U.S. Department of Energy

Commercial Buildings
Energy Consumption Survey
for 2007

BUILDING QUESTIONNAIRE
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HOW TO USE THIS QUESTIONNAIRE

The 2007 Commercial Buildings Energy Consumption Survey (CBECS) was conducted using a computer-assisted personal interview programmed using a software called Blaise. A professional interviewer administered the questionnaire to the building respondent using a laptop computer. The purpose of this paper representation of the questionnaire is to document the question text, fills, and skip patterns within the 2007 CBECS questionnaire.

PLEASE NOTE: All the question fills and skip patterns were handled automatically by the software and were transparent to the interviewer, so this document appears much more complex that the actual CBECS instrument.

Each question is formatted as follows:

<table>
<thead>
<tr>
<th>A1</th>
<th>Question name</th>
<th>SASVAR9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ASK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FILL</td>
<td></td>
</tr>
</tbody>
</table>

The black box (A1 here) contains a question number, followed by the Question name and the SAS variable (if applicable) in the same row. If the SAS variable area says “see below,” the variables are found within the Question text box.

The ASK line describes what needs to be true for a question to be asked for a particular building.

There are two variables that are preloaded into each case and used for routing in some questions:

- Freestanding – a building that is not attached on any sides
- Enclosed mall – the building is an enclosed mall building

The FILL line describes any question fills and the conditions under which each appears. If the fill appears as something such as “A1 [Square footage]” this means that the figure provided in question A1 will be appear as question fill text.

The Question text box shows the question text, and any other elements for each question, such as Show Card indicators or instructions, and the answer choices for each question.

The RANGE line is only applicable to numeric questions. It shows the range of answers that will be accepted by Blaise.

The NEXT line details the routing for the next question. Follow these instructions in order. Once a true statement is reached, go to the question indicated by the arrow (→).
### Worksheet and Respondent Questions

<table>
<thead>
<tr>
<th>WS</th>
<th>Worksheet 1</th>
<th>R1WS19 – RXWS19</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>All cases not yet done with Section E</td>
<td></td>
</tr>
</tbody>
</table>

Do you have Worksheet 1 with you and completed?

1. Yes
2. No

<table>
<thead>
<tr>
<th>NEXT</th>
<th>IF First time case started ➔ R1 [Respondent function]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IF Restart ➔ R2 [Respondent function]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R1</th>
<th>Respondent function</th>
<th>R1JOB9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>All cases on first start</td>
<td></td>
</tr>
</tbody>
</table>

#### SHOW CARD R1

- Take out the Show Card booklet. It is very important to use these cards, as some of them contain more information than can be found on your CAPI screens.

Before we get started, I’m going to give you this booklet of Show Cards to look at for some of the questions. Please turn to Show Card R1.

Looking at this list, please tell me which of these best describes your job function.

1. Operations, maintenance, or engineering
2. Property management
3. Store management
4. Mall management
5. Administration or company management
6. Energy or environmental management
7. Building owner
8. Business owner
9. Accounting, finances, or payroll
10. Executive official
11. School official
12. Religious official
13. Support staff
14. Other

<table>
<thead>
<tr>
<th>NEXT</th>
<th>IF Other ➔ R3 [Other job function]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anything but Other ➔ A1a [Building name]</td>
</tr>
</tbody>
</table>
### R2 Respondent function

<table>
<thead>
<tr>
<th>ASK</th>
<th>All restarted cases</th>
</tr>
</thead>
</table>
|     | ◆ ASK if interview is with a new respondent  
|     | ◆ If interview is with same respondent as previous interview, ENTER "0"  

**SHOW CARD R1**

Before we get started, I'm going to give you this booklet of Show Cards to look at for some of the questions. Please turn to Show Card R1.

Looking at this list, please tell me which of these best describes your job function.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Same respondent as previous interview</td>
</tr>
<tr>
<td>1</td>
<td>Operations, maintenance, or engineering</td>
</tr>
<tr>
<td>2</td>
<td>Property management</td>
</tr>
<tr>
<td>3</td>
<td>Store management</td>
</tr>
<tr>
<td>4</td>
<td>Mall management</td>
</tr>
<tr>
<td>5</td>
<td>Administration or company management</td>
</tr>
<tr>
<td>6</td>
<td>Energy or environmental management</td>
</tr>
<tr>
<td>7</td>
<td>Building owner</td>
</tr>
<tr>
<td>8</td>
<td>Business owner</td>
</tr>
<tr>
<td>9</td>
<td>Accounting, finances, or payroll</td>
</tr>
<tr>
<td>10</td>
<td>Executive official</td>
</tr>
<tr>
<td>11</td>
<td>School official</td>
</tr>
<tr>
<td>12</td>
<td>Religious official</td>
</tr>
<tr>
<td>13</td>
<td>Support staff</td>
</tr>
<tr>
<td>14</td>
<td>Other</td>
</tr>
</tbody>
</table>

**NEXT** IF Other ➔ R3 [Other job function]  
Anything but Other ➔ A1a [Building name]

### R3 Other job function

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF R1 [Respondent function] = Other OR R2 [Respondent function] = Other</th>
</tr>
</thead>
</table>

What is your job function?

**NEXT** ➔ A1a [Building name]
### SECTION A: BUILDING SIZE AND AGE

**A1a Building name**  
**ASK** All Buildings

By what name is this building most commonly referred?

- **EXP:** [This may be the name of the building or the name of the largest business or organization within the building.]

**NEXT** → A1b [Street address]

**A1b Street address**  
**ASK** All Buildings

Please tell me the address of the building, beginning with the street address.

**NEXT** → A1c [City]

**A1c City**  
**ASK** All Buildings

What is the city?

**NEXT** → A1d [State]

**A1d State**  
**ASK** All Buildings

What is the state?

- **ENTER** the two letter abbreviation

**NEXT** → A1e [ZIP code]
<table>
<thead>
<tr>
<th><strong>A1e</strong></th>
<th>ZIP code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>All Buildings</td>
</tr>
</tbody>
</table>

And what is the ZIP code?

**NEXT**  ➔ A1 [Square footage]

<table>
<thead>
<tr>
<th><strong>A1</strong></th>
<th>Square footage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>All Buildings</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{Worksheet1Intro}</td>
</tr>
</tbody>
</table>
| | IF R has Worksheet 1 = “Please refer to Worksheet 1 for some of these next questions on general characteristics.”  
| | OTHERWISE = BLANK |

{Worksheet1Intro}

What is the gross or total square footage of all the space in this building both finished and unfinished, including basements, hallways, lobbies, stairways, elevator shafts, and indoor parking levels?

- **DEF:** [Total square footage = Length of building multiplied by width of building multiplied by the number of floors.]
- **VERIFY** number digit by digit

<table>
<thead>
<tr>
<th><strong>RANGE</strong></th>
<th>1 to 999,999,999</th>
</tr>
</thead>
</table>
| **NEXT** | IF DK/RF ➔ A2 [Square footage category]  
| | IF Enclosed mall ➔ A5 [Food court]  
| | IF 1,000 square feet or less ➔ A3 [End of interview]  
| | OTHERWISE ➔ A6 [Wall construction material] |
I understand that it may be difficult to give an exact figure for square footage. However, the size of your building is very important in helping understand its use of energy.

Please look at this list and tell me which category best describes the total gross square footage in this building. There are examples provided to help you estimate.

◆ If respondent gives the category code, VERIFY the response by reading the full answer

1 1,000 square feet or less
2 1,001 to 5,000 square feet
3 5,001 to 10,000 square feet
4 10,001 to 25,000 square feet
5 25,001 to 50,000 square feet
6 50,001 to 100,000 square feet
7 100,001 to 200,000 square feet
8 200,001 to 500,000 square feet
9 500,001 to 1 million square feet
10 Over 1 million square feet

Thank you, that’s all the questions that I have at this time, since we are only interviewing buildings that are larger than one thousand square feet. (CollectWorksheet)

Thank you for your time and help.

◆ [F10]-Exit

NEXT TERMINATE
A5 Food court

ASK IF Enclosed mall

Is there a food court in this mall?

- EXP: [A food court is a public area with tables and chairs surrounded by various food service establishments which generally offer only counter service.]

  1. Yes
  2. No

NEXT ➔ A6 Wall construction material

A6 Wall construction material

ASK All Buildings

[SHOW CARD A2]

Here is a list of different types of construction materials. Which best describes the major type of exterior wall construction material used on this building?

1. Brick, stone, or stucco
2. Pre-cast concrete panels
3. Concrete block or poured concrete (above grade)
4. Aluminum, asbestos, plastic, or wood siding, shingles, tiles, or shakes
5. Sheet metal panels
6. Window or vision glass (glass that can be seen through)
7. Decorative or construction glass
8. IF VOLUNTEERED: No one major type
9. IF VOLUNTEERED: Other

NEXT ➔ A7 Roof construction material
### A7 Roof construction material

**ASK**
All Buildings

**SHOW CARD A3**

Here is a list of different types of roofing materials. Which best describes the building's predominant exterior roof surface?

1. Built-up (tar, felts, or fiberglass and a ballast, such as stone)
2. Slate or tile shingles
3. Wood shingles, shakes, or other wooden materials
4. Asphalt, fiberglass, or other shingles
5. Metal surfacing
6. Plastic, rubber, or synthetic sheeting (single or multiple ply)
7. Concrete
8. IF VOLUNTEERED: No one major type
9. IF VOLUNTEERED: Other

**NEXT** ➔ A8 [Roof tilt]

### A8 Roof tilt

**ASK**
All Buildings

**SHOW CARD A4**

Looking at this card, please tell me which best describes the tilt or pitch of the roof of this building.

1. Flat
2. Shallow pitch
3. Steeper pitch

**NEXT** IF Freestanding ➔ A9 [Building shape]  
OTHERWISE ➔ A13 [Number of floors]
**A9 Building shape**

**ASK IF Freestanding**

/show card A5

Here is a card that shows some common building shapes. Which one most resembles the floorplan of this building at ground level? This is sometimes called the "footprint" of the building.

1. Square
2. Wide rectangle
3. Narrow rectangle
4. Rectangle or square with an interior courtyard
5. "H" shaped
6. "U" shaped
7. "E" shaped
8. "T" shaped
9. "L" shaped
10. "+" or cross shaped
11. Other shape

**NEXT ➔ A10 [Percent exterior glass]**

**A10 Percent exterior glass**

**ASK IF Freestanding**

/show card A6

Which of the ranges on this card best describes the percent of the exterior wall surface of this building that is covered with window glass or glass doors?

1. 1 percent or less
2. 2 to 10 percent
3. 11 to 25 percent
4. 26 to 50 percent
5. 51 to 75 percent
6. 76 to 100 percent

**NEXT ➔ A11 [Equal glass on all sides]**

**A11 Equal glass on all sides**

**ASK IF Freestanding**

Is the amount of glass about the same for all sides of the building?

1. Yes
2. No

**NEXT**

- IF Yes ➔ A13 [Number of floors]
- IF No OR DK/RF ➔ A12 [Glass sides most sunlight]
### A12 Glass sides most sunlight

**ASK**

IF Freestanding & A11 [Equal glass on all sides] = No OR DK/RF

Do the sides receiving direct sunlight have more or less glass area than the sides that do not receive direct sunlight?

1. More glass area
2. Less glass area
3. IF VOLUNTEERED: About the same amount

**NEXT** ➔ A13 [Number of floors]

### A13 Number of floors

**ASK**

All Buildings

How many floors are in the tallest section of the building, including basements, parking levels, or any other floors below ground level, but excluding half-floors, mezzanines, balconies, and lofts?

- PROBE for estimate if DK

**RANGE** 1 to 999

**NEXT**

IF Only one floor OR DK/RF ➔ A15 [Attic]
IF More than one floor ➔ A14 [Number of underground floors]

### A14 Number of underground floors

**ASK**

IF A13 [Number of floors] > 1

How many of these floors are below ground (or partially below ground)?

- PROBE for estimate if DK

**RANGE** 0 to 999

**NEXT** ➔ A15 [Attic]
### A15 Attic

**ASK**
All Buildings

Does the building have an attic?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**
IF A13 [Number of floors] = 1 ➔ A20 [Year of construction]
IF A13 [Number of floors] > 1 OR DK/RF ➔ A16 [Elevators]

### A16 Elevators

**ASK**
IF A13 [Number of floors] >1 OR DK/RF

Are there any elevators in this building?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**
IF Yes ➔ A17 [Number of elevators]
IF No OR DK/RF ➔ A18 [Escalators]

### A17 Number of elevators

**ASK**
IF A16 [Elevators] = Yes

How many elevators are there?

- PROBE for estimate if DK

**RANGE**
1 to 99

**NEXT**
➔ A18 [Escalators]

### A18 Escalators

**ASK**
IF A13 [Number of floors] >1 OR DK/RF

Are there any escalators in this building?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**
IF Yes ➔ A19 [Number of escalators]
IF No OR DK/RF ➔ A20 [Year of construction]
<table>
<thead>
<tr>
<th>A19</th>
<th>Number of escalators</th>
<th>NESLTR9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF A18 [Escalators] = Yes</td>
<td></td>
</tr>
</tbody>
</table>

How many escalators are there? Count each one, for example, a pair of up and down escalators should be counted as two.

- **PROBE** for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 99</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ A20 [Year of construction]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A20</th>
<th>Year of construction</th>
<th>YRCON9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>All Structures</td>
<td></td>
</tr>
</tbody>
</table>

[F1]-HELP

What year was this building constructed? If there have been major additions, give the year the largest portion of the building was completed.

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1600 to 2008</th>
</tr>
</thead>
</table>
| **NEXT** | IF DK/RF ➔ A21 [Year of construction category]  
IF 2007 ➔ A23 [Month ready for occupancy]  
IF 2008 ➔ A22 [End of interview]  
IF 1999 or earlier ➔ A24 [Renovations]  
IF 2000 or later ➔ B1 [One activity in building] |
<table>
<thead>
<tr>
<th>A21</th>
<th>Year of construction category</th>
<th>YRCONC9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF A20 [Year of construction] = DK/RF</td>
<td></td>
</tr>
</tbody>
</table>

[SHOW CARD A7]

Please look at this card and tell me which range best describes when this building was constructed.

1. Before 1920
2. 1920 to 1945
3. 1946 to 1959
4. 1960 to 1969
5. 1970 to 1979
6. 1980 to 1989
7. 1990 to 1999
8. 2000 to 2003
9. 2004 to 2007
10. IF VOLUNTEERED: 2008

**NEXT** IF 2008 ➔ A22 [End of interview]

IF Before 1999 ➔ A24 [Renovations]

IF 2000 to 2007:

IF Enclosed mall ➔ B30 [Assign CBECS Activity = Enclosed mall]

OTHERWISE ➔ B1 [One activity in building]

---

<table>
<thead>
<tr>
<th>A22</th>
<th>End of interview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF A20 [Year of construction] OR A21 [Year of construction category] = 2008</td>
</tr>
</tbody>
</table>

**FILL** {CollectWorksheet}

IF R has Worksheet 1 = “However, I would like to collect Worksheet 1 and any other worksheets that you may have completed.”

Thank you, that’s all the questions that I have at this time, since we are only interviewing structures that were ready for occupancy before January 1, 2008. {CollectWorksheet}

Thank you for your time and help.

◆ [F10]-Exit

**NEXT** TERMINATE
**A23 Month ready for occupancy**  
**ASK** IF A20 [Year of construction] = 2007

In what month of 2007 was this building first ready for occupancy?

1. January
2. February
3. March
4. April
5. May
6. June
7. July
8. August
9. September
10. October
11. November
12. December

**NEXT** IF Enclosed mall ➔ B30 [Assign CBECS Activity = Enclosed mall]  
OTHERWISE ➔ B1 [One activity in building]

**A24 Renovations**  
**ASK** IF A20 [Year of construction] = 1999 or earlier OR  
A21 [Year of construction category] = Any category before 2000

**FILL** {Since1980}  
IF A20 [Year of construction] = 1979 or earlier  
OR A21 [Year of construction category] = Any category before 1980 = “since 1980”  
OTHERWISE = BLANK

Has any portion of this building undergone major renovations {Since1980}?

1. Yes
2. No

**NEXT** IF Yes ➔ A25 [What renovations]  
IF No OR DK/RF:  
IF Enclosed mall ➔ B30 [Assign CBECS Activity = Enclosed mall]  
OTHERWISE ➔ B1 [One activity in building]
<table>
<thead>
<tr>
<th>A25</th>
<th>What renovations</th>
<th>see below</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF A24 [Renovations] = Yes</td>
<td></td>
</tr>
<tr>
<td>FILL</td>
<td>{Since1980}</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF A20 [Year of construction] = 1979 or earlier</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR A21 [Year of construction category] = Any category before 1980 = “since 1980”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHERWISE = BLANK</td>
<td></td>
</tr>
</tbody>
</table>

SHOW CARD A8

Please look at this card and tell me which types of renovations have been done {Since1980}.

- PROBE for any others
- ENTER all that apply

1. Addition or annex  
2. Reduction of enclosed floorspace  
3. Interior or exterior cosmetic improvements  
4. Exterior replacement  
5. Interior wall re-configuration  
6. HVAC equipment upgrade  
7. Lighting upgrade  
8. Window replacement  
9. Plumbing system upgrade  
10. Insulation upgrade  
11. Structural upgrade  
12. Other

NEXT | IF Other ➔ A26 [Other renovation] |
OTHERWISE: |
|      | IF Enclosed mall ➔ B30 [Assign CBECS Activity = Enclosed mall] |
|      | OTHERWISE ➔ B1 [One activity in building] |

<table>
<thead>
<tr>
<th>A26</th>
<th>Other renovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF A25 [What renovations] = Other</td>
</tr>
</tbody>
</table>

Please describe the other type of renovation.

- RECORD in open box

NEXT | IF Enclosed mall ➔ B30 [Assign CBECS Activity = Enclosed mall] |
OTHERWISE ➔ B1 [One activity in building] |
### SECTION B: BUILDING ACTIVITY

<table>
<thead>
<tr>
<th><strong>B1</strong></th>
<th><strong>One activity in building</strong></th>
<th><strong>ONEACT9</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF NOT Enclosed mall</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

#### SHOW CARD B1

Looking at this list of activities, does one single activity account for 75 percent or more of the floorspace in the building?

1. Yes
2. No

#### NEXT
- IF Yes ➔ B2 [Primary activity]
- IF No OR DK/RF ➔ B3 [Activities in building]
<table>
<thead>
<tr>
<th>B2</th>
<th>Primary activity</th>
<th>ACT9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B1 [One activity in building] = Yes</td>
<td></td>
</tr>
</tbody>
</table>

[F1]-HELP

SHOW CARD B1

Which one of the activities listed accounts for 75 percent or more of the floorspace in the building?

◆ PROBE if DK

11 Office/Professional
12 Data center/Computer "server farm"
13 Warehouse/Storage
14 Food sales or service
15 Retail
16 Education
17 Religious worship
18 Public assembly
19 Health care
20 Service
21 Lodging
22 Public order and safety
23 Residential
24 Industrial
25 Agricultural
26 Vacant
27 Other

NEXT

IF Office/Professional  ➔ B5 [Office type]
IF Data center/Computer "server farm"  ➔ B6 [Verify data center]
IF Warehouse/Storage  ➔ B9 [Warehouse type]
IF Food sales or service  ➔ B10 [Food sales or service type]
IF Retail  ➔ B11 [Retail type]
IF Education  ➔ B13 [Education type]
IF Religious worship  ➔ B30 [Assign CBECS Activity = Religious worship]
IF Public assembly  ➔ B14 [Assembly type]
IF Health care  ➔ B15 [Health care type]
IF Service  ➔ B16 [Service type]
IF Lodging  ➔ B18 [Lodging type]
IF Public order and safety  ➔ B19 [Public order type]
IF Residential  ➔ B20 [Residential type]
IF Industrial  ➔ B8 [Used as warehouse]
IF Agricultural  ➔ B22 [Space for retail sales]
IF Vacant  ➔ B23 [Vacant for noncommercial]
IF Other  ➔ B25 [Other type]
IF DK/RF  ➔ B41 [On a multibuilding complex]
### Activities in building

<table>
<thead>
<tr>
<th>B3</th>
<th>ACT19, ACT29, ACT39</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B1 [One activity in building] = No OR DK/RF</td>
</tr>
</tbody>
</table>

[**[F1]-HELP**]

**SHOW CARD B1**

Which activities occupy the most space in this building? Choose up to three.

- **PROBE** for any others (up to three)

11. Office/Professional  
12. Data center/Computer “server farm”  
13. Warehouse/Storage  
14. Food sales or service  
15. Retail  
16. Education  
17. Religious worship  
18. Public assembly  
19. Health care  
20. Service  
21. Lodging  
22. Public order and safety  
23. Residential  
24. Industrial  
25. Agricultural  
26. Vacant  
27. Other

**NEXT**  
IF Activities given ➔ B4 [Percents for activities]  
IF DK/RF ➔ B41 [On a multibuilding complex]
### B4 Percents for activities

**ASK**
For each activity given in B3 [Activities in building]

**FILL**

<table>
<thead>
<tr>
<th>ActivityLabel</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Office/Professional = &quot;office space&quot;</td>
</tr>
<tr>
<td>IF Data center/Computer &quot;server farm&quot; = &quot;used as a data center&quot;</td>
</tr>
<tr>
<td>IF Warehouse/Storage = &quot;warehouse space&quot;</td>
</tr>
<tr>
<td>IF Food sales or service = &quot;used for food sales or service&quot;</td>
</tr>
<tr>
<td>IF Retail = &quot;used for retail&quot;</td>
</tr>
<tr>
<td>IF Education = &quot;used for education&quot;</td>
</tr>
<tr>
<td>IF Religious worship = &quot;used for religious worship&quot;</td>
</tr>
<tr>
<td>IF Public assembly = &quot;used for public assembly&quot;</td>
</tr>
<tr>
<td>IF Health care = &quot;used for health care&quot;</td>
</tr>
<tr>
<td>IF Service = &quot;used for service&quot;</td>
</tr>
<tr>
<td>IF Lodging = &quot;used for lodging&quot;</td>
</tr>
<tr>
<td>IF Public order and safety = &quot;used for public order and safety&quot;</td>
</tr>
<tr>
<td>IF Residential = &quot;residential&quot;</td>
</tr>
<tr>
<td>IF Industrial = &quot;industrial or manufacturing&quot;</td>
</tr>
<tr>
<td>IF Agricultural = &quot;agricultural&quot;</td>
</tr>
<tr>
<td>IF Vacant = &quot;vacant&quot;</td>
</tr>
<tr>
<td>IF Other = &quot;used for another activity&quot;</td>
</tr>
</tbody>
</table>

About what percent of the total space is {ActivityLabel}?

<table>
<thead>
<tr>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 100</td>
</tr>
</tbody>
</table>

**NEXT**

IF There is an activity with a maximum percent, assign that as the primary activity

IF There are equal maximum percents (e.g. 50% an 50%), or if they are all DK/RF, assign the primary activity as the most energy-intensive one (based on 2003 CBECS data)

THEN, follow here based on the assigned primary activity:

IF Office/Professional ➔ B5 [Office type]

IF Data center/Computer "server farm" ➔ B6 [Verify data center]

IF Warehouse/Storage ➔ B9 [Warehouse type]

IF Food sales or service ➔ B10 [Food sales or service type]

IF Retail ➔ B11 [Retail type]

IF Education ➔ B13 [Education type]

IF Religious worship ➔ B30 [Assign CBECS Activity = Religious worship]

IF Public assembly ➔ B14 [Assembly type]

IF Health care ➔ B15 [Health care type]

IF Service ➔ B16 [Service type]

IF Lodging ➔ B18 [Lodging type]

IF Public order and safety ➔ B19 [Public order type]

IF Residential ➔ B20 [Residential type]

IF Industrial ➔ B8 [Used as warehouse]

IF Agricultural ➔ B22 [Space for retail sales]

IF Vacant ➔ B23 [Vacant for noncommercial]

IF Other ➔ B25 [Other type]
<table>
<thead>
<tr>
<th>B5</th>
<th>Office type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Office/Professional</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{ActivityExplanation}</td>
</tr>
</tbody>
</table>
|  | IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of office.”  
|  | OTHERWISE = BLANK |

SHOW CARD B3

{ActivityExplanation}

Looking at this list, what type of office is this?

1. Administrative or professional office building such as consulting, insurance, law, utility/telephone company, publishing, or college administration
2. Government office
3. Mixed-use office
4. Bank or other financial institution
5. Doctor's or dentist's office
6. Sales office such as for vehicles or real estate
7. Contractor's office such as for construction, plumbing, or HVAC
8. Non-profit or social services office
9. Research and development office
10. City hall or city center
11. Religious office
12. Call center
13. Courthouse or probation office
14. Library
15. Veterinarian's office
16. Vacant
17. Other type of office

**NEXT**

IF Administrative or professional office building; Government office; Mixed-use office; Bank or other financial institution; Doctor's or dentist's office; Sales office; Contractor's office; Non-profit or social services office; Research and development office; City hall or city center; Religious office; OR Call center ➔ B30 [Assign CBECS Activity = Office]

IF Courthouse or probation office ➔ B30 [Assign CBECS Activity = Public order and safety]

IF Library ➔ B30 [Assign CBECS Activity = Public assembly]

IF Veterinarian's office ➔ B30 [Assign CBECS Activity = Outpatient health]

IF Vacant:

IF More than one activity ➔ B30 [Assign CBECS Activity = Vacant]

IF Only one activity OR Establishment OR Anchor ➔ B24 [Completely vacant]

IF Other type of office ➔ B26 [Specify other activity]
<table>
<thead>
<tr>
<th>B6</th>
<th>Verify data center</th>
<th>DATCTR9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Data center/Computer “server farm”</td>
<td></td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{ActivityExplanation}</td>
<td></td>
</tr>
<tr>
<td>IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of data center.” OTHERWISE = BLANK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[F1]-HELP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>{ActivityExplanation}</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A data center or server farm is a group of networked computer servers that are housed in one location, usually a secure area, and perform no other tasks besides server tasks.

There are usually many computers without screens, stacked in rows of racks, which operate continuously, day and night. Data centers are generally kept very cool and have a backup source of electricity.

Does this accurately describe your building?

1  Yes
2  No

**NEXT** IF Yes ➔ B30 [Assign CBECS Activity = Data center]

IF No OR DK/RF ➔ B7 [Classify as office]

<table>
<thead>
<tr>
<th>B7</th>
<th>Classify as office</th>
<th>NODCTR9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B6 [Verify data center] = No OR DK/RF</td>
<td></td>
</tr>
</tbody>
</table>

Then, for the purposes of this study, I am going to classify your building as an office.

◆ ENTER "1" to continue

**NEXT** ➔ B30 [Assign CBECS Activity = Office]

<table>
<thead>
<tr>
<th>B8</th>
<th>Used as warehouse</th>
<th>WARECHK9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Industrial</td>
<td></td>
</tr>
</tbody>
</table>

Is this building used primarily as a warehouse or distribution center?

1  Yes
2  No

**NEXT** IF Yes ➔ B9 [Warehouse type]

IF No OR DK/RF ➔ B21 [Space for retail sales]
### B9 Warehouse type

**ASK**  

**FILL**  
{ActivityExplanation}  
IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of warehouse.”  
OTHERWISE = BLANK

[F1]-HELP

SHOW CARD B4

{ActivityExplanation}

Looking at this list, what type of warehouse is this?

1. Non-refrigerated warehouse
2. Refrigerated warehouse
3. Distribution or shipping center
4. Public rental storage units
5. Vehicle storage and/or maintenance (car barn)
6. Airplane hangar
7. Vacant
8. Other type of warehouse

**NEXT**  
IF Non-refrigerated warehouse; Distribution or shipping center; OR Public rental storage units  
⇒ B30 [Assign CBECS Activity = Nonrefrigerated warehouse]  
IF Refrigerated warehouse  ⇒ B30 [Assign CBECS Activity = Refrigerated warehouse]  
IF Vehicle storage and/or maintenance  ⇒ B30 [Assign CBECS Activity = Service]  
IF Airplane hangar  ⇒ B30 [Assign CBECS Activity = Other]  
IF Vacant:  
   IF More than one activity  ⇒ B30 [Assign CBECS Activity = Vacant]  
   IF Only one activity OR Establishment OR Anchor  ⇒ B24 [Completely vacant]  
IF Other type of warehouse  ⇒ B26 [Specify other activity]
<table>
<thead>
<tr>
<th>B10</th>
<th>Food sales or service type</th>
<th>FOODSP9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Food sales or service</td>
<td></td>
</tr>
<tr>
<td>FILL</td>
<td><code>{ActivityExplanation}</code></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of food sales or service.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHERWISE = BLANK</td>
<td></td>
</tr>
</tbody>
</table>

Show Card B5

{ActivityExplanation}

Looking at this list, what type of food sales or service is this?

1. Restaurant or cafeteria
2. Fast food
3. Bar, pub, or lounge
4. Grocery store or food market
5. Gas station with a convenience store
6. Convenience store
7. Beer, wine, or liquor store
8. Reception hall
9. Catering service
10. Coffee, doughnut, or bagel shop
11. Ice cream or frozen yogurt shop
12. Bakery
13. Vacant
14. Other type of food sales or service

Next

IF Restaurant or cafeteria; Fast food; Bar, pub, or lounge; Reception hall; Catering service; Coffee, doughnut, or bagel shop; OR Ice cream or frozen yogurt shop
   ➔ B30 [Assign CBECs Activity = Food service]
IF Grocery store or food market; Gas station with a convenience store; Convenience store; OR Bakery
   ➔ B30 [Assign CBECs Activity = Food sales]
IF Beer, wine, or liquor store ➔ B30 [Assign CBECs Activity = Retail]
IF Vacant:
   IF More than one activity ➔ B30 [Assign CBECs Activity = Vacant]
   IF Only one activity OR Establishment OR Anchor ➔ B24 [Completely vacant]
IF Other type of food sales or service ➔ B26 [Specify other activity]
<table>
<thead>
<tr>
<th>B11</th>
<th>Retail type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Retail</td>
</tr>
<tr>
<td>FILL</td>
<td>{ActivityExplanation} \n IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of retail.” \n OTHERWISE = BLANK</td>
</tr>
</tbody>
</table>

SHOW CARD B6

{ActivityExplanation}

Looking at this list, what type of retail is this?

1. Store such as a department store, furniture, clothing, hardware, drugstore, bookstore, building supplies, lumber, home improvement, farm equipment, lawn and garden, floral, crafts, gifts, antiques, pawn shop, or wholesale club
2. Bank or other financial institution
3. Convenience store
4. Beer, wine, or liquor store
5. Rental center such as for videos, DVDs, equipment, or vehicles
6. Dealership or showroom for vehicles or boats
7. Studio or gallery
8. Grocery store or food market
9. Photo processing shop
10. Copy center or printing service
11. Distribution or shipping center
12. Gas station with a convenience store
13. Gas station (without convenience store)
14. Post office or postal center
15. Recreation such as gymnasium, health club, bowling alley, ice rink, field house, or indoor racquet sports
16. Repair shop
17. Vacant
18. Other type of retail

NEXT IF Store ➔ B12 [Type of store] IF Alcoholic beverage store; Rental center; Dealership or showroom; OR Studio or gallery ➔ B30 [Assign CBECS Activity = Retail] IF Bank or other financial institution ➔ B30 [Assign CBECS Activity = Office] IF Convenience store; Grocery store or food market; OR Gas station with a convenience store ➔ B30 [Assign CBECS Activity = Food sales] IF Photo processing shop; Copy center or printing service; Gas station; Post office or postal center; OR Repair shop ➔ B30 [Assign CBECS Activity = Service] IF Distribution or shipping center ➔ B30 [Assign CBECS Activity = Nonrefrigerated warehouse] IF Recreation ➔ B30 [Assign CBECS Activity = Public assembly] IF Vacant: IF More than one activity ➔ B30 [Assign CBECS Activity = Vacant] IF Only one activity OR Establishment OR Anchor ➔ B24 [Completely vacant] IF Other type of retail ➔ B26 [Specify other activity]
Looking at this list, please tell me the type of retail store.

- 1. Apparel specialty
- 2. Hard lines specialty
- 3. Warehouse club
- 4. Discount or supercenter
- 5. Electronics store
- 6. Department store
- 7. Drug store
- 8. Home center or hardware store
- 9. Other type of store
### B13 Education type

<table>
<thead>
<tr>
<th>ASK</th>
<th>FILL</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Education</td>
<td>IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of education.” Otherwise = BLANK</td>
</tr>
</tbody>
</table>

**SHOW CARD B8**

(ActivityExplanation)

Looking at this list, what type of education is this?

- 1 Elementary or middle school
- 2 High school
- 3 College or university
- 4 Preschool or daycare
- 5 Adult education
- 6 Career or vocational training
- 7 Religious education
- 8 Library
- 9 Laboratory
- 10 Vacant
- 11 Other type of classroom education

**NEXT**

IF Elementary or middle school; High school; College or university; Preschool or daycare; Adult education; Career or vocational training; OR Religious education → B30 [Assign CBECS Activity = Education]

IF Library → B30 [Assign CBECS Activity = Public assembly]

IF Laboratory → B30 [Assign CBECS Activity = Laboratory]

IF Vacant:
- IF More than one activity → B30 [Assign CBECS Activity = Vacant]
- IF Only one activity OR Establishment OR Anchor → B24 [Completely vacant]
- IF Other type of classroom education → B26 [Specify other activity]
### Assembly type

#### ASMSP9

<table>
<thead>
<tr>
<th>B14</th>
<th>Assembly type</th>
</tr>
</thead>
</table>

**ASK**  
If B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Public assembly

**FILL**  
{ActivityExplanation}  

IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of public assembly.”  
OTHERWISE = BLANK

SHOW CARD B9

{ActivityExplanation}

Looking at this list, what type of public assembly is this?

1. Social or meeting such as a community center, lodge, meeting hall, convention center, or senior center
2. Recreation such as a gymnasium, health club, bowling alley, ice rink, field house, or indoor racquet sports
3. Entertainment or culture such as a museum, theater, cinema, sports arena, casino, or night club
4. Library
5. Religious worship
6. Funeral home
7. Student activities center
8. Armory
9. Exhibition hall
10. Broadcasting studio
11. Transportation terminal
12. Elementary or middle school
13. High school
14. Restaurant or cafeteria
15. Fast food
16. Bar, pub, or lounge
17. Vacant
18. Other type of public assembly

**NEXT**  
IF Social or meeting; Recreation; Entertainment or culture; Library; Funeral home; Student activities center; Armory; Exhibition hall; Broadcasting studio; OR Transportation terminal  
B30 [Assign CBECS Activity = Public assembly]

IF Religious worship  
B30 [Assign CBECS Activity = Religious worship]

IF Elementary or middle school; OR High school  
B30 [Assign CBECS Activity = Education]

IF Restaurant or cafeteria; Fast food; OR Bar  
B30 [Assign CBECS Activity = Food service]

IF Vacant:  
IF More than one activity  
B30 [Assign CBECS Activity = Vacant]

IF Only one activity OR Establishment OR Anchor  
B24 [Completely vacant]

IF Other type of public assembly  
B26 [Specify other activity]
**B15 Health care type**

**ASK**
IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Health care

**FILL**

<table>
<thead>
<tr>
<th>ActivityExplanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of health care.”</td>
</tr>
<tr>
<td>OTHERWISE = BLANK</td>
</tr>
<tr>
<td>SHOW CARD B10</td>
</tr>
</tbody>
</table>

Looking at this list, what type of health care is this?

