOR ESTABLISHMENT IN BUILDING

VERIFIED STREET ADDRESS: _____

A-4. What is the phone number of this building (establishment)?

() _____
AREA
CODE

A-5. What is the building's ZIP Code?

_____ ZIP CODE

BOX 3

- IF AREA SAMPLE: CHECK TO SEE IF THE BUILDING'S ZIP IS LISTED ON THE LABEL (CHECK ONE BOX)
 - BUILDING ZIP IS LISTED: CONTINUE WITH INTERVIEW.
 - BUILDING ZIP IS NOT LISTED: VERIFY THAT YOU ARE AT THE CORRECT ADDRESS AND WITHIN THE SEGMENT BOUNDARIES. IF YOU ARE, CONTINUE WITH INTERVIEW. IF NOT, DISCONTINUE AND CALL YOUR SUPERVISOR.
- IF SPECIAL BUILDING SAMPLE: VERIFY THAT YOU ARE AT CORRECT ADDRESS AND CONTINUE WITH INTERVIEW.

B. PRINCIPAL BUILDING ACTIVITIES

B-1. What is the gross or total square footage of all the space enclosed within the exterior walls of this building? Please include indoor parking facilities and basements, and all space such as hallways, lobbies, stairways and elevator shafts both finished and unfinished.

_____ (B-3)
TOTAL SQUARE FOOTAGE
DON'T KNOW. 9-8 (B-2)

B-2. Here is a card that has several broad categories of total square feet. (HAND CARD 1) Which category in your estimation best applies to the total square feet in this building, including all areas just mentioned?

HAND CARD 1	5,000 square feet or less. 01	100,001 to 200,000 square feet. 06
	5,001 to 10,000 square feet. 02	200,001 to 500,000 square feet. 07
	10,001 to 25,000 square feet. 03	500,001 to 1 million square feet. 08
	25,001 to 50,000 square feet. 04	Over 1 million square feet. 09
	50,001 to 100,000 square feet. 05	DON'T KNOW. 9B

B-3. The purpose of the next few questions is to find out about the kinds of activities that occur within this building. By activity we mean what the building is used for. For example, space in a building may be used for (INTERVIEWER OBSERVATION OF BUILDING ACTIVITY).

Is any part of the building used for residential purposes? By residential we mean living quarters with kitchen facilities.

YES 1 (B-4)
NO. 2 (B-5)

B-4. Approximately what percentage of the (MENTION SQUARE FEET FROM B-1 OR B-2) square feet in the building is used for residential purposes?

100% 1 (TERMINATE INTERVIEW)
75-99% 2 (C-1)
25-74% 3 (B-9)
LESS THAN 25% 4 (B-5)
DON'T KNOW 8 (B-5)

B-5 INTERVIEWER: CODE BEST DESCRIPTION BASED ON YOUR OBSERVATION AND GO TO B-5a.

B-5a Considering all of the (MENTION SQUARE FEET FROM B-1 OR B-2) square feet in this building, would you estimate that 75 percent or more of this space is used for its (READ BUILDING ACTIVITY DESCRIPTION FOR CLASSIFICATION CODE CIRCLED)?

ACTIVITY	CIRCLE ONE	YES	NO
a. VACANT	01	1 (B-10a)	2 (B-7)
b. OFFICE/PROFESSIONAL BUILDING	02	1 (C-1)	2 (B-7)
c. SHOPPING CENTER/MALL/RETAIL SERVICE	03	1 (C-1)	2 (B-7)
d. ASSEMBLY BUILDING	04	1 (C-1)	2 (B-7)
e. FOOD SALES	05	1 (C-1)	2 (B-7)
f. PUBLIC ORDER AND SAFETY	06	1 (C-1)	2 (B-7)
g. OUT-PATIENT HEALTH SERVICES/CLINIC	07	1 (C-1)	2 (B-7)
h. INDUSTRIAL PROCESSING AND MANUFACTURING	08	1 (TERMINATE)	2 (B-6)
i. AGRICULTURAL PURPOSES	09	1 (TERMINATE)	2 (B-6)
j. LABORATORY	10	1 (C-1)	2 (B-7)
k. REFRIGERATED WAREHOUSE OR STORAGE	11	1 (C-1)	2 (B-7)
l. NONREFRIGERATED WAREHOUSE OR STORAGE	12	1 (C-1)	2 (B-7)
m. EDUCATION	13	1 (B-10m)	2 (B-7)
n. FOOD SERVICES	14	1 (B-10n)	2 (B-7)
o. HOSPITAL/IN-PATIENT HEALTH SERVICES (IHS)	15	1 (B-10o)	2 (B-7)
p. SKILLED NURSING/OTHER RESIDENTIAL CARE (NURSING HOME)	16	1 (B-10p)	2 (B-7)
q. HOTEL/MOTEL/DORM, ETC.	17	1 (B-10q)	2 (B-7)
r. RESIDENTIAL	18	1 (C-1)	2 (B-7)
s. OTHER (SPECIFY):	19	1 (C-1)	2 (B-7)

B-6. Would you estimate that 50 percent or more of the space in this building is used for (industrial/agricultural) activities?
 YES 1 (TERMINATE INTERVIEW)
 NO 2 (B-7)

B-7. Considering all of the (MENTION SQUARE FEET FROM B-1 OR B-2) square feet in this building, is there one main activity that occupies 75 percent or more of the space?
 YES 1 (B-8)
 NO 2 (B-9)

(10/86)

B-8 Here is a card with a list of activities that may take place within a building. (HAND CARD 2) Please tell me which activity occupies over 75% of the space in this building? CIRCLE ONE

HAND CARD 2

B-9 Here is a card with a list of activities that may take place in a building. Please tell me which activities occupy space in this building?

ACTIVITY	CIRCLE ONE	OCCUPIES SPACE CIRCLE ALL THAT APPLY	Approximate what percentage of space does this activity occupy?
a. VACANT SPACE	01 (B-10a)	01 →	%
b. OFFICE/PROFESSIONAL BUILDING	02 (C-1)	02 →	%
c. SHOPPING CENTER/MALL/RETAIL	03 (C-1)	03 →	%
d. ASSEMBLY BUILDING	04 (C-1)	04 →	%
e. FOOD SALES	05 (C-1)	05 →	%
f. PUBLIC ORDER AND SAFETY	06 (C-1)	06 →	%
g. OUT-PATIENT HEALTH SERVICES	07 (C-1)	07 →	%
h. INDUSTRIAL AND MANUFACTURING	08 (TERMINATE)	08 →	%
i. AGRICULTURAL PURPOSES	09 (TERMINATE)	09 →	%
j. LABORATORY	10 (C-1)	10 →	%
k. REFRIG. WAREHOUSE OR STORAGE	11 (C-1)	11 →	%
l. NONREFRIG. WAREHOUSE OR STORAGE	12 (C-1)	12 →	%
m. EDUCATION	13 (B-10m)	13 →	%
n. FOOD SERVICES	14 (B-10n)	14 →	%
o. HOSPITAL/INPATIENT HEALTH SERVICES	15 (B-10o)	15 →	%
p. SKILLED NURSING/OTHER RES. CARE	16 (B-10p)	16 →	%
q. HOTEL/MOTEL/DORM, ETC.	17 (B-10q)	17 →	%
r. RESIDENTIAL	18 (C-1)	18 →	%
s. OTHER (SPECIFY)	19 (C-1)	19 →	%

TOTAL SHOULD EQUAL 100%

ASK ALL APPROPRIATE B-10 QUESTIONS BEFORE GOING TO C-1

(10/86)

B-10 a. IF MORE THAN 50% VACANT, ASK: What was this vacant space previously used for? OR IF NEVER USED: What was this space intended to be used for?

B-10 m. How many students can be seated in the classrooms in this building at one time?
 _____ STUDENTS

n. What is the seating capacity of this facility?
 _____ SEATS

o. What is the licensed bed capacity of this facility?
 _____ BEDS

p. What is the licensed bed capacity of this facility?
 _____ BEDS

q. How many guest rooms are there in this facility?
 _____ ROOMS

C. BUILDING OWNERSHIP AND OCCUPANCY CHARACTERISTICS

C-1. Is the building owned by: (READ EACH CATEGORY SEPARATELY)

	YES	NO	DK
1. A Federal Government agency?	1	2	8
2. A State Government agency?	1	2	8
3. A Local Government agency?	1	2	8

C-2. Is the building owner, or the owner's business, an occupant of this building?

YES	1
NO	2
DON'T KNOW	8

C-3. My next few questions are about the establishments in this building. Approximately how many people work in (all of the establishments that occupy/the establishment that occupies) this building during most of the year?

_____ (C-5)
 NUMBER OF PEOPLE
 DON'T KNOW OR WON'T ESTIMATE. 9-8 (C-4)

C-4. Here is a card which shows categories. (HAND CARD 3) Which category in your estimation best applies to the number of people who work in the building?

HAND
 CARD
 3

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

C-5. What were the usual operating hours for the building during calendar year 1986? By "in operation," we mean the usual number of hours each day at least 50% of the building's square footage was in full use. Let's start with: (READ EACH DAY)

DAY(S)	TIME	OPEN 24 HOURS	NOT OPEN
Monday through Friday	____ AM to ____ AM PM PM	<input type="checkbox"/>	<input type="checkbox"/>
Saturday	____ AM to ____ AM PM PM	<input type="checkbox"/>	<input type="checkbox"/>
Sunday	____ AM to ____ AM PM PM	<input type="checkbox"/>	<input type="checkbox"/>
Holidays	____ AM to ____ AM PM PM	<input type="checkbox"/>	<input type="checkbox"/>

D. BUILDING ENVELOPE CHARACTERISTICS

D-1. Now I would like to ask you some questions about the physical characteristics of the building. When was the construction of the major or largest portion of the building completed?

_____ (D-3)
YEAR
DON'T KNOW. 9-8 (D-2)

D-2. Here is a card which has several categories of years. (HAND CARD 4) Which category in your estimation best contains the year the largest portion of the building was completed?

HAND
CARD
4

1900 or before. 01
1901-1920 02
1921-1945 03
1946-1960 04
1961-1970 05
1971-1973 06
1974-1979 07
1980-1983 08
1984 to present 09
DON'T KNOW. 98

D-3. How many floors are in the tallest section of the building? Please include basements, floors that may be used as a parking garage, or any other floors below ground level.

