

2012 Commercial Buildings Energy Consumption Survey (CBECS)

Building Questionnaire – *Form EIA-871A*

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HOW TO USE THIS QUESTIONNAIRE

The 2012 Commercial Buildings Energy Consumption Survey (CBECS) was conducted using a *computer-assisted 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 2012 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 than the actual CBECS instrument.

Each question is formatted as follows:

A1	Question name	SASVAR
ASK		
FILL		
	Question text	
RANGE		
NEXT		

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. When the **SASVAR is highlighted**, it means the variable is included in the public use microdata file. **Other public use file-related notes are also highlighted.**

The **ASK** line describes what needs to be true for a question to be asked for a particular building. If **a portion of the code in this box is highlighted**, it means that for the purposes of the public use file, you can ignore the rest of the ASK code.

There is one variable that is preloaded into each case and used for routing in some questions:

- Freestanding – a building that is not attached on any sides

The **FILL** line describes any question fills and the conditions under which each appears. If the fill appears as something such as “A6 [Square footage]” this means that the figure given in question A1 will be filled in.

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

NOTE: Questions R1-R6 are asked each time a case is started and re-started (if more than one contact is necessary to complete the interview), except as specified in the ASK line.

R1	Consent	<i>R1CARI - RXCARI</i>
ASK	All Buildings	
		[F1]-Help
	<p>Some parts of this interview will be recorded for quality control purposes. I'd like to continue now unless you have any questions.</p> <p>◆ For FAQs, press [F1] - Help</p> <p>1 Gives consent to record interview 2 Does <u>not</u> give consent to record interview</p>	
NEXT	IF First time case started OR Restart but not done with Section E → R2 [Worksheet 1] OTHERWISE → R4 [Respondent function]	

R2	Worksheet 1	<i>R1WS1 – RXWS1</i>
ASK	All Buildings not yet done with Section E	
	<p>Do you have Worksheet 1 with you and completed?</p> <p>1 Yes 2 No</p>	
NEXT	IF First time case started → R3 [Respondent function] IF Restart → R4 [Respondent function]	

R3	Respondent function	<i>R1JOB</i>
ASK	All Buildings on first start	
<p> SHOW CARD 1</p> <p>◆ Take out the Show Card booklet or make sure the respondent has access to them. It is <u>very important</u> to use these cards, as some of them contain more information than can be found on your CAPI screens</p> <p>Before we get started, we need to make sure that we have Show Cards available for some of the questions. Please turn to Show Card 1.</p> <p>Looking at this list, please tell me which of these best describes your job function.</p> <ol style="list-style-type: none"> 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 		
NEXT	IF Other → R5 [Other job function] Anything but Other → R6 [Building boundaries]	

R4	Respondent function	<i>R2JOB – RXJOB</i>
ASK	All Buildings if case is a re-start	
<p>◆ ASK if interview is with a new respondent</p> <p>◆ If interview is with same respondent as previous interview, ENTER "0"</p> <p> SHOW CARD 1</p> <p>Before we get started, we need to make sure that we have Show Cards available for some of the questions. Please turn to Show Card 1.</p> <p>Looking at this list, please tell me which of these best describes your job function.</p> <ul style="list-style-type: none"> 0 Same respondent as previous interview 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 		
NEXT	IF Other → R5 [Other job function] Anything but Other → R6 [Buildings boundaries]	

R5	Other job function	<i>R1JOBX – RXJOBX</i>
ASK	IF R3 [Respondent function] = Other OR R4 [Respondent function] = Other	
What is your job function?		
NEXT	→ R6 [Building boundaries]	

R6	Building boundaries
ASK	All Buildings
<p>The building that we're going to be talking about today is...</p> <ul style="list-style-type: none"> ◆ EXP: [Describe the boundaries of the building as described in the header. The amount of detail necessary will vary by the situation.] ◆ ENTER "1" to continue 	
NEXT	→ A1 [Building name]

SECTION A: BUILDING SIZE AND AGE

A1	Building name	<i>BLDGNAM</i>
ASK	All Buildings	
<p>By what name is this building most commonly referred?</p> <p>◆ EXP: [This may be the name of the building or the name of the largest business or organization within the building.]</p>		
NEXT	→ A2 [Street address]	

A2	Street address	<i>ADDRESS</i>
ASK	All Buildings	
<p>Please tell me the address of the building, beginning with the street address.</p>		
NEXT	→ A3 [City]	

A3	City	<i>CITY</i>
ASK	All Buildings	
<p>What is the city?</p>		
NEXT	→ A4 [State]	

A4	State	<i>STATE</i>
ASK	All Buildings	
<p>What is the state?</p> <p>◆ ENTER the two letter abbreviation</p>		<i>[F1]-HELP</i>
NEXT	→ A5 [ZIP code]	

A5	ZIP code	<i>ZIP</i>
ASK	All Buildings	
And what is the ZIP code?		
NEXT	→ A6 [Square footage]	

A6	Square footage	SQFT
ASK	All Buildings	
FILL	{Worksheet1Intro} IF R has Worksheet 1 = "Please refer to Worksheet 1 for some of these next questions on general characteristics." OTHERWISE = BLANK	
[F1]-HELP		
{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?		
<ul style="list-style-type: none"> ◆ DEF: [Total square footage = Length of building multiplied by width of building multiplied by the number of floors.] ◆ VERIFY number <u>digit by digit</u> 		
RANGE	1 to 999,999,999	
NEXT	IF DK/RF → A12 [Square footage category] IF 1,000 square feet or less → A13 [End of interview] OTHERWISE → A7 [Square footage includes parking]	

A7	Square footage includes parking	<i>SQFTRK</i>
ASK	IF A6 [Square footage] ≠ DK/RF & A6 [Square footage] > 1,000 square feet	
Does this square footage include any parking areas?		
1 Yes 2 No		
NEXT	IF Yes → A8 [Parking enclosed or open] IF No/DK/RF → A11 [Square footage includes common]	

A8	Parking enclosed or open	<i>PRKENCL</i>
ASK	IF A7 [Square footage includes parking] = Yes	
<p>Are these parking areas completely enclosed, such as underground parking levels, or are they open to the outside, with open spaces in the walls?</p> <p>1 Completely enclosed 2 Open to the outside</p>		
NEXT	IF Completely enclosed OR DK/RF → A9 [Parking separate or part of building] IF Open to the outside → A10 [Sq ft of open or separate parking]	

A9	Parking separate or part of building	<i>PRKSEP</i>
ASK	IF A8 [Parking enclosed or open] = Completely enclosed OR DK/RF	
<p>Are these parking areas in a completely separate structure, connected to the building only by a walkway or tunnel, or are they a part of the building itself?</p> <p>1 Completely separate 2 Connected by walkway or tunnel 3 Part of the building</p>		
NEXT	IF Completely separate, Connected by walkway or tunnel OR DK/RF → A10 [Sq ft of open or separate parking] IF Part of the building → A11 [Square footage includes common]	

A10	Sq ft of open or separate parking	<i>PRKSQFT</i>
ASK	IF A8 [Parking enclosed or open] = Open to the outside OR A9 [Parking separate or part of building] = Completely separate, Connected by walkway or tunnel OR DK/RF	
<p>What is the square footage of these parking areas (that you included in the total square footage of the building)?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ A11 [Square footage includes common]	

A11	Square footage includes common	<i>SQFTCOM</i>
ASK	IF A6 [Square footage] ≠ DK/RF & A6 [Square footage] > 1,000 square feet	
FILL	{SqFt} = "A6 [Square footage]"	
<p>Does the building's {SqFt} square feet include all the common and unoccupied areas such as hallways, lobbies, stairways, and mechanical rooms?</p> <p>1 Yes 2 No</p>		
NEXT	→ A14 [Wall construction material]	

A12	Square footage category	SQFTC
ASK	IF A6 [Square footage] = DK/RF On public use file: for all buildings, square footage has been coded into the corresponding category.	
<p style="text-align: right;">[F1]-HELP</p> <p> SHOW CARD A1</p> <p>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.</p> <p>Please look at Show Card A1 and tell me which category best describes the total gross square footage in this building. There are examples provided to help you estimate.</p> <ul style="list-style-type: none"> ◆ If respondent gives the category code, VERIFY the response by reading the full answer <p>01 1,000 square feet or less 02 1,001 to 5,000 square feet 03 5,001 to 10,000 square feet 04 10,001 to 25,000 square feet 05 25,001 to 50,000 square feet 06 50,001 to 100,000 square feet 07 100,001 to 200,000 square feet 08 200,001 to 500,000 square feet 09 500,001 to 1 million square feet 10 Over 1 million square feet</p>		
NEXT	IF 1,000 square feet or less → A13 [End of interview] IF Over 1,000 square feet OR DK/RF → A14 [Wall construction material]	

A13	End of interview
ASK	IF A6 [Square footage] ≤ 1000
FILL	{CollectWorksheet} IF R has Worksheet 1 = "However, I would like to collect Worksheet 1 and any other worksheets that you may have completed."
<p>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}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE

NOTE: For the rest of this document, "All Buildings" refers to buildings > 1,000 square feet.

A14	Wall construction material	WLCNS
ASK	All Buildings	
<p> SHOW CARD A2</p> <p>Please look at Show Card A2 for a list of different types of construction materials. Which of these best describes the major type of exterior wall construction material used on this building?</p> <ol style="list-style-type: none"> 1 Brick, stone, or stucco 2 Pre-cast concrete panels 3 Concrete block or poured concrete (above grade) 4 Aluminum, asbestos, plastic, or wood materials (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 		[F1]-HELP
NEXT	→ A15 [Roof construction material]	

A15	Roof construction material	RFCNS
ASK	All Buildings	
		[F1]-HELP
 SHOW CARD A3		
<p>Please look at Show Card A3 for a list of different types of roofing materials. Which of these best describes the building's predominant exterior roof surface?</p>		
<ol style="list-style-type: none"> 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	→ A16 [Cool roof materials]	

A16	Cool roof materials	RFCOOL
ASK	All Buildings	
<p>Is the roof of this building designed to reduce solar heat gain, also known as a "cool roof"?</p>		
<p>◆ EXP: [Roofs with a highly reflective surface, a ballasted roof system, a vegetated roof system, or any combination of these technologies should be considered a "cool roof".]</p>		
<ol style="list-style-type: none"> 1 Yes 2 No 		
NEXT	→ A17 [Roof tilt]	

A17	Roof tilt	RFTILT
ASK	All Buildings	
 SHOW CARD A4		
<p>Looking at Show Card A4, please tell me which best describes the tilt or pitch of the roof of this building.</p>		
<ol style="list-style-type: none"> 1 Flat 2 Shallow pitch 3 Steeper pitch 		
NEXT	IF Freestanding → A18 [Building shape] OTHERWISE → A22 [Number of floors]	

A18	Building shape	BLDSHP
ASK	IF Freestanding	
 SHOW CARD A5 Looking at Show Card A5, which of these shapes most resembles the floorplan of this building at ground level? This is sometimes called the "footprint" of the building. 01 Square 02 Wide rectangle 03 Narrow rectangle 04 Rectangle or square with an interior courtyard 05 "H" shaped 06 "U" shaped 07 "E" shaped 08 "T" shaped 09 "L" shaped 10 "+" or cross shaped 11 Other shape		
NEXT	→ A19 [Percent exterior glass]	

A19	Percent exterior glass	GLSSPC
ASK	IF Freestanding	
 SHOW CARD A6 Which of the ranges on Show Card A6 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	→ A20 [Equal glass on all sides]	

A20	Equal glass on all sides	EQGLSS
ASK	IF Freestanding	
Is the amount of glass about the same for all sides of the building? 1 Yes 2 No		
NEXT	IF Yes → A22 [Number of floors] IF No OR DK/RF → A21 [Glass sides most sunlight]	

A21	Glass sides most sunlight	SUNGLS
ASK	IF Freestanding & A20 [Equal glass on all sides] = No OR DK/RF	
<p>Do the sides receiving direct sunlight have more or less glass area than the sides that do not receive direct sunlight?</p> <p>1 More glass area 2 Less glass area 3 IF VOLUNTEERED: About the same amount</p>		
NEXT	→ A22 [Number of floors]	

A22	Number of floors	NFLOOR
ASK	All Buildings	
<p>[F1]-HELP</p> <p>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?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999 On public use file: 994 = 15 to 25 floors 995 = More than 25 floors	
NEXT	IF Only one floor OR DK/RF → A24 [Floor-to-ceiling height] IF More than one floor → A23 [Number of underground floors]	

A23	Number of underground floors	BASEMNT
ASK	IF A22 [Number of floors] > 1	
<p>How many of these floors are below ground (or partially below ground)?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	0 to 999	
NEXT	→ A24 [Floor-to-ceiling height]	

A24	Floor-to-ceiling height	FLCEILHT
ASK	All Buildings	
FILL	{Floors} IF A22 [Number of floors] = 1 = "in this building" ELSE IF A22 [Number of floors] = DK/RF = "of the floors in this building" OTHERWISE = "of these floors"	
What is the typical floor-to-ceiling height {Floors}? <ul style="list-style-type: none"> ◆ DEF: [Floor-to-ceiling height is the distance, in feet, from the floor to the ceiling surface.] ◆ EXP: [If it varies by floor, ask for the height of the majority of floors.] 		
RANGE	5 to 500 On public use file: 995 = More than 50	
NEXT	→ A25 [Attic]	

A25	Attic	ATTIC
ASK	All Buildings	
Does the building have an attic? <ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF A22 [Number of floors] = 1 → A30 [Year of construction] IF A22 [Number of floors] > 1 OR DK/RF → A26 [Elevators]	

A26	Elevators	ELEVTR
ASK	IF A22 [Number of floors] >1 OR DK/RF	
Are there any elevators in this building? <ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → A27 [Number of elevators] IF No OR DK/RF → A28 [Escalators]	

A27	Number of elevators	NELVTR
ASK	IF A26 [Elevators] = Yes	
<p>How many elevators are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999 On public use file: 995 = More than 50	
NEXT	→ A28 [Escalators]	

A28	Escalators	ESCLTR
ASK	IF A22 [Number of floors] >1 OR DK/RF	
<p>Are there any escalators in this building?</p> <p>◆ EXP: ["Moving sidewalks" should be included as escalators.]</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → A29 [Number of escalators] IF No OR DK/RF → A30 [Year of construction]	

A29	Number of escalators	NESLTR
ASK	IF A28 [Escalators] = Yes	
<p>How many escalators are there? Count <u>each</u> one, for example, a pair of up and down escalators should be counted as two.</p> <p>◆ EXP: ["Moving sidewalks" should be counted as escalators.]</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 99 On public use file: 995 = More than 20	
NEXT	→ A30 [Year of construction]	

A30	Year of construction	YRCON
ASK	All Buildings	
		[F1]-HELP
	What year was this building constructed? If there have been major additions, give the year the <u>largest portion</u> of the building was completed.	
RANGE	1600 to 2013 On public use file: 995 = Before 1946	
NEXT	IF DK/RF → A31 [Year of construction category] IF 2012 → A33 [Month ready for occupancy] IF 2013 → A32 [End of interview] IF 2007 or earlier → A34 [Renovations] IF 2008 or later → B1 [One activity in building]	

A31	Year of construction category	YRCONC
ASK	IF A30 [Year of construction] = DK/RF On public use file: for all buildings, year of construction has been coded into the corresponding category.	
		[F1]-HELP
	 SHOW CARD A7 Please look at Show Card A7 and tell me which range best describes when this building was constructed.	
	01 Before 1920 02 1920 to 1945 03 1946 to 1959 04 1960 to 1969 05 1970 to 1979 06 1980 to 1989 07 1990 to 1999 08 2000 to 2003 09 2004 to 2007 10 2008 to 2012 11 IF VOLUNTEERED: 2013	
NEXT	IF 2013 → A32 [End of interview] IF Any category (OR DK/RF) except 2008 to 2012 → A34 [Renovations] IF 2008 to 2012 → B1 [One activity in building]	

A32	End of interview
ASK	IF A30 [Year of construction] OR A31 [Year of construction category] = 2013
FILL	{CollectWorksheet} IF R has Worksheet 1 = "However, I would like to collect Worksheet 1 and any other worksheets that you may have completed."
<p>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, 2013. {CollectWorksheet}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE

A33	Month ready for occupancy	MONCON
ASK	IF A30 [Year of construction] = 2012	
<p>In what month of 2012 was this building first ready for occupancy?</p> <p>1 January 2 February 3 March 4 April 5 May 6 June 7 July 8 August 9 September 10 October 11 November 12 December 97 PUBLIC USE FILE ONLY: Undetermined</p>		[F1]-HELP
NEXT	→ B1 [One activity in building]	

A34	Renovations RENOV
ASK	IF A30 [Year of construction] = 2007 or earlier OR A31 [Year of construction category] = Any category (OR DK/RF) except 2008 to 2012
FILL	{Since1990orConstructed} IF A30 [Year of construction] = 1990 or later OR A31 [Year of construction category] = 1990 to 1999, 2000 to 2003, OR 2004 to 2007 = "since it was constructed" OTHERWISE = "since 1990"
<p>Has any portion of this building undergone renovations {Since1990orConstructed}?</p> <p>1 Yes 2 No</p>	
NEXT	IF Yes → A35 [What renovations] IF No OR DK/RF → B1 [One activity in building]

A35	What renovations <i>see below</i>																														
ASK	IF A34 [Renovations] = Yes On public use file: for cases where Renovations=No, these variables are also coded No.																														
FILL	{Since1990orConstructed} IF A30 [Year of construction] = 1990 or later OR A31 [Year of construction category] = 1990 to 1999, 2000 to 2003, OR 2004 to 2007 = "since it was constructed" OTHERWISE = "since 1990"																														
<p> SHOW CARD A8</p> <p>Please look at Show Card A8 and tell me which types of renovations have been done {Since1990orConstructed}.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">1 Addition or annex</td> <td style="width: 20%; text-align: right;">RENADD</td> </tr> <tr> <td>2 Reduction of enclosed floorspace</td> <td style="text-align: right;">RENDC</td> </tr> <tr> <td>3 Interior or exterior cosmetic improvements</td> <td style="text-align: right;">RENCOS</td> </tr> <tr> <td>4 Interior wall re-configuration</td> <td style="text-align: right;">RENINT</td> </tr> <tr> <td>5 Roof replacement</td> <td style="text-align: right;">RENRF</td> </tr> <tr> <td>6 Exterior wall replacement</td> <td style="text-align: right;">RENWLL</td> </tr> <tr> <td>7 Window replacement</td> <td style="text-align: right;">RENWIN</td> </tr> <tr> <td>8 HVAC equipment upgrade</td> <td style="text-align: right;">RENVVC</td> </tr> <tr> <td>9 Lighting upgrade</td> <td style="text-align: right;">RENLGT</td> </tr> <tr> <td>10 Plumbing system upgrade</td> <td style="text-align: right;">RENPLB</td> </tr> <tr> <td>11 Electrical upgrade</td> <td style="text-align: right;">RENELC</td> </tr> <tr> <td>12 Insulation upgrade</td> <td style="text-align: right;">RENINS</td> </tr> <tr> <td>13 Fire, safety, or security upgrade</td> <td style="text-align: right;">RENSAF</td> </tr> <tr> <td>14 Structural upgrade</td> <td style="text-align: right;">RENSTR</td> </tr> <tr> <td>15 Other</td> <td style="text-align: right;">RENOTH</td> </tr> </table>		1 Addition or annex	RENADD	2 Reduction of enclosed floorspace	RENDC	3 Interior or exterior cosmetic improvements	RENCOS	4 Interior wall re-configuration	RENINT	5 Roof replacement	RENRF	6 Exterior wall replacement	RENWLL	7 Window replacement	RENWIN	8 HVAC equipment upgrade	RENVVC	9 Lighting upgrade	RENLGT	10 Plumbing system upgrade	RENPLB	11 Electrical upgrade	RENELC	12 Insulation upgrade	RENINS	13 Fire, safety, or security upgrade	RENSAF	14 Structural upgrade	RENSTR	15 Other	RENOTH
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13 Fire, safety, or security upgrade	RENSAF																														
14 Structural upgrade	RENSTR																														
15 Other	RENOTH																														
NEXT	IF Other → A36 [Other renovation] OTHERWISE → B1 [One activity in building]																														

A36	Other renovation
ASK	IF A35 [What renovations] = Other
<p>Please describe the other type of renovation.</p> <p>◆ RECORD in open box</p>	
NEXT	→ B1 [One activity in building]

SECTION B: BUILDING ACTIVITY

B1	One activity in building	ONEACT
ASK	All Buildings	
<div style="text-align: right;">[F1]-HELP</div>  SHOW CARD B1 Looking at the list of activities on Show Card B1, does one <u>single</u> 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]	

B2	Primary activity	<i>ACT</i>
ASK	IF B1 [One activity in building] = Yes	
<div style="text-align: right;">[F1]-HELP</div>  SHOW CARD B1 <p>Which one of the activities listed on Show Card B1 accounts for 75 percent or more of the floorspace in the building?</p> <p>◆ PROBE if DK</p> <ul style="list-style-type: none"> 11 Office/Professional 12 Data center/Computer "server farm" 13 Warehouse/Storage 14 Food sales or service 15 Enclosed mall 16 Retail (other than mall) 17 Education 18 Religious worship 19 Public assembly 20 Health care 21 Service 22 Lodging 23 Public order and safety 24 Residential 25 Industrial 26 Agricultural 27 Vacant 28 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 Enclosed mall → B41 [Food court] 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 → B42 [On a multibuilding complex]	

Note: Codes for the final CBECS building activity (PBA) are found on page 43.