1. Doctor’s or dentist’s office
2. Clinic or other outpatient health care building
3. Hospital (inpatient)
4. Outpatient rehabilitation center
5. Inpatient rehabilitation center
6. Nursing home, assisted living center, or other residential care building
7. Retirement home
8. Veterinarian’s office
9. Laboratory
10. Vacant
11. Other type of health care

**NEXT**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Clinic or other outpatient health care building; Outpatient rehabilitation center; OR Veterinarian’s office</td>
<td>B30 [Assign CBECS Activity = Outpatient health care]</td>
</tr>
<tr>
<td>IF Hospital (inpatient); OR Inpatient rehabilitation</td>
<td>B30 [Assign CBECS Activity = Inpatient health care]</td>
</tr>
<tr>
<td>IF Doctor’s or dentist’s office</td>
<td>B30 [Assign CBECS Activity = Office]</td>
</tr>
<tr>
<td>IF Nursing home, assisted living center, or other residential care building</td>
<td>B30 [Assign CBECS Activity = Nursing]</td>
</tr>
<tr>
<td>IF Retirement home</td>
<td>B30 [Assign CBECS Activity = Lodging]</td>
</tr>
<tr>
<td>IF Laboratory</td>
<td>B30 [Assign CBECS Activity = Laboratory]</td>
</tr>
<tr>
<td>IF Vacant: IF More than one activity</td>
<td>B30 [Assign CBECS Activity = Vacant]</td>
</tr>
<tr>
<td>IF Only one activity OR Establishment OR Anchor</td>
<td>B24 [Completely vacant]</td>
</tr>
<tr>
<td>IF Other type of health care</td>
<td>B26 [Specify other activity]</td>
</tr>
</tbody>
</table>
Service type

ASK

FILL
{ActivityExplanation}
IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of service.”
OTHERWISE = BLANK

SHOW CARD B11

{ActivityExplanation}

Looking at this list, what type of service is this?

1. Auto service or auto repair shop
2. Vehicle storage and/or maintenance (car barn)
3. Contractor's office such as construction, plumbing, or HVAC
4. Building and grounds maintenance shop
5. Repair shop
6. Dry cleaner or laundromat
7. Post office or postal center
8. Bank or other financial institution
9. Restaurant or cafeteria
10. Fast food
11. Bar, pub, or lounge
12. Car wash
13. Gas station with a convenience store
14. Gas station (without convenience store)
15. Telephone switching facilities
16. Photo processing shop
17. Beauty parlor or barber shop
18. Tanning salon
19. Funeral home
20. Airplane hangar
21. Copy center or printing shop
22. Distribution or shipping center
23. Kennel
24. Library
25. Non-profit or social services office
26. Preschool or daycare
27. Recreation such as a gymnasium, health club, bowling alley, ice rink, field house, or indoor racquet sports
28. Rental center such as for videos, DVDs, equipment, or vehicles
29. Public rental storage units
30. Student activities center
31. Indoor parking garage
32. Vacant
33. Other type of service
| NEXT | IF Dry cleaner or Laundromat  ➔ B17 [Dry cleaning onsite]  
  IF Auto service or auto repair shop; Building and grounds maintenance shop; Vehicle storage and/or maintenance; Repair shop; Post office or postal center; Car wash; Gas station (without convenience store); Photo processing shop; Beauty parlor or barber shop; Tanning salon; Copy center or printing shop; OR Kennel ➔ B30 [Assign CBECS Activity = Service]  
  IF Contractor's office; Bank or other financial institution; OR Non-profit or social services office ➔ B30 [Assign CBECS Activity = Office]  
  IF Restaurant or cafeteria; Fast food; OR Bar, pub, or lounge ➔ B30 [Assign CBECS Activity = Food service]  
  IF Gas station with convenience store ➔ B30 [Assign CBECS Activity = Food sales]  
  IF Telephone switching facilities OR Airplane hangar ➔ B30 [Assign CBECS Activity = Other]  
  IF Distribution or shipping center OR Public rental storage units ➔ B30 [Assign CBECS Activity = Nonrefrigerated warehouse]  
  IF Funeral home; Library; Recreation; OR Student activities center ➔ B30 [Assign CBECS Activity = Public assembly]  
  IF Preschool or daycare ➔ B30 [Assign CBECS Activity = Education]  
  IF Rental center ➔ B30 [Assign CBECS Activity = Retail]  
  IF Indoor parking garage:  
    IF B1 [One activity in building] = Yes ➔ B28 [End of interview]  
    IF B1 [One activity in building] ≠ Yes ➔ B30 [Assign CBECS Activity = Other]  
  IF Vacant:  
    IF More than one activity ➔ B30 [Assign CBECS Activity = Vacant]  
    IF Only one activity OR Establishment OR Anchor ➔ B24 [Completely vacant]  
  IF Other type of service ➔ B26 [Specify other activity] |
|---|---|

<table>
<thead>
<tr>
<th>B17</th>
<th>Dry cleaning onsite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B16 [Service type] = Dry cleaner or laundromat</td>
</tr>
</tbody>
</table>

Is the dry cleaning or laundry done in this building, or is it done off-site?

1. In this building
2. Off-site

| NEXT | ➔ B30 [Assign CBECS Activity = Service] |
ASK IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Lodging

FILL {ActivityExplanation}
IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of lodging.”
OTHERWISE = BLANK

SHOW CARD B12

{ActivityExplanation}
Looking at this list, what type of lodging is this?

1. Motel or inn
2. Hotel
3. Dormitory, fraternity, or sorority
4. Retirement home
5. Nursing home, assisted living center, or other residential care building
6. Convent or monastery
7. Shelter, orphanage, or children’s home
8. Halfway house
9. Jail, reformatory, or penitentiary
10. Vacant
11. Other type of lodging

NEXT IF Motel or inn; Hotel; Dormitory, fraternity, or sorority; Retirement home; Convent or monastery;
Shelter, orphanage, or children’s home; OR Halfway house
→ B30 [Assign CBECS Activity = Lodging]
IF Nursing home, assisted living center, or other residential care building
→ B30 [Assign CBECS Activity = Nursing]
IF Jail, reformatory, or penitentiary → B30 [Assign CBECS Activity = Public order and safety]
IF Vacant:
IF More than one activity → B30 [Assign CBECS Activity = Vacant]
IF Only one activity OR Establishment OR Anchor → B24 [Completely vacant]
IF Other type of lodging → B26 [Specify other activity]
<table>
<thead>
<tr>
<th>B19</th>
<th>Public order type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Public order and safety</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{ActivityExplanation}</td>
</tr>
<tr>
<td></td>
<td>IF (B1 [One activity in building] ≠ Yes) = &quot;For the purposes of this survey, I will include your building in the general category of public order and safety.&quot;</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE = BLANK</td>
</tr>
<tr>
<td>SHOWN CARD B13</td>
<td></td>
</tr>
<tr>
<td>{ActivityExplanation}</td>
<td></td>
</tr>
</tbody>
</table>

Looking at this list, what type of public order and safety is this?

1. Police station
2. Fire station
3. Combination police and fire station
4. Jail, reformatory, or penitentiary
5. Courthouse or probation office
6. Halfway house
7. Armory
8. City hall or city center
9. Vacant
10. Other type of public order and safety

**NEXT**

IF Police station; Fire station; Combination police and fire station; Jail, reformatory, or penitentiary; OR Courthouse or probation office ➔ B30 [Assign CBECS Activity = Public order and safety]

IF Halfway house ➔ B30 [Assign CBECS Activity = Lodging]

IF Armory ➔ B30 [Assign CBECS Activity = Public assembly]

IF City hall or city center ➔ B30 [Assign CBECS Activity = Office]

IF Vacant:

IF More than one activity ➔ B30 [Assign CBECS Activity = Vacant]

IF Only one activity OR Establishment OR Anchor ➔ B24 [Completely vacant]

IF Other type of public order and safety ➔ B26 [Specify other activity]
### B20 Residential type

**ASK**  

**FILL**  
{ActivityExplanation}  
IF (B1 [One activity in building] ≠ Yes) = "For the purposes of this survey, I will include your building in the general category of residential."  
OTHERWISE = BLANK

SHOW CARD B14

{ActivityExplanation}

Looking at this list, what type of residential is this?

1. Hotel
2. Motel or inn
3. Retirement home
4. Shelter, orphanage, or children's home
5. Convent or monastery
6. Dormitory, fraternity, or sorority
7. Nursing home, assisted living center, or other residential care building
8. Halfway house
9. Other type of residential

**NEXT**  
IF Hotel; Motel or inn; Retirement home; Shelter, orphanage, or children's home; Convent or monastery; Dormitory, fraternity, or sorority; OR Halfway house

→ B30 [Assign CBECS Activity = Lodging]

IF Nursing home, assisted living center, or other residential care building

→ B30 [Assign CBECS Activity = Nursing]

IF Other type of residential → B27 [End of interview]

---

### B21 Space for retail sales

**ASK**  
IF (B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Industrial)  
& B8 [Used as warehouse] = No OR DK/RF

[F1]-HELP

Is any of the space in this building used for retail sales of the products that are made here?

1. Yes
2. No

**NEXT**  
IF Yes → B30 [Assign CBECS Activity = Other]

IF No OR DK/RF → B27 [End of interview]
### B22 Space for retail sales

**ASK**

IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Agricultural

[F1]-HELP

Is any of the space in this building used for retail sales of the products that are grown here?

- 1 Yes
- 2 No

**NEXT**

IF Yes ➔ B30 [Assign CBECS Activity = Other]

IF No OR DK/RF ➔ B27 [End of interview]

### B23 Vacant for noncommercial

**ASK**


Was the vacant space used for or intended to be used for either agricultural, industrial, manufacturing, or residential purposes or as a parking garage?

- 1 Yes
- 2 No

**NEXT**

IF Yes ➔ B29 [End of interview]

IF No OR DK/RF:

IF B1 [One activity in building] ≠ Yes ➔ B30 [Assign CBECS Activity = Vacant]

OTHERWISE ➔ B24 [Completely vacant]

### B24 Completely vacant

**ASK**


Is this building completely vacant?

- 1 Yes
- 2 No

**NEXT** ➔ B30 [Assign CBECS Activity = Vacant]
**B25**  Other type

**ASK**  IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Other

**FILL**  {ActivityExplanation}

IF (B1 [One activity in building] ≠ Yes) = “For the purposes of this survey, I will include your building in the general category of other types of buildings.”

 OTHERWISE = BLANK

**SHOW CARD B15**

{ActivityExplanation}

Looking at this list, what type of other activity is this?

1. Airplane hangar
2. Broadcasting studio
3. Crematorium
4. Entertainment or culture such as a museum, theater, cinema, sports arena, casino or night club
5. Funeral home
6. Laboratory
7. Library
8. Recreation such as a gymnasium, health club, bowling alley, ice rink, field house, or indoor racquet sports
9. Telephone switching facilities
10. Transportation terminal
11. Vehicle storage and/or maintenance (car barn)
12. Veterinarian’s office
13. Vacant
14. Indoor parking garage
15. Agricultural building with some retail space
16. Manufacturing or industrial building with some retail space
17. Other type of building
18. 50 percent commercial (for coding use only)

**NEXT**

IF Airplane hangar; Crematorium; Telephone switching facilities; Agricultural building with some retail space; Manufacturing or industrial building with some retail space;

 OR 50 percent commercial  ➔ B30 [Assign CBECS Activity = Other]

 IF Broadcasting studio; Entertainment or culture; Funeral home; Library; Recreation;

 OR Transportation terminal  ➔ B30 [Assign CBECS Activity = Public assembly]

 IF Laboratory  ➔ B30 [Assign CBECS Activity = Laboratory]

 IF Vehicle storage and/or maintenance  ➔ B30 [Assign CBECS Activity = Service]

 IF Veterinarian’s office  ➔ B30 [Assign CBECS Activity = Outpatient health care]

 IF Vacant:

 IF More than one activity  ➔ B30 [Assign CBECS Activity = Vacant]

 IF Only one activity OR Establishment OR Anchor  ➔ B24 [Completely vacant]

 IF Indoor parking garage:

 IF B1 [One activity in building] = Yes  ➔ B28 [End of interview]

 IF B1 [One activity in building] ≠ Yes  ➔ B30 [Assign CBECS Activity = Other]

 IF Other type of building  ➔ B26 [Specify other activity]
**B26** Specify other activity

**ASK**
- F B5 [Office type] = Other type of office OR
- IF B9 [Warehouse type] = Other type of warehouse OR
- IF B10 [Food sales or service type] = Other type of food sales or service OR
- IF B11 [Retail type] = Other type of retail OR
- IF B13 [Education type] = Other type of classroom education OR
- IF B14 [Assembly type] = Other type of public assembly OR
- IF B15 [Health care type] = Other type of health care OR
- IF B16 [Service type] = Other type of service OR
- IF B18 [Lodging type] = Other type of lodging OR
- IF B19 [Public order type] = Other type of public order and safety OR
- IF B25 [Other type] = Other type of building

Please describe this other type of activity.
- RECORD in open box

**NEXT**
- IF Previous question was:
  - B5 [Office type] ➔ B30 [Assign CBECS Activity = Office]
  - B9 [Warehouse type] ➔ B30 [Assign CBECS Activity = Nonrefrigerated warehouse]
  - B10 [Food sales or service type] ➔ B30 [Assign CBECS Activity = Food service]
  - B11 [Retail type] ➔ B30 [Assign CBECS Activity = Retail]
  - B13 [Education type] ➔ B30 [Assign CBECS Activity = Education]
  - B14 [Assembly type] ➔ B30 [Assign CBECS Activity = Public assembly]
  - B15 [Health care type] ➔ B30 [Assign CBECS Activity = Outpatient health care]
  - B16 [Service type] ➔ B30 [Assign CBECS Activity = Service]
  - B18 [Lodging type] ➔ B30 [Assign CBECS Activity = Lodging]
  - B19 [Public order type] ➔ B30 [Assign CBECS Activity = Public order and safety]
  - B25 [Other type] ➔ B30 [Assign CBECS Activity = Other]
### B27 End of interview

**ASK** IF B20 [Residential type] = Other type of residential OR B21 [Space for retail sales] = No OR DK/RF OR B22 [Space for retail sales] = No OR DK/RF

**FILL** `{CollectWorksheet}` IF R has Worksheet 1 = “However, I would like to collect Worksheet 1 and any other worksheets that you may have completed.”

Thank you, that’s all the questions that I have at this time, since we are only interviewing commercial buildings. `{CollectWorksheet}`

Thank you for your time and help.

◆ [F10]-Exit

### B28 End of interview

**ASK** IF B16 [Service type] OR B25 [Other type] = Indoor parking garage

**FILL** `{CollectWorksheet}` IF R has Worksheet 1 = “However, I would like to collect Worksheet 1 and any other worksheets that you may have completed.”

Thank you, that’s all the questions that I have at this time, since this study does not cover parking garages. `{CollectWorksheet}`

Thank you for your time and help.

◆ [F10]-Exit

### B29 End of interview

**ASK** IF B23 [Vacant for noncommercial] = Yes

**FILL** `{CollectWorksheet}` IF R has Worksheet 1 = “However, I would like to collect Worksheet 1 and any other worksheets that you may have completed.”

Thank you, that’s all the questions that I have at this time, since we are only interviewing buildings intended for commercial use. `{CollectWorksheet}`

Thank you for your time and help.

◆ [F10]-Exit
IF Office IN B3 [Activities in building] OR CBECS Activity = Office → B31 [Open plan office space]
OTHERWISE:

1. Vacant → B41 [On a multibuilding complex]
2. Office → B31 [Open plan office space]
3. Data center → B41 [On a multibuilding complex]
4. Laboratory → B41 [On a multibuilding complex]
5. Nonrefrigerated warehouse → B41 [On a multibuilding complex]
6. Food sales → B41 [On a multibuilding complex]
7. Public order and safety → B41 [On a multibuilding complex]
8. Outpatient health care → B41 [On a multibuilding complex]
9. Refrigerated warehouse → B41 [On a multibuilding complex]
10. Religious worship → B34 [Religious worship seating capacity]
11. Public assembly → B35 [Assembly seating capacity]
12. Education → B36 [Number of classroom seats]
13. Food service → B37 [Food service seating capacity]
14. Inpatient health care → B38 [Licensed bed capacity]
15. Nursing → B39 [Licensed bed capacity]
16. Lodging → B40 [Number of guest rooms]
17. Retail → B41 [On a multibuilding complex]
18. Service → B41 [On a multibuilding complex]
19. Enclosed mall → B41 [On a multibuilding complex]
20. Other → B41 [On a multibuilding complex]
**B31** Open plan office space  
**ASK** IF Office IN B3 [Activities in building] OR CBECS Activity = Office

Is any of the office space in this building set up as open plan offices, such as cubicles?

1. Yes  
2. No  

**NEXT** IF Yes B32 [Percent open plan]  
IF No OR DK/RF B41 [On a multibuilding complex]

**B32** Percent open plan

**ASK** IF B31 [Open plan office space] = Yes

For the office areas in your building, approximately what percentage would you say is open plan (that is, cubicles)? Would you say 1 to 20 percent, 21 to 50, or more than 50 percent of the office space is open plan?

1. 1 to 20 percent  
2. 21 to 50 percent  
3. More than 50 percent  

**NEXT** B33 [Location of open plan]

**B33** Location of open plan

**ASK** IF B31 [Open plan office space] = Yes

Is most of the open plan office space located near the perimeter of the building, that is, within about 15 feet of the exterior walls, or in the core of the building?

1. Near perimeter of building  
2. In core of building  
3. IF VOLUNTEERED: Entire building is open plan  

**NEXT** B41 [On a multibuilding complex]
### B34 Religious worship seating capacity

**ASK**

IF B30 [CBECS Activity] = Religious worship

What is the total seating capacity of the religious worship areas in this building?

- PROBE for estimate if DK

**RANGE** 0 to 99,999

**NEXT** → B41 [On a multibuilding complex]

### B35 Assembly seating capacity

**ASK**

IF B30 [CBECS Activity] = Public assembly

What is the fixed seating capacity of the public assembly areas in this building?

- PROBE for estimate if DK

**RANGE** 0 to 99,999

**NEXT** → B41 [On a multibuilding complex]

### B36 Number of classroom seats

**ASK**

IF B30 [CBECS Activity] = Education

How many students can be seated in all of the classrooms in this building at one time?

- PROBE for estimate if DK

**RANGE** 0 to 99,999

**NEXT** → B41 [On a multibuilding complex]
<table>
<thead>
<tr>
<th>B37</th>
<th>Food service seating capacity</th>
<th>FDSEAT9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B30 [CBECS Activity] = Food service</td>
<td>[F1]-HELP</td>
</tr>
<tr>
<td></td>
<td>What is the total seating capacity of the food service areas in this building?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◆ PROBE for estimate if DK</td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>0 to 99,999</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ B41 [On a multibuilding complex]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B38</th>
<th>Licensed bed capacity</th>
<th>HCBED9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B30 [CBECS Activity] = Inpatient health care</td>
<td>[F1]-HELP</td>
</tr>
<tr>
<td></td>
<td>What is the inpatient licensed bed capacity in this building?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◆ PROBE for estimate if DK</td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>0 to 99,999</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ B41 [On a multibuilding complex]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B39</th>
<th>Licensed bed capacity</th>
<th>NRSBED9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B30 [CBECS Activity] = Nursing</td>
<td>[F1]-HELP</td>
</tr>
<tr>
<td></td>
<td>What is the skilled or residential care licensed bed capacity in this building?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◆ PROBE for estimate if DK</td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>0 to 99,999</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ B41 [On a multibuilding complex]</td>
<td></td>
</tr>
<tr>
<td>B40</td>
<td>Number of guest rooms</td>
<td>LODGRM9</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>ASK</strong></td>
<td>IF B30 [CBECS Activity] = Lodging</td>
<td></td>
</tr>
</tbody>
</table>

[F1]-HELP

How many guest rooms or occupant rooms are there in this building?

◆ PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>0 to 99,999</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>B41 [On a multibuilding complex]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B41</th>
<th>On a multibuilding complex</th>
<th>FACIL9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>All Buildings</td>
<td></td>
</tr>
</tbody>
</table>

[F1]-HELP

Is this building part of a multibuilding campus or complex?

◆ DEF: [A campus or complex is a group of two or more buildings on the same site that are owned or operated by a single organization or individual. It may also be referred to as a multibuilding facility.]

| 1 | Yes |
| 2 | No  |

| NEXT | IF Yes ➔ B42 [Federal complex] |
|      | IF No OR DK/RF ➔ C1 [Government owned] |

<table>
<thead>
<tr>
<th>B42</th>
<th>Federal complex</th>
<th>FEDFAC9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B41 [On a multibuilding complex] = Yes</td>
<td></td>
</tr>
</tbody>
</table>

[F1]-HELP

Is this campus or complex owned by the Federal government?

| 1 | Yes |
| 2 | No  |

<p>| NEXT  | ➔ B43 [Type of complex] |</p>
<table>
<thead>
<tr>
<th>B43</th>
<th>Type of complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B41 [On a multibuilding complex] = Yes</td>
</tr>
</tbody>
</table>

Looking at this list, what is the primary business or function of this group of buildings as a whole?

1. College, university, or junior college
2. Primary or secondary school [GRADES K-12]
3. Other type of school
4. Office complex
5. Retail complex
6. Storage complex
7. Religious campus or complex
8. Hospital or other health care complex
9. Lodging or resort complex
10. Post office complex
11. Other type of government complex
12. Industrial complex
13. Transportation complex such as a terminal, depot, or airport
14. Other type of campus or complex

NEXT  
IF Industrial complex ➔ B44 [Manufacturing industrial]  
IF Any other type ➔ B47 [Central physical plant]

<table>
<thead>
<tr>
<th>B44</th>
<th>Manufacturing industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B43 [Type of complex] = Industrial complex</td>
</tr>
</tbody>
</table>

Is it a manufacturing industrial complex?

◆ DEF: [Manufacturing industrial complexes involve the production or processing of goods, merchandise, raw materials, or food.]

1. Yes
2. No

NEXT  
IF Yes ➔ B45 [Same owner as manufacturing]  
IF No OR DK/RF ➔ B47 [Central physical plant]
### B45  Same owner as manufacturing  

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF B44 [Manufacturing industrial] = Yes</th>
</tr>
</thead>
</table>

Does this building have the same owner and operator as the manufacturing campus or complex?

1. Yes
2. No

**NEXT**  
IF Yes ➔ B46 [End of interview]  
IF No OR DK/RF ➔ B47 [Central physical plant]

### B46  End of interview  

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF B45 [Same owner as manufacturing] = Yes</th>
</tr>
</thead>
</table>

**FILL**  
{CollectWorksheet}  
IF R has Worksheet 1 = "However, I would like to collect Worksheet 1 and any other worksheets that you may have completed."

Thank you, that’s all the questions that I have at this time, since this study does not include buildings on manufacturing facilities. {CollectWorksheet}

Thank you for your time and help.

◆ [F10]-Exit

**NEXT**  
TERMINATE

### B47  Central physical plant  

| ASK | IF B41 [On a multibuilding complex] = Yes  
& NOT (B43 [Type of complex] = Industrial complex & B44 [Manufacturing industrial] = Yes  
& B45 [Same owner as manufacturing] = Yes) |
|-----|------------------------------------------------------------------|

**FILL**  
{CollectWorksheet}  
IF R has Worksheet 1 = "However, I would like to collect Worksheet 1 and any other worksheets that you may have completed."

Does this campus or complex have a central physical plant that produces district hot water, district steam, district chilled water, or electricity?

1. Yes
2. No

**NEXT**  
IF Yes ➔ B48 [Plant produces district steam]  
IF No OR DK/RF ➔ C1 [Government owned]
<table>
<thead>
<tr>
<th>B48</th>
<th>Plant produces district steam</th>
<th>FACDST9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B47 [Central physical plant] = Yes</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

Does the central physical plant produce...

District steam?

1. Yes
2. No

**NEXT** ➔ B49 [Plant produces district hot water]

<table>
<thead>
<tr>
<th>B49</th>
<th>Plant produces district hot water</th>
<th>FACDHW9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B47 [Central physical plant] = Yes</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

(Does the central physical plant produce...)

District hot water?

1. Yes
2. No

**NEXT** ➔ B50 [Plant produces district chilled water]

<table>
<thead>
<tr>
<th>B50</th>
<th>Plant produces district chilled water</th>
<th>FACDCW9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF B47 [Central physical plant] = Yes</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

(Does the central physical plant produce...)

District chilled water?

1. Yes
2. No

**NEXT** ➔ B51 [Plant produces electricity]
<table>
<thead>
<tr>
<th>B51</th>
<th>Plant produces electricity</th>
<th>FACELC9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B47 [Central physical plant] = Yes</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

(Does the central physical plant produce...) Electricity?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**  ➔ B52 [Central plant in building]

<table>
<thead>
<tr>
<th>B52</th>
<th>Central plant in building</th>
<th>BLDPLT9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF B47 [Central physical plant] = Yes</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

Is the central physical plant for this campus or complex located in the building?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**  ➔ C1 [Government owned]
### SECTION C. OCCUPANCY AND OPERATING HOURS

<table>
<thead>
<tr>
<th>C1</th>
<th>Government owned</th>
<th>GOVOWN9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>All Buildings</td>
<td></td>
</tr>
</tbody>
</table>

**FILL**

*BldgIntro*

IF B41 [On a multibuilding complex] = Yes = “For the rest of this survey, I will be asking you only about the building, not the entire campus or complex.”

OTHERWISE = BLANK

*SchoolExample*

IF B13 [Education type] = Elementary or middle school OR High school = “, such as a local school district”

OTHERWISE = BLANK

### [F1]-HELP

*BldgIntro*

Is this building owned by a government agency *SchoolExample*?

1. Yes
2. No

**NEXT**

IF Yes ➝ C2 [Type of government]

IF No OR DK/RF ➝ C3 [Owner]

<table>
<thead>
<tr>
<th>C2</th>
<th>Type of government</th>
<th>GOVTYP9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF C1 [Government owned] = Yes</td>
<td></td>
</tr>
</tbody>
</table>

**[F1]-HELP**

Is it owned by the Federal government, a State government, or a local government?

1. Federal
2. State
3. Local

**NEXT**

IF B24 [Completely vacant] = Yes ➝ C10 [Owner operates]

OTHERWISE ➝ C5 [Number of businesses]
### C3 Owner

**ASK**

IF C1 [Government owned] ≠ Yes

#### Show Card C1

Looking at this list, please tell me which of these best describes the owner of this building.

1. Property management company
2. Other corporation, partnership, LLC, or LLP
3. Individual owner(s)
4. Religious organization
5. Non-profit organization (other than religious or government)
6. Private academic institution
7. Other

#### NEXT

IF Other ➔ C4 [Other owner]

OTHERWISE:

IF B24 [Completely vacant] ≠ Yes ➔ C5 [Number of businesses]

IF B24 [Completely vacant] = Yes:

IF Owner known ➔ C10 [Owner operates]

IF DK/RF ➔ C17 [Months in use]

### C4 Other owner

**ASK**

IF C3 [Owner] = Other

Please describe this other owner.

◆ RECORD in open box

#### NEXT

IF B24 [Completely vacant] = Yes ➔ C10 [Owner operates]

OTHERWISE ➔ C5 [Number of businesses]

### C5 Number of businesses

**ASK**

IF B24 [Completely vacant] ≠ Yes

**RANGE**

0 to 9,999

[F1]-HELP

How many different businesses or organizations use space full-time in this building?

#### NEXT

IF Zero ➔ C6 [Any occupants]


IF DK/RF ➔ C8 [Number of businesses category]
### C6 Any occupants

**ASK**
IF C5 [Number of businesses] = Zero & B24 [Completely vacant] ≠ Yes

I do not have this building recorded as being completely vacant. Unless a building is completely vacant and unused, it should be considered to have at least one occupant. At this time, is any space used by a company, business, school, organization, non-profit company, religious organization, government agency or establishment?

1. Yes
2. No

**NEXT**
IF Yes ➔ C7 [Re-ask number of businesses]
IF No & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) ➔ C10 [Owner operates]
IF DK/RF ➔ C8 [Number of businesses category]

### C7 Re-ask number of businesses

**ASK**
IF C5 [Number of businesses] = Zero & C6 [Any occupants] = Yes

How many businesses or organizations are there?

**RANGE**
1 to 9,999

**NEXT**
IF DK/RF ➔ C8 [Number of businesses category]
IF Number given & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) ➔ C9 [Owner occupies]
IF Number given & (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) ➔ C17 [Months in use]
### C8 Number of businesses category

**ASK**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF C5 [Number of businesses] = DK/RF OR C6 [Any occupants] = DK/RF OR C7 [Re-ask number of businesses] = DK/RF</td>
<td></td>
</tr>
</tbody>
</table>

**FILL**

{IsAreBusinesses} owned, operated, or managed by the owner, or by an employee or representative of the owner?

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**

⇒ C10 [Owner operates]

### C9 Owner occupies

**ASK**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF NOT (C1 [Government owned] = DK/RF &amp; C3 [Owner] = DK/RF) &amp; C5 [Number of businesses] ≠ 0 &amp; C8 [Number of businesses category] ≠ Zero OR DK/RF</td>
<td></td>
</tr>
</tbody>
</table>

**FILL**

{IsAreBusinesses} owned, operated, or managed by the owner, or by an employee or representative of the owner?

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**

⇒ C10 [Owner operates]
<table>
<thead>
<tr>
<th>C10</th>
<th>Owner operates</th>
<th>OWNOPR9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF NOT (C1 [Government owned] = DK/RF &amp; C3 [Owner] = DK/RF)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the building owner responsible for the operation and maintenance of the energy systems?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1  Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2  No</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>IF Yes ➔ C11 [Owner has purchasing power]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF No ➔ C13 [Nonowner operator]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF DK/RF ➔ C17 [Months in use]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C11</th>
<th>Owner has purchasing power</th>
<th>OWNPPR9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF C10 [Owner operates] = Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the building owner also have direct input on decisions regarding purchases of energy-related equipment?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1  Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2  No</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>IF Yes OR DK/RF ➔ C17 [Months in use]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF No ➔ C12 [Nonowner has purchasing power]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C12</th>
<th>Nonowner has purchasing power</th>
<th>NWNPPR9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF C11 [Owner has purchasing power] = No</td>
<td></td>
</tr>
</tbody>
</table>

SHOW CARD C3

Looking at this list, please tell me who does have direct input (on decisions regarding purchases of energy-related equipment).

1  Property management company/leasing agent
2  Facilities personnel employed directly by the owner
3  Facilities/energy management consultant
4  Volunteer member of the organization
5  Manager with general supervisory duties
6  Other

NEXT | IF Other ➔ C16 [Other with purchasing power] | |
|     | OTHERWISE ➔ C17 [Months in use] | |
### C13 Nonowner operator

**ASK** IF C10 [Owner operates] = No

SHOW CARD C3

Looking at this next list, please tell me who is responsible for the operation and maintenance of the energy systems.

1. Property management company/leasing agent
2. Facilities personnel employed directly by the owner
3. Facilities/energy management consultant
4. Volunteer member of the organization
5. Manager with general supervisory duties
6. Other

NEXT IF Other ➔ C14 [Other operator]  
OTHERWISE ➔ C15 [Who has purchasing power]

### C14 Other operator

**ASK** IF C13 [Nonowner operator] = Other

Please describe who is responsible for the operation and maintenance of the energy systems.

- RECORD in open box

NEXT ➔ C15 [Who has purchasing power]

### C15 Who has purchasing power

**ASK** IF C10 [Owner operates] = No

Who has the most direct input on decisions regarding purchases of energy-related equipment - the building owner or the party responsible for the energy systems?

1. Building owner
2. Party responsible for building operations
3. IF VOLUNTEERED: Both (either they have equal input, or are the same person)
4. IF VOLUNTEERED: Other

NEXT IF Other ➔ C16 [Other with purchasing power]  
OTHERWISE ➔ C17 [Months in use]
C16 Other with purchasing power

ASK IF C15 [Who has purchasing power] = Other

Please describe who has the most direct input on decisions regarding purchases of energy-related equipment.

◆ RECORD in open box

NEXT ➔ C17 [Months in use]

C17 Months in use

ASK All Buildings

Thinking of calendar year 2007, for how many months was this building in use?

RANGE 0 to 12

NEXT IF Zero ➔ D1 [Heating]
IF 1-3 months:
  IF B24 [Completely vacant] = Yes ➔ C18 [Previous use]
  IF C6 [Any occupants] = No OR C8 [Number of businesses category] = Zero ➔ D1 [Heating]
  OTHERWISE ➔ C20 [Open 24 hours a day]
IF 4-12 months:
  IF B24 [Completely vacant] = Yes ➔ C18 [Previous use]
  OTHERWISE ➔ C19 [Space vacant 3 months in row]
IF DK/RF ➔ C19 [Space vacant 3 months in row]

C18 Previous use

ASK IF B24 [Completely vacant] = Yes AND C17 [Months in use] > 0

Since this building was not completely vacant for all of 2007, I'd just like to remind you to think about the equipment and the energy that was used during the time that the building was in use when answering this questionnaire.

Also, would you please briefly tell me what the building was used for during the months that it was used in 2007.

◆ RECORD in open box

NEXT IF C17 [Months in use] = 1-3 months ➔ D1 [Heating]
IF C17 [Months in use] = 4-12 months OR DK/RF ➔ C19 [Space vacant 3 months in row]
### C19  Space vacant 3 months in row

**ASK**

| IF C17 [Months in use] = 4-12 OR DK/RF

---

**[F1]-HELP**

Was any space in the building vacant or unoccupied for at least 3 consecutive months during calendar year 2007?

1. Yes
2. No

**NEXT**

| IF B24 [Completely vacant] = Yes OR C6 [Any occupants] = No OR C8 [Number of businesses category] = Zero ➔ D1 [Heating] OTHERWISE ➔ C20 [Open 24 hours a day] |

---

### C20  Open 24 hours a day

**ASK**


---

**[F1]-HELP**

Now I have some questions about the hours that this building is normally open.

"Normally open" means the hours when the usual activities occur. Do not consider the building to be open if only maintenance, housekeeping, or security personnel are present.

Is this building normally open 24 hours a day, seven days a week?

1. Yes
2. No

**NEXT**

| IF Yes ➔ C26 [Number of employees] IF No OR DK/RF ➔ C21 [Open during week] |

---

### C21  Open during week

**ASK**

| IF C20 [Open 24 hours a day] = No OR DK/RF

---

**[F1]-HELP**

Thinking of Monday through Friday, is this building open all five days, open some of these days, or is it not open at all Monday through Friday?

1. All five days
2. Some of these days
3. Not open at all Monday through Friday

**NEXT** ➔ C22 [Open on weekend]
### C22 Open on weekend

**ASK**

IF C20 [Open 24 hours a day] = No OR DK/RF

Is this building normally open at all on the weekend?

- **EXP:** [If only open one day of the weekend, consider to be open.]
  - 1 Yes
  - 2 No

**NEXT**

IF C21 [Open during week] = Not open at all Monday through Friday & C22 [Open on weekend] = No ➔ C23 [No operating hours]

**OTHERWISE ➔ C24 [Total hours open per week]**

### C23 No operating hours

**ASK**

IF C21 [Open during week] = Not open at all Monday through Friday & C22 [Open on weekend] = No

I would just like to confirm that this building does not have any normal operating hours?

