

Glossary

Account Classification: As used in this report, this term refers to the way in which suppliers of electricity, natural gas, or fuel oil classify and bill their customers. Commonly used account classifications are "Commercial," "Industrial," and "Residential." Suppliers' definitions of these terms vary from supplier to supplier and from the definitions used in CBECS. In addition, the same customer may be classified differently by each of its energy suppliers.

Activities with Large Amounts of Hot Water: One of the energy-related space function activities within the building that required large amounts of hot water for other than space heating. Examples of these activities are commercial laundry rooms, heated swimming pools, spas, or sauna and steam rooms. (See **Energy-Related Space Functions**.)

Agricultural: In this survey, activities involving the production, processing, sale, storage, or housing of agricultural products, including livestock. Buildings that housed such activities were included during the listing stage. However, buildings that had 50 percent or more of the floorspace devoted to agricultural activity were considered out of scope and were deleted from the sample during the interview phase. Farms and farm buildings, whose buildings are overwhelmingly residential and agricultural, were out of scope for the CBECS and were not listed. (See **Commercial Building, Out of Scope, Nonresidential Building, Building, Principal Building Activity**, and Appendix A, "How the Survey was Conducted.")

Air Conditioning: See **Cooling**.

Air-Handling Units: A method for channeling warm or cool air to different parts of a building. The process of moving the conditioned air often involves drawing air over heating or cooling coils and forcing it from a central location through ducts or air-handling units. Air-handling units are hidden in the walls or ceilings, where they use steam or hot water to heat or chilled water to cool the air inside the duct work. In the "Detailed Tables," air-handling units are included in the "Ducts for Heating" heating distribution category and in the "Ducts for Cooling" cooling distribution category. (See **Cooling, Duct, and Space Heating**.)

Alternative-Rate DSM Program Assistance: A DSM program assistance that offers special rate structures or discounts on the consumer's monthly electric bill in exchange for participation in DSM programs aimed at cutting peak demands or changing load shape. These rates are intended to reduce consumer bills and shift hours of operation of equipment from on-peak to off-peak periods through the application of time-differentiated rates. For example, utilities often pay consumers several dollars a month (refund on their monthly electric bill) for participation in a load control program. Large commercial and industrial consumers sometimes obtain interruptible rates, which provide a discount in return for the consumer's agreement to cut electrical loads upon request from the utility (usually during critical periods, such as summer afternoons when the system demand approaches the utility's generating capability). (See **Demand-Side Management (DSM)**.)

Asphalt or Fiberglass Shingles: See **Shingles**.

Authorization Form: A form signed by the building respondent, authorizing energy suppliers that serve the building to release information on the amounts and costs of energy consumed in the building and the participation by the building in DSM programs during a specified period. (See **Energy Supplier** and Appendix A, "How the Survey Was Conducted.")

Barrel: A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons. (See **Gallon**.)

Baseboard: As a type of heating distribution equipment, a system in which either electric resistance coils or finned tubes carrying steam or hot water are mounted behind shallow panels along baseboards. Baseboards rely on passive convection to distribute heated air in the space. Electric baseboards are an example of an Individual Space Heater. (See **Electric Baseboard** and **Individual Space Heater**.)

Boiler: A type of space-heating equipment consisting of a vessel or tank where heat produced from the combustion of fuels such as natural gas, fuel oil, or coal is used to generate hot water or steam. Many buildings have their own boilers, while other buildings have steam or hot water piped in from a central plant. For this survey, only boilers inside the building (or serving only that particular building) are counted as part of the building's heating system. Steam or hot water piped into a building from a central plant is considered district heat. (See **Furnace, Heating, Ventilation, and Air Conditioning (HVAC)**, and **District Heat**.)

Bottled Gas: See **Liquefied Petroleum Gas (LPG)** and **Propane**.

British Thermal Unit: See **Btu (British Thermal Unit)**.

Btu (British Thermal Unit): A unit of energy consumed by or delivered to a building. A Btu is defined as the amount of energy required to increase the temperature of 1 pound of water by 1 degree Fahrenheit, at normal atmospheric pressure. Energy consumption is expressed in Btu in this report to allow for consumption comparisons among fuels that are measured in different units. (See **Btu Conversion Factors** and **Metric Conversion Factors**.)

Btu Conversion Factors: The Btu conversion factors used for this survey are as follows:

| | Btu Equivalent | Unit |
|--|----------------|--------------|
| Electricity | 3,412 | Kilowatthour |
| Natural Gas | 1,033 | cubic foot |
| Distillate Fuel Oils (Nos. 1,2, and 4) | 138,690 | gallon |
| Residual Fuel Oils (Nos. 5 and 6) | 149,690 | gallon |
| Kerosene | 135,000 | gallon |
| District Heat (Steam and Hot Water) | 1,000 | pound |

Note: Btu of district hot water have been converted into equivalent pounds of steam using the conversion 1,000 Btu hot water \approx 1 pound steam.

Sources: Energy Information Administration, *Natural Gas Annual* (1992), p. 81 for natural gas; *Monthly Energy Review* (June 1992), pp. 138-141, for electricity, distillate, residual, and kerosene; and *Methodological Issues In the Nonresidential Buildings Energy Consumption Survey* (September 1983), pp. 173-175 for district steam.

Building: In this survey, a structure totally enclosed by walls extending from the foundation to the roof, containing over 1,000 square feet of floorspace, and intended for human occupancy. Structures that were included in the survey as a specific exception were parking garages not totally enclosed by walls and a roof, as well as structures erected on pillars to elevate the first fully enclosed level, but leaving the sides at ground level open.

Excluded from the survey as nonbuildings were the following: structures (other than the exceptions just noted) that were not totally enclosed by walls and a roof (such as oil refineries, steel mills, and water towers); street lights, pumps, billboards, bridges, swimming pools, and construction sites; mobile homes and trailers, even if they housed commercial activity; and oil storage tanks. (See **Commercial Building** and **Nonresidential Building**.)

Building Energy Manager: A person whose chief day-to-day responsibility is the physical operation and maintenance of the building's heating and/or cooling equipment. In Section 3, "Detailed Tables," this is included under the "Energy Management Practices" category. (See **Energy Management Practices**.)

Building Floorspace: See **Floorspace**.

Building Ownership (Owner/Manager): See **Ownership of Building**.

Building Shape: The shape of the building that mostly resembles the floorplan of the building. This is often referred to as the "footprint" of the building. For this survey, the following response categories were given for the building shape: square, rectangle, rectangle or square with courtyard, right angle (L shape) and H, U, E, T, or cross shapes. In the "Detailed Tables" of this report, the "Other" category under Building Shape includes rectangle or square with courtyard, H, U, E, T, L and cross shapes.

Building Shell Conservation Features: Building features designed to reduce the energy loss or gain through the shell or envelope of the building. In the "Detailed Tables," this category includes roof, ceiling or wall insulation; storm windows or double- or triple-paned glass (multiple glazing); tinted or reflective glass or shading films; exterior or interior shadings or awnings, and windows that open. This category does not include any building shell DSM program participation. In the "Detailed Tables," any building shell DSM program participation is included in DSM programs. (See **Roof or Ceiling Insulation, Wall Insulation, Storm Windows, Storm Doors, Storm or Multiple Glazing, Tinted or Reflective Glass or Shading Film, Exterior or Interior Shadings or Awnings, and Windows that Open.**)

Building Shell (Envelope): The thermal envelope of the building, that is, the roof, exterior walls, and bottom floors that enclose conditioned space through which thermal energy may be transferred to or from the exterior.

Building Shell (Envelope) DSM Program: A DSM program that promotes reduction of energy consumption through improvements to the building envelope. Includes installation of insulation, weatherstripping, caulking, window film, and window replacement. In the "Detailed Tables," this is included in the "DSM Programs" category. (See **Building Shell (Envelope)** and **Demand-Side Management (DSM) Programs.**)

Built-Up Roof: A roof covering consisting of several successive layers (each of which is called a ply), usually of roofing felt, with mopping of hot asphalt between layers and topped by a mineral-surfaced layer or by gravel embedded in a heavy coat of asphalt.

Campus or Complex: See **Multibuilding Facility.**

Cases or Cabinets: Refrigeration in cabinets (units) without covers or with flexible covers made of plastic or some other material, hung in strips or curtains (fringed material, usually plastic, that push aside like a bead curtain). Flexible covers stop the flow of warm air into the refrigerated space. (See **Commercial Refrigeration/Freezer Equipment.**)

CDD: See **Cooling Degree-Days (CDD).**

Census Division: A geographic area consisting of several States defined by the U.S. Department of Commerce, Bureau of the Census. (See the map in Appendix F.) The States are grouped into four regions and nine divisions:

| Region | Division | States |
|---------------|--------------------|---|
| Northeast | New England | Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont |
| | Middle Atlantic | New Jersey, New York, and Pennsylvania |
| Midwest | East North Central | Illinois, Indiana, Michigan, Ohio, and Wisconsin |
| | West North Central | Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota |
| South | South Atlantic | Delaware, the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia |
| | East South Central | Alabama, Kentucky, Mississippi, and Tennessee |
| | West South Central | Arkansas, Louisiana, Oklahoma, and Texas |
| West | Mountain | Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming |
| | Pacific | Alaska, California, Hawaii, Oregon, and Washington |

Census Region: See **Census Division** and the map in Appendix F.