B3	Activities in building	ACT1, ACT2, ACT3
ASK	IF B1 [One activity in building] = No OR DK/RF	
<div style="text-align: right;">[F1]-HELP</div> <p> SHOW CARD B1</p> <p>Which activities listed on Show Card B1 occupy the most space in this building? Choose up to three.</p> <p>◆ PROBE for any others (up to three)</p> <ul style="list-style-type: none"> 11 Office/Professional 12 Data center/Computer "server farm" 13 Warehouse/Storage 14 Food sales or service 15 Enclosed mall 16 Retail (other than mall) 17 Education 18 Religious worship 19 Public assembly 20 Health care 21 Service 22 Lodging 23 Public order and safety 24 Residential 25 Industrial 26 Agricultural 27 Vacant 28 Other 		
NEXT	IF Activities given → B4 [Percents for activities] IF DK/RF → B42 [On a multibuilding complex]	

B4	Percents for activities	ACT1PCT, ACT2PCT, ACT3PCT
ASK	For each activity given in B3 [Activities in building]	
FILL	<p>{ActivityLabel}</p> <p>IF Office/Professional = "office space"</p> <p>IF Data center/Computer "server farm" = "used as a data center"</p> <p>IF Warehouse/Storage = "warehouse space"</p> <p>IF Food sales or service = "used for food sales or service"</p> <p>IF Enclosed mall = "enclosed mall"</p> <p>IF Retail = "used for retail"</p> <p>IF Education = "used for education"</p> <p>IF Religious worship = "used for religious worship"</p> <p>IF Public assembly = "used for public assembly"</p> <p>IF Health care = "used for health care"</p> <p>IF Service = "used for service"</p> <p>IF Lodging = "used for lodging"</p> <p>IF Public order and safety = "used for public order and safety"</p> <p>IF Residential = "residential"</p> <p>IF Industrial = "industrial or manufacturing"</p> <p>IF Agricultural = "agricultural"</p> <p>IF Vacant = "vacant"</p> <p>IF Other = "used for another activity"</p>	
About what percent of the total space is {ActivityLabel}?		
RANGE	1 to 100	
NEXT	<p>IF There is an activity with a maximum percent, assign that as the primary activity</p> <p>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)</p> <p>THEN, follow here based on the assigned primary activity:</p> <p>IF Office/Professional → B5 [Office type]</p> <p>IF Data center/Computer "server farm" → B6 [Verify data center]</p> <p>IF Warehouse/Storage → B9 [Warehouse type]</p> <p>IF Food sales or service → B10 [Food sales or service type]</p> <p>IF Enclosed mall → B41 [Food court]</p> <p>IF Retail → B11 [Retail type]</p> <p>IF Education → B13 [Education type]</p> <p>IF Religious worship → B30 [Assign CBECS Activity = Religious worship]</p> <p>IF Public assembly → B14 [Assembly type]</p> <p>IF Health care → B15 [Health care type]</p> <p>IF Service → B16 [Service type]</p> <p>IF Lodging → B18 [Lodging type]</p> <p>IF Public order and safety → B19 [Public order type]</p> <p>IF Residential → B20 [Residential type]</p> <p>IF Industrial → B8 [Used as warehouse]</p> <p>IF Agricultural → B22 [Space for retail sales]</p> <p>IF Vacant → B23 [Vacant for noncommercial]</p> <p>IF Other → B25 [Other type]</p>	

Responses to the activity follow-up questions are combined into this new variable on the public use file.

- 01 Vacant
- 02 Administrative/professional office
- 03 Bank/other financial
- 04 Government office
- 05 Medical office (non-diagnostic)
- 06 Mixed-use office
- 07 Other office
- 08 Laboratory
- 09 Distribution/shipping center
- 10 Non-refrigerated warehouse
- 11 Self-storage
- 12 Convenience store
- 13 Convenience store with gas station
- 14 Grocery store/food market
- 15 Other food sales
- 16 Fire station/police station
- 17 Other public order and safety
- 18 Medical office (diagnostic)
- 19 Clinic/other outpatient health
- 20 Refrigerated warehouse
- 21 Religious worship
- 22 Entertainment/culture
- 23 Library
- 24 Recreation
- 25 Social/meeting
- 26 Other public assembly
- 27 College/university
- 28 Elementary/middle school
- 29 High school
- 30 Preschool/daycare
- 31 Other classroom education
- 32 Fast food
- 33 Restaurant/cafeteria
- 34 Other food service
- 35 Hospital/inpatient health
- 36 Nursing home/assisted living
- 37 Dormitory/fraternity/sorority
- 38 Hotel
- 39 Motel or inn
- 40 Other lodging
- 41 Vehicle dealership/showroom
- 42 Retail store
- 43 Other retail
- 44 Post office/postal center
- 45 Repair shop
- 46 Vehicle service/repair shop
- 47 Vehicle storage/maintenance
- 48 Other service
- 49 Other
- 50 Strip shopping mall
- 51 Enclosed mall
- 52 Courthouse/probation office
- 53 Bar/pub/lounge

B5	Office type	<i>OFFCSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Office/Professional	
FILL	<p>{ActivityExplanation} 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</p>	
<p> SHOW CARD B3</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B3, what type of office is this?</p> <ol style="list-style-type: none"> 1 Administrative or professional office building 2 Government office 3 Mixed-use office 4 Bank or other financial institution 5 Doctor's or dentist's office 6 Sales or leasing office 7 Contractor's office 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]	

B6	Verify data center	<i>DATCTR</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Data center/Computer "server farm"	
FILL	<p>{ActivityExplanation} 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</p>	
<p>{ActivityExplanation}</p> <p>A data center or server farm is a group of networked computer servers that are housed in one location, usually a secure area. The servers perform functions such as data storage and processing.</p> <p>There are usually many servers stacked in rows of racks and they operate continuously, day and night. Data centers are generally kept very cool and require a dedicated uninterruptible power supply.</p> <p>Does this accurately describe your building?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → B30 [Assign CBECS Activity = Data center] IF No OR DK/RF → B7 [Classify as office]	

B7	Classify as office	<i>NODCTR</i>
ASK	IF B6 [Verify data center] = No OR DK/RF	
<p>Then, for the purposes of this study, I am going to classify your building as an office.</p> <p>◆ ENTER "1" to continue</p>		
NEXT	→ B30 [Assign CBECS Activity = Office]	

B8	Used as warehouse	<i>WARECHK</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Industrial	
<p>Is this building used primarily as a warehouse or distribution center?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → B9 [Warehouse type] IF No OR DK/RF → B21 [Space for retail sales]	

B9	Warehouse type	WARESP
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Warehouse/Storage	
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	
 SHOW CARD B4 {ActivityExplanation} Looking at the list on Show Card B4, what type of warehouse is this? 1 Non-refrigerated warehouse or storage building 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		[F1]-HELP
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]	

B10	Food sales or service type	<i>FOODSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Food sales or service	
FILL	<p>{ActivityExplanation} 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.” OTHERWISE = BLANK</p>	
<p> SHOW CARD B5</p> <p>{ActivityExplanation}</p> <p>Looking at list on Show Card B5, what type of food sales or service is this?</p> <ol style="list-style-type: none"> 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]	

B11	Retail type	<i>RETLSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Retail	
FILL	<p>{ActivityExplanation} IF (B1 [One activity in building] ≠ Yes) = "For the purposes of this survey, I will include your building in the general category of retail." OTHERWISE = BLANK</p>	
<p> SHOW CARD B6</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B6, what type of retail is this?</p> <ol style="list-style-type: none"> 1 Retail store 2 Bank or other financial institution 3 Convenience store 4 Beer, wine, or liquor store 5 Rental center 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 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]	

B12	Type of store	<i>STORE</i>
ASK	IF B11 [Retail type] = Store	
 SHOW CARD B7 Looking at the list on Show Card B7, please tell me the type of retail store. <ul style="list-style-type: none"> 1 Apparel specialty 2 Drug store 3 Home center or hardware store 4 Electronics or appliance store 5 Other specialty merchandise (hard-line goods) 6 Department store 7 Warehouse club 8 Discount or supercenter 9 Other type of store 		
NEXT	→ B30 [Assign CBECS Activity = Retail]	

B13	Education type <i>EDUCSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Education
FILL	<p>{ActivityExplanation} 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</p>
<p> SHOW CARD B8</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B8, what type of education is this?</p> <ol style="list-style-type: none"> 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]

B14	Assembly type	ASSMSP
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Public assembly	
FILL	<p>{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</p>	
<p> SHOW CARD B9</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B9, what type of public assembly is this?</p> <ol style="list-style-type: none"> 1 Social or meeting 2 Recreation 3 Entertainment or culture 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	<i>HLTHSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Health care	
FILL	<p>{ActivityExplanation} 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.” OTHERWISE = BLANK</p>	
<p> SHOW CARD B10</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B10, what type of health care is this?</p> <ol style="list-style-type: none"> 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	IF Clinic or other outpatient health care building; Outpatient rehabilitation center; OR Veterinarian's office → B30 [Assign CBECS Activity = Outpatient health care] IF Hospital (inpatient); OR Inpatient rehabilitation → B30 [Assign CBECS Activity = Inpatient health care] IF Doctor's or dentist's office → B30 [Assign CBECS Activity = Office] IF Nursing home, assisted living center, or other residential care building → B30 [Assign CBECS Activity = Nursing] IF Retirement home → B30 [Assign CBECS Activity = Lodging] 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 health care → B26 [Specify other activity]	

B16	Service type	<i>SERVSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Service	
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 the list on Show Card B11, what type of service is this?

- 1 Auto service or auto repair shop
- 2 Vehicle storage and/or maintenance (car barn)
- 3 Airplane hangar
- 4 Car wash
- 5 Gas station with a convenience store
- 6 Gas station without convenience store
- 7 Building and grounds maintenance shop
- 8 Contractor's office
- 9 Kennel
- 10 Repair shop
- 11 Dry cleaner or laundromat
- 12 Photo processing shop
- 13 Copy center or printing shop
- 14 Post office, postal center, or mail sorting
- 15 Distribution or shipping center
- 16 Bank or other financial institution
- 17 Beauty parlor or barber shop
- 18 Tanning salon
- 19 Restaurant or cafeteria
- 20 Fast food
- 21 Bar, pub, or lounge
- 22 Transportation terminal
- 23 Recreation
- 24 Student activities center
- 25 Library
- 26 Preschool or daycare
- 27 Non-profit or social services office
- 28 Funeral home
- 29 Rental center
- 30 Public rental storage units
- 31 Telephone switching facilities
- 32 Indoor parking garage
- 33 Vacant
- 34 Other type of service

NEXT	<p>IF Dry cleaner or Laundromat → B17 [Dry cleaning onsite]</p> <p>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]</p> <p>IF Contractor's office; Bank or other financial institution; OR Non-profit or social services office → B30 [Assign CBECS Activity = Office]</p> <p>IF Restaurant or cafeteria; Fast food; OR Bar, pub, or lounge → B30 [Assign CBECS Activity = Food service]</p> <p>IF Gas station with convenience store → B30 [Assign CBECS Activity = Food sales]</p> <p>IF Telephone switching facilities OR Airplane hangar → B30 [Assign CBECS Activity = Other]</p> <p>IF Distribution or shipping center OR Public rental storage units → B30 [Assign CBECS Activity = Nonrefrigerated warehouse]</p> <p>IF Funeral home; Library; Recreation; Student activities center; OR Transportation terminal → B30 [Assign CBECS Activity = Public assembly]</p> <p>IF Preschool or daycare → B30 [Assign CBECS Activity = Education]</p> <p>IF Rental center → B30 [Assign CBECS Activity = Retail]</p> <p>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]</p> <p>IF Vacant: IF More than one activity → B30 [Assign CBECS Activity = Vacant] IF Only one activity OR Establishment OR Anchor → B24 [Completely vacant]</p> <p>IF Other type of service → B26 [Specify other activity]</p>
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B17	Dry cleaning onsite	DRYCL
ASK	IF B16 [Service type] = Dry cleaner or laundromat	
<p>Is the dry cleaning or laundry done in this building, or is it done off-site?</p> <p>1 In this building 2 Off-site</p>		
NEXT	→ B30 [Assign CBECS Activity = Service]	

B18	Lodging type	<i>LODGSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Lodging	
FILL	<p>{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</p>	
<p> SHOW CARD B12</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B12, what type of lodging is this?</p> <ol style="list-style-type: none"> 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]	

B19	Public order type	<i>ORDRSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Public order and safety	
FILL	<p>{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 order and safety.” OTHERWISE = BLANK</p>	
<p> SHOW CARD B13</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B13, what type of public order and safety is this?</p> <ol style="list-style-type: none"> 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	<i>RESDSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Residential	
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 the list on Show Card B14, 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	<i>INDRET</i>
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 → B27a [End of interview]	

B22	Space for retail sales	<i>AGRRET</i>
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 → B27a [End of interview]	

B23	Vacant for noncommercial	<i>VACUSE</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] Assigned activity = Vacant	
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	VACANT
ASK	IF B1 [One activity in building] = Yes & B2 [Primary activity] = Vacant	
Is this building <u>completely</u> vacant?		
1 Yes 2 No		
NEXT	→ B30 [Assign CBECS Activity = Vacant]	

B25	Other type	<i>OTHRSP</i>
ASK	IF B2 [Primary activity] OR B4 [Percents for activities] assigned activity = Other	
FILL	<p>{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</p>	
<p> SHOW CARD B15</p> <p>{ActivityExplanation}</p> <p>Looking at the list on Show Card B15, what type of other activity is this?</p> <ol style="list-style-type: none"> 1 Laboratory 2 Airplane hangar 3 Broadcasting studio 4 Telephone switching facilities 5 Funeral home 6 Crematorium 7 Vehicle storage and/or maintenance (car barn) 8 Indoor parking garage 9 Library 10 Post office, postal center, or mail sorting 11 Distribution or shipping center 12 Entertainment or culture 13 Recreation 14 Transportation terminal 15 Veterinarian's office 16 Vacant 17 Agricultural building with some retail space 18 Manufacturing or industrial building with some retail space 19 Other type of building 20 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 OR Post office, postal center, or mail sorting → B30 [Assign CBECS Activity = Service] IF Distribution or shipping center → B30 [Assign CBECS Activity = Nonrefrigerated warehouse] 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	<p>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</p>
<p>Please describe this other type of activity.</p> <p>◆ RECORD in open box</p>	
NEXT	<p>IF Previous question was:</p> <p>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]</p>

B27	End of interview
ASK	IF B20 [Residential type] = Other type of residential
FILL	<p>{CollectWorksheet}</p> <p>IF R has Worksheet 1 = "However, I would like to collect Worksheet 1 and any other worksheets that you may have completed."</p>
<p>Thank you, that's all the questions that I have at this time, since we are not interviewing buildings that are primarily residential. {CollectWorksheet}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE

B27a	End of interview
ASK	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."
<p>Thank you, that's all the questions that I have at this time, since we are since we are not interviewing buildings that are primarily industrial or agricultural. {CollectWorksheet}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE

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."
<p>Thank you, that's all the questions that I have at this time, since this study does not cover parking garages. {CollectWorksheet}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE

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."
<p>Thank you, that's all the questions that I have at this time, since we are only interviewing buildings intended for commercial use. {CollectWorksheet}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE

B30	Assign CBECS Activity	PBA
NEXT	<p>IF Office IN B3 [Activities in building] OR CBECS Activity = Office → B31 [Open plan office space]</p> <p>OTHERWISE:</p> <ul style="list-style-type: none"> 01 Vacant → B42 [On a multibuilding complex] 02 Office → B31 [Open plan office space] 03 Data center → B42 [On a multibuilding complex] 04 Laboratory → B42 [On a multibuilding complex] 05 Nonrefrigerated warehouse → B42 [On a multibuilding complex] 06 Food sales → B42 [On a multibuilding complex] 07 Public order and safety → B42 [On a multibuilding complex] 08 Outpatient health care → B42 [On a multibuilding complex] 11 Refrigerated warehouse → B42 [On a multibuilding complex] 12 Religious worship → B34 [Religious worship seating capacity] 13 Public assembly → B35 [Assembly seating capacity] 14 Education → B36 [Number of classroom seats] 15 Food service → B37 [Food service seating capacity] 16 Inpatient health care → B38 [Licensed bed capacity] 17 Nursing → B39 [Licensed bed capacity] 18 Lodging → B40 [Number of guest rooms] 23 Strip shopping center 24 Enclosed mall → B41 [Food court] 25 Retail → B42 [On a multibuilding complex] 26 Service → B42 [On a multibuilding complex] 91 Other → B42 [On a multibuilding complex] 	

B31	Open plan office space	CUBE
ASK	IF Office IN B3 [Activities in building] OR CBECS Activity = Office On public use file: this question applies if PBA=Office (02), if ACT1, ACT2, or ACT3=Office (11), or if PBAPLUS=Medical office (diagnostic) (18).	
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: IF CBECS Activity = Enclosed Mall → B41 [Food court] OTHERWISE → B42 [On a multibuilding complex]	

B32	Percent open plan	CUBEC
ASK	IF B31 [Open plan office space] = Yes	
For the office areas in your building, approximately what percentage would you say is open plan? 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	CUBELOC
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	IF CBECS Activity = Enclosed Mall → B41 [Food court] OTHERWISE → B42 [On a multibuilding complex]	

B34	Religious worship seating capacity	RWSEAT
ASK	IF B30 [CBECS Activity] = Religious worship	
	<p style="text-align: right;">[F1]-HELP</p> <p>What is the total seating capacity of the religious worship areas in this building?</p> <p>◆ PROBE for estimate if DK</p>	
RANGE	0 to 99,999 On public use file: 99,995 = More than 1,500	
NEXT	→ B42 [On a multibuilding complex]	

B35	Assembly seating capacity	PBSEAT
ASK	IF B30 [CBECS Activity] = Public assembly	
	<p style="text-align: right;">[F1]-HELP</p> <p>What is the fixed seating capacity of the public assembly areas in this building?</p> <p>◆ PROBE for estimate if DK</p>	
RANGE	0 to 99,999 On public use file: 999995 = More than 15,000	
NEXT	→ B42 [On a multibuilding complex]	

B36	Number of classroom seats	EDSEAT
ASK	IF B30 [CBECS Activity] = Education	
	<p>[F1]-HELP</p> <p>How many students can be seated in all of the classrooms in this building at one time?</p> <p>◆ PROBE for estimate if DK</p>	
RANGE	0 to 99,999	
NEXT	→ B42 [On a multibuilding complex]	

B37	Food service seating capacity	FDSEAT
ASK	IF B30 [CBECS Activity] = Food service	
	[F1]-HELP	
	What is the total seating capacity of the food service areas in this building? ◆ PROBE for estimate if DK	
RANGE	0 to 99,999	
NEXT	→ B42 [On a multibuilding complex]	

B38	Licensed bed capacity	HCBED
ASK	IF B30 [CBECS Activity] = Inpatient health care	
	[F1]-HELP	
	What is the inpatient licensed bed capacity in this building? ◆ PROBE for estimate if DK	
RANGE	0 to 99,999 On public use file: 9,995 = More than 250	
NEXT	→ B42 [On a multibuilding complex]	

B39	Licensed bed capacity	NRSBED
ASK	IF B30 [CBECS Activity] = Nursing	
	[F1]-HELP	
	What is the skilled or residential care licensed bed capacity in this building? ◆ PROBE for estimate if DK	
RANGE	0 to 99,999 On public use file: 9,995 = More than 250	
NEXT	→ B42 [On a multibuilding complex]	

B40	Number of guest rooms	LODGRM
ASK	IF B30 [CBECS Activity] = Lodging	
<p>[F1]-HELP</p> <p>How many guest rooms or occupant rooms are there in this building?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	0 to 99,999 On public use file: 99,995 = More than 900	
NEXT	→ B42 [On a multibuilding complex]	

B41	Food court	COURT
ASK	IF CBECS Activity = Enclosed mall	
<p>Is there a food court in this mall?</p> <p>◆ EXP: [A food court is a public area with tables and chairs surrounded by various food service establishments which generally offer only counter service.]</p> <p>1 Yes 2 No</p>		
NEXT	→ B42 [On a multibuilding complex]	

B42	On a multibuilding complex	FACIL
ASK	All Buildings	
<p>[F1]-HELP</p> <p>Is this building part of a multibuilding campus or complex?</p> <p>◆ 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.]</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → B43 [Federal complex] IF No OR DK/RF → C1 [Government owned]	

B43	Federal complex	FEDFAC
ASK	IF B42 [On a multibuilding complex] = Yes	
		[F1]-HELP
Is this <u>campus or complex</u> owned by the Federal government?		
<ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	→ B44 [Type of complex]	

B44	Type of complex	FACACT
ASK	IF B42 [On a multibuilding complex] = Yes	
		[F1]-HELP
 SHOW CARD B16		
Looking at the list on Show Card B16, what is the primary business or function of this group of buildings as a whole?		
<ul style="list-style-type: none"> 01 College, university, or junior college 02 Primary or secondary school [GRADES K-12] 03 Other type of school 04 Office complex 05 Retail complex 06 Storage complex 07 Religious campus or complex 08 Hospital or other health care complex 09 Lodging or resort complex 10 Post office complex 11 Prison or correctional facility 12 Other type of government complex 13 Industrial complex 14 Transportation complex such as a terminal, depot, or airport 15 Other type of campus or complex 		
NEXT	IF Industrial complex → B45 [Manufacturing industrial] IF Any other type → B48 [Central physical plant]	

B45	Manufacturing industrial	MANIND
ASK	IF B44 [Type of complex] = Industrial complex	
		[F1]-HELP
	<p>Is it a <u>manufacturing</u> industrial complex?</p> <p>◆ DEF: [Manufacturing industrial complexes involve the production or processing of goods, merchandise, raw materials, or food.]</p> <p>1 Yes 2 No</p>	
NEXT	IF Yes → B46 [Same owner as manufacturing] IF No OR DK/RF → B48 [Central physical plant]	

B46	Same owner as manufacturing	MANFAC
ASK	IF B45 [Manufacturing industrial] = Yes	
		[F1]-HELP
	<p>Does this building have the same owner and operator as the manufacturing campus or complex?</p> <p>1 Yes 2 No</p>	
NEXT	IF Yes → B47 [End of interview] IF No OR DK/RF → B48 [Central physical plant]	

B47	End of interview	
ASK	IF B46 [Same owner as manufacturing] = Yes	
FILL	<p>{CollectWorksheet} IF R has Worksheet 1 = "However, I would like to collect Worksheet 1 and any other worksheets that you may have completed."</p>	
	<p>Thank you, that's all the questions that I have at this time, since this study does not include buildings on manufacturing facilities. {CollectWorksheet}</p> <p>Thank you for your time and help.</p> <p>◆ [F10]-Exit</p>	
NEXT	TERMINATE	

B48	Central physical plant	PLANT
ASK	IF B42 [On a multibuilding complex] = Yes & NOT (B44 [Type of complex] = Industrial complex & B45 [Manufacturing industrial] = Yes & B46 [Same owner as manufacturing] = Yes)	
		[F1]-HELP
Does this campus or complex have a central physical plant that produces and distributes district hot water, district steam, district chilled water, or electricity to <u>more than one building</u> ?		
1 Yes 2 No		
NEXT	IF Yes → B49 [Plant produces district steam] IF No OR DK/RF → C1 [Government owned]	

B49	Plant produces district steam	FACDST
ASK	IF B48 [Central physical plant] = Yes	
		[F1]-HELP
Does the central physical plant produce...		
District steam?		
1 Yes 2 No		
NEXT	→ B50 [Plant produces district hot water]	

B50	Plant produces district hot water	FACDHW
ASK	IF B48 [Central physical plant] = Yes	
		[F1]-HELP
(Does the central physical plant produce...)		
District hot water?		
1 Yes 2 No		
NEXT	→ B51 [Plant produces district chilled water]	

B51	Plant produces district chilled water	FACDCW
ASK	IF B48 [Central physical plant] = Yes	
<p>(Does the central physical plant produce...)</p> <p>District chilled water?</p> <p>1 Yes</p> <p>2 No</p>		[F1]-HELP
NEXT	→ B52 [Plant produces electricity]	

B52	Plant produces electricity	FACELC
ASK	IF B48 [Central physical plant] = Yes	
<p>(Does the central physical plant produce...)</p> <p>Electricity?</p> <p>1 Yes</p> <p>2 No</p>		[F1]-HELP
NEXT	→ B53 [Central plant in building]	

B53	Central plant in building	BLDPLT
ASK	IF B48 [Central physical plant] = Yes	
<p>Is the central physical plant for this campus or complex located in the building?</p> <p>1 Yes</p> <p>2 No</p>		[F1]-HELP
NEXT	→ C1 [Government owned]	