- 1 True, no operating hours
- 2 False, there are operating hours

**NEXT**

IF True, no operating hours ➔ C26 [Number of employees]

IF False, there are operating hours OR DK/RF ➔ C24 [Total hours open per week]

### C24 Total hours open per week

**ASK**

IF (C21 [Open during week] = All five days OR Some of these days) OR C22 [Open on weekend] = Yes OR C23 [No operating hours] = False, there are operating hours

How many total hours per week is the building normally open?

- **DEF:** "Normally open" means the hours when the usual activities occur.
- **EXP:** [If the hours vary for different parts of the building, ask for the hours for most of the building, based on square footage.]

**RANGE**

0 to 168

**NEXT**

Number given ➔ C26 [Number of employees]

DK/RF ➔ C25 [Weekly hours category]
### C25 Weekly hours category

**ASK**

> IF C24 [Total hours open per week] = DK/RF

**SHOW CARD C4**

Which category on this list best describes the total hours per week that the building is normally open?

- **DEF:** "Normally open" means the hours when the usual activities occur.
- **EXP:** [If the hours vary for different parts of the building, ask for the hours for most of the building, based on square footage.]

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 to 39</td>
</tr>
<tr>
<td>2</td>
<td>40 to 48</td>
</tr>
<tr>
<td>3</td>
<td>49 to 60</td>
</tr>
<tr>
<td>4</td>
<td>61 to 84</td>
</tr>
<tr>
<td>5</td>
<td>85 to 167</td>
</tr>
<tr>
<td>6</td>
<td>168</td>
</tr>
</tbody>
</table>

**NEXT** ➔ C26 [Number of employees]

### C26 Number of employees

**ASK**


**How many employees work in the building during the main shift, that is, when most employees are present?**

- **EXP:** [Include any volunteer workers. Do not include employees who always work outside the building (such as drivers with delivery routes), customers, patients, students, or institutionalized residents.]

**RANGE**

0 to 99,999

**NEXT**

Number given ➔ D1 [Heating]

DK/RF ➔ C27 [Number of employees category]
<table>
<thead>
<tr>
<th>Number of employees category</th>
<th>NWKERC9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong> IF C26 [Number of employees] = DK/RF</td>
<td>[F1]-HELP</td>
</tr>
</tbody>
</table>

![SHOW CARD C5](image)

Which category on this list best describes how many employees work in the building during the main shift?

1. None
2. 1 to 4
3. 5 to 9
4. 10 to 19
5. 20 to 49
6. 50 to 99
7. 100 to 249
8. 250 to 499
9. 500 to 999
10. 1,000 to 2,499
11. 2,500 to 4,999
12. 5,000 or More

**NEXT** ➔ D1 [Heating]
SECTION D. ENERGY USE AND EQUIPMENT

D1  Heating

ASK  All Buildings

FILL  {Worksheet1Intro}
IF R has Worksheet 1 = “Please continue to refer to Worksheet 1 for some of these next questions on energy sources, uses, and equipment.”
OTHERWISE = BLANK

{Worksheet1Intro}
For the next five questions, please tell me if energy was used in this building for any of these purposes during calendar year 2007.

Was any energy used for heating the building?

1  Yes
2  No

NEXT  ➔ D2 [Cooling]

D2  Cooling

ASK  All Buildings

{Worksheet1Intro}
For air conditioning?

1  Yes
2  No

NEXT  ➔ D3 [Water heating]

D3  Water heating

ASK  All Buildings

{Worksheet1Intro}
For heating water for purposes such as washing hands, dishes, or clothes?

1  Yes
2  No

NEXT  ➔ D4 [Cooking]
### D4 Cooking

**ASK**
All Buildings

**[F1]-HELP**

(Was any energy used...) For cooking?

1. Yes
2. No

**NEXT**
OTHERWISE ➔ D4a [Missing end uses]

---

### D4a Missing end uses

**SHOW**


◆ INTERVIEWER: You have entered DK or RF for the four major end use questions. This information is important for understanding how energy is used in this building. You may need to find a new respondent at this point. Explain to the current respondent that the remainder of the questionnaire contains technical information about energy use and equipment and ask whether the respondent would want us to consult someone else in the building for these questions.

◆ ENTER "1" when you are ready to continue

**NEXT** ➔ D5 [Manufacturing]

---

### D5 Manufacturing

**ASK**
All Buildings

**[F1]-HELP**

(Was any energy used...) For manufacturing?

1. Yes
2. No

**NEXT**
IF No & D1 [Heating] = No & D2 [Cooling] = No & D3 [Water heating] = No & D4 [Cooking] = No
OTHERWISE ➔ D7 [Electricity generation capability]
**D6 Any energy used**

**ASK**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF D1 [Heating] = No &amp; D2 [Cooling] = No &amp; D3 [Water heating] = No &amp; D4 [Cooking] = No &amp; D4 [Manufacturing] = No</td>
<td>I did not record any uses of energy for this building. Did this building use any energy in 2007 for other purposes, such as lighting or appliances?</td>
</tr>
</tbody>
</table>

1. Yes, some energy was used in 2007
2. No, no energy was used

**NEXT**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Yes, some energy was used OR DK/RF</td>
<td>D7 [Electricity generation capability]</td>
</tr>
<tr>
<td>IF No, no energy was used</td>
<td>E63 [Window glass type]</td>
</tr>
</tbody>
</table>

**D7 Electricity generation capability**

**ASK**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF D1 [Heating] = Yes OR D2 [Cooling] = Yes OR D3 [Water heating] = Yes OR D4 [Cooking] = Yes OR D5 [Manufacturing] = Yes OR D6 [Any energy used] = Yes, some energy was used OR DK/RF</td>
<td>Does this building have the ability to generate electricity, including for emergency backup?</td>
</tr>
</tbody>
</table>

1. Yes
2. No

**NEXT**

D8 [Energy sources used]
D8 Energy sources used  

ASK  IF D1 [Heating] = Yes OR D2 [Cooling] = Yes OR D3 [Water heating] = Yes OR D4 [Cooking] = Yes OR D4 [Manufacturing] = Yes OR D6 [Any energy used] = Yes, some energy was used OR DK/RF

SHOW CARD D1

Looking at this list of energy sources, please tell me which ones were used in this building for any purpose in 2007.

◆ EXP: [Include fuel oil, diesel, or kerosene if it was purchased or delivered in 2007, even if it was not used during that time.]

◆ EXP: [Do not include any fuels used in vehicles outside the building.]

◆ PROBE for any others

◆ ENTER all that apply

11 Electricity  
12 Natural gas  
13 Fuel oil, diesel, or kerosene  
14 Bottled gas, also known as LPG or propane  
15 District steam piped in from a separate building or utility  
16 District hot water piped in from a separate building or utility  
17 District chilled water piped in from a separate building or utility  
18 Wood, coal, or solar  
24 Other source or sources

NEXT  IF Fuel, oil, diesel, or kerosene selected  ➔ D9 [Fuel oil, diesel, or kerosene]  
IF Wood, coal, or solar selected  ➔ D10 [Wood, coal, or solar]  
IF Other source or sources selected  ➔ D11 [Other energy source 1]  
IF District steam or District hot water selected & B47 [Central physical plant] = Yes & B52 [Central plant in building] = No  ➔ D14 [From central plant]  
IF DK/RF:
IF D7 [Electricity generation capability] = Yes  ➔ D70 [Energy for generation]  
IF D7 [Electricity generation capability] ≠ Yes  ➔ E1 [Section E Routing]  
OTHERWISE:
IF D1 [Heating] = Yes  ➔ D16 [Source for main heating]  
IF D2 [Cooling] = Yes  ➔ D42 [Sources for cooling]  
IF D3 [Water heating] = Yes  ➔ D62 [Sources for water heating]  
IF D4 [Cooking] = Yes  ➔ D66 [Sources for cooking]  
IF D4 [Manufacturing] = Yes  ➔ D68 [Sources for manufacturing]  
IF D7 [Electricity generation capability] = Yes  ➔ D70 [Energy for generation]  
OTHERWISE ➔ D76 [Any other sources]
### D9 Fuel oil, diesel, or kerosene

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF Fuel oil, diesel, or kerosene IN D8 [Energy sources used]</th>
</tr>
</thead>
</table>

- VERIFY if volunteered in previous question

You mentioned fuel oil, diesel, or kerosene. Which of these were used (in this building in 2007)?

- ENTER all that apply

1. Fuel oil
2. Diesel
3. Kerosene

### NEXT

IF Wood, coal, or solar IN D8 [Energy sources used] ➔ D10 [Wood, coal, or solar]

IF Other source or sources IN D8 [Energy sources used] ➔ D11 [Other energy source 1]

IF District steam or District hot water IN D8 [Energy sources used] & B47 [Central physical plant] = Yes & B52 [Central plant in building] = No ➔ D14 [From central plant]

OTHERWISE:

1. IF D1 [Heating] = Yes ➔ D16 [Source for main heating]
2. IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]
3. IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]
4. IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]
5. IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
6. IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]

### D10 Wood, coal, or solar

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF Wood, coal, or solar IN D8 [Energy sources used]</th>
</tr>
</thead>
</table>

- VERIFY if volunteered in previous question

You mentioned wood, coal, or solar. Which of these were used (in this building in 2007)?

- ENTER all that apply

1. Wood
2. Coal
3. Solar

### NEXT

IF Other source or sources IN D8 [Energy sources used] ➔ D11 [Other energy source 1]

IF District steam or District hot water IN D8 [Energy sources used] & B47 [Central physical plant] = Yes & B52 [Central plant in building] = No ➔ D14 [From central plant]

OTHERWISE:

1. IF D1 [Heating] = Yes ➔ D16 [Source for main heating]
2. IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]
3. IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]
4. IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]
5. IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
6. IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]
### Other energy source 1

**ASK**

IF Other source or sources IN D8 [Energy sources used]

What was the first other energy source used (in this building in 2007)?

- ENTER the first energy source used

**NEXT**

→ D12 [Other energy source 2]

---

### Other energy source 2

**ASK**

IF Other source or sources IN D8 [Energy sources used]

Were there any other energy sources used (in this building in 2007)?

- ENTER the next energy source
- [ENTER] if no others

**NEXT**

IF Source entered here → D13 [Other energy source 3]

IF No source entered here:

- IF District steam or District hot water IN D8 [Energy sources used] & B47 [Central physical plant] = Yes & B52 [Central plant in building] = No → D14 [From central plant]

OTHERWISE:

- IF D1 [Heating] = Yes → D16 [Source for main heating]
- IF D2 [Cooling] = Yes → D42 [Sources for cooling]
- IF D3 [Water heating] = Yes → D62 [Sources for water heating]
- IF D4 [Cooking] = Yes → D66 [Sources for cooking]
- IF D4 [Manufacturing] = Yes → D68 [Sources for manufacturing]
- IF D7 [Electricity generation capability] = Yes → D70 [Energy for generation]

OTHERWISE → D76 [Any other sources]
### D13  Other energy source 3

**ASK**

IF Source was entered in D12 [Other energy source 2]

Were there any other energy sources used (in this building in 2007)?

- ENTER the next energy source
- [ENTER] if no others

**NEXT**
IF District steam or District hot water IN D8 [Energy sources used] & B47 [Central physical plant] = Yes & B52 [Central plant in building] = No ➔ D14 [From central plant]

OTHERWISE:
- IF D1 [Heating] = Yes ➔ D16 [Source for main heating]
- IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]
- IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]
- IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]
- IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
- IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]

### D14  From central plant

**ASK**

IF District steam or District hot water IN D8 [Energy sources used] & B47 [Central physical plant] = Yes & B52 [Central plant in building] = No

Is the district steam or hot water piped in from a central plant that is part of the same campus or complex as your building?

1  Yes
2  No

**NEXT**
IF No OR DK/RF ➔ D15 [Purchase from offsite]
IF Yes:
- IF D1 [Heating] = Yes ➔ D16 [Source for main heating]
- IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]
- IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]
- IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]
- IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
- IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]
**D15 Purchase from offsite**

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF D14 [From central plant] = No OR DK/RF</th>
</tr>
</thead>
</table>

Is it (the district steam or hot water) purchased from somewhere off-site, such as a commercial or municipal plant?

1. Yes
2. No

**NEXT**

IF D1 [Heating] = Yes ➔ D16 [Source for main heating]

IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]

IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]

IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]

IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]

IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]

---

**D16 Source for main heating**

| ASK | IF D1 [Heating] = Yes |

**FILL**

{Ht1SourcesList} = List of all energy sources used

{Electricity} – {Other3} = If a source is used, it appears in this list; if not, the line is blank

{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

{Other1} – {Other3} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

What was the main energy source for heating? (Was it {Ht1SourcesList}?)

- **DEF:** [The main energy source for heating is the energy source used to heat most of the square footage in this building most of the time.]

- **EXP:** [Do not include electricity if it is used only to run fan motors.]

- Only sources already selected are shown here

11 {Electricity} ELHT19
12 {Natural gas} NGHT19
13 {FuelOilType} FKHT19
14 {Bottled gas} PRHT19
15 {District steam} STHT19
16 {District hot water} HWHT19
18 {Wood} WOHT19
19 {Coal} COHT19
20 {Solar} SOHT19
21 {Other1} OTHT19
22 {Other2} OTHT19
23 {Other3} OTHT19
24 Some other energy source

**NEXT**

IF Some other energy source ➔ D17 [Other source for main heating]

IF Anything but Some other energy source OR DK/RF:

IF More than one energy source used ➔ D18 [Other sources for heating]

IF Only one energy source used ➔ D19 [Other sources for heating]
**D17 Other source for main heating**

ASK IF D16 [Source for main heating] = Some other energy source

What was the other energy source used for main space heating?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Electricity</td>
</tr>
<tr>
<td>12</td>
<td>Natural gas</td>
</tr>
<tr>
<td>13</td>
<td>Fuel oil/Diesel/Kerosene</td>
</tr>
<tr>
<td>14</td>
<td>Bottled gas</td>
</tr>
<tr>
<td>15</td>
<td>District steam</td>
</tr>
<tr>
<td>16</td>
<td>District hot water</td>
</tr>
<tr>
<td>18</td>
<td>Wood</td>
</tr>
<tr>
<td>19</td>
<td>Coal</td>
</tr>
<tr>
<td>20</td>
<td>Solar</td>
</tr>
<tr>
<td>24</td>
<td>Some other energy source</td>
</tr>
</tbody>
</table>

**NEXT** ➔ D18 [Other sources for heating]

**D18 Other sources for heating**

ASK IF D1 [Heating] = Yes & More than one energy source used

FILL \{Ht2SourcesList\} = List of all energy sources used, minus the one used for main heating
\{Electricity\} – \{Other3\} = If a source is used (other than for main space heating), it appears in this list; if not, the line is blank
\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]
\{Other1\} – \{Other3\} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

Which other energy sources, if any, were used for heating? (\{Ht2SourcesList\})

- EXP: [Do not include electricity if it is used only to run fan motors.]
- Only sources already selected are shown here
- PROBE for any others
- ENTER all that apply

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>{Electricity}</td>
</tr>
<tr>
<td>12</td>
<td>{Natural gas}</td>
</tr>
<tr>
<td>13</td>
<td>{FuelOilType}</td>
</tr>
<tr>
<td>14</td>
<td>{Bottled gas}</td>
</tr>
<tr>
<td>15</td>
<td>{District steam}</td>
</tr>
<tr>
<td>16</td>
<td>{District hot water}</td>
</tr>
<tr>
<td>18</td>
<td>{Wood}</td>
</tr>
<tr>
<td>19</td>
<td>{Coal}</td>
</tr>
<tr>
<td>20</td>
<td>{Solar}</td>
</tr>
<tr>
<td>21</td>
<td>{Other1}</td>
</tr>
<tr>
<td>22</td>
<td>{Other2}</td>
</tr>
<tr>
<td>23</td>
<td>{Other3}</td>
</tr>
<tr>
<td>24</td>
<td>Some other energy source</td>
</tr>
<tr>
<td>99</td>
<td>No other sources for heating</td>
</tr>
</tbody>
</table>

NEXT IF Some other energy source ➔ D20 [Other source for heating]

IF Anything but Some other energy source OR DK/RF ➔ D21 [Percent heated]
### D19 Other sources for heating

**ASK**

IF D1 [Heating] = Yes & Only one energy source used

Were there any other energy sources used for heating?

1  Yes
2  No

**NEXT**

IF Yes ➔ D20 [Other source for heating]
IF No OR DK/RF ➔ D21 [Percent heated]

### D20 Other source for heating

**ASK**

IF D18 [Other sources for heating] = Some other energy source
OR D19 [Other sources for heating] = Yes

What was the other energy source used for secondary space heating?

11  Electricity  
12  Natural gas  
13  Fuel oil/Diesel/Kerosene  
14  Bottled gas  
15  District steam  
16  District hot water  
18  Wood  
19  Coal  
20  Solar  
24  Some other energy source

**NEXT** ➔ D21 [Percent heated]

### NOTE ON ENERGY SOURCES:

Throughout the rest of this questionnaire, there will be references such as “Electricity used” or “Natural gas used.” In addition to the energy sources that were given in D8 [Energy sources used], if sources are added along the way, such as in D17 [Other source for main heating] OR D20 [Other source for heating], those sources are then also considered to be used.
### D21 Percent heated

**ASK**  
IF D1 [Heating] = Yes

**FILL**  
{SqFt}  
IF A1 [Square footage] = DK/RF = “floorspace”

What percent of the {SqFt} in this building was heated to at least 50 degrees Fahrenheit during 2007, including basements and enclosed garages if they were heated to at least 50 degrees?

- If heated square footage is known, but not the percent, RECORD square footage in comments, then code DK
- PROBE for estimate if DK

**RANGE** 0 to 100  
**NEXT**  
IF Zero ➔ D22 [Heated to less than 50 degrees]  
IF Anything else ➔ D23 [Heating equipment types]

### D22 Heated to less than 50 degrees

**ASK**  
IF D21 [Percent heated] = Zero

Was any of this building heated to less than 50 degrees Fahrenheit?

- EXP: [Areas may be heated to less than 50 degrees to prevent pipes from freezing.]
  
1. Yes  
2. No

**NEXT**  
IF Yes OR DK/RF ➔ D23 [Heating equipment types]  
IF No:  
   IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]  
   IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]  
   IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]  
   IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]  
   IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]  
OTHERWISE ➔ D76 [Any other sources]
### D23 Heating equipment types

**ASK** IF D21 [Percent heated] > 0 OR D22 [Heated to less than 50 degrees] = Yes OR DK/RF

<table>
<thead>
<tr>
<th>SHOW CARD D2</th>
</tr>
</thead>
</table>

Looking at this list of heating equipment types, please tell me which types are used in this building.

- **PROBE** for any others
- **ENTER** all that apply

1. Furnaces that heat air directly, without using steam or hot water  
   - **FURNAC9**
2. Packaged central unit (roof mounted)  
   - **PKGHT9**
3. Boilers inside (or adjacent to) the building that produce steam or hot water  
   - **BOILER9**
4. District steam or hot water piped in from outside the building  
   - **STHW9**
5. Heat pumps  
   - **HTPMPH9**
6. Individual space heaters, other than heat pumps  
   - **SLFCON9**
7. Other heating equipment  
   - **OTHTEQ9**

**NEXT** IF Furnaces  
- D24 [Type of furnace]
IF Packaged central unit  
- D27 [Type of packaged heating]
IF Boilers  
- D29 [Type of boiler system]
IF District steam or hot water  
- D30 [Type of district system]
IF Heat pumps  
- D31 [Heat pump heating system]
IF Individual space heaters  
- D33 [Type of individual heater]
IF Other heating equipment  
- D34 [Other heat specify]
IF DK/RF  
- D40 [Reduce heating]
### D24 Type of furnace

**ASK** IF Furnaces IN D23 [Heating equipment types]

[SHOW CARD D3]

Looking at this list, please tell me the type or types of furnace systems used in the building.

- ENTER all that apply
  1. Residential-type split system
  2. Packaged central unit (roof mounted)
  3. Individual room furnace (freestanding or floor-mounted)

**NEXT** IF Packaged central unit ➔ D25 [Classify as packaged]
IF Individual room furnace ➔ D26 [Classify as space heater]

OTHERWISE:
- IF Boilers IN D23 [Heating equipment types] ➔ D29 [Type of boiler system]
- IF District steam or hot water IN D23 [Heating equipment types] ➔ D30 [Type of district system]
- IF Heat pumps IN D23 [Heating equipment types] ➔ D31 [Heat pump heating system]
- IF Individual space heaters IN D23 [Heating equipment types] ➔ D33 [Type of individual heater]
- IF Other heating equipment IN D23 [Heating equipment types] ➔ D34 [Other heat specify]

OTHERWISE:
- Assign Furnace as Main heating equipment, THEN
  - IF More than one energy source used for heating ➔ D35 [Explain sources for heating]
  - IF A20 [Year of construction] < 1990
    OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 ➔ D38 [Main heating replaced]
  
  OTHERWISE ➔ D39 [Heating ventilation types]

### D25 Classify as packaged

**ASK** IF Packaged central unit IN D24 [Type of furnace]

For the purposes of this study, I am going to refer to your packaged central furnace as a "packaged unit."

- ENTER "1" to continue

**NEXT** IF Individual room furnace IN D24 [Type of furnace] ➔ D26 [Classify as space heater]

OTHERWISE:
- IF Boilers IN D23 [Heating equipment types] ➔ D29 [Type of boiler system]
- IF District steam or hot water IN D23 [Heating equipment types] ➔ D30 [Type of district system]
- IF Heat pumps IN D23 [Heating equipment types] ➔ D31 [Heat pump heating system]
- IF Individual space heaters IN D23 [Heating equipment types] ➔ D33 [Type of individual heater]
- IF Other heating equipment IN D23 [Heating equipment types] ➔ D34 [Other heat specify]

OTHERWISE:
- IF More than one heating equipment type ➔ D36 [Percent heated by each type]

OTHERWISE:
- Assign Packaged heating as Main heating equipment, THEN:
  - IF A20 [Year of construction] < 1990
    OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 ➔ D38 [Main heating replaced]

  OTHERWISE ➔ D39 [Heating ventilation types]
### D26 Classify as space heater

**ASK**

IF D24 [Type of furnace] = Individual room furnace

For the purposes of this study, I am going to refer to your individual room furnace as an "individual space heater."

- ENTER "1" to continue

#### NEXT

IF Packaged central unit IN D23 [Heating equipment types] & NOT Packaged central unit IN D24 [Type of furnace] ➞ D27 [Type of packaged heating]

IF Boilers IN D23 [Heating equipment types] ➞ D29 [Type of boiler system]

IF District steam or hot water IN D23 [Heating equipment types] ➞ D30 [Type of district system]

IF Heat pumps IN D23 [Heating equipment types] ➞ D31 [Heat pump heating system]

IF Individual space heaters IN D23 [Heating equipment types] ➞ D33 [Type of individual heater]

IF Other heating equipment IN D23 [Heating equipment types] ➞ D34 [Other heat specify]

OTHERWISE:

- IF More than one heating equipment type ➞ D36 [Percent heated by each type]
- OTHERWISE:
  - Assign Space heater as Main heating equipment, THEN:
    - IF A20 [Year of construction] < 1990 OR
    - ➞ D38 [Main heating replaced]
  - OTHERWISE ➞ D39 [Heating ventilation types]

### D27 Type of packaged heating

**ASK**

IF Packaged central unit IN D23 [Heating equipment types] & NOT Packaged central unit IN D24 [Type of furnace]

[HELP]

Just to verify, is the packaged unit a central roof-mounted unit or is it a packaged heat pump?

1. Packaged central unit (roof mounted)
2. Packaged heat pump
3. [IF VOLUNTEERED] Both central and packaged heat pumps

#### NEXT

IF Packaged heat pump or Both central and packaged heat pumps ➞ D28 [Classify as heat pump]

OTHERWISE:

IF Boilers IN D23 [Heating equipment types] ➞ D29 [Type of boiler system]

IF District steam or hot water IN D23 [Heating equipment types] ➞ D30 [Type of district system]

IF Heat pumps IN D23 [Heating equipment types] ➞ D31 [Heat pump heating system]

IF Individual space heaters IN D23 [Heating equipment types] ➞ D33 [Type of individual heater]

IF Other heating equipment IN D23 [Heating equipment types] ➞ D34 [Other heat specify]

OTHERWISE:

- IF More than one heating equipment type ➞ D36 [Percent heated by each type]
- OTHERWISE:
  - Assign Packaged heating as Main heating equipment, THEN:
    - IF A20 [Year of construction] < 1990 OR
    - ➞ D38 [Main heating replaced]
  - OTHERWISE ➞ D39 [Heating ventilation types]
### D28  Classify as heat pump

**ASK**

IF D27 [Type of packaged heating] = Packaged heat pump OR Both central and packaged heat pumps

For the purposes of this study, I am going to refer to your packaged unit heat pump as a "heat pump."

- ENTER "1" to continue

### D29  Type of boiler system

**ASK**

IF Boilers IN D23 [Heating equipment types]

1. District steam or hot water IN D23 [Heating equipment types] ➔ D30 [Type of district system]
2. Heat pumps IN D23 [Heating equipment types] ➔ D31 [Heat pump heating system]
3. Other heating equipment IN D23 [Heating equipment types] ➔ D34 [Other heat specify]

**NEXT**

IF More than one heating equipment type ➔ D36 [Percent heated by each type]

Otherwise:

Assign Boiler as Main heating equipment, THEN:

IF More than one energy source used for heating ➔ D35 [Explain sources for heating]

**NEXT**

IF A20 [Year of construction] < 1990 OR
A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 ➔ D38 [Main heating replaced]

Otherwise ➔ D39 [Heating ventilation types]
### D30 Type of district system

**ASK**

- IF District steam or hot water IN D23 [Heating equipment types]

[**[F1]-HELP**](#)

SHOW CARD D4

Looking at this list, please tell me the type or types of distribution systems used with the district steam or hot water.

- ENTER all that apply
  1. Radiators
  2. Fan coil units in rooms (or areas)
  3. Central air handling system

**NEXT**

- IF Heat pumps IN D23 [Heating equipment types] ➔ D31 [Heat pump heating system]
- IF Individual space heaters IN D23 [Heating equipment types] ➔ D33 [Type of individual heater]
- IF Other heating equipment IN D23 [Heating equipment types] ➔ D34 [Other heat specify]
  
  OTHERWISE:
  
  - IF More than one heating equipment type ➔ D36 [Percent heated by each type]
  
  OTHERWISE:
  
  Assign District steam or hot water as Main heating equipment, THEN:
  
  - IF More than one energy source used for heating ➔ D35 [Explain sources for heating]
  
  OTHERWISE ➔ D39 [Heating ventilation types]

### D31 Heat pump heating system

**ASK**

- IF Heat pumps IN D23 [Heating equipment types] OR
  
  Packaged heat pump OR Both central and packaged heat pumps IN D27 [Type of packaged heating]

[**[F1]-HELP**](#)

SHOW CARD D5

Please look at the first list on this card and tell me which heat pump systems are used for heating in this building.

- ENTER all that apply
  1. Packaged unit
  2. Residential-type split system
  3. Individual room heat pump

**NEXT** ➔ D32 [Heat pump heating type]
### D32 Heat pump heating type

**ASK**

IF Heat pumps IN D23 [Heating equipment types] OR
Packaged heat pump OR Both central and packaged heat pumps IN D27 [Type of packaged heating]

[SHOW CARD D5]

Looking at the second list on this card, which types of heat pumps are these?

- ENTER all that apply
  1. Air source heat pump  \( \text{AIRHPT9} \)
  2. Ground source or ground water heat pump  \( \text{GRDHPT9} \)
  3. Water loop heat pump  \( \text{WTRHPT9} \)

### D33 Type of individual heater

**ASK**

IF Individual space heaters IN D23 [Heating equipment types] \( \Rightarrow \) D33 [Type of individual heater]

[SHOW CARD D6]

Looking at this list, please tell me the type or types of individual heaters used in the building.

- ENTER all that apply
  1. Infrared radiant heater (permanent)  \( \text{RDNNSH9} \)
  2. Baseboard heater (permanent)  \( \text{BBRDSH9} \)
  3. Portable space heater  \( \text{PORTSH9} \)
  4. Wall heater  \( \text{WALLSH9} \)
  5. Individual furnace  \( \text{FURNSH9} \)

### Next

IF More than one heating equipment type \( \Rightarrow \) D36 [Percent heated by each type]

OTHERWISE:
- Assign Heat pump as Main heating equipment, THEN:
    \( \Rightarrow \) D38 [Main heating replaced]
  OTHERWISE \( \Rightarrow \) D39 [Heating ventilation types]
### D34 Other heat specify

**ASK**  
IF Other heating equipment IN D23 [Heating equipment types]  

Please describe the other type of heating equipment.  
◆ RECORD in open box

**NEXT**  
IF More than one heating equipment type ➔ D36 [Percent heated by each type]  
OTHERWISE:  
Assign Other heating equipment as Main heating equipment, THEN:  
IF A20 [Year of construction] < 1990 OR  
➔ D38 [Main heating replaced]  
OTHERWISE ➔ D39 [Heating ventilation types]

### D35 Explain sources for heating

**ASK**  
IF ONLY Boiler, Furnace, OR District heat as heating equipment but more than one energy source used for heating

**FILL**  
{HeatEquip}  
IF Boilers = “boiler”  
IF Furnace = “furnace”  
IF District heat = “district heating system”  
{HeatSources} = list of the energy sources given for heating

I've recorded just one type of heating equipment - a {HeatEquip} - but more than one energy source – {HeatSources} - for heating. For clarification, will you please briefly explain how these sources are used for operating the {HeatEquip}.  
◆ RECORD in open box

**NEXT**  
IF Main heating equipment ≠ District steam or hot water & (A20 [Year of construction] < 1990 OR  
A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)  
➔ D38 [Main heating replaced]  
OTHERWISE ➔ D39 [Heating ventilation types]
## D36 Percent heated by each type

**ASK** For each equipment type given in D23 [Heating equipment types]

**FILL**

1. **{Introduction}**
   - IF First equipment = “The next questions are about the percent of floorspace heated by the equipment you just mentioned. Please keep in mind:”
   - OTHERWISE = BLANK

2. **{Explanation}**
   - IF First equipment and D21 [Percent heated] ≠ 100 = “We are talking only about the heated portion of the floorspace, so these percents must add up to at least 100, but since more than one type of equipment can heat the same area, it is also possible for them to add up to more than 100.”
   - IF First equipment and D21 [Percent heated] = 100 = “These percents must add up to at least 100, but since more than one type of equipment can heat the same area, it is also possible for them to add up to more than 100.”
   - OTHERWISE = BLANK

3. **{Equipment}**
   - IF Furnaces that heat air directly IN D23 [Heating equipment types] = “furnace”
   - IF Packaged heating units IN D23 [Heating equipment types] = “packaged heating”
   - IF Boilers inside the building IN D23 [Heating equipment types] = “boiler”
   - IF District steam or hot water IN D23 [Heating equipment types] = “district steam or hot water”
   - IF Heat pumps IN D23 [Heating equipment types] = “heat pump”
   - IF Individual space heaters IN D23 [Heating equipment types] = “space heater”
   - IF Other heating equipment IN D23 [Heating equipment types] = “other heating equipment”

**SHOW CARD D7**

1. **{Introduction}**
2. **{Explanation}**

What percent of the heated area in this building is served by the {Equipment}?

- **PROBE** for estimate if DK

**RANGE** 0 to 100

**NEXT**

- IF There are equal maximum percents OR DK/RF ➔ D37 [Main heating equipment]
- IF There is an equipment with a maximum percent, assign that equipment as the Main heating equipment [MAINHT9]. THEN:
  - OTHERWISE ➔ D39 [Heating ventilation types]
**D37 Main heating equipment**

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF D36 [Percent heated by each type] has equal maximum percents OR DK/RF</th>
</tr>
</thead>
</table>
| FILL | {EquipmentList} = List of the equipments with equal maximum percents  
     | {Furnace} – {Other heating equipment} = Each equipment with an equal maximum percent appears  
     |     on this list; otherwise the line is blank |

Which do you consider to be your main heating equipment – {EquipmentList}?

- Only equipment types with equal percentages are shown here

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>{Furnace}</td>
</tr>
<tr>
<td>2</td>
<td>{Packaged heating}</td>
</tr>
<tr>
<td>3</td>
<td>{Boiler}</td>
</tr>
<tr>
<td>4</td>
<td>{District steam or hot water}</td>
</tr>
<tr>
<td>5</td>
<td>{Heat pump}</td>
</tr>
<tr>
<td>6</td>
<td>{Space heater}</td>
</tr>
<tr>
<td>7</td>
<td>{Other heating equipment}</td>
</tr>
</tbody>
</table>

**NEXT** IF Main equipment NOT (District steam or hot water OR DK/RF) & (A20 [Year of construction] < 1990 OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)

   ➔ D38 [Main heating replaced]

**OTHERWISE** ➔ D39 [Heating ventilation types]

---

**D38 Main heating replaced**

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF Main heating equipment known &amp; NOT District steam or hot water &amp; (A20 [Year of construction] &lt; 1990 OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILL</td>
<td>{MainHeatEquip}</td>
</tr>
</tbody>
</table>

- {MainHeatEquip} been replaced since 1990?

  - EXP: [If there is more than one of this equipment type and at least one has been replaced, answer “Yes.”]

<p>| | |</p>
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<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT** ➔ D39 [Heating ventilation types]
**D39  Heating ventilation types**

**ASK** IF D23 [Heating equipment types] ≠ DK/RF

[SHOW CARD D8]

Looking at this list of mechanical ventilation equipment types, please tell me which types are used with the heating system.

◆ PROBE for any others

◆ ENTER all that apply

1. No mechanical ventilation equipment  
   HTVNON9
2. Central air handling unit(s) with outside air system and constant air volume control  
   HTVCAV9
3. Central air handling unit(s) with outside air system and variable air volume (VAV) control  
   HTVVAV9
4. Packaged unit(s) with outside air damper  
   HTVPKO9
5. Through-the-wall packaged units  
   HTVPKW9
6. Stand-alone exhaust fans (or relief blowers)  
   HTVEXH9
7. Dedicated outside air system  
   HTVOUT9

**NEXT** ➔ D40 [Reduce heating]

---

**D40  Reduce heating**

**ASK** IF D21 [Percent heated] > 0 OR D22 [Heated to less than 50 degrees] = Yes

**FILL** {TimesNotInFullUse}

IF C20 [Open 24 hours a day] = Yes OR C24 [Total hours open per week] = 168
   OR C25 [Weekly hours category] = 168
   = “Are there any periods during a normal 24-hour day when there is”
OTHERWISE = “When this building is not in full use, is there”

{TimesNotInFullUse} a change in the temperature setting for heating?

1. Yes
2. No

**NEXT** IF Yes ➔ D41 [How reduce heating]
IF No OR DK/RF:
   IF D2 [Cooling] = Yes ➔ D42 [Sources for cooling]
   IF D2 [Cooling] ≠ Yes & More than just Individual space heaters IN D23 [Heating equipment types] ➔ D61 [Regular HVAC maintenance]
   IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]
   IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]
   IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
   IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]
OTHERWISE ➔ D76 [Any other sources]
### D41 How reduce heating

**ASK**  
IF D40 [Reduce heating] = Yes

**SHOW CARD D9**

Looking at this card, which of these best describes how the temperature for heating is usually changed?