_____ # OF FLOORS

D-4. Approximately what percentage of the exterior wall surface of this building is covered with glass doors or window glass? By glass doors or window glass we mean glass that can be seen through from the inside.

_____ (D-6)
PERCENT
DON'T KNOW. 998 (D-5)

D-5. Here is a card that shows categories. (HAND CARD 5) Which category, in your estimation, best describes the percent of the exterior wall surface of this building that is covered with glass doors or window glass?

HAND
CARD
5

0 percent 1
1-25 percent. 2
26-50 percent 3
51-75 percent 4
76 percent or more. 5
DON'T KNOW. 8

(10/86)

8

D-6. Here is a card that shows different types of construction materials. (HAND CARD 6) What is the major type of exterior wall construction material used on this building? [CODE ONLY ONE RESPONSE]

HAND
CARD
6

Glass exterior coverings that are not window glass (such as glass blocks or spandrels) 01
Concrete panels 02
Brick, stone, stucco, or other masonry over wood frame 03
Wood, plastic or metal siding over wood frame. 04
Metal siding - over masonry wall. 05
Brick, stone, stucco or other masonry over masonry wall (solid masonry wall). . . 06
Brick, stone, stucco or other masonry wall over a steel frame 07
Pre-engineered metal or light-weight metal panel 08
Other (SPECIFY) _____ . . . 09
DON'T KNOW. 98

D-7. Now I would like to ask you a few questions about the roof on this building. (HAND CARD 7) Here is a card that shows different size categories. Which of these square footage categories, in your estimation, best describes the total exposed surface area of the roof on this building?

HAND
CARD
7

5,000 square feet or less 01
5,001 to 10,000 square feet 02
10,001 to 25,000 square feet. 03
25,001 to 50,000 square feet. 04
50,001 to 100,000 square feet 05
100,001 to 200,000 square feet. 06
200,001 to 500,000 square feet. 07
500,001 to 1 million square feet. 08
Over 1 million square feet. 09
DON'T KNOW. 98

D-8. Here is a card with different types of roofing materials. (HAND CARD 8) Which of the following best describes the building's major type of roof surface? [CODE ONLY ONE RESPONSE]

HAND
CARD
8

Wood shingles, shakes and other wooden materials 01
Slate or tile 02
Shingles - asphalt, fiberglass, etc. . . . 03
Built-up (tar, felts or fiberglass and a ballast, such as stone) 04
Metal surfacing 05
Single ply synthetic (plastic/rubber) . . . 06
Other (SPECIFY) _____ . . . 07
DON'T KNOW. 98

(10/86)

9

E. HEATING AND COOLING SYSTEMS

E-1. What percentage of the total square footage in this building you mentioned before is heated to at least 50 degrees Fahrenheit? (Be sure to include basements or enclosed garages if they are heated to at least 50 degrees.)

PERCENTAGE
DON'T KNOW 998

E-2. What percentage of the square footage in this building is cooled?

PERCENTAGE
DON'T KNOW 998

IF BOTH OF THE PERCENTAGES HEATED AND COOLED ARE ZERO, THEN SKIP TO SECTION F. OTHERWISE CONTINUE.

E-3. Here is a card that shows primary heating and cooling equipment. (HAND CARD 9) During the 1986 calendar year did this building use:

HAND CARD 9

HEATING OR COOLING EQUIPMENT	YES	NO	DON'T KNOW
a) Boilers inside the building?	1	2	8
b) Furnaces that heat air directly, <u>without</u> using steam or hot water coils?	1	2	8
c) Water source heat pump?	1	2	8
d) Air source heat pump?	1	2	8
e) Central cooling (for example, chillers)?	1	2	8
f) Electric baseboards, individual space heaters, free-standing or mounted in walls or floors?	1	2	8
g) Individual air conditioners, mounted through the walls or windows?	1	2	8
h) Packaged rooftop units used for heating?	1	2	8
i) Packaged rooftop units used for cooling?	1	2	8
j) Evaporative cooler (that is, "swamp coolers")?	1	2	8
k) Some other heating or cooling equipment?	1	2	8
(SPECIFY) _____			

E-4. Now think about the system or systems which distribute heating and cooling throughout the building. (HAND CARD 10)

HAND CARD 10

A How was heating or cooling delivered throughout this building in 1986? Did you use: SYSTEM TYPE	B			FOR EACH DISTRIBUTION SYSTEM MENTIONED IN COLUMN A, ASK: Did the system deliver heating or cooling, or both in 1986?			
	YES	NO	DON'T KNOW	HEATING ONLY	COOLING ONLY	BOTH HEATING AND COOLING	DON'T KNOW
a) Forced air distributed through ducts?	1	2	8	1	2	3	8
b) Fan-coil units? (These are thermostatically controlled units in individual rooms. Hot or cold water or steam must be piped into the unit, and it has a built-in fan.)	1	2	8	1	2	3	8
c) Steam radiators or baseboards?	1	2	8				
d) Hot water baseboards or radiators?	1	2	8				
e) Heating panels in the walls, ceiling or floors?	1	2	8				
f) Some other system? (SPECIFY) _____ _____ _____	1	2	8	1	2	3	8

E-5. Other than maintenance personnel, do most tenants in the building have control over the heating temperatures; that is, are they able to turn the heating on or off, or to set the temperature in their area? How about for cooling?

<u>HEATING</u>		<u>COOLING</u>
YES 1	} →	YES 1
NO 2		NO 2
NO HEATING . . . 7		NO COOLING . . . 7
DON'T KNOW . . . 8		DON'T KNOW . . . 8

E-6. As part of the building's standard operating procedure, do you reduce the amount of heating produced during the hours when the building is not in full use? How about for cooling?

<u>HEATING</u>		<u>COOLING</u>
YES 1	} →	YES 1
NO 2		NO 2
NO HEATING . . . 7		NO COOLING . . . 7
DON'T KNOW . . . 8		DON'T KNOW . . . 8

E-7. Was any space in the building vacant or unoccupied for at least 3 consecutive months during calendar year 1986?

YES 1 (E-8)
 NO 2 (F)
 DON'T KNOW 8 (F)

E-8. Approximately what percentage of the square feet was vacant or unoccupied for at least 3 consecutive months during 1986?

_____ PERCENTAGE VACANT
 DON'T KNOW 998

E-9. During that time, was there a reduction in the amount of heating or cooling supplied to the vacant or unoccupied area compared to what it would have received if it were occupied?

YES 1
 NO 2
 DON'T KNOW 8

F. THE LIGHTING SYSTEM

The next set of questions pertains to the lighting system in this building.

F-1. What percentage of the total square footage of the interior of the building is lit electrically. . .

a) During usual operating hours? _____ %
 BUILDING NOT LIT 997
 DON'T KNOW 998

b) During off hours? _____ %
 BUILDING NOT LIT 997
 DON'T KNOW 998

IF BUILDING NEVER LIT (F-1a AND F-1b = "NOT LIT"), SKIP TO SECTION G.

F-2. Here is a card which lists the different types of lighting equipment. (HAND CARD 11)

HAND
CARD
11

What percentage of the electrically lighted interior space of this building is lit by:	% FOR EACH LIGHTING TYPE
a. Energy Efficient Incandescent bulbs?	_____ %
b. Standard incandescent bulbs?	_____ %
c. Energy efficient fluorescent lights?	_____ %
d. Standard Fluorescent lights?	_____ %
e. High Intensity Discharge lights such as mercury vapor, metal halide and sodium lights?	_____ %
f. Some other electric lighting equipment? (SPECIFY) _____	_____ %
TOTAL SHOULD EQUAL 100%	

H. ELECTRICITY QUESTIONS

H-1. Do you have the capability of generating your own electric power in this building?

- YES 1
- NO. 2 (I-1)
- DON'T KNOW. 8 (I-1)

H-2. Here is a list of ways in which electricity generators can be used. Please indicate the primary use of the generators in the building. (HAND CARD 12)

- | |
|--------------------|
| HAND
CARD
12 |
|--------------------|
- a) Emergency back-up generation, for use only when there is an interruption of normal service from your utility 1 (I-1)
 - b) Generators used only during periods of high electric power demand. 2 (H-3)
 - c) Generators operating continuously for most of the year 3 (H-3)
 - d) Other (SPECIFY) _____ 4 (I-1)
 - e) DON'T KNOW 8 (I-1)

H-3. Is the electric power generating system in this building also a cogeneration system? That is, in addition to producing electric power, does the system also produce heat which is used in this or another building for space heating, water heating, or air cooling, industrial processes, and so on?

- YES 1
- NO. 2
- DON'T KNOW. 8

INTENTIONALLY LEFT BLANK

H-4. During calendar year 1986, how many kilowatt-hours of electricity were generated in this building?

- _____
KILOWATT-HOURS
- ELECTRICITY NOT GENERATED IN 1986 . . . 9-7 (I-1)
 - DON'T KNOW. 9-8

H-5. During calendar year 1986, was the electric power generated onsite:

- 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) DON'T KNOW 8

I. ENERGY SOURCES, SUPPLIERS AND WAIVERS SECTION

I-1. Here is a card which lists various types of fuels or energy sources. Which of these fuels or energy sources are brought into this building? (HAND CARD 13)

HAND
CARD
13

Electricity	*Wood
Natural Gas	*Coal
Fuel Oil, Diesel or Kerosene which is consumed in the building	*Active Solar with collector panels
LPG or bottled gas	*Other (RECORD IN COLUMN HEADINGS)
Purchased Steam	
Steam piped in from a central plant but not purchased	
Purchased Hot Water	
Hot water piped in from a central plant but not purchased	
Purchased Chilled Water	
Chilled water piped in from a central plant but not purchased	

RECORD ENERGY SOURCES IN COLUMN HEADINGS ON TOP OF FACING PAGE, INCLUDING THE ASTERISK (*). IF MORE COLUMNS ARE NEEDED, USE CONTINUATION BOOKLET.

I-2. HAS R MENTIONED FUEL OIL OR DIESEL?

YES 1
 NO. 2 (1-4)

INTENTIONALLY LEFT BLANK

I-3. Think about the fuel oil storage tanks for this building. What is the total capacity, in gallons, of all the fuel oil storage tanks?

_____ GALLONS OF TOTAL FUEL OIL
 STORAGE TANK CAPACITY
 DON'T KNOW. 9-8

I-4. (HAND RESPONDENT CARD 13.) Which of the fuels or energy sources listed on this card are used to supply the building's need for: (RECORD RESPONSES BY CHECKING APPROPRIATE COLUMN(S) ON FACING PAGE OR "NOT PERFORMED.")