SECTION C. OCCUPANCY AND OPERATING HOURS

C1	Government owned	GOVOWN
ASK	All Buildings	
FILL	<p>{BldgIntro} IF B42 [On a multibuilding complex] = Yes = "For the rest of this survey, I will be asking you only about the <u>building</u>, 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</p>	
		[F1]-HELP
	<p>{BldgIntro}</p> <p>Is this building owned by a government agency {SchoolExample}?</p> <p>1 Yes 2 No</p>	
NEXT	IF Yes → C2 [Type of government] IF No OR DK/RF → C3 [Owner]	

C2	Type of government	GOVTYP
ASK	IF C1 [Government owned] = Yes	
		[F1]-HELP
	<p>Is it owned by the Federal government, a State government, or a local government?</p> <p>1 Federal 2 State 3 Local 7 PUBLIC USE FILE ONLY: Withheld for confidentiality</p>	
NEXT	IF B24 [Completely vacant] = Yes → C11 [Owner operates] OTHERWISE → C5 [Number of businesses]	

C3	Owner	OWNER
ASK	IF C1 [Government owned] ≠ Yes	
 SHOW CARD C1 Looking at Show Card C1, please tell me which category best describes the owner of this building. <ol style="list-style-type: none"> 1 Real estate investment trust (REIT) 2 Other public or private 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 → C11 [Owner operates] IF DK/RF → C18 [Months in use]	

	Building owner	OWNTYPE
Type of government and Owner have been combined into this variable for all buildings on the public use file.		
<ol style="list-style-type: none"> 01 Real estate investment trust (REIT) 02 Other public or private corporation, partnership, LLC, or LLP 03 Individual owner(s) 04 Religious organization 05 Non-profit organization (other than religious or government) 06 Private academic institution 07 Other non-government 08 Federal government 09 State government 10 Local government 97 Withheld to protect confidentiality 		

C4	Other owner	
ASK	IF C3 [Owner] = Other	
Please describe this other owner. <ul style="list-style-type: none"> ◆ RECORD in open box 		
NEXT	IF B24 [Completely vacant] = Yes → C11 [Owner operates] OTHERWISE → C5 [Number of businesses]	

C5	Number of businesses	NOCC
ASK	IF B24 [Completely vacant] ≠ Yes On public use files: this variable has been coded zero for completely vacant buildings, so all buildings now have a value for this variable.	
		[F1]-HELP
	How many different businesses or organizations use space full-time in this building?	
RANGE	0 to 9,999 On public use file: 995 = More than 200	
NEXT	IF Zero → C6 [Any occupants] IF =1 & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C9 [Single occupant owner occupies] IF >1 & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C10 [Multi-occupant owner occupies] IF ≥1 & (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C18 [Months in use] IF DK/RF → C8 [Number of businesses category]	

C6	Any occupants	VACCHK
ASK	IF C5 [Number of businesses] = Zero & B24 [Completely vacant] ≠ Yes	
FILL	{OccExpl} IF CBECS Activity = Nonrefrigerated warehouse or Refrigerated warehouse = "If goods are stored in the warehouse, then it should be considered to have at least one occupant. Is this warehouse being used for storage?" OTHERWISE = 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?	
		[F1]-HELP
	I do not have this building recorded as being completely vacant. {OccExpl}	
	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) → C11 [Owner operates] IF No & (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C18 [Months in use] IF DK/RF → C8 [Number of businesses category]	

C7	Re-ask number of businesses	<i>NOCC2</i>
ASK	IF C5 [Number of businesses] = Zero & C6 [Any occupants] = Yes	
		[F1]-HELP
	With this new information, please tell me again, how many businesses or organizations are there?	
RANGE	1 to 9,999	
NEXT	IF DK/RF → C8 [Number of businesses category] IF Number given=1 & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C9 [Single occupant owner occupies] IF Number given>1 & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C10 [Multi-occupant owner occupies] IF Number given & (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C18 [Months in use]	

C8	Number of businesses category	<i>NOCCAT</i>
ASK	IF C5 [Number of businesses] = DK/RF OR C6 [Any occupants] = DK/RF OR C7 [Re-ask number of businesses] = DK/RF On public use file: for all buildings, number of businesses has been coded into the corresponding category	
		[F1]-HELP
	 SHOW CARD C2 Which category on Show Card C2 best describes the number of businesses or organizations that use space full-time in this building? [Note: The Zero category did not appear for this question during the interview, but was added to the variable on the public use file.] 01 Zero 02 One 03 2 to 5 04 6 to 10 05 11 to 20 06 21 to 50 07 51 to 100 08 More than 100	
NEXT	IF One & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C9 [Single occupant owner occupies] IF Any category except Zero OR One & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C10 [Multi-occupant owner occupies] IF Any category except Zero & (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C18 [Months in use] IF Zero OR DK/RF & NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C11 [Owner operates] IF Zero OR DK/RF & (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) → C18 [Months in use]	

C9	Single occupant owner occupies	SOWNOCC
ASK	IF NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) & C5 [Number of businesses] = 1 OR C8 [Number of businesses category] = One	
Does the owner occupy the building or is it leased to a tenant?		
<ul style="list-style-type: none"> 1 Owner occupies 2 Leased to tenant 		
NEXT	→ C11 [Owner operates]	

C10	Multi-occupant owner occupies	MOWNOCC
ASK	IF NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) & C5 [Number of businesses] > 1 OR C8 [Number of businesses category] > One	
Is the space in this building occupied by the owner, leased to tenants, or a combination of both?		
<ul style="list-style-type: none"> 1 Owner occupies 2 Leased to tenants 3 Combination of occupied and leased 		
NEXT	→ C11 [Owner operates]	

Owner occupied or leased to tenant(s)		OWNOCC
Single occupant owner occupies and Multi-occupant owner occupies have been combined into one variable on the public use file, which applies to all buildings with at least one business.		
<ul style="list-style-type: none"> 1 Owner occupied 2 Leased to tenant(s) 3 Combination of occupied and leased 		

C11	Owner operates	OWNOPR
ASK	IF NOT (C1 [Government owned] = DK/RF & C3 [Owner] = DK/RF) On public use file: this variable was imputed when ownership was DK/RF, so all buildings now have a value for this variable.	
Is the building owner responsible for the operation and maintenance of the energy systems?		
<ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → C12 [Owner has purchasing power] IF No → C14 [Nonowner operator] IF DK/RF → C18 [Months in use]	

C12	Owner has purchasing power	OWNPPR
ASK	IF C11 [Owner operates] = Yes	
<p>Does the building owner also have direct input on decisions regarding purchases of energy-related equipment?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes OR DK/RF → C18 [Months in use] IF No → C13 [Nonowner with purchasing power]	

C13	Nonowner with purchasing power	NWNPPR
ASK	IF C12 [Owner has purchasing power] = No	
<p> SHOW CARD C3</p> <p>Looking at Show Card C3, please tell me who <u>does</u> have direct input (on decisions regarding purchases of energy-related equipment).</p> <p>1 Property management company or leasing agent 2 Business owner or tenant 3 Facilities personnel employed directly by the building owner 4 Facilities or energy management consultant 5 Volunteer member of the organization 6 Manager with general supervisory duties 7 Other</p>		
NEXT	IF Other → C17 [Other with purchasing power] OTHERWISE → C18 [Months in use]	

C14	Nonowner operator	NWNOPR
ASK	IF C11 [Owner operates] = No	
<p> SHOW CARD C3</p> <p>Looking at Show Card C3, please tell me who <u>is</u> responsible for the operation and maintenance of the energy systems.</p> <p>1 Property management company or leasing agent 2 Business owner or tenant 3 Facilities personnel employed directly by the building owner 4 Facilities or energy management consultant 5 Volunteer member of the organization 6 Manager with general supervisory duties 7 Other</p>		
NEXT	IF Other → C15 [Other operator] OTHERWISE → C16 [Who has purchasing power]	

C15	Other operator
ASK	IF C14 [Nonowner operator] = Other
<p>Please describe who is responsible for the operation and maintenance of the energy systems.</p> <p>◆ RECORD in open box</p>	
NEXT	→ C16 [Who has purchasing power]

C16	Who has purchasing power	WHOPPR
ASK	IF C11 [Owner operates] = No	
<p>Who has the most direct input on decisions regarding purchases of energy-related equipment - the building owner or the party who is responsible for the energy systems?</p> <ol style="list-style-type: none"> 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 → C17 [Other with purchasing power] OTHERWISE → C18 [Months in use]	

C17	Other with purchasing power
ASK	IF C16 [Who has purchasing power] = Other
<p>Please describe who has the most direct input on decisions regarding purchases of energy-related equipment.</p> <p>◆ RECORD in open box</p>	
NEXT	→ C18 [Months in use]

C18	Months in use	MONUSE
ASK	All Buildings	
[F1]-HELP		
Thinking of calendar year 2012, for how many months was this building in use?		
RANGE	0 to 12	
NEXT	IF Zero → D1 [Heating] IF 1-12: IF B24 [Completely vacant] = Yes → C19 [Previous use] IF C6 [Any occupants] = No OR C8 [Number of businesses category] = Zero → D1 [Heating] IF CBECS Activity = Office or Enclosed Mall OR Outpatient health care → C20 [Percent occupancy] IF B18 [Lodging type] = Hotel OR Motel or inn OR Retirement home OR B20 [Residential type] = Hotel OR Motel or inn OR Retirement home OR B15 [Health care type] = Retirement home → C21 [Lodging room percent occupancy] IF B14 [Assembly type] = Social or Meeting & A6 [Square footage] > 50,000 OR A12 [Square footage category] > 50,001 to 100,000 sq ft → C22 [Social/meeting events] IF B10 [Food sales or service type] = Restaurant or cafeteria OR B14 [Assembly type] = Restaurant or cafeteria OR B16 [Service type] = Restaurant or cafeteria → C23 [Restaurant meals] OTHERWISE → C24 [Seasonal use] IF DK/RF → C24 [Seasonal use]	

C19	Previous use
ASK	IF B24 [Completely vacant] = Yes & C18 [Months in use] > 0
<p>Since this building was not completely vacant for all of 2012, I'd just like to remind you to think about the equipment and the energy that was used during the time that the building <u>was</u> in use when answering this questionnaire.</p> <p>Also, would you please briefly tell me what the building was used for during the months that it <u>was</u> used in 2012.</p> <p>◆ RECORD in open box</p>	
NEXT	→ D1 [Heating]

C20	Percent occupancy	OCCUPYP
ASK	IF CBECS Activity = Office OR Enclosed Mall OR Outpatient health care On public use file: in addition to the above activities, this variable also applies to strip shopping centers.	
FILL	{MonthsInUse} IF C18 [Months in use] < 12 = "Thinking about the months that this building was in use in 2012, about " OTHERWISE = 'In 2012, about '	
{MonthsInUse} what percent of the total floorspace of this building was <u>occupied</u> ? If occupancy varied, please provide an average percent occupancy."		
RANGE	0 to 100	
NEXT	C24 [Seasonal use]	

C21	Lodging room percent occupancy	LODOCCP
ASK	IF B18 [Lodging type] = Hotel OR Motel or inn OR Retirement home OR B20 [Residential type] = Hotel OR Motel or inn OR Retirement home OR B15 [Health care type] = Retirement home	
FILL	{LodgeRooms} IF B40 [Number of guest rooms] known = "B40 [Number of guest rooms]" IF B40 [Number of guest rooms] = DK/RF = BLANK	
In 2012, on average, what percent of the {LodgeRooms} guest or occupant rooms in this building were occupied per night?		
RANGE	0 to 100	
NEXT	→ C24 [Seasonal use]	

C22	Social/meeting events	EVENTN
ASK	IF B14 [Assembly type] = Social or Meeting & A6 [Square footage] > 50,000 OR A12 [Square footage category] > 50,001 to 100,000 sq ft	
About how many events were held in this public assembly building in 2012?		
RANGE	0 to 999,999	
NEXT	→ C24 [Seasonal use]	

C23	Restaurant meals	<i>MEALN</i>
ASK	IF B10 [Food sales or service type] = Restaurant or cafeteria OR B14 [Assembly type] = Restaurant or cafeteria OR B16 [Service type] = Restaurant or cafeteria	
About how many meals were served in this food service building in the year 2012?		
RANGE	0 to 999,999,999	
NEXT	→ C24 [Seasonal use]	

C24	Seasonal use	<i>SEASONAL</i>
ASK	IF B24 [Completely vacant] ≠ Yes & C6 [Any occupants] ≠ No & C8 [Number of businesses category] ≠ Zero & C18 [Months in use] ≠ Zero	
Is this a seasonal building, that is, were there any months during 2012 when the hours of operation were significantly greater than the rest of the year?		
<p>◆ EXP: [For example, we are looking for buildings in resort towns that drastically reduce their hours during the off season. Do not include retail buildings that are open for extended hours during the holiday season.]</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → C25 [Months of high season] IF No/DK/RF → C26 [Open 24 hours a day]	

C25	Months of high season	<i>MONHIGH</i>
ASK	IF C24 [Seasonal use] = Yes	
How many months of 2012 were in the “high season,” that is, the months when the hours of operation were significantly greater than the rest of the year?		
RANGE	1 to 11	
NEXT	→ C26 [Open 24 hours a day]	

C26	Open 24 hours a day	OPEN24
ASK	IF B24 [Completely vacant] ≠ Yes & C6 [Any occupants] ≠ No & C8 [Number of businesses category] ≠ Zero & C18 [Months in use] ≠ Zero On public use file: this variable has been coded as No for completely vacant or unoccupied buildings, so all buildings have a value for this variable.	
FILL	{SeasonalFill} IF C24 [Seasonal use] = Yes = "Thinking of the months of high seasonal use, now" OTHERWISE = "Now"	
		[F1]-HELP
	<p>{SeasonalFill} I have some questions about the hours that this building is normally open.</p> <p>"Normally open" means the hours when the usual activities occur. Do <u>not</u> consider the building to be open if <u>only</u> maintenance, housekeeping, or security personnel are present.</p> <p>Is this building normally open 24 hours a day, seven days a week?</p> <p>1 Yes 2 No</p>	
NEXT	IF No OR DK/RF → C27 [Open during week] IF Yes: IF C24 [Seasonal use] = Yes → C32 [Open during the off season] OTHERWISE → C34 [Number of employees]	

C27	Open during week	OPNMF
ASK	IF C26 [Open 24 hours a day] = No OR DK/RF On public use file: this variable has been coded as All five days for buildings open 24 hours a day, so all buildings have a value for this variable.	
		[F1]-HELP
	<p>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?</p> <p>1 All five days 2 Some of these days 3 Not open at all Monday through Friday</p>	
NEXT	→ C28 [Open on weekend]	

C28	Open on weekend	OPNWE
ASK	IF C26 [Open 24 hours a day] = No OR DK/RF On public use file: this variable has been coded as Yes for buildings open 24 hours a day, so all buildings have a value for this variable.	
	Is this building normally open at all on the weekend? [F1]-HELP	
	◆ EXP: [If only open one day of the weekend, consider to be open.]	
	1 Yes 2 No	
NEXT	IF C27 [Open during week] = Not open at all Monday through Friday & C28 [Open on weekend] = No → C29 [No operating hours] OTHERWISE → C30 [Total hours open per week]	

C29	No operating hours	NOHRS
ASK	IF C27 [Open during week] = Not open at all Monday through Friday & C28 [Open on weekend] = No	
	I would just like to confirm that this building does not have any normal operating hours? [F1]-HELP	
	1 True, no operating hours 2 False, there are operating hours	
NEXT	IF False, there are operating hours OR DK/RF → C30 [Total hours open per week] IF True, no operating hours: IF C24 [Seasonal use] = Yes → C32 [Open during the off season] OTHERWISE → C34 [Number of employees]	

C30	Total hours open per week	WKHRS
ASK	IF (C27 [Open during week] = All five days OR Some of these days) OR C28 [Open on weekend] = Yes OR C29 [No operating hours] = False, there are operating hours On public use file: this variable has been coded as 0 for completely vacant or unoccupied buildings and 168 for buildings open 24 hours a day, so all buildings have a value for this variable.	
	How many total hours per week is the building normally open? [F1]-HELP	
	◆ DEF: ["Normally open" means the hours when the usual activities occur. Press F1 for detailed definitions by building type.]	
	◆ 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	IF DK/RF → C31 [Weekly hours category] IF C24 [Seasonal use] = Yes → C32 [Open during the off season] OTHERWISE → C34 [Number of employees]	

C31	Weekly hours category	<i>WKHRSC</i>
ASK	IF C30 [Total hours open per week] = DK/RF On public use file: for all buildings, weekly hours have been coded into the corresponding category.	
 SHOW CARD C4		[F1]-HELP
Which category on Show Card C4 best describes the total hours per week that the building is normally open?		
<ul style="list-style-type: none"> ◆ DEF: ["Normally open" means the hours when the usual activities occur. Press F1 for detailed definitions by building type.] ◆ EXP: [If the hours vary for different parts of the building, ask for the hours for most of the building, based on square footage.] 		
[Note: the No hours category did not appear for this question during the interview, but was added to the variable on the public use file.]		
1 No hours 2 1 to 39 3 40 to 48 4 49 to 60 5 61 to 84 6 85 to 167 7 168		
NEXT	IF C24 [Seasonal use] = Yes → C32 [Open during the off season] OTHERWISE → C34 [Number of employees]	

C32	Open during the off season	<i>OFFSEASN</i>
ASK	IF C24 [Seasonal use] = Yes	
Is this building normally open at all during the months that are <u>not</u> in the high season?		
<ul style="list-style-type: none"> ◆ DEF: ["Normally open" means the hours when the usual activities occur.] 		
1 Yes 2 No		
NEXT	IF Yes → C33 [Off season hours category] IF No OR DK/RF → C34 [Number of employees]	

C33	Off season hours category	<i>LOWHRSC</i>
ASK	IF C32 [Open during the off season] = Yes	
FILL	{LowMonths} IF C25 [Months of high season] ≠ DK/RF = 12-C25 [Months of high season] IF C25 [Months of high season] = DK/RF = BLANK	
		[F1]-HELP
 SHOW CARD C4		
Thinking of the {LowMonths} months that are <u>not</u> in the high season, which category on Show Card C4 best describes the total hours per week that the building is normally open?		
◆ DEF: ["Normally open" means the hours when the usual activities occur.]		
1 1 to 39 2 40 to 48 3 49 to 60 4 61 to 84 5 85 to 167 6 168		
NEXT	→ C34 [Number of employees]	

C34	Number of employees	NWKER
ASK	IF B24 [Completely vacant] ≠ Yes & C6 [Any occupants] ≠ No & C8 [Number of businesses category] ≠ Zero & C18 [Months in use] ≠ Zero On public use file: this variable has been coded as 0 for completely vacant or unoccupied buildings, so all buildings have a value for this variable.	
		[F1]-HELP
How many employees work <u>in the building</u> 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	IF Number given: IF B19 [Public order type] = Fire station OR Combination police and fire station → C36 [Fire station personnel] OTHERWISE → D1 [Heating] IF DK/RF → C35 [Number of employees category]	

C35	Number of employees category	NWKERC
ASK	IF C34 [Number of employees] = DK/RF On public use file: for all buildings, number of employees have been coded into the corresponding category.	
 SHOW CARD C5		[F1]-HELP
Which category on Show Card C5 best describes how many employees work <u>in the building</u> during the main shift?		
01 None 02 1 to 4 03 5 to 9 04 10 to 19 05 20 to 49 06 50 to 99 07 100 to 249 08 250 to 499 09 500 to 999 10 1,000 to 2,499 11 2,500 to 4,999 12 5,000 or More		
NEXT	IF B19 [Public order type] = Fire station OR Combination police and fire station → C36 [Fire station personnel] OTHERWISE → D1 [Heating]	

C36	Fire station personnel	FIREWKER
ASK	IF B19 [Public order type] = Fire station OR Combination police and fire station	
Are the personnel at this fire station career only, volunteer only, or a combination of career and volunteer?		
1 Career only 2 Volunteer only 3 Combination of career and volunteer		
NEXT	→ D1 [Heating]	

SECTION D. ENERGY USE AND EQUIPMENT

D1	Heating	HT1
ASK	All Buildings	
FILL	<p>{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</p>	
		[F1]-HELP
<p>{Worksheet1Intro}</p> <p>For the next five questions, please tell me if energy was used in this building for any of these purposes during calendar year 2012.</p> <p>Was any energy used for heating the building?</p> <p>1 Yes 2 No</p>		
NEXT	→ D2 [Cooling]	

D2	Cooling	COOL
ASK	All Buildings	
		[F1]-HELP
<p>(Was any energy used...)</p> <p>For air conditioning?</p> <p>1 Yes 2 No</p>		
NEXT	→ D3 [Water heating]	

D3	Water heating	WATR
ASK	All Buildings	
		[F1]-HELP
<p>(Was any energy used...)</p> <p>For heating water for purposes such as washing hands, dishes, or clothes?</p> <p>1 Yes 2 No</p>		
NEXT	→ D4 [Cooking]	

D4	Cooking	COOK
ASK	All Buildings	
	[F1]-HELP	
	<p>(Was any energy used...)</p> <p>For cooking?</p> <ul style="list-style-type: none"> ◆ EXP: [If there is only minimal cooking, such as microwaves, hot plates, or toaster ovens, answer "No."] <p>1 Yes 2 No</p>	
NEXT	IF D1 [Heating] = DK/RF & D2 [Cooling] = DK/RF & D3 [Water heating] = DK/RF & D4 [Cooking] = DK/RF → D5 [Missing end uses] OTHERWISE → D6 [Manufacturing]	

D5	Missing end uses	
SHOW	IF D1 [Heating] = DK/RF & D2 [Cooling] = DK/RF & D3 [Water heating] = DK/RF & D4 [Cooking] = DK/RF	
	<ul style="list-style-type: none"> ◆ 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	→ D6 [Manufacturing]	

D6	Manufacturing	MANU
ASK	All Buildings	
	[F1]-HELP	
	<p>(Was any energy used...)</p> <p>For manufacturing?</p> <p>1 Yes 2 No</p>	
NEXT	IF No & D1 [Heating] = No & D2 [Cooling] = No & D3 [Water heating] = No & D4 [Cooking] = No → D7 [Any energy used] OTHERWISE → D8 [Electricity generation capability]	

D7	Any energy used	ANYEGY
ASK	IF D1 [Heating] = No & D2 [Cooling] = No & D3 [Water heating] = No & D4 [Cooking] = No & D6 [Manufacturing] = No	
<p>I did not record any uses of energy for this building. Did this building use <u>any</u> energy in 2012 for other purposes, such as lighting or appliances?</p> <p>1 Yes, some energy was used in 2012 2 No, no energy was used</p>		
NEXT	IF Yes, some energy was used OR DK/RF → D8 [Electricity generation capability] IF No, no energy was used → E83 [Window glass type]	