1. Time-clock thermostat  
2. Thermostat is manually reset  
3. Part of "Energy Management and Control System (EMCS)" or "Building Automation System (BAS)"

### NEXT  
IF D2 [Cooling] = Yes  ➔ D42 [Sources for cooling]  
IF D2 [Cooling] ≠ Yes  & More than just Individual space heaters IN D23 [Heating equipment types]  ➔ D61 [Regular HVAC maintenance]  
IF D3 [Water heating] = Yes  ➔ D62 [Sources for water heating]  
IF D4 [Cooking] = Yes  ➔ D66 [Sources for cooking]  
IF D4 [Manufacturing] = Yes  ➔ D68 [Sources for manufacturing]  
IF D7 [Electricity generation capability] = Yes  ➔ D70 [Energy for generation]  
OTHERWISE ➔ D76 [Any other sources]

### D42 Sources for cooling

**ASK**  
IF D2 [Cooling] = Yes

**FILL**  
{CoolSourcesList} = List of all possible air conditioning energy sources used  
{Electricity} – {Other3} = If a source is used, it appears in this list; if not, the line is blank  
{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]  
{Other1} – {Other3} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

Which energy sources were used for air conditioning? ({CoolSourcesList})

- Only sources already selected are shown here
- PROBE for any others
- ENTER all that apply

11 {Electricity}  
12 {Natural gas}  
13 {FuelOilType}  
14 {Bottled gas}  
15 {District steam}  
16 {District hot water}  
17 {District chilled water}  
21 {Other1}  
22 {Other2}  
23 {Other3}  
24 Some other energy source

**NEXT**  
IF Some other energy source selected ➔ D43 [Other source for cooling]  
OTHERWISE ➔ D44 [Percent cooled]
**D43 Other source for cooling**

**ASK** IF Some other energy source IN D42 [Sources for cooling]

What was the other energy source used for air conditioning?

<table>
<thead>
<tr>
<th>Source</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>ELCOOL9</td>
</tr>
<tr>
<td>Natural gas</td>
<td>NGCOOL9</td>
</tr>
<tr>
<td>Fuel oil/Diesel/Kerosene</td>
<td>FKCOOL9</td>
</tr>
<tr>
<td>Bottled gas</td>
<td>PRCOOL9</td>
</tr>
<tr>
<td>District steam</td>
<td>STCOOL9</td>
</tr>
<tr>
<td>District hot water</td>
<td>HWCOOL9</td>
</tr>
<tr>
<td>District chilled water</td>
<td>CWCOOL9</td>
</tr>
<tr>
<td>Some other energy source</td>
<td>OTCOOL9</td>
</tr>
</tbody>
</table>

**NEXT** ➔ D44 [Percent cooled]

**D44 Percent cooled**

**ASK** IF D1 [Cooling] = Yes

**FILL** {SqFtIn}

- IF A1 [Square footage] known = A1 [Square footage]
- IF A1 [Square footage] = DK/RF = “floorspace”

What percent of the {SqFt} in this building was cooled by air conditioning equipment during 2007?

- If cooled square footage is known, but not the percent, RECORD square footage in comments, then code DK
- PROBE for estimate if DK

**RANGE** 0 to 100

**NEXT** IF 1-100, DK/RF ➔ D45 [Cooling equipment types]

- IF Zero:
  - IF More than just Individual space heaters IN D23 [Heating equipment types] ➔ D61 [Regular HVAC maintenance]
  - IF D3 [Water heating] = Yes ➔ D62 [Sources for water heating]
  - IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]
  - IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
  - IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]
  - OTHERWISE ➔ D76 [Any other sources]
D45  Cooling equipment types  

ASK  IF D44 [Percent cooled] = 1 to 100 OR DK/RF

SHOW CARD D10

Looking at this list of cooling equipment types, please tell me which types are used in this building.

◆ PROBE for any others

◆ ENTER all that apply

1  Residential-type central air conditioners, other than heat pumps, that cool air directly and circulate it without using chilled water  RCAC9
2  Packaged air conditioning units, other than heat pumps  PKGCL9
3  Central chillers inside the building that chill water for air conditioning  CHILLR9
4  District chilled water piped in from outside the building  CHWT9
5  Heat pumps for cooling  HTPMPC9
6  Individual room air conditioners, other than heat pumps  ACWNWL9
7  "Swamp" coolers or evaporative coolers  EVAPCL9
8  Other cooling equipment  OTCLEQ9

NEXT  IF Packaged air conditioning units  ➔ D46 [Type of packaged cooling]
     IF Central chillers  ➔ D47 [Type of chiller system]
     IF District chilled water  ➔ D48 [Type of chilled water system]
     IF Heat pumps for cooling AND NOT Heat pumps for heating  ➔ D49 [Heat pump cooling system]
     IF Other cooling equipment  ➔ D51 [Other cool specify]
     IF DK/RF  ➔ D58 [Reduce cooling]
     OTHERWISE:
     IF Any source(s) other than electricity or chilled water reported in D42 [Sources for cooling] OR D31 [Other sources for cooling]  ➔ D52 [Cool source explanation]
     OTHERWISE:
     IF More than one selected  ➔ D53 [Percent cooled by each type]
     IF Only one selected, assign as Main cooling equipment. THEN:
     IF NOT District chilled water & NOT Packaged cooling (if the Main heating equipment was Packaged heating) & NOT Heat pump (if the main heating equipment was Heat pump) & (A20 [Year of construction] < 1990 OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)  ➔ D55 [Main cooling replaced]
     IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)  ➔ D56 [Cooling ventilation same as heating]
     OTHERWISE  ➔ D57 [Cooling ventilation types]
**D46** Type of packaged cooling

<table>
<thead>
<tr>
<th>Type of packaged cooling</th>
<th>see below</th>
</tr>
</thead>
</table>

**ASK** IF Packaged air conditioning units IN D45 [Cooling equipment types]

[F1]-HELP

Just to verify, is the packaged unit a central roof-mounted unit or is it a split system with outdoor and indoor units?

1. Packaged central unit (roof mounted)  
2. Split system, with outdoor (condensor) and indoor (evaporator/blower) units  
3. [IF VOLUNTEERED] Both central unit and split system

**NEXT**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Next Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Central chillers IN D45 [Cooling equipment types] ➔ D47 [Type of chiller system]</td>
<td>D47 [Type of chiller system]</td>
</tr>
<tr>
<td>IF District chilled water IN D45 [Cooling equipment types] ➔ D48 [Type of chilled water system]</td>
<td>D48 [Type of chilled water system]</td>
</tr>
<tr>
<td>IF Heat pumps for cooling IN D45 [Cooling equipment types] AND NOT Heat pumps for heating ➔ D49 [Heat pump cooling system]</td>
<td>D49 [Heat pump cooling system]</td>
</tr>
<tr>
<td>IF Other cooling equipment IN D45 [Cooling equipment types] ➔ D51 [Other cool specify]</td>
<td>D51 [Other cool specify]</td>
</tr>
<tr>
<td>OTHERWISE:</td>
<td>D45 [Cooling equipment types]</td>
</tr>
<tr>
<td>IF Any source(s) other than electricity or chilled water reported in D42 [Sources for cooling] OR D31 [Other sources for cooling] ➔ D52 [Cool source explanation]</td>
<td>D52 [Cool source explanation]</td>
</tr>
<tr>
<td>OTHERWISE:</td>
<td>D45 [Cooling equipment types]</td>
</tr>
<tr>
<td>IF More than one type in D45 [Cooling equipment types] ➔ D53 [Percent cooled by each type]</td>
<td>D53 [Percent cooled by each type]</td>
</tr>
<tr>
<td>OTHERWISE:</td>
<td>D45 [Cooling equipment types]</td>
</tr>
</tbody>
</table>

Assign Packaged cooling as Main cooling equipment. THEN:

IF Main heating equipment ≠ Packaged heating
   & (A20 [Year of construction] < 1990
   OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)
   ➔ D55 [Main cooling replaced]
IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)
   ➔ D56 [Cooling ventilation same as heating]
 OTHERWISE ➔ D57 [Cooling ventilation types]
### D47 Type of chiller system

**ASK**

IF Central chillers IN D45 [Cooling equipment types]

---

Is the water from the chiller distributed through a central air handling system or by fan coil units?

1. Central air handling system  
2. Fan coil units in rooms (or area)  
3. [IF VOLUNTEERED] Both air handling and fan coil units

---

### D48 Type of chilled water system

**ASK**

IF District chilled water IN D45 [Cooling equipment types]

---

Is the chilled water distributed through a central air handling system or by fan coil units?

1. Central air handling system  
2. Fan coil units in rooms (or area)  
3. [IF VOLUNTEERED] Both air handling and fan coil units

---
**D49**  
**Heat pump cooling system**  
*see below*

**ASK**  
IF Heat pumps IN D45 [Cooling equipment types]  
& Heat pumps NOT IN D23 [Heating equipment types]

[ F1]-HELP

**SHOW CARD D5**

Please look at the first list on this card and tell me which heat pump systems are used for cooling in this building.

- ENTER all that apply
  1. Packaged unit  
  2. Residential-type split system  
  3. Individual room heat pump

**NEXT**  
⇒ D50 [Heat pump cooling type]

---

**D50**  
**Heat pump cooling type**  
*see below*

**ASK**  
IF Heat pumps in D45 [Cooling equipment types]  
& Heat pumps NOT IN D23 [Heating equipment types]

[ F1]-HELP

**SHOW CARD D5**

Looking at the second list on this card, which types of heat pumps are these?

- ENTER all that apply
  1. Air source heat pump
  2. Ground source or ground water heat pump
  3. Water loop heat pump

**NEXT**  
IF Other cooling equipment IN D45 [Cooling equipment types]  
⇒ D51 [Other cool specify]  
OTHERWISE:
  - IF Any source(s) other than electricity or chilled water reported in D42 [Sources for cooling] OR  
    D31 [Other sources for cooling] & District chiller NOT IN D45 [Cooling equipment types]  
    ⇒ D52 [Cool source explanation]  
  OTHERWISE:
    - IF More than one type in D45 [Cooling equipment types]  
      ⇒ D53 [Percent cooled by each type]  
    OTHERWISE:
      Assign Heat pump as Main cooling equipment. THEN:
      - IF Main heating equipment ≠ Heat pump  
        & (A20 [Year of construction] < 1990  
        OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)  
        ⇒ D55 [Main cooling replaced]  
      - IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)  
        ⇒ D56 [Cooling ventilation same as heating]  
    OTHERWISE  
    ⇒ D57 [Cooling ventilation types]
### D51 Other cool specify

**ASK**

IF Other cooling equipment in D45 [Cooling equipment types]

Please describe the other type of cooling equipment.

- RECORD in open box

**NEXT**

IF Any source(s) other than electricity or chilled water reported in D42 [Sources for cooling] OR D31 [Other sources for cooling] & District chiller NOT IN D45 [Cooling equipment types] ➔ D52 [Cool source explanation]

OTHERWISE:

- IF More than one type in D45 [Cooling equipment types] ➔ D53 [Percent cooled by each type]
- OTHERWISE:
  
  Assign Other cooling equipment as Main cooling equipment. THEN:
  
  - IF A20 [Year of construction] < 1990
  - OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)
  
  ➔ D55 [Main cooling replaced]
  
  IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)
  
  ➔ D56 [Cooling ventilation same as heating]
  
  OTHERWISE ➔ D57 [Cooling ventilation types]

### D52 Cool source explanation

**ASK**

IF Any source(s) other than electricity or chilled water reported in D42 [Sources for cooling] OR D31 [Other sources for cooling] & Central chillers NOT IN D45 [Cooling equipment types]

**FILL**

\{CoolSources\} = List of the energy sources given for cooling, other than electricity or chilled water

\{IsAre\} =

- IF Only one cooling source in list = “is”
- IF More than one cooling source in list = “are”

Among the sources for cooling, I have recorded that \{CoolSources\} \{IsAre\} used. Because it is somewhat unusual to use sources other than electricity or chilled water for cooling, will you please briefly describe how the \{CoolSources\} \{IsAre\} used with the cooling equipment.

- RECORD in open box

**NEXT**

IF More than one type in D45 [Cooling equipment types] ➔ D53 [Percent cooled by each type]

IF Main cooling equipment ≠ (District chilled water OR Packaged cooling, IF Main heating equipment = Packaged heating OR Heat pump, IF Main heating equipment = Heat pump) & (A20 [Year of construction] < 1990 OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)

➔ D55 [Main cooling replaced]

IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)

➔ D56 [Cooling ventilation same as heating]

OTHERWISE ➔ D57 [Cooling ventilation types]
**D53** Percent cooled by each type

**ASK** For each equipment type given in D45 [Cooling equipment types]

**FILL**

{Introduction}

IF First equipment = "The next questions are about the percent of floorspace cooled by the equipment you just mentioned. Please keep in mind:"

OTHERWISE = BLANK

{Explanation}

IF First equipment and D44 [Percent cooled] ≠ 100 = "We are talking only about the cooled portion of the floorspace, so these percents must add up to at least 100, but since more than one type of equipment can cool the same area, it is also possible for them to add up to more than 100."

IF First equipment and D44 [Percent cooled] = 100 = "These percents must add up to at least 100, but since more than one type of equipment can cool the same area, it is also possible for them to add up to more than 100."

OTHERWISE = BLANK

{Equipment}

IF Residential-type central air conditioners IN D45 [Cooling equipment types] = "central air conditioner"

IF Packaged air conditioning units IN D45 [Cooling equipment types] = "packaged cooling"

IF Central chillers inside the building IN D45 [Cooling equipment types] = "central chiller"

IF District chilled water IN D45 [Cooling equipment types] = "district chilled water"

IF Heat pumps for cooling IN D45 [Cooling equipment types] = "heat pump"

IF Individual room air conditioners IN D45 [Cooling equipment types] = "room air conditioner"

IF "Swamp" coolers or evaporative coolers IN D45 [Cooling equipment types] = "swamp cooler"

IF Other cooling equipment IN D45 [Cooling equipment types] = "other cooling equipment"

SHOW CARD D11

{Introduction}

{Explanation}

What percent of the cooled area in this building is served by the {Equipment}?

◆ PROBE for estimate if DK

**RANGE** 0 to 100

**NEXT**

IF there are equal maximum percents OR DK/RF ➔ D54 [Main cooling equipment]

IF there is an equipment with a maximum percent, assign that equipment as the Main cooling equipment [MAINCL9]. THEN:

IF (Main equipment NOT District chilled water OR DK/RF) & (Main cooling equipment NOT Packaged cooling if the Main heating equipment was Packaged heating) & (Main cooling equipment NOT Heat pump if the main heating equipment was Heat pump) & (A20 [Year of construction] < 1990 OR A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007) ➔ D55 [Main cooling replaced]

IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF) ➔ D56 [Cooling ventilation same as heating]

OTHERWISE ➔ D57 [Cooling ventilation types]
<table>
<thead>
<tr>
<th>D54</th>
<th>Main cooling equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF D53 [Percent cooled by each type] has equal maximum percents OR DK/RF</td>
</tr>
</tbody>
</table>
| **FILL** | {EquipmentList} = List of the equipments with equal maximum percents  
{Packaged cooling} – {Other cooling equipment} = Each equipment with an equal maximum percent appears on this list; otherwise the line is blank |

Which do you consider to be your main cooling equipment – {EquipmentList} ?

◆ Only equipment types with equal percentages are shown here

1. {Central air conditioner}
2. {Packaged cooling}
3. {Central chiller}
4. {District chilled water}
5. {Heat pump}
6. {Room air conditioner}
7. {Swamp coolers}
8. {Other cooling equipment}

| NEXT | IF (Main equipment NOT District chilled water OR DK/RF) & (Main cooling equipment NOT Packaged cooling if the Main heating equipment was Packaged heating)  
& (Main cooling equipment NOT Heat pump if the main heating equipment was Heat pump)  
IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)  
➔ D56 [Cooling ventilation same as heating]  
OTHERWISE ➔ D57 [Cooling ventilation types] |
ASK
IF Main cooling equipment known & NOT District chilled water & (Main cooling equipment
NOT Packaged cooling if the Main heating equipment was Packaged heating)
& (Main cooling equipment NOT Heat pump if the main heating equipment was Heat pump)
& (A20 [Year of construction] < 1990 OR
A21 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007)

FILL
{MainCoolEquip}
IF Main cooling equipment = Packaged cooling = “Has the packaged air conditioning unit”
IF Main cooling equipment = Central air conditioner = “Has the central air conditioner”
IF Main cooling equipment = Room air conditioner = “Have any of the room air conditioners”
IF Main cooling equipment = Heat pump = “Has the heat pump”
IF Main cooling equipment = Central chiller = “Has the central chiller”
IF Main cooling equipment = Swamp coolers = “Has the swamp cooler”
IF Main cooling equipment = Other cooling equipment = “Has the other type of cooling equipment”

{MainCoolEquip} been replaced since 1990?
◆ EXP: [If there is more than one of this equipment type and
at least one has been replaced, the answer is “Yes.”]

1  Yes
2  No

NEXT
IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF)
⇒ D56 [Cooling ventilation same as heating]
OTHERWISE ⇒ D57 [Cooling ventilation types]

D56  Cooling ventilation same as heating

ASK
IF D1 [Heating] = Yes & D39 [Heating ventilation types] ≠ (No ventilation or DK/RF) &
D45 [Cooling equipment types] ≠ DK/RF

Is the ventilation system for cooling the same as the one for heating?

1  Yes
2  No

NEXT
IF Yes OR DK/RF ⇒ D58 [Reduce cooling]
IF No  ⇒ D57 [Cooling ventilation types]
## Cooling ventilation types

**ASK**

IF D56 [Cooling ventilation same as heating] = No

### SHOW CARD D12

Looking at this list of mechanical ventilation equipment types, please tell me which types are used with the cooling system.

- **PROBE** for any others
- **ENTER** all that apply

1. No mechanical ventilation equipment
2. Central air handling unit(s) with outside air system and constant air volume control
3. Central air handling unit(s) with outside air system and variable air volume (VAV) control
4. Packaged unit(s) with outside air damper
5. Through-the wall packaged units
6. Stand-alone exhaust fans (or relief blowers)
7. Dedicated outside air system
8. Fans, including ceiling fans

**NEXT** → D58 [Reduce cooling]

## Reduce cooling

**ASK**

IF D44 [Percent cooled] > 0

### FILL

{TimesNotInFullUse}

IF C20 [Open 24 hours a day] = Yes OR C24 [Total hours open per week] = 168
OR C25 [Weekly hours category] = 168
= “Are there any periods during a normal 24-hour day when there is”
OTHERWISE = “When this building is not in full use, is there”

**NEXT** [D58]

### TIMES NOT IN FULL USE

<table>
<thead>
<tr>
<th>D58</th>
<th>Reduce cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT** [D58]

IF Yes → D59 [How reduce cooling]

IF No OR DK/RF:

IF More than just individual room air conditioners IN D45 [Cooling equipment types]

→ D60 [Economizer cycle]

IF More than just individual space heaters IN D23 [Heating equipment types]

→ D61 [Regular HVAC maintenance]

IF D3 [Water heating] = Yes → D62 [Sources for water heating]

IF D4 [Cooking] = Yes → D66 [Sources for cooking]

IF D4 [Manufacturing] = Yes → D68 [Sources for manufacturing]

IF D7 [Electricity generation capability] = Yes → D70 [Energy for generation]

OTHERWISE → D76 [Any other sources]
**D59 How reduce cooling**  

**ASK**  
IF D58 [Reduce cooling] = Yes

**SHOW CARD D9**

Looking at this card, which of these best describes how the temperature for cooling is usually changed?

1. Time-clock thermostat  
2. Thermostat is manually reset  
3. Part of "Energy Management and Control System (EMCS)" or "Building Automation System (BAS)"

**NEXT**

IF More than just Individual room air conditioners IN D45 [Cooling equipment types]  

IF More than just individual space heaters IN D23 [Heating equipment types]  

IF D3 [Water heating] = Yes  

IF D4 [Cooking] = Yes  

IF D4 [Manufacturing] = Yes  

IF D7 [Electricity generation capability] = Yes  

OTHERWISE  

**D60 Economizer cycle**  

**ASK**  
IF D44 [Percent cooled] > 0  

& More than just Individual room air conditioners IN D45 [Cooling equipment types]

**NEXT**  

Does this building have any equipment that uses outside air for cooling, often called an "economizer cycle"?

1. Yes  
2. No  

**NEXT**  

D61 [Regular HVAC maintenance]
D61  **Regular HVAC maintenance**  

**ASK**  
IF More than just Individual space heaters IN D23 [Heating equipment types]  
OR More than just Individual room air conditioners IN D45 [Cooling equipment types]

**FILL**  
{HeatCool}  
IF Heating only = “heating”  
IF Cooling only = “cooling”  
IF Heating & Cooling = “heating and cooling”

Is there any regularly scheduled maintenance and repair for the {HeatCool} system?  
1  Yes  
2  No

**NEXT**  
IF D3 [Water heating] = Yes ⇒ D62 [Sources for water heating]  
IF D4 [Cooking] = Yes ⇒ D66 [Sources for cooking]  
IF D4 [Manufacturing] = Yes ⇒ D68 [Sources for manufacturing]  
IF D7 [Electricity generation capability] = Yes ⇒ D70 [Energy for generation]  
OTHERWISE ⇒ D76 [Any other sources]

D62  **Sources for water heating**  

**ASK**  
IF D3 [Water heating] = Yes  

**FILL**  
{WatrSourcesList} = List of all energy sources used  
{Electricity} – {Other3} = If a source is used, it appears in this list; if not, the line is blank  
{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]  
{Other1} – {Other3} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

Which energy sources were used for water heating? (WatrSourcesList)  
◆ Only sources already selected are shown here  
◆ PROBE for any others  
◆ ENTER all that apply

11  {Electricity}  
12  {Natural gas}  
13  {FuelOilType}  
14  {Bottled gas}  
15  {District steam}  
16  {District hot water}  
18  {Wood}  
19  {Coal}  
20  {Solar}  
21  {Other1}  
22  {Other2}  
23  {Other3}  
24  Some other energy source

**NEXT**  
IF Some other energy source selected ⇒ D63 [Other water heating source]  
OTHERWISE ⇒ D64 [Water heating equipment]
### D63 Other water heating source

**ASK** IF Some other energy source IN D62 [Sources for water heating]

What was the other energy source used for water heating?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Electricity</td>
</tr>
<tr>
<td>12</td>
<td>Natural gas</td>
</tr>
<tr>
<td>13</td>
<td>Fuel oil/Diesel/Kerosene</td>
</tr>
<tr>
<td>14</td>
<td>Bottled gas</td>
</tr>
<tr>
<td>15</td>
<td>District steam</td>
</tr>
<tr>
<td>16</td>
<td>District hot water</td>
</tr>
<tr>
<td>18</td>
<td>Wood</td>
</tr>
<tr>
<td>19</td>
<td>Coal</td>
</tr>
<tr>
<td>20</td>
<td>Solar</td>
</tr>
<tr>
<td>24</td>
<td>Some other energy source</td>
</tr>
</tbody>
</table>

**NEXT** ➔ D64 [Water heating equipment]

### D64 Water heating equipment

**ASK** IF D3 [Water heating] = Yes

[IF1]-HELP

Does this building have one or more centralized water heaters, one or more "point-of-use" water heaters, or both of these types (of water heaters)?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>One or more centralized water heaters</td>
</tr>
<tr>
<td>2</td>
<td>One or more &quot;point-of-use&quot; water heaters</td>
</tr>
<tr>
<td>3</td>
<td>Both types</td>
</tr>
</tbody>
</table>

**NEXT** IF CBECS Activity = Lodging ➔ D65 [Instant hot water]

OTHERWISE:

IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]

IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]

IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]

### D65 Instant hot water

**ASK** IF D3 [Water heating] = Yes & CBECS Activity = Lodging

Is the water hot as soon as you turn on the faucet?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT** IF D4 [Cooking] = Yes ➔ D66 [Sources for cooking]

IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]

IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]
D66  Sources for cooking  

**ASK**

IF D4 [Cooking] = Yes

**FILL**

{CookSourcesList} = List of all energy sources used

{Electricity} – {Other3} = If a source is used, it appears in this list; if not, the line is blank

{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

{Other1} – {Other3} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

Which energy sources were used for cooking? [ {CookSourcesList} ]

- Only sources already selected are shown here
- PROBE for any others
- ENTER all that apply

<table>
<thead>
<tr>
<th>Source</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>{Electricity}</td>
<td>ELCOOK9</td>
</tr>
<tr>
<td>{Natural gas}</td>
<td>NGCOOK9</td>
</tr>
<tr>
<td>{FuelOilType}</td>
<td>FKCOOK9</td>
</tr>
<tr>
<td>{Bottled gas}</td>
<td>PRCOOK9</td>
</tr>
<tr>
<td>{District steam}</td>
<td>STCOOK9</td>
</tr>
<tr>
<td>{District hot water}</td>
<td>HWCOOK9</td>
</tr>
<tr>
<td>{Wood}</td>
<td>WOCOOK9</td>
</tr>
<tr>
<td>{Coal}</td>
<td>COCOOK9</td>
</tr>
<tr>
<td>{Solar}</td>
<td>SOCOOK9</td>
</tr>
<tr>
<td>{Other1}</td>
<td>OTCOOK9</td>
</tr>
<tr>
<td>{Other2}</td>
<td>OTCOOK9</td>
</tr>
<tr>
<td>{Other3}</td>
<td>OTCOOK9</td>
</tr>
<tr>
<td>Some other energy source</td>
<td></td>
</tr>
</tbody>
</table>

**NEXT**

IF Some other energy source selected ➔ D67 [Other cooking source]

OTHERWISE:

IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]

IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]

OTHERWISE ➔ D76 [Any other sources]
### D67 Other cooking source

**ASK**

IF Some other energy source IN D66 [Sources for cooking]

What was the other energy source used for cooking?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Electricity</td>
</tr>
<tr>
<td>12</td>
<td>Natural gas</td>
</tr>
<tr>
<td>13</td>
<td>Fuel oil/Diesel/Kerosene</td>
</tr>
<tr>
<td>14</td>
<td>Bottled gas</td>
</tr>
<tr>
<td>15</td>
<td>District steam</td>
</tr>
<tr>
<td>16</td>
<td>District hot water</td>
</tr>
<tr>
<td>18</td>
<td>Wood</td>
</tr>
<tr>
<td>19</td>
<td>Coal</td>
</tr>
<tr>
<td>20</td>
<td>Solar</td>
</tr>
<tr>
<td>24</td>
<td>Some other energy source</td>
</tr>
</tbody>
</table>

**NEXT**

IF D4 [Manufacturing] = Yes ➔ D68 [Sources for manufacturing]
IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]
OTHERWISE ➔ D76 [Any other sources]
D68  Sources for manufacturing

ASK IF D4 [Manufacturing] = Yes

FILL

{ManuSourcesList} = List of all energy sources used
{Electricity} – {Other3} = If a source is used, it appears in this list; if not, the line is blank
{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]
{Other1} – {Other3} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

Which energy sources were used for manufacturing? [{ManuSourcesList}]

◆ Only sources already selected are shown here
◆ PROBE for any others
◆ ENTER all that apply

11 {Electricity}  ELMANU9
12 {Natural gas}  NGMANU9
13 {FuelOilType}  FKMANU9
14 {Bottled gas}  PRMANU9
15 {District steam}  STMANU9
16 {District hot water}  HWMANU9
18 {Wood}  WOMANU9
19 {Coal}  COMANU9
20 {Solar}  SOMANU9
21 {Other1}  OTMANU9
22 {Other2}  OTMANU9
23 {Other3}  OTMANU9
24 Some other energy source

NEXT IF Some other energy source selected ➔ D69 [Other manufacturing source]
OTHERWISE:
IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]
IF D7 [Electricity generation capability] ≠ Yes ➔ D76 [Any other sources]

D69  Other manufacturing source

ASK IF Some other energy source IN D68 [Sources for manufacturing]

What was the other energy source used for manufacturing?

11 Electricity  ELMANU9
12 Natural gas  NGMANU9
13 Fuel oil/Diesel/Kerosene  FKMANU9
14 Bottled gas  PRMANU9
15 District steam  STMANU9
16 District hot water  HWMANU9
18 Wood  WOMANU9
19 Coal  COMANU9
20 Solar  SOMANU9
24 Some other energy source  OTMANU9

NEXT IF D7 [Electricity generation capability] = Yes ➔ D70 [Energy for generation]
IF D7 [Electricity generation capability] ≠ Yes ➔ D76 [Any other sources]
**D70**  **Energy for generation**

**ASK**  IF D7 [Electricity generation capability] = Yes

Was any energy actually used for generating electricity in this building during 2007, even if just a small amount was used for emergency backup or for testing generators?

1. Yes
2. No

**NEXT**  IF Yes ➔ D71 [Sources for electricity generation]  
IF No OR DK/RF ➔ D76 [Any other sources]

---

**D71**  **Sources for electricity generation**

**ASK**  IF D70 [Energy for generation] = Yes

**FILL**  {Other1} – {Other3} = Sources specified in D11 [Other energy source 1] – D13 [Other energy source 3]

SHOW CARD D13

Looking at this first list, please tell me which energy sources were used for electricity generation.

◆ PROBE for any others

◆ ENTER all that apply

12 Natural gas  
13 Fuel oil/Diesel/Kerosene  
14 Bottled gas/LPG/Propane  
18 Wood  
19 Coal  
20 Solar  
21 {Other1}  
22 {Other2}  
23 {Other3}  
24 Some other energy source

**NEXT**  ➔ D72 [Generation technologies]
**D72 Generation technologies**  
*see below*

**ASK** IF D70 [Energy for generation] = Yes

**SHOW CARD D13**

Looking again at this card, were any of the technologies on this second list used for generating electricity?

- PROBE for any others
- ENTER all that apply

1. Photovoltaic cells
2. Fuel cells
3. Microturbines
4. IF VOLUNTEERED: None of these

**NEXT**  ➔ D73 [Use of generated electricity]

---

**D73 Use of generated electricity**  
*GENUSE9*

**ASK** IF D70 [Energy for generation] = Yes  
*[F1]-HELP*

During 2007, was the electricity generated in this building used: primarily for emergency back-up, during periods of high electricity demand, or whenever electricity was used?

1. Primarily for emergency back-up
2. During periods of high electricity demand
3. Whenever electricity was used

**NEXT**  
IF Primarily for emergency back-up OR DK/RF ➔ D76 [Any other sources]  
IF During periods of high electricity demand OR Whenever electricity was used ➔ D74 [Cogeneration system]

---

**D74 Cogeneration system**  
*COGEN9*

**ASK** IF D73 [Use of generated electricity] = During periods of high electricity demand OR Whenever electricity was used  
*[F1]-HELP*

Is the electric power generating system also a cogeneration system? That is, in addition to producing electric power, does the same system simultaneously produce heat that is used in this or another building for space heating, water heating, or industrial processes?

1. Yes
2. No

**NEXT**  ➔ D75 [Deliver electricity to grid]
<table>
<thead>
<tr>
<th>D75</th>
<th>Deliver electricity to grid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF D73 [Use of generated electricity] = During periods of high electricity demand OR Whenever electricity was used</td>
</tr>
</tbody>
</table>

Is the generation system interconnected with an electric utility so that it is able to deliver or sell electricity to the grid?

1. Yes
2. No

**NEXT**  ➔ D76 [Any other sources]

---

<table>
<thead>
<tr>
<th>D76</th>
<th>Any other sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF D8 [Energy sources used] was answered</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{SourcesList} = List of all energy sources used</td>
</tr>
</tbody>
</table>

As a final check, were there any energy sources used in this building other than {Sources List}?

1. Yes
2. No

**NEXT**  IF Yes ➔ D77 [Other sources]  
IF No OR DK/RF:  
Check that every energy source given in D8 [Energy sources used] (other than electricity or district chilled water) was assigned an end use. THEN:  
IF Yes:  
IF Electricity used ➔ D80 [How purchase electricity]  
IF Natural gas used ➔ D82 [How purchase natural gas]  
IF Bottled gas used ➔ D83 [Bottled gas amount]  
IF Wood used ➔ D85 [Amount wood burned]  
OTHERWISE ➔ E1 [Section E Routing]  
IF No ➔ D79 [{Energy source} use]
D77 Other sources

**ASK**
IF D76 [Any other sources] = Yes

**FILL**

<table>
<thead>
<tr>
<th>D76</th>
<th>Electricity</th>
<th>Solar</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Electricity</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Natural gas</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Fuel/Diesel/Kerosene</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Bottled gas</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>District steam</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>District hot water</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>District chilled water</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Wood</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Coal</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Solar</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

What other sources were used?
- PROBE for any others
- ENTER all that apply

What other sources were used?

11 {Electricity}
12 {Natural gas}
13 {Fuel/Diesel/Kerosene}
14 {Bottled gas}
15 {District steam}
16 {District hot water}
17 {District chilled water}
18 {Wood}
19 {Coal}
20 {Solar}
24 Other
**D78** {Energy source} use

*see below where {XX} is the energy source abbreviation*

**ASK** For each source selected in D77 [Other sources]

**FILL**

{EnergySource}
IF Electricity IN D77 [Other sources] = “electricity”
IF Natural gas IN D77 [Other sources] = “natural gas”
IF Fuel oil/Diesel/Kerosene IN D77 [Other sources] = “fuel oil/diesel/kerosene”
IF Bottled gas IN D77 [Other sources] = “bottled gas”
IF District steam IN D77 [Other sources] = “district steam”
IF District hot water IN D77 [Other sources] = “district hot water”
IF Wood IN D77 [Other sources] = “wood”
IF Coal IN D77 [Other sources] = “coal”
IF Solar IN D77 [Other sources] = “solar energy”
IF Other IN D77 [Other sources] = “other fuel”

{Cooling}
Does not appear as a choice for Wood use, Coal use, OR Solar use

{Electricity generation}
Does not appear as a choice for Electricity use, District steam use, OR District hot water use

What was the {EnergySource} used for?

1  Heating
2  {Cooling}
3  Water heating
4  Cooking
5  Manufacturing
6  {Electricity generation}
7  Some other use
8  Incorrectly recorded--source not used

**NEXT** Check that every energy source given in D8 [Energy sources used] (other than electricity or district chilled water) was assigned an end use:

IF Yes:
IF Electricity used ➔ D80 [How purchase electricity]
IF Natural gas used ➔ D82 [How purchase natural gas]
IF Bottled gas used ➔ D83 [Bottled gas amount]
IF Wood used ➔ D85 [Amount wood burned]
OTHERWISE ➔ E1 [Section E Routing]
IF No ➔ D79 [{Energy source} use]
### D79 {Energy source} use

**ASK**
For every energy source given in D8 [Energy sources used] that was not assigned an end use (other than electricity)

<table>
<thead>
<tr>
<th>FILL</th>
<th>{EnergySource}</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF No end use for Natural gas = “natural gas”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for Fuel oil = Type or types specified in D9 [Fuel oil, diesel, or kerosene]</td>
<td></td>
</tr>
<tr>
<td>IF No end use for Bottled gas = “bottled gas”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for District steam = “district steam”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for District hot water = “district hot water”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for District chilled water = “district chilled water”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for Wood = “wood”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for Coal = “coal”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for Solar = “solar energy”</td>
<td></td>
</tr>
<tr>
<td>IF No end use for Other = “another energy source” (second fill = “other energy source”)</td>
<td></td>
</tr>
<tr>
<td>{Heating}, {Water heating}, {Cooking}, {Manufacturing}</td>
<td></td>
</tr>
<tr>
<td>Do not appear as a choice for District chilled water use</td>
<td></td>
</tr>
<tr>
<td>{Cooling}</td>
<td></td>
</tr>
<tr>
<td>Does not appear as a choice for Wood use, Coal use, OR Solar use</td>
<td></td>
</tr>
<tr>
<td>{Electricity generation}</td>
<td></td>
</tr>
<tr>
<td>Does not appear as a choice for District chilled water use, District steam use OR District hot water use</td>
<td></td>
</tr>
</tbody>
</table>

I have recorded that {EnergySource} was used in this building but not how it was used. What was the {EnergySource} used for?