Central Chiller: Any centrally located air-conditioning system that produces chilled water in order to cool air. The chilled water or cold air is then distributed throughout the building using pipes or air ducts, or both. These systems are also commonly known as "chillers," "centrifugal chillers," "reciprocating chillers" or "absorption chillers." Chillers are generally located in, or just outside, the building they serve. Chillers located at central plants are included under district chilled water. (See **Cooling, District Chilled Water, Central Physical Plant, and Heating, Ventilation, and Air Conditioning (HVAC).**)

Central Cooling: Cooling of an entire building with a refrigeration unit to condition the air. Typically, central chillers and ductwork are present in a centrally cooled building. (See **Cooling.**)

Central Physical Plant: A plant that is owned by, and on the grounds of, a multibuilding facility that provides district heating, district cooling, or electricity to one or more buildings on the same facility. The central physical plant may be by itself in a separate building or may be located in a building where other activities occur. (See **Multibuilding Facility, District Heat, or District Chilled Water.**)

Centralized Water-Heating System: Equipment to heat and store water for purposes other than space heating which provides hot water from a single location for distribution throughout a building. A residential-type tank water heater is a good example of a centralized water heater. (See **Water-Heating Equipment and Distributed/Point-of-Use Water-Heating System.**)

Chiller: See **Central Chiller.**

Climate Zone: One of five climatically distinct areas, defined by long-term weather conditions affecting the heating and cooling loads in buildings. The zones were developed from seven distinct climate categories originally identified by the American Institute of Architects (AIA) for the U.S. Department of Energy and the U.S. Department of Housing and Urban Development. The zones were determined according to the 45-year average (1931-1975) of the annual heating and cooling degree-days (base 65 degrees Fahrenheit). An individual building was assigned to a climate zone according to the 45-year average annual degree-days for its NOAA Division. (See **Heating Degree-Days (HDD), Cooling Degree-Days (CDD), and NOAA Division.**)

The zones are defined as follows:

| <u>Climate Zone</u> | <u>Average Annual Cooling Degree-Days</u> | <u>Average Annual Heating Degree-Days</u> |
|---------------------|---|---|
| 1 | Less than 2,000 | More than 7,000 |
| 2 | Less than 2,000 | 5,500 to 7,000 |
| 3 | Less than 2,000 | 4,000 to 5,499 |
| 4 | Less than 2,000 | Less than 4,000 |
| 5 | 2,000 or more | Less than 4,000 |

Coal: A black or brownish-black solid, combustible substance formed by the partial decomposition of vegetable matter without access to air. In this report, the term includes anthracite, bituminous and subbituminous coal, as well as the derivative of coal (formed by destructive distillation or imperfect combustion) known as coke. This survey determined if coal was used in the commercial building but did not collect consumption and expenditure data on the use of coal as an energy source. In this report, coal is included in the "Any Other" category for the energy sources, main space-heating energy sources, and space-heating energy sources categories. (See **Energy Source.**)

Cogeneration: The sequential or simultaneous process in which useful heat/steam is generated, used in a variety of process applications, and then directed into a turbine to generate electricity and/or mechanical work from the useful thermal energy still available for use. This process of electric generation may be electrically interconnected with an electric utility and grid, to deliver electricity to the grid as well as receive it from the grid. Neither generation of electricity without use of the byproduct heat, nor waste-heat recovery from processes other than electricity generation is included in the definition of cogeneration. (See **Electricity Generation.**)

Commercial: Neither residential, manufacturing/industrial, nor agricultural. (See **Residential, Manufacturing/Industrial, Agricultural, and Commercial Building.**)

Commercial Building: A building with more than 50 percent of its floorspace used for commercial activities. Commercial buildings include, but are not limited to, stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, and jails. Government buildings were included except for buildings on sites with restricted access, such as some military bases or reservations. Agricultural buildings, residences, and manufacturing buildings were excluded from the survey. For a more complete list of buildings in the survey, see Appendix E, "Types of Buildings." (See **Building, Commercial, Residential, Manufacturing/Industrial, Agricultural, Nonresidential Building, and Principal Building Activity.**)

Commercial Food Preparation and Serving: In this survey, this term denotes space specifically designed and equipped to meet the needs for preparing and serving food commercially. This includes kitchens in restaurants, diners, and other commercial institutions such as schools. The term "commercial" also includes what is sometimes classified as "institutional"; that is, food preparation and serving areas in schools, hospitals, prisons, shelters, churches and nursing homes. This category includes cafeterias where food is brought in and kept warm with steam tables or other warming devices until it is served. It does not include employee or student "lounge" areas with microwave or other food preparation equipment and/or vending machines. (See **Energy-Related Space Functions.**)

Commercial Refrigeration/Freezer Equipment: These include: commercial refrigeration/freezer units for the sale or storage of perishable materials; residential-type refrigerators/freezers; water coolers; or any other refrigeration equipment, excluding air conditioning. Freezers are designed to keep their contents below the freezing point (32 degrees Fahrenheit) and refrigeration equipment is designed to maintain the stored items below room temperature, but above the freezing point. In this report, data are collected on refrigeration/freezer equipment inside and/or adjacent to the building. (See **Cases and Cabinets and Walk-in Refrigeration Units.**)

Compact Fluorescent Light Bulbs: Designed to replace screw-in incandescent light bulbs, they are often found in table lamps, wall sconces and hall and ceiling fixtures of commercial buildings with residential type lights. They combine the efficiency of fluorescent lighting with the convenience of standard incandescent bulbs. Light is produced the same way as other fluorescent lamps. Compact fluorescent bulbs have either electronic or magnetic ballasts. (See **Light Bulbs and Fluorescent Light Bulbs.**)

Computer Room with Separate Air-Conditioning System: In this survey, space specifically designed and equipped to meet the needs of computer equipment for controlled temperatures and/or humidity. The air-conditioning system for this area is separate from that used to control the environment in other parts of the building. The space is usually separated by walls and doors. Sometimes such rooms have raised floors with ventilation equipment located under the floor. (See **Energy-Related Space Functions**.)

Computer Terminal: An electronic system which consists of a computer screen (monitor) or terminal and a data entry device such as a keyboard. Terminals used in offices usually look like PCs without the box or central processing unit (CPU) case. The "CPU" for the terminal is the mainframe computer located in a central place. (See **Personal Computer**.)

Concrete Panel: A wall construction panel made of concrete, which is either prefabricated in a factory or poured at the site and then hoisted onto the structure. (See **Precast Concrete Panel**.)

Concrete Roof: A poured concrete roof, often intended to bear the load of a parking garage that occupies the roof area of a building.

Conditional Energy Intensity: Total consumption of a particular energy source(s) or fuel(s) divided by the total floorspace of buildings that use the energy source(s) or fuel(s), i.e., the ratio of consumption to energy source-specific floorspace. This measure is used in the fuel-specific tables in the "Detailed Tables." (See **Energy Source-Specific Floorspace**.)

Confidence Interval: A range that is estimated to include the population value at a given confidence level, usually 95 percent. The range is calculated from the sample data. The confidence level is the expected fraction of such confidence intervals that actually do include the corresponding, unknown population value. (See Appendix B, "Nonsampling and Sampling Errors.")

Conservation Features: A feature in the building designed to reduce the usage of energy. (See **Building Shell Conservation Features**, **HVAC Conservation Features**, and **Lighting Conservation Features**.)

Consumption: The amount of energy used in, or delivered to, a building during a given period of time. For this report, unless otherwise noted, all consumption statistics are site energy consumption, which includes electric utility sales to commercial buildings but excludes electrical system and district heat energy losses. Statistics for this report are presented on an annual basis for the 365-day period of calendar year 1992. Site consumption is the amount of energy delivered to the site (building); no adjustment is made for the fuels consumed to produce electricity or district sources. Site consumption is also referred to as net energy. However, primary consumption is the amount of site consumption plus losses that occur in the electricity generation process.

Data on energy consumption were not collected by end uses separately. For example, although it might be known that electricity was used in some buildings for heating, the consumption of electricity reported for those buildings would typically include other uses of electricity as well (such as lighting and water heating). (See **Btu**, **Conversion Losses**, **Energy Supplier**, **Expenditures**, and the section on "Annual Consumption and Expenditures" in Appendix B, "Nonsampling and Sampling Errors.")

Consumption per Square Foot: The aggregate ratio of total consumption for a particular set of buildings to the total floorspace of those buildings. (See **Consumption**, **Energy Intensity**, and **Floorspace**.)

Consumption per Worker: The aggregate ratio of total consumption to total number of workers (main shift). (See **Consumption** and **Workers (Main Shift)**.)

Continuous-Delivery Energy Sources: Those energy sources provided continuously to a building. In this report, continuous delivery energy sources are electricity, natural gas, and district heating and cooling. (See **Energy Source** and **Discrete-Delivery Energy Sources**.)

Conversion Factors: See **Btu**, **Btu Conversion Factors**, and **Metric Conversion Factors**.

Conversion Losses: The amount of energy lost during generation, transmission, and distribution of energy sources particularly electricity, including plant and unaccounted-for uses. (See **Consumption**, **Site Electricity**, and **Primary Electricity**.)

Cooking: In this report, the use of energy for commercial or institutional food preparation. This survey asked specifically about "commercial or institutional cooking," which was intended to include any kitchen facility that was not part of a residence. This is one of six energy end uses specifically asked for in this survey. (See **Energy End Use**.)

Cooling: Conditioning of room air for human comfort by a refrigeration unit (such as an air conditioner or heat pump) or by a central cooling or district cooling system that circulates chilled water. Use of fans or blowers by themselves, without chilled air or water, is not included in this definition of cooling. This is one of six end uses specifically asked for in this survey. (See **Energy End Use**, **Central Cooling**, **Central Chiller**, **Heat Pump**, **Heating**, **Ventilation**, and **Air Conditioning (HVAC)**, and **Residential-Type Central Air Conditioner**.)

Cooling Degree-Days (CDD): A measure of how hot a location was over a period of time, relative to a base temperature. In this report, the base temperature is 65 degrees Fahrenheit, and the period of time is one year. The cooling degree-day is the difference between that day's average temperature and the base temperature if the daily average is greater than the base; it is zero if the daily average temperature is less than or equal to the base temperature. The cooling degree-days for a longer period of time is the sum of the daily cooling degree-days for the days in that period. (See **Heating Degree-Days (HDD)**, **Climate Zone**, and **NOAA Division**.)

Cooling Distribution Equipment: The part of a cooling system that distributes conditioned water and/or air throughout by means of pipes, ducts, or fans. Often the distribution serves both heating and cooling. (See **Duct**, **Individual Room Air Conditioners in Wall or Windows**, and **Fan-Coil Unit**.)

Cooling Equipment: The equipment used for cooling room air in the building for human comfort. (See **Cooling Distribution Equipment** and also descriptions of specific response categories collected in the CBECS: **Residential-Type Central Air Conditioner, Heat Pump, Individual Room Air Conditioners in Walls or Windows, Central Chillers, and Packaged Units.**)

Daylighting Controls: See **Natural Lighting Control Sensors.**

Cubic Foot (cf): As a natural gas measure, the volume of gas contained in a cube with an edge that is 1 foot long at standard temperature and pressure (60 degrees Fahrenheit and 14.73 pounds standard per square inch.) The thermal content varies by the composition of the gas. (See **Natural Gas** and **Btu Conversion Factors.**)

Decorative or Construction Glass: An exterior building wall material of glass decorative coverings such as glass blocks or spandrels, that are not window or vision (see-through) glass. Structural glass or glass curtain walls used on the outside of buildings are also included in this category. In Section 3, "Detailed Tables," decorative or construction glass is included in the "Other" wall materials category. (See **Window or Vision Glass.**)

Degree-Days 45-Year Average: The average of the total annual heating and cooling degree-days (base, 65 Degrees Fahrenheit) in each NOAA Division, for the 45 years, 1931 through 1975. Computed from the Division's daily temperature averages for each year in question and used to assign individual buildings to climate zones. (See **Heating Degree-Days (HDD), Cooling Degree-Days (CDD), NOAA Division, and Climate Zone.**)

Demand: The rate of energy consumption per unit of time. The term is most commonly applied to electricity, for which demand is typically measured in watts (W) or kilowatts (kW). (See **Consumption** and **Peak Demand.**)

Demand-Metered: Having a meter to measure peak demand (in addition to total consumption) during a billing period. The 1992 CBECS collected data on metered demand only for electricity. Demand is not usually metered for other energy sources. (See **Demand, Peak Demand, and "Peak Electricity Demand"** in Appendix B, "Nonsampling and Sampling Errors.")