D8	Electricity generation capability	CAPGEN
ASK	IF D1 [Heating] = Yes OR D2 [Cooling] = Yes OR D3 [Water heating] = Yes OR D4 [Cooking] = Yes OR D6 [Manufacturing] = Yes OR D7 [Any energy used] = Yes, some energy was used OR DK/RF On public use file: buildings that did not use any energy have been coded as No, so all buildings have a value for this variable.	
<p style="text-align: right;">[F1]-HELP</p> <p>Does this building have the ability to generate electricity, including for emergency backup?</p> <p>1 Yes 2 No</p>		
NEXT	→ D9 [Energy sources used]	

D9	Energy sources used	<i>see below</i>																		
ASK	<p>IF D1 [Heating] = Yes OR D2 [Cooling] = Yes OR D3 [Water heating] = Yes OR D4 [Cooking] = Yes OR D6 [Manufacturing] = Yes OR D7 [Any energy used] = Yes, some energy was used OR DK/RF</p> <p>On public use file: buildings that did not use any energy have been coded as No, so all buildings have values for these variables.</p>																			
<p style="text-align: right;">[F1]-HELP</p> <p> SHOW CARD D1</p> <p>Looking at this list of energy sources on Show Card D1, please tell me which ones were used <u>in this building</u> for any purpose in 2012.</p> <ul style="list-style-type: none"> ◆ EXP: [Include fuel oil, diesel, or kerosene if it was purchased or delivered in 2012, 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 <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">11 Electricity</td> <td style="width: 20%; text-align: right;">ELUSED</td> </tr> <tr> <td>12 Natural gas</td> <td style="text-align: right;">NGUSED</td> </tr> <tr> <td>13 Fuel oil, diesel, or kerosene</td> <td style="text-align: right;">FKUSED</td> </tr> <tr> <td>14 Bottled gas, also known as LPG or propane</td> <td style="text-align: right;">PRUSED</td> </tr> <tr> <td>15 District steam piped in from a separate building or utility</td> <td style="text-align: right;">STUSED</td> </tr> <tr> <td>16 District hot water piped in from a separate building or utility</td> <td style="text-align: right;">HWUSED</td> </tr> <tr> <td>17 District chilled water piped in from a separate building or utility</td> <td style="text-align: right;">CWUSED</td> </tr> <tr> <td>18 Wood, coal, or solar</td> <td></td> </tr> <tr> <td>24 Other source or sources</td> <td style="text-align: right;">OTUSED</td> </tr> </table>			11 Electricity	ELUSED	12 Natural gas	NGUSED	13 Fuel oil, diesel, or kerosene	FKUSED	14 Bottled gas, also known as LPG or propane	PRUSED	15 District steam piped in from a separate building or utility	STUSED	16 District hot water piped in from a separate building or utility	HWUSED	17 District chilled water piped in from a separate building or utility	CWUSED	18 Wood, coal, or solar		24 Other source or sources	OTUSED
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18 Wood, coal, or solar																				
24 Other source or sources	OTUSED																			
NEXT	<p>IF Fuel, oil, diesel, or kerosene selected → D10 [Fuel oil, diesel, or kerosene] IF Wood, coal, or solar selected → D11 [Wood, coal, or solar] IF Other source or sources selected → D12 [Other energy source 1] IF District steam or District hot water selected & B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → D15 [From central plant] IF DK/RF: IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] IF D8 [Electricity generation capability] ≠ Yes & D1 [Heating] = Yes OR D2 [Cooling] = Yes → D104 [Energy management plan] IF D8 [Electricity generation capability] ≠ Yes & D1 [Heating] ≠ Yes & D2 [Cooling] ≠ Yes → E1 [Section E Routing] OTHERWISE: IF D1 [Heating] = Yes → D17 [Source for main heating] IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]</p>																			

D10	Fuel oil, diesel, or kerosene	FKTYPE
ASK	IF Fuel oil, diesel, or kerosene IN D9 [Energy sources used]	
		[F1]-HELP
<p>◆ VERIFY if volunteered in previous question</p> <p>You mentioned fuel oil, diesel, or kerosene. Which of these were used (in this building in 2012)?</p> <p>◆ ENTER all that apply</p> <p>[Note: Only the first three choices were options during the interview, but all combinations have been coded for the public use file.]</p> <ol style="list-style-type: none"> 1 Fuel oil 2 Diesel 3 Kerosene 4 Fuel oil and diesel 5 Fuel oil and kerosene 6 Diesel and kerosene 7 Fuel oil, diesel, and kerosene 		
NEXT	<p>IF Wood, coal, or solar IN D9 [Energy sources used] → D11 [Wood, coal, or solar]</p> <p>IF Other source or sources IN D9 [Energy sources used] → D12 [Other energy source 1]</p> <p>IF District steam or District hot water IN D9 [Energy sources used] & B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → D15 [From central plant]</p> <p>OTHERWISE:</p> <p>IF D1 [Heating] = Yes → D17 [Source for main heating]</p> <p>IF D2 [Cooling] = Yes → D48 [Sources for cooling]</p> <p>IF D3 [Water heating] = Yes → D75 [Sources for water heating]</p> <p>IF D4 [Cooking] = Yes → D80 [Sources for cooking]</p> <p>IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing]</p> <p>IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation]</p> <p>OTHERWISE → D90 [Any other sources]</p>	

D11	Wood, coal, or solar	<i>see below</i>		
ASK	IF Wood, coal, or solar IN D9 [Energy sources used] On public use file: buildings that did not use any energy have been coded as No, so all buildings have values for these variables.			
	<p>◆ VERIFY if volunteered in previous question</p> <p>You mentioned wood, coal, or solar. Which of these were used (in this building in 2012)?</p> <p>◆ ENTER all that apply</p> <table style="width: 100%;"> <tr> <td style="width: 50%;"> 1 Wood 2 Coal 3 Solar </td> <td style="width: 50%; text-align: right; vertical-align: top;"> WOUSED COUSED SOUSED </td> </tr> </table>		1 Wood 2 Coal 3 Solar	WOUSED COUSED SOUSED
1 Wood 2 Coal 3 Solar	WOUSED COUSED SOUSED			
NEXT	IF Other source or sources IN D9 [Energy sources used] → D12 [Other energy source 1] IF District steam or District hot water IN D9 [Energy sources used] & B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → D15 [From central plant] OTHERWISE: IF D1 [Heating] = Yes → D17 [Source for main heating] IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]			

D12	Other energy source 1	<i>OTUSDx1</i>
ASK	IF Other source or sources IN D9 [Energy sources used]	
	<p>What was the first other energy source used (in this building in 2012)?</p> <p>◆ ENTER the first energy source used</p>	
NEXT	→ D13 [Other energy source 2]	

D13	Other energy source 2	<i>OTUSDX2</i>
ASK	IF Other source or sources IN D9 [Energy sources used]	
<p>Were there any other energy sources used (in this building in 2012)?</p> <ul style="list-style-type: none"> ◆ ENTER the next energy source ◆ [ENTER] if no others 		
NEXT	<p>IF Source entered here → D14 [Other energy source 3] IF No source entered here: IF District steam or District hot water IN D9 [Energy sources used] & B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → D15 [From central plant] OTHERWISE: IF D1 [Heating] = Yes → D17 [Source for main heating] IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]</p>	

D14	Other energy source 3	<i>OTUSDX3</i>
ASK	IF Source was entered in D13 [Other energy source 2]	
<p>Were there any other energy sources used (in this building in 2012)?</p> <ul style="list-style-type: none"> ◆ ENTER the next energy source ◆ [ENTER] if no others 		
NEXT	<p>IF District steam or District hot water IN D9 [Energy sources used] & B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → D15 [From central plant] OTHERWISE: IF D1 [Heating] = Yes → D17 [Source for main heating] IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]</p>	

D15	From central plant	<i>DHFRPL</i>
ASK	IF District steam or District hot water IN D9 [Energy sources used] & B48 [Central physical plant] = Yes & B53 [Central plant in building] = No	
<p>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?</p> <p>1 Yes 2 No</p>		
NEXT	IF No OR DK/RF → D16 [Purchase from offsite] IF Yes: IF D1 [Heating] = Yes → D17 [Source for main heating] IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D16	Purchase from offsite	<i>DHOFF</i>
ASK	IF D15 [From central plant] = No OR DK/RF	
<p>Is it (the district steam or hot water) purchased from somewhere off-site, such as a commercial or municipal plant?</p> <p>1 Yes 2 No</p>		
NEXT	IF D1 [Heating] = Yes → D17 [Source for main heating] IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D17	Source for main heating	<i>see below</i>																																							
ASK	IF D1 [Heating] = Yes On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, NGHT1 is set to missing if natural gas is not used, but is set to No if natural gas is used but not used for main heating.																																								
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 D10 [Fuel oil, diesel, or kerosene] {Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																																								
<p>What was the <u>main</u> energy source for heating? (Was it {Ht1SourcesList}?)</p> <ul style="list-style-type: none"> ◆ 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 <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">11</td> <td style="width: 70%;">{Electricity}</td> <td style="width: 20%;">ELHT1</td> </tr> <tr> <td>12</td> <td>{Natural gas}</td> <td>NGHT1</td> </tr> <tr> <td>13</td> <td>{FuelOilType}</td> <td>FKHT1</td> </tr> <tr> <td>14</td> <td>{Bottled gas}</td> <td>PRHT1</td> </tr> <tr> <td>15</td> <td>{District steam}</td> <td>STHT1</td> </tr> <tr> <td>16</td> <td>{District hot water}</td> <td>HWHT1</td> </tr> <tr> <td>18</td> <td>{Wood}</td> <td>WOHT1</td> </tr> <tr> <td>19</td> <td>{Coal}</td> <td>COHT1</td> </tr> <tr> <td>20</td> <td>{Solar}</td> <td>SOHT1</td> </tr> <tr> <td>21</td> <td>{Other1}</td> <td>OTHT1</td> </tr> <tr> <td>22</td> <td>{Other2}</td> <td>OTHT1</td> </tr> <tr> <td>23</td> <td>{Other3}</td> <td>OTHT1</td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td></td> </tr> </table>			11	{Electricity}	ELHT1	12	{Natural gas}	NGHT1	13	{FuelOilType}	FKHT1	14	{Bottled gas}	PRHT1	15	{District steam}	STHT1	16	{District hot water}	HWHT1	18	{Wood}	WOHT1	19	{Coal}	COHT1	20	{Solar}	SOHT1	21	{Other1}	OTHT1	22	{Other2}	OTHT1	23	{Other3}	OTHT1	24	Some other energy source	
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23	{Other3}	OTHT1																																							
24	Some other energy source																																								
NEXT	IF Some other energy source → D18 [Other source for main heating] IF Anything but Some other energy source OR DK/RF: IF More than one energy source used → D19 [Which other sources for heating] IF Only one energy source used → D20 [Any other sources for heating]																																								

D18	Other source for main heating	<i>see below</i>																														
ASK	IF D17 [Source for main heating] = Some other energy source																															
<p>What was the other energy source used for <u>main</u> space heating?</p> <table> <tr> <td>11</td> <td>Electricity</td> <td><i>ELHT1</i></td> </tr> <tr> <td>12</td> <td>Natural gas</td> <td><i>NGHT1</i></td> </tr> <tr> <td>13</td> <td>Fuel oil/Diesel/Kerosene</td> <td><i>FKHT1</i></td> </tr> <tr> <td>14</td> <td>Bottled gas</td> <td><i>PRHT1</i></td> </tr> <tr> <td>15</td> <td>District steam</td> <td><i>STHT1</i></td> </tr> <tr> <td>16</td> <td>District hot water</td> <td><i>HWHT1</i></td> </tr> <tr> <td>18</td> <td>Wood</td> <td><i>WOHT1</i></td> </tr> <tr> <td>19</td> <td>Coal</td> <td><i>COHT1</i></td> </tr> <tr> <td>20</td> <td>Solar</td> <td><i>SOHT1</i></td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td><i>OTHT1</i></td> </tr> </table>			11	Electricity	<i>ELHT1</i>	12	Natural gas	<i>NGHT1</i>	13	Fuel oil/Diesel/Kerosene	<i>FKHT1</i>	14	Bottled gas	<i>PRHT1</i>	15	District steam	<i>STHT1</i>	16	District hot water	<i>HWHT1</i>	18	Wood	<i>WOHT1</i>	19	Coal	<i>COHT1</i>	20	Solar	<i>SOHT1</i>	24	Some other energy source	<i>OTHT1</i>
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NEXT	➔ D20 [Any other sources for heating]																															

D19	Which other sources for heating	HT2 & see below																																										
ASK	IF D1 [Heating] = Yes & More than one energy source used On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, NGHT2 is set to missing if natural gas is not used, but is set to No if natural gas is used but not used for secondary heating.																																											
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 D10 [Fuel oil, diesel, or kerosene] {Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																																											
<p>Which other energy sources, if any, were used for heating? ({Ht2SourcesList})</p> <ul style="list-style-type: none"> ◆ 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 <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">11</td> <td style="width: 70%;">{Electricity}</td> <td style="width: 20%;">ELHT2</td> </tr> <tr> <td>12</td> <td>{Natural gas}</td> <td>NGHT2</td> </tr> <tr> <td>13</td> <td>{FuelOilType}</td> <td>FKHT2</td> </tr> <tr> <td>14</td> <td>{Bottled gas}</td> <td>PRHT2</td> </tr> <tr> <td>15</td> <td>{District steam}</td> <td>STHT2</td> </tr> <tr> <td>16</td> <td>{District hot water}</td> <td>HWHT2</td> </tr> <tr> <td>18</td> <td>{Wood}</td> <td>WOHT2</td> </tr> <tr> <td>19</td> <td>{Coal}</td> <td>COHT2</td> </tr> <tr> <td>20</td> <td>{Solar}</td> <td>SOHT2</td> </tr> <tr> <td>21</td> <td>{Other1}</td> <td>OTHT2</td> </tr> <tr> <td>22</td> <td>{Other2}</td> <td>OTHT2</td> </tr> <tr> <td>23</td> <td>{Other3}</td> <td>OTHT2</td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td></td> </tr> <tr> <td>99</td> <td>No other sources for heating</td> <td></td> </tr> </table>			11	{Electricity}	ELHT2	12	{Natural gas}	NGHT2	13	{FuelOilType}	FKHT2	14	{Bottled gas}	PRHT2	15	{District steam}	STHT2	16	{District hot water}	HWHT2	18	{Wood}	WOHT2	19	{Coal}	COHT2	20	{Solar}	SOHT2	21	{Other1}	OTHT2	22	{Other2}	OTHT2	23	{Other3}	OTHT2	24	Some other energy source		99	No other sources for heating	
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NEXT	IF Some other energy source → D21 [Other source for heating] IF Anything but Some other energy source OR DK/RF → D22 [Percent heated]																																											

D20	Any other sources for heating	HT2
ASK	IF D1 [Heating] = Yes & Only one energy source used	
<p>Were there any other energy sources used for heating?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → D21 [Other source for heating] IF No OR DK/RF → D22 [Percent heated]	

D21	Other source for heating																														
ASK	IF D19 [Which other sources for heating] = Some other energy source OR D20 [Any other sources for heating] = Yes																														
<p>What was the other energy source used for secondary space heating?</p> <table> <tr> <td>11</td> <td>Electricity</td> <td><i>ELHT2</i></td> </tr> <tr> <td>12</td> <td>Natural gas</td> <td><i>NGHT2</i></td> </tr> <tr> <td>13</td> <td>Fuel oil/Diesel/Kerosene</td> <td><i>FKHT2</i></td> </tr> <tr> <td>14</td> <td>Bottled gas</td> <td><i>PRHT2</i></td> </tr> <tr> <td>15</td> <td>District steam</td> <td><i>STHT2</i></td> </tr> <tr> <td>16</td> <td>District hot water</td> <td><i>HWHT2</i></td> </tr> <tr> <td>18</td> <td>Wood</td> <td><i>WOHT2</i></td> </tr> <tr> <td>19</td> <td>Coal</td> <td><i>COHT2</i></td> </tr> <tr> <td>20</td> <td>Solar</td> <td><i>SOHT2</i></td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td><i>OTHT2</i></td> </tr> </table>		11	Electricity	<i>ELHT2</i>	12	Natural gas	<i>NGHT2</i>	13	Fuel oil/Diesel/Kerosene	<i>FKHT2</i>	14	Bottled gas	<i>PRHT2</i>	15	District steam	<i>STHT2</i>	16	District hot water	<i>HWHT2</i>	18	Wood	<i>WOHT2</i>	19	Coal	<i>COHT2</i>	20	Solar	<i>SOHT2</i>	24	Some other energy source	<i>OTHT2</i>
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NEXT	➔ D22 [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 D9 [Energy sources used], if sources are added along the way, such as in D18 [Other source for main heating] OR D21 [Other source for heating], those sources are then also considered to be used.

D22	Percent heated	HEATP
ASK	IF D1 [Heating] = Yes	
FILL	{SqFt} IF A6 [Square footage] known = "A6 [Square footage]" IF A6 [Square footage] = DK/RF = "floorspace"	
[F1]-HELP		
What percent of the {SqFt} in this building was heated to at least 50 degrees Fahrenheit during 2012, including basements and indoor parking levels if they were heated to at least 50 degrees?		
<ul style="list-style-type: none"> ◆ 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 → D23 [Heated to less than 50 degrees] IF Anything else → D24 [Heating equipment types]	

D23	Heated to less than 50 degrees	HTLS50
ASK	IF D22 [Percent heated] = Zero	
Was any of this building heated to less than 50 degrees Fahrenheit?		
<ul style="list-style-type: none"> ◆ EXP: [Areas may be heated to less than 50 degrees to prevent pipes from freezing.] <ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes OR DK/RF → D24 [Heating equipment types] IF No: IF D2 [Cooling] = Yes → D48 [Sources for cooling] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D24	Heating equipment types	<i>see below</i>
ASK	IF D22 [Percent heated] > 0 OR D23 [Heated to less than 50 degrees] = Yes OR DK/RF	
 SHOW CARD D2		[F1]-HELP
<p>Looking at the list of heating equipment types on Show Card D2, please tell me which types are used in this building.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <ol style="list-style-type: none"> 1 Furnaces that heat air directly, without using steam or hot water 2 Packaged central unit (roof mounted) 3 Boilers inside (or adjacent to) the building that produce steam or hot water 4 District steam or hot water piped in from outside the building 5 Heat pumps (other than components of a packaged unit) 6 Individual space heaters (other than heat pumps) 7 Other heating equipment 		
NEXT	IF Furnaces → D25 [Type of furnace] IF Boilers → D28 [Type of boiler system] IF District steam or hot water → D29 [Type of district heat system] IF Other heating equipment → D30 [Other heating components] IF Packaged central unit → D36 [Type of packaged heating] IF Heat pumps → D38 [Heat pump heating system] IF Individual space heaters → D41 [Type of individual heater] IF DK/RF: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]	

FURNAC
PKGHT
BOILER
STHW
HTPMPH
SLFCON
OTHTEQ

D25	Type of furnace
ASK	IF Furnaces IN D24 [Heating equipment types]
[F1]-HELP	
 SHOW CARD D3	
<p>Looking at Show Card D3, please tell me the type or types of furnace systems used in the building.</p> <p>◆ ENTER all that apply</p> <ol style="list-style-type: none"> 1 Packaged central unit (roof mounted) 2 Split system (residential-type furnace with DX cooling unit) 3 Duct furnace (installed in air distribution duct) 4 Individual room furnace (freestanding or floor-mounted) 	
NEXT	IF Packaged central unit OR Duct furnace → D26 [Classify furnace as packaged] IF Individual room furnace → D27 [Classify furnace as space heater] OTHERWISE: IF Boilers IN D24 [Heating equipment types] → D28 [Type of boiler system] IF District steam or hot water IN D24 [Heating equipment types] → D29 [Type of district heat system] IF Other heating equipment IN D24 [Heating equipment types] → D30 [Other heating components] IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating] IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF More than one energy source used for heating → D42 [Explain sources for heating] OTHERWISE → D43 [Heating ventilation types]

D26	Classify furnace as packaged
ASK	IF Packaged central unit OR Duct furnace IN D25 [Type of furnace]
<p>For the purposes of this study, I am going to refer to this furnace as a "packaged unit."</p> <p>◆ ENTER "1" to continue</p>	
NEXT	IF Individual room furnace IN D25 [Type of furnace] → D27 [Classify furnace as space heater] OTHERWISE: IF Boilers IN D24 [Heating equipment types] → D28 [Type of boiler system] IF District steam or hot water IN D24 [Heating equipment types] → D29 [Type of district heat system] IF Other heating equipment IN D24 [Heating equipment types] → D30 [Other heating components] OTHERWISE → D36 [Type of packaged heating]

D27	Classify furnace as space heater
ASK	IF D25 [Type of furnace] = Individual room furnace
<p>For the purposes of this study, I am going to refer to the individual room furnace as an "individual space heater."</p> <p>◆ ENTER "1" to continue</p>	
NEXT	<p>IF Boilers IN D24 [Heating equipment types] → D28 [Type of boiler system] IF District steam or hot water IN D24 [Heating equipment types] → D29 [Type of district heat system] IF Other heating equipment IN D24 [Heating equipment types] → D30 [Other heating components] IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating] IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>

D28	Type of boiler system														
ASK	IF Boilers IN D24 [Heating equipment types]														
[F1]-HELP															
 SHOW CARD D4															
<p>Looking at Show Card D4, please tell me the type or types of distribution systems used with the boiler.</p> <p>◆ ENTER all that apply</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">1 Radiators</td> <td style="width: 30%;">BLRRAD</td> </tr> <tr> <td>2 Fan coil units in rooms (or areas)</td> <td>BLRFNCL</td> </tr> <tr> <td>3 Induction units</td> <td>BLRINDC</td> </tr> <tr> <td>4 Water loop heat pump</td> <td>BLRWATR</td> </tr> <tr> <td>5 Central air handler (hydronic/steam coils)</td> <td>BLRAIR</td> </tr> <tr> <td>6 Packaged unit (hydronic/steam coils)</td> <td>BLRPKG</td> </tr> <tr> <td>7 Duct reheat (hydronic/steam coils)</td> <td>BLRDUCT</td> </tr> </table>		1 Radiators	BLRRAD	2 Fan coil units in rooms (or areas)	BLRFNCL	3 Induction units	BLRINDC	4 Water loop heat pump	BLRWATR	5 Central air handler (hydronic/steam coils)	BLRAIR	6 Packaged unit (hydronic/steam coils)	BLRPKG	7 Duct reheat (hydronic/steam coils)	BLRDUCT
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NEXT	<p>IF District steam or hot water IN D24 [Heating equipment types] → D29 [Type of district heat system] IF Other heating equipment IN D24 [Heating equipment types] → D30 [Other heating components] IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating] IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF Water loop, Central air handler, Packaged unit, OR Duct reheat given here OR Any type except Individual room furnace IN D25 [Type of furnace] OR Packaged central unit IN D24 [Heating equipment types] → D43 [Heating ventilation types] IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>														