1. {Heating} {XX} HT19/HT29
2. {Cooling} {XX} COOL9
3. {Water heating} {XX} WATR9
4. {Cooking} {XX} COOK9
5. {Manufacturing} {XX} MANU9
6. {Electricity generation} {XX} GENR9
7. Some other use {XX} OTH9
8. Incorrectly recorded--source not used

**NEXT**
IF Electricity used ➔ D80 [How purchase electricity]
IF Natural gas used ➔ D82 [How purchase natural gas]
IF Bottled gas used ➔ D83 [Bottled gas amount]
IF Wood used ➔ D85 [Amount wood burned]
OTHERWISE ➔ E1 [Section E Routing]

### NOTE ON USES OF ENERGY:
In addition to the end uses given in D1 [Heating], D2 [Cooling], D3 [Water heating], D4 [Cooking], and D4 [Manufacturing], it is now possible that an end use was added in D78 [{Energy source} use] OR D79 [{Energy source} use]. For the rest of this questionnaire, end uses will just simply be stated, for example: “IF Cooking” would mean: IF D4 [Cooking] =Yes OR Cooking was added as an end use in D78 [{Energy source} use] OR in D63 [Energy source use].

“Any energy used” will be used to refer to:
IF D1 [Heating] = Yes OR D2 [Cooling] = Yes OR D3 [Water heating] = Yes OR D4 [Cooking] = Yes OR D4 [Manufacturing] = Yes OR D6 [Any energy used] = Yes, some energy was used OR DK/RF
<table>
<thead>
<tr>
<th>Card</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D80</td>
<td>How purchase electricity</td>
</tr>
<tr>
<td>ASK</td>
<td>IF Electricity used</td>
</tr>
</tbody>
</table>

**SHOW CARD D14**

In some areas of the country, consumers may purchase their electricity from more than one supplier. Looking at the list, please tell me all the ways that electricity is purchased for this building.

- **EXP:** [If electricity is bought from the city, that is considered to be the local utility.]
- **PROBE** for any others
- **ENTER** all that apply
  1. Bought from the local utility
  2. Contracted or bought from an independent power producer or non-local utility
  3. Bought from someone else, such as a broker
  4. IF VOLUNTEERED: Produced by a central plant on campus

**NEXT**

IF more than one selected, including Bought from the local utility ➔ **D81** [Percent from local utility]

OTHERWISE:
- IF Natural gas used ➔ **D82** [How purchase natural gas]
- IF Bottled gas used ➔ **D83** [Bottled gas amount]
- IF Wood used ➔ **D85** [Amount wood burned]
- OTHERWISE ➔ **E1** [Section E Routing]

<table>
<thead>
<tr>
<th>Card</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D81</td>
<td>Percent from local utility</td>
</tr>
<tr>
<td>ASK</td>
<td>IF More than one response selected in D80 [How purchase electricity], including Bought from the local utility</td>
</tr>
</tbody>
</table>

About what percent of the electricity would you estimate was obtained from the local utility?

**RANGE** 1 to 100

**NEXT**

IF Natural gas used ➔ **D82** [How purchase natural gas]
- IF Bottled gas used ➔ **D83** [Bottled gas amount]
- IF Wood used ➔ **D85** [Amount wood burned]
- OTHERWISE ➔ **E1** [Section E Routing]
<table>
<thead>
<tr>
<th>D82</th>
<th><strong>How purchase natural gas</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Natural gas used</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td><strong>{Introduction}</strong></td>
</tr>
</tbody>
</table>
| IF Electricity used = "Consumers may also be able to purchase their natural gas from more than one supplier."
| IF Electricity not used = "In some areas of the country, consumers may purchase their natural gas from more than one supplier." |

{Introduction} Was the natural gas in this building bought from the local utility, bought from someone else, such as a non-utility or a broker, or bought both of these ways?

1. Bought from the local utility
2. Bought from someone else, such as a non-utility or a broker
3. Bought both ways

**NEXT**
- IF Bottled gas used ➔ D83 [Bottled gas amount]
- IF Wood used ➔ D85 [Amount wood burned]
- OTHERWISE ➔ E1 [Section E Routing]

<table>
<thead>
<tr>
<th>D83</th>
<th><strong>Bottled gas amount</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Bottled gas used</td>
</tr>
</tbody>
</table>

SHOW CARD D15

You mentioned that bottled gas is used in this building. Looking at this list, which range best describes the amount of bottled gas used in 2007?

1. Less than 100
2. 100 to 499
3. 500 to 999
4. 1,000 or more

**NEXT**
- IF Amount given ➔ D84 [Bottled gas units]
- IF DK/RF:
  - IF Wood used ➔ D85 [Amount wood burned]
  - OTHERWISE ➔ E1 [Section E Routing]
### D84 Bottled gas units

**ASK** IF D83 [Bottled gas amount] was answered

- **VERIFY** if volunteered in previous question

Is that in gallons or pounds?

1. Gallons
2. Pounds

**NEXT** IF Wood used ➔ D85 [Amount wood burned]
OTHERWISE ➔ E1 [Section E Routing]

### D85 Amount wood burned

**ASK** IF Wood used

SHOW CARD D16

Looking at this card, which range best describes how much wood was burned in this building in 2007?

1. Less than 1 cord
2. 1 to 9 cords
3. 10 to 20 cords
4. More than 20 cords

**NEXT** ➔ D86 [How obtain wood]

### D86 How obtain wood

**ASK** IF Wood used

Did you purchase all the wood, obtain it all free of charge, or was some purchased and some free?

1. Purchased all the wood
2. Obtained it all free of charge
3. Some purchased and some free

**NEXT** IF Purchased all the wood OR Some purchased and some free ➔ D87 [Expenditures for wood]
IF Obtained it all free of charge OR DK/RF ➔ E1 [Section E Routing]
**D87** Expenditures for wood  

**ASK** IF D86 [How obtain wood] = Purchase all the wood OR Some purchased and some free

Please give me an estimate of the total amount spent for the wood used in 2007.

- Do not enter cents
- VERIFY number digit by digit

**RANGE** 1 to 99,999

**NEXT** IF DK/RF → D88 [Wood expenditures category]  
IF Amount given → E1 [Section E Routing]

---

**D88** Wood expenditures category

**ASK** IF D87 [Expenditures for wood] = DK/RF

SHOW CARD D17

Looking at this list, which range best describes the total amount spent for the wood used in 2007?

1. $1 to $100
2. $101 to $500
3. $501 to $1,000
4. $1,001 to $2,000
5. Over $2,000

**NEXT** → E1 [Section E Routing]
# SECTION E. MISCELLANEOUS EQUIPMENT

## E1 Section E Routing

| NEXT | IF Cooking ➔ E2 [Commercial food prep] |
|      | IF Water heating ➔ E5 [Large amounts of hot water] |
|      | IF CBECS Activity = Lodging; Inpatient health care; OR Nursing ➔ E6 [Laundry onsite] |
|      | IF B5 [Office type] = Doctor’s or dentist’s office OR Mixed-use office |
|      | OR B15 [Health care type] = Doctor’s or dentist’s office; Clinic or other outpatient health care; Outpatient rehabilitation center; Other type of health care ➔ E7 [Medical equipment] |
|      | IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service ➔ E8 [Laboratory equipment] |
|      | IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse ➔ E9 [Machine equipment] |
|      | IF CBECS Activity = Enclosed mall ➔ E13 [Indoor ice rink] |
|      | IF CBECS Activity = Food sales; Food service; Public order and safety; OR Religious worship ➔ E14 [Sewer flow metered] |
|      | OTHERWISE: IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ➔ E17 [Verify no electricity] |
|      | OTHERWISE ➔ E18 [Refrigeration] |

## E2 Commercial food prep

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF Cooking</th>
</tr>
</thead>
</table>

Now I have some questions about uses of space and equipment in this building.

Is any space used for institutional or commercial food preparation and serving, such as kitchens, restaurants, snack bars, cafeterias, steam tables, or warming areas?

Do not include lounge areas with only a microwave or other small food preparation equipment or vending machines.

1. Yes
2. No

| NEXT | IF Yes ➔ E3 [Type of food area] |
|      | IF No OR DK/RF: |
|      | IF Water heating ➔ E5 [Large amounts of hot water] |
|      | IF CBECS Activity = Lodging; Inpatient health care; OR Nursing ➔ E6 [Laundry onsite] |
|      | IF B5 [Office type] = Doctor’s or dentist’s office OR Mixed-use office |
|      | OR B15 [Health care type] = Doctor’s or dentist’s office; Clinic or other outpatient health care; Outpatient rehabilitation center; Other type of health care ➔ E7 [Medical equipment] |
|      | IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service ➔ E8 [Laboratory equipment] |
|      | IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse ➔ E9 [Machine equipment] |
|      | IF CBECS Activity = Enclosed mall ➔ E13 [Indoor ice rink] |
|      | OTHERWISE: IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ➔ E17 [Verify no electricity] |
|      | OTHERWISE ➔ E18 [Refrigeration] |
### E3 Type of food area

**ASK**

IF E2 [Commercial food prep] = Yes

**SHOW CARD E1**

Which of these types best describes the food preparation or serving areas in this building?

- PROBE for any others
- ENTER all that apply

1. Snack bar/Concession stand
2. Fast food/Small restaurant
3. Cafeteria/Large restaurant
4. Food preparation area
5. Small kitchen area
6. Some other type of food preparation area

**NEXT**

IF Some other type selected ➔ E4 [Other food area]

OTHERWISE:

- IF Water heating ➔ E5 [Large amounts of hot water]
- IF CBECs Activity = Lodging; Inpatient health care; OR Nursing ➔ E6 [Laundry onsite]
- IF B5 [Office type] = Doctor’s or dentist’s office OR Mixed-use office
  - OR B15 [Health care type] = Doctor’s or dentist’s office; Clinic or other outpatient health care;
    Outpatient rehabilitation center; Other type of health care
  - ➔ E7 [Medical equipment]
- IF CBECs Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail;
  OR Service ➔ E8 [Laboratory equipment]
- IF CBECs Activity = Nonrefrigerated OR Refrigerated warehouse ➔ E9 [Machine equipment]
- IF CBECs Activity = Enclosed mall ➔ E13 [Indoor ice rink]

OTHERWISE:

- IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ➔ E17 [Verify no electricity]

OTHERWISE ➔ E18 [Refrigeration]

### E4 Other food area

**ASK**

IF Some other type IN E3 [Type of food area]

Please describe this other type of food preparation or serving area.

- RECORD in open box

**NEXT**

IF Water heating ➔ E5 [Large amounts of hot water]

IF CBECs Activity = Lodging; Inpatient health care; OR Nursing ➔ E6 [Laundry onsite]

IF B5 [Office type] = Doctor’s or dentist’s office OR B15 [Health care type] = Doctor’s or dentist’s office; Clinic or other outpatient health care; Outpatient rehabilitation center

 ➔ E7 [Medical equipment]

IF CBECs Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail;

OR Service ➔ E8 [Laboratory equipment]

IF CBECs Activity = Nonrefrigerated OR Refrigerated warehouse ➔ E9 [Machine equipment]

IF CBECs Activity = Enclosed mall ➔ E13 [Indoor ice rink]

OTHERWISE:

- IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ➔ E17 [Verify no electricity]

OTHERWISE ➔ E18 [Refrigeration]
### Large amounts of hot water

**ASK**

IF Water heating

**FILL**

**Introduction**

IF E2 [Commercial food prep] was NOT asked = "Now I have some questions about energy-related space uses and equipment that may be used in this building."

OTHERWISE = BLANK

---

Is any space in this building used for any activities requiring large amounts of hot water, such as a commercial dishwasher, laundry room, heated pool, steam room, whirlpool, or showers?

1. Yes
2. No

**NEXT**

IF CBECS Activity = Lodging; Inpatient health care; OR Nursing ➔ E6 [Laundry onsite]

IF B5 [Office type] = Doctor’s or dentist’s office OR Mixed-use office

OR B15 [Health care type] = Doctor’s or dentist’s office; Clinic or other outpatient health care; Outpatient rehabilitation center; Other type of health care

➔ E7 [Medical equipment]

IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service ➔ E8 [Laboratory equipment]

IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse ➔ E9 [Machine equipment]

IF CBECS Activity = Enclosed mall ➔ E13 [Indoor ice rink]

OTHERWISE:

- IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ➔ E17 [Verify no electricity]
- OTHERWISE ➔ E18 [Refrigeration]

### Laundry onsite

**ASK**

IF Any energy used & CBECS Activity = Lodging; Inpatient health care; OR Nursing

Are the linens primarily laundered in this building, in another building on-site, or by an off-site laundry service?

- EXP: [Linens include sheets, bedding, towels, tablecloths, and napkins.]

1. In this building
2. In another building on-site
3. By an off-site laundry service

**NEXT**

IF B15 [Health care type] = Inpatient rehabilitation center ➔ E7 [Medical equipment]

IF CBECS Activity = Inpatient health care ➔ E8 [Laboratory equipment]

IF CBECS Activity = Lodging ➔ E10 [Indoor pool]

IF CBECS Activity = Nursing ➔ E14 [Sewer flow metered]

OTHERWISE:

- IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ➔ E17 [Verify no electricity]
- OTHERWISE ➔ E18 [Refrigeration]
### E7 Medical equipment

**ASK**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Any energy used &amp; (B5 [Office type] = Doctor’s or dentist’s office OR B14 [Health care type] = Doctor’s or dentist’s office; Clinic or other outpatient health care; Outpatient rehabilitation center; Inpatient rehabilitation center; OR Other type of health care)</td>
<td>[F1]-HELP</td>
</tr>
<tr>
<td></td>
<td>Does this building have any equipment for medical diagnosis or treatment, such as X-ray, CAT scan, MRI, dialysis, or ultrasound machines?</td>
</tr>
<tr>
<td></td>
<td>1  Yes</td>
</tr>
<tr>
<td></td>
<td>2  No</td>
</tr>
</tbody>
</table>

**NEXT**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF CBECS Activity = Outpatient health care OR B15 [Health care type] = Inpatient rehabilitation center</td>
<td>E8 [Laboratory equipment]</td>
</tr>
<tr>
<td>IF CBECS Activity = Office</td>
<td>E14 [Sewer flow metered]</td>
</tr>
<tr>
<td>OTHERWISE:</td>
<td>IF Electricity NOT used &amp; D70 [Energy for generation] ≠ Yes</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE</td>
</tr>
</tbody>
</table>

**NOTE**

IF the building is a Doctor’s or dentist’s office (from either B5 [Office type] OR B14 [Health care type]):

- IF Medical equipment = Yes, the CBECS Activity = Outpatient health care
- IF Medical equipment = No, the CBECS Activity = Office

### E8 Laboratory equipment

**ASK**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Any energy used &amp; CBECS Activity = Education; Inpatient health care; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does this building have any specialized laboratory equipment that requires extra energy consumption?</td>
</tr>
<tr>
<td></td>
<td>1  Yes</td>
</tr>
<tr>
<td></td>
<td>2  No</td>
</tr>
</tbody>
</table>

**NEXT**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF CBECS Activity = Education; Laboratory; Retail; OR Service</td>
<td>E9 [Machine equipment]</td>
</tr>
<tr>
<td>IF CBECS Activity = Public Assembly OR B15 [Health care type] = Inpatient rehabilitation center OR Outpatient rehabilitation center</td>
<td>E8 [Laboratory equipment]</td>
</tr>
<tr>
<td></td>
<td>E10 [Indoor pool]</td>
</tr>
<tr>
<td>IF CBECS Activity = Office</td>
<td>E14 [Sewer flow metered]</td>
</tr>
<tr>
<td>OTHERWISE:</td>
<td>IF Electricity NOT used &amp; D70 [Energy for generation] ≠ Yes</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE</td>
</tr>
</tbody>
</table>
### E9 Machine equipment

**ASK**

| IF | E10 [Indoor pool] if CBECS Activity = Education |
| IF | E14 [Sewer flow metered] if CBECS Activity = Laboratory |
| OTHERWISE: | IF Electricity NOT used & D70 [Energy for generation] ≠ Yes ⇒ E17 [Verify no electricity] |
| OTHERWISE: | E18 [Refrigeration] |

Does this building have any machine or shop equipment such as woodworking tools, metalworking tools, arc welders, or any other types of power tools?

1. Yes
2. No

### E10 Indoor pool

**ASK**

| IF Any energy used & (CBECS Activity = Education; Lodging; OR Public Assembly OR B15 [Health care type] = Outpatient rehabilitation center OR Inpatient rehabilitation center) |

Is there an indoor swimming pool in this building?

1. Yes
2. No

**NEXT**

| IF Yes ⇒ E11 [Heated pool] |
| IF No OR DK/RF: |
| IF CBECS Activity = Education; Lodging; OR Public assembly ⇒ E13 [Indoor ice rink] |
| IF B15 [Health care type] = Outpatient rehabilitation center OR Inpatient rehabilitation center ⇒ E14 [Sewer flow metered] |

### E11 Heated pool

**ASK**

| IF E10 [Indoor pool] =Yes |

Is it a heated pool?

1. Yes
2. No

**NEXT**

| IF Yes ⇒ E12 [Pool energy source] |
| IF No OR DK/RF: |
| IF CBECS Activity = Education; Lodging; OR Public assembly ⇒ E13 [Indoor ice rink] |
| IF B15 [Health care type] = Outpatient rehabilitation center OR Inpatient rehabilitation center ⇒ E14 [Sewer flow metered] |
### E12 Pool energy source

**ASK**

IF E11 [Heated pool] = Yes

What energy source is used to heat the pool?

- Read choices if necessary

1. Electricity
2. Natural gas
3. Fuel oil/Diesel/Kerosene
4. Bottled gas/LPG/Propane
5. Solar
6. Some other energy source

**NEXT**

IF CBECS Activity = Education; Lodging; OR Public assembly → E13 [Indoor ice rink]
OTHERWISE → E14 [Sewer flow metered]

### E13 Indoor ice rink

**ASK**

IF Any energy used & CBECS Activity = Education; Lodging; Enclosed mall OR Public assembly

Does this building contain an indoor ice skating rink?

1. Yes
2. No

**NEXT**

IF Enclosed mall & Electricity NOT used & D70 [Energy for generation] ≠ Yes → E17 [Verify no electricity]
IF Enclosed mall & Electricity used → E18 [Refrigeration]
OTHERWISE → E14 [Sewer flow metered]

### E14 Sewer flow metered

**ASK**

IF Any energy used & CBECS Activity = Education; Food sales; Food service; Inpatient health care; Laboratory; Lodging; Nursing; Office; Outpatient health care; Public assembly; Public order and safety; OR Religious worship

Is the sewer flow metered for this building?

1. Yes
2. No

**NEXT** → E15 [Sterilizers or autoclaves]
### E15 Sterilizers or autoclaves

**ASK**

IF Any energy used & CBECS Activity = Education; Food sales; Food service; Inpatient health care; Laboratory; Lodging; Nursing; Office; Outpatient health care; Public assembly; Public order and safety; OR Religious worship

Does this building use any sterilizers or autoclaves?

- DEF: [Sterilizers are used to sterilize containers, medical instruments, surgical tools, and trays. Sterilizers use water to produce steam, to cool steam, and in some units, to create a vacuum to accelerate drying of disinfected items.]

- DEF: [Autoclaves are similar to sterilizers except that they use ethylene oxide as the sterilizing medium and a stream of pressurized water at high temperatures to draw off spent ethylene oxide. Like steam sterilizers, some autoclaves also use a continuous stream of water to create a vacuum to speed the drying process.]

1  Yes
2  No

**NEXT**  ➔ E16 [Irrigation system]

---

### E16 Irrigation system

**ASK**

IF Any energy used & CBECS Activity = Education; Food sales; Food service; Inpatient health care; Laboratory; Lodging; Nursing; Office; Outpatient health care; Public assembly; Public order and safety; OR Religious worship

Does this building have a landscape irrigation system?

- DEF: [Irrigation systems are used to water outdoor landscape plantings. They consist of a circuit of equipment controlled by a central valve that can include: pipes, sprinkler heads, rotors and drip or bubble emitters. The central valve can be operated either manually or by an automatic controller.]

1  Yes
2  No

**NEXT**  IF Electricity NOT used & D70 [Energy for generation] ≠ Yes  ➔ E17 [Verify no electricity]  OTHERWISE  ➔ E18 [Refrigeration]

---

### E17 Verify no electricity

**ASK**

IF Any energy used & Electricity NOT used & D70 [Energy for generation] ≠ Yes

I do not have electricity recorded as being used in this building. Is it true that there is not any electricity used in this building?

1  True, electricity is not used
2  False, electricity is used

**NEXT**  IF True, electricity is not used OR DK/RF  ➔ E63 [Window glass type]  IF False, electricity is used  ➔ E18 [Refrigeration]
### E18 Refrigeration

**ASK**

IF Electricity used OR D70 [Energy for generation] = Yes OR E17 [Verify no electricity] = False, electricity is used

[F1]-HELP

Is there any refrigeration or freezer equipment used in this building, including vending machines?

1. Yes
2. No

**NEXT**

IF Yes ➔ E19 [Refrigeration types]

IF No OR DK/RF & NOT(B24 [Completely vacant] = Yes & C17 [Months in use] = Zero OR DK/RF) ➔ E27 [Computers used]

OTHERWISE:

IF C23 [No operating hours] ≠ True, no operating hours & C24 [Total hours open per week] > Zero ➔ E49 [Percent lit when open]

OTHERWISE ➔ E52 [Percent lit off hours]

### E19 Refrigeration types

**ASK**

IF E18 [Refrigeration] = Yes

[F1]-HELP

SHOW CARD E2

Looking at this card, please tell me which types of refrigeration or freezer equipment are found in this building.

- PROBE for any others
- ENTER all that apply

1. Walk-in refrigeration/freezer units
2. Open refrigerated/freezer cases or cabinets
3. Residential-type refrigerators/freezers
4. Closed refrigerated/freezer cases or cabinets
5. Refrigerated vending machines
6. Commercial ice makers
7. Large cold storage areas

**NEXT**

IF Walk-in units selected ➔ E20 [Number walk-in units]

IF Open cases or cabinets selected ➔ E21 [Number open cases]

IF Residential-type selected ➔ E22 [Number residential refrigerators]

IF Closed cases or cabinets selected ➔ E23 [Number closed cases]

IF Refrigerated vending machines selected ➔ E24 [Number vending]

IF Commercial ice makers selected ➔ E25 [Number ice makers]

IF Large cold storage areas selected ➔ E26 [Percent cold storage]

IF DK/RF ➔ E27 [Computers used]
<table>
<thead>
<tr>
<th>E20</th>
<th>Number walk-in units</th>
<th>RFGWIN9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Walk-in units IN E19 [Refrigeration types]</td>
<td></td>
</tr>
</tbody>
</table>

How many walk-in refrigeration or freezer units are there?

- PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 999</th>
</tr>
</thead>
</table>
| NEXT  | IF Open cases or cabinets IN E19 [Refrigeration types] ➔ E21 [Number open cases]  
|       | IF Residential-type IN E19 [Refrigeration types] ➔ E22 [Number residential refrigerators]  
|       | IF Closed cases or cabinets IN E19 [Refrigeration types] ➔ E23 [Number closed cases]  
|       | IF Refrigerated vending machines IN E19 [Refrigeration types] ➔ E24 [Number vending]  
|       | IF Commercial ice makers IN E19 [Refrigeration types] ➔ E25 [Number ice makers]  
|       | IF Large cold storage areas IN E19 [Refrigeration types] ➔ E26 [Percent cold storage]  
|       | OTHERWISE ➔ E27 [Computers used] |

<table>
<thead>
<tr>
<th>E21</th>
<th>Number open cases</th>
<th>RFGOPN9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Open cases or cabinets IN E19 [Refrigeration types]</td>
<td></td>
</tr>
</tbody>
</table>

How many open refrigerated or freezer cases or cabinets are there?

- PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 999</th>
</tr>
</thead>
</table>
| NEXT  | IF Residential-type IN E19 [Refrigeration types] ➔ E22 [Number residential refrigerators]  
|       | IF Closed cases or cabinets IN E19 [Refrigeration types] ➔ E23 [Number closed cases]  
|       | IF Refrigerated vending machines IN E19 [Refrigeration types] ➔ E24 [Number vending]  
|       | IF Commercial ice makers IN E19 [Refrigeration types] ➔ E25 [Number ice makers]  
|       | IF Large cold storage areas IN E19 [Refrigeration types] ➔ E26 [Percent cold storage]  
|       | OTHERWISE ➔ E27 [Computers used] |

<table>
<thead>
<tr>
<th>E22</th>
<th>Number residential refrigerators</th>
<th>RFGRSN9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Residential-type IN E19 [Refrigeration types]</td>
<td></td>
</tr>
</tbody>
</table>

How many residential-type refrigerators or freezers are there?

- PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 999</th>
</tr>
</thead>
</table>
| NEXT  | IF Closed cases or cabinets IN E19 [Refrigeration types] ➔ E23 [Number closed cases]  
|       | IF Refrigerated vending machines IN E19 [Refrigeration types] ➔ E24 [Number vending]  
|       | IF Commercial ice makers IN E19 [Refrigeration types] ➔ E25 [Number ice makers]  
|       | IF Large cold storage areas IN E19 [Refrigeration types] ➔ E26 [Percent cold storage]  
<p>|       | OTHERWISE ➔ E27 [Computers used] |</p>
<table>
<thead>
<tr>
<th>E23</th>
<th>Number closed cases</th>
<th>RFGCLN9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Closed cases or cabinets IN E19 [Refrigeration types]</td>
<td></td>
</tr>
<tr>
<td>How many closed refrigerated or freezer cases or cabinets are there?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◆ PROBE for estimate if DK</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>1 to 999</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>IF Refrigerated vending machines IN E19 [Refrigeration types] → E24 [Number vending]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Commercial ice makers IN E19 [Refrigeration types] → E25 [Number ice makers]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Large cold storage areas IN E19 [Refrigeration types] → E26 [Percent cold storage]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → E27 [Computers used]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E24</th>
<th>Number vending</th>
<th>RFGVNN9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Refrigerated vending machines IN E19 [Refrigeration types]</td>
<td></td>
</tr>
<tr>
<td>How many refrigerated vending machines are there?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◆ PROBE for estimate if DK</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>1 to 999</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>IF Commercial ice makers IN E19 [Refrigeration types] → E25 [Number ice makers]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Large cold storage areas IN E19 [Refrigeration types] → E26 [Percent cold storage]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → E27 [Computers used]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E25</th>
<th>Number ice makers</th>
<th>RFGICN9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Commercial ice makers IN E19 [Refrigeration types]</td>
<td></td>
</tr>
<tr>
<td>How many commercial ice makers are there?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◆ PROBE for estimate if DK</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>1 to 999</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>IF Large cold storage areas IN E19 [Refrigeration types] → E26 [Percent cold storage]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → E27 [Computers used]</td>
<td></td>
</tr>
</tbody>
</table>
### E26 Percent cold storage

**ASK**

IF Large cold storage areas IN E19 [Refrigeration types]

About what percent of the total floorspace in the building is used for cold storage?

- PROBE for estimate if DK

**RANGE** 1 to 100

**NEXT** → E27 [Computers used]

### E27 Computers used

**ASK**

IF Electricity used OR D70 [Energy for generation] = Yes

OR E17 [Verify no electricity] = False, electricity is used

& NOT(B24 [Completely vacant] = Yes & C17 [Months in use] = Zero OR DK/RF)

Are there any computers used in this building?

- EXP: [Even if only laptops are used, answer Yes.]
- EXP: [Do not include inventory, such as in retail stores.]

1. Yes
2. No

**NEXT**

IF Yes → E28 [Number of computers]

IF No OR DK/RF → E38 [Dedicated servers]

### E28 Number of computers

**ASK**

IF E27 [Computers used] = Yes

Not counting any dedicated servers or laptop computers, about how many computers are used in this building?

- EXP: [Do not include inventory, such as in retail stores.]
- DEF: [A server is usually just the CPU, or "case," portion of a computer that manages network resources such as computer files, printers, databases, or network traffic; servers do not require much human operation, so most do not have keyboards or monitors.]

**RANGE** 0 to 9,999,999

**NEXT**

IF DK/RF → E29 [Computers category]

IF > Zero → E30 [Multiple monitors]

IF Zero → E34 [Number of laptops]
<table>
<thead>
<tr>
<th>E29</th>
<th>Computers category</th>
<th>PCTRMC9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF E28 [Number of computers] = DK/RF</td>
<td></td>
</tr>
</tbody>
</table>

SHOW CARD E3

Looking at this card, which category best describes the number of computers used in this building?

1. 1 to 4
2. 5 to 9
3. 10 to 19
4. 20 to 49
5. 50 to 99
6. 100 to 249
7. 250 to 499
8. 500 to 999
9. 1,000 to 2,499
10. 2,500 to 4,999
11. 5,000 or more

NEXT ➔ E30 [Multiple monitors]

<table>
<thead>
<tr>
<th>E30</th>
<th>Multiple monitors</th>
<th>MLTMON9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF E28 [Number of computers] &gt; Zero</td>
<td></td>
</tr>
</tbody>
</table>

Do any of the computers use more than one monitor?

1. Yes
2. No

NEXT IF Yes ➔ E31 [Multiple monitor category] IF No OR DK/RF ➔ E32 [Flat screen]

<table>
<thead>
<tr>
<th>E31</th>
<th>Multiple monitor category</th>
<th>MLTMNC9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF E30 [Multiple monitors] = Yes</td>
<td></td>
</tr>
</tbody>
</table>

Would you say that multiple monitors are used with all of the computers, most of them, some of them, or just a few?

1. All
2. Most
3. Some
4. A few

NEXT ➔ E32 [Flat screen]
### E32 Flat screen

**ASK**
IF E28 [Number of computers] > Zero

**FILL**
{FlatQuestion}
IF E30 [Multiple monitors] = Yes = Are any of the monitors of this type?
IF E30 [Multiple monitors] ≠ Yes = Do any of the computers in this building have these types of monitors?

**SHOW CARD E4**

Please look at this picture of a flat screen monitor. {FlatQuestion}

- **DEF:** [A flat screen monitor, also known as a liquid crystal display (LCD), is lightweight and very thin, in contrast to most standard monitors which have bulky backs and take up a lot of desk space.]

1 Yes
2 No

**NEXT**
Yes → E33 [Flat screen category]
No OR DK/RF → E34 [Number of laptops]

---

### E33 Flat screen category

**ASK**
IF E32 [Flat screen] = Yes

**FILL**
{MonitorsComputers}
IF E30 [Multiple monitors] = Yes = “the monitors are”
IF E30 [Multiple monitors] ≠ Yes = “the computers have”

Would you say that all {MonitorsComputers} flat screen monitors, most of them, some of them, or just a few?

1 All
2 Most
3 Some
4 A few

**NEXT**
→ E34 [Number of laptops]

---

### E34 Number of laptops

**ASK**
IF E27 [Computers used] = Yes

About how many laptop computers are used in this building?

- **EXP:** [Do not include inventory, such as in retail stores.]

**RANGE**
0 to 9,999,999

**NEXT**
IF DK/RF → E35 [Laptops category]
IF Number given → E36 [Number of printers]
### E35 Laptops category

**ASK**

```
IF E34 [Number of laptops] = DK/RF
```

**SHOW CARD E3**

Looking at this card, which category best describes the number of laptop computers used in this building?

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Laptops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 to 4</td>
</tr>
<tr>
<td>2</td>
<td>5 to 9</td>
</tr>
<tr>
<td>3</td>
<td>10 to 19</td>
</tr>
<tr>
<td>4</td>
<td>20 to 49</td>
</tr>
<tr>
<td>5</td>
<td>50 to 99</td>
</tr>
<tr>
<td>6</td>
<td>100 to 249</td>
</tr>
<tr>
<td>7</td>
<td>250 to 499</td>
</tr>
<tr>
<td>8</td>
<td>500 to 999</td>
</tr>
<tr>
<td>9</td>
<td>1,000 to 2,499</td>
</tr>
<tr>
<td>10</td>
<td>2,500 to 4,999</td>
</tr>
<tr>
<td>11</td>
<td>5,000 or more</td>
</tr>
</tbody>
</table>

**NEXT**  ➔ E36 [Number of printers]

### E36 Number of printers

**ASK**

```
IF E27 [Computers used] = Yes
```

About how many printers are there in this building?

- **PROBE** for estimate if DK

**RANGE** 0 to 9,999,999

**NEXT**

- IF ≥ 1 ➔ E37 [Type of printers]
- IF Zero OR DK/RF ➔ E38 [Dedicated servers]

### E37 Type of printers

**ASK**

```
IF E36 [Number of printers] ≥ 1
```

**[F1]-HELP**

Are these mainly inkjet or laser printers?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inkjet</td>
</tr>
<tr>
<td>2</td>
<td>Laser</td>
</tr>
<tr>
<td>3</td>
<td>IF VOLUNTEERED: Some other type</td>
</tr>
<tr>
<td>4</td>
<td>IF VOLUNTEERED: Half inkjet, half laser</td>
</tr>
</tbody>
</table>

**NEXT**  ➔ E38 [Dedicated servers]
Are there any dedicated computer servers used in this building?

- DEF: [A server is usually just the CPU, or "case," portion of a computer that manages network resources such as computer files, printers, databases, or network traffic; servers do not require much human operation, so most do not have keyboards or monitors.]

- DEF: [Dedicated means that the server performs no other tasks besides server tasks.]

1. Yes
2. No

NEXT IF Yes \(\Rightarrow\) E39 [Number of servers]
IF No OR DK/RF \(\Rightarrow\) E41 [Separate computer areas]

### E39 Number of servers

**ASK** IF E38 [Dedicated servers] = Yes

About how many dedicated servers are used in this building?

**RANGE** 1 to 9,999,999

**NEXT** IF DK/RF \(\Rightarrow\) E40 [Servers category]
IF Number given \(\Rightarrow\) E41 [Separate computer areas]

### E40 Servers category

**ASK** IF E39 [Number of servers] = DK/RF

SHOW CARD E3

Looking at this card, which category best describes the number of servers used in this building?

1. 1 to 4
2. 5 to 9
3. 10 to 19
4. 20 to 49
5. 50 to 99
6. 100 to 249
7. 250 to 499
8. 500 to 999
9. 1,000 to 2,499
10. 2,500 to 4,999
11. 5,000 or more

**NEXT** \(\Rightarrow\) E41 [Separate computer areas]
<table>
<thead>
<tr>
<th><strong>E41</strong> Separate computer areas</th>
</tr>
</thead>
</table>
| **ASK** | IF E27 [Computers used] = Yes OR E38 [Dedicated servers] = Yes  

**SHOW CARD E5**  
Please look at this card and tell me if any of these types of separate computer areas are found in this building.  