Demand-Side Management (DSM): In this report, this is the planning and implementation of strategies designed to encourage consumers to improve energy efficiency, reduce energy costs, change the time of usage, or promote the use of a different energy source. DSM covers the complete range of load-shape objectives, including strategic conservation and load management, as well as strategic load growth.

The 1992 CBECS collected information on a variety of DSM strategies. This information included whether the building's electric or natural gas utility has sponsored any DSM programs; whether the building or facility had participated in, or planned to participate in, any DSM programs sponsored in-house, by a utility, or third-party; which specific DSM program areas the building had participated in, such as: lighting, building envelope, and HVAC systems; identification of specific program sponsors; and what type of assistance was received through the DSM program, such as: general information, incentives, or alternative rates.

Demand-Side Management (DSM) Program Assistance: In this report, DSM program assistance consists of: general information, site-specific information, incentives, alternative-rate programs, fuel-switching programs, and other DSM programs. This assistance can be provided by utilities, in-house group, or third parties, such as an energy service company or contractor. Assistance for DSM programs may be monetary or non-monetary awards to encourage consumers to buy energy-efficient equipment and to participate in programs designed to reduce energy usage. Examples of incentives are zero or low-interest loans, rebates, and direct installation of low-cost measures, such as water-heater wraps or compact fluorescent bulbs.

Demand-Side Management (DSM) Programs: In this report, DSM programs consist of the Building Envelope or Shell DSM Programs; HVAC DSM Programs; Lighting DSM Programs; and Other DSM Programs, including Direct Electricity Load-Control DSM Programs, Energy Efficient Motors DSM Programs, Process Heating or Cooling DSM Programs, Standby Electricity Generation DSM Programs, Thermal Storage DSM Programs, and Water Heating DSM Programs. In Section 3, "Detailed Tables," DSM Program Participation is a category under Energy Management Practices.

Demand-Side Management (DSM) Program Sponsor: A DSM program can be sponsored by electric and natural gas utilities, in-house, or a third party, such as an energy service company or contractor. A sponsor suggests ways to increase the energy efficiency of buildings, to reduce energy costs, to change the usage patterns, or to promote the use of a different energy source through DSM programs.

Direct Electricity Load-Control DSM Program: DSM program activities that can interrupt consumer load at the time of peak load by direct control of the utility system operator by interrupting the power supply to individual equipment on consumer premises. In Section 3, "Detailed Tables," this is included in the "Other DSM Programs" category under DSM Program Participation and in the "DSM Program Participation" category under Energy Management Practices. (See **Demand-Side Management (DSM)**.)

Discrete-Delivery Energy Sources: Energy sources that arrive at a building (site) in units or containers of a fixed size, rather than being available on a continuous basis. In this report, fuel oil is the only discrete delivery energy source. (See **Energy Source** and **Continuous-Delivery Energy Sources**.)

Distributed/Point-of-Use Water-Heating System: A system for heating hot water, for other than space-heating purposes, which is located at more than one place within a building. A point-of use water heater is located at the faucet and heats water only as required for immediate use. Because water is not heated until it is required, this equipment is more energy efficient. (See **Water-Heating Equipment** and **Centralized Water Heating System**.)

District Chilled Water: Chilled water from an outside source used as an energy source for cooling in a building. The water is chilled in a central district system and piped into the building. Chilled water may be purchased from a utility or provided by a central physical plant in a separate building that is part of the same multibuilding facility (for example, a hospital complex or university). (See **Energy Source**, **Central Physical Plant**, and **Multibuilding Facility**.)

District Heat: Steam or hot water from an outside source as an energy source for space heating or another end use in a building. The steam or hot water is produced in a central plant and piped into the building. The district heat may be purchased from a utility or provided by a central physical plant in a separate building that is part of the same multibuilding facility (for example, a hospital complex or university.) For this report, district steam and district hot water are reported together as district heat in most places. (See **Energy Source**, **Central Physical Plant**, and **Multibuilding Facility**.)

District Hot Water: District heat in the form of hot water. (See **District Heat**.)

District Steam: District heat in the form of steam. (See **District Heat**.)

DSM: See **Demand-Side Management (DSM)**.

Duct: A passageway made of sheet metal or other suitable material to convey air from the heating, ventilating, and cooling systems to and from the point of utilization. (See **Air-Handling Units**.)

Economizer Cycle: An HVAC conservation feature, a method of operating a ventilation system to reduce the air-conditioning load. Wherever the temperature and humidity of the outdoor air are more favorable (lower heat content) than the temperature and humidity of the return air, more outdoor air is brought into the building. An economizer consists of indoor and outdoor temperature and humidity sensors, dampers, motors, and motor controls. In Section 3, "Detailed Tables," this is included under the "HVAC Conservation Features" category. (See **HVAC Conservation Features**.)

Electric Baseboard: An individual space heater with electric resistance coils mounted behind shallow panels along baseboards. Electric baseboards rely on passive convection to distribute heated air to the space. (See **Individual Space Heater** and **Baseboard**.)

Electricity: As an energy source for this report, electric energy supplied to a building by a central utility via power lines or from a central physical plant in a separate building that is part of the same multibuilding facility. Electric power generated within a building for exclusive use in that building is specifically excluded from the definition of electricity as an energy source. (See **Energy Source**, **Central Physical Plant**, **Multibuilding Facility**, **Primary Electricity**, and **Site Electricity**.)

Electricity Generation: The onsite production of electricity using electricity generators on either a regular or emergency basis. This is one of the end uses of energy specifically asked for in this survey. Not included in this survey were electricity-generating plants belonging to utility companies that produce electric power for sale to other buildings but are not part of the same multibuilding facility. (See **Energy End Use, Electricity, Multibuilding Facility, and Cogeneration.**)

EMCS: See **Energy Management and Control System (EMCS).**

Energy Audit: In this report, an evaluation to provide information on the physical and operating characteristics of a building and its energy uses and processes that is collected at the premise or facility by trained auditors. Audit services vary from simple walk-throughs to building management training programs and site-specific process and efficiency evaluations. Audits can be initiated or sponsored and performed by a local utility, a Federal, State or local government, a building owner, or an energy service contractor. In Section 3, "Detailed Tables," this is included in the "Energy Management Practices" category. (See **Energy Management Practices.**)

Energy Conservation Features: In Section 3, "Detailed Tables," this includes building shell conservation features, HVAC conservation features, lighting conservation features, and other conservation features incorporated by the building. However, this category does not include any DSM program participation by the building. Any DSM program participation is included in "DSM Programs" category. (See **Building Shell Conservation Features, HVAC Conservation Features, and Lighting Conservation Features.**)

Energy-Efficient Motor(s) DSM Program: A DSM program designed to promote the use of high-efficiency motors, adjustable speed drives or variable speed motors to ensure that the motor's speed and size is properly matched to the load placed on the motor. In Section 3, "Detailed Tables," this is included in "Other DSM Programs" under the "DSM Programs" category. (See **Demand-Side Management (DSM) Programs.**)

Energy End Use: A use for which energy is consumed in a building. Information on six specific end uses was collected in this survey. (See **Cooking, Cooling, Space Heating, Electricity Generation, Manufacturing, and Water Heating.**)

Energy Intensity: The ratio of consumption to unit of measurement (floorspace, number of workers, etc.) In this report, energy intensity is usually given on an aggregate basis, as the ratio of the total consumption for a set of buildings to the total floorspace in those buildings. This report presents both conditional energy intensity and gross energy intensity. The energy intensity can also be computed for individual buildings. (See **Consumption, Conditional Energy Intensity, Gross Energy Intensity, and Floorspace.**)

Energy Management and Control System (EMCS): An energy conservation feature that uses mini/microcomputers, instrumentation, control equipment, and software to manage a building's use of energy for heating, ventilation, air conditioning, lighting, and/or business-related processes. These systems can also manage fire control, safety, and security. In Section 3, "Detailed Tables," this is included under the "Energy Management Practices" category. Not included as EMCS are time-clock thermostats.

Energy Management Practices: In this report, involvement, as a part of the building's normal operations, in energy efficiency programs that are designed to reduce the energy used by specific end-use systems. In Section 3, "Detailed Tables," this includes the following: EMCS, DSM Program Participation, Energy Audit, and a Building Energy Manager. (See **Energy Management and Control System (EMCS), DSM Program Participation, Energy Audit, and Building Energy Manager.**)

Energy-Related Space Functions: In this survey, the use of space in the building for one or more of four specific functions: commercial food preparation and serving, computer rooms with separate air conditioning systems, special ventilation equipment, activities with large amounts of hot water, and any other large use of energy. The total square footage used for each special space function was also collected. (See **Commercial Food Preparation and Serving, Computer Room with Separate Air-Conditioning System, Rooms with Special Ventilation, and Activities with Large Amounts of Hot Water.**)

Energy Source: A type of energy or fuel consumed in the building. For this report, the major energy sources identified are electricity, natural gas, fuel oil, district heat, and district chilled water. In this survey, information about the use of propane, wood, coal, photovoltaic cells and solar thermal panels in commercial buildings was obtained from the building respondent. (See **Electricity, Natural Gas, Fuel Oil, District Heat, District Chilled Water, Liquefied Petroleum Gas (LPG), Propane, Wood, Coal, Photovoltaic Cells (PCV's) and Solar Thermal Panels.**)

Energy Source-Specific Floorspace: Total floorspace of those buildings that use a particular fuel. (See **Conditional Energy Intensity.**)

Energy Supplier: Fuel companies supplying electricity, natural gas, fuel oil, or other sources of energy to a building. In the 1992 CBECS, only suppliers of electricity, natural gas, fuel oil, and district heat or chilled water were sent the Energy Supplier Survey forms. (See **Energy Source** and Appendix A, "How the Survey was Conducted.")

Energy Supplier Survey: This is the second stage of the CBECS (the Building Characteristics Survey is the first stage) where data concerning actual energy consumption were obtained from the energy suppliers to the building. Monthly billing data were obtained for each building using a mandatory mail survey. (See Appendix A, "How the Survey was Conducted.")

Envelope: See **Building Shell (Envelope).**

Establishment: As defined by the Standard Industrial Classification manual developed by the Office of Management and Budget, "an economic unit, generally, at a single physical location where business is conducted or where services or industrial operations are performed." However, "establishment" is not synonymous with "building." In this survey, respondents were asked how many establishments or organizations occupy (i.e., hold or lease space on a full-time basis) the building.