NOT PERFORMED
IN BUILDING

HAND
CARD
13

a. The primary fuel for space heating?	<input type="checkbox"/>	b. The secondary fuel for space heating?	<input type="checkbox"/>	c. Cooling?	<input type="checkbox"/>	d. The primary fuel for water heating other than for heating the building	<input type="checkbox"/>	e. The secondary fuel for water heating?	<input type="checkbox"/>	f. Commercial cooking?	<input type="checkbox"/>	g. Manufacturing or any other type of industrial activity?	<input type="checkbox"/>	h. Fuel used to generate electricity (other than for emergency back-up) in this building?	<input type="checkbox"/>
--	--------------------------	--	--------------------------	-----------------------	--------------------------	---	--------------------------	--	--------------------------	----------------------------------	--------------------------	--	--------------------------	---	--------------------------

ASK I-5 THROUGH I-14 CONSECUTIVELY FOR EACH ENERGY SOURCE RECORDED IN THE COLUMN HEADINGS ON TOP OF FACING PAGE THAT DOES NOT HAVE AN ASTERISK (*).

The following questions ask about specific companies that supply energy to this building.

I-5. May I have the name and address of the company that has supplied (MENTION ENERGY SOURCE) during calendar year 1986? (RECORD COMPLETE SUPPLIER NAME AND ADDRESS UNDER APPROPRIATE ENERGY SOURCE. IF MORE THAN ONE SUPPLIER IS MENTIONED, RECORD ADDITIONAL SUPPLIERS IN CONTINUATION BOOKLET, IF NECESSARY.)

I-6. Has any other company supplied the building's (ENERGY SOURCE) in the past year?

YES	NO	DON'T KNOW	
---------------	--------------	----------------------	--

a. . . . <input type="checkbox"/> b. . . . <input type="checkbox"/> c. . . . <input type="checkbox"/> d. . . . <input type="checkbox"/> e. . . . <input type="checkbox"/> f. . . . <input type="checkbox"/> g. . . . <input type="checkbox"/> h. . . . <input type="checkbox"/>	a. . . . <input type="checkbox"/> b. . . . <input type="checkbox"/> c. . . . <input type="checkbox"/> d. . . . <input type="checkbox"/> e. . . . <input type="checkbox"/> f. . . . <input type="checkbox"/> g. . . . <input type="checkbox"/> h. . . . <input type="checkbox"/>	a. . . . <input type="checkbox"/> b. . . . <input type="checkbox"/> c. . . . <input type="checkbox"/> d. . . . <input type="checkbox"/> e. . . . <input type="checkbox"/> f. . . . <input type="checkbox"/> g. . . . <input type="checkbox"/> h. . . . <input type="checkbox"/>	a. . . . <input type="checkbox"/> b. . . . <input type="checkbox"/> c. . . . <input type="checkbox"/> d. . . . <input type="checkbox"/> e. . . . <input type="checkbox"/> f. . . . <input type="checkbox"/> g. . . . <input type="checkbox"/> h. . . . <input type="checkbox"/>
YES 1 NO 2 (I-8) DK. . . . 8 (I-8)	YES 1 NO 2 (I-8) DK. . . . 8 (I-8)	YES 1 NO 2 (I-8) DK. . . . 8 (I-8)	YES 1 NO 2 (I-8) DK. . . . 8 (I-8)

I-7. What (is/are) the name(s) and address(es) of the other company(ies) that supplied (MENTION ENERGY SOURCE) in the past year? (RECORD INFORMATION ON FACING SHEET OR IN CONTINUATION BOOKLET)

I-8. Is the building occupied by one, or more than one establishment, organization, company or agency?

NONE, COMPLETELY VACANT. 1 (I-12)
ONE. 2 (I-12)
MORE THAN ONE. 3 (I-9)
DON'T KNOW 8 (I-12)

I-9. Is there a bill from (SUPPLIER) for (ENERGY SOURCE) for the entire building or are any of the tenants or establishments billed separately?

ONE BILL.
MORE THAN ONE BILL.

I-10. How many separately billed tenants are there?

I-11. We would like to contact each tenant or establishment who receives a bill from (NAME OF SUPPLIER) to obtain information about each one's energy consumption. Please tell me the name of each company, organization or agency that received a bill from (NAME OF SUPPLIER) for the building's use of (NAME OF ENERGY SOURCE) during calendar year 1986?

IF LIST IS NOT PROVIDED, RECORD NAME AND ADDRESS OF EACH TENANT WHO RECEIVES A SEPARATE BILL ON A "SUPPLIER CUSTOMER SHEET."

I-12. What is the name and address of the person or company who receives the bill for this building's use of (MENTION ENERGY SOURCE) from the (NAME OF SUPPLIER)?

NAME.
ADDRESS

ZIP CODE.

. 1 (I-12) 2 (I-10)	. . . . . 1 (I-12) 2 (I-10)	. . . . . 1 (I-12) 2 (I-10)	. . . . . 1 (I-12) 2 (I-10)
NUMBER OF BILLS	NUMBER OF BILLS	NUMBER OF BILLS	NUMBER OF BILLS
LIST PROVIDED. . . 1 NOT PROVIDED . . . 2	LIST PROVIDED. . . 1 NOT PROVIDED . . . 2	LIST PROVIDED. . . 1 NOT PROVIDED . . . 2	LIST PROVIDED. . . 1 NOT PROVIDED . . . 2
GO TO NEXT COL. OR I-15.	GO TO NEXT COL. OR I-15.	GO TO NEXT COL. OR I-15.	GO TO NEXT COL. OR I-15.

I-13. Does the bill you receive from (NAME OF SUPPLIER) cover just this building or does it cover another building?

JUST THIS BUILDING.

ALSO COVERS ANOTHER BUILDING. . .

DON'T KNOW.

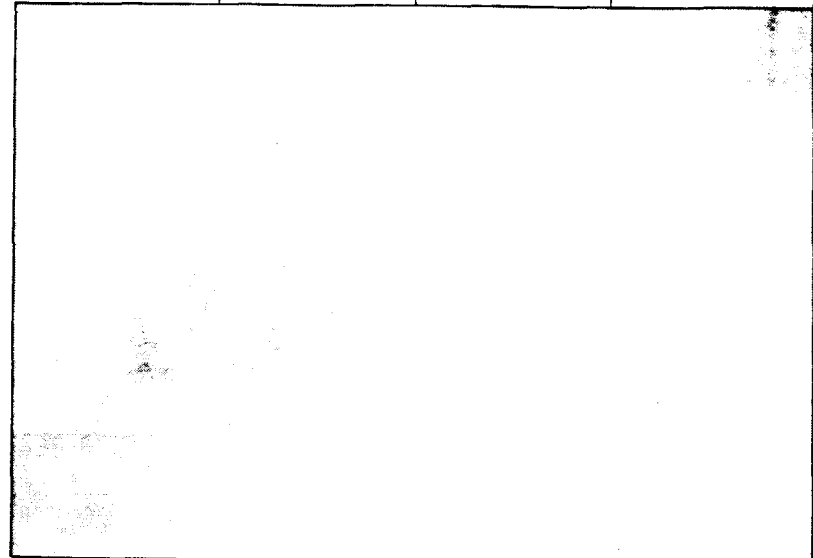
I-14. What is the approximate square footage of the other buildings that are served by this bill?

BOX 4

CHECK NEXT COLUMN ON FACING SHEET AND CONTINUATION BOOKLET.

- IF NO OTHER ENTRIES, GO TO I-15.
- OTHERWISE, GO TO I-5 (FOR ENERGY SOURCE WITHOUT *) OR I-9 (FOR ADDITIONAL SUPPLIER)

..... 1 (BOX 4)	..... 1 (BOX 4)	..... 1 (BOX 4)	..... 1 (BOX 4)
..... 2 (I-14)	..... 2 (I-14)	..... 2 (I-14)	..... 2 (I-14)
..... 8 (BOX 4)	..... 8 (BOX 4)	..... 8 (BOX 4)	..... 8 (BOX 4)
<hr/> SQUARE FOOTAGE	<hr/> SQUARE FOOTAGE	<hr/> SQUARE FOOTAGE	<hr/> SQUARE FOOTAGE
DON'T KNOW. . . 9-8	DON'T KNOW. . . 9-8	DON'T KNOW. . . 9-8	DON'T KNOW. . . 9-8



WAIVERS

I-15. As I mentioned, the purpose of this study is to relate building characteristics with energy consumption and expenditures. This information can only be obtained by going directly to each energy supplier of this 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.

Should the authorization form be signed by you or someone else?

RESPONDENT. 1 (OBTAIN WAIVER)
 SOMEONE ELSE (SPECIFY). 2 (RECORD BELOW)

NAME: _____
 TITLE: _____
 ADDRESS: _____
 CITY, STATE, ZIP: _____
 PHONE NUMBER: _____

I-16. CHECK LABEL: HAS THIS BUILDING BEEN SELECTED FOR THE SUPPLEMENT?

YES. 1 (RECORD TIME BELOW AND GO TO SUPPLEMENT)
 NO 2

This completes the interview. Thank you very much for your time and help.

TIME ENDED: _____

* MEANS DO NOT ASK QUESTIONS 1-5 THROUGH 1-14 FOR THIS ENERGY SOURCE.

ENERGY SOURCES			
TYPE OF ENERGY	TYPE OF ENERGY	TYPE OF ENERGY	TYPE OF ENERGY
SUPPLIERS			
NAME:	_____	_____	_____
ADDRESS:	_____	_____	_____
	_____	_____	_____
ZIP:	_____	_____	_____

INTERVIEWER OBSERVATIONS

FILL THIS OUT IF YOU COMPLETE THE BUILDING INTERVIEW.