- **PROBE** for any others  
- **ENTER** all that apply  

1. High-density computing center  
2. Computer-based training room  
3. Student or public computer center  
4. Other type of specialized computer area  
5. None of these types of areas  

**NEXT** IF Other type of specialized computer area selected ➔ E42 [Other computer area]  
IF Any other type selected ➔ E43 [Computer area percent]  
IF None of these types of areas OR DK/RF ➔ E44a [Cash registers]  

<table>
<thead>
<tr>
<th><strong>E42</strong> Other computer area</th>
</tr>
</thead>
</table>
| **ASK** | IF Other type of specialized computer area IN E41 [Separate computer areas]  

Please describe this other type of computer area.  

- **RECORD** in open box  

**NEXT** ➔ E43 [Computer area percent]  

<table>
<thead>
<tr>
<th><strong>E43</strong> Computer area percent</th>
</tr>
</thead>
</table>
| **ASK** | IF E41 [Separate computer areas] ≠ None of these types of areas OR DK/RF  

Approximately what percent of the floorspace in this building does all of the computer area you just mentioned comprise?  

**RANGE** 1 to 100  

**NEXT** ➔ E44a [Cash registers]
**E44a**  Cash registers  

**ASK**

IF Electricity used OR D70 [Energy for generation] = Yes 
OR E17 [Verify no electricity] = False, electricity is used 
& NOT(B24 [Completely vacant] = Yes & C17 [Months in use] = Zero)

Are there any cash registers or "point-of-sales" terminals used in this building? 

1  Yes 
2  No 

**NEXT**

IF Yes ➔ E44 [Number of cash registers]  
IF No OR DK/RF ➔ E45 [Photocopiers]

---

**E44**  Number of cash registers  

**ASK**

IF E44a [Cash registers] = Yes

About how many cash registers or "point-of-sales" terminals are used in this building? 

◆ PROBE for estimate if DK

**RANGE**  1 to 9,999

**NEXT**  ➔ E45 [Photocopiers]

---

**E45**  Photocopiers  

**ASK**

IF Electricity used OR D70 [Energy for generation] = Yes 
OR E17 [Verify no electricity] = False, electricity is used 
& NOT(B24 [Completely vacant] = Yes & C17 [Months in use] = Zero)

Are there any photocopiers, other than small desktop copiers, used in this building? 

1  Yes 
2  No 

**NEXT**

IF Yes ➔ E46 [Number of photocopiers]  
IF No OR DK/RF ➔ E47 [FAX machines]
### E46  Number of photocopiers  

<table>
<thead>
<tr>
<th>ASK</th>
<th>COPRN9</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF E45 [Photocopiers] = Yes</td>
<td></td>
</tr>
<tr>
<td>About how many photocopiers are there?</td>
<td></td>
</tr>
<tr>
<td>◆ PROBE for estimate if DK</td>
<td></td>
</tr>
</tbody>
</table>

**RANGE**: 1 to 9,999

**NEXT**: E47 [FAX machines]

### E47  FAX machines  

<table>
<thead>
<tr>
<th>ASK</th>
<th>FAX9</th>
</tr>
</thead>
</table>
| IF Electricity used OR D70 [Energy for generation] = Yes  
OR E17 [Verify no electricity] = False, electricity is used  
& NOT(B24 [Completely vacant] = Yes & C17 [Months in use] = Zero) |  |
| Are there any FAX machines used in this building? | |
| 1  Yes |  |
| 2  No |  |

**NEXT**: E48 [Equipment turned off]

**OTHERWISE**:
- IF C23 [No operating hours] ≠ True, no operating hours  
 & C24 [Total hours open per week] > Zero  
 ➔ E49 [Percent lit when open]  
**OTHERWISE**: ➔ E52 [Percent lit off hours]
E48  Equipment turned off


FILL  {Equipment}
  IF E36 [Number of printers] number was given OR E44 [Number of cash registers] number was given OR E45 [Photocopiers] = Yes OR E47 [FAX machines] = Yes = “the computers and the office equipment just mentioned” OTHERWISE = “the computers”

{F1}-HELP

How often are the majority of {Equipment} turned off when the building is not normally open? Would you say that they are always turned off, sometimes turned off, or never turned off when the building is not normally open?

1  Always turned off
2  Sometimes turned off
3  Never turned off
4  IF VOLUNTEERED: Computers are "powered down"

NEXT  IF C23 [No operating hours] ≠ True, no operating hours & C24 [Total hours open per week] > Zero ➔ E49 [Percent lit when open] OTHERWISE ➔ E52 [Percent lit off hours]

E49  Percent lit when open

ASK  IF C23 [No operating hours] ≠ True, no operating hours & C24 [Total hours open per week] > Zero & (Electricity used OR D70 [Energy for generation] = Yes OR E17 [Verify no electricity] = False, electricity is used)

FILL  {SqFt}
  IF A1 [Square footage] = DK/RF = “square footage”

{F1}-HELP

The next questions are about the lighting inside the building.

What percent of the {SqFt} in this building is lit when the building is normally open?

◆ DEF: [*Normally open* means the hours when the usual activities occur.]
◆ If lit square footage is known but not the percent, RECORD square footage in comments, then code DK

RANGE 0 to 100

NEXT  IF DK/RF ➔ E50 [Lit when open category] IF Percent given:
  IF C20 [Open 24 hours a day] = Yes OR C24 [Total hours open per week] = 168 OR C25 [Weekly hours category] = 168 ➔ E51 [Lights off during 24 hours] OTHERWISE ➔ E52 [Percent lit off hours]
### E50 Lit when open category

**ASK**

<table>
<thead>
<tr>
<th>Choice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 to 25 percent</td>
</tr>
<tr>
<td>2</td>
<td>26 to 50 percent</td>
</tr>
<tr>
<td>3</td>
<td>51 to 75 percent</td>
</tr>
<tr>
<td>4</td>
<td>76 to 100 percent</td>
</tr>
<tr>
<td>5</td>
<td>Not lit at all when it is normally open</td>
</tr>
</tbody>
</table>

**SHOW CARD E6**

Looking at this list, what is your best estimate of the percent of the square feet in this building that is lit when the building is normally open?

### E51 Lights off during 24 hours

**ASK**

<table>
<thead>
<tr>
<th>Choice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT**

IF Yes ➔ E52 [Percent lit off hours]  
IF No OR DK/RF:  
IF E49 [Percent lit when open] > 0 OR E50 [Lit when open category] ≠ Not lit ➔ E54 [Lighting types]  
OTHERWISE ➔ E60 [Percent of exterior lighted]
### E52 Percent lit off hours

**ASK**

\[
\text{IF } (C20 \text{ [Open 24 hours a day]} \neq \text{Yes} \& C24 \text{ [Total hours open per week]} \neq 168 \\
\& C25 \text{ [Weekly hours category]} \neq 168) \text{ OR } E51 \text{ [Lights off during 24 hours]} = \text{Yes} \\
\& (\text{Electricity used OR } D70 \text{ [Energy for generation]} = \text{Yes} \\
\text{OR } E17 \text{ [Verify no electricity]} = \text{False, electricity is used})
\]

**FILL**

\[
\text{IF } A1 \text{ [Square footage]} \text{ known} = \text{“A1 [Square footage] square feet”} \\
\text{IF } A1 \text{ [Square footage]} = \text{DK/RF} = \text{“square footage”} \\
\{\text{OffHours}\} \\
\text{IF } C20 \text{ [Open 24 hours a day]} = \text{Yes OR } C24 \text{ [Total hours open per week]} = 168 \\
\text{OR } C25 \text{ [Weekly hours category]} = \text{“the time during a 24-hour period when some lights are turned off”} \\
\text{OTHERWISE} = \text{“the hours when the building is not normally open”}
\]

What percent of the \{SqFt\} is lit during off hours, that is \{OffHours\}? Exclude the space lit by emergency lighting.

- ◆ If lit square footage is known but not the percent, RECORD square footage in comments, then code DK

**RANGE**

0 to 100

**NEXT**

IF DK/RF ➔ E53 [Lit off hours category] \\
IF 1-100 ➔ E54 [Lighting types] \\
IF Zero: \\
\text{IF } E49 \text{ [Percent lit when open]} > 0 \text{ OR } E50 \text{ [Lit when open category]} \neq \text{Not lit} ➔ E54 [Lighting types] \\
\text{OTHERWISE} ➔ E60 [Percent of exterior lighted]

### E53 Lit off hours category

**ASK**

\[
\text{IF } E52 \text{ [Percent lit off hours]} = \text{DK/RF}
\]

**SHOW CARD E6**

Looking at this list, what is your best estimate of the percent lit during off hours?

1. 1 to 25 percent
2. 26 to 50 percent
3. 51 to 75 percent
4. 76 to 100 percent
5. Not lit at all during off hours

**NEXT**

IF 1 to 100 percent OR DK/RF ➔ E54 [Lighting types] \\
IF Not lit at all: \\
\text{IF } E49 \text{ [Percent lit when open]} > 0 \text{ OR } E50 \text{ [Lit when open category]} \neq \text{Not lit} ➔ E54 [Lighting types] \\
\text{OTHERWISE} ➔ E60 [Percent of exterior lighted]
## E54 Lighting types

**ASK**

IF E49 [Percent lit when open] > 0 OR E50 [Lit when open category] = 1 to 100 OR DK/RF
OR E52 [Percent lit off hours] > 0 OR E53 [Lit off hours category] = 1 to 100 OR DK/RF

Looking at this card, what types of lighting were used to light any of the space in this building?

- **PROBE** for any others
- **ENTER** all that apply

1. Fluorescent lighting other than compact fluorescent bulbs
2. Compact fluorescent bulbs
3. Incandescent light bulbs, other than halogen bulbs
4. Halogen bulbs
5. High intensity discharge (HID) lights such as high pressure sodium, metal halide or mercury vapor
6. Light-emitting diode (LED) lights
7. Other type of lighting

**NEXT**

IF Other type of lighting selected ➔ E55 [Other bulb type]  
OTHERWISE:  
IF More than one type selected ➔ E56 [Percent lit by bulb type]  
IF Only one type selected:  
- IF Fluorescent selected ➔ E57 [Specular reflectors]  
- IF HID selected ➔ E58 [Electronic ballasts]  
- IF D41 [How reduce heating] = EMCS OR D59 [How reduce cooling] = EMCS ➔ E59 [EMCS controls lighting]  
OTHERWISE ➔ E60 [Percent of exterior lighted]

## E55 Other bulb type

**ASK**

IF Other type of lighting IN E54 [Lighting types]

What type of bulb is the other type of lighting?

- **RECORD** in space below

**NEXT**

IF More than one type selected in E54 [Lighting types] ➔ E56 [Percent lit by bulb type]  
IF Only one type selected in E54 [Lighting types]:  
- IF Fluorescent in E54 [Lighting types] ➔ E57 [Specular reflectors]  
- IF HID in E54 [Lighting types] ➔ E58 [Electronic ballasts]  
- IF D41 [How reduce heating] = EMCS OR D59 [How reduce cooling] = EMCS ➔ E59 [EMCS controls lighting]  
OTHERWISE ➔ E60 [Percent of exterior lighted]
**E56** Percent lit by bulb type

**ASK** For each lighting type given in E54 [Lighting types]

**FILL**

- **{Introduction}**
  - IF First lighting type = "The next questions are about the percent of floorspace lit by the types of lighting you just mentioned. Please keep in mind:"
  - OTHERWISE = BLANK

- **{Explanation}**
  - IF First lighting type and E49 [Percent lit when open] ≠ 100 = "We are talking only about the lighted portion of the floorspace, so these percents must add up to at least 100, but since more than one type of bulb can light the same area, it is also possible for them to add up to more than 100."
  - IF First lighting type and E49 [Percent lit when open] = 100 = "These percents must add up to at least 100, but since more than one type of bulb can light the same area, it is also possible for them to add up to more than 100."
  - OTHERWISE = BLANK

- **{BulbType}**
  - IF Fluorescent IN E54 [Lighting types] = "fluorescent lighting"
  - IF Compact fluorescent bulbs IN E54 [Lighting types] = "compact fluorescent bulbs"
  - IF Incandescent light bulbs IN E54 [Lighting types] = "incandescent bulbs"
  - IF Halogen bulbs IN E54 [Lighting types] = "halogen lighting"
  - IF High intensity discharge (HID) lights IN E54 [Lighting types] = "high intensity discharge lights"
  - IF Light-emitting diode (LED) lights IN E54 [Lighting types] = "LED lights"
  - IF Other type of lighting IN E54 [Lighting types] = "other lighting type"

**SHOW CARD E8**

- **{Introduction}**

- **{Explanation}**

What percent of the lighted area in this building is lit by the {BulbType}?

- ◆ PROBE for estimate if DK

**RANGE** 0 to 100

**NEXT**

- IF Fluorescent in E54 [Lighting types] ➔ E57 [Specular reflectors]
- IF HID in E54 [Lighting types] ➔ E58 [Electronic ballasts]
- IF D41 [How reduce heating] = EMCS OR D59 [How reduce cooling] = EMCS ➔ E59 [EMCS controls lighting]
- OTHERWISE ➔ E60 [Percent of exterior lighted]
## E57 Specular reflectors

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF Fluorescent in E54 [Lighting types]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Does your building's interior lighting system have any specular reflectors, which are designed to increase the amount of light from a fluorescent fixture?</td>
</tr>
<tr>
<td></td>
<td>- DEF: [A specular reflector consists of a reflective surface or panel attached to a fluorescent lamp to direct a greater fraction of the lamp's light to the room.]</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

NEXT  ➔ E58 [Electronic ballasts]

## E58 Electronic ballasts

<table>
<thead>
<tr>
<th>ASK</th>
<th>IF Fluorescent OR HID in E54 [Lighting types]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do any of the building's lights have electronic ballasts?</td>
</tr>
<tr>
<td></td>
<td>- DEF: [A ballast is the transformer for fluorescent and HID lamps which provides the necessary current, voltage, and wave-form conditions to operate the lamp. Electronic ballasts operate lamps using electronic switching power supply circuits, are lightweight, and start instantly without flickering.]</td>
</tr>
<tr>
<td></td>
<td>- EXP: [Do not include magnetic ballasts.]</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

NEXT  ➔ IF D41 [How reduce heating] = EMCS OR D59 [How reduce cooling] = EMCS ➔ E59 [EMCS controls lighting] OTHERWISE ➔ E60 [Percent of exterior lighted]
### E60 Percent of exterior lighted

**ASK**

IF (Electricity used OR D70 [Energy for generation] = Yes OR E17 [Verify no electricity] = False, electricity is used)

What percentage of all the exterior building wall surfaces is lighted? Would you say less than 10 percent, 10 to 25, 25 to 50, or more than 50 percent of the total building façade is lighted?

1. Less than 10 percent
2. 10 to 25 percent
3. 25 to 50 percent
4. More than 50 percent

**NEXT** ➔ E61 [Lighted parking area]

### E61 Lighted parking area

**ASK**

IF (Electricity used OR D70 [Energy for generation] = Yes OR E17 [Verify no electricity] = False, electricity is used)

Is there a parking area associated with the building that is lighted with fixtures powered through the building’s electrical service?

1. Yes
2. No

**NEXT**

IF Yes ➔ E62 [Vehicle parking capacity]
IF No ➔ E63 [Window glass type]

### E62 Vehicle parking capacity

**ASK**

IF E61 [Lighted parking area] = Yes

What is the vehicle capacity of the parking area, that is, the number of parking spaces?

**RANGE** 1 to 999,999

**NEXT** ➔ E63 [Window glass type]
### E63 Window glass type

**ASK**
All Buildings

**SHOW CARD E9**

Looking at the picture on this card, which shows a multi-layer window, do the exterior windows in this building contain single layer glass, multi-layer glass, or a combination of both of these types?

1. Single layer glass
2. Multi-layer glass
3. Combination of both
4. IF VOLUNTEERED: No windows

**NEXT**
IF Single layer, Multi-layer, OR Combination ➞ E64 [Daylighting features]
IF No windows OR DK/RF ➞ F1 [Section F Routing]

### E64 Daylighting features

**ASK**
IF E63 [Window glass type] ≠ (No windows OR DK/RF)

**SHOW CARD E9**

Looking at the list at the bottom of this same card, please tell me which of these daylighting or conservation features are present in this building.

- **PROBE** for any others
- **ENTER** all that apply

1. Tinted window glass
2. Reflective window glass
3. External overhangs or awnings
4. Skylights or atriums designed to provide light
5. Automatic controls or sensors that increase or reduce lighting in response to the level of natural light
6. Occupancy sensors that reduce lighting when rooms are unoccupied
7. IF VOLUNTEERED: None of these

**NEXT** ➞ E65 [Percent daylight]
<table>
<thead>
<tr>
<th>ASK</th>
<th>IF E63 [Window glass type] ≠ (No windows OR DK/RF)</th>
</tr>
</thead>
</table>

What percent of the building receives enough outside light so that the interior lights do not need to be turned on?

- If none, ENTER "0"
- PROBE for estimate if DK

**RANGE** 0 to 100

**NEXT** ➔ F1 [Section F Routing]
### SECTION F. ELECTRICITY

<table>
<thead>
<tr>
<th>F1</th>
<th>Section F Routing</th>
</tr>
</thead>
</table>
| NEXT | IF Electricity used ➔ F2 [WS2 electricity filled out]  
OTHERWISE ➔ G1 [Section G Routing] |

<table>
<thead>
<tr>
<th>F2</th>
<th>WS2 electricity filled out</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Electricity used</td>
</tr>
<tr>
<td></td>
<td>Do you have Worksheet 2 with you and filled out for electricity?</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>
| NEXT | IF No OR DK/RF ➔ F3 [Provide electricity figures]  
IF Yes ➔ F4 [Electricity consumption] |

<table>
<thead>
<tr>
<th>F3</th>
<th>Provide electricity figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF F2 [WS2 electricity filled out] = No OR DK/RF</td>
</tr>
<tr>
<td></td>
<td>The next questions are about electricity usage in the building during calendar year 2007. Would you be able to give me an approximate figure of how much electricity was used or how much was spent on it?</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>
| NEXT | IF Yes ➔ F4 [Electricity consumption]  
IF No OR DK/RF ➔ F26 [Number electricity suppliers] |
### F4 Electricity consumption

**ASK**

IF F2 [WS2 electricity filled out] = Yes OR F3 [Provide electricity figures] = Yes

Please give me the total number of kilowatthours of electricity used in calendar year 2007.

- EXP: [If part of a multibuilding campus or complex, and the respondent only knows the consumption for the whole campus or complex, ENTER the total consumption for the campus or complex here.]
- VERIFY number digit by digit

**RANGE** 1 to 99,999,999,999,999

**NEXT** ➔ F5 [Electricity expenditures]

### F5 Electricity expenditures

**ASK**

IF F2 [WS2 electricity filled out] = Yes OR F3 [Provide electricity figures] = Yes

Please give me the total dollars spent on electricity in calendar year 2007. This should include state and local taxes and the following charges: fuel adjustment, system, distribution, and demand.

- Do not enter cents
- VERIFY number digit by digit

**RANGE** 0 to 999,999,999

**NEXT** IF F4 [Electricity consumption] = DK/RF & F5 [Electricity expenditures] = DK/RF ➔ F26 [Number electricity suppliers] OTHERWISE ➔ F6 [Starting date for electricity figures]

### F6 Starting date for electricity figures

**ASK**

IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given

What is the starting date for these electricity usage figures?

- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

**NEXT** ➔ F7 [Ending date for electricity figures]
### F7 Ending date for electricity figures

**ASK**

- All Structures

IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given

<table>
<thead>
<tr>
<th>Ending date for electricity figures</th>
<th>ELENDAT9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td></td>
</tr>
<tr>
<td>All Structures</td>
<td></td>
</tr>
<tr>
<td>IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given</td>
<td></td>
</tr>
<tr>
<td>[F1]-HELP</td>
<td></td>
</tr>
</tbody>
</table>

What is the ending date [for these electricity usage figures]?

- ENTER date as MMDDYYYY
- VERIFY that this is the last day of the last billing period
- If the day is not known, ENTER "15" for DD

**NEXT**

IF C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1

OR C8 [Number of businesses category] ≠ Zero OR One ➔ F8 [All occupants electricity included]

IF Enclosed mall & A5 [Food court] = Yes & Electricity IN D66 [Sources for cooking]

➔ F10 [Electricity covers food court]

OTHERWISE ➔ F11 [Other bldgs electricity included]

### F8 All occupants electricity included

**ASK**

IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given

& C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1

OR C8 [Number of businesses category] ≠ Zero OR One

<table>
<thead>
<tr>
<th>All occupants electricity included</th>
<th>ELALL9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td></td>
</tr>
<tr>
<td>IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given</td>
<td></td>
</tr>
<tr>
<td>&amp; C5 [Number of businesses] &gt;1 OR C7 [Re-ask number of businesses] &gt; 1</td>
<td></td>
</tr>
<tr>
<td>OR C8 [Number of businesses category] ≠ Zero OR One</td>
<td></td>
</tr>
<tr>
<td>Do these figures include the electricity for all of the businesses or organizations in this building?</td>
<td></td>
</tr>
<tr>
<td>1 Yes</td>
<td></td>
</tr>
<tr>
<td>2 No</td>
<td></td>
</tr>
</tbody>
</table>

**NEXT**

IF No ➔ F9 [Sq ft not included]

IF Enclosed mall & A5 [Food court] = Yes & Electricity IN D66 [Sources for cooking]

➔ F10 [Electricity covers food court]

OTHERWISE ➔ F11 [Other bldgs electricity included]

### F9 Sq ft not included

**ASK**

IF F8 [All occupants electricity included] = No

<table>
<thead>
<tr>
<th>Sq ft not included</th>
<th>ELNISF9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td></td>
</tr>
<tr>
<td>IF F8 [All occupants electricity included] = No</td>
<td></td>
</tr>
</tbody>
</table>

What is the approximate square footage of the space in the building that is not included in these figures?

- PROBE for estimate if DK

**RANGE**

1 to 999,999,999

**NEXT**

IF Enclosed mall & A5 [Food court] = Yes & Electricity IN D66 [Sources for cooking]

➔ F10 [Electricity covers food court]

OTHERWISE ➔ F11 [Other bldgs electricity included]
**F10 Electricity covers food court**

**ASK**

IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given
& Enclosed mall & A5 [Food court] = Yes & Electricity IN D66 [Sources for cooking]

Do these figures include the energy used for cooking by the establishments in the food court?

1. Yes
2. No

**NEXT**  ➔ F11 [Other bldgs electricity included]

---

**F11 Other bldgs electricity included**

**ASK**

IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given

Is any consumption from other buildings included in these figures?

1. Yes
2. No

**NEXT** IF Yes ➔ F12 [Sq ft of other included]
IF No OR DK/RF:
IF E61 [Lighted parking area] = Yes ➔ F15 [Include parking lot lights]
OTHERWISE ➔ F16 [Include other major electricity]

---

**F12 Sq ft of other included**

**ASK**

IF F11 [Other bldgs electricity included] = Yes

What is the approximate square footage of the other buildings that are included in these figures?

◆ PROBE for estimate if DK

**RANGE** 1 to 999,999,999

**NEXT** IF A1 [Square footage] known & Number given > A1 [Square footage]
& Number given < A1 [Square footage] x 50 ➔ F13 [Verify sq ft other bldgs]
OTHERWISE:
IF E61 [Lighted parking area] = Yes ➔ F15 [Include parking lot lights]
OTHERWISE ➔ F16 [Include other major electricity]
Verify sq ft other bldgs

ASK

FILL
{SqFt} = A1 [Square footage] square feet
{OtherSqFt} = F12 [Sq ft of other included]
{TotalSqFt} = A1 [Square footage] square feet + F12 [Sq ft of other included]

So, just to verify, the consumption figures you just gave me are for both this {SqFt} square foot building and {OtherSqFt} square feet of additional space, for a total of {TotalSqFt} square feet, is that correct?

1  Yes, consumption is for {TotalSqFt} square feet
2  No, the square footage just given was the total including this building - consumption is for {OtherSqFt} square feet
3  No, consumption is for some other number of square feet

NEXT IF No, consumption is for some other number of square feet
   IF E61 [Lighted parking area] = Yes
      F15 [Include parking lot lights]
   OTHERWISE
      F16 [Include other major electricity]

What sq ft included

ASK
IF F13 [Verify sq ft other bldgs] = No, consumption is for some other number of square feet

What is the total floorspace included in the electricity usage figures?

◆ PROBE for estimate if DK

RANGE 1 to 999,999,999

NEXT IF E61 [Lighted parking area] = Yes
   F15 [Include parking lot lights]
   OTHERWISE
   F16 [Include other major electricity]

Include parking lot lights

ASK
IF E61 [Lighted parking area] = Yes

Do these figures include the electricity for the lights in the parking area that you mentioned earlier?

1  Yes
2  No

NEXT  F16 [Include other major electricity]
### F16 Include other major electricity

**ASK**

IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given

Do these figures include charges for any other major electricity usage outside the building, such as parking lot lights, exterior lights, signs or billboards, large pumps, or swimming pools?

1. Yes
2. No

### NEXT

IF Independent power producer or non-local utility OR Bought from someone else IN D64 [How purchase electricity] ➞ F17 [Include all non-local electricity]


OTHERWISE:

IF F2 [WS2 electricity filled out] = Yes ➞ F23 [Monthly electricity included]

IF F2 [WS2 electricity filled out] = No OR DK/RF ➞ F24 [Monthly electricity available]

### F17 Include all non-local electricity

**ASK**

IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given) & (Independent power producer or non-local utility OR Bought from someone else IN D80 [How purchase electricity])

Do these figures include all the electricity from the independent power producer, non-local utility, or broker?

1. Yes
2. No

### NEXT

IF No ➞ F18 [What not included]

IF Yes OR DK/RF:


OTHERWISE:

IF F2 [WS2 electricity filled out] = Yes ➞ F23 [Monthly electricity included]

IF F2 [WS2 electricity filled out] = No OR DK/RF ➞ F24 [Monthly electricity available]

### F18 What not included

**ASK**

IF F17 [Include all non-local electricity] = No

What was not included?

◆ RECORD the additional charges in the open box

### NEXT


OTHERWISE:

IF F2 [WS2 electricity filled out] = Yes ➞ F23 [Monthly electricity included]

IF F2 [WS2 electricity filled out] = No OR DK/RF ➞ F24 [Monthly electricity available]
Electricity regression check

ASK

IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given)
& (A1 [Square footage] known OR A2 [Square footage category known])

Based on various characteristics of the structure, Blaise will use a detailed equation to compute predicted consumption and expenditures estimates. The electricity consumption and/or expenditures given will be ratio adjusted if other square footage was either included or excluded in the figures, and then will either PASS or FAIL this regression check, based on the following formula:

IF F4 [Electricity consumption] > [Predicted consumption] × 8
OR F5 [Electricity expenditures] > [Predicted expenditures] × 8 → FAIL (HIGH)
IF F4 [Electricity consumption] < [Predicted consumption] ÷ 13
OR F5 [Electricity expenditures] < [Predicted expenditures] ÷ 13 → FAIL (LOW)
OTHERWISE → PASS

NEXT

IF FAIL (HIGH) → F20 [Anything unusual high]
IF FAIL (LOW) → F21 [Anything unusual low]
IF PASS:
IF F2 [WS2 electricity filled out] = Yes → F23 [Monthly electricity included]
IF F2 [WS2 electricity filled out] = No OR DK/RF → F24 [Monthly electricity available]

Anything unusual high

ASK

IF F19 [Electricity regression check] = FAIL (HIGH)

These usage figures seem high for what you have told me about this building. Is there anything unusual that might explain this high usage?

1  Yes
2  No

NEXT

IF Yes → F22 [What is unusual]
IF No OR DK/RF:
IF F2 [WS2 electricity filled out] = Yes → F23 [Monthly electricity included]
IF F2 [WS2 electricity filled out] = No OR DK/RF → F24 [Monthly electricity available]

Anything unusual low

ASK

IF F19 [Electricity regression check] = FAIL (LOW)

These usage figures seem low for what you have told me about this building. Is there anything unusual that might explain this low usage?

1  Yes
2  No

NEXT

IF Yes → F22 [What is unusual]
IF No OR DK/RF:
IF F2 [WS2 electricity filled out] = Yes → F23 [Monthly electricity included]
IF F2 [WS2 electricity filled out] = No OR DK/RF → F24 [Monthly electricity available]
### F22 What is unusual

**ASK** IF F21 [Anything unusual high] = Yes OR F22 [Anything unusual low] = Yes

Please tell me [what is out of the ordinary about this building].

- RECORD in open box

**NEXT** IF F2 [WS2 electricity filled out] = Yes \(\Rightarrow\) F23 [Monthly electricity included]
  IF F2 [WS2 electricity filled out] = No OR DK/RF \(\Rightarrow\) F24 [Monthly electricity available]

### F23 Monthly electricity included

**ASK** IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given)
  & F2 [WS2 electricity filled out] = Yes

Did you include your monthly electricity usage on Worksheet 2?

1. Yes
2. No

**NEXT** IF No OR DK/RF \(\Rightarrow\) F24 [Monthly electricity available]
  IF Yes:
    IF F19 [Electricity regression check] = FAIL (HIGH) OR FAIL (LOW)
      OR F9 [Sq ft not included] / A1 [Square footage] > 0.25 \(\Rightarrow\) F26 [Number electricity suppliers]
    IF F19 [Electricity regression check] = PASS \(\Rightarrow\) F25 [Electricity bill available]

### F24 Monthly electricity available

**ASK** IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given)
  & (F2 [WS2 electricity filled out] = No OR DK/RF
  OR F23 [Monthly electricity included] = No OR DK/RF)

Do you have a record of the monthly electricity use that I could have to help us better understand the seasonal patterns of electricity use?

- If available, you will be prompted again to collect this at the end of the interview, so it is not necessary to stop the interview to collect it here

1. Yes, monthly electricity available
2. No, will not be able to provide monthly electricity

  OR D2 [Cooling] = DK/RF OR D3 [Water heating] = DK/RF)
  OR F19 [Electricity regression check] = FAIL (HIGH) OR FAIL (LOW)
  OR F9 [Sq ft not included] / A1 [Square footage] > 0.25 \(\Rightarrow\) F26 [Number electricity suppliers]
  OTHERWISE \(\Rightarrow\) F25 [Electricity bill available]
**F25**  
**Electricity bill available**  

**ASK**  
IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given & F19 [Electricity regression check] = PASS

Would it be possible for me to scan one of your electricity bills? There is information on some utility bills that may help energy researchers who use these data.

- **EXP:** [Examples of these items include miscellaneous charges, past months data, and units of measure.]
- **If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here**
  
1. Yes, bill available
2. No, will not be able to provide bill

**NEXT**  
⇒ G1 [Section G Routing]

---

**F26**  
**Number electricity suppliers**

**ASK**  

**FILL**  
{SuppliersIntro}  
IF (F3 [Provide electricity figures] = No OR DK/RF) OR (F4 [Electricity consumption] = DK/RF & F5 [Electricity expenditures] = DK/RF) = "We should be able to obtain this information directly from your electricity supplier, so I just need to collect some information about your electricity accounts."
OTHERWISE = "We may need to go to your supplier to verify some information, so I need to ask you some questions about your electricity supplier or suppliers."

{SuppliersIntro}

In some parts of the country, customers can purchase energy from more than one supplier. How many different companies supplied electricity to this building during calendar year 2007?

**RANGE**  
1 to 4

**NEXT**  
Number given ⇒ F27 [Electricity suppliers]  
DK/RF ⇒ G1 [Section G Routing]
<table>
<thead>
<tr>
<th>F27</th>
<th><strong>Electricity suppliers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF F26 [Number electricity suppliers] given</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td></td>
</tr>
</tbody>
</table>
| {FirstNext} | IF Only one supplier = BLANK 
|           | IF First supplier given = “first” 
|           | OTHERWISE = “next” |

What is the name of the {FirstNext} supplier that provided electricity in calendar year 2007?

- Start typing the name of the supplier or use [BACKSPACE] to bring up the look-up table
- Type in the first few letters of the supplier name, and the look-up table will scroll to the closest match
- If you find a match, make sure the correct line is highlighted (blue) and press [ENTER]
- If you don’t find a match, use [BACKSPACE] to clear the Search line, which will bring you back to the top of the look-up table where ** NOT ON LIST will be highlighted, then press [ENTER] two times

| NEXT | IF NOT ON LIST selected ➔ F28 [Supplier name] 
|      | IF Supplier found in look-up table ➔ F27a [Verify electricity supplier] 
|      | IF DK/RF: 
|      |   - IF Only one supplier or last supplier ➔ G1 [Section G Routing] 
|      |   - IF More suppliers left to answer for ➔ Ask F27 [Electricity suppliers] again for next supplier |

<table>
<thead>
<tr>
<th>F27a</th>
<th><strong>Verify electricity supplier</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Supplier found in F27 [Electricity suppliers] look-up table</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td></td>
</tr>
<tr>
<td>{Supplier} = Supplier name from F27 [Electricity suppliers] look-up table</td>
<td></td>
</tr>
</tbody>
</table>

Just to verify, I have selected that your electricity supplier is {Supplier}. Is that correct?

- If No, you will be taken back to the previous screen to select again
  - 1  Yes
  - 2  No

| NEXT | IF Yes ➔ F34 [Number electricity accounts] 
<p>|      | IF No ➔ F27 [Electricity suppliers] |</p>
<table>
<thead>
<tr>
<th>F28</th>
<th>Supplier name</th>
<th>EL1NEW9—EL4NEW9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF NOT ON LIST selected in F27 [Electricity suppliers]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENTER the name of the supplier</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>IF Name given → F29 [Street address]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF DK/RF:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Only one supplier or last supplier → G1 [Section G Routing]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF More suppliers left to answer for → Back to F27 [Electricity suppliers] for next supplier</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F29</th>
<th>Street address</th>
<th>EL1AD19—EL4AD19</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF NOT ON LIST selected in F27 [Electricity suppliers]</td>
<td></td>
</tr>
<tr>
<td>FILL</td>
<td>(Supplier) = “F28 [Supplier name]”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the address for (Supplier), beginning with the street?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>→ F30 [P.O. Box or Suite]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F30</th>
<th>P.O. Box or Suite</th>
<th>EL1AD29—EL4AD29</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF NOT ON LIST selected in F27 [Electricity suppliers]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is there a post office box or suite number?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENTER</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>→ F31 [City]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F31</th>
<th>City</th>
<th>EL1CTY9—EL4CTY9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF NOT ON LIST selected in F27 [Electricity suppliers]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the city?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>→ F32 [State abbreviation]</td>
<td></td>
</tr>
<tr>
<td>F32</td>
<td>State abbreviation</td>
<td>EL1STA9—EL4STA9</td>
</tr>
<tr>
<td>------</td>
<td>--------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>ASK</strong></td>
<td>IF NOT ON LIST selected in F27 [Electricity suppliers]</td>
<td></td>
</tr>
<tr>
<td>What is the state?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✦ ENTER the two letter abbreviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ F33 [Zip code]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F33</th>
<th>Zip code</th>
<th>EL1ZIP9—EL4ZIP9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF NOT ON LIST selected in F27 [Electricity suppliers]</td>
<td></td>
</tr>
<tr>
<td>And what is the zip code?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ F34 [Number electricity accounts]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F34</th>
<th>Number electricity accounts</th>
<th>EL1NAC9—EL4NAC9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Supplier found in F27 [Electricity suppliers] look-up table OR F28 [Supplier name] given</td>
<td></td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{Supplier} = Supplier name from F27 [Electricity suppliers] look-up table OR F28 [Supplier name]</td>
<td></td>
</tr>
<tr>
<td>How many different electricity accounts does this building have with {Supplier}?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>1 to 999</td>
<td></td>
</tr>
</tbody>
</table>
| **NEXT** | IF 1 to 10 accounts ➔ F35 [Electricity account number]  
IF More than 10 accounts OR DK/RF ➔ F40 [Electricity bill available] |

<table>
<thead>
<tr>
<th>F35</th>
<th>Electricity account number</th>
<th>EL1AC19—EL4AC109</th>
</tr>
</thead>
</table>
| **ASK** | IF F34 [Number electricity accounts] = 1 to 10  
Ask as many times as account numbers given, or until DK/RF |
| **FILL** | {FirstNext}  
IF Only one account = BLANK  
IF First account given = “first”  
OTHERWISE = “next”  
{Supplier} = Supplier name from F27 [Electricity suppliers] look-up table OR F28 [Supplier name] |
| Please give me the {FirstNext} electricity account number for {Supplier}. |
| ✦ VERIFY number digit by digit |
| **NEXT** | IF Independent power producer or non-local utility OR Bought from someone else  
IN D80 [How purchase electricity] ➔ F36 [Supplier is non-local utility]  
OTHERWISE ➔ F37 [Bills cover only building] |
**F36 Supplier is non-local utility**  

**ASK** IF (Supplier found in F27 [Electricity suppliers] look-up table OR F28 [Supplier name] given) & (Independent power producer or non-local utility OR Bought from someone else IN D80 [How purchase electricity])

**FILL** {Supplier} = Supplier name from F27 [Electricity suppliers] look-up table OR F28 [Supplier name]

You mentioned earlier that you purchase electricity from an independent power producer, non-local utility, or broker. Is {Supplier} one of those companies?