Evaporative Cooler (Swamp Cooler): An air-cooling unit that turns air into moist, cool air by saturating the air with water vapor. It does not cool air by use of a refrigeration unit. This type of equipment is commonly found in warm, dry climates. In this report, evaporative coolers are included under "Other" in the cooling equipment category. (See **Cooling.**)

Expenditures: Funds spent for the energy consumed in, or delivered to, a building during a given period of time. For this report, all expenditure statistics are presented on an annual basis, for calendar year 1992. The total dollar amount includes State and local taxes, fuel adjustment charges, system charges, and demand charges. The total dollar amount excludes merchandise, repair charges, and service charges. Data on energy expenditures were not collected by end uses separately. For example, although it might be known that electricity was used in some buildings for heating, the expenditures for electricity reported for those buildings would typically include other uses of electricity as well (such as lighting and water heating). (See **Consumption, Energy Supplier**, and the section on "Annual Consumption and Expenditures" in Appendix B, "Nonsampling and Sampling Errors.")

Expenditures per Million Btu: The aggregate ratio of a group of buildings' total expenditures for a given fuel to the total consumption of that fuel. (See **Expenditures** and **Consumption.**)

Expenditures per Square Foot: The aggregate ratio of a group of buildings' total expenditures for a given fuel to the total floorspace in those buildings. (See **Expenditures, Floorspace, and Square Footage.**)

Exterior or Interior Shadings or Awnings: A building shell conservation feature designed to reduce the flux of light into a building. Exterior shadings or awnings include any type of shading (including architectural) or awning on the outside of the building designed to limit solar penetration. Interior shadings are drapes, horizontal or vertical shades, mini blinds, or any other means of covering a window from the inside to limit the amount of solar or thermal penetration. (See **Building Shell Conservation Features.**)

Facility: At the sampling stage, an establishment that encompasses more than one building at a single location. Examples include college campuses and large hospital complexes. The building represents the interviewed sampling unit for this survey. Listings for the area sample ordinarily identified each building individually. However, listings for the large and specialized buildings lists sometime represented a facility including several buildings. If an intended sampling unit turned out to be a cluster of buildings such as a campus, sampling proceeded in one of two ways: (1) If there were three or fewer buildings in the cluster, all buildings were sampled or (2) If there were four or more buildings, subsampling from the cluster was performed. For all sample buildings, a survey question determined whether the building was part of a multibuilding facility. In many cases, a building was reported during the interview to be part of a multibuilding facility even though the building had not been identified as part of a facility at the sampling stage. More rarely, a building identified as part of a facility during sampling was reported not to be part of a multibuilding facility during the interview. (See **Building, List Sample, Multibuilding Facility** and Appendix A, "How the Survey was Conducted.")

Fan-Coil Unit: A type of heating and cooling distribution equipment that circulates hot or chilled water with fans but without ducts. Fan-coil units have thermostatically controlled built-in fans that draw air from the room and then across finned tubes containing hot water, steam, or chilled water. The hot water, steam or chilled water can be produced by equipment within the building or be piped into the building as part of a district heating or cooling system. (See **Space Heating and Cooling**.)

Floors: The number of levels in the tallest section of a building that are actually considered a part of the building, including parking areas, basements, or other floors below ground level.

Floorspace: All the area enclosed by the exterior walls of a building, including indoor parking facilities, basements, hallways, lobbies, stairways, and elevator shafts. For aggregate floorspace statistics, floorspace was summed or aggregated over all buildings in a category (such as all office buildings in the United States). (See **Square Footage**.)

Fluorescent Light Bulbs: These are usually long, narrow, white tubes made of glass coated on the inside with fluorescent material that are connected to a fixture at both ends of the light bulb; the tubes may also be circular or U-shaped. The light bulb produces light by passing electricity through mercury vapor, causing the fluorescent coating to glow or fluoresce. Excluded are compact fluorescent light bulbs, which are a separate category. In Section 3, "Detailed Tables," these bulbs are included in the "Standard Fluorescent" category under Lighting Equipment. (See **Light Bulbs**, and **Compact Fluorescent Light Bulbs**.)

Forced Air Through Vents or Air-Handling Units: See **Air-Handling Units**.

Fuel: See **Energy Source**.

Fuel Oil: A liquid petroleum product less volatile than gasoline, used as an energy source. In this report, fuel oil includes distillate fuel oil (No. 1, 2, and 4), residual fuel oil (No. 5 and 6), and kerosene. Number 1 distillate fuel oil is used mostly as a blending stock to assure that heavier grades of fuel flow under severe cold weather conditions. Number 2 fuel oil is the most common form of heating oil. Number 2 distillate collectively refers to Number 2 heating oil and Number 2 diesel fuel. Although these products are not precisely identical, they are essentially interchangeable in most applications. Number 4 distillate is a blend of Numbers 2, 5 or Number 6 residual fuel oil, used in large stationary diesel engines and boilers equipped with fuel preheating equipment. (See **Energy Source**.)

Fuel-Switching: See **Replacement Energy Source for Main Heating**.

Fuel-Switching DSM Program Assistance: DSM program assistance where the sponsor encourages consumers to change from one fuel to another for a particular end-use service. For example, utilities might encourage consumers to replace electric water heaters with gas units or encourage industrial consumers to use electric microwave heaters instead of natural gas-heaters. (See **Demand-Side Management (DSM) Program Assistance**.)

Furnace: An enclosed chamber where fuel is burned or electrical resistance is used to heat air directly, without using steam or hot water. The warm air for heating is distributed throughout the building, typically by air ducts. (See **Boiler; Duct; Space Heating; and Heating, Ventilation, Air Conditioning, and Heating (HVAC)**.)

Gas Transported for the Account of Others: Natural gas physically delivered to a building by a local utility, but not bought from that utility. A separate transaction is made to purchase the volume of gas and the utility is paid for the use of its pipeline to deliver the gas. Included are quantities covered by long-term contracts and quantities involved in short-term or spot-market sales. Also called "Direct-Purchase Gas," "Spot-Market Gas," "Spot Gas," "Transported Gas," and "Self-Help Gas." (See Appendix B, "Nonsampling and Sampling Errors.")

Gallon: A volumetric measure equal to 4 quarts (231 cubic inches) used to measure fuel oil. One barrel equals 42 gallons. (See **Barrel**.)

General Information DSM Program Assistance: This DSM program assistance refers to efforts of a DSM sponsor to inform consumers about DSM options through such mechanisms as brochures, bill stuffers, and workshops. (See **Demand-Side Management (DSM) Program Assistance** and **Demand-Side Management (DSM)**.)

Government Owned: Owned by a Federal, State, or local government agency. The building may be occupied by agencies of more than one government and may also be shared with nongovernment establishments.

Gross Floorspace: Total floorspace of a group of buildings, regardless of which end uses are present or which energy sources or fuels are used within the buildings. (See **Energy Source-Specific Floorspace** and **Gross Energy Intensity**.)

Gross Energy Intensity: Total consumption of a particular energy source(s) or fuel(s) by a group of buildings, divided by the total floorspace of those buildings, including buildings and floorspace where the energy source or fuel is not used, i.e., the ratio of consumption to gross floorspace. (See **Energy Intensity** and **Conditional Energy Intensity**.)

HDD: See **Heating Degree-Days (HDD)**.

Heating: See **Space Heating** or **Water Heating**.

Heating Degree-Days (HDD): A measure of how cold a location was over a period of time, relative to a base temperature. In this report, the base temperature used is 65 degrees Fahrenheit, and the period of time is one year. The heating degree-day is the difference between the base temperature and the day's average temperature if the daily average is less than the base; and zero if the daily average temperature is greater than or equal to the base temperature. The heating degree-days for a longer period of time is the sum of the daily heating degree-days for days in that period. (See **Cooling Degree-Days (CDD)**, **Climate Zone**, and **NOAA Division**.)

Heating Distribution Equipment: The part of a heating system that distributes conditioned water and/or air throughout a building by means of pipes, ducts, or fans. Often the distribution equipment serves both heating and cooling. (See **Radiators**, **Baseboard**, **Duct**, **Individual Space Heater**, and **Fan-Coil Unit**.)

Heating Equipment: The equipment used for heating ambient air in the building such as a heat pump, furnace, individual space heater, district steam or hot water piped in from outside the building, boiler and packaged-heating units. (See **Heating Distribution Equipment**, and also descriptions of specific types of space-heating equipment collected in the CBECS, **Boiler**, **Furnace**, **Heat Pump**, **Individual Space Heater**, and **Packaged Units**.)

Heating, Ventilation, and Air Conditioning (HVAC): The system or systems that condition air in a building.

Heat Pump: Heating and/or cooling equipment that draws heat into a building from outside and, during the cooling season, ejects heat from the building to the outside. Heat pumps are vapor-compression refrigeration systems whose indoor/outdoor coils are used reversibly as condensers or evaporators, depending on the need for heating or cooling. (See **Cooling, Space Heating, Central Cooling, and Heating, Ventilation, and Air Conditioning (HVAC).**)

HID: See **High-Intensity Discharge (HID) Light Bulbs.**

High-Intensity Discharge (HID) Light Bulbs: A lamp that produces light by passing electricity through gas, which causes the gas to glow. Examples of HID lamps are mercury vapor lamps, metal halide lamps, and high- and low-pressure sodium lamps. HID lamps have an extremely long life and emit far more lumens per fixture than do fluorescent lights. (See **Light Bulbs.**)

Hot-Deck Imputation: An imputation procedure for deriving a probable response to a questionnaire item concerning the commercial building using random resampling from nonmissing cases to fill in values for missing cases. (See **Imputation** and Appendix B, "Nonsampling and Sampling Errors.")

HVAC: See **Heating, Ventilation, and Air Conditioning (HVAC)**.

HVAC Conservation Features: A building feature designed to reduce the amount of energy consumed by the heating, cooling, and ventilating equipment. In this report, this category includes the presence of variable air-volume (VAV) systems, an economizer cycle, and preventive maintenance programs for the heating and cooling equipment. However, this category does not include any HVAC DSM Program Participation. Any HVAC DSM program participation is included in DSM Programs. (See **Variable Air-Volume (VAV) System, Economizer Cycle, and Preventive Maintenance Program for the Heating and/or Cooling Equipment**.)

HVAC DSM Program: A DSM program designed to promote the efficiency of the heating or cooling delivery system, including replacement. Includes ventilation (economizers; heat recovery from exhaust air), cooling (evaporative cooling, cool storage; heat recovery from chillers; high-efficiency air conditioning), heating, and automatic energy management systems. In Section 3, "Detailed Tables," this is included under the "DSM Program" category. (See **Demand-Side Management Programs (DSM)**.)

HVAC Maintenance: See **Preventive Maintenance Program for Heating and/or Cooling Equipment**.

Imputation: A statistical method used to fill in values for missing items, designed to minimize the bias of estimates based on the filled-in data set. (See **Hot-Deck Imputation**, and **Regression** Appendix B, "Nonsampling and Sampling Errors.")