D29	Type of district heat system														
ASK	IF District steam or hot water IN D24 [Heating equipment types]														
[F1]-HELP															
 SHOW CARD D4															
<p>Looking at Show Card D4, please tell me the type or types of distribution systems used with the district steam or hot water.</p> <p>◆ ENTER all that apply</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">1 Radiators</td> <td style="width: 30%;">DHRAD</td> </tr> <tr> <td>2 Fan coil units in rooms (or areas)</td> <td>DHFNCL</td> </tr> <tr> <td>3 Induction units</td> <td>DHINDC</td> </tr> <tr> <td>4 Water loop heat pump</td> <td>DHWATR</td> </tr> <tr> <td>5 Central air handler (hydronic/steam coils)</td> <td>DHAIR</td> </tr> <tr> <td>6 Packaged unit (hydronic/steam coils)</td> <td>DHPKG</td> </tr> <tr> <td>7 Duct reheat (hydronic/steam coils)</td> <td>DHDUCT</td> </tr> </table>		1 Radiators	DHRAD	2 Fan coil units in rooms (or areas)	DHFNCL	3 Induction units	DHINDC	4 Water loop heat pump	DHWATR	5 Central air handler (hydronic/steam coils)	DHAIR	6 Packaged unit (hydronic/steam coils)	DHPKG	7 Duct reheat (hydronic/steam coils)	DHDUCT
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NEXT	<p>IF Other heating equipment IN D24 [Heating equipment types] → D30 [Other heating components] IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating] IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF Water loop, Central air handler, Packaged unit, OR Duct reheat given here OR Any type except Individual room furnace IN D25 [Type of furnace] OR Packaged central unit IN D24 [Heating equipment types] → D43 [Heating ventilation types] IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>														

D30	Other heating components					
ASK	<p>IF Other heating equipment IN D24 [Heating equipment types] On public use file: please note that this question was asked as a way to help classify heating equipment. These variables provide information components of the heating system but do not indicate an <i>Other</i> type of heating equipment.</p>					
<p> SHOW CARD D5</p> <p>Looking at Show Card D5, please tell me if the other heating equipment includes any of these components.</p> <p>◆ ENTER all that apply</p> <table border="0"> <tr> <td>1 Heating coil or electric heat strip</td> <td rowspan="4" style="text-align: right; vertical-align: middle;">OTSTRP OTDUCT OTPIU</td> </tr> <tr> <td>2 Duct reheat or electric reheat</td> </tr> <tr> <td>3 Powered induction units (PIU)</td> </tr> <tr> <td>4 None of these components</td> </tr> </table>		1 Heating coil or electric heat strip	OTSTRP OTDUCT OTPIU	2 Duct reheat or electric reheat	3 Powered induction units (PIU)	4 None of these components
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4 None of these components						
NEXT	<p>IF Any components: IF Packaged central unit IN D24 [Heating equipment types] OR Packaged central unit OR Duct furnace IN D25 [Type of furnace] → D31 [Classify other as part of packaged] IF Boiler IN D24 [Heating equipment types] → D32 [Classify other as part of boiler] IF District steam or hot water IN D24 [Heating equipment types] → D33 [Classify other as part of district] OTHERWISE → D34 [Classify other as packaged] IF None of these components OR DK/RF → D35 [Other heat specify]</p>					

D31	Classify other as part of packaged
ASK	<p>IF Any components given in D30 [Other heating components] & Packaged central unit IN D24 [Heating equipment types] OR Packaged central unit OR Duct furnace IN D25 [Type of furnace]</p>
<p>For the purposes of this study, I am going to consider the other heating equipment to be part of the packaged unit.</p> <p>◆ ENTER "1" to continue</p>	
NEXT	→ D36 [Type of packaged heating]

D32	Classify other as part of boiler
ASK	IF Any components given in D30 [Other heating components] & Boiler IN D24 [Heating equipment types]
<p>For the purposes of this study, I am going to consider the other heating equipment to be part of the boiler system.</p> <p>◆ ENTER "1" to continue</p>	
NEXT	<p>IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating] IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF Any type except Individual room furnace IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] → D43 [Heating ventilation types] IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>

D33	Classify other as part of district
ASK	IF Any components given in D30 [Other heating components] & District steam or hot water IN D24 [Heating equipment types]
<p>For the purposes of this study, I am going to consider the other heating equipment to be part of the district heating system.</p> <p>◆ ENTER "1" to continue</p>	
NEXT	<p>IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating] IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF Any type except Individual room furnace IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] → D43 [Heating ventilation types] IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>

D34	Classify other as packaged
ASK	IF Any components given in D30 [Other heating components] & NOT (Packaged central unit IN D24 [Heating equipment types] OR Packaged central unit OR Duct furnace IN D25 [Type of furnace] OR Boiler IN D24 [Heating equipment types] OR District steam or hot water IN D24 [Heating equipment types])
<p>For the purposes of this study, I am going to refer to the other heating equipment as a “packaged unit.” In the next couple questions I just need to verify some of the components of the packaged system.</p> <p>◆ ENTER "1" to continue</p>	
NEXT	→ D36 [Type of packaged heating]

D35	Other heat specify
ASK	IF Other heating equipment IN D24 [Heating equipment types] & D30 [Other heating components] = None of these components
<p>Please describe the other type of heating equipment.</p> <p>◆ RECORD in open box</p>	
NEXT	<p>IF Packaged central unit IN D24 [Heating equipment types] → D36 [Type of packaged heating]</p> <p>IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system]</p> <p>IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater]</p> <p>OTHERWISE:</p> <p>IF Any type except Individual room furnace IN D25 [Type of furnace]</p> <p>OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system]</p> <p>OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system]</p> <p>OR Any components given in D30 [Other heating components]</p> <p>OR Packaged central unit IN D24 [Heating equipment types] → D43 [Heating ventilation types]</p> <p>IF More than one heating equipment → D45 [Percent heated by each type]</p> <p>IF Only one equipment, assign it as Main heating equipment, THEN</p> <p>IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced]</p> <p>OTHERWISE:</p> <p>IF D2 [Cooling] = Yes → D48 [Sources for cooling]</p> <p>OTHERWISE → D66 [Building automation system]</p>

D36	Type of packaged heating	PKGHTTYP
ASK	IF Packaged central unit IN D24 [Heating equipment types] OR D26 [Classify furnace as packaged] = "1" OR D31 [Classify other as part of packaged] = "1" OR D34 [Classify other as packaged] = "1"	
[F1]-HELP		
 SHOW CARD D6 Please look at Show Card D6 and tell me if the packaged unit is a factory-assembled unitary packaged unit or a custom built-up unit? 1 Factory-assembled unitary packaged unit 2 Custom built-up packaged unit 3 IF VOLUNTEERED: Both factory-assembled and custom built-up packaged units		
NEXT	IF Any type given → D37 [Packaged heating components] IF DK/RF: IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE → D43 [Heating ventilation types]	

D37	Packaged heating components	
ASK	IF Any type given in D36 [Type of packaged heating] On public use file: this variable applies to all buildings with packaged central unit as a heating equipment.	
[F1]-HELP		
 SHOW CARD D6 Looking at the second list on Show Card D6, please tell me which heating components are part of this packaged system. ◆ ENTER all that apply 1 Furnace 2 Heat pump 3 Heating coil 4 Powered induction unit (PIU) 5 Duct reheat		
PKGFURN PKGHTP PKGCOIL PKGPIU PKGDUCT		
NEXT	IF Heat pumps IN D24 [Heating equipment types] → D38 [Heat pump heating system] IF Heat pump selected here → D39 [Heat pump heating type] IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE → D43 [Heating ventilation types]	

D38	Heat pump heating system	<i>see below</i>
ASK	IF Heat pumps IN D24 [Heating equipment types]	
 SHOW CARD D7		[F1]-HELP
<p>Please look at the first list on Show Card D7 and tell me which heat pump systems are used for heating in this building.</p> <p>◆ ENTER all that apply</p> <ul style="list-style-type: none"> 1 Packaged unit 2 Split system (residential-type) 3 Individual room heat pump (packaged terminal heat pump or PTHP) 4 Ductless mini-split system 5 Variable refrigerant flow (VRF) system 		
NEXT	➔ D39 [Heat pump heating type]	

HPHPKG
HPHSPLT
HPHROOM
HPHMINI
HPHVRF

D39	Heat pump heating type	<i>see below</i>
ASK	IF Heat pumps IN D24 [Heating equipment types] OR Heat pump in D37 [Packaged heating components]	
 SHOW CARD D7		[F1]-HELP
<p>Looking at the second list on Show Card D7, which types of heat pumps are these?</p> <p>◆ ENTER all that apply</p> <ul style="list-style-type: none"> 1 Air source heat pump 2 Ground source or ground water heat pump (geothermal) 3 Dual source heat pump (combination air source and geothermal) 4 Water loop heat pump 		
NEXT	IF Air source heat pump & Natural gas OR Bottled gas used for heating ➔ D40 [Heat pump backup] IF Individual space heaters IN D24 [Heating equipment types] ➔ D41 [Type of individual heater] OTHERWISE: IF Any type except Individual room furnace IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] OR Packaged unit OR Split system IN D38 [Heat pump heating system] ➔ D43 [Heating ventilation types] IF More than one heating equipment ➔ D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) ➔ D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes ➔ D48 [Sources for cooling] OTHERWISE ➔ D66 [Building automation system]	

HPHAIR
HPHGRD
HPHDUAL
HPHWTR

D40	Heat pump backup	HPHBKUP
ASK	IF D39 [Heat pump heating type] = Air source heat pump & Natural gas OR Bottled gas used for heating	
FILL	<p>{NatGasBotGas} IF Natural gas but not bottled gas for heating = "natural gas" IF Bottled gas but not natural gas for heating = "bottled gas" IF Both natural gas and bottled gas for heating = "natural gas or bottled gas" { NatGasBotGasList} IF Natural gas but not bottled gas for heating = "Natural gas" IF Bottled gas but not natural gas for heating = "Bottled gas" IF Both natural gas and bottled gas for heating = "Natural gas or bottled gas"</p>	
<p>Does the air source heat pump have electric resistance backup, is it a dual fuel heat pump with {NatGasBotGas} backup, or is there no backup source for the heat pump?</p> <p>◆ DEF: [When outside air is near freezing, air source heat pumps do not work well and may use electric resistance coils to provide extra heat. They can also have a natural gas-fired or bottled gas-fired furnace to supplement the system, sometimes called a dual fuel heat pump.]</p> <ol style="list-style-type: none"> 1 Electric resistance backup 2 {NatGasBotGasList} backup (dual fuel) 3 No backup source 		
NEXT	<p>IF Individual space heaters IN D24 [Heating equipment types] → D41 [Type of individual heater] OTHERWISE: IF Any type except Individual room furnace IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] OR Packaged unit OR Split system IN D38 [Heat pump heating system] → D43 [Heating ventilation types] IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>	

D41	Type of individual heater														
ASK	IF Individual space heaters IN D24 [Heating equipment types]														
[F1]-HELP															
 SHOW CARD D8															
<p>Looking at Show Card D8, please tell me the type or types of individual heaters used in the building.</p> <p>◆ ENTER all that apply</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">1 Infrared radiant heater (permanent)</td> <td style="width: 20%;">SHRDNT</td> </tr> <tr> <td>2 Baseboard heater (permanent)</td> <td>SHBBRD</td> </tr> <tr> <td>3 Portable space heater</td> <td>SHPORT</td> </tr> <tr> <td>4 Wall heater</td> <td>SHWALL</td> </tr> <tr> <td>5 Individual furnace</td> <td>SHFURN</td> </tr> <tr> <td>6 Unit heater</td> <td>SHUNIT</td> </tr> <tr> <td>7 Heating element in package terminal air conditioner (PTAC)</td> <td>SHPTAC</td> </tr> </table>		1 Infrared radiant heater (permanent)	SHRDNT	2 Baseboard heater (permanent)	SHBBRD	3 Portable space heater	SHPORT	4 Wall heater	SHWALL	5 Individual furnace	SHFURN	6 Unit heater	SHUNIT	7 Heating element in package terminal air conditioner (PTAC)	SHPTAC
1 Infrared radiant heater (permanent)	SHRDNT														
2 Baseboard heater (permanent)	SHBBRD														
3 Portable space heater	SHPORT														
4 Wall heater	SHWALL														
5 Individual furnace	SHFURN														
6 Unit heater	SHUNIT														
7 Heating element in package terminal air conditioner (PTAC)	SHPTAC														
NEXT	<p>IF Any type except Individual room furnace IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] OR Packaged unit OR Split system IN D38 [Heat pump heating system] ➔ D43 [Heating ventilation types]</p> <p>IF More than one heating equipment ➔ D45 [Percent heated by each type]</p> <p>IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) ➔ D47 [Main heating replaced]</p> <p>OTHERWISE: IF D2 [Cooling] = Yes ➔ D48 [Sources for cooling] OTHERWISE ➔ D66 [Building automation system]</p>														

D42	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	<p>{HeatEquip} IF Boilers = "boiler" IF Furnace = "furnace" IF District heat = "district heating system" {HeatSources} = list of the energy sources given for heating</p>
<p>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}.</p> <p>◆ RECORD in open box</p>	
NEXT	<p>IF Any type except Individual room furnace IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] OR Packaged unit OR Split system IN D38 [Heat pump heating system] → D43 [Heating ventilation types] OTHERWISE: IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>

D43	Heating ventilation types												
ASK	<p>IF Any type except Individual room furnace (ONLY) IN D25 [Type of furnace] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D28 [Type of boiler system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D29 [Type of district heat system] OR Any components given in D30 [Other heating components] OR Packaged central unit IN D24 [Heating equipment types] OR Packaged unit OR Split system IN D38 [Heat pump heating system]</p>												
[F1]-HELP													
 SHOW CARD D9													
<p>Show Card D9 provides a list of mechanical ventilation equipment types. Please tell me which types are used with the heating system.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">1 Central air-handling unit(s) with constant air volume (CAV) control</td> <td style="width: 20%; text-align: center;">HTVCAV</td> </tr> <tr> <td>2 Central air-handling unit(s) with variable air volume (VAV) control</td> <td style="text-align: center;">HTVVAV</td> </tr> <tr> <td>3 Underfloor air distribution</td> <td style="text-align: center;">HTVFLR</td> </tr> <tr> <td>4 Dedicated outside air system (DOAS)</td> <td style="text-align: center;">HTVOAS</td> </tr> <tr> <td>5 Demand controlled ventilation</td> <td style="text-align: center;">HTVDEM</td> </tr> <tr> <td>6 None of these types</td> <td style="text-align: center;">HTVNON</td> </tr> </table>		1 Central air-handling unit(s) with constant air volume (CAV) control	HTVCAV	2 Central air-handling unit(s) with variable air volume (VAV) control	HTVVAV	3 Underfloor air distribution	HTVFLR	4 Dedicated outside air system (DOAS)	HTVOAS	5 Demand controlled ventilation	HTVDEM	6 None of these types	HTVNON
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4 Dedicated outside air system (DOAS)	HTVOAS												
5 Demand controlled ventilation	HTVDEM												
6 None of these types	HTVNON												
NEXT	<p>IF None of these types → D44 [Heating ventilation specify] OTHERWISE: IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>												

D44	Heating ventilation specify
ASK	IF D43 [Heating ventilation types] = None of these types
<p>Please describe the ventilation system that is used with the heating system.</p> <ul style="list-style-type: none"> ◆ RECORD in open box 	
NEXT	<p>IF More than one heating equipment → D45 [Percent heated by each type] IF Only one equipment, assign it as Main heating equipment, THEN IF Main heating equipment ≠ District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]</p>

D45	Percent heated by each type FURNP, PKGHP, BOILP, STHWP, HTPHP, SLFCNP, OTHTP
ASK	IF more than one type, for each equipment type given in D24 [Heating equipment types]
FILL	<p>{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</p> <p>{Explanation} IF First equipment and D22 [Percent heated] \neq 100 = “We are talking only about the <u>heated portion</u> 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 <u>more</u> than 100.” IF First equipment and D22 [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 <u>more</u> than 100.” OTHERWISE = BLANK</p> <p>{Equipment} IF Furnaces that heat air directly IN D24 [Heating equipment types] = “furnace” IF Packaged heating units IN D24 [Heating equipment types] = “packaged heating” IF Boilers inside the building IN D24 [Heating equipment types] = “boiler” IF District steam or hot water IN D24 [Heating equipment types] = “district steam or hot water” IF Heat pumps IN D24 [Heating equipment types] = “heat pump” IF Individual space heaters IN D24 [Heating equipment types] = “space heater” IF Other heating equipment IN D24 [Heating equipment types] = “other heating equipment”</p>
 SHOW CARD D10 {Introduction} {Explanation} Please look at Show Card D10. 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 → D46 [Main heating equipment] IF There is an equipment with a maximum percent, assign that equipment as the Main heating equipment [MAINHT]. THEN: IF Main heating equipment \neq District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] \neq 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]

D46	Main heating equipment	<i>MAINHTX</i>
ASK	IF D45 [Percent heated by each type] has equal maximum percents OR DK/RF	
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	
<p>Which do you consider to be your main heating equipment – {EquipmentList} ?</p> <p>◆ Only equipment types with equal percentages are shown here</p> <ol style="list-style-type: none"> 1 {Furnace} 2 {Packaged heating} 3 {Boiler} 4 {District steam or hot water} 5 {Heat pump} 6 {Space heater} 7 {Other heating equipment} 		
NEXT	IF Main equipment NOT (District steam or hot water OR DK/RF) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D47 [Main heating replaced] OTHERWISE: IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]	

	Main heating equipment	MAINHT
For all buildings with heating, main heating equipment is determined by the preceding equipment and percent questions or selected in the above question when there are equal maximum percents.		
<ol style="list-style-type: none"> 1 Furnaces that heat air directly, without using steam or hot water 2 Packaged central unit (roof mounted) 3 Boilers inside (or adjacent to) the building that produce steam or hot water 4 District steam or hot water piped in from outside the building 5 Heat pumps (other than components of a packaged unit) 6 Individual space heaters (other than heat pumps) 7 Other heating equipment 		

D47	Main heating replaced	NWMNHT
ASK	IF Main heating equipment known & NOT District steam or hot water & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012)	
FILL	{MainHeatEquip} IF Main heating equipment = Furnace = "Has the furnace" IF Main heating equipment = Boiler = "Has the boiler" IF Main heating equipment = Packaged heating = "Has the packaged heating unit" IF Main heating equipment = Individual space heater = "Have any of the individual space heaters" IF Main heating equipment = Heat pump = "Has the heat pump" IF Main heating equipment = Other = "Has the other type of heating equipment"	
	{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."] 1 Yes 2 No	
NEXT	IF D2 [Cooling] = Yes → D48 [Sources for cooling] OTHERWISE → D66 [Building automation system]	

D48	Sources for cooling	<i>see below</i>																																	
ASK	IF D2 [Cooling] = Yes On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, STCOOL is set to missing if district steam is not used, but is set to No if district steam is used but not used for cooling.																																		
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 D10 [Fuel oil, diesel, or kerosene] {Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																																		
<p>Which energy sources were used for air conditioning? ({CoolSourcesList})</p> <ul style="list-style-type: none"> ◆ Only sources already selected are shown here ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">11</td> <td style="width: 70%;">{Electricity}</td> <td style="width: 20%;">ELCOOL</td> </tr> <tr> <td>12</td> <td>{Natural gas}</td> <td>NGCOOL</td> </tr> <tr> <td>13</td> <td>{FuelOilType}</td> <td>FKCOOL</td> </tr> <tr> <td>14</td> <td>{Bottled gas}</td> <td>PRCOOL</td> </tr> <tr> <td>15</td> <td>{District steam}</td> <td>STCOOL</td> </tr> <tr> <td>16</td> <td>{District hot water}</td> <td>HWCOOL</td> </tr> <tr> <td>17</td> <td>{District chilled water}</td> <td>CWCOOL</td> </tr> <tr> <td>21</td> <td>{Other1}</td> <td>OTCOOL</td> </tr> <tr> <td>22</td> <td>{Other2}</td> <td>OTCOOL</td> </tr> <tr> <td>23</td> <td>{Other3}</td> <td>OTCOOL</td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td></td> </tr> </table>			11	{Electricity}	ELCOOL	12	{Natural gas}	NGCOOL	13	{FuelOilType}	FKCOOL	14	{Bottled gas}	PRCOOL	15	{District steam}	STCOOL	16	{District hot water}	HWCOOL	17	{District chilled water}	CWCOOL	21	{Other1}	OTCOOL	22	{Other2}	OTCOOL	23	{Other3}	OTCOOL	24	Some other energy source	
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22	{Other2}	OTCOOL																																	
23	{Other3}	OTCOOL																																	
24	Some other energy source																																		
NEXT	IF Some other energy source selected → D49 [Other source for cooling] OTHERWISE → D50 [Percent cooled]																																		

D49	Other source for cooling	<i>see below</i>																								
ASK	IF Some other energy source IN D48 [Sources for cooling]																									
<p>What was the other energy source used for air conditioning?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">11</td> <td style="width: 70%;">Electricity</td> <td style="width: 20%;">ELCOOL</td> </tr> <tr> <td>12</td> <td>Natural gas</td> <td>NGCOOL</td> </tr> <tr> <td>13</td> <td>Fuel oil/Diesel/Kerosene</td> <td>FKCOOL</td> </tr> <tr> <td>14</td> <td>Bottled gas</td> <td>PRCOOL</td> </tr> <tr> <td>15</td> <td>District steam</td> <td>STCOOL</td> </tr> <tr> <td>16</td> <td>District hot water</td> <td>HWCOOL</td> </tr> <tr> <td>17</td> <td>District chilled water</td> <td>CWCOOL</td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td>OTCOOL</td> </tr> </table>			11	Electricity	ELCOOL	12	Natural gas	NGCOOL	13	Fuel oil/Diesel/Kerosene	FKCOOL	14	Bottled gas	PRCOOL	15	District steam	STCOOL	16	District hot water	HWCOOL	17	District chilled water	CWCOOL	24	Some other energy source	OTCOOL
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17	District chilled water	CWCOOL																								
24	Some other energy source	OTCOOL																								
NEXT	→ D50 [Percent cooled]																									

D50	Percent cooled	COOLP
ASK	IF D1 [Cooling] = Yes	
FILL	{SqFtIn} IF A6 [Square footage] known = A6 [Square footage] IF A6 [Square footage] = DK/RF = "floorspace"	
		[F1]-HELP
	What percent of the {SqFt} in this building was cooled by air conditioning equipment during 2012? ◆ 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 → D51 [Cooling equipment types] IF Zero: IF More than just Individual space heaters IN D24 [Heating equipment types] → D74 [Regular HVAC maintenance] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D51	Cooling equipment types	<i>see below</i>
ASK	IF D50 [Percent cooled] = 1 to 100 OR DK/RF	
 SHOW CARD D11		[F1]-HELP
<p>Looking at the list of cooling equipment types on Show Card D11, please tell me which types are used in this building.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <ol style="list-style-type: none"> 1 Residential-type central air conditioners (other than heat pumps) that cool air directly and circulate it without using chilled water 2 Packaged air conditioning units (other than heat pumps) 3 Central chillers inside (or adjacent to) the building that chill water for air conditioning 4 District chilled water piped in from outside the building 5 Heat pumps for cooling 6 Individual room air conditioners (other than heat pumps) 7 "Swamp" coolers or evaporative coolers 8 Other cooling equipment 		
NEXT	<p>IF Packaged air conditioning units → D52 [Type of packaged cooling] IF Central chillers → D53 [Type of chiller] IF District chilled water → D56 [Type of district chilled water system] IF Heat pumps for cooling & NOT Heat pumps for heating → D57 [Heat pump cooling system] IF Other cooling equipment → D59 [Other cool specify] IF DK/RF → D66 [Building automation system] OTHERWISE: IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] → D60 [Cool source explanation] IF Residential-type central air & D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF → D61 [Cooling ventilation same as heating] IF Residential-type central air & (D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] =DK/RF) → D62 [Cooling ventilation types] OTHERWISE: IF More than one selected → D63 [Percent cooled by each type] IF Only one selected, assign as Main cooling equipment. THEN: IF (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]</p>	