1. Yes
2. No

NEXT ➔ F37 [Bills cover only building]

**F37 Bills cover only building**

**ASK** IF Supplier found in F27 [Electricity suppliers] look-up table OR F28 [Supplier name] given

**FILL** {Bills} IF Only one account = “Does the bill or statement” IF 2 to 10 accounts = “Do the bills or statements” {Supplier} = Supplier name from F27 [Electricity suppliers] look-up table OR F28 [Supplier name]

{Bills} from {Supplier} cover just this building or are other buildings covered as well?

1. Just this building
2. Other building(s)

NEXT IF Other buildings ➔ F38 [Sq ft of others included] IF Just this building OR DK/RF ➔ F39 [Include other major electricity]

**F38 Sq ft of others included**

**ASK** IF F37 [Bills cover only building] = Other buildings

**FILL** {Bills} IF Only one account = “bill or statement” IF 2 to 10 accounts = “bills or statements”

What is the approximate square footage of the other buildings included on the {Bills}?

◆ PROBE for estimate if DK

**RANGE** 1 to 999,999,999

NEXT ➔ F39 [Include other major electricity]
<table>
<thead>
<tr>
<th>F39</th>
<th>Include other major electricity</th>
<th>EL1OTU9—EL4OTU9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Supplier found in F27 [Electricity suppliers] look-up table OR F28 [Supplier name] given</td>
<td></td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{Bills}</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Only one account = “Does the bill or statement”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF 2 to 10 accounts = “Do the bills or statements”</td>
<td></td>
</tr>
<tr>
<td>{Bills}</td>
<td>include charges for any other major electricity usage outside the building, such as parking lot lights, exterior lights, signs or billboards, large pumps or swimming pools?</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ F40 [Electricity bill available]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F40</th>
<th>Electricity bill available</th>
<th>EL1BILL9—EL4BILL9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF (Supplier found in F27 [Electricity suppliers] look-up table OR F28 [Supplier name] given)</td>
<td></td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{Supplier} = Supplier name from F27 [Electricity suppliers] look-up table OR F28 [Supplier name]</td>
<td></td>
</tr>
<tr>
<td>Would it be possible for me to scan one electricity bill from {Supplier}? There is information on some utility bills that may help energy researchers who use these data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◆</td>
<td>EXP: [Examples of these items include other miscellaneous charges, past months data, and units of measure.]</td>
<td></td>
</tr>
<tr>
<td>◆</td>
<td>If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Yes, bill available</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No, will not be able to provide bill</td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>IF More suppliers left to answer for ➔ Back to F27 [Electricity suppliers] for next supplier</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHERWISE ➔ G1 [Section G Routing]</td>
<td></td>
</tr>
</tbody>
</table>
# SECTION G. NATURAL GAS

<table>
<thead>
<tr>
<th>G1</th>
<th>Section G Routing</th>
</tr>
</thead>
</table>
| NEXT | IF Natural gas used ➔ G2 [WS2 natural gas filled out]  
OTHERWISE ➔ H1 [Section H Routing] |

<table>
<thead>
<tr>
<th>G2</th>
<th>WS2 natural gas filled out</th>
</tr>
</thead>
</table>
| ASK | IF Natural gas used  
Do you have Worksheet 2 with you and filled out for natural gas?  
1  Yes  
2  No |
| NEXT | IF No OR DK/RF ➔ G3 [Provide natural gas figures]  
IF Yes ➔ G4 [Units for natural gas] |

<table>
<thead>
<tr>
<th>G3</th>
<th>Provide natural gas figures</th>
</tr>
</thead>
</table>
| ASK | IF G2 [WS2 natural gas filled out] = No OR DK/RF  
The next questions are about natural gas usage in this building during calendar year 2007. Would you be able to give me an approximate figure of how much natural gas was used or how much was spent on it?  
1  Yes  
2  No |
| NEXT | IF Yes ➔ G4 [Units for natural gas]  
IF No OR DK/RF ➔ G27 [Number natural gas suppliers] |

<table>
<thead>
<tr>
<th>G4</th>
<th>Units for natural gas</th>
</tr>
</thead>
</table>
| ASK | IF G2 [WS2 natural gas filled out] = Yes OR G3 [Provide natural gas figures] = Yes  
SHOW CARD G1  
Please look at this card and tell me the units in which your natural gas is measured.  
1  Hundred cubic feet (Ccf)  
2  Therms  
3  Thousand cubic feet (Mcf)  
4  Dekatherms  
5  Cubic feet (cf)  
6  IF VOLUNTEERED: Some other units |
| NEXT | IF Some other units ➔ G5 [Other natural gas units]  
IF Anything else OR DK/RF ➔ G6 [Natural gas consumption] |
### G5 Other natural gas units

**ASK**

IF G4 [Units for natural gas] = Some other units

What are the other units?

**NEXT** ➔ G6 [Natural gas consumption]

### G6 Natural gas consumption

**ASK**

IF G2 [WS2 natural gas filled out] = Yes OR G3 [Provide natural gas figures] = Yes

Please give me the total amount of natural gas used in calendar year 2007.

- **EXP:** [If part of a multibuilding campus or complex, and the respondent only knows the consumption for the whole campus or complex, ENTER the total consumption for the campus or complex here.]
- **VERIFY number digit by digit**

**RANGE**

1 to 99,999,999,999,999

**NEXT** ➔ G7 [Natural gas expenditures]

### G7 Natural gas expenditures

**ASK**

IF G2 [WS2 natural gas filled out] = Yes OR G3 [Provide natural gas figures] = Yes

Please give me the total dollars spent on natural gas in calendar year 2007. This should include state and local taxes and the following charges: fuel adjustment, system, demand, and distribution.

- Do **not** enter cents
- **VERIFY number digit by digit**

**RANGE**

0 to 999,999,999

**NEXT**

IF G6 [Natural gas consumption] = DK/RF & G7 [Natural gas expenditures] = DK/RF ➔ G27 [Number natural gas suppliers]

OTHERWISE ➔ G8 [Starting date for natural gas figures]
### G8 Starting date for natural gas figures

**ASK**  
IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given

What is the starting date for these natural gas usage figures?

- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

**NEXT**  ➔ G9 [Ending date for natural gas figures]

### G9 Ending date for natural gas figures

**ASK**  
IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given

What is the ending date [for these natural gas usage figures]?

- ENTER date as MMDDYYYY
- VERIFY that this is the last day of the last billing period
- If the day is not known, ENTER "15" for DD

**NEXT**  
IF C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1  
OR C8 [Number of businesses category] ≠ Zero OR One ➔ G10 [All occupants natural gas included]  
IF Enclosed mall & A5 [Food court] = Yes & Natural gas IN D66 [Sources for cooking]  
   ➔ G12 [Natural gas covers food court]  
OTHERWISE ➔ G13 [Other bldgs natural gas included]

### G10 All occupants natural gas included

**ASK**  
IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given  
& C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1  
OR C8 [Number of businesses category] ≠ Zero OR One

Do these figures include the natural gas for all of the businesses or organizations in this building?

1  Yes
2  No

**NEXT**  
IF No ➔ G11 [Sq ft not included]  
IF Enclosed mall & A5 [Food court] = Yes & Natural gas IN D66 [Sources for cooking]  
   ➔ G12 [Natural gas covers food court]  
OTHERWISE ➔ G13 [Other bldgs natural gas included]
<table>
<thead>
<tr>
<th><strong>G11</strong> Sq ft not included</th>
<th><strong>NGNISF9</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF G10 [All occupants natural gas included] = No</td>
</tr>
<tr>
<td></td>
<td>What is the approximate square footage of the space in the building that is <strong>not</strong> included in these figures?</td>
</tr>
<tr>
<td></td>
<td>☐ PROBE for estimate if DK</td>
</tr>
</tbody>
</table>

| **RANGE**                | 1 to 999,999,999 |
| **NEXT**                 | IF Enclosed mall & A5 [Food court] = Yes & Natural gas IN D66 [Sources for cooking] |
|                         | G12 [Natural gas covers food court] |
|                         | OTHERWISE G13 [Other bldgs natural gas included] |

<table>
<thead>
<tr>
<th><strong>G12</strong> Natural gas covers food court</th>
<th><strong>NGFDCT9</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given &amp; Enclosed mall &amp; A5 [Food court] = Yes &amp; Natural gas IN D66 [Sources for cooking]</td>
</tr>
<tr>
<td></td>
<td>Do these figures include the natural gas used for cooking by the establishments in the food court?</td>
</tr>
<tr>
<td></td>
<td>1 Yes</td>
</tr>
<tr>
<td></td>
<td>2 No</td>
</tr>
</tbody>
</table>

| **NEXT** | G13 [Other bldgs natural gas included] |

<table>
<thead>
<tr>
<th><strong>G13</strong> Other bldgs natural gas included</th>
<th><strong>NGOTBD9</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given</td>
</tr>
<tr>
<td></td>
<td>Is any consumption from other buildings included in these figures?</td>
</tr>
<tr>
<td></td>
<td>1 Yes</td>
</tr>
<tr>
<td></td>
<td>2 No</td>
</tr>
</tbody>
</table>

| **NEXT** | IF Yes G14 [Sq ft of other included] |
|          | IF No OR DK/RF G17 [Include other major natural gas] |
### G14 - Sq ft of other included

**ASK** IF G13 [Other bldgs natural gas included] = Yes

What is the approximate square footage of the other buildings that are included in these figures?

- PROBE for estimate if DK

**RANGE** 1 to 999,999,999

**NEXT** IF A1 [Square footage] known & Number given > A1 [Square footage] & Number given < A1 [Square footage] x 50 \( \Rightarrow \) G15 [Verify sq ft other bldgs]

OTHERWISE \( \Rightarrow \) G17 [Include other major natural gas]

---

### G15 - Verify sq ft other bldgs


**FILL**

\[
\begin{align*}
\{\text{SqFt}\} &= A1 \text{ [Square footage] square feet} \\
\{\text{OtherSqFt}\} &= G14 \text{ [Sq ft of other included]} \\
\{\text{TotalSqFt}\} &= A1 \text{ [Square footage] square feet} + G14 \text{ [Sq ft of other included]}
\end{align*}
\]

So, just to verify, the consumption figures you just gave me are for both this \(\{\text{SqFt}\}\) square foot building and \(\{\text{OtherSqFt}\}\) square feet of additional space, for a total of \(\{\text{TotalSqFt}\}\) square feet, is that correct?

1. Yes, consumption is for \(\{\text{TotalSqFt}\}\) square feet
2. No, the square footage just given was the total including this building - consumption is for \(\{\text{OtherSqFt}\}\) square feet
3. No, consumption is for some other number of square feet

**NEXT** IF No, consumption is for some other number of square feet \( \Rightarrow \) G16 [What sq ft included]

OTHERWISE \( \Rightarrow \) G17 [Include other major natural gas]

---

### G16 - What sq ft included

**ASK** IF G15 [Verify sq ft other bldgs] = No, consumption is for some other number of square feet

What is the total floorspace included in the natural gas usage figures?

- PROBE for estimate if DK

**RANGE** 1 to 999,999,999

**NEXT** \( \Rightarrow \) G17 [Include other major natural gas]
### G17 Include other major natural gas

**ASK**

If G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given

Do these figures include charges for any other major natural gas usage outside the building, such as for kilns, gas space heaters, exterior or decorative lighting, compressed natural gas vehicles, or pumps not used in the building?

1. Yes
2. No

**NEXT**

If D82 [How purchase natural gas] = Bought from someone else OR Bought both ways

- G18 [Include all non-local natural gas]
  - G20 [Natural gas regression check]

Otherwise:

- If G2 [WS2 natural gas filled out] = Yes
  - G24 [Monthly natural gas included]
- If G2 [WS2 natural gas filled out] = No OR DK/RF

### G18 Include all non-local natural gas

**ASK**

If (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & (D82 [How purchase natural gas] = Bought from someone else OR Bought both ways)

Do these figures include all the natural gas from the non-utility or broker?

1. Yes
2. No

**NEXT**

If No

- G19 [What not included]
- If Yes OR DK/RF:
  - G20 [Natural gas regression check]

Otherwise:

- If G2 [WS2 natural gas filled out] = Yes
  - G24 [Monthly natural gas included]
- If G2 [WS2 natural gas filled out] = No OR DK/RF

### G19 What not included

**ASK**

If G18 [Include all non-local natural gas] = No

What was not included?

- RECORD the additional charges in the open box

**NEXT**


- G20 [Natural gas regression check]

Otherwise:

- If G2 [WS2 natural gas filled out] = Yes
  - G24 [Monthly natural gas included]
- If G2 [WS2 natural gas filled out] = No OR DK/RF

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### G20  Natural gas regression check

**ASK**

IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given)
  & (A1 [Square footage] known OR A2 [Square footage category known])
  & D16 [Source for main heating] ≠ DK/RF

Based on various characteristics of the structure, Blaise will use a detailed equation to compute predicted consumption and expenditures estimates. The natural gas consumption and/or expenditures given will be adjusted based on the units for natural gas, and ratio adjusted if other square footage was either included or excluded in the figures, and then will either PASS or FAIL this regression check, based on the following formula:

\[
\begin{align*}
\text{IF } F12 \text{ [Natural gas consumption]} &> \text{[Predicted consumption]} \times 8 \\
\text{OR } F13 \text{ [Natural gas expenditures]} &> \text{[Predicted expenditures]} \times 8 \Rightarrow \text{FAIL (HIGH)} \\
\text{IF } F12 \text{ [Natural gas consumption]} &< \text{[Predicted consumption]} \div 13 \\
\text{OR } F13 \text{ [Natural gas expenditures]} &< \text{[Predicted expenditures]} \div 13 \Rightarrow \text{FAIL (LOW)} \\
\text{OTHERWISE} &\Rightarrow \text{PASS}
\end{align*}
\]

**NEXT**

IF FAIL (HIGH) ➔ G21 [Anything unusual high]
IF FAIL (LOW) ➔ G22 [Anything unusual low]
IF PASS:
  IF G2 [WS2 natural gas filled out] = Yes ➔ G24 [Monthly natural gas included]
  IF G2 [WS2 natural gas filled out] = No OR DK/RF ➔ G25 [Monthly natural gas available]

### G21  Anything unusual high

**ASK**

IF G20 [Natural gas regression check] = FAIL (HIGH)

These usage figures seem high for what you have told me about this building. Is there anything unusual that might explain this high usage?

1  Yes
2  No

**NEXT**

IF Yes ➔ G23 [What is unusual]
IF No OR DK/RF:
  IF G2 [WS2 natural gas filled out] = Yes ➔ G24 [Monthly natural gas included]
  IF G2 [WS2 natural gas filled out] = No OR DK/RF ➔ G25 [Monthly natural gas available]
### G22  Anything unusual low

**ASK**

IF G20 [Natural gas regression check] = FAIL (LOW)

These usage figures seem low for what you have told me about this building. Is there anything unusual that might explain this low usage?

1. Yes
2. No

**NEXT**

IF Yes ➞ G23 [What is unusual]

IF No OR DK/RF:

- IF G2 [WS2 natural gas filled out] = Yes ➞ G24 [Monthly natural gas included]
- IF G2 [WS2 natural gas filled out] = No OR DK/RF ➞ G25 [Monthly natural gas available]

### G23  What is unusual

**ASK**

IF G21 [Anything unusual high] = Yes OR G22 [Anything unusual low] = Yes

Please tell me [what is out of the ordinary about this building].

- RECORD in open box

**NEXT**

IF G2 [WS2 natural gas filled out] = Yes ➞ G24 [Monthly natural gas included]

IF G2 [WS2 natural gas filled out] = No OR DK/RF ➞ G25 [Monthly natural gas available]

### G24  Monthly natural gas included

**ASK**

IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & G2 [WS2 natural gas filled out] = Yes

Did you include your monthly natural gas usage on Worksheet 2?

1. Yes
2. No

**NEXT**

IF No OR DK/RF ➞ G25 [Monthly natural gas available]

IF Yes:

- IF G20 [Natural gas regression check] = PASS ➞ G26 [Natural gas bill available]
- IF G20 [Natural gas regression check] = FAIL (HIGH) OR FAIL (LOW) ➞ G27 [Number natural gas suppliers]
### G25 Monthly natural gas available

**ASK**

IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) AND (G2 [WS2 natural gas filled out] = No OR DK/RF OR G24 [Monthly natural gas included] = No OR DK/RF)

Do you have a record of the monthly natural gas use that I could have to help us better understand the seasonal patterns of natural gas use?

- If available, you will be prompted again to collect this at the end of the interview, so it is not necessary to stop the interview to collect it here

1. Yes, monthly natural gas available
2. No, will not be able to provide monthly natural gas

**NEXT**


OTHERWISE ➔ G26 [Natural gas bill available]

### G26 Natural gas bill available

**ASK**

IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given AND G20 [Natural gas regression check] = PASS

Would it be possible for me to scan one of your natural gas bills? (There is information on some utility bills that may help energy researchers who use these data.)

- EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]

- If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

1. Yes, bill available
2. No, will not be able to provide bill

**NEXT**

➔ H1 [Section H Routing]
Number natural gas suppliers

ASK

IF G3 [Provide natural gas figures] = No OR DK/RF
OR
G6 [Natural gas consumption] = DK/RF & G7 [Natural gas expenditures] = DK/RF
OR
G20 [Natural gas regression check] = FAIL (HIGH) OR FAIL (LOW)
OR
((A1 [Square footage] = DK/RF & A2 [Square footage category]) OR D1 [Heating] = DK/RF
OR D2 [Cooling] = DK/RF OR D3 [Water heating] = DK/RF
OR D16 [Source for main heating] = DK/RF)
OR
G11 [Sq ft not included] / A1 [Square footage] > 0.25

FILL

{SuppliersIntro}

IF (G3 [Provide natural gas figures] = No OR DK/RF) OR (G6 [Natural gas consumption] = DK/RF
& G7 [Natural gas expenditures] = DK/RF) = “We should be able to obtain this information directly
from your natural gas supplier, so I just need to collect some information about your natural gas
accounts.”
OTHERWISE = “We may need to go to your supplier to verify some information, so I need to ask you
some questions about your natural gas supplier or suppliers.”

{SuppliersIntro}

In some parts of the country, customers can purchase energy from more than one supplier. How many different
companies supplied natural gas to this building during calendar year 2007?

RANGE 1 to 4

NEXT Number given ➔ G28 [Natural gas suppliers]
DK/RF ➔ H1 [Section H Routing]
**Natural gas suppliers**

ASK

IF G27 [Number natural gas suppliers] given

FILL

{FirstNext}

IF Only one supplier = BLANK
IF First supplier given = “first”
OTHERWISE = “next”

What is the name of the {FirstNext} supplier that provided natural gas in calendar year 2007?

- Start typing the name of the supplier or use [BACKSPACE] to bring up the look-up table
- Type in the first few letters of the supplier name, and the look-up table will scroll to the closest match
- If you find a match, make sure the correct line is highlighted (blue) and press [ENTER]
- If you don’t find a match, use [BACKSPACE] to clear the Search line, which will bring you back to the top of the look-up table where ** NOT ON LIST will be highlighted, then press [ENTER] two times

NEXT

IF NOT ON LIST selected → G29 [Supplier name]
IF Supplier found in look-up table → G28a [Verify natural gas supplier]
IF DK/RF:
    IF Only one supplier or last supplier → H1 [Section H Routing]
    IF More suppliers left to answer for → Ask G28 [Natural gas suppliers] again for next supplier

**Verify natural gas supplier**

ASK

IF Supplier found in G28 [Natural gas suppliers] look-up table

FILL

{Supplier} = Supplier name from G28 [Natural gas suppliers] look-up table

Just to verify, I have selected that your natural gas supplier is {Supplier}. Is that correct?

- If No, you will be taken back to the previous screen to select again
  1  Yes
  2  No

NEXT

IF Yes → G35 [Number natural gas accounts]
IF No → G28 [Natural gas suppliers]
## G29 Supplier name

**ASK**

- IF NOT ON LIST selected in G28 [Natural gas suppliers]
  - ENTER the name of the supplier

**NEXT**

- IF Name given → G30 [Street address]
  - IF DK/RF:
    - IF Only one supplier or last supplier → H1 [Section H Routing]
    - IF More suppliers left to answer for → Back to G28 [Natural gas suppliers] for next supplier

## G30 Street address

**ASK**

- All Structures selected in G28 [Natural gas suppliers]

**FILL**

- `{Supplier} = “G29 [Supplier name]”`

What is the address for `{Supplier}`, beginning with the street?

**NEXT** → G31 [P.O. Box or Suite]

## G31 P.O. Box or Suite

**ASK**

- IF NOT ON LIST selected in G28 [Natural gas suppliers]

Is there a post office box or suite number?

- If not, press [ENTER]

**NEXT** → G32 [City]

## G32 City

**ASK**

- IF NOT ON LIST selected in G28 [Natural gas suppliers]

What is the city?

**NEXT** → G33 [State abbreviation]
| **G33** State abbreviation |  
|---------------------------|---|
| **ASK** IF NOT ON LIST selected in G28 [Natural gas suppliers] |  
| What is the state? |  
| ◆ ENTER the two letter abbreviation |  
| **NEXT** ➔ G34 [Zip code] |  

| **G34** Zip code |  
|-----------------|---|
| **ASK** IF NOT ON LIST selected in G28 [Natural gas suppliers] |  
| And what is the zip code? |  
| **NEXT** ➔ G35 [Number natural gas accounts] |  

| **G35** Number natural gas accounts |  
|------------------------------------|---|
| **ASK** IF Supplier found in G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] given |  
| **FILL** {Supplier} = Supplier name from G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] |  
| How many different natural gas accounts does this building have with {Supplier}? |  
| **RANGE** 1 to 999 |  
| **NEXT** IF 1 to 10 accounts ➔ G36 [Natural gas account number]  
IF More than 10 accounts OR DK/RF ➔ G41 [Natural gas bill available] |  

| **G36** Natural gas account number |  
|-----------------------------------|---|
| **ASK** IF G35 [Number natural gas accounts] = 1 to 10  
As many times as account numbers given, or until DK/RF |  
| **FILL** {FirstNext}  
IF Only one account = BLANK  
IF First account given = “first”  
OTHERWISE = “next”  
{Supplier} = Supplier name from G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] |  
| Please give me the {FirstNext} natural gas account number for {Supplier}.  
◆ VERIFY number digit by digit |  
| **NEXT** IF D82 [How purchase natural gas] = Bought from someone else OR Bought both ways ➔ G37 [Supplier is non-local utility]  
OTHERWISE ➔ G38 [Bills cover only building] |  

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### G37 Supplier is non-local utility

**ASK**
- IF (Supplier found in G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] given)
- & (D82 [How purchase natural gas] = Bought from someone else OR Bought both ways)

**FILL**
- \{Supplier\} = Supplier name from G28 [Natural gas suppliers] look-up table OR G29 [Supplier name]

You mentioned earlier that you purchase natural gas from a non-utility or broker. Is \{Supplier\} one of those companies?

1. Yes
2. No

**NEXT** ➔ G38 [Bills cover only building]

### G38 Bills cover only building

**ASK**
- IF Supplier found in G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] given

**FILL**
- \{Bills\}
  - IF Only one account = “Does the bill or statement”
  - IF 2 to 10 accounts = “Do the bills or statements”
  - \{Supplier\} = Supplier name from G28 [Natural gas suppliers] look-up table OR G29 [Supplier name]

\{Bills\} from \{Supplier\} cover just this building or are other buildings covered as well?

1. Just this building
2. Other building(s)

**NEXT**
- IF Other buildings ➔ G39 [Sq ft of others included]
- IF Just this building OR DK/RF ➔ G40 [Include other major natural gas]

### G39 Sq ft of others included

**ASK**
- IF G38 [Bills cover only building] = Other buildings

**FILL**
- \{Bills\}
  - IF Only one account = “bill or statement”
  - IF 2 to 10 accounts = “bills or statements”

What is the approximate square footage of the other buildings included on the \{Bills\}?  
◆ PROBE for estimate if DK

**RANGE**
- 1 to 999,999,999

**NEXT** ➔ G40 [Include other major natural gas]
### G40: Include other major natural gas

**ASK**
- IF Supplier found in G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] given

**FILL**
- \{Bills\}
- IF Only one account = “Does the bill or statement”
- IF 2 to 10 accounts = “Do the bills or statements”

{Bills} include charges for any other major natural gas usage outside the building, such as for kilns, gas space heaters, exterior or decorative lighting, compressed natural gas vehicles, or pumps not used in the building?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**NEXT** ➔ G41 [Natural gas bill available]

### G41: Natural gas bill available

**ASK**
- IF (Supplier found in G28 [Natural gas suppliers] look-up table OR G29 [Supplier name] given)

**FILL**
- \{Supplier\} = Supplier name from G28 [Natural gas suppliers] look-up table OR G29 [Supplier name]

Would it be possible for me to scan one of your natural gas bills from \{Supplier\}? (There is information on some utility bills that may help energy researchers who use these data.)

◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]

◆ If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes, bill available</td>
</tr>
<tr>
<td>2</td>
<td>No, will not be able to provide bill</td>
</tr>
</tbody>
</table>

**NEXT** IF More suppliers left to answer for ➔ Back to G28 [Natural gas suppliers] for next supplier
OTHERWISE ➔ H1 [Section H Routing]
SECTION H. FUEL OIL/DIESEL/KEROSENE

NOTE: In ASK and NEXT instructions in this section, “Fuel oil” refers to fuel oil, diesel, or kerosene.

<table>
<thead>
<tr>
<th>H1</th>
<th>Section H Routing</th>
</tr>
</thead>
</table>
| NEXT | IF Fuel oil used ➔ H2 [WS2 fuel oil filled out]  
OTHERWISE ➔ I1 [Section I Routing] |

<table>
<thead>
<tr>
<th>H2</th>
<th>WS2 fuel oil filled out</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Fuel oil used</td>
</tr>
<tr>
<td>FILL</td>
<td>{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]</td>
</tr>
</tbody>
</table>
| Do you have Worksheet 2 with you and filled out for {FuelOilType}?
  1  Yes  
  2  No |
| NEXT | IF No OR DK/RF ➔ H3 [Provide fuel oil figures]  
IF Yes ➔ H4 [Fuel oil purchases] |

<table>
<thead>
<tr>
<th>H3</th>
<th>Provide fuel oil figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF H2 [WS2 fuel oil filled out] = No OR DK/RF</td>
</tr>
<tr>
<td>FILL</td>
<td>{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]</td>
</tr>
</tbody>
</table>
| The next questions are about {FuelOilType} usage and purchases in this building during calendar year 2007. Would you be able to give me an approximate figure of how much {FuelOilType} was purchased or used or how much was spent on it?
  1  Yes  
  2  No |
| NEXT | IF Yes ➔ H4 [Fuel oil purchases]  
IF No OR DK/RF:  
  IF D16 [Source for main heating] = Fuel oil OR D17 [Other source for main heating] = Fuel oil ➔ H23 [Number fuel oil suppliers]  
OTHERWISE ➔ I1 [Section I Routing] |
### H4 Fuel oil purchases

**ASK**
IF H2 [WS2 fuel oil filled out] = Yes OR H3 [Provide fuel oil figures] = Yes

**FILL**
\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

Please give me the total number of gallons of \{FuelOilType\} purchased in calendar year 2007.

- **EXP:** If part of a multibuilding campus or complex, and the respondent only knows the consumption for the whole campus or complex, ENTER the total consumption for the campus or complex here.
- **VERIFY** number digit by digit

**RANGE** 0 to 99,999,999,999,999

**NEXT** ➔ H5 [Fuel oil expenditures]

### H5 Fuel oil expenditures

**ASK**
IF H2 [WS2 fuel oil filled out] = Yes OR H3 [Provide fuel oil figures] = Yes

**FILL**
\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

Please give me the total dollars spent on \{FuelOilType\} in calendar year 2007, including state and local taxes.

- **Do not** enter cents
- **VERIFY** number digit by digit

**RANGE** 0 to 999,999,999

**NEXT**
IF H4 [Fuel oil purchases] = Zero & H5 [Fuel oil expenditures] = Zero (OR one is Zero and one is DK/RF) ➔ H6 [Purchased before 2007]
OTHERWISE ➔ H7 [Starting date for fuel oil figures]
### H6 Purchased before 2007

**ASK**
(OR one is Zero and one is DK/RF)

**FILL**
{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

Was any {FuelOilType} used in 2007 that was purchased or delivered in 2006 or before?
1. Yes
2. No

**NEXT**
IF Yes OR DK/RF ➔ H9 [Fuel oil use measured]
IF No ➔ I1 [Section I Routing]

### H7 Starting date for fuel oil figures

**ASK**
IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given) & Not both zero

**FILL**
{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

What is the first delivery date for these {FuelOilType} purchases?

- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

**NEXT** ➔ H8 [Ending date for fuel oil figures]

### H8 Ending date for fuel oil figures

**ASK**
IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given) & Not both zero

**FILL**
{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

What is the last delivery date [for these {FuelOilType} purchases]?

- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

**NEXT** ➔ H9 [Fuel oil use measured]
**H9**  
**Fuel oil use measured**  
**FKMEAS9**

**ASK**

IF H2 [WS2 fuel oil filled out] = Yes OR H3 [Provide fuel oil figures] = Yes

**FILL**

\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

Is your \{FuelOilType\} consumption measured or metered so that you can tell how much was actually consumed during 2007?

1  Yes  
2  No

**NEXT**

IF Yes  ➔ H10 [Fuel oil actual consumption]  
IF No OR DK/RF:  
   IF H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given:  
      IF C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1  
         OR C8 [Number of businesses category] ≠ Zero OR One  
            ➔ H11 [All occupants fuel oil included]  
      OTHERWISE ➔ H13 [Other bldgs fuel oil included]  
   IF (H4 [Fuel oil purchases] = DK/RF & H5 [Fuel oil expenditures] = DK/RF)  
      & (D16 [Source for main heating] = Fuel oil OR D17 [Other source for main heating] = Fuel oil)  
         ➔ H23 [Number fuel oil suppliers]  
   OTHERWISE ➔ I1 [Section I Routing]

---

**H10**  
**Fuel oil actual consumption**  
**FKCNSA9**

**ASK**

IF H9 [Fuel oil use measured] = Yes OR DK/RF

**FILL**

\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

**[F1]-HELP**

Please give me the total number of gallons of \{FuelOilType\} that was consumed in calendar year 2007.

◆ VERIFY number digit by digit

**RANGE**  
1 to 99,999,999,999,999

**NEXT**

IF Number given & (C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1  
   OR C8 [Number of businesses category] ≠ Zero OR One) ➔ H11 [All occupants fuel oil included]  
IF Number given & (C5 [Number of businesses] = 0 OR 1 OR C7 [Re-ask number of businesses] = 1  
   OR C8 [Number of businesses category] = Zero OR One ➔ H13 [Other bldgs fuel oil included]  
   OTHERWISE:  
      IF H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given:  
         IF C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1  
            OR C8 [Number of businesses category] ≠ Zero OR One  
               ➔ H11 [All occupants fuel oil included]  
      OTHERWISE ➔ H13 [Other bldgs fuel oil included]  
   IF (H4 [Fuel oil purchases] = DK/RF & H5 [Fuel oil expenditures] = DK/RF)  
      & (D16 [Source for main heating] = Fuel oil OR D17 [Other source for main heating] = Fuel oil)  
         ➔ H23 [Number fuel oil suppliers]  
   OTHERWISE ➔ I1 [Section I Routing]
<table>
<thead>
<tr>
<th>Section</th>
<th>Question</th>
<th>Filler</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H11</strong></td>
<td>All occupants fuel oil included</td>
<td>{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]</td>
<td>FILL</td>
</tr>
<tr>
<td><strong>ASK</strong></td>
<td>IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given OR H10 [Fuel oil actual consumption] given) &amp; (C5 [Number of businesses] &gt; 1 OR C7 [Re-ask number of businesses] &gt; 1 OR C8 [Number of businesses category] ≠ Zero OR One)</td>
<td>Do these figures include the {FuelOilType} for all of the businesses or organizations in this building?</td>
<td>1. Yes 2. No</td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>IF No ➔ H12 [Sq ft not included] IF Yes OR DK/RF ➔ H13 [Other bldgs fuel oil included]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H12</strong></td>
<td>Sq ft not included</td>
<td></td>
<td>FILL</td>
</tr>
<tr>
<td><strong>ASK</strong></td>
<td>IF H11 [All occupants fuel oil included] = No</td>
<td>What is the approximate square footage of the space in the building that is not included in these figures?</td>
<td>◆ PROBE for estimate if DK</td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>1 to 999,999,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>➔ H13 [Other bldgs fuel oil included]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H13</strong></td>
<td>Other bldgs fuel oil included</td>
<td></td>
<td>FILL</td>
</tr>
<tr>
<td><strong>ASK</strong></td>
<td>IF H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given OR H10 [Fuel oil actual consumption] given</td>
<td>Is any consumption from other buildings included in these figures?</td>
<td>1. Yes 2. No</td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td>IF Yes ➔ H14 [Sq ft of other included] IF No OR DK/RF ➔ H17 [Include other major fuel oil]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H14</td>
<td>Sq ft of other included</td>
<td>FKOTSF9</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>ASK</td>
<td>IF H13 [Other bldgs fuel oil included] = Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What is the approximate square footage of the other buildings that are included in these figures?

◆ PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 999,999,999</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>H15</th>
<th>Verify sq ft other bldgs</th>
<th>FKOTVY9</th>
</tr>
</thead>
</table>

| FILL | {SqFt} = A1 [Square footage] square feet {OtherSqFt} = H14 [Sq ft of other included] {TotalSqFt} = A1 [Square footage] square feet + H14 [Sq ft of other included] |

So, just to verify, the consumption figures you just gave me are for both this {SqFt} square foot building and {OtherSqFt} square feet of additional space, for a total of {TotalSqFt} square feet, is that correct?