Incandescent Light Bulbs: A light bulb that produces a soft warm light by electrically heating a tungsten filament so that it glows. Because so much of the energy is lost as heat, these are highly inefficient sources of light. The halogen light bulb is a type of incandescent light bulb made more efficient by the addition of a halogen gas. Included in this category are the familiar type of light bulbs which screw into sockets, as well as energy-efficient incandescent bulbs such as Tungsten Halogen (spotlights), Reflector or R-Lamps (accent and task lighting), Parabolic Aluminized Reflector (PAR) lamps (flood and spot lighting), and Ellipsoidal Reflector (ER) lamps (recessed lighting). (See **Light Bulbs**.)

Individual A/C: See **Individual Room Air Conditioners in Walls or Windows**.

Individual Room Air Conditioners in Walls or Windows: Self-contained air-conditioning units installed in either walls or windows (with heat-radiating condensers exposed to the outdoor air). These units are characterized by a lack of pipes or duct work for distributing the cool air; the units condition air only in the room or areas where they are located. In Section 3, "Detailed Tables," labeled as individual A/C. (See **Cooling**.)

Individual Space Heater: A free-standing or self-contained unit that generates and delivers heat to a local zone within the building. The heater may be permanently mounted in a wall or floor, or may be portable. Examples of individual space heaters include electric baseboards, electric radiant or quartz heaters, heating panels, gas- or kerosene-fired unit heaters, wood stoves, and infrared radiant heaters. These heaters are characterized by a lack of pipes or duct work for distributing hot water, steam, or warm air through the building. (See **Baseboard** and **Electric Baseboard**.)

Industrial: See **Manufacturing/Industrial**.

In Scope: Meeting the requirements for eligibility in the CBECS, and, therefore, included in the population covered by the survey. These eligibility requirements were (a) that the structure be a building, according to the CBECS definition; (b) that the building be larger than 1,000 square feet; and (c) that more than 50 percent of the floorspace be used for commercial activities. (See **Building, Commercial, Floorspace**, and Appendix 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 Features**.)

Intensity: The amount of a quantity per unit of measurement (floorspace, number of workers, etc.) This is a method of adjusting either the amount of energy consumed or expenditures spent, for the effects of various building characteristics such as size of the building, number of workers, or number of operating hours, to facilitate comparisons of energy across time, fuels, and buildings. (See **Conditional Energy Intensity, Energy Intensity, Expenditures per Square Foot, Gross Energy Intensity**, and **Peak Intensity**.)

Kerosene: A petroleum distillate with properties similar to No. 1 fuel oil, used primarily in space heaters, cooking stoves, and water heaters. In this report, no distinction is made between kerosene and fuel oil. (See **Fuel Oil**.)

Kilowatthour (kWh): A unit of work or energy, measured as 1 kilowatt (1,000 watts) of power expended for 1 hour. One kWh is equivalent to 3,412 Btu. (See **Btu** and **Electricity**.)

Lamp: See **Light Bulbs**.

Large and Specialized Buildings Lists: Lists that were used to select a supplementary sample of buildings for the CBECS. The sample of buildings drawn from these lists was used to supplement the Multistage Area Probability Sample within each selected PSU. (See **Multistage Area Probability Sample, List Sample**, and Appendix 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, Special Measures of Occupancy**, and Appendix E, "Types of Buildings.")

Light Bulbs: A term generally used to describe a manmade source of light. The term is often used when referring to a "bulb" or "tube." The CBECS collects data only about light bulbs using electricity. (See **Incandescent Light Bulbs, Fluorescent Light Bulbs, Compact Fluorescent Light Bulbs** and **High-Intensity Discharge (HID) Light Bulbs**.)

Lighting Conservation Features: A building feature or practice designed to reduce the amount of energy consumed by the lighting system. In Section 3, "Detailed Tables," Lighting Conservation Features include natural lighting control sensors, manual dimmer switches, occupancy sensors, specular reflectors, and time clocks or timed switches. However, this category does not include Lighting DSM Program participation. Any Lighting DSM Program participation is included in DSM Programs. (See **Natural Lighting Control Sensors, Manual Dimmer Switches, Occupancy Sensors, Specular Reflectors, and Time Clocks or Timed Switches.**)

Lighting DSM Program: A DSM program designed to promote efficient lighting systems in new construction or existing facilities. Lighting DSM Programs can include: certain types of high-efficiency fluorescent fixtures including T-8 lamp technology, solid state electronic ballasts, specular reflectors, compact fluorescent fixtures, LED and Electro-Luminescent Emergency Exit Signs, High Pressure Sodium with switchable ballasts, Compact Metal Halide, occupancy sensors, and daylighting controllers. These are included in Section 3, "Detailed Tables," under the "DSM Programs" category. (See **Demand-Side Management (DSM) Programs.**)

Lighting Equipment: These are light bulbs used to light the building's interior, such as incandescent light bulbs, fluorescent light bulbs, compact fluorescent light bulbs, and high-intensity discharge (HID) lights. (See **Incandescent Light Bulbs, Fluorescent Light Bulbs, Compact Fluorescent Light Bulbs, and High-Intensity Discharge (HID) Light Bulbs.**)

Liquefied Petroleum Gas (LPG): Gas fuel in liquid form supplied to a building as an energy source. The fuel is usually delivered by tank trucks and stored near the building in a tank or cylinder until used. LPG contains mostly propane, but can contain such gases as butane, propylene, butylene, or ethane. For this report, any LPG reported was assumed to be propane. (See **Energy Source, Propane, and Natural Gas.**)

List Sample: A sample drawn from the large and specialized building lists used to supplement the area probability sample. (See **Large and Specialized Buildings Lists** and Section A, "How the Survey Was Conducted.")

Load Factor: The ratio of average demand to peak demand, usually computed only for electricity demand. In this report, load factors were determined on an annual basis, for calendar year 1992, as

$$\text{Load Factor} = \frac{\text{Annual Consumption (kWh)}}{(366 \times 24 \text{ Hours})} \div \text{Annual Peak Demand (kW)}$$

Load Factors were computed only for individual buildings, not for aggregates, since aggregate peak demand could not be meaningfully determined. (See **Demand, Peak Demand**, and "Electricity Peak Demand" in Appendix B, "Nonsampling and Sampling Errors.")

LPG: See **Liquefied Petroleum Gas (LPG).**

Main Space-Heating Energy Source: The energy source used to heat most of the square footage in the building most of the time.

Major Energy Sources: The energy sources or fuels for which consumption and expenditures data were collected in the 1992 CBECS. These fuels or energy sources are: electricity, fuel oil, natural gas, district steam, district hot water, and district chilled water. District chilled water is not included in any totals for the sum of major energy sources or fuels; all other major fuels are included in these totals. (See **Energy Sources.**)

Major Fuels: See **Major Energy Sources.**

Manual Dimmer Switches: A lighting conservation feature that changes the level of light in the building. These are like residential-style dimmer switches, which are not commonly used with fluorescent or HID lamps. (See **Lighting Conservation Features.**)

Manufacturing: As an energy end use, any of the energy-using operations required for manufacturing/industrial processes. Manufacturing is one of the six end uses of energy specifically requested in this survey. (See **Energy End Use and Manufacturing/Industrial.**)

Manufacturing/Industrial: As a building activity 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, metalwork, glasswork, 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.

Commercial buildings (such as offices) that were associated with a manufacturing establishment were included, but the manufacturing and industrial buildings were excluded from the population covered. Such buildings could be included in the sample during the listing stage. However, buildings that had 50 percent or more of their square footage devoted to manufacturing or industrial activities were dropped from the sample during the interview stage. (See **Principal Building Activity**, Appendix A, "How the Survey Was Conducted and Appendix E, "Types of Buildings.")

Master-Metering: Measurement of electricity or natural gas consumption in a building using a single meter to measure the total consumption by several tenants or establishments in the building. (See **Separate Metering**.)

Masonry: A general term covering wall construction using masonry materials such as brick, concrete block, stone, and tile that are set in mortar; also included is stucco. This category does not include concrete panels since concrete panels represent a different method of constructing buildings. Concrete panels are reported separately. (See **Concrete Panel**.)

Mean: The simple arithmetic average for a population is the sum of all the values in a population divided by the size of the population. For this report, population means are estimated by computing the weighted sum of the sample values, then dividing by the sum of the sample weights. (See **Median** and **Weight**.)

Mean Operating Hours: The arithmetic average number of operating hours per building is the weighted sum of the number of operating hours divided by the weighted sum of the number of buildings.

Mean Square Feet per Building: The arithmetic average square feet per building is the weighted sum of the total square feet divided by the weighted sum of the number of buildings.

Mean Square Feet per Worker: The arithmetic average square feet per worker is the weighted sum of the total square feet divided by the weighted sum of the total number of main shift workers.

Median: The middle value in the population; half the population has a value above the median and half has a value below. The median is different from the mean in that its estimate is not influenced much by extremes in the sample. For example, an estimate of the mean square feet per building would be affected by the inclusion of some very large buildings, and would not express square footage for a "typical" building. In contrast, the median square feet would not be so affected. (See **Mean**.)

Median Age of the Building: The middle age of all buildings in the CBECS--half of all buildings have an age above the median age of the building and half of all buildings have an age below the median age of the building.

Median Operating Hours: The middle number of operating hours of all buildings in the CBECS--half of all buildings have operating hours above the median operating hours and half of all buildings have operating hours below the median operating hours.

Median Square Feet per Building: The middle size (in square feet) of all buildings in the CBECS--half of all buildings have a size above the median square feet per building and half of all buildings have a size below the median square feet per building.

Median Square Feet per Worker: The middle amount of the floorspace per worker of all buildings in the CBECS--half of all buildings have floorspace per worker above the median square feet per worker and half of all buildings have floorspace below the median square feet per worker.

Metal Panels: An exterior wall construction material made of aluminum or galvanized steel panels fabricated in factories and fastened to the frame of the building to form outside walls. Pre-engineered metal buildings are also included in this category.

Metal Surfacing: Light-gauge metal sheets used for roofing.

Metered Peak Demand: The presence of a device to measure the maximum rate of electricity consumption per unit of time. This device allows electric utility companies to bill their customers for maximum rate of consumption, as well as for total consumption.

Metric Conversion Factors: In this report, estimates are presented in customary U.S. units. Floorspace estimates may be converted to metric units by using the relationship: 1 square foot is approximately equal to .0929 square meters. Energy estimates may be converted to metric units by using the relationship, 1 Btu is approximately equal to 1,055 joules. One kilowatthour is exactly equal to 3,600,000 joules. One gigajoule (10⁹ joules) is approximately 278 kilowatthours (kWh.) (For additional metric conversions, see Appendix H, "Metric Conversion Factors.")