RCAC
PKGCL
CHILLR
CHWT
HTPMPC
ACWNWL
EVAPCL
OTCLEQ

D52	Type of packaged cooling	PKGCLTYP
ASK	IF Packaged air conditioning units IN D51 [Cooling equipment types]	
		[F1]-HELP
	 SHOW CARD D6 Please look at Show Card D6 and tell me if the packaged unit for cooling is a factory-assembled unitary packaged unit or a custom built-up unit? <ol style="list-style-type: none"> 1 Factory-assembled unitary packaged unit 2 Custom built-up packaged unit 3 IF VOLUNTEERED: Both factory-assembled and custom built-up packaged units 	
NEXT	IF Central chillers IN D51 [Cooling equipment types] → D53 [Type of chiller] IF District chilled water IN D51 [Cooling equipment types] → D56 [Type of district chilled water system] IF Heat pumps for cooling IN D51 [Cooling equipment types] & NOT Heat pumps for heating IN D24 [Heating equipment types] → D57 [Heat pump cooling system] IF Other cooling equipment IN D51 [Cooling equipment types] → D59 [Other cool specify] OTHERWISE: IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] → D60 [Cool source explanation] OTHERWISE: IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF → D61 [Cooling ventilation same as heating] IF D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] =DK/RF → D62 [Cooling ventilation types]	

D53	Type of chiller	<i>see below</i>
ASK	IF Central chillers IN D51 [Cooling equipment types]	
		[F1]-HELP
 SHOW CARD D12 Please look at Show Card D12 and tell me whether the chiller is air-cooled, water cooled, or an absorption chiller? ◆ ENTER all that apply 1 Air-cooled 2 Water cooled 3 Absorption		
NEXT	IF Absorption → D54 [Heater chiller] OTHERWISE → D55 [Type of chiller system]	

CHLAIRCL
CHLWTRCL
CHLABSRP

D54	Heater chiller	HTRCHLR
ASK	IF Absorption IN D53 [Type of chiller]	
A “heater chiller” is a type of absorption chiller that can produce both chilled and hot water and can provide both cooling and heating. Does this absorption chiller have this capability? 1 Yes 2 No		
NEXT	→ D55 [Type of chiller system]	

D55	Type of chiller system	<i>see below</i>		
ASK	IF Central chillers IN D51 [Cooling equipment types]			
<p style="text-align: right;">[F1]-HELP</p> <p> SHOW CARD D13</p> <p>Please look at Show Card D13 and tell me which system or systems are used for distributing the water from the chiller.</p> <p>◆ ENTER all that apply</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ol style="list-style-type: none"> 1 Central air handler (hydronic coils) 2 Fan coil units in rooms (or areas) 3 Induction units 4 Water loop heat pump 5 Chilled beam 6 Packaged unit (hydronic coils) 7 Duct reheat </td> <td style="vertical-align: top; text-align: right;"> <p>CHLAIR</p> <p>CHLFNCL</p> <p>CHLINDC</p> <p>CHLWATR</p> <p>CHLBEAM</p> <p>CHLPKG</p> <p>CHLDUCT</p> </td> </tr> </table>			<ol style="list-style-type: none"> 1 Central air handler (hydronic coils) 2 Fan coil units in rooms (or areas) 3 Induction units 4 Water loop heat pump 5 Chilled beam 6 Packaged unit (hydronic coils) 7 Duct reheat 	<p>CHLAIR</p> <p>CHLFNCL</p> <p>CHLINDC</p> <p>CHLWATR</p> <p>CHLBEAM</p> <p>CHLPKG</p> <p>CHLDUCT</p>
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NEXT	<p>IF District chilled water IN D51 [Cooling equipment types] → D56 [Type of district chilled water system]</p> <p>IF Heat pumps for cooling IN D51 [Cooling equipment types] & NOT Heat pumps for heating IN D24 [Heating equipment types] → D57 [Heat pump cooling system]</p> <p>IF Other cooling equipment IN D51 [Cooling equipment types] → D59 [Other cool specify]</p> <p>OTHERWISE:</p> <p>IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] → D60 [Cool source explanation]</p> <p>IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat selected here → D61 [Cooling ventilation same as heating]</p> <p>IF D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] = DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat selected here → D62 [Cooling ventilation types]</p> <p>OTHERWISE:</p> <p>IF More than one cooling equipment → D63 [Percent cooled by each type]</p> <p>IF Only one equipment, assign as Main cooling equipment. THEN:</p> <p>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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced]</p> <p>OTHERWISE → D66 [Building automation system]</p>			

D56	Type of district chilled water system	<i>see below</i>		
ASK	IF District chilled water IN D51 [Cooling equipment types]			
<p style="text-align: right;">[F1]-HELP</p> <p> SHOW CARD D13</p> <p>Please look at Show Card D13 and tell me which system or systems are used for distributing the district chilled water.</p> <p>◆ ENTER all that apply</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ol style="list-style-type: none"> 1 Central air handler (hydronic coils) 2 Fan coil units in rooms (or areas) 3 Induction units 4 Water loop heat pump 5 Chilled beam 6 Packaged unit (hydronic coils) 7 Duct reheat </td> <td style="vertical-align: top; text-align: right;"> <p>DCWAIR</p> <p>DCWFNCL</p> <p>DCWINDC</p> <p>DCWWATR</p> <p>DCWBEAM</p> <p>DCWPKG</p> <p>DCWDUCT</p> </td> </tr> </table>			<ol style="list-style-type: none"> 1 Central air handler (hydronic coils) 2 Fan coil units in rooms (or areas) 3 Induction units 4 Water loop heat pump 5 Chilled beam 6 Packaged unit (hydronic coils) 7 Duct reheat 	<p>DCWAIR</p> <p>DCWFNCL</p> <p>DCWINDC</p> <p>DCWWATR</p> <p>DCWBEAM</p> <p>DCWPKG</p> <p>DCWDUCT</p>
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NEXT	<p>IF Heat pumps for cooling IN D51 [Cooling equipment types] & NOT Heat pumps for heating IN D24 [Heating equipment types] → D57 [Heat pump cooling system] IF Other cooling equipment IN D51 [Cooling equipment types] → D59 [Other cool specify] OTHERWISE: IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] → D60 [Cool source explanation] IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat selected here → D61 [Cooling ventilation same as heating] IF D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] = DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat selected here → D62 [Cooling ventilation types] OTHERWISE: IF More than one cooling equipment → D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]</p>			

D57	Heat pump cooling system	<i>see below</i>										
ASK	<p>IF Heat pumps IN D51 [Cooling equipment types] & Heat pumps NOT IN D24 [Heating equipment types]</p> <p>On public use file: when heat pumps were also part of the heating system, this variable was coded to match the equivalent heating variable.</p>											
<p style="text-align: right;">[F1]-HELP</p> <p> SHOW CARD D7</p> <p>Please look at the first list on Show Card D7 and tell me which heat pump systems are used for cooling in this building.</p> <p>◆ ENTER all that apply</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 100px;">1 Packaged unit</td> <td style="width: 100px;">HPCPKG</td> </tr> <tr> <td>2 Split system (residential-type)</td> <td>HPCSPLT</td> </tr> <tr> <td>3 Individual room heat pump (packaged terminal heat pump or PTHP)</td> <td>HPCROOM</td> </tr> <tr> <td>4 Ductless mini-split system</td> <td>HPCMINI</td> </tr> <tr> <td>5 Variable refrigerant flow (VRF) system</td> <td>HPCVRF</td> </tr> </table>			1 Packaged unit	HPCPKG	2 Split system (residential-type)	HPCSPLT	3 Individual room heat pump (packaged terminal heat pump or PTHP)	HPCROOM	4 Ductless mini-split system	HPCMINI	5 Variable refrigerant flow (VRF) system	HPCVRF
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5 Variable refrigerant flow (VRF) system	HPCVRF											
NEXT	➔ D58 [Heat pump cooling type]											

D58	Heat pump cooling type	<i>see below</i>												
ASK	<p>IF Heat pumps IN D51 [Cooling equipment types] & Heat pumps NOT IN D24 [Heating equipment types]</p> <p>On public use file: when heat pumps were also part of the heating system, this variable was coded to match the equivalent heating variable.</p>													
<p style="text-align: right;">[F1]-HELP</p> <p> SHOW CARD D7</p> <p>Looking at the second list on Show Card D7, which types of heat pumps are these?</p> <p>◆ ENTER all that apply</p> <table border="0"> <tr> <td>1</td> <td>Air source heat pump</td> <td>HPCAIR</td> </tr> <tr> <td>2</td> <td>Ground source or ground water heat pump (geothermal)</td> <td>HPCGRD</td> </tr> <tr> <td>3</td> <td>Dual source heat pump (combination air source and geothermal)</td> <td>HPCDUAL</td> </tr> <tr> <td>3</td> <td>Water loop heat pump</td> <td>HPCWTR</td> </tr> </table>			1	Air source heat pump	HPCAIR	2	Ground source or ground water heat pump (geothermal)	HPCGRD	3	Dual source heat pump (combination air source and geothermal)	HPCDUAL	3	Water loop heat pump	HPCWTR
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NEXT	<p>IF Other cooling equipment IN D51 [Cooling equipment types] → D59 [Other cool specify] OTHERWISE:</p> <p>IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] → D60 [Cool source explanation]</p> <p>IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system] → D61 [Cooling ventilation same as heating]</p> <p>IF D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] = DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system] → D62 [Cooling ventilation types]</p> <p>OTHERWISE:</p> <p>IF More than one cooling equipment → D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]</p>													

D59	Other cool specify
ASK	IF Other cooling equipment in D51 [Cooling equipment types]
<p>Please describe the other type of cooling equipment.</p> <p>◆ RECORD in open box</p>	
NEXT	<p>IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] → D60 [Cool source explanation]</p> <p>IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system] → D61 [Cooling ventilation same as heating]</p> <p>IF D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] = DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system] → D62 [Cooling ventilation types]</p> <p>OTHERWISE: IF More than one cooling equipment → D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]</p>

D60	Cool source explanation
ASK	IF Any source(s) other than electricity or chilled water reported in D48 [Sources for cooling] OR D49 [Other source for cooling] & Central chillers NOT IN D51 [Cooling equipment types]
FILL	<p>{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"</p> <p>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.</p> <p>◆ RECORD in open box</p>
NEXT	<p>IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system] ➔ D61 [Cooling ventilation same as heating]</p> <p>IF D1 [Heating] ≠ Yes OR D43 [Heating ventilation types] = DK/RF & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system] ➔ D62 [Cooling ventilation types]</p> <p>OTHERWISE: IF More than one cooling equipment ➔ D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) ➔ D65 [Main cooling replaced] OTHERWISE ➔ D66 [Building automation system]</p>

D61	Cooling ventilation same as heating
ASK	<p>IF D1 [Heating] = Yes & D43 [Heating ventilation types] ≠ (No ventilation or DK/RF) & Residential-type central air IN D51 [Cooling equipment types] OR Packaged unit IN D51 [Cooling equipment types] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D55 [Type of chiller system] OR Water loop, Central air handler, Packaged unit, OR Duct reheat IN D56 [Type of district chilled water system] OR Packaged unit OR Split system IN D57 [Heat pump cooling system]</p>
<p>Is the ventilation system for cooling the same as the one for heating?</p> <p>1 Yes 2 No</p>	
NEXT	<p>IF No → D62 [Cooling ventilation types] OTHERWISE: IF More than one cooling equipment → D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]</p>

D62	Cooling ventilation types		
ASK	IF D61 [Cooling ventilation same as heating] = No On public use file: when the cooling ventilation was reported to be the same as the heating ventilation, this variable was coded to match the equivalent heating variable.		
[F1]-HELP			
 SHOW CARD D9			
<p>Show Card D9 provides a list of mechanical ventilation equipment types. Please tell me which types are used with the cooling system.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;"> <ol style="list-style-type: none"> 1 Central air-handling unit(s) with constant air volume (CAV) control 2 Central air-handling unit(s) with variable air volume (VAV) control 3 Underfloor air distribution 4 Dedicated outside air system (DOAS) 5 Demand controlled ventilation 6 None of these types </td> <td style="width: 30%; vertical-align: top; text-align: center;"> CLVCAV CLVVAV CLVFLR CLVOAS CLVDEM CLVNON </td> </tr> </table>		<ol style="list-style-type: none"> 1 Central air-handling unit(s) with constant air volume (CAV) control 2 Central air-handling unit(s) with variable air volume (VAV) control 3 Underfloor air distribution 4 Dedicated outside air system (DOAS) 5 Demand controlled ventilation 6 None of these types 	CLVCAV CLVVAV CLVFLR CLVOAS CLVDEM CLVNON
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NEXT	IF None of these types → D62a [Cooling ventilation specify] OTHERWISE: IF More than one cooling equipment → D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]		

D62a	Cooling ventilation specify
ASK	IF D62 [Cooling ventilation types] = None of these types
Please describe the ventilation system that is used with the cooling system. <ul style="list-style-type: none"> ◆ RECORD in open box 	
NEXT	IF More than one cooling equipment → D63 [Percent cooled by each type] IF Only one equipment, assign as Main cooling equipment. 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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]

D63	Percent cooled by each type RCACP, PKGCP, CHILP, CHWTP, HTPCP, ACWNWP, EVAPP, OTCLP
ASK	IF more than one, for each equipment type given in D51 [Cooling equipment types]
FILL	<p>{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</p> <p>{Explanation} IF First equipment and D50 [Percent cooled] \neq 100 = "We are talking only about the <u>cooled portion</u> 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 <u>more</u> than 100." IF First equipment and D50 [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 <u>more</u> than 100." OTHERWISE = BLANK</p> <p>{Equipment} IF Residential-type central air conditioners IN D51 [Cooling equipment types] = "central air conditioner" IF Packaged air conditioning units IN D51 [Cooling equipment types] = "packaged cooling" IF Central chillers inside the building IN D51 [Cooling equipment types] = "central chiller" IF District chilled water IN D51 [Cooling equipment types] = "district chilled water" IF Heat pumps for cooling IN D51 [Cooling equipment types] = "heat pump" IF Individual room air conditioners IN D51 [Cooling equipment types] = "room air conditioner" IF "Swamp" coolers or evaporative coolers IN D51 [Cooling equipment types] = "swamp cooler" IF Other cooling equipment IN D51 [Cooling equipment types] = "other cooling equipment"</p>
 SHOW CARD D14 {Introduction} {Explanation} Please look at Show Card D14. 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 → D64 [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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] \neq 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]

D64	Main cooling equipment	<i>MAINCLX</i>
ASK	IF D63 [Percent cooled by each type] has equal maximum percents OR DK/RF	
FILL	<p>{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</p>	
<p>Which do you consider to be your main cooling equipment – {EquipmentList} ?</p> <p>◆ Only equipment types with equal percentages are shown here</p> <ol style="list-style-type: none"> 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	<p>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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012) → D65 [Main cooling replaced] OTHERWISE → D66 [Building automation system]</p>	

	Main cooling equipment	MAINCL
<p>For all buildings with cooling, main cooling equipment is determined by the preceding equipment and percent questions or selected in the above question when there are equal maximum percents.</p>		
<ol style="list-style-type: none"> 1 Residential-type central air conditioners (other than heat pumps) that cool air directly and circulate it without using chilled water 2 Packaged air conditioning units (other than heat pumps) 3 Central chillers inside (or adjacent to) the building that chill water for air conditioning 4 District chilled water piped in from outside the building 5 Heat pumps for cooling 6 Individual room air conditioners (other than heat pumps) 7 "Swamp" coolers or evaporative coolers 8 Other cooling equipment 		

D65	Main cooling replaced	NWMNCL
ASK	<p>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) & (A30 [Year of construction] < 1990 OR A31 [Year of construction category] ≠ 1990 to 1999 OR 2000 to 2003 OR 2004 to 2007 OR 2008 to 2012)</p> <p>On public use file: when the main cooling equipment matched the main heating equipment with a packaged system or heat pump, this variable was coded to match the response to main heating replaced.</p>	
FILL	<p>{MainCoolEquip}</p> <p>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”</p>	
<p>{MainCoolEquip} been replaced since 1990?</p> <p>◆ EXP: [If there is more than one of this equipment type and at least one has been replaced, the answer is "Yes."]</p> <p>1 Yes 2 No</p>		
NEXT	➔ D66 [Building automation system]	

D66	Building automation system	EMCS
ASK	IF D22 [Percent heated] > 0 OR D50 [Percent cooled] > 0	
<p>Does this building have a “Building Automation System” which may also be referred to as BAS, smart building controls, an energy management and control system, or EMCS?</p> <p>◆ DEF: [These systems monitor changes in ambient temperature and operating conditions and automatically modify the heating and cooling levels in different interior zones. This is accomplished by means of remote sensing and control instruments, and interpretive and control software.]</p> <p>1 Yes 2 No</p>		
NEXT	IF D22 [Percent heated] > 0 ➔ D67 [Reduce heating] OTHERWISE ➔ D69 [Reduce cooling]	

D67	Reduce heating	RDHTNF
ASK	IF D22 [Percent heated] > 0	
FILL	{TimesNotInFullUse} IF C26 [Open 24 hours a day] = Yes OR C30 [Total hours open per week] = 168 OR C31 [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"	
		[F1]-HELP
{TimesNotInFullUse} a change in the temperature setting for heating? 1 Yes 2 No		
NEXT	IF Yes → D68 [How reduce heating] IF No OR DK/RF: IF D50 [Percent cooled] > 0 → D69 [Reduce cooling] OTHERWISE: IF More than just Individual space heaters IN D24 [Heating equipment types] → D74 [Regular HVAC maintenance] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D68	How reduce heating	HWRDHT
ASK	IF D67 [Reduce heating] = Yes	
FILL	{PartOfBAS} IF D66 [Building automation system] = Yes = 'as part of the Building Automation System' OTHERWISE = BLANK	
How is the temperature for heating usually changed – {PartOfBAS}, using a programmable thermostat, manually changing the thermostat, or manually shutting down the equipment? ◆ DEF: [A programmable thermostat, or "time-clock thermostat" is programmed to automatically change thermostat settings for times when the building is unoccupied.] 1 {Part of the Building Automation System} 2 Programmable thermostat 3 Manually change thermostat 4 Manually shut down equipment		
NEXT	IF D50 [Percent cooled] > 0 → D69 [Reduce cooling] OTHERWISE: IF More than just Individual space heaters IN D24 [Heating equipment types] → D74 [Regular HVAC maintenance] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D69	Reduce cooling	RDCLNF
ASK	IF D50 [Percent cooled] > 0	
FILL	{TimesNotInFullUse} IF C26 [Open 24 hours a day] = Yes OR C30 [Total hours open per week] = 168 OR C31 [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"	
		[F1]-HELP
	{TimesNotInFullUse} a change in the temperature setting for <u>cooling</u> ? 1 Yes 2 No	
NEXT	IF Yes → D70 [How reduce cooling] IF No OR DK/RF: IF More than just Individual room air conditioners IN D51 [Cooling equipment types] → D71 [Economizer cycle] IF Packaged air conditioning units OR Central chillers OR Heat pumps for cooling IN D51 [Cooling equipment types] → D73 [Cooling tower] IF More than just individual space heaters IN D24 [Heating equipment types] → D74 [Regular HVAC maintenance] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D70	How reduce cooling	HWRDCL
ASK	IF D69 [Reduce cooling] = Yes	
FILL	{PartOfBAS} IF D66 [Building automation system] = Yes = 'as part of the Building Automation System' OTHERWISE = BLANK	
<p>How is the temperature for cooling usually changed – {PartOfBAS}, using a programmable thermostat, manually changing the thermostat, or manually shutting down the equipment?</p> <p>◆ DEF: [A programmable thermostat, or "time-clock thermostat" is programmed to automatically change thermostat settings for times when the building is unoccupied.]</p> <ol style="list-style-type: none"> 1 {Part of the Building Automation System} 2 Programmable thermostat 3 Manually change thermostat 4 Manually shut down equipment 		
NEXT	IF More than just Individual room air conditioners IN D51 [Cooling equipment types] → D71 [Economizer cycle] IF Packaged air conditioning units OR Central chillers OR Heat pumps for cooling IN D51 [Cooling equipment types] → D73 [Cooling tower] IF More than just individual space heaters IN D24 [Heating equipment types] → D74 [Regular HVAC maintenance] IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D71	Economizer cycle	ECN
ASK	IF More than just Individual room air conditioners IN D51 [Cooling equipment types]	
[F1]-HELP		
<p>Does this building have any equipment that uses outside air for cooling, often called an "economizer cycle"?</p> <ol style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → D72 [Type of economizer cycle] OTHERWISE: IF Packaged air conditioning units OR Central chillers OR Heat pumps for cooling IN D51 [Cooling equipment types] → D73 [Cooling tower] OTHERWISE → D74 [Regular HVAC maintenance]	

D72	Type of economizer cycle	ECNTYPE
ASK	IF D71 [Economizer cycle] = Yes	
 SHOW CARD D15		[F1]-HELP
<p>Looking at Show Card D15, is this an air-side economizer or a water-side economizer?</p> <ol style="list-style-type: none"> 1 Air-side economizer 2 Water-side economizer 		
NEXT	IF Packaged air conditioning units OR Central chillers OR Heat pumps for cooling IN D51 [Cooling equipment types] → D73 [Cooling tower] OTHERWISE → D74 [Regular HVAC maintenance]	

D73	Cooling tower	CTOWER
ASK	IF Packaged air conditioning units OR Central chillers OR Heat pumps for cooling IN D51 [Cooling equipment types]	
<p>Does this building have a cooling tower for the cooling equipment?</p> <p>◆ DEF: [A cooling tower is used to dispose of unwanted heat from the cooling equipment.]</p> <ol style="list-style-type: none"> 1 Yes 2 No 		
NEXT	→ D74 [Regular HVAC maintenance]	