1  Yes, consumption is for {TotalSqFt} square feet
2  No, the square footage just given was the total including this building - consumption is for {OtherSqFt} square feet
3  No, consumption is for some other number of square feet

| NEXT | IF No, consumption is for some other number of square feet → H16 [What sq ft included] OTHERWISE → H17 [Include other major fuel oil] |

<table>
<thead>
<tr>
<th>H16</th>
<th>What sq ft included</th>
<th>FKTOSF9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF H15 [Verify sq ft other bldgs] = No, consumption is for some other number of square feet</td>
<td></td>
</tr>
</tbody>
</table>

| FILL | {FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene] |

What is the total floorspace included in the {FuelOilType} usage figures?

◆ PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 999,999,999</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>→ H17 [Include other major fuel oil]</td>
</tr>
</tbody>
</table>
### H17 Include other major fuel oil

**ASK**


**FILL**

\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

Do these figures include charges for any other major {FuelOilType} usage outside the building, such as for kilns, welding, pumps, or motors?

1. Yes
2. No

**NEXT**


OTHERWISE:


OTHERWISE → H22 [Fuel oil bill available]

### H18 Fuel oil regression check

**DO**


Based on various characteristics of the structure, Blaise will use a detailed equation to compute predicted consumption and expenditures estimates. The fuel oil consumption given will either PASS or FAIL this regression check, based on the following formula:

1. IF H10 [Fuel oil actual consumption] > (Predicted consumption × 10) → FAIL (HIGH)
2. IF H10 [Fuel oil actual consumption] < (Predicted consumption ÷ 20) → FAIL (LOW)
3. OTHERWISE → PASS

**NEXT**

IF FAIL (HIGH) → H19 [Anything unusual high]

IF FAIL (LOW) → H20 [Anything unusual low]

IF PASS & H12 [Sq ft not included] / A1 [Square footage] > 0.25 → H23 [Number fuel oil suppliers]

OTHERWISE → H22 [Fuel oil bill available]
### H19 Anything unusual high

**ASK**

IF H18 [Fuel oil regression check] = FAIL (HIGH)

**FILL**

{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

These {FuelOilType} usage figures seem high for what you have told me about this building. Is there anything unusual that might explain this high usage?

1. Yes
2. No

**NEXT**

IF Yes ➔ H21 [What is unusual]

IF No OR DK/RF ➔ H23 [Number fuel oil suppliers]

### H20 Anything unusual low

**ASK**

IF H18 [Fuel oil regression check] = FAIL (LOW)

**FILL**

{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

These {FuelOilType} usage figures seem low for what you have told me about this building. Is there anything unusual that might explain this low usage?

1. Yes
2. No

**NEXT**

IF Yes ➔ H21 [What is unusual]

IF No OR DK/RF ➔ H23 [Number fuel oil suppliers]

### H21 What is unusual

**ASK**

IF H19 [Anything unusual high] = Yes OR H20 [Anything unusual low] = Yes

Please tell me [what is out of the ordinary about this building].

◆ RECORD in open box

**NEXT**

➔ H23 [Number fuel oil suppliers]
### H22 Fuel oil bill available

**FILL**

\{\text{FuelOilType}\} = \text{Type or types specified in D9 [Fuel oil, diesel, or kerosene]}

**ASK**

IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given
OR H10 [Fuel oil actual consumption] given) &
((D16 [Source for main heating] ≠ Fuel oil & D17 [Other source for main heating] ≠ Fuel oil)
OR
((D16 [Source for main heating] = Fuel oil OR D17 [Other source for main heating] = Fuel oil)
& H12 [Sq ft not included] / A1 [Square footage] <= 0.25 & A2 [Square footage category] ≠ DK
& D3 [Water heating] ≠ DK)
OR
(H10 [Fuel oil actual consumption] given & H18 [Fuel oil regression check] = PASS
& H12 [Sq ft not included] / A1 [Square footage] <= 0.25)

Would it be possible for me to scan one of your {FuelOilType} bills? (There is information on some utility bills that may help energy researchers who use these data.)

- **EXP:** [Examples of these items include miscellaneous charges, past months data, and units of measure.]

- If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

1. Yes, bill available
2. No, will not be able to provide bill

**NEXT** → I1 [Section I Routing]
**H23 Number fuel oil suppliers**

**ASK**

IF D16 [Source for main heating] = Fuel oil OR D17 [Other source for main heating] = Fuel oil 
&  
(H3 [Provide fuel oil figures] = No OR DK/RF 
OR  
H10 [Fuel oil actual consumption] = DK/RF/EMPTY 
OR  
A2 [Square footage category] = DK OR D3 [Water heating] = DK 
OR  
H18 [Fuel oil regression check] = FAIL (LOW) OR FAIL (HIGH) 
OR  
H12 [Sq ft not included] / A1 [Square footage] > 0.25)

**FILL**

{SuppliersIntro}

IF H3 [Provide fuel oil figures] = No OR DK/RF OR  
(H4 [Fuel oil purchases] = DK/RF) & H5 [Fuel oil expenditures] = DK/RF &  
H10 [Fuel oil actual consumption] = DK/RF)  
= “We should be able to obtain this information directly from your supplier, so I just need to collect some information about your accounts.” 
OTHERWISE = “We may need to go to your supplier to verify some information, so I need to ask you some questions about your supplier or suppliers.”

{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

{SuppliersIntro}

How many different companies supplied {FuelOilType} to building during calendar year 2007?

**RANGE** 1 to 4

**NEXT** Number given ➔ H24 [Fuel oil supplier name]  
DK/RF ➔ I1 [Section I Routing]

**H24 Fuel oil supplier name**

**ASK**

IF H23 [Number fuel oil suppliers] given

**FILL**

{FirstNext}

IF Only one supplier = BLANK  
IF First supplier given = “first”  
OTHERWISE = “next”

{FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]

What is the name of the {FirstNext} supplier that provided {FuelOilType} during 2007?

◆ ENTER the name of the supplier

**NEXT**

IF Name given ➔ H25 [Street address]  
IF DK/RF:  
IF Only one supplier or last supplier ➔ I1 [Section I Routing]  
IF More suppliers left to answer for ➔ Ask H24 [Fuel oil supplier name] again for next supplier
<table>
<thead>
<tr>
<th>H25</th>
<th>Street address</th>
<th>FK1AD19—FK4AD19</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td>FILL</td>
<td>{Supplier} = H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the address for {Supplier}, beginning with the street?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ H26 [P.O. Box or Suite]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H26</th>
<th>P.O. Box or Suite</th>
<th>FK1AD29—FK4AD29</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is there a post office box or suite number?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☞ If not, press [ENTER]</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ H27 [City]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H27</th>
<th>City</th>
<th>FK1CTY9—FK4CTY9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the city?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ H28 [State abbreviation]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H28</th>
<th>State abbreviation</th>
<th>FK1STA9—FK4STA9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the state?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☞ ENTER the two letter abbreviation</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ H29 [Zip code]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H29</th>
<th>Zip code</th>
<th>FK1ZIP9—FK4ZIP9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>And what is the zip code?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ H30 [Number fuel oil accounts]</td>
<td></td>
</tr>
<tr>
<td>H30</td>
<td>Number fuel oil accounts</td>
<td>FK1NAC9—FK4NAC9</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>ASK</strong></td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
</tbody>
</table>
| **FILL** | \{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]  
\{Supplier\} = H24 [Fuel oil supplier name] |

How many different {FuelOilType} accounts does this building have with {Supplier}?  

**NEXT**  
IF 1 to 10 accounts \(\Rightarrow\) H31 [Fuel oil account number]  
IF More than 10 accounts OR DK/RF \(\Rightarrow\) H35 [Fuel oil bill available]  

<table>
<thead>
<tr>
<th>H31</th>
<th>Fuel oil account number</th>
<th>FK1AC19—FK4AC109</th>
</tr>
</thead>
</table>
| **ASK** | IF H28 [Number fuel oil accounts] = 1 to 10  
Ask as many times as account numbers given, or until DK/RF |
| **FILL** | \{FirstNext\}  
IF Only one account = BLANK  
IF First account given = “first”  
OTHERWISE = “next”  
\{FuelOilType\} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]  
\{Supplier\} = H24 [Fuel oil supplier name] |

Please give me the {FirstNext} {FuelOilType} account number for {Supplier}.  
◆ VERIFY number digit by digit  

**NEXT** \(\Rightarrow\) H32 [Bills cover only building]  

<table>
<thead>
<tr>
<th>H32</th>
<th>Bills cover only building</th>
<th>FK1OTB9—FK4OTB9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
</tbody>
</table>
| **FILL** | \{Bills\}  
IF Only one account = “Does the bill or statement”  
IF 2 to 10 accounts = “Do the bills or statements”  
\{Supplier\} = H24 [Fuel oil supplier name] |

\{Bills\} from {Supplier} cover just this building or are other buildings covered as well?  

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Just this building</td>
</tr>
<tr>
<td>2</td>
<td>Other building(s)</td>
</tr>
</tbody>
</table>

**NEXT**  
IF Other buildings \(\Rightarrow\) H33 [Sq ft of others included]  
IF Just this building OR DK/RF \(\Rightarrow\) H34 [Include other major fuel oil]
<table>
<thead>
<tr>
<th>H33</th>
<th>Sq ft of others included</th>
<th>FK1OTS9—FK4OTS9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF H32 [Bills cover only building] = Other buildings</td>
<td></td>
</tr>
<tr>
<td>FILL</td>
<td>{Bills}</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Only one account = “bill or statement”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF 2 to 10 accounts = “bills or statements”</td>
<td></td>
</tr>
</tbody>
</table>

What is the approximate square footage of the other buildings included on the {Bills}?  
◆ PROBE for estimate if DK

<table>
<thead>
<tr>
<th>RANGE</th>
<th>1 to 999,999,999</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>H34 [Include other major fuel oil]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H34</th>
<th>Include other major fuel oil</th>
<th>FK1OTU9—FK4OTU9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
<tr>
<td>FILL</td>
<td>{Bills}</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF Only one account = “Does the bill or statement”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IF 2 to 10 accounts = “Do the bills or statements”</td>
<td></td>
</tr>
</tbody>
</table>

{Bills} include charges for any other major fuel oil usage outside the building, such as for kilns, welding, pumps, or motors?  
1  Yes  
2  No

<table>
<thead>
<tr>
<th>NEXT</th>
<th>H35 [Fuel oil bill available]</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>H35</th>
<th>Fuel oil bill available</th>
<th>FK1BILL9—FK4BILL9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in H24 [Fuel oil supplier name]</td>
<td></td>
</tr>
</tbody>
</table>
| FILL | {FuelOilType} = Type or types specified in D9 [Fuel oil, diesel, or kerosene]  
{Supplier} = H24 [Fuel oil supplier name] |

Would it be possible for me to scan one {FuelOilType} bill from {Supplier}? (There is information on some utility bills that may help energy researchers who use these data.)  
◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]  
◆ If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here  
1  Yes, bill available  
2  No, will not be able to provide bill

| NEXT  | IF More suppliers left to answer for Back to H21 [Fuel oil supplier name] for next supplier  
OTHERWISE | I1 [Section I Routing] |
### SECTION I. DISTRICT STEAM

<table>
<thead>
<tr>
<th>I1</th>
<th>Section I Routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>IF District steam used → I2 [WS2 district steam filled out]</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → J1 [Section J Routing]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I2</th>
<th>WS2 district steam filled out</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF District steam used</td>
</tr>
<tr>
<td>Do you have Worksheet 2 with you and filled out for district steam?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1  Yes</td>
</tr>
<tr>
<td></td>
<td>2  No</td>
</tr>
<tr>
<td>NEXT</td>
<td>IF No OR DK/RF → I3 [Provide district steam figures]</td>
</tr>
<tr>
<td></td>
<td>IF Yes → I4 [Units for district steam]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I3</th>
<th>Provide district steam figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF I2 [WS2 district steam filled out] = No OR DK/RF</td>
</tr>
<tr>
<td>The next questions are about district steam usage in this building during calendar year 2007. Would you be able to give me an approximate figure of how much district steam was used or how much was spent on it?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1  Yes</td>
</tr>
<tr>
<td></td>
<td>2  No</td>
</tr>
<tr>
<td>NEXT</td>
<td>IF Yes → I4 [Units for district steam]</td>
</tr>
<tr>
<td></td>
<td>IF No OR DK/RF:</td>
</tr>
<tr>
<td></td>
<td>IF D14 [From central plant] = No OR D15 [Purchase from offsite = Yes]</td>
</tr>
<tr>
<td></td>
<td>→ I18 [District steam supplier name]</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → J1 [Section J Routing]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I4</th>
<th>Units for district steam</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF I2 [WS2 district steam filled out] = Yes OR I3 [Provide district steam figures] = Yes</td>
</tr>
<tr>
<td>SHOW CARD I1</td>
<td></td>
</tr>
<tr>
<td>Please look at this card and tell me the units in which your district steam is measured.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1  Thousand pounds</td>
</tr>
<tr>
<td></td>
<td>2  Pounds</td>
</tr>
<tr>
<td></td>
<td>3  Million Btu</td>
</tr>
<tr>
<td></td>
<td>4  IF VOLUNTEERED: Some other units</td>
</tr>
<tr>
<td>NEXT</td>
<td>IF Some other units → I5 [Other district steam units]</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → I6 [District steam consumption]</td>
</tr>
</tbody>
</table>
## Other district steam units

**STUNITX9**

**ASK**

IF I4 [Units for district steam] = Some other units

What are the other units?

**NEXT**  ➔ I6 [District steam consumption]

## District steam consumption

**STCNS9**

**ASK**

IF I2 [WS2 district steam filled out] = Yes OR I3 [Provide district steam figures] = Yes

Please give me the total amount of district steam used in calendar year 2007.

- **EXP:** If part of a multibuilding campus or complex, and the respondent only knows the consumption for the whole campus or complex, enter the total consumption for the campus or complex here.
- **VERIFY** number digit by digit

**RANGE** 1 to 99,999,999,999,999

**NEXT**  ➔ I7 [District steam expenditures]

## District steam expenditures

**STEXP9**

**ASK**

IF I2 [WS2 district steam filled out] = Yes OR I3 [Provide district steam figures] = Yes

Please give me the total dollars spent on district steam in calendar year 2007, including state and local taxes.

- **Do not** enter cents
- **VERIFY** number digit by digit

**RANGE** 0 to 999,999,999

**NEXT** IF I6 [District steam consumption] = DK/RF & I7 [District steam expenditures] = DK/RF:

IF D14 [From central plant] = No OR D15 [Purchase from offsite] = Yes  ➔ I18 [District steam supplier name]

OTHERWISE ➔ J1 [Section J Routing]

OTHERWISE ➔ I8 [Starting date for district steam figures]
### I8. Starting date for district steam figures

**ASK**

IF I6 [District steam consumption] given OR I7 [District steam expenditures] given

What is the starting date for these district steam usage figures?
- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

**NEXT** ➔ I9 [Ending date for district steam figures]

### I9. Ending date for district steam figures

**ASK**

IF I6 [District steam consumption] given OR I7 [District steam expenditures] given

What is the ending date [for these district steam usage figures]?
- ENTER date as MMDDYYYY
- VERIFY that this is the last day of the last billing period
- If the day is not known, ENTER "15" for DD

**NEXT**

IF C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One ➔ I10 [All occupants steam included]

OTHERWISE ➔ I12 [Other bldgs steam included]

### I10. All occupants steam included

**ASK**

IF I6 [District steam consumption] given OR I7 [District steam expenditures] given & C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One

Do these figures include the district steam from all of the businesses or organizations in this building?

1. Yes
2. No

**NEXT**

IF No ➔ I11 [Sq ft not included]

OTHERWISE ➔ I12 [Other bldgs steam included]
I11  Sq ft not included  STNISF9

ASK  IF I10 [All occupants steam included] = No

What is the approximate square footage of the space in the building that is not included in these figures?

◆ PROBE for estimate if DK

RANGE  1 to 999,999,999

NEXT  ➔ I12 [Other bldgs steam included]

I12  Other bldgs steam included  STOTBD9

ASK  IF I6 [District steam consumption] given OR I7 [District steam expenditures] given

Is any consumption from other buildings included in these figures?

1  Yes
2  No

NEXT  IF Yes ➔ I13 [Sq ft of other included]
IF No OR DK/RF ➔ I17 [District steam bill available]

I13  Sq ft of other included  STOTSF9

ASK  IF I12 [Other bldgs steam included] = Yes

What is the approximate square footage of the other buildings that are included in these figures?

◆ PROBE for estimate if DK

RANGE  1 to 999,999,999

OTHERWISE ➔ I17 [District steam bill available]
### I14 Verify sq ft other bldgs

**ASK**


**FILL**

\[
\begin{align*}
\{\text{SqFt}\} &= A1 \text{ [Square footage] square feet} \\
\{\text{OtherSqFt}\} &= I13 \text{ [Sq ft of other included]} \\
\{\text{TotalSqFt}\} &= A1 \text{ [Square footage] square feet} + I13 \text{ [Sq ft of other included]}
\end{align*}
\]

So, just to verify, the consumption figures you just gave me are for both this \{SqFt\} square foot building and \{OtherSqFt\} square feet of additional space, for a total of \{TotalSqFt\} square feet, is that correct?

1. Yes, consumption is for \{TotalSqFt\} square feet
2. No, the square footage just given was the total including this building - consumption is for \{OtherSqFt\} square feet
3. No, consumption is for some other number of square feet

**NEXT**

IF No, consumption is for some other number of square feet  ➔ I15 [What sq ft included]  
OTHERWISE ➔ I17 [District steam bill available]

### I15 What sq ft included

**ASK**

IF I14 [Verify sq ft other bldgs] = No, consumption is for some other number of square feet

What is the total floorspace included in the district steam usage figures?

- **PROBE** for estimate if DK

**RANGE**

1 to 999,999,999

**NEXT**  ➔ I17 [District steam bill available]

[I16 deleted]
I17 District steam bill available

ASK IF I6 [District steam consumption] given OR I7 [District steam expenditures] given

Would it be possible for me to scan one of your district steam bills? (There is information on some utility bills that may help energy researchers who use these data.)

◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]

◆ If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

1  Yes, bill available
2  No, will not be able to provide bill

NEXT  ➔ J1 [Section J Routing]

I18 District steam supplier name

ASK IF D14 [From central plant] = No OR D15 [Purchase from offsite = Yes] &
(D3 [Provide district steam figures] = No OR DK/RF OR
I6 [District steam consumption] = DK/RF & I7 [District steam expenditures] = DK/RF)

We should be able to obtain this information directly from your district steam supplier, so I just need to collect some information about your district steam accounts.

What is the name of the supplier that provided district steam in calendar year 2007?

◆ ENTER the name of the supplier

NEXT IF Name given  ➔ I19 [Street address]
IF DK/RF  ➔ J1 [Section J Routing]

I19 Street address

ASK IF Name given in I18 [District steam supplier name]

FILL {Supplier} = I18 [District steam supplier name]

What is the address for {Supplier}, beginning with the street?

NEXT  ➔ I20 [P.O. Box or Suite]
<table>
<thead>
<tr>
<th>I20</th>
<th>P.O. Box or Suite</th>
<th>STAD29</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in I18 [District steam supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is there a post office box or suite number?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◆ If not, press [ENTER]</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ I21 [City]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I21</th>
<th>City</th>
<th>STCTY9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in I18 [District steam supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the city?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ I22 [State abbreviation]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I22</th>
<th>State abbreviation</th>
<th>STSTA9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in I18 [District steam supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the state?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>◆ ENTER the two letter abbreviation</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ I23 [Zip code]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I23</th>
<th>Zip code</th>
<th>STZIP9</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF Name given in I18 [District steam supplier name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>And what is the zip code?</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>➔ I24 [Number district steam accounts]</td>
<td></td>
</tr>
</tbody>
</table>
### I24 Number district steam accounts

**ASK**

IF Name given in I18 [District steam supplier name]

**FILL**

\{Supplier\} = I18 [District steam supplier name]

How many different district steam accounts does this building have with {Supplier}?

**RANGE**

1 to 999

**NEXT**

IF 1 to 10 accounts ➔ I25 [District steam account number]
IF More than 10 accounts OR DK/RF ➔ I28 [District steam bill available]

### I25 District steam account number

**ASK**

IF I24 [Number district steam accounts] = 1 to 10
Ask as many times as account numbers given, or until DK/RF

**FILL**

\{FirstNext\}

IF Only one account = BLANK
IF First account given = “first”
OTHERWISE = “next”

\{Supplier\} = I18 [District steam supplier name]

Please give me the {FirstNext} district steam account number for {Supplier}.

◆ VERIFY number digit by digit

**NEXT**

➔ I26 [Bills cover only building]

### I26 Bills cover only building

**ASK**

IF Name given in I18 [District steam supplier name]

**FILL**

\{Bills\}

IF Only one account = “Does the bill or statement”
IF 2 to 10 accounts = “Do the bills or statements”

\{Supplier\} = I18 [District steam supplier name]

\{Bills\} from {Supplier} cover just this building or are other buildings covered as well?

1. Just this building
2. Other building(s)

**NEXT**

IF Other buildings ➔ I27 [Sq ft of others included]
IF Just this building OR DK/RF ➔ I28 [District steam bill available]
**I27** | Sq ft of others included | STOTS9
---|---|---
**ASK** | IF I26 [Bills cover only building] = Other buildings | 
**FILL** | {Bills} | 
IF Only one account = "bill or statement"
IF 2 to 10 accounts = "bills or statements"

What is the approximate square footage of the other buildings included on the {Bills}?  
◆ PROBE for estimate if DK

**RANGE** | 1 to 999,999,999

**NEXT** | ➞ I28 [District steam bill available]

---

**I28** | District steam bill available | STBILL29
---|---|---
**ASK** | IF Name given in I18 [District steam supplier name] | 
Would it be possible for me to scan one district steam bill from {Supplier}? (There is information on some utility bills that may help energy researchers who use these data.)  
◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]
◆ If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

1. Yes, bill available
2. No, will not be able to provide bill

**NEXT** | ➞ J1 [Section J Routing]
### SECTION J. DISTRICT HOT WATER

<table>
<thead>
<tr>
<th>J1</th>
<th>Section J Routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>IF District hot water used → J2 [WS2 district hot water filled out]</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → K1 [Section K Routing]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J2</th>
<th>WS2 district hot water filled out</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF District hot water used</td>
</tr>
<tr>
<td>Do you have Worksheet 2 with you and filled out for district hot water?</td>
<td></td>
</tr>
<tr>
<td>1  Yes</td>
<td></td>
</tr>
<tr>
<td>2  No</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>IF No OR DK/RF → J3 [Provide district hot water figures]</td>
</tr>
<tr>
<td></td>
<td>IF Yes → J4 [District hot water consumption]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J3</th>
<th>Provide district hot water figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>IF J2 [WS2 district hot water filled out] = No OR DK/RF</td>
</tr>
<tr>
<td>The next questions are about district hot water usage in this building during calendar year 2007. Would you be able to give me an approximate figure of how much district hot water was used or how much was spent on it?</td>
<td></td>
</tr>
<tr>
<td>1  Yes</td>
<td></td>
</tr>
<tr>
<td>2  No</td>
<td></td>
</tr>
<tr>
<td>NEXT</td>
<td>IF Yes → J4 [District hot water consumption]</td>
</tr>
<tr>
<td></td>
<td>IF No OR DK/RF:</td>
</tr>
<tr>
<td></td>
<td>IF D14 [From central plant] = No OR D15 [Purchase from offsite = Yes]</td>
</tr>
<tr>
<td></td>
<td>→ J16 [District hot water supplier name]</td>
</tr>
<tr>
<td></td>
<td>OTHERWISE → K1 [Section K Routing]</td>
</tr>
</tbody>
</table>
**J4 District hot water consumption**  
ASK IF J2 [WS2 district hot water filled out] = Yes OR J3 [Provide district hot water figures] = Yes

Please give me the total amount, in million Btu, of district hot water used in calendar year 2007.

- EXP: [If part of a multibuilding campus or complex, and the respondent only knows the consumption for the whole campus or complex, ENTER the total consumption for the campus or complex here.]
- VERIFY number digit by digit

RANGE 1 to 99,999,999,999,999

NEXT ➔ J5 [District hot water expenditures]

**J5 District hot water expenditures**  
ASK IF J2 [WS2 district hot water filled out] = Yes OR J3 [Provide district hot water figures] = Yes

Please give me the total dollars spent on district hot water in calendar year 2007, including state and local taxes.

- Do not enter cents
- VERIFY number digit by digit

RANGE 0 to 999,999,999

NEXT IF J4 [District hot water consumption] = DK/RF & J5 [District hot water expenditures] = DK/RF:
- IF D14 [From central plant] = No OR D15 [Purchase from offsite] = Yes ➔ J6 [District hot water supplier name]
- OTHERWISE ➔ K1 [Section K Routing]
- OTHERWISE ➔ J6 [Starting date for district hot water figures]

**J6 Starting date for district hot water figures**  
ASK IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given

What is the starting date for these district hot water usage figures?

- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

NEXT ➔ J7 [Ending date for district hot water figures]
### J7 Ending date for district hot water figures

**ASK** IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given

What is the ending date [for these district hot water usage figures]?
- ENTER date as MMDDYYYY
- VERIFY that this is the last day of the last billing period
- If the day is not known, ENTER "15" for DD

**NEXT** IF C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One \(\Rightarrow\) J8 [All occupants hot water included] OTHERWISE \(\Rightarrow\) J10 [Other bldgs hot water included]

### J8 All occupants hot water included

**ASK** IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given & C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One

Do these figures include the district hot water for all of the businesses or organizations in this building?
1. Yes
2. No

**NEXT** IF No \(\Rightarrow\) J9 [Sq ft not included] OTHERWISE \(\Rightarrow\) J10 [Other bldgs hot water included]

### J9 Sq ft not included

**ASK** IF J8 [All occupants hot water included] = No

What is the approximate square footage of the space in the building that is not included in these figures?
- PROBE for estimate if DK

**RANGE** 1 to 999,999,999

**NEXT** \(\Rightarrow\) J10 [Other bldgs hot water included]
### J10 Other bldgs hot water included

**ASK**

| IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given |

Is any consumption from other buildings included in these figures?

1. Yes
2. No

**NEXT**

| IF Yes → J11 [Sq ft of other included] |
| IF No OR DK/RF → J15 [District hot water bill available] |

### J11 Sq ft of other included

**ASK**

| IF J10 [Other bldgs hot water included] = Yes |

What is the approximate square footage of the other buildings that are included in these figures?

♦ PROBE for estimate if DK

**RANGE**

1 to 999,999,999

**NEXT**

| OTHERWISE → J15 [District hot water bill available] |

### J12 Verify sq ft other bldgs

**ASK**


**FILL**

- \( \{\text{SqFt}\} = A1 [\text{Square footage}] \) square feet
- \( \{\text{OtherSqFt}\} = J11[\text{Sq ft of other included}] \) square feet + J11 [Sq ft of other included]

\( \{\text{TotalSqFt}\} = A1 [\text{Square footage}] \) square feet + J11 [Sq ft of other included]

So, just to verify, the consumption figures you just gave me are for both this \( \{\text{SqFt}\} \) square foot building and \( \{\text{OtherSqFt}\} \) square feet of additional space, for a total of \( \{\text{TotalSqFt}\} \) square feet, is that correct?

1. Yes, consumption is for \( \{\text{TotalSqFt}\} \) square feet
2. No, the square footage just given was the total including this building - consumption is for \( \{\text{OtherSqFt}\} \) square feet
3. No, consumption is for some other number of square feet

**NEXT**

| IF No, consumption is for some other number of square feet → J13 [What sq ft included] |
| OTHERWISE → J15 [District hot water bill available] |
### J13 What sq ft included  
**ASK** IF J12 [Verify sq ft other bldgs] = No, consumption is for some other number of square feet

What is the total floorspace included in the district hot water usage figures?

- PROBE for estimate if DK

**RANGE** 1 to 999,999,999

**NEXT** ➔ J15 [District hot water bill available]

---

### J15 District hot water bill available

**ASK** IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given

Would it be possible for me to scan one of your district hot water bills? (There is information on some utility bills that may help energy researchers who use these data.)

- **EXP:** [Examples of these items include miscellaneous charges, past months data, and units of measure.]
- If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

1. Yes, bill available
2. No, will not be able to provide bill

**NEXT** ➔ K1 [Section K Routing]
We should be able to obtain this information directly from your district hot water supplier, so I just need to collect some information about your district hot water accounts.

What is the name of the supplier that provided district hot water in calendar year 2007?

◆ ENTER the name of the supplier

NEXT IF Name given → J17 [Street address]
IF DK/RF → K1 [Section K Routing]

What is the address for {Supplier}, beginning with the street?

NEXT → J18 [P.O. Box or Suite]

Is there a post office box or suite number?

◆ If not, press [ENTER]

NEXT → J19 [City]

What is the city?

NEXT → J20 [State abbreviation]
**J20  State abbreviation**

**ASK**

IF Name given in J16 [District hot water supplier name]

What is the state?

◆ ENTER the two letter abbreviation

**NEXT**  →  J21 [Zip code]

---

**J21  Zip code**

**ASK**

IF Name given in J16 [District hot water supplier name]

And what is the zip code?

**NEXT**  →  J22 [Number district hot water accounts]

---

**J22  Number district hot water accounts**

**ASK**

IF Name given in J16 [District hot water supplier name]

**FILL**

{Supplier} = J16 [District hot water supplier name]

How many different district hot water accounts does this building have with {Supplier}?

**RANGE** 1 to 999

**NEXT**  
IF 1 to 10 accounts  →  J23 [District hot water account number]  
IF More than 10 accounts OR DK/RF  →  J26 [District hot water bill available]

---

**J23  District hot water account number**

**ASK**

IF J22 [Number district hot water accounts] = 1 to 10  
Ask as many times as account numbers given, or until DK/RF

**FILL**

{FirstNext}  
IF Only one account = BLANK  
IF First account given = “first”  
OTHERWISE = “next”  
{Supplier} = J16 [District hot water supplier name]

Please give me the {FirstNext} district hot water account number for {Supplier}.

◆ VERIFY number digit by digit

**NEXT**  →  J24 [Bills cover only building]
<table>
<thead>
<tr>
<th><strong>J24</strong></th>
<th>Bills cover only building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Name given in J16 [District hot water supplier name]</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{Bills}</td>
</tr>
<tr>
<td></td>
<td>IF Only one account = “Does the bill or statement”</td>
</tr>
<tr>
<td></td>
<td>IF 2 to 10 accounts = “Do the bills or statements”</td>
</tr>
<tr>
<td></td>
<td>{Supplier} = J16 [District hot water supplier name]</td>
</tr>
</tbody>
</table>

{Bills} from {Supplier} cover just this building or are other buildings covered as well?

1. Just this building
2. Other building(s)

**NEXT** IF Other buildings ➔ J25 [Sq ft of others included]
IF Just this building OR DK/RF ➔ J26 [District hot water bill available]

<table>
<thead>
<tr>
<th><strong>J25</strong></th>
<th>Sq ft of others included</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF J24 [Bills cover only building] = Other buildings</td>
</tr>
<tr>
<td><strong>FILL</strong></td>
<td>{Bills}</td>
</tr>
<tr>
<td></td>
<td>IF Only one account = “bill or statement”</td>
</tr>
<tr>
<td></td>
<td>IF 2 to 10 accounts = “bills or statements”</td>
</tr>
</tbody>
</table>

What is the approximate square footage of the other buildings included on the {Bills}?

◆ PROBE for estimate if DK

**RANGE** 1 to 999,999,999

**NEXT** ➔ J26 [District hot water bill available]

<table>
<thead>
<tr>
<th><strong>J26</strong></th>
<th>District hot water bill available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong></td>
<td>IF Name given in J16 [District hot water supplier name]</td>
</tr>
</tbody>
</table>

Would it be possible for me to scan one district hot water bill from {Supplier}? (There is information on some utility bills that may help energy researchers who use these data.)

◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]

◆ If available, you will be prompted to scan the bill at the end of the interview, so it is not necessary to stop the interview here

1. Yes, bill available
2. No, will not be able to provide bill

**NEXT** ➔ K1 [Section K Routing]
## SECTION K. DOMESTIC WATER

### K1 Domestic water consumption

**ASK**

All Buildings

---

The next questions are about domestic water, that is, the water supplied to the building for everyday use, such as for washing hands. (These questions are found on the third page of Worksheet 2.)

In gallons, please give me the total volume of water used in 2007.

- **VERIFY** that the number the Respondent provides is in gallons, not millions of gallons. Worksheet 2 asks for this number in millions of gallons.

**RANGE**

0 to 99,999,999,999,999

**NEXT**

IF Amount given → K2 [Outside water consumption]
IF DK/RF → K4 [Domestic water expenditures]

### K2 Outside water consumption

**ASK**

IF Amount given in K1 [Domestic water consumption]

In gallons, how much of this water was used outside the building?

- **VERIFY** that the number the Respondent provides is in gallons, not millions of gallons. Worksheet 2 asks for this number in millions of gallons.

**RANGE**

0 to 99,999,999,999,999

**NEXT**

→ K3 [How water volume determined]

### K3 How water volume determined

**ASK**

IF Amount given in K1 [Domestic water consumption]

How is the annual water volume determined? Is it metered, estimated, both metered and estimated, or measured in some other way?

1. Metered
2. Estimated
3. Both metered and estimated
4. Other

**NEXT**

→ K4 [Domestic water expenditures]
### K4 Domestic water expenditures

**ASK** All Buildings

Please give me the total dollars spent on domestic water in 2007, including state and local taxes.

- Do not enter cents
- VERIFY number digit by digit

**RANGE** 0 to 999,999,999

**NEXT**
- IF Amount given in K1 [Domestic water consumption] OR K4 [Domestic water expenditures]  
  - K5 [Starting date for water figures]
- OTHERWISE  
  - K8 [Heard of WaterSense]

### K5 Starting date for water figures

**ASK** K1 [Domestic water consumption] given OR K4 [Domestic water expenditures] given

What is the starting date for these water usage figures?

- ENTER date as MMDDYYYY
- If the day is not known, ENTER "15" for DD

**NEXT**  
- K6 [Ending date for water figures]

### K6 Ending date for water figures

**ASK** K1 [Domestic water consumption] given OR K4 [Domestic water expenditures] given

What is the ending date [for these water usage figures]?  

- ENTER date as MMDDYYYY
- VERIFY that this is the last day of the last billing period
- If the day is not known, ENTER "15" for DD

**NEXT**
- IF Central chillers in D33 [Cooling equipment type]  
  - K7 [Cooling tower water consumption]
- OTHERWISE  
  - K8 [Heard of WaterSense]
### K7  Cooling tower water consumption

**ASK**

IF (K1 [Domestic water consumption] given OR K4 [Domestic water expenditures] given) & Central chillers in D33 [Cooling equipment type]

If the cooling towers on your chilled water system are metered, please give the volume of water used for the cooling towers in gallons.

◆ VERIFY that the number the Respondent provides is in gallons, not millions of gallons. Worksheet 2 asks for this number in millions of gallons.

**RANGE** 0 to 99,999,999,999

**NEXT** ➔ K8 [Heard of WaterSense]

### K8  Heard of WaterSense

**ASK** All Buildings

Have you heard of the WaterSense program of the U.S. Environmental Protection Agency?

1  Yes

2  No

**NEXT** INTERVIEW COMPLETE