Metropolitan Statistical Area (MSA): As defined by the U.S. Office of Management and Budget, an MSA is a county or group of contiguous counties that contain (1) at least one city of 50,000 inhabitants or more (or "twin cities" with a combined population of at least 50,000), or (2) an urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). The contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSA's consist of towns and cities, rather than counties. (See **Nonmetropolitan Statistical Area**.)

Metropolitan Status: A building classification referring to the location of the building either located within an MSA or outside of an MSA. (See **Metropolitan Statistical Area (MSA)** and **Nonmetropolitan Statistical Area**.)

More than One May Apply: In Section 3, "Detailed Tables," a row stub accompanied by this phrase indicates overlapping categories, so that a particular building may be represented in more than one line under this stub. In general, row stubs without this designation are exclusive, that is, they divide the population of buildings into distinct groups, so that a particular building is represented in no more than one line under this stub.

MSA: See **Metropolitan Statistical Area (MSA)**.

Multibuilding Facility: A group of two or more buildings on the same site owned or operated by a single organization, business, or individual. Examples include university campuses and hospital complexes. (See **Building, Facility**, and Appendix A, "How the Survey Was Conducted.")

Multiple-Establishment Building: A single building that houses more than one establishment. Examples include enclosed shopping malls and office suites. In this survey, the building was the interviewed sampling unit. If establishments in the building were billed for an energy source using separate meters or accounts, the utility (or energy supplier) was asked to provide data on consumption and expenditures for the entire building, on an "aggregate" reporting form that was provided. (See **Establishment, Single-Establishment Building**, and **Building**.)

Multistage Area Probability Sample: A sample design executed in stages with geographic "clusters" of sampling units selected at each stage. This procedure reduces survey expense while maintaining representative national coverage. (See Appendix 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 (LPG) or to privately owned gas wells operated by a building owner. (See **Energy Source, Liquefied Petroleum Gas (LPG)**, and **Propane**.)

Natural Gas Utility DSM Program Sponsor: A DSM program sponsored by a natural gas utility that suggests ways to increase the energy efficiency of buildings, to reduce energy costs, to change the usage patterns, or to promote the use of a different energy source. (See **Demand-Side Management (DSM) Program Sponsor and Utility-Sponsored DSM Program**).

Natural Lighting Control Sensors: A lighting conservation feature that takes advantage of sunlight to cut the amount of electric lighting used in a building; control system that varies the light output of an electric lighting system in response to variations in available daylight. It is sometimes referred to as "daylighting controls" or "photocells." (See **Lighting Conservation Features**.)

NOAA Division: One of the 356 weather divisions designated by the National Oceanic and Atmospheric Administration (NOAA), encompassing the 50 contiguous United States and the District of Columbia. These divisions usually follow county borders to encompass counties with similar weather conditions. However, the NOAA division does not follow county borders when weather conditions vary considerably within a county, as is likely to be the case when a county borders the ocean or contains high mountains. A State contains an average of seven NOAA divisions; a NOAA division contains an average of nine counties. (See **Climate Zone, Cooling Degree-Days, and Heating Degree-Days**.)

Nongovernment Owned: Owned by a private-owned utility company, a church, synagogue, or other religious organization or any other type of individual or group; such as, a private business or nonprofit organization. The building may be occupied by more than one nongovernment agency, and may be owner occupied, nonowner occupied or unoccupied.

Nonmetropolitan Statistical Area: Buildings not located within MSA's as defined by the U.S. Office of Management and Budget. (See **Metropolitan Statistical Area (MSA)**.)

Nonresidential Building: A building used for some purpose other than residential. Nonresidential buildings comprise three groups: commercial, manufacturing/industrial, and agricultural. Commercial buildings are the focus of this report. (See **Commercial Building, Manufacturing/Industrial, Building, Residential, Principal Building Activity, Out of Scope**, and Appendix E, "Types of Buildings.")

Nonowner Occupied: Having anyone other than the owner or the owner's business represented at the site. A building is considered nonowner occupied if anyone other than an employee or representative of the owner maintains a majority of the space in the building.

Number of Rooms - Lodging: The number of guest rooms or quarters in a short-term residential building, such as a motel, tourist home, or hotel; or the number of bedrooms or residential suites in a long-term facility, such as a dormitory, boarding house, orphanage, convent, monastery, fraternity, or sorority house. (See **Principal Building Activity, Special Measures of Occupancy**, and Appendix E, "Types of Buildings.")

Occupancy of Building: To occupy is to lease or hold a space on a full-time basis.

Occupancy Sensors: A lighting conservation feature that uses motion or sound to switch lights on or off; also known as "ultrasonic switching." When movement is detected, the lights turn on and remain on as long as there is movement in the room. Occupancy sensors that detect sound work like ultrasonic switching; when sound is detected, the lights turn on. In this report, occupancy sensors refer to detecting movement, not sound. (See **Lighting Conservation Features**.)

Off-Hours Equipment Reduction: A method of conserving energy by changing the temperature setting or reducing the use of heating, cooling, domestic hot water heating, lighting or any other equipment either manually or automatically when the building is closed. (See **Conservation Features**.)

Operating Hours: See **Weekly Operating Hours**.

Other DSM Assistance Programs: A DSM program assistance that includes alternative-rate, fuel-switching, and any other DSM assistance programs that are offered to consumers to encourage their participation in DSM programs. (Excludes General Information, Site-Specific and Incentive DSM assistance programs.) (See **Alternative-Rate DSM Program Assistance**, **Demand-Side Management (DSM) Program Assistance**, and **Fuel-Switching DSM Program Assistance**.)

Out of Scope: Violating one or more of the requirements for eligibility in the survey, therefore not included in the population covered by CBECS. (See **In Scope**.)

Owner Occupied: Having the owner or the owner's business represented at the site. A building is considered owner occupied if an employee or representative of the owner (such as a building engineer or building manager) maintains the majority of space in the building. Similarly, a chain store is considered owner occupied even though the actual owner may not be in the building but headquartered elsewhere. Other examples of the owner's business occupying a building include State-owned university buildings, elementary and secondary schools owned by a public school district, and a post office where the building is owned by the U.S. Postal Service.

Ownership and Occupancy: See **Occupancy of Building** and **Ownership of Building**.

Ownership of Building: The individual, agency, or organization that owns the building. In this report, building ownership is grouped into the following categories: Federal, State, or local government agency; a privately owned utility company; a church, synagogue, or other religious group; or any other type of individual or group.

Packaged Air-Conditioning Units: See **Packaged Units**.

Packaged-Heating Units: See **Packaged Units**.

Packaged Units: Units built and assembled at a factory and installed as a self-contained unit to heat or cool all or portions of a building. Packaged units are in contrast to engineer-specified units built up from individual components for use in a given building. "Packaged Units" is a term that can apply to heating equipment, cooling equipment, or combined heating and cooling equipment. Some types of electric packaged units are also called "Direct Expansion" or DX units. (See **Cooling; Heating, Ventilation, and Air Conditioning (HVAC)**; and **Space Heating**.)

Passive Solar Features: As an energy conservation feature, a deliberate approach to designing buildings to make use of natural ways to heat buildings in the winter and keep them cool in the summer. Passive solar design features include structuring the building on the lot so that large window areas face south to capture sunlight during the winter months; building "overhangs" on the south-facing windows to keep the sun from over heating the building during the summer; using certain types of building material to absorb heat during the day and release heat at night; and planting trees and vegetation to minimize heat gain in the building in the summer.

Peak Demand: The maximum rate of energy consumption per unit time over a period of measurement (also called "peak load"). In this report, peak demand was determined on an annual basis for calendar year 1992 and peak demand data were presented only for electricity. Peak demand was computed only for individual buildings, not for aggregates, since aggregate peak demand could not be meaningfully determined. (See **Demand** and "Peak Electricity Demand" in Appendix B, "Nonsampling and Sampling Errors.")

Peak Intensity: The ratio of peak demand to floorspace, usually determined only for electricity. In this report, peak intensity was computed only for individual buildings, not for aggregates, since aggregate peak demand could not be meaningfully determined. (See **Peak Demand**, **Floorspace**, and the Section on "Electricity Peak Demand" in Appendix B, "Nonsampling and Sampling Errors.")

Peak Load: See **Peak Demand**.

Percent Lit When Closed: The percentage of the building's square footage that is lit electrically during all hours other than the usual operating hours. (See **Percent Lit When Open**, **Square Footage**, and **Weekly Operating Hours**.)

Percent Lit When Open: The percentage of the building's square footage that is lit electrically during usual operating hours. (See **Percent Lit When Closed**, **Square Footage** and **Weekly Operating Hours**.)

Percent of Floorspace 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 of Floorspace Heated: The percentage of the building's square footage designed to be heated to at least 50 degrees Fahrenheit. (See **Square Footage** and **Space Heating**.)

Percent Window Glass: The percentage of the building's exterior wall construction material made of glass that can be seen through from the inside of the building. This percentage excludes glass covered or constructed of glass material that cannot be seen through. (See **Decorative or Construction Glass** and **Window or Vision Glass**.)

Personal Computer: A self-contained electronic system with all the components necessary to perform computerized functions which is called a terminal and has a screen (monitor), keyboard and/or mouse, and a CPU; a microcomputer for producing written, programmed or coded material, playing games, or doing calculations. (See **Computer Terminal**.)

Photovoltaic Cells (PVC): A device that produces electrical current by converting light or similar radiation. In Section 3, "Detailed Tables," PVC's are included in the "Any Other" Energy Sources, Space-Heating and Main Space-Heating categories.

Plastic, Rubber, or Synthetic Roofing: A layer of heavy gauge plastic or rubber used for roofing. In Section 3, "Detailed Tables," plastic, rubber or synthetic roofing are included in the "Synthetic or Rubber" roof materials category.

Point-of-Use Water-Heating System: See **Distributed/Point-of-Use Water-Heating System**.

Pounds (District Heat): A weight quantity of steam, also used in this report to denote a quantity of energy in the form of steam. The amount of usable energy obtained from a pound of steam depends on its temperature and pressure at the point of consumption and on the drop in pressure after consumption. For the CBECS, a conversion factor of 1,000 Btu per pound was used for steam. Hot water, always reported in Btu, was converted to equivalent pounds of steam using the same factor of 1,000 Btu per pound. (See **Btu**, **District Steam**, and **District Heat**.)

Precast Concrete Panel: Refers to concrete panels usually made in factories and delivered to the construction site where they are hoisted onto the structure. Sometimes concrete panels are poured at the site and then hoisted on the structure. The panels are either solid or insulated. They can have plain, colored or textured finishing. In Section 3, "Detailed Tables," pre-cast concrete panels are included in the "Concrete Panels" wall materials category. (See **Concrete Panel**.)

Preventive Maintenance Program for Heating and/or Cooling Equipment: As used in this report, an HVAC conservation feature consisting of a program of routine inspection and service for the heating and/or cooling equipment. The inspection is performed on a regular basis, even if there are no apparent problems. In Section 3, "Detailed Tables," this is included in the "HVAC Conservation Features" category. (See **HVAC Conservation Features**.)