1. Does the interview's definition of the building agree with the listing sheet (BOX 2 - "CORRECT")?
- YES, AGREES WITH LISTING 1 (Q.3)
 NO 2

2. A. Please indicate the name and address(es) of the building from the listing sheet.

NAME: _____
 ADDRESS: _____

B. Please indicate the name and address of the building as defined for the interview.

NAME: _____
 ADDRESS: _____

C. Please explain the circumstances of the disagreement between listing and interview definition of the building.

3. 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 (Q.4)
 NO 2 (Q.5)

4. Please list all other respondents.

NAME: _____
 TITLE: _____
 LOCATION: _____ PHONE NO. () _____

NAME: _____
 TITLE: _____
 LOCATION: _____ PHONE NO. () _____

5. What is your observation of the type of building or kind of business that occurs within the building? Please be thorough in your description.
- _____

6. ANSWER IF INDUSTRIAL BUILDING IS MENTIONED IN QUESTION 5: Is this building part of an industrial establishment, campus or complex?
- YES. 1
 NO 2

7. Is this building free standing or attached to another building?
- FREE STANDING. 1
 ATTACHED 2

8. Please describe any unusual circumstances you may have encountered in obtaining the waiver. (If you did not obtain the waiver, explain who refused and why.)
- _____

9. IF SHOPPING CENTER/MALL:
- A. Is this a strip shopping center or enclosed mall?
- STRIP SHOPPING CENTER. 1
 ENCLOSED MALL. 2

- B. Approximately how many establishments are in this shopping center/mall?
- LESS THAN 10 1
 10-24. 2
 25-49. 3
 50-74. 4
 75-100 5
 OVER 100 6

NON-INTERVIEW 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 (Q.4)
- RESPONDENT CANNOT 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 s/he refuse? (RECORD VERBATIM) OR: Why were there problems contacting the respondent?

SKIP TO Q.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. IF INDUSTRIAL OR AGRICULTURAL MENTIONED IN Q.5: Would you estimate that 50% or more of the space in this building is used for (industrial/agricultural) activities?

- YES. 1
- NO 2
- DON'T KNOW 8

7. What is the length of the building along the street (linear footage)? IF YOU CAN'T ESTIMATE, ENTER NUMBER OF "CAR LENGTHS" ALONG THE STREET.

LENGTH IN FEET

OR

CAR LENGTHS

8. How many floors does the building have, ground level and above?

OF FLOORS

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

I-11 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 _____	_____ _____ _____

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

I-11 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 _____	_____ _____

SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

I-11 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 _____	_____ _____ _____

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SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

I-11 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 _____	_____ _____

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SUPPLIER CUSTOMER SHEET

ENERGY SOURCE: _____

SUPPLIER'S NAME: _____

I-11 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 _____	_____

(10/86)

Form Approval
 OMB No. 1905-0145
 Expires: 9/30/89
 Form EIA-871A

NONRESIDENTIAL BUILDINGS ENERGY CONSUMPTION SURVEY
 AUTHORIZATION FORM (Continued)

UNITED STATES DEPARTMENT OF ENERGY
 NONRESIDENTIAL BUILDINGS ENERGY CONSUMPTION SURVEY

AUTHORIZATION FORM

I hereby give permission to Westat, Inc. to obtain energy consumption information 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, 1985 to January 31, 1988 by the building/establishment identified below

Companies are authorized to provide this 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
_____ 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, 1985.

Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____

CONTINUED ON REVERSE SIDE

Signature of Authorizing Person

Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____
Energy Source _____	Print full name of company _____ Address (if known) _____ City and State _____ ZIP _____ () _____ Telephone _____ Account Number(s) _____

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1e. IF CURRENTLY VACANT, SKIP TO Q2. OTHERWISE, ASK Q1f.

1f. How much (additional) money did (all) the current tenant(s) spend on construction improvements to this building during calendar year 1986?

\$ _____ (2)
DOLLARS SPENT
DON'T KNOW 9-8

IF MORE THAN ONE ESTABLISHMENT, GO TO Q.1g
IF ONE ESTABLISHMENT, SKIP TO Q.1h.

1g. CHECK LABEL: IS MULTITENANT BUILDING SELECTED FOR FOLLOWUP?

YES. 1
NO 2 (2)

1h. What (is/are the name(s), address(es) and telephone number(s) of the current tenant(s) in this building? [IF MORE THAN ONE TENANT, RECORD NAMES, ADDRESSES, AND TELEPHONE NUMBERS AT THE END OF THIS SUPPLEMENT.]

NAME ADDRESS TELEPHONE NUMBER (2)

2. Now let's think about expenditures for maintenance and repairs to this building. Approximately what is the total amount of money spent by you and all other (persons/businesses) during calendar year 1986 for maintenance and repairs to this building? (HAND CARD 15) (That is, current costs for the upkeep of the property rather than additional investment in the property)

HAND CARD 15

\$ _____ (TERMINATE)
DOLLARS SPENT
NEEDS A FEW DAYS TO COMPILE DATA 6 (2a)
DON'T KNOW 9-8 (2b)

2a. When can I call you back to get this information? _____ (TERMINATE)
DATE TIME

2b. What is the name, address, and telephone number of the person who knows the total amount spent on maintenance and repairs for this building during calendar year 1986?

NAME TELEPHONE NUMBER (TERMINATE)

COMPLETE ADDRESS

NO ONE PERSON KNOWS THE TOTAL 6 (BOX B)
DON'T KNOW 8 (BOX B)

BOX B: EXPENDITURES FOR MAINTENANCE AND REPAIRS
CHECK QUESTIONS C-2 AND I-8 AND CIRCLE ONE:
1. ONE ESTABLISHMENT IN BUILDING: OCCUPIED BY OWNER/OWNER'S BUSINESS . . . 1 (TERMINATE)
2. ONE ESTABLISHMENT IN BUILDING: NOT OCCUPIED BY OWNER'S BUSINESS 2 (2c)
3. MORE THAN ONE ESTABLISHMENT IN BUILDING: OWNER(S) AND TENANT(S) OR ONLY TENANTS 3 (2c)
4. VACANT 4 (2c)

2c. How much money did the owners spend on maintenance and repairs to this building during calendar year 1986?

\$ _____ (2a)
DOLLARS SPENT
DON'T KNOW 9-8 (2d)

2d. What is the name and address and telephone number of someone who knows how much the owner spent on maintenance and repairs to this building during calendar year 1986?

NAME TELEPHONE NUMBER (2e)

COMPLETE ADDRESS

2e. IF CURRENTLY VACANT, TERMINATE. OTHERWISE, ASK Q.2f.

2f. How much (additional) money did (all) the current tenant(s) spend on maintenance and repairs for this building during calendar year 1986?

\$ _____ (TERMINATE)
DOLLARS SPENT
DON'T KNOW 8

IF MORE THAN ONE ESTABLISHMENT, GO TO Q.2g
IF ONE ESTABLISHMENT, SKIP TO Q.2i.

2g. CHECK LABEL: IS MULTITENANT BUILDING SELECTED FOR FOLLOWUP?

YES. 1
NO 2 (TERMINATE)

2h. HAS A COMPLETE TENANT LIST BEEN OBTAINED AT Q.1h?

YES. 1 (TERMINATE)
NO 2

2i. What (is/are) the name(s), address(es) and telephone number(s) of the current tenant(s) in this building? [IF MORE THAN ONE TENANT, RECORD NAMES, ADDRESSES, AND TELEPHONE NUMBERS AT THE END OF THIS SUPPLEMENT.]

NAME	ADDRESS	TELEPHONE NUMBER
_____	_____	() _____

TERMINATE: This completes the interview. Thank you very much for your time and help.

TIME ENDED: _____

INTERVIEWER OBSERVATION

INDICATE WHO PROVIDED THE INFORMATION ON EXPENDITURES FOR CONSTRUCTION IMPROVEMENTS AND MAINTENANCE AND REPAIRS:

	CONSTRUCTION IMPROVEMENTS	MAINTENANCE AND REPAIRS
OWNER	<input type="checkbox"/>	<input type="checkbox"/>
OWNER'S BUSINESS OR REPRESENTATIVE	<input type="checkbox"/>	<input type="checkbox"/>
TENANT	<input type="checkbox"/>	<input type="checkbox"/>
TENANT REPRESENTATIVE	<input type="checkbox"/>	<input type="checkbox"/>
OTHER (SPECIFY) _____	<input type="checkbox"/>	<input type="checkbox"/>

RESPONDENT NAME: _____ TELEPHONE: () _____

REMEMBER:

IF MULTITENANT LIST REQUIRED, MAKE SURE YOU HAVE ALL TENANTS RECORDED ON FOLLOWING PAGES.

NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF TENANTS/OWNERS

CHECK, IF MAJOR TENANT

- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____
- NAME: _____
ADDRESS: _____
TELEPHONE NO. () _____

NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF TENANTS OWNERS

CHECK, IF
MAJOR TENANT

1. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
2. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
3. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
4. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
5. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
6. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
7. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
8. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____
9. NAME: _____
ADDRESS: _____
TELEPHONE NO. (____) _____

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Appendix G

Related Publications from the EIA on Energy Consumption

Data on energy consumption are collected and analyzed by EIA, and then made available in a variety of Government publications and computer tapes.





Appendix G

Related Publications from the EIA on Energy Consumption

These publications are available from the National Energy Information Center or the Superintendent of Documents. See the inside cover of this report on how to obtain copies of these publications. Please note that the prices quoted are subject to change. In addition to the reports listed below, public use data tapes for the residential, residential transportation and commercial sectors are available from the National Technical Information Service (NTIS). To obtain information on how to order tapes, you may call NTIS at 703/487-4807.

Commercial Sector

Characteristics of Buildings

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 National Technical Information Service (NTIS), Order Number DE-85015581.

Nonresidential Buildings Energy Consumption Survey: Fuel Characteristics and Conservation Practices; June 1981, DOE/EIA-0278, GPO Stock No. 061-003-00200-5, \$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

Nonresidential Building 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, Fuel Oil, LPG, and All Fuels; December 1983, DOE/EIA-0318(79)/2, GPO Stock No. 061-003-00366-4, \$6.00.

Residential Sector

Housing Characteristics

Residential Energy Consumption Survey: Housing Characteristics 1984; September 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.).

Consumption and Expenditures

Residential Energy Consumption Survey: Consumption and Expenditures, April 1984 through March 1985 Part 1: National Data; March 1987, DOE/EIA-0321(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.

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 2: 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

End-Use Consumption of Residential Energy (Article), pp. vii - xiv, *Monthly Energy Review,* 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. 061-003-0053-7, \$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. 061-003-00347-8, \$5.00.

National Interim Energy Consumption Survey: Exploring the Variability in Energy Consumption; July 1981, DOE/EIA-0272, GPO Stock No. 061-003-00205-6, \$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

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

Manufacturing Energy Consumption Survey: Methodological Report, 1985; planned for October 1988.

Manufacturing Energy Consumption Survey: Consumption of Energy Sources, 1985; planned for October 1988.