D74	Regular HVAC maintenance	MAINT
ASK	IF More than just Individual space heaters IN D24 [Heating equipment types] OR More than just Individual room air conditioners IN D51 [Cooling equipment types]	
FILL	{HeatCool} IF Heating only = "heating" IF Cooling only = "cooling" IF Heating & Cooling = "heating and cooling"	
<p>Is there any regularly scheduled maintenance and repair for the {HeatCool} system?</p> <ol style="list-style-type: none"> 1 Yes 2 No 		[F1]-HELP
NEXT	IF D3 [Water heating] = Yes → D75 [Sources for water heating] IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D75	Sources for water heating	<i>see below</i>																																							
ASK	IF D3 [Water heating] = Yes On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, NGWATR is set to missing if natural gas is not used, but is set to No if natural gas is used but not used for water heating.																																								
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 D10 [Fuel oil, diesel, or kerosene] {Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																																								
<p>Which energy sources were used for water heating? ({WatrSourcesList})</p> <ul style="list-style-type: none"> ◆ Only sources already selected are shown here ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; vertical-align: top;">11</td> <td style="width: 70%; vertical-align: top;">{Electricity}</td> <td style="width: 20%; vertical-align: top;">ELWATR</td> </tr> <tr> <td style="vertical-align: top;">12</td> <td style="vertical-align: top;">{Natural gas}</td> <td style="vertical-align: top;">NGWATR</td> </tr> <tr> <td style="vertical-align: top;">13</td> <td style="vertical-align: top;">{FuelOilType}</td> <td style="vertical-align: top;">FKWATR</td> </tr> <tr> <td style="vertical-align: top;">14</td> <td style="vertical-align: top;">{Bottled gas}</td> <td style="vertical-align: top;">PRWATR</td> </tr> <tr> <td style="vertical-align: top;">15</td> <td style="vertical-align: top;">{District steam}</td> <td style="vertical-align: top;">STWATR</td> </tr> <tr> <td style="vertical-align: top;">16</td> <td style="vertical-align: top;">{District hot water}</td> <td style="vertical-align: top;">HWWATR</td> </tr> <tr> <td style="vertical-align: top;">18</td> <td style="vertical-align: top;">{Wood}</td> <td style="vertical-align: top;">WOWATR</td> </tr> <tr> <td style="vertical-align: top;">19</td> <td style="vertical-align: top;">{Coal}</td> <td style="vertical-align: top;">COWATR</td> </tr> <tr> <td style="vertical-align: top;">20</td> <td style="vertical-align: top;">{Solar}</td> <td style="vertical-align: top;">SOWATR</td> </tr> <tr> <td style="vertical-align: top;">21</td> <td style="vertical-align: top;">{Other1}</td> <td style="vertical-align: top;">OTWATR</td> </tr> <tr> <td style="vertical-align: top;">22</td> <td style="vertical-align: top;">{Other2}</td> <td style="vertical-align: top;">OTWATR</td> </tr> <tr> <td style="vertical-align: top;">23</td> <td style="vertical-align: top;">{Other3}</td> <td style="vertical-align: top;">OTWATR</td> </tr> <tr> <td style="vertical-align: top;">24</td> <td style="vertical-align: top;">Some other energy source</td> <td></td> </tr> </table>			11	{Electricity}	ELWATR	12	{Natural gas}	NGWATR	13	{FuelOilType}	FKWATR	14	{Bottled gas}	PRWATR	15	{District steam}	STWATR	16	{District hot water}	HWWATR	18	{Wood}	WOWATR	19	{Coal}	COWATR	20	{Solar}	SOWATR	21	{Other1}	OTWATR	22	{Other2}	OTWATR	23	{Other3}	OTWATR	24	Some other energy source	
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NEXT	IF Some other energy source selected → D76 [Other water heating source] OTHERWISE → D77 [Water heating equipment]																																								

D76	Other water heating source	<i>see below</i>																														
ASK	IF Some other energy source IN D75 [Sources for water heating]																															
<p>What was the other energy source used for water heating?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; vertical-align: top;">11</td> <td style="width: 70%; vertical-align: top;">Electricity</td> <td style="width: 20%; vertical-align: top;">ELWATR</td> </tr> <tr> <td style="vertical-align: top;">12</td> <td style="vertical-align: top;">Natural gas</td> <td style="vertical-align: top;">NGWATR</td> </tr> <tr> <td style="vertical-align: top;">13</td> <td style="vertical-align: top;">Fuel oil/Diesel/Kerosene</td> <td style="vertical-align: top;">FKWATR</td> </tr> <tr> <td style="vertical-align: top;">14</td> <td style="vertical-align: top;">Bottled gas</td> <td style="vertical-align: top;">PRWATR</td> </tr> <tr> <td style="vertical-align: top;">15</td> <td style="vertical-align: top;">District steam</td> <td style="vertical-align: top;">STWATR</td> </tr> <tr> <td style="vertical-align: top;">16</td> <td style="vertical-align: top;">District hot water</td> <td style="vertical-align: top;">HWWATR</td> </tr> <tr> <td style="vertical-align: top;">18</td> <td style="vertical-align: top;">Wood</td> <td style="vertical-align: top;">WOWATR</td> </tr> <tr> <td style="vertical-align: top;">19</td> <td style="vertical-align: top;">Coal</td> <td style="vertical-align: top;">COWATR</td> </tr> <tr> <td style="vertical-align: top;">20</td> <td style="vertical-align: top;">Solar</td> <td style="vertical-align: top;">SOWATR</td> </tr> <tr> <td style="vertical-align: top;">24</td> <td style="vertical-align: top;">Some other energy source</td> <td style="vertical-align: top;">OTWATR</td> </tr> </table>			11	Electricity	ELWATR	12	Natural gas	NGWATR	13	Fuel oil/Diesel/Kerosene	FKWATR	14	Bottled gas	PRWATR	15	District steam	STWATR	16	District hot water	HWWATR	18	Wood	WOWATR	19	Coal	COWATR	20	Solar	SOWATR	24	Some other energy source	OTWATR
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NEXT	→ D77 [Water heating equipment]																															

D77	Water heating equipment	WTHTEQ
ASK	IF D3 [Water heating] = Yes	
	[F1]-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)?	
	<ul style="list-style-type: none"> 1 One or more centralized water heaters 2 One or more "point-of-use" water heaters 3 Both types 	
NEXT	IF D77 [Water heating equipment] = One or more point-of-use OR Both types & CBECS Activity = Food service OR Inpatient health OR B16 [Service type] = Dry cleaner or Laundromat OR Car wash → D78 [Booster water heaters] IF CBECS Activity = Lodging → D79 [Instant hot water] OTHERWISE: IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D78	Booster water heaters	BOOSTWT
ASK	IF D77 [Water heating equipment] = One or more point-of-use OR Both types & CBECS Activity = Food service OR Inpatient health OR B16 [Service type] = Dry cleaner or Laundromat OR Car wash On public use file: in addition to the above activities, this variable also applies to strip shopping centers.	
	How many of the point-of-use water heaters are "booster" water heaters, which are used to increase service water temperature up to 180 degrees, often for the purpose of sanitizing?	
RANGE	0 to 99	
NEXT	IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D79	Instant hot water	INSTWT
ASK	IF D3 [Water heating] = Yes & CBECS Activity = Lodging	
	Is the water hot <u>as soon as</u> you turn on the faucet?	
	<ul style="list-style-type: none"> 1 Yes 2 No 	
NEXT	IF D4 [Cooking] = Yes → D80 [Sources for cooking] IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]	

D80	Sources for cooking	<i>see below</i>																																							
ASK	IF D4 [Cooking] = Yes On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, PRCOOK is set to missing if bottled gas is not used, but is set to No if bottled gas is used but not used for cooking.																																								
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 D10 [Fuel oil, diesel, or kerosene] {Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																																								
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NEXT	IF Some other energy source selected → D81 [Other cooking source] OTHERWISE: IF D6 [Manufacturing] = Yes → D82 [Sources for manufacturing] IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] OTHERWISE → D90 [Any other sources]																																								

D81	Other cooking source																														
ASK	IF Some other energy source IN D80 [Sources for cooking]																														
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D82	Sources for manufacturing	<i>see below</i>																																							
ASK	IF D6 [Manufacturing] = Yes On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, ELMANU is set to missing if electricity is not used, but is set to No if electricity is used but not used for manufacturing.																																								
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 D10 [Fuel oil, diesel, or kerosene] {Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																																								
<p>Which energy sources were used for manufacturing? [{ManuSourcesList}]</p> <ul style="list-style-type: none"> ◆ Only sources already selected are shown here ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; vertical-align: top;">11</td> <td style="width: 70%; vertical-align: top;">{Electricity}</td> <td style="width: 20%; vertical-align: top;">ELMANU</td> </tr> <tr> <td style="vertical-align: top;">12</td> <td style="vertical-align: top;">{Natural gas}</td> <td style="vertical-align: top;">NGMANU</td> </tr> <tr> <td style="vertical-align: top;">13</td> <td style="vertical-align: top;">{FuelOilType}</td> <td style="vertical-align: top;">FKMANU</td> </tr> <tr> <td style="vertical-align: top;">14</td> <td style="vertical-align: top;">{Bottled gas}</td> <td style="vertical-align: top;">PRMANU</td> </tr> <tr> <td style="vertical-align: top;">15</td> <td style="vertical-align: top;">{District steam}</td> <td style="vertical-align: top;">STMANU</td> </tr> <tr> <td style="vertical-align: top;">16</td> <td style="vertical-align: top;">{District hot water}</td> <td style="vertical-align: top;">HWMANU</td> </tr> <tr> <td style="vertical-align: top;">18</td> <td style="vertical-align: top;">{Wood}</td> <td style="vertical-align: top;">WOMANU</td> </tr> <tr> <td style="vertical-align: top;">19</td> <td style="vertical-align: top;">{Coal}</td> <td style="vertical-align: top;">COMANU</td> </tr> <tr> <td style="vertical-align: top;">20</td> <td style="vertical-align: top;">{Solar}</td> <td style="vertical-align: top;">SOMANU</td> </tr> <tr> <td style="vertical-align: top;">21</td> <td style="vertical-align: top;">{Other1}</td> <td style="vertical-align: top;">OTMANU</td> </tr> <tr> <td style="vertical-align: top;">22</td> <td style="vertical-align: top;">{Other2}</td> <td style="vertical-align: top;">OTMANU</td> </tr> <tr> <td style="vertical-align: top;">23</td> <td style="vertical-align: top;">{Other3}</td> <td style="vertical-align: top;">OTMANU</td> </tr> <tr> <td style="vertical-align: top;">24</td> <td style="vertical-align: top;">Some other energy source</td> <td></td> </tr> </table>			11	{Electricity}	ELMANU	12	{Natural gas}	NGMANU	13	{FuelOilType}	FKMANU	14	{Bottled gas}	PRMANU	15	{District steam}	STMANU	16	{District hot water}	HWMANU	18	{Wood}	WOMANU	19	{Coal}	COMANU	20	{Solar}	SOMANU	21	{Other1}	OTMANU	22	{Other2}	OTMANU	23	{Other3}	OTMANU	24	Some other energy source	
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NEXT	IF Some other energy source selected → D83 [Other manufacturing source] OTHERWISE: IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] IF D8 [Electricity generation capability] ≠ Yes → D90 [Any other sources]																																								

D83	Other manufacturing source	<i>see below</i>																														
ASK	IF Some other energy source IN D82 [Sources for manufacturing]																															
<p>What was the other energy source used for manufacturing?</p> <table> <tr> <td>11</td> <td>Electricity</td> <td><i>ELMANU</i></td> </tr> <tr> <td>12</td> <td>Natural gas</td> <td><i>NGMANU</i></td> </tr> <tr> <td>13</td> <td>Fuel oil/Diesel/Kerosene</td> <td><i>FKMANU</i></td> </tr> <tr> <td>14</td> <td>Bottled gas</td> <td><i>PRMANU</i></td> </tr> <tr> <td>15</td> <td>District steam</td> <td><i>STMANU</i></td> </tr> <tr> <td>16</td> <td>District hot water</td> <td><i>HWMANU</i></td> </tr> <tr> <td>18</td> <td>Wood</td> <td><i>WOMANU</i></td> </tr> <tr> <td>19</td> <td>Coal</td> <td><i>COMANU</i></td> </tr> <tr> <td>20</td> <td>Solar</td> <td><i>SOMANU</i></td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td><i>OTMANU</i></td> </tr> </table>			11	Electricity	<i>ELMANU</i>	12	Natural gas	<i>NGMANU</i>	13	Fuel oil/Diesel/Kerosene	<i>FKMANU</i>	14	Bottled gas	<i>PRMANU</i>	15	District steam	<i>STMANU</i>	16	District hot water	<i>HWMANU</i>	18	Wood	<i>WOMANU</i>	19	Coal	<i>COMANU</i>	20	Solar	<i>SOMANU</i>	24	Some other energy source	<i>OTMANU</i>
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NEXT	IF D8 [Electricity generation capability] = Yes → D84 [Energy for generation] IF D8 [Electricity generation capability] ≠ Yes → D90 [Any other sources]																															

D84	Energy for generation	GENR				
ASK	IF D8 [Electricity generation capability] = Yes On public use files: this variable has been coded No for buildings that do not have electricity generation capability, so all buildings have a value for this variable.					
<p>Was any energy actually <u>used</u> for generating electricity in this building during 2012, even if just a small amount was used for emergency backup or for testing generators?</p> <table> <tr> <td>1</td> <td>Yes</td> </tr> <tr> <td>2</td> <td>No</td> </tr> </table>			1	Yes	2	No
1	Yes					
2	No					
NEXT	IF Yes → D85 [Sources for electricity generation] IF No OR DK/RF → D90 [Any other sources]					

D85	Sources for electricity generation	<i>see below</i>																														
ASK	IF D84 [Energy for generation] = Yes On public use file: these variables are set to missing (i.e., inapplicable) when the energy source is not used at all. For example, FKGENR is set to missing if fuel oil is not used, but is set to No if fule oil is used but not used for electricity generation.																															
FILL	{Other1} – {Other3} = Sources specified in D12 [Other energy source 1] – D14 [Other energy source 3]																															
 SHOW CARD D16 Looking at Show Card D16, please tell me which energy sources were used for electricity generation. <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">12</td> <td style="width: 70%;">Natural gas</td> <td style="width: 15%; text-align: right;">NGGENR</td> </tr> <tr> <td>13</td> <td>Fuel oil/Diesel/Kerosene</td> <td style="text-align: right;">FKGENR</td> </tr> <tr> <td>14</td> <td>Bottled gas/LPG/Propane</td> <td style="text-align: right;">PRGENR</td> </tr> <tr> <td>18</td> <td>Wood</td> <td style="text-align: right;">WOGENR</td> </tr> <tr> <td>19</td> <td>Coal</td> <td style="text-align: right;">COGENR</td> </tr> <tr> <td>20</td> <td>Solar</td> <td style="text-align: right;">SOGENR</td> </tr> <tr> <td>21</td> <td>{Other1}</td> <td style="text-align: right;">OTGENR</td> </tr> <tr> <td>22</td> <td>{Other2}</td> <td style="text-align: right;">OTGENR</td> </tr> <tr> <td>23</td> <td>{Other3}</td> <td style="text-align: right;">OTGENR</td> </tr> <tr> <td>24</td> <td>Some other energy source</td> <td style="text-align: right;">OTGENR</td> </tr> </table>			12	Natural gas	NGGENR	13	Fuel oil/Diesel/Kerosene	FKGENR	14	Bottled gas/LPG/Propane	PRGENR	18	Wood	WOGENR	19	Coal	COGENR	20	Solar	SOGENR	21	{Other1}	OTGENR	22	{Other2}	OTGENR	23	{Other3}	OTGENR	24	Some other energy source	OTGENR
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24	Some other energy source	OTGENR																														
NEXT	➔ D86 [Generation technologies]																															

D86	Generation technologies	<i>see below</i>																					
ASK	IF D84 [Energy for generation] = Yes																						
 SHOW CARD D17 Looking at Show Card D17, were any of the technologies on the list used on-site for generating electricity? <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">1</td> <td style="width: 70%;">Photovoltaic cells</td> <td style="width: 15%; text-align: right;">PVC</td> </tr> <tr> <td>2</td> <td>Fuel cells</td> <td style="text-align: right;">FUELCL</td> </tr> <tr> <td>5</td> <td>Large turbines</td> <td style="text-align: right;">LRGTRB</td> </tr> <tr> <td>3</td> <td>Microturbines</td> <td style="text-align: right;">MCROTB</td> </tr> <tr> <td>4</td> <td>Wind turbines</td> <td style="text-align: right;">WINDTRB</td> </tr> <tr> <td>6</td> <td>Reciprocating engines</td> <td style="text-align: right;">ENGINE</td> </tr> <tr> <td>7</td> <td>IF VOLUNTEERED: None of these</td> <td></td> </tr> </table>			1	Photovoltaic cells	PVC	2	Fuel cells	FUELCL	5	Large turbines	LRGTRB	3	Microturbines	MCROTB	4	Wind turbines	WINDTRB	6	Reciprocating engines	ENGINE	7	IF VOLUNTEERED: None of these	
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4	Wind turbines	WINDTRB																					
6	Reciprocating engines	ENGINE																					
7	IF VOLUNTEERED: None of these																						
NEXT	➔ D87 [Use of generated electricity]																						

D87	Use of generated electricity	GENUSE
ASK	IF D84 [Energy for generation] = Yes	
	[F1]-HELP	
	<p>During 2012, was the electricity generated in this building used: primarily for emergency back-up or testing, during periods of high electricity demand, or whenever electricity was used?</p> <ol style="list-style-type: none"> 1 Primarily for emergency back-up or testing 2 During periods of high electricity demand 3 Whenever electricity was used 	
NEXT	IF Primarily for emergency back-up and testing OR DK/RF → D90 [Any other sources] IF During periods of high electricity demand OR Whenever electricity was used → D88 [Cogeneration system]	

D88	Cogeneration system	COGEN
ASK	IF D87 [Use of generated electricity] = During periods of high electricity demand OR Whenever electricity was used	
	[F1]-HELP	
	<p>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 <u>is used</u> in this or another building for space heating, water heating, or industrial processes?</p> <ol style="list-style-type: none"> 1 Yes 2 No 	
NEXT	→ D89 [Deliver electricity to grid]	

D89	Deliver electricity to grid	TOGRID
ASK	IF D87 [Use of generated electricity] = During periods of high electricity demand OR Whenever electricity was used	
	<p>Is the generation system interconnected with an electric utility so that it is able to deliver or sell electricity <u>to the grid</u>?</p> <ol style="list-style-type: none"> 1 Yes 2 No 	
NEXT	→ D90 [Any other sources]	

D90	Any other sources
ASK	IF D9 [Energy sources used] was answered
FILL	{SourcesList} = List of all energy sources used
<p>As a final check, were there any energy sources used in this building other than {Sources List} ?</p> <p>1 Yes 2 No</p>	
NEXT	<p>IF Yes → D91 [Other sources] IF No OR DK/RF: Check that every energy source given in D9 [Energy sources used] (other than electricity or district chilled water) was assigned an end use. THEN: IF Yes: IF Electricity used → D94 [How purchase electricity] IF Natural gas used → D96 [How purchase natural gas] IF Bottled gas used → D97 [Bottled gas amount] IF Wood used → D99 [Amount wood burned] IF No → D93 [Missed {energy source} use]</p>

D91	Other sources	<i>see below</i>																																	
ASK	IF D90 [Any other sources] =Yes																																		
FILL	{Electricity} – {Solar} = If a source has NOT been mentioned, it appears in this list; if it has, the line is blank																																		
<p>What other sources were used?</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">11</td> <td style="width: 70%;">{Electricity}</td> <td style="width: 20%; text-align: right;"><i>ELUSED</i></td> </tr> <tr> <td>12</td> <td>{Natural gas}</td> <td style="text-align: right;"><i>NGUSED</i></td> </tr> <tr> <td>13</td> <td>{Fuel/Diesel/Kerosene}</td> <td style="text-align: right;"><i>FKUSED</i></td> </tr> <tr> <td>14</td> <td>{Bottled gas}</td> <td style="text-align: right;"><i>PRUSED</i></td> </tr> <tr> <td>15</td> <td>{District steam}</td> <td style="text-align: right;"><i>STUSED</i></td> </tr> <tr> <td>16</td> <td>{District hot water}</td> <td style="text-align: right;"><i>HWUSED</i></td> </tr> <tr> <td>17</td> <td>{District chilled water}</td> <td style="text-align: right;"><i>CWUSED</i></td> </tr> <tr> <td>18</td> <td>{Wood}</td> <td style="text-align: right;"><i>WOUSED</i></td> </tr> <tr> <td>19</td> <td>{Coal}</td> <td style="text-align: right;"><i>COUSED</i></td> </tr> <tr> <td>20</td> <td>{Solar}</td> <td style="text-align: right;"><i>SOUSED</i></td> </tr> <tr> <td>24</td> <td>Other</td> <td style="text-align: right;"><i>OTUSED</i></td> </tr> </table>			11	{Electricity}	<i>ELUSED</i>	12	{Natural gas}	<i>NGUSED</i>	13	{Fuel/Diesel/Kerosene}	<i>FKUSED</i>	14	{Bottled gas}	<i>PRUSED</i>	15	{District steam}	<i>STUSED</i>	16	{District hot water}	<i>HWUSED</i>	17	{District chilled water}	<i>CWUSED</i>	18	{Wood}	<i>WOUSED</i>	19	{Coal}	<i>COUSED</i>	20	{Solar}	<i>SOUSED</i>	24	Other	<i>OTUSED</i>
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24	Other	<i>OTUSED</i>																																	
NEXT	→ D92 [{Energy source} use]																																		

D92	{Energy source} use <i>see below where {XX} is the energy source abbreviation</i>																
ASK	For each source selected in D91 [Other sources]																
FILL	<p>{EnergySource} IF Electricity IN D91 [Other sources] = "electricity" IF Natural gas IN D91 [Other sources] = "natural gas" IF Fuel oil/Diesel/Kerosene IN D91 [Other sources] = "fuel oil/diesel/kerosene" IF Bottled gas IN D91 [Other sources] = "bottled gas" IF District steam IN D91 [Other sources] = "district steam" IF District hot water IN D91 [Other sources] = "district hot water" IF Wood IN D91 [Other sources] = "wood" IF Coal IN D91 [Other sources] = "coal" IF Solar IN D91 [Other sources] = "solar energy" IF Other IN D91 [Other sources] = "other fuel"</p> <p>{Cooling} Does not appear as a choice for Wood use, Coal use, OR Solar use</p> <p>{Electricity generation} Does not appear as a choice for Electricity use, District steam use, OR District hot water use</p>																
<p>What was the {EnergySource} used for?</p> <table> <tr> <td>1 Heating</td> <td>{XX}HT1/HT2</td> </tr> <tr> <td>2 {Cooling}</td> <td>{XX}COOL</td> </tr> <tr> <td>3 Water heating</td> <td>{XX}WATR</td> </tr> <tr> <td>4 Cooking</td> <td>{XX}COOK</td> </tr> <tr> <td>5 Manufacturing</td> <td>{XX}MANU</td> </tr> <tr> <td>6 {Electricity generation}</td> <td>{XX}GENR</td> </tr> <tr> <td>7 Some other use</td> <td>{XX}OTH</td> </tr> <tr> <td>8 Incorrectly recorded--source not used</td> <td></td> </tr> </table>		1 Heating	{XX}HT1/HT2	2 {Cooling}	{XX}COOL	3 Water heating	{XX}WATR	4 Cooking	{XX}COOK	5 Manufacturing	{XX}MANU	6 {Electricity generation}	{XX}GENR	7 Some other use	{XX}OTH	8 Incorrectly recorded--source not used	
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NEXT	<p>Check that every energy source given in D9 [Energy sources used] (other than electricity or district chilled water) was assigned an end use: IF Yes: IF Electricity used → D94 [How purchase electricity] IF Natural gas used → D96 [How purchase natural gas] IF Bottled gas used → D97 [Bottled gas amount] IF Wood used → D99 [Amount wood burned] IF No → D93 [Missed {energy source} use]</p>																