Primary Electricity: The amount of electricity delivered to commercial buildings adjusted to account for the fuels used to produce the electricity. That is, site electricity plus the conversion losses in the generation process at the utility plant. (See **Consumption, Conversion Losses, Electricity and Site Electricity**.)

Primary Energy Consumption: See **Consumption**.

Primary Sampling Unit (PSU): A sampling unit selected at the first stage in a multistage area probability sample. A PSU typically consists of one to several contiguous counties--for example, a MSA with surrounding suburban counties. (See **Multistage Area Probability Sample, Metropolitan Statistical Area (MSA)**, and Appendix 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 and service. (See Appendix E, "Types of Buildings.")

Principal Facility Activity: The main purpose for the activities across all buildings in a facility; for example, the principal building activity for a library on a school campus is "public assembly"; however, the principal facility activity is "school."

Process Heating or Cooling DSM Program: A DSM program designed to promote increased electric energy efficiency applications in industrial process heating or cooling. In Section 3, "Detailed Tables," this is included in the "Other DSM Programs" under the "DSM Program" category. (See **Demand-Side Management (DSM) Programs and Waste-Heat Recovery**.)

Propane: A gaseous petroleum product that liquefies under pressure; propane is a major component in liquefied petroleum gas, or LPG. Any LPG reported in the CBECS was assumed to be propane. (See **Liquefied Petroleum Gas (LPG)**.)

PSU: See **Primary Sampling Unit (PSU)**.

Public Assembly: The principal building activity for buildings in which people gather, in private or public meeting halls, for social, cultural, or recreational activities. This building activity was first reported in the 1992 CBECS. In previous surveys, "Public Assembly" (along with "Religious Worship") had been classified under the principal building activity "Assembly." (See **Religious Worship** and Appendix E, "Types of Buildings.")

Quad: Quadrillion (10^{15}) Btu. (See **Btu**.)

Radiator: A heating unit usually visibly exposed within the room or space to be heated; it transfers heat from steam or hot water by radiation to objects within visible range and by conduction to the surrounding air, which in turn is circulated by natural convection. Typically, a radiator is a freestanding, cast-iron fixture. (See **Space Heating**.)

Reduced Use--Off Hours: See **Off-Hours Equipment Reduction**.

Reflectors: See **Specular Reflectors**.

Regression: A statistical procedure used in this report to estimate consumption of, or expenditures for, energy when data were unavailable. The procedure takes into account many characteristics of buildings (such as size, age, principal activity, heating fuels). (See **Imputation** and Appendix B, "Nonsampling and Sampling Errors.")

Regular HVAC Maintenance: See **Preventive Maintenance Program for Heating and/or Cooling Equipment**.

Reheating Coils: A part of some air-conditioning systems, these are electric coils in air ducts used primarily to raise the temperature of circulated air after it was over cooled to remove moisture. Some buildings report reheating coils as their sole heating source. (See **Air-Handling Units, Cooling, and Space Heating**.)

Relative Standard Error: See **RSE or Relative Standard Error**.

Religious Worship: The principal building activity for buildings in which people gather for religious activities. This building activity was first reported in the 1992 CBECS. In previous surveys, "Religious Worship" (along with "Public Assembly") had been classified under the principal building activity "Assembly." (See **Public Assembly** and Appendix E, "Types of Buildings.")

Replacement Energy Source for Main Heating: In this report, the heating energy source to which the building could switch within one week without major modifications to the main heating equipment, without substantially reducing the area heated, and without substantially reducing the temperature maintained in the heated area.

Residential: As a building activity in this survey, activities related to use as a dwelling for one or more households. Residential buildings that contained commercial activities were included in the sample during the listing stage. However, buildings that had 50 percent or more of their square footage devoted to residential activities were considered out of scope and dropped from the sample during the interview stage. (See **Principal Building Activity, In Scope, Commercial Building**, and Appendix A, "How the Survey Was Conducted.")

Residential Type-Central Air Conditioner: There are four basic parts to a residential central air-conditioning system: (1) a condensing unit, (2) a cooling coil, (3) ductwork, and (4) a control mechanism such as a thermostat. There are two basic configurations of residential central systems: (1) a "split system" where the condensing unit is located outside and the other components are inside, and (2) a packaged-terminal air-conditioning (PTAC) unit that both heats and cools or cools only. This system contains all four components encased in one unit and is usually found in a "utility closet." If the residential type is a "PTAC", it is considered a "Packaged air-conditioning unit."

Roof or Ceiling Insulation: A building shell conservation feature consisting of insulation placed in the roof (below the waterproofing layer) or in the ceiling of the top floor in the building. (See **Insulation** and **Building Shell Conservation Features**.)

Rooms with Special Ventilation: This survey collects data for "any use that requires special ventilation equipment, such as laboratories or 'clean room'." This category refers to the part of buildings that have special ventilation equipment for cleaning the air or controlling or maintaining the temperature or humidity. In addition to laboratories, other examples of spaces with special ventilation requirements include dry cleaning establishments, enclosed parking garages, auto body repair shops, operating rooms in hospitals, kitchens in full-service restaurants, or other areas, which utilize fume hoods; safety cabinets, ventilation fans, diffusers, exhaust air system, exhaust fans, and supply fans. **Note:** To be considered special ventilation equipment, a fan must be attached to ducts and these ducts must be ducted to the outside. (See **Energy-Related Space Functions**.)

RSE Column Factor: An adjustment factor that appears above each column of the published tables and is used to compute RSE's. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that cell. (See **RSE or Relative Standard Error, RSE Row Factor**, Section 3, "Detailed Tables," and Appendix B, "Nonsampling and Sampling Errors.")

RSE or Relative Standard Error: A measure of the reliability or precision of a survey statistic. Variability occurs in survey statistics because the different samples that could be drawn would each produce different values for the survey statistics. The RSE is defined as the standard error (the square root of the variance,) of a survey estimate, divided by the survey estimate and multiplied by 100. For example, an RSE of 10 percent means that the standard error is one-tenth as large as the survey estimate. (See Appendix B, "Nonsampling and Sampling Errors.")

RSE Row Factor: A component that appears to the right of each row of the published tables and is used to compute RSE's. The row factor is equal to the geometric mean of the RSE's in a particular row of the main tables. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that cell. (See **RSE or Relative Standard Error, RSE Column Factor**, Section 3, "Detailed Tables," and Appendix B, "Nonsampling and Sampling Errors.")

Sales Accounts: See **Account Classification**.

Sampling: The procedure used to select cases (in this survey, buildings) for interview from the population (commercial buildings in the United States). (See **Multistage Area Probability Sample** and Appendix A, "How the Survey Was Conducted.")

Seating Capacity: The number of persons that can be seated at a given time in a classroom/lecture hall of an education building, food service building, or in a building used for public assembly or religious worship. (See **Principal Building Activity, Special Measures of Occupancy**, and Appendix E, "Types of Buildings.")

Secondary Heating Fuel: Fuels used in secondary space-heating equipment. When no secondary space-heating equipment is used, a secondary space-heating fuel that is used in the main space-heating equipment is not included in the tabulations. This occurs when, for example, wood and coal are both used in a furnace but wood is named the main space-heating fuel. Coal, in this case, is not tabulated.

Separate Metering: Measurement of electricity or natural gas consumption in a building using a separate meter for each of several tenants or establishments in the building. (See **Master-Metering**.)

Shadings or Awnings: See **Exterior or Interior Shadings or Awnings**.

Shakes: Flat pieces of weatherproof material laid with others in a series of overlapping rows as covering for roofs and sometimes the sides of buildings. Shakes are similar to wood shingles, but instead of having a cut and smoothly planed surface, shakes have textured grooves and a rough or "split" appearance to give a rustic feeling. (See **Shingles, Siding**, and **Wooden Materials**.)

Sheet Metal Panels: Includes metal panels made in factories and shipped to the building site where they are fastened to the building frame. They are usually aluminum or galvanized steel. (See **Metal Panels**.)

Shingles: Flat pieces of weatherproof material laid with others in a series of overlapping rows as covering for roofs and sometimes the walls of buildings. Shingles are manufactured in a variety of materials including fiberglass, wood, plastic, baked clay, tile, asbestos, asphalt, and aluminum. Wood Shingles are included in the "Other" roof material category. (See **Siding, Shakes, Slate or Tile Shingles**, and **Wooden Materials**.)

Siding: An exterior wall covering material made of wood, plastic (including vinyl), or metal. The structural walls may be masonry or wood. Siding is generally produced in the shape of boards applied to the outside of a building in overlapping rows. (See **Wooden Materials**.)

Single-Establishment Building: A building that houses only one establishment, for example, a building dedicated to the offices of a single corporation. (See **Establishment, Multiple-Establishment Building**, and **Building**.)

Site Electricity: The amount of electricity delivered to commercial buildings. (See **Consumption, Conversion Losses, Electricity** and **Primary Electricity**.)

Site-Specific Information DSM Program Assistance: A DSM assistance program that provides guidance on energy efficiency and load-management options tailored to a particular customer's facility; it often involves an on-site inspection of the customer facility to identify cost-effective DSM actions that could be taken. They include audits, engineering design calculations on information provided about the building, and technical assistance to architects and engineers who design new facilities. (See **Demand-Side Management (DSM) Program Assistance**.)

Slate or Tile Shingles: A type of roofing material. Tile refers to any thin, square, or rectangular piece of baked clay, stone, or concrete used as a roofing material. Slate refers to a particular stone used for roofing. (See **Shingles**.)

Solar Thermal Panels: These are thermal panels that use sunlight to heat fluids, a system that actively concentrates thermal energy from the sun by means of solar collector panels. The panels typically consist of flat, sun-oriented boxes with transparent covers, containing water tubes or air baffles under a blackened heat-absorbent panel. The energy is usually used for space heating, for water heating and/or for heating swimming pools. This is included under the "Any Other" energy sources category. (See **Energy Sources**.)

Space Heating: The use of mechanical equipment (including wood stoves and active solar heating devices) to heat all, or part, of a building to at least 50 degrees Fahrenheit. This is one of the six end uses of energy specifically asked for in this survey. (See **Energy End Use**.)

Special Measures of Occupancy: A measure relating to the intensity of use of a building, for example, the number of licensed beds in a hospital or the number of guest rooms in a hotel. (See **Seating Capacity, Number of Rooms - Lodging, and Licensed Bed Capacity**.)

Specular Reflectors: A lighting conservation feature, this is the mirror-like backing of a florescent lighting fixture specifically designed to reflect light into the room. The materials and shape of the reflector are designed to reduce absorption of light within the fixture, while delivering light in the desired angular pattern. The most common materials used are silver (highest reflectivity) and aluminum (lowest cost). (See **Lighting Conservation Features**.)