Manufacturing Energy Consumption Survey: Fuel Switching Capability, 1985; planned for October 1988.

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.).

Cross-Sector

Natural Gas: Use and Expenditures; April 1983, DOE/EIA-0382, GPO Stock No. 061-003-00307-9, \$5.50.

Planned Publications for 1989

Nonresidential Buildings Energy Consumption Survey: Commercial Buildings Consumption and Expenditures, 1986 (May 1989).

Residential Transportation Energy Consumption Survey: Consumption Patterns of Household Vehicles, 1988 (Dec. 1989).

Residential Energy Consumption Survey: Housing Characteristics, 1987 (June 1989).

Residential Energy Consumption Survey: Consumption and Expenditures, January 1987 Through December 1987, Part 1: National Data (Oct. 1989).

Residential Energy Consumption Survey: Consumption and Expenditures, January 1987 Through December 1987, Part 2: Regional Data (Nov. 1989).

Manufacturing Energy Consumption Survey: Energy Efficiency In Manufacturing, 1985; (March 1989).

Appendix H

Cross-Classification Matrix for the Detailed Tables



The complex heating, cooling, and lighting situation in this hotel lobby may require the use of an energy management and control system.



Appendix H

Cross-Classification Matrix for the Detailed Tables

Each of the detailed tables gives aggregates of buildings, floorspace, or both, within cells defined by two-way cross-classifications of building characteristics, such as building size by year constructed. The matrix below indicates which crosses are found in which tables. A particular two-way cross A*B may appear only in the tables that feature A as the main topic, only in the tables that feature B as the main topic, or in both sets of tables. For example, percent heated is crossed with heat production equipment in the heat production equipment tables (46 and 47) but not in the percent heated table (43). By contrast, Census region is crossed with wall materials in both the Census region tables (13 and 14) and the wall and frame materials tables (29 and 30). Classifications that appear as row stubs in all of the detailed tables are marked with an asterisk (*) in the matrix. Some

classifications and cross-classifications of special interest that are not included in the "Detailed Tables" section may be found in Tables 1 through 12 of the main text.

Key to the Cross-Classification Matrix

- ^ This row stub appears in all the tables indicated at the top of this column.
- S This row stub appears in some of the tables indicated at the top of this column.
- This row stub does not appear in the tables indicated at the top of this column.

Key to Table Topic Abbreviations

Location

Region	Census Region
Divisn	Census Division
Climat	Climate Zone

Building Size

Sq Ft	Building Floorspace
-------	---------------------

Building Use

Wrkers	Workers
Hours	Weekly Operating Hours
Occpcy	Occupancy

Structure

Yr Cns	Year Constructed
Floors	Floors
Wl Mat	Wall and Frame Materials
Rf Mat	Roof Materials

Energy Sources and End Uses

En Src	Energy Sources Used
End Use	Energy End Uses
Ht Src	Heating Energy Source
Cl Src	Cooling Energy Source
WtrSrc	Water Heating Energy Source
CkgSrc	Cooking Energy Source
ElGenr	Electricity Generation Capability

End Use Intensity

Pct Ht	Percent Heated
Pct Cl	Percent Cooled
Pct Lt	Percent Lit

End Use Equipment

HtProd	Heat Production
ClProd	Cooling Production
HCDist	Heating and Cooling Distribution

Conservation Features

Summry	Summary
HVAC	HVAC
Ltg	Lighting
Shell	Building Shell
Oc Ctl	Occupant Control
RedOff	Reduced Heat/Cool Off Hours

Cross-Classification Matrix

	Table Topic <u>a/</u> (Column Headers) and Table Numbers												
	Location		Building Size	Building Use		Structure		Energy Sources and End Uses			End Use Intensity	End Use Equipment	Conservation Features
	Region/Divisn	Climat	Sq Ft	Wrkers Hours	Occpcy	Yr Cns	Floors Wl Mat Rf Mat	En Src EndUse	Ht Src Cl Src	WtrSrc CkgSrc ElGenr	Pct Ht Pct Cl Pct Lt	HtProd ClProd MCDist	Summary HVAC Ltg Shell Oc Ctl RedOff
Subgroup (Row Stubs)	13,14	15	16,17	18-22	23-25	26,27	28-32	33-35	36-38	39-42	43-45	46-51	52-62
Location													
*Census Region	.	^	^	^	^	^	^	^	^	^	^	^	^
Climate Zone	^	.	.	.	.	^	S	S	^	.	^	^	S
Metropolitan Status	^	.	.	^	S	^	.	.	.	.	.	.	.
Building Size													
*Building Floorspace	^	^	^	^	^	^	^	^	^	^	^	^	^
Roof Area	^	.	^	.	.	^	S	.	.	.	.	.	S
Building Use													
*Principal Building Activity	^	^	^	^	^	^	^	^	^	^	^	^	^
*Workers	^	^	^	^	^	^	^	^	^	^	^	^	^
*Weekly Operating Hours	^	^	^	^	^	^	^	^	^	^	^	^	^
*Occupancy	^	^	^	^	.	^	^	^	^	^	^	^	^
Structure													
*Year Constructed	^	^	^	^	^	^	^	^	^	^	^	^	^
Floors	^	.	.	.	.	^	S	.	.	.	.	.	S
Wall and Frame Materials	^	.	.	.	.	^	.	.	^	.	.	.	S
Roof Materials	^	.	.	.	.	^	S	.	^	.	.	.	S
Window Glass Percent	^	.	.	.	.	^	S	.	S	.	^	S	S
Energy Sources and End Uses													
*Energy Sources Used	^	^	^	^	^	^	^	^	^	^	^	^	^
*Energy End Uses	^	^	^	^	^	^	^	^	^	^	^	^	^
Heating Energy Source	.	.	.	.	.	.	.	.	S	S	.	.	.
Cooling Energy Source	.	.	.	.	.	.	.	.	S	.	.	.	.

a/ See key to matrix and table topic abbreviations preceding the matrix.

Cross-Classification Matrix (continued)

	Table Topic <u>a/</u> (Column Headers) and Table Numbers												
	Location		Build- ing Size	Building Use		Structure		Energy Sources and End Uses			End Use | Inten- sity	End Use | Equip- ment	Con- ser- vation | Fea- tures
	Region | Divisn	Climat	Sq Ft	Wrkrs | Hours	Occpcy	Yr Cns	Floors | Wl Mat | Rf Mat	En Src | EndUse	Ht Src | Cl Src	WtrSrc | CkgSrc | ElGenr	Pct Ht | Pct Cl | Pct Lt	HtProd | ClProd | HCDist	Summary | HVAC | Ltg | Shell | Oc Ctl | RedOff
Subgroup (Row Stubs)	13,14	15	16,17	18-22	23-25	26,27	28-32	33-35	36-38	39-42	43-45	46-51	52-62
End Use Intensity													
Percent Heated	^	.	.	^	S	^	S	.	S	.	S	^	S
Percent Cooled	^	.	.	^	S	^	S	.	S	.	S	^	S
Percent Lit - Open	^	.	.	^	S	^	.	.	S	.	S	S	S
Percent Lit - Off Hours	S	.	S
End Use Equipment													
Heat Production	^	^	.	.	S	.	.	S	.
Cooling Production	^	^	.	.	S	.	.	S	.
Heat Distribution	^	^	.	.	S	.	.	S	.
Cooling Distribution	^	^	.	.	S	.	.	S	.
Lighting Equipment	^	^	S	.	S
Conservation Features													
Summary	^	.	.	.	S	^	.	.	^	.	.	.	S
HVAC	^	.	.	^	S
Lighting	S	.	.	.	S
Building Shell	^	.	.	.	S
Occupant Control	.	.	.	^	S	.	.	.	^	.	S	^	S
Reduced Heat/Cool Off Hrs	.	.	.	^	S	.	.	.	^	.	S	^	S

a/ See key to matrix and table topic abbreviations preceding the matrix.

Glossary

Active Solar: As an energy source, the use of mechanical pumps/fans to circulate heat-laden fluids or air between solar collectors and the building. Examples include the use of solar collectors for water or space heating. Data on the passive collection of solar energy, such as by trombe walls, were not collected on the 1986 NBECS. Active solar is considered a minor fuel in this report. (See **Energy Source, Major Fuels, and Minor Fuels.**)

Aggregate Ratio: The ratio of two population aggregates (totals). For example, the aggregate square feet per worker is the ratio of the total square footage in each category to the total number of workers in the category. (See **Mean and Median.**)

Aggregate Square Feet per Worker: The ratio of the total square footage in each category to the total number of workers in the category. (See **Aggregate Ratio.**)

Agricultural: As used in this survey, activities involving the manufacturing, processing, sale, storage, or housing of agricultural products, including livestock. These buildings were listed during the listing stage. However, buildings that had more than 50 percent of the floorspace devoted to the sale, storage, housing, manufacturing, or processing of agricultural products were out of scope and were dropped from the sample during the interview phase. Farms and farm buildings (silos, grain elevators, and barns) were out of scope for the NBECS and were not listed during the listing stage. (See **Commercial Building, Out-of-Scope Building, Non-residential Building, Building, Principal Building Activity, and Appendix A, "How the Survey was Conducted."**)

Air Conditioning: See **Cooling.**

Air-Source Heat Pump: A heat pump that uses ambient air as the source/sink for heat. (See **Heat Pump and Water-Source Heat Pump.**)

Ballast: The transformer for fluorescent and High-Intensity Discharge (HID) lamps. The ballast provides the necessary current, voltage, and wave-form conditions to operate the lamp.

Baseboard: A heating system or a heat-distribution 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 **Heating and Cooling Distribution Equipment and Individual Space Heater.**)

Boiler: A type of heat production equipment consisting of a vessel or tank where hot water or steam is produced from the combustion of fuels such as natural gas, fuel oil, or coal. 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 boilers. Steam or hot water piped into a building from a central plant is considered a district heating system. (See **Warm-Air Furnace, HVAC, Heat Production Equipment, and District Heating System.**)

Building: For this survey, a structure totally enclosed by walls extending from the foundation to the roof. 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 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); mobile homes and trailers, even if they housed nonresidential activity; and oil storage tanks. Also excluded were nonbuildings that consume energy (such as street lights, pumps, bridges, swimming pools, and construction sites). Only commercial buildings are included in this report. (See **Commercial Building and Non-residential Building.**)

Building Floorspace: See **Square Footage.**

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 Conservation Feature: A building feature designed to reduce the energy loss or gain through the shell or envelope of the building. The 1986 NBECs collected data on the following specific building shell energy conservation features: roof, ceiling or wall insulation; storm windows or double- or triple-paned glass; tinted or reflective glass or shading films; exterior or interior shadings or awnings; and weather stripping or caulking. (See **Roof or Ceiling Insulation, Wall Insulation, Reflective or Shading Glass or Film, Storm or Multiple Glazing, Building Shell (Envelope), Exterior or Interior Shadings or Awnings, and Weather Stripping or Caulking.**)

Built-Up: A roof covering consisting of several successive layers (each of which is called a ply) usually of roofing felt with moppings 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: A well-defined geographic unit containing a group of separate buildings that are operated as a unit, such as a university campus or a hospital complex. (See **Facility.**)

Caulking: See **Weather Stripping or Caulking.**

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 E.) The States are grouped into nine divisions and four regions:

Region	Division	States
Northeast	New England	Connecticut, Maine Massachusetts, New Hampshire, Vermont and Rhode Island
	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 E.

Central Cooling: A type of cooling production equipment consisting of a central chiller or chillers used to produce cooled air or liquid. (See **Cooling and HVAC.**)

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 by the Energy End Use Division (EEUD) 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 °F.).

The zones are defined as follows:

AIA Group	EEUD Climate Zone	Average Annual Cooling Degree-Days	Average Annual Heating Degree-Days
1	1	Less than 2,000	More than 7,000
2	2	Less than 2,000	5,500 to 7,000
3	3	Less than 2,000	4,000 to 5,499
4	4	Less than 2,000	2,000 to 3,999
5	4	Less than 2,000	Less than 2,000
6	5	2,000 or more	Less than 2,000
7	5	2,000 or more	2,000 to 3,999

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.)

Coal: An energy source consisting of a black or brownish-black, carbon-based solid combustible fuel. In this report, the term includes anthracite, bituminous and subbituminous coal, as well as the derivative of coal known as coke. Coal is considered a minor fuel in this report. (See Energy Source, Major Fuels, and Minor Fuels.)

Cogeneration: The simultaneous generation of electric power and useful heat by a single process. In essence, cogeneration involves the recovery of waste heat from electric power generation. 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, and Waste-Heat Recovery Equipment.)

Commercial Building: A building whose principal activity is not residential, industrial, or agricultural. 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 military bases or reservations. Farms and buildings located on farms (such as silos, grain elevators and barns) were excluded from the survey. Other agricultural buildings were excluded if the agricultural activity occupied 50 percent or more of the floorspace in the building. Buildings were also excluded if 50 percent or more of the floorspace was used for residential, industrial, or manufacturing purposes. For a more complete list of buildings in the survey, see Appendix C, "Types of Buildings." (See Building, Nonresidential Building, Manufacturing/Industrial, Agricultural, and Principal Building Activity.)

Concrete Panel: A wall construction panel made of concrete, either prefabricated in a factory or poured at the site.

Conservation Feature: A feature in the building designed to reduce the usage of energy. In the 1986 NBECS, data are gathered on HVAC, lighting, building shell and other conservation features. (See Reduced Use Off-Hours: Cooling, Reduced Use Off-Hours: Heating, Building Shell Conservation Feature, Lighting Conservation Feature, and HVAC Conservation Feature.)

Cooking: The use of energy for commercial or institutional cooking. The 1986 NBECS asked specifically about "commercial cooking," which was intended to include any kitchen facility that was not part of a residence. This is one of six energy end uses specifically asked for in this survey. (See Energy End Use and Appendix B, "Sampling and Nonsampling Errors.")

Cooling: Cooling of room air by a refrigeration unit (such as an air-conditioner or heat-pump) or by circulating chilled water through a central cooling or district cooling system. Use of fans or blowers by themselves without refrigeration or chilled 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, Heat Pump, and HVAC.)

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 °F, and the period of time is one year. The cooling degree-days for a single day is the difference between that day's average temperature and the base temperature if the daily average is greater than the base; and 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**.)

Cooling Distribution Equipment: See **Heating and Cooling Distribution Equipment**.

Cooling Production Equipment: The part of a cooling system that chills water or air. Cooling production equipment may operate either as a free-standing unit, or in conjunction with cooling distribution equipment. (See **Cooling**, and **Heating and Cooling Distribution Equipment**.)

Daylighting Controls: See **Natural Lighting Control Sensor (Daylighting Controls)**.

Delamping Program: A lighting conservation feature whereby the lighting level in the building is reduced by taking out unnecessary lamps and, in the case of some fluorescent lights, disconnecting the associated ballast. Some ballasts will continue to draw a small amount of electricity if left connected. (See **Ballast**.)

District Chilled Water: Chilled water from an outside source used as an energy source in a building. The water is chilled in a central plant or district system and piped into the building. Chilled water may be purchased from a utility or provided by a physical plant in a separate building that is part of the same facility (for example, a hospital complex or university). For this report, District Chilled Water is considered a major fuel. (See **Energy Source**, **District Cooling System**, **Major Fuels**, and **Minor Fuels**.)

District Cooling System: A system of providing chilled water for cooling using District Chilled Water. (See **District Chilled Water**.)

District Heating System: A system of providing space heating or hot-water heating using District Steam or District Hot Water. (See **District Steam/ District Hot Water**.)

District Steam/District Hot Water: Steam or hot water from an outside source used as an energy source in a building. The steam or hot water is produced in a central plant or district system and piped into the building for space heating, absorption cooling, water heating, or cooking. It may be purchased from a utility or provided by a physical plant in a separate building that is part of the same facility (for example, a hospital complex or university.) For this report, District Steam and District Hot Water are considered major fuels. (See **Energy Source**, **Major Fuels**, and **Minor Fuels**.)

Ducted Forced Air: A type of Heating and Cooling Distribution Equipment that distributes conditioned air throughout a building through ducts by fans or blowers. (See **HVAC**, and **Heating and Cooling Distribution Equipment**.)

Economizer Cycle: As an HVAC conservation feature, a method of operating a ventilation system to reduce the air-conditioning load. Whenever 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. (See **HVAC Conservation Feature**.)

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: An energy source supplied to a building by a central utility via underground or above-ground power lines. Electric power generated on-site for exclusive use in the building is specifically excluded from the definition of electricity as an energy source. For this report, electricity is considered a major fuel. (See **Energy Source**, **Major Fuels**, and **Minor Fuels**.)

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. Electricity-generating plants belonging to utility companies, which produce electric power for sale to other buildings, were not included in this survey. (See **Energy End Use** and **Cogeneration**.)

EMCS: See **Energy Management and Control System (EMCS)**.

Emergency Backup Generation: The use of electric generators only during interruptions of normal power supply.

Energy Audit: An inspection that determines where and how a building uses energy, and identifies energy-conservation possibilities. (See **Conservation Feature**.)

Energy Efficient Fluorescent Lamp: A fluorescent lamp that has a higher lumen output per watt of electricity than a conventional fluorescent lamp. (See **Fluorescent Lamp**.)

Energy Efficient Incandescent Lamp: An incandescent lamp that has a higher lumen output per watt of electricity than a conventional incandescent lamp. (See **Incandescent Lamp**.)

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/Industrial, 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. Not included are time-clock thermostats. (See **Time-Clock Thermostat, Occupant Control of Heating, and Occupant Control of Cooling**.)

Energy Source: A type of energy or fuel consumed in the building. (See **Electricity, Natural Gas, Fuel Oil, District Steam/District Hot Water, District Chilled Water, Liquefied Petroleum Gas (LPG), Wood, Coal, and Active Solar**.)

Energy Supplier: A company that provides electricity, natural gas, fuel oil, LPG, or other sources of energy to a building. (See **Energy Source**.)

Envelope: See **Building Shell (Envelope)**.

Exterior or Interior Shadings or Awnings: A building shell conservation feature consisting of any type of exterior shadings (including architectural) or awnings on the outside of the building. Interior shading devices include drapes, venetian blinds, and window shades. (See **Building Shell Conservation Feature**.)

Evaporative Cooler ("Swamp" Cooler): A type of cooling equipment using the evaporation of water to cool air. This type of equipment is commonly found in warm, dry climates. (See **Cooling**.)

Facility: An economic unit that operates in 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. 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. This problem arose most often for buildings from the list sample. (See **Campus or Complex, Building, List Sample, and Appendix A, "How the Survey Was Conducted"**.)

Fan-Coil Unit: A type of heating and cooling distribution equipment. Fan-coil units have built-in fans that draw air from the room and then across finned tubes containing hot water, steam, or chilled water. (See **Heating and Cooling Distribution Equipment**.)

Floors: The number of levels in the tallest section of a building, including parking areas, basements, or other floors below ground level.

Floorspace: See **Square Footage**.

Fuel Oil: A liquid petroleum product less volatile than gasoline, used as an energy source. In this report, fuel oil includes distillates (No. 1, No. 2, No. 4, and kerosene) and residual (No. 5 and No. 6). Fuel oil is classified as a major fuel for this report. (See **Energy Source, Major Fuels, and Minor Fuels**.)

Government Ownership: Ownership of a building 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)**.