Square Feet per Worker: The ratio of the total square footage in each category to the total number of workers in the category.

Square Footage: Floorspace, in units of square feet. One square foot is approximately equal to 0.0929 square meters. (See **Floorspace and Metric Conversion Factors**.)

Standard Error: A measure of the precision of an estimate, equal to the square root of the variance. (See **Variance, RSE or Relative Standard Error**, Section 3, "Detailed Tables," and Appendix B, "Nonsampling and Sampling Errors.")

Standard Fluorescent: See **Fluorescent Light Bulbs**.

Standby Electricity Generation: Involves use of generators during times of high demand on utilities to avoid extra "peak-demand" charges.

Standby Electricity Generation DSM Program: A DSM program that encourages consumers to use generators during times of high electricity demand to avoid "peak-demand" charges. In Section 3, "Detailed Tables," this is included in the "Other DSM Programs" under the "DSM Programs" category. (See **Demand-Side Management (DSM) Programs**.)

Steam: See **District Steam**.

Steam or Hot Water Radiators or Baseboards: See **Baseboard** and **Radiator**.

Storm Doors: A building shell conservation feature consisting of a second door installed outside or inside a prime door creating an insulating air space. Included are sliding glass doors made of double glass or of insulating glass such as thermopane, double- or triple-pane glass as well as sliding glass doors with glass or plexiglass installed outside or inside of the door. Plastic materials covering doors or doors with storm window covering on just the glass portion of the door are counted only if they can be used year after year. (See **Storm or Multiple Glazing**.)

Storm or Multiple Glazing: A building shell conservation feature consisting of storm windows, storm doors, or double- or triple-pane glass that are placed on the exterior of the building to reduce the rate of heat loss. (See **Building Shell Conservation Features**.)

Storm Windows: A building shell conservation feature consisting of a window or glazing material placed outside or inside a window creating an insulating air space. Windows with double glass or thermopanes are considered storm windows as well as windows with glass or plexiglass placed on the outside or inside of the window. Plastic material over windows is counted as a storm window if the same plastic material can be used year after year. (See **Storm or Multiple Glazing**.)

Summer and Winter Peaking: Having the annual peak demand reached both during the summer months (May through October) and during the winter months (November through April). (See **Peak Demand, Summer Peaking, Winter Peaking**, and "Peak Electricity Demand" in Appendix B, "Nonsampling and Sampling Errors.")

Summer Peaking: Having the annual peak demand falling during the summer. In this report, a building was classified as summer peaking if its annual peak demand was reached during any of the months from May through October. (See **Peak Demand** and "Peak Electricity Demand" in Appendix B, "Nonsampling and Sampling Errors.")

Swamp Coolers: See **Evaporative Cooler (Swamp Cooler)** and **Cooling**.

Synthetic or Rubber Roofing: See **Plastic, Rubber or Synthetic Roofing**.

Thermal Energy Storage (TES) or Pump Storage: The temporary storage of energy for later use. Examples of thermal storage are the storage of solar energy for night heating, the storage of summer heat for winter use, the storage of winter ice for space cooling in the summer, and the storage of heat or coolness generated electrically during time when electricity is cheaper (off-peak hours) for later use when electricity rates are higher. There are four basic types TES systems: ice storage, water storage, storage in a thermal mass such as soil, rock or other solids, and storage in other material such as glycol. The most commonly installed types of thermal energy storage systems in commercial buildings are those using ice or chilled water for cooling the building.

Thermal Storage DSM Program: This is a DSM program that shifts the time of energy usage through the temporary storage of energy for later use. In Section 3, "Detailed Tables," this is included in the "Other Program" under the "DSM Programs" category. (See **Demand-Side Management (DSM) Programs** and **Thermal Energy Storage (TES) or Pump Storage**.)

Thermostat: A device that adjusts the amount of heating and cooling produced and/or distributed by automatically responding to the temperature in the environment.

Third-Party DSM Program Sponsor: An energy service company (ESCO), which promotes a program sponsored by a manufacturer or distributor of energy products such as lighting or refrigeration whose goal is to encourage consumers to improve energy efficiency, reduce energy costs, change the time of usage, or promote the use of a different energy source. (See **Demand-Side Management (DSM)** and **Demand-Side Management (DSM) Program Sponsor**.)

Time Clocks or Timed Switches: Time clocks are automatic controls that turn lights off and on at predetermined times. (See **Lighting Conservation Features**.)

Tinted or Reflective Glass, or Shading Film: A building shell energy conservation feature consisting of tinted or reflective glass or shading films installed on the exterior glazing of a building to reduce the rate of solar penetration into the building. (See **Building Shell Conservation Features**.)

Transported Gas: See **Gas Transported for the Account of Others**.

Trillion Btu: Equivalent to 1,000,000,000,000 (10¹²) Btu. (See **Btu**.)

Usage Requiring Special Ventilation Equipment: See **Rooms with Special Ventilation**.

Utility-Sponsored DSM Program: In this report, this is any DSM program sponsored by an electric and/or natural gas utility to review equipment and construction features in buildings and advise on ways, among other things, to increase the energy efficiency of buildings; such as, programs to encourage the use of more energy-efficient equipment. Also, included in this survey were programs to improve the energy efficiency in the lighting system or building equipment, or the thermal efficiency of the building shell. (See **Demand-Side Management (DSM) Program Sponsor.**)

Vacant: As a principal building activity, the designation for a building in which most of the floorspace was not occupied by any tenant or establishment. A vacant building may contain occupants who are using up to 50 percent of the floorspace. The CBECS also measures vacancy in terms of the fraction of space vacant within an individual building and the fraction of time the building was in use. For all buildings, data were collected on the percent of floorspace vacant for three or more consecutive months, and/or the number of months the building was in use. (See **Principal Building Activity**, and Appendix E, "Types of Buildings.")

Variable Air-Volume (VAV) System: An HVAC system that supplies varying quantities of conditioned (heated or cooled) air to different parts of the building according to the heating and cooling needs of those specific areas. This is an HVAC conservation feature and is usually referred to as "VAV." (See **HVAC Conservation Features.**)

Variance: A measure of the variability of a set of observations that are subject to some chance variation, equal to the expected squared difference between a single observation and the average of all possible observations obtained in the same manner. The variance is the square of the standard error of estimates. For statistics presented in this report, the variance indicates the likely difference between the value computed from the CBECS sample and the average of the values that could have been computed from all possible samples that might have been obtained by the same sample selection process. (See **Standard Error**, and Appendix B, "Nonsampling and Sampling Errors.")

VAV: See **Variable Air-Volume (VAV) System.**

Vintage: The year of origin or age. Used in this report, the year of construction for the building, as in "building vintage." (See **Year Constructed.**)

Walk-In Refrigeration Units: Refrigeration/freezer units within a building that are large enough to walk into. They may be portable or permanent, such as a meat storage locker in a butcher store. Walk-in units may or may not have a door, plastic strips, or other flexible covers. (See **Commercial Refrigeration/Freezer Equipment.**)

Wall Insulation: A building shell conservation feature consisting of insulation placed between the exterior and interior walls of a building. (See **Insulation** and **Building Shell Conservation Features**.)

Warm-Air Furnace: See **Furnace**.

Waste-Heat Recovery: Any conservation system whereby some space heating or water heating is done by actively capturing byproduct heat that would otherwise be ejected into the environment. In commercial buildings, sources of waste-heat recovery include refrigeration/air-conditioner compressors, manufacturing or other processes, data processing centers, lighting fixtures, ventilation exhaust air, and the occupants themselves. Not to be considered is the passive use of radiant heat from lighting, workers, motors, ovens, etc., when there are no special systems for collecting and redistributing heat. This is included in "Other DSM Programs" under the "DSM Programs" category. (See **Process Heating or Cooling DSM Program**.)

Water Heating: The use of energy to heat water for purposes other than space heating. This is one of the six end uses of energy specifically asked for in this survey. (See **Energy End Use** .)

Water-Heating DSM Programs: These are DSM programs designed to promote increased efficiency in water heating, including water-heater insulation wraps. In Section 3, "Detailed Tables," this is included in the "Other Program" under the "DSM Programs" category. (See **Demand-Side Management (DSM) Programs**.)

Water-Heating Equipment: Automatically controlled, thermal insulated equipment designed for heating water at temperatures less than 180 degrees Fahrenheit for other than space heating purposes. This survey collected data to distinguish between two types of water heating equipment: centralized and distributed/point-of-use. (See **Centralized Water-Heating System** and **Distributed/Point-of-Use Water-Heating System**.)

Weekly Operating Hours: The number of hours per week that a building is used, excluding hours when the building is occupied only by maintenance, security, or other support personnel. For buildings with a schedule that varied during the year, "weekly operating hours" refers to the total weekly hours for the schedule most often followed. If operating hours varied throughout a building, the usual operating hours of the largest business in the building (based on square footage) determined the operating hours for the building.

Weight: The number of buildings in the United States that a particular sample building represents. To estimate the total value of an attribute (such as square footage) in the U.S. commercial buildings population as a whole, each sample building's value is multiplied by the building's weight. Summing (aggregating) the weighted sample values provides an estimate of the nationwide total. (See **Multistage Area Probability Sample**, and Appendix B, "Nonsampling and Sampling Errors.")

Window or Vision Glass: An exterior wall construction material made of glass that can be seen through from the inside of the building--the glass especially found in windows. Walls that are glass covered or constructed of glass material, but cannot be seen through, are excluded from this category. (See **Decorative or Construction Glass**.)

Windows that Open: Windows that can be opened from the inside of the building to assist in ventilation. In Section 3, "Detailed Tables," this is included under the "Building Shell Conservation Features" category. (See **Building Shell Conservation Features**.)

Winter Peaking: Having the annual peak demand occurring during the winter. In this report, a building was classified as winter peaking if its annual peak demand was reached during any of the months from November through April. (See **Peak Demand** and "Peak Electricity Demand" in Appendix B, "Nonsampling and Sampling Errors.")

Wood: As an energy source, wood logs, chips, or wood products that are used as fuel. In this survey, information about the use of wood as fuel in commercial buildings was obtained from the building respondent. Wood is included in the "Any Other" under the "Energy Sources" category. (See **Energy Source**.)

Wooden Materials: Wood shingles, wood shakes, or other wooden materials used as roofing materials. (The questionnaire also includes wood siding and shingles under exterior wall construction.) (See **Shingles** and **Shakes**.)

Workers (Main Shift): The number of people working in a building during the main shift on a typical workday during the year. The main shift is the time when most people are in the building. Included in this definition are self-employed workers and volunteers. Excluded from this definition are customers, patients, and students, unless they are working for establishments in the building. Also excluded are employees who work out of the office, such as salespeople who report in, delivery people with routes, and messengers.

Year Constructed: The year in which the major part or the largest portion of a building was constructed.