Heat Pump: A system that, during the heating season, 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. The source/sink for heat is either ambient air or water. (See **Air-Source Heat Pump, Water-Source Heat Pump, Cooling, Heating, Central Cooling, and HVAC.**)

Heating: See **Space Heating.**

Heating and Cooling Distribution Equipment: The part of a heating and/or cooling system that conveys conditioned water and/or air throughout a building by means of pipes, pumps, ducts, or fans. Often the distribution equipment serves both heating and cooling. (See **Ducted Forced Air, Baseboard, Radiator, Heating Panel, Fan-Coil Units, and Central Cooling.**)

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 °F, and the period of time is one year. The heating degree-days for a single 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: See **Heating and Cooling Distribution Equipment.**

Heating Panel: A type of heating distribution equipment containing electric coils or steam or hot-water tubes, built beneath the surface of walls, ceilings, or floors. The panel heats by radiation and passive convection. (See **Heating and Cooling Distribution Equipment.**)

Heat Production Equipment: The part of a space heating system that generates heat in the form of warm air, hot water, or steam. Heat production equipment may operate either as an individual space heater, or in conjunction with heating distribution equipment. (See **Space Heating, Individual Space Heaters, and Cooling Distribution Equipment.**)

HID: See **High-Intensity Discharge (HID) Lamp.**

High-Efficiency Ballast: A lighting conservation feature consisting of an energy-efficient version of a conventional electromagnetic ballast. A high-efficiency ballast requires lower power input than a conventional ballast to operate High-Intensity Discharge (HID) and fluorescent lamps. (See **Ballast.**)

High-Intensity Discharge (HID) Lamp: 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-pressure sodium lamps. (See **Lamp.**)

Hot-Deck Imputation: An imputation procedure using random resampling from nonmissing cases to fill in values for missing cases. (See **Imputation and Appendix B, "Sampling and Nonsampling Errors."**)

HVAC: An abbreviation for heating, ventilation, and air-conditioning system; the system or systems that condition air in a building. (See **Heating and Cooling Distribution Equipment, Heating Production Equipment, and Cooling Production Equipment.**)

HVAC Conservation Feature: A building feature designed to reduce the amount of energy consumed by the heating, cooling, and ventilating equipment. The 1986 Building Characteristics Survey collected data on the presence of the following HVAC conservation features: variable air-volume systems, waste heat-recovery equipment, preventive maintenance program for the heating and cooling equipment, energy management and control systems, and time-clock thermostats. (See **Preventive Maintenance Program for the Heating and/or Cooling Equipment, Waste-Heat Recovery Equipment, Energy Management and Control System (EMCS), Variable Air-Volume (VAV) System, Time-Clock Thermostat, and Economizer Cycle.**)

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 B, "Sampling and Nonsampling Errors."**)

Individual 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). (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, gas- or kerosene-fired unit heaters, wood stoves, and infrared radiant heaters. (See **Electric Baseboard**.)

Industrial Building: See **Manufacturing/Industrial**.

In-Scope Building: A structure that (a) meets the NBECS definition of a building; (b) has floorspace greater than 1,000 square feet; and (c) has over 50 percent of its floorspace devoted to commercial activities (that is, activities that are nonindustrial, nonagricultural, and nonresidential). (See **Building**, **Commercial Building**, **Nonresidential Building**, **Out-of-Scope Building**, and Appendix A, "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 Feature**.)

Kerosene: A petroleum distillate with properties similar to No. 1 fuel oil, used primarily in space heaters, cooking stoves, and water heaters. For this survey, no distinction is made between kerosene and fuel oil. (See **Fuel Oil**.)

Lamp: A term generally used to describe a manmade source of light. The term is often used when referring to a "bulb" or "tube." The survey collects data only about lamps using electricity. (See **Standard Incandescent Lamp**, **Standard Fluorescent Lamp**, and **High-Intensity Discharge (HID) Lamp**.)

Large and Specialized Buildings Lists: Lists that were used to select a supplementary sample of buildings for the 1986 NBECS. The sample of buildings drawn from these lists were used to supplement the Multistage Area Probability Sample within each selected PSU. (See **Multistage Area Probability Sample**, **List Sample**, and Appendix A, "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** and Appendix C, "Types of Buildings.")

Lighting Conservation Feature: A building feature or practice designed to reduce the amount of energy consumed by the lighting system. The 1986 NBECS collected data on: delamping; high-efficiency ballasts; lighting control sensors that detect natural light (daylighting controls); and other lighting controls such as occupancy sensors, timed switches, and/or time-clocks. (See **High-Efficiency Ballast**, **Natural Lighting Control Sensor (Daylighting Controls)**, **Other Lighting Controls**, **Time Clock (Lighting)**, and **Delamping Program**.)

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 and is considered a major fuel. (See **Energy Source**, **Propane**, **Major Fuels**, **Minor Fuels**, 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 A, "How the Survey Was Conducted.")

LPG: See **Liquefied Petroleum Gas (LPG)**.

Major Fuels: The energy sources or fuels for which consumption and expenditures data were collected on the 1986 NBECS. These fuels or energy sources are: electricity; fuel oil; liquefied petroleum gas; natural gas; district steam; district hot water; and district chilled water. (See **Minor Fuels**.)

Manufacturing/Industrial: As used in this survey, activities involving the processing or procurement of goods, merchandise, raw materials, or food. These activities include: 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. Manufacturing is one of the six end uses of energy specifically requested in this survey.

In the 1986 NBECS, manufacturing and industrial buildings were 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 Energy End Use and Appendix A, "How the Survey Was Conducted.")

Masonry: A general term covering wall construction using masonry materials such as brick, concrete block, stone, and tile that are set in mortar. This category does not include concrete panels because concrete panels represent a different method of constructing buildings and, therefore, are reported separately. (See **Masonry Over Wood Frame**, **Masonry Over Steel Frame**, and **Masonry Over Masonry Frame (Solid Masonry Wall)**.)

Masonry Over Masonry Frame (Solid Masonry Wall): A method of constructing exterior walls. Both the outside surface materials and the structural walls are made of masonry. (See **Masonry**, **Masonry Over Steel Frame**, and **Masonry Over Wood Frame**.)

Masonry Over Steel Frame: A method of constructing exterior walls. The outside surface is brick, stone, stucco, or other masonry. The structural frame is made of steel. (See **Masonry**, **Masonry Over Masonry Frame (Solid Masonry Wall)**, and **Masonry Over Wood Frame**.)

Masonry Over Wood Frame: A method of constructing exterior walls. The outside surface material is brick, stone, stucco, or other masonry. The structural frame is wood. (See **Masonry**, **Masonry Over Masonry Frame (Solid Masonry Wall)**, and **Masonry Over Steel Frame**.)

Mean: The simple arithmetic average for a population; that 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. The mean is, thus, an aggregate ratio whose denominator is the total number of buildings. (See **Aggregate Ratio**, and **Weight**.)

Mean Weekly Operating Hours: The average number of hours per week that buildings in the population are open. (See **Mean and Weekly Operating Hours**.)

Mean Square Feet per Building: The average square footage of buildings in the population. (See **Mean and Square Footage**.)

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 value is not influenced much by extremes. 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 Weekly Operating Hours: The middle value of weekly operating hours in the population. Half the buildings in the population are open longer and half the buildings are open fewer hours per week than this number. (See **Median and Weekly Operating Hours**.)

Median Square Feet per Building: The middle square footage value in the population. Half the buildings in the population are larger and half the buildings are smaller than this number. (See **Median and Square Footage**.)

Median Square Feet per Worker: The middle value in the population of the ratio of building size to number of workers. Half the buildings in the population have more square feet per worker than the median and half the buildings have fewer square feet per worker. (See **Median**, **Square Footage**, and **Number of Workers in the Building**.)

Metal Panel: A wall construction panel made of aluminum or galvanized steel fabricated in factories and fastened to the frame of the building to form outside walls.

Metal Surfacing: Light-gauge metal sheets used for roofing.

Metropolitan: Buildings located within Metropolitan Statistical Areas (MSA's) as defined in the 1980 Census. Except in New England, an MSA is a county or a group of contiguous counties that contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. The contiguous counties are included in an MSA if 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**.)

Metropolitan Status: A building classification, either metropolitan or non-metropolitan. (See **Metropolitan** and **Nonmetropolitan**.)

Minor Fuels: The energy sources or fuels for which consumption and expenditures data were not collected on the 1986 NBECS. The decision not to collect data on these energy sources or fuels was based on the difficulty of obtaining reliable data for these sources given survey constraints including time, budget, and respondent burden. For this survey, any energy source not designated as a major fuel is a minor fuel. The minor fuels include active solar, coal, and wood, as well as other energy sources. (See **Major Fuels**.)

MSA: See **Metropolitan**.

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 national coverage. (See Appendix A, "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 or to privately owned gas wells operated by a building owner. For this report, natural gas is considered a major fuel. (See **Energy Source**, **Liquefied Petroleum Gas (LPG)**, **Major Fuels**, **Minor Fuels**, and **Propane**.)

Natural Lighting Control Sensor (Daylighting Controls): A lighting conservation device that senses the amount of light provided by natural light, and controls electric lighting or shading devices to maintain a specified lighting level. Daylighting controls are also sometimes referred to as "photocells." (See **Lighting Conservation Feature**.)

NOAA Division: One of the 356 weather divisions designated by the National Oceanic and Atmospheric Administration (NOAA), encompassing the 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; an NOAA division contains an average of nine counties. (See **Climate Zone**.)

Nonmetropolitan: Buildings not located within Metropolitan Statistical Areas as defined in the 1980 Census. (See **Metropolitan**.)

Nonresidential Building: A building used for some purpose other than residential. Nonresidential buildings comprise three groups: commercial, industrial, and agricultural. Commercial buildings are the focus of this report. (See **Commercial Building**, **Manufacturing/Industrial Building**, **Residential Building**, **Principal Building Activity**, **Out-of-Scope Building**, and Appendix C, "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. (See **Principal Building Activity** and Appendix C, "Types of Buildings.")

Number of Workers in the Building: The number of people working in a building during all shifts on 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 that work out of the office, such as salesmen that report in, delivery men with routes, and messengers.

Occupancy Sensor: A lighting conservation feature that uses motion or sound to switch lights on or off. Occupancy sensors that detect movements are also known as ultrasonic switching. When movement is detected, the lights are turned 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. (See **Lighting Conservation Feature**.)

Occupant Control of Cooling: Control by individuals other than maintenance personnel of the cooling equipment in a building.

Occupant Control of Heating: Control by individuals other than maintenance personnel of the heating equipment in a building.

Other Lighting Controls: A lighting conservation feature consisting of controls other than natural lighting control sensors. Such other controls include occupancy sensors, timed-switches, and time-clocks. (See **Lighting**)

Conservation Feature, Natural Lighting Control Sensor (Daylighting Controls), Occupancy Sensor, Timed-Switch, and Time-Clock (Lighting.)

Out-of-Scope Building: A building that did not qualify as in-scope, either because 50 percent or less of its floorspace was devoted to commercial activities, because its floorspace was 1,000 square feet or less, or because the structure did not satisfy the NBECs definition of a building. (See **Building, In-Scope Building, Commercial Building**, and Appendix A, "How the Survey Was Conducted.")

Owner Occupied: Having the owner present in the building 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.

Packaged Air-Conditioning Units: See **Packaged Units**.

Packaged Heating Units: See **Packaged Units**.

Packaged Units: Units built and assembled at a factory and installed as a unit to cool or heat 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. (See **Cooling, HVAC, and Space Heating**.)

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 °F. (See **Total Square Footage and Space Heating**.)

Percent Lit--Off-Hours: The percentage of the building's square footage that is lit electrically during all hours other than the usual operating hours. (See **Percent Lit--Open Hours, Square Footage, and Weekly Operating Hours**.)

Percent Lit--Open Hours: The percentage of the building's square footage that is lit electrically during usual operating hours. (See **Percent Lit--Off-Hours, Square Footage and Weekly Operating Hours**.)

Preventive Maintenance Program for Heating and/or Cooling Equipment: As used in this report, a HVAC conservation feature consisting of a routine program of inspection and routine service for the heating and/or cooling equipment. The inspection is performed on a regular basis, even if there are no apparent problems. (See **HVAC Conservation Feature**.)

Primary Sampling Unit (PSU): The sampling units selected at the first stage in a multistage area probability sample. A PSU typically consists of one to several contiguous counties--for example, a metropolitan area with surrounding suburban counties. (See **Multistage Area Probability Sample, Metropolitan**, and Appendix A, "How the Survey Was Conducted.")

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 sales/service. (See Appendix C, "Types of Buildings.")

Propane: A gaseous petroleum product that liquefies under pressure; it is a major component in liquefied petroleum gas, or LPG. Any LPG reported was assumed to be propane. Propane is classified as a major fuel for this report. (See **Liquefied Petroleum Gas (LPG), Major Fuels, and Minor Fuels**.)

PSU: See **Primary Sampling Unit (PSU)**.

Radiator: A heat-distribution unit that transfers heat from steam or hot water to air by a combination of direct radiation, conduction, and convection. Typically, a radiator is a freestanding, cast-iron fixture exposed in the space it heats. (See **Heating and Cooling Distribution Equipment**.)

Reduced Use Off-Hours: Cooling: A conservation feature consisting of manually or automatically reducing the amount of cooling produced during the hours a building is not in full use. (See **Cooling and Conservation Feature**.)

Reduced Use Off-Hours: Heating: A conservation feature consisting of manually or automatically reducing the amount of heating produced during the hours a building is not in full use. (See **Space Heating and Conservation Feature**.)

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 Feature**.)

Relative Standard Error: See **RSE (Relative Standard Error)**.

Residential Building: A structure used primarily as a dwelling for one or more households. In the 1986 NBECs, residential buildings that contained commercial activities were included in the survey during the listing and interviewing stages. However, buildings that had 50 percent or more of their square footage devoted to residential activities were dropped from the database during the analysis stage. (See **Principal Building Activity, In-Scope Building, Commercial Building**, and Appendix A, "How the Survey Was Conducted.")

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 Feature**.)

Roof Square Footage: The area in square feet of the exposed roof area.

RSE (Relative Standard Error): A measure of the reliability or precision of a survey statistic. The Relative Standard Error, or RSE, is defined as the standard error of a survey estimate, expressed as a percent of the estimate. For example, an RSE of 10 percent means that the standard error is one-tenth as large as the survey estimate. (See the "Generalized Variances" section of Appendix B, "Sampling and Nonsampling Errors," for a discussion of sampling errors.)

RSE Column Factor: An adjustment factor used to compute RSE's. For a survey estimate in a particular row and a 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 (Relative Standard Error)**, **RSE Row Factor**, and the "Generalized Variances" section of Appendix B, "Sampling and Nonsampling Errors.")

RSE Row Factor: A factor 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 (Relative Standard Error)**, **RSE Column Factor**, and the "Generalized Variances" section of Appendix B, "Sampling and Nonsampling Errors.")

Sampling: The procedure used to select buildings for interview from the population of commercial buildings in the United States. (See **Multistage Area Probability Sampling** and Appendix A, "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** and Appendix C, "Types of Buildings.")

Seating Capacity - Food Service Facility: The number of patrons that can be seated in a food service facility at a given time. (See **Principal Building Activity** and Appendix C, "Types of Buildings.")

Shakes: A roofing material similar to wood shingles. Instead of having a cut and smoothly planed surface, shakes are split into shapes to give a rustic appearance (See **Shingles and Wood Shingles or Shakes**.)

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 fiber glass, wood, plastic, baked clay, tile, asbestos, asphalt, and aluminum. (See **Shakes and Wood Shingles or Shakes**.)

Siding Over Masonry Frame: A method of constructing exterior walls where the outside surface is wood, plastic, or metal siding, and the structural walls are masonry. (See **Siding Over Wood Frame**.)

Siding Over Wood Frame: A method of constructing exterior walls where the outside surface is wood, plastic, or metal siding, and the structural walls are wood. (See **Siding Over Masonry Frame**.)

Slate or Tile: 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.

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 °F. This is one of the six end uses of energy specifically asked for in this survey. (See **Energy End Use**.)

Square Footage: All the area enclosed by the exterior walls of a building, including indoor parking facilities, basements, hallways, lobbies, stairways, and elevator shafts, in units of square feet. (See **Total Square Footage and Appendix A, "How the Survey Was Conducted."**)

Standard Fluorescent Lamp: A lamp made of a glass tube coated on the inside with fluorescent material. The lamp produces light by passing electricity through mercury vapor, which causes the fluorescent coating to glow or fluoresce. (See **Lamp**.)

Standard Incandescent Lamp: A lamp that produces light by electrically heating a filament so that it glows.

Steam: See **District Steam/District Hot Water**.

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 Feature**.)

Synthetic or Rubber Roofing: A layer of heavy gauge plastic, or rubber used for roofing.

Time-Clock (Lighting): A lighting conservation feature consisting of a mechanical or digital device that automatically turns lights off and on at predetermined times (for example, on at dusk and off at dawn). (See **Lighting Conservation Feature**.)

Time-Clock Thermostat: A HVAC conservation feature using a time clock to change the thermostat settings at certain preset times. The number of time-clock thermostats reported in this survey represents a conservative estimate since counts were obtained from an open-ended question about "other HVAC conservation features" not mentioned in the questionnaire. (See **HVAC and HVAC Conservation Feature**.)

Timed-Switch: A device used as a lighting conservation feature that automatically turns lights off after a predetermined time interval. Timed-switches are most frequently found in rooms that are not in continuous use (such as a rest room) and whose occupants may be unlikely to turn the lights off. (See **Lighting Conservation Feature**.)

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 **Square Footage and Weight**.)

VAV: See **Variable Air Volume (VAV) System**.

Variable Air Volume (VAV) System: As used in this report, conservation feature on HVAC distribution equipment that varies the volume of conditioned air delivered to different zones in the building according to the heating and cooling needs of the zone. Control of the air flow is achieved with a thermostat in each zone that controls variable air volume dampers. (See **HVAC, Heating and Cooling Distribution Equipment and HVAC Conservation Feature**.)

Waiver: An authorization form, to be signed by the respondent from a building, authorizing energy supplier companies that serve the building to release information on the amounts and costs of energy consumed in the building during a specified period. (See **Energy Supplier and Appendix A, "How the Survey Was Conducted."**)

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 Feature**.)

Warm-Air Furnace: A type of heat production equipment consisting of a fuel-burning or electric resistance furnace that warms air directly. Warm-air furnaces typically rely on air ducts to carry the warm air throughout the building. (See Heat Production Equipment, HVAC, and Boiler.)

Waste-Heat Recovery Equipment: Any type of HVAC energy-conservation equipment that collects byproduct heat that would otherwise be ejected into the environment for use in space or water heating. (See HVAC Conservation Feature.)

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-Source Heat Pump: A heat pump that uses water as the source/sink for heat. (See Heat Pump and Air-Source Heat Pump.)

Weather Stripping or Caulking: A building shell conservation feature that includes any material placed between the door or window and the door frame or window frame to reduce the rate of loss of heat or cold caused by air infiltration. (See Building Shell Conservation Feature.)

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.

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 building 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 nation-wide total. (See Multistage Area Probability Sample, Total Square Footage, and Appendix B, "Sampling and Nonsampling Errors.")

Window Glass: Percent of Exterior Walls: The proportion of the exterior wall surface area that is composed of glass that can be seen through to the outside (that is, the external window area). Wall areas that are glass covered or constructed of glass material, but that cannot be seen through, are excluded from this percentage.

Wood: Wood logs, chips, or wood products that are used as an energy source. For this survey, wood is considered a minor fuel. (See Energy Source and Minor Fuels.)

Wood Shingles or Shakes: Wood shingles, wood shakes, or other wooden materials used as roofing materials. (See Shingles and Shakes.)

Year Constructed: The year in which the major part or the largest portion of a building was constructed.

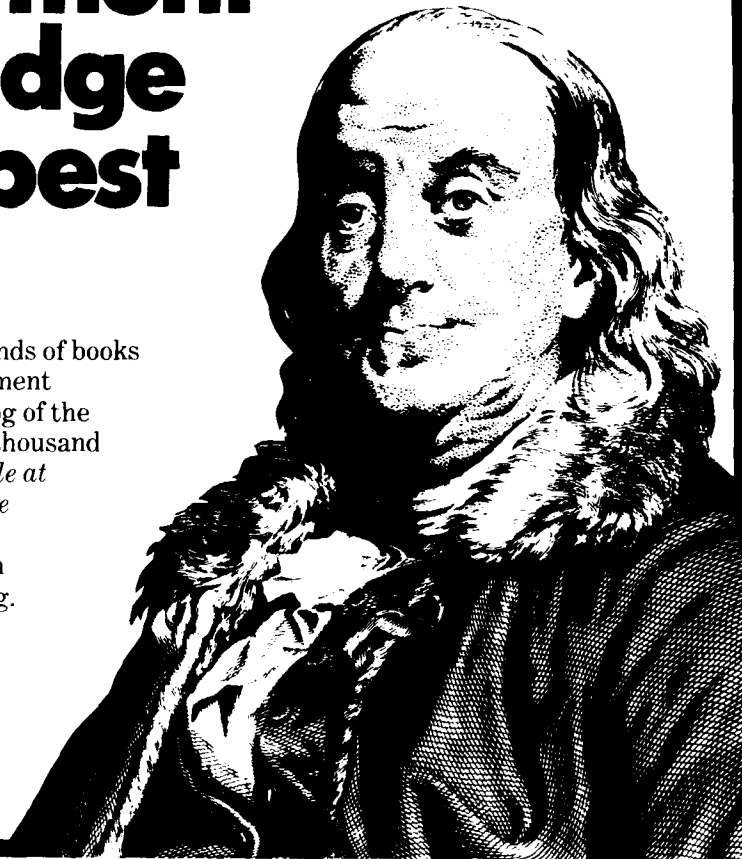
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