D93	Missed {energy source} use <i>see below where {XX} is the energy source abbreviation</i>																
ASK	For every energy source given in D9 [Energy sources used] that was not assigned an end use (other than electricity)																
FILL	<p>{EnergySource} IF No end use for Natural gas = "natural gas" IF No end use for Fuel oil = Type or types specified in D10 [Fuel oil, diesel, or kerosene] IF No end use for Bottled gas = "bottled gas" IF No end use for District steam = "district steam" IF No end use for District hot water = "district hot water" IF No end use for District chilled water = "district chilled water" IF No end use for Wood = "wood" IF No end use for Coal = "coal" IF No end use for Solar = "solar energy" IF No end use for Other = "another energy source" (second fill = "other energy source")</p> <p>{Heating}, {Water heating}, {Cooking}, {Manufacturing} Do not appear as a choice for District chilled water use</p> <p>{Cooling} Does not appear as a choice for Wood use, Coal use, OR Solar use</p> <p>{Electricity generation} Does not appear as a choice for District chilled water use, District steam use OR District hot water use</p>																
<p>I have recorded that {EnergySource} was used in this building but not how it was used. What was the {EnergySource} used for?</p> <table> <tr> <td>1 {Heating}</td> <td>{XX}HT1/HT2</td> </tr> <tr> <td>2 {Cooling}</td> <td>{XX}COOL</td> </tr> <tr> <td>3 {Water heating}</td> <td>{XX}WATR</td> </tr> <tr> <td>4 {Cooking}</td> <td>{XX}COOK</td> </tr> <tr> <td>5 {Manufacturing}</td> <td>{XX}MANU</td> </tr> <tr> <td>6 {Electricity generation}</td> <td>{XX}GENR</td> </tr> <tr> <td>7 Some other use</td> <td>{XX}OTH</td> </tr> <tr> <td>8 Incorrectly recorded--source not used</td> <td></td> </tr> </table>		1 {Heating}	{XX}HT1/HT2	2 {Cooling}	{XX}COOL	3 {Water heating}	{XX}WATR	4 {Cooking}	{XX}COOK	5 {Manufacturing}	{XX}MANU	6 {Electricity generation}	{XX}GENR	7 Some other use	{XX}OTH	8 Incorrectly recorded--source not used	
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NEXT	IF Electricity used → D94 [How purchase electricity] IF Natural gas used → D96 [How purchase natural gas] IF Bottled gas used → D97 [Bottled gas amount] IF Wood used → D99 [Amount wood burned]																

NOTE ON USES OF ENERGY:

In addition to the end uses given in D1 [Heating], D2 [Cooling], D3 [Water heating], D4 [Cooking], and D6 [Manufacturing], it is now possible that an end use was added in D92 [{Energy source} use] OR D93 [Missed {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 D92 [{Energy source} use] OR in D93 [Missed {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 D6 [Manufacturing] = Yes OR D7 [Any energy used] = Yes, some energy was used OR DK/RF

D94	How purchase electricity	<i>see below</i>
ASK	IF Electricity used On public use files: this variable does not apply to strip shopping centers.	
		[F1]-HELP
	 SHOW CARD D18 In some areas of the country, consumers may purchase their electricity from more than one supplier. Looking at Show Card D18, please tell me all the ways that electricity is purchased for this building.	
	<ul style="list-style-type: none"> ◆ 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	ELLOCUT ELNONLU ELOTSRC ELCPLT
NEXT	IF more than one selected, including Bought from the local utility → D95 [Percent from local utility] OTHERWISE: IF Natural gas used → D96 [How purchase natural gas] IF Bottled gas used → D97 [Bottled gas amount] IF Wood used → D99 [Amount wood burned] OTHERWISE → D103 [AMI smart metering]	

D95	Percent from local utility	ELLUPCT
ASK	IF More than one response selected in D94 [How purchase electricity], including Bought from the local utility	
	About what percent of the electricity would you estimate was obtained from the local utility?	
RANGE	1 to 100	
NEXT	IF Natural gas used → D96 [How purchase natural gas] IF Bottled gas used → D97 [Bottled gas amount] IF Wood used → D99 [Amount wood burned] OTHERWISE → D103 [AMI smart metering]	

D96	How purchase natural gas	NGSRC
ASK	IF Natural gas used On public use files: this variable does not apply to strip shopping centers.	
FILL	{Introduction} 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."	
		[F1]-HELP
	{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 → D97 [Bottled gas amount] IF Wood used → D99 [Amount wood burned] IF Electricity used → D103 [AMI smart metering] OTHERWISE: IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D97	Bottled gas amount	PRAMTC
ASK	IF Bottled gas used	
	 SHOW CARD D19 You mentioned that bottled gas is used in this building. Looking at Show Card D19, which range best describes the amount of bottled gas used in 2012? 1 Less than 100 2 100 to 499 3 500 to 999 4 1,000 or more	
NEXT	IF Amount given → D98 [Bottled gas units] IF DK/RF: IF Wood used → D99 [Amount wood burned] IF Electricity used → D103 [AMI smart metering] OTHERWISE: IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D98	Bottled gas units	PRUNIT
ASK	IF D97 [Bottled gas amount] was answered	
	<p>◆ VERIFY if volunteered in previous question</p> <p>Is that in gallons or pounds?</p> <ol style="list-style-type: none"> 1 Gallons 2 Pounds 	
NEXT	IF Wood used → D99 [Amount wood burned] IF Electricity used → D103 [AMI smart metering] OTHERWISE: IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D99	Amount wood burned	WOAMT
ASK	IF Wood used	
	 SHOW CARD D20 Looking at Show Card D20, which range best describes how much wood was burned in this building in 2012? <ol style="list-style-type: none"> 1 Less than 1 cord 2 1 to 9 cords 3 10 to 20 cords 4 More than 20 cords 	
NEXT	→ D100 [How obtain wood]	

D100	How obtain wood	WOSRC
ASK	IF Wood used	
	Did you purchase all the wood, obtain it all free of charge, or was some purchased and some free? <ol style="list-style-type: none"> 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 → D101 [Expenditures for wood] IF Electricity used → D103 [AMI smart metering] OTHERWISE: IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D101	Expenditures for wood	WOEXP
ASK	IF D100 [How obtain wood] = Purchase all the wood OR Some purchased and some free	
<p>Please give me an estimate of the total amount spent for the wood used in 2012.</p> <ul style="list-style-type: none"> ◆ Do not enter cents ◆ VERIFY number digit by digit 		
RANGE	1 to 99,999	
NEXT	IF DK/RF → D102 [Wood expenditures category] IF Electricity used → D103 [AMI smart metering] OTHERWISE: IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D102	Wood expenditures category	WOEXPC
ASK	IF D101 [Expenditures for wood] = DK/RF On public use file: for all buildings that purchase all or some wood, wood expenditures has been coded into the corresponding category.	
 SHOW CARD D21 Looking at Show Card D21, which range best describes the total amount spent for the wood used in 2012? 1 \$1 to \$100 2 \$101 to \$500 3 \$501 to \$1,000 4 \$1,001 to \$2,000 5 Over \$2,000		
NEXT	IF Electricity used → D103 [AMI smart metering] OTHERWISE: IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D103	AMI smart metering	AMIMETER
ASK	IF Electricity used	
<p>Does this building have advanced metering infrastructure, sometimes referred to as AMI or "smart metering"?</p> <p>◆ DEF: [An AMI or "smart meter" is a meter that records electricity consumption in intervals of one hour or less. Daily data are available to both the energy company and the consumer through a web portal, display device, or other form of communication.]</p> <p>1 Yes 2 No</p>		
NEXT	IF Heating OR Cooling → D104 [Energy management plan] OTHERWISE → E1 [Section E Routing]	

D104	Energy management plan	ENRGYPLN
ASK	IF Heating OR Cooling	
<p>Does this building have a formal energy management plan in which energy targets are set and consistently monitored?</p> <p>1 Yes 2 No</p>		
NEXT	→ E1 [Section E Routing]	

SECTION E. MISCELLANEOUS EQUIPMENT

E1	Section E Routing
NEXT	<p>IF Cooking & CBECS Activity ≠ Food service → E2 [Type of food area] IF Water heating → E9 [Large amounts of hot water] IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [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 → E16 [Medical equipment] IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment] IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment] IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]</p>

E2	Type of food area		
ASK	IF Cooking & CBECS Activity ≠ Food service		
<p> SHOW CARD E1</p> <p>Now I have some questions about uses of space and equipment in this building.</p> <p>Please look at Show Card E1 and tell me which of these types of food preparation or serving areas are found in this building.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 70%; vertical-align: top;"> <ol style="list-style-type: none"> 1 Snack bar or concession stand 2 Fast food or small restaurant 3 Cafeteria or large restaurant 4 Large kitchen, commercial kitchen, or other large food preparation area 5 Small kitchen area 6 Employee lounge, breakroom, or pantry 7 Other type of food preparation or serving area 8 IF VOLUNTEERED: None of these food preparation areas </td> <td style="width: 30%; vertical-align: top; text-align: center;"> <p>SNACK</p> <p>FASTFD</p> <p>CAF</p> <p>FDPREP</p> <p>KITCHN</p> <p>BREAKRM</p> <p>OTFDRM</p> </td> </tr> </table>		<ol style="list-style-type: none"> 1 Snack bar or concession stand 2 Fast food or small restaurant 3 Cafeteria or large restaurant 4 Large kitchen, commercial kitchen, or other large food preparation area 5 Small kitchen area 6 Employee lounge, breakroom, or pantry 7 Other type of food preparation or serving area 8 IF VOLUNTEERED: None of these food preparation areas 	<p>SNACK</p> <p>FASTFD</p> <p>CAF</p> <p>FDPREP</p> <p>KITCHN</p> <p>BREAKRM</p> <p>OTFDRM</p>
<ol style="list-style-type: none"> 1 Snack bar or concession stand 2 Fast food or small restaurant 3 Cafeteria or large restaurant 4 Large kitchen, commercial kitchen, or other large food preparation area 5 Small kitchen area 6 Employee lounge, breakroom, or pantry 7 Other type of food preparation or serving area 8 IF VOLUNTEERED: None of these food preparation areas 	<p>SNACK</p> <p>FASTFD</p> <p>CAF</p> <p>FDPREP</p> <p>KITCHN</p> <p>BREAKRM</p> <p>OTFDRM</p>		
NEXT	<p>IF ONLY Employee lounge/breakroom/pantry selected → E3 [Cooking in break room]</p> <p>IF Some other type → E4 [Other food area]</p> <p>IF Snack bar or concession stand → E5 [Snack bar square footage]</p> <p>IF Fast food or small restaurant → E6 [Fast food square footage]</p> <p>IF Cafeteria or large restaurant → E7 [Cafeteria square footage]</p> <p>IF Large kitchen, commercial kitchen, or other large food preparation area → E8 [Commercial kitchen square footage]</p> <p>OTHERWISE:</p> <p>IF Water heating → E9 [Large amounts of hot water]</p> <p>IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [Laundry onsite]</p> <p>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 → E16 [Medical equipment]</p> <p>IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment]</p> <p>IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment]</p> <p>IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink]</p> <p>OTHERWISE:</p> <p>IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity]</p> <p>OTHERWISE → E31 [Refrigeration]</p>		

E3	Cooking in break room	<i>COOKBRK</i>
ASK	IF ONLY Employee lounge/breakroom/pantry selected IN E2 [Type of food area]	
<p>Does this employee lounge or break room contain a full-size oven or stove for cooking?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Water heating → E9 [Large amounts of hot water] IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [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 → E16 [Medical equipment] IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment] IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment] IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]</p>	

E4	Other food area	
ASK	IF Some other type IN E2 [Type of food area]	
<p>Please describe this other type of food preparation or serving area.</p> <p>◆ RECORD in open box</p>		
NEXT	<p>IF Snack bar or concession stand IN E2 [Type of food area] → E5 [Snack bar square footage] IF Fast food or small restaurant IN E2 [Type of food area] → E6 [Fast food square footage] IF Cafeteria or large restaurant IN E2 [Type of food area] → E7 [Cafeteria square footage] IF Large kitchen, commercial kitchen, or other large food preparation area IN E2 [Type of food area] → E8 [Commercial kitchen square footage] OTHERWISE: IF Water heating → E9 [Large amounts of hot water] IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [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 → E16 [Medical equipment] IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment] IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment] IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]</p>	

E5	Snack bar square footage	<i>SNACKSF</i>
ASK	IF Snack bar or concession stand IN E2 [Type of food area]	
<p>What is the total square footage of all the snack bar or concession stand areas in this building?</p> <ul style="list-style-type: none"> ◆ EXP: [Include seating area, if any.] ◆ EXP: PROBE for estimate if DK 		
RANGE	10 to 999,999,999	
NEXT	<p>IF Fast food or small restaurant IN E2 [Type of food area] → E6 [Fast food square footage] IF Cafeteria or large restaurant IN E2 [Type of food area] → E7 [Cafeteria square footage] IF Large kitchen, commercial kitchen, or other large food preparation area IN E2 [Type of food area] → E8 [Commercial kitchen square footage] OTHERWISE: IF Water heating → E9 [Large amounts of hot water] IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [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 → E16 [Medical equipment] IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment] IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment] IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]</p>	

E6	Fast food square footage	<i>FASTFDSF</i>
ASK	IF Fast food or small restaurant IN E2 [Type of food area]	
<p>What is the total square footage of all the fast food or small restaurant areas in this building?</p> <ul style="list-style-type: none"> ◆ EXP: [Include seating area, if any.] ◆ EXP: PROBE for estimate if DK 		
RANGE	10 to 999,999,999	
NEXT	<p>IF Cafeteria or large restaurant IN E2 [Type of food area] → E7 [Cafeteria square footage] IF Large kitchen, commercial kitchen, or other large food preparation area IN E2 [Type of food area] → E8 [Commercial kitchen square footage] OTHERWISE: IF Water heating → E9 [Large amounts of hot water] IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [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 → E16 [Medical equipment] IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment] IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment] IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]</p>	

E7	Cafeteria square footage	<i>CAFSSF</i>
ASK	IF Cafeteria or large restaurant IN E2 [Type of food area]	
<p>What is the total square footage of all the cafeteria or large restaurant areas in this building?</p> <p>◆ EXP: [Include seating area, if any.]</p> <p>◆ EXP: PROBE for estimate if DK</p>		
RANGE	10 to 999,999,999	
NEXT	<p>IF Large kitchen, commercial kitchen, or other large food preparation area IN E2 [Type of food area] → E8 [Commercial kitchen square footage]</p> <p>OTHERWISE:</p> <p>IF Water heating → E9 [Large amounts of hot water]</p> <p>IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [Laundry onsite]</p> <p>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 → E16 [Medical equipment]</p> <p>IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment]</p> <p>IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment]</p> <p>IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink]</p> <p>OTHERWISE:</p> <p>IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity]</p> <p>OTHERWISE → E31 [Refrigeration]</p>	

E8	Commercial kitchen square footage	<i>FDPREPSF</i>
ASK	IF Cafeteria or large restaurant IN E2 [Type of food area]	
<p>What is the total square footage of all the commercial kitchen or food preparation areas in this building?</p> <p>◆ EXP: PROBE for estimate if DK</p>		
RANGE	10 to 999,999,999	
NEXT	<p>IF Water heating → E9 [Large amounts of hot water]</p> <p>IF CBECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [Laundry onsite]</p> <p>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 → E16 [Medical equipment]</p> <p>IF CBECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment]</p> <p>IF CBECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment]</p> <p>IF CBECS Activity = Enclosed mall → E28 [Indoor ice rink]</p> <p>OTHERWISE:</p> <p>IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity]</p> <p>OTHERWISE → E31 [Refrigeration]</p>	

E9	Large amounts of hot water	HWTRM
ASK	IF Water heating	
FILL	{Introduction} IF E2 [Type of food area] was NOT asked = "Now I have some questions about energy-related space uses and equipment that may be used in this building." OTHERWISE = BLANK	
[F1]-HELP		
{Introduction} 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 CBCECS Activity = Lodging; Inpatient health care; OR Nursing → E10 [Laundry onsite] IF B19 [Public order type] = Fire station → E11 [Non-fire station space] 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 → E16 [Medical equipment] IF CBCECS Activity = Education; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service → E23 [Laboratory equipment] IF CBCECS Activity = Nonrefrigerated OR Refrigerated warehouse → E24 [Machine equipment] IF CBCECS Activity = Enclosed mall → E28 [Indoor ice rink] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]	

E10	Laundry onsite	LAUNDR
ASK	IF Any energy used & CBCECS 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 → E16 [Medical equipment] IF CBCECS Activity = Inpatient health care → E23 [Laboratory equipment] IF CBCECS Activity = Lodging & ((B18 [Lodging type] = Hotel OR Motel or inn) OR (B20 [Residential type] = Hotel OR Motel or inn) → E14 [Conference or event space] IF CBCECS Activity = Lodging & B18 [Lodging type] ≠ Motel or inn OR Hotel → E25 [Indoor pool] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]	

E11	Non-fire station space	<i>FSSPACE</i>
ASK	IF B19 [Public order type] = Fire station	
<p>Is any space in this building used for hall rental, police station, government offices, or other activities not related to the fire station?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → E12 [Percent non-fire station activities] IF No OR DK/RF → E13 [Fire station living quarters]	

E12	Percent non-fire station space	<i>FSSPACEP</i>
ASK	IF E11 [Non-fire station space] = Yes	
<p>About what percent of the total floorspace in the building is used for these activities?</p>		
RANGE	1 to 100	
NEXT	→ E13 [Fire station living quarters]	

E13	Fire station living quarters	<i>FSLIVEQ</i>
ASK	IF B19 [Public order type] = Fire station OR Combination police and fire station	
<p>Are there living quarters in this fire station?</p> <p>1 Yes 2 No</p>		
NEXT	IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]	

E14	Conference or event space	CONFSP
ASK	IF CBECS Activity = Lodging & ((B18 [Lodging type] = Hotel OR Motel or inn) OR (B20 [Residential type] = Hotel OR Motel or inn)	
<p>Is there any space in this building used for conferences or social events?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → E15 [Percent conference or event space] IF No OR DK/RF → E25 [Indoor pool]	

E15	Percent conference or event space	CONFSP
ASK	IF E14 [Conference or event space] = Yes	
About what percent of the total floorspace in the building is used for these events?		
RANGE	1 to 100	
NEXT	➔ E25 [Indoor pool]	

E16	Medical equipment	MEDEQP
ASK	IF Any energy used & B5 [Office type] = Doctor's or dentist's office OR Mixed-use 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	
[F1]-HELP		
Does this building have any equipment for medical diagnosis or treatment, such as X-ray, CT scan, MRI, linear accelerator, dialysis, or ultrasound machines?		
1 Yes 2 No		
NEXT	IF CBECS Activity = Inpatient health care OR E16 [Medical equipment] = Yes ➔ E17 [Number of X-ray machines] IF CBECS Activity = Outpatient health care ➔ E22 [Outpatient surgery] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes ➔ E30 [Verify no electricity] OTHERWISE ➔ E31 [Refrigeration]	
NOTE	IF the building is a Doctor's or dentist's office (from either B5 [Office type] OR B14 [Health care type]): IF E16 [Medical equipment] = Yes ➔ CHANGE the CBECS Activity = Outpatient health care IF E16 [Medical equipment] = No ➔ KEEP the CBECS Activity = Office	

E17	Number of X-ray machines	XRAYN
ASK	IF CBECS Activity = Inpatient health care OR E16 [Medical equipment] = Yes	
How many X-ray machines are used in this building?		
RANGE	0 to 999 On public use file: 995 = More than 20	
NEXT	➔ E18 [Number of CT scan machines]	

E18	Number of CT scan machines	<i>CTSCANN</i>
ASK	IF CBECS Activity = Inpatient health care OR E16 [Medical equipment] = Yes	
How many CT scan machines are used in this building?		
RANGE	0 to 999	
NEXT	→ E19 [Number of MRI machines]	

	CT scan machines	CTSCAN
This variable was created for the public use file. If the number of CT scan machines=0, then this variable is set to No; if the number of CT scan machines is >0 then it is set to Yes.		
CT scan machines are used in this building...		
1 Yes 2 No		

E19	Number of MRI machines	<i>MRIN</i>
ASK	IF CBECS Activity = Inpatient health care OR E16 [Medical equipment] = Yes	
How many MRI machines are used in this building?		
RANGE	0 to 999	
NEXT	→ E20 [Number of linear accelerators]	

	MRI machines	MRI
This variable was created for the public use file. If the number of MRI machines=0, then this variable is set to No; if the number of MRI machines is >0 then it is set to Yes.		
MRI machines are used in this building...		
1 Yes 2 No		

E20	Number of linear accelerators	<i>LINACCN</i>
ASK	IF CBECS Activity = Inpatient health care OR E16 [Medical equipment] = Yes	
<p>How many linear accelerators are used in this building?</p> <p>◆ DEF: [A linear accelerator is used for external beam adiation treatments for patients with cancer.]</p>		
RANGE	0 to 999	
NEXT	IF CBECS Activity = Inpatient health care → E21 [Percent outpatient space] IF CBECS Activity = Outpatient health care → E22 [Outpatient surgery] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]	

	Linear accelerators	LINACCN
<p>This variable was created for the public use file. If the number of linear accelerators=0, then this variable is set to No; if the number of linear accelerators is >0 then it is set to Yes.</p>		
<p>Linear accelerators are used in this building...</p> <p>1 Yes 2 No</p>		

E21	Percent outpatient spae	<i>OUTHOSPP</i>
ASK	IF CBECS Activity = Inpatient health care	
FILL	{SqFt} IF A6 [Square footage] known = "A6 [Square footage] square feet" IF A6 [Square footage] = DK/RF = "square footage"	
<p>What percent of the {SqFt} in this building is used for outpatient care?</p> <p>◆ DEF: [Outpatient care is medical care or treatment that does not require an overnight stay.]</p>		
RANGE	0 to 100	
NEXT	→ E23 [Laboratory equipment]	

E22	Outpatient surgery	OUTSURG
ASK	IF CBECS Activity = Outpatient health care	
<p>Are there any operating rooms used for outpatient surgery in this building?</p> <p>1 Yes 2 No</p>		
NEXT	➔ E23 [Laboratory equipment]	

E23	Laboratory equipment	LABEQP
ASK	IF Any energy used & CBECS Activity = Education; Inpatient health care; Laboratory; Office; Outpatient health care; Public assembly; Retail; OR Service On public use file: in addition to the above activities, this variable also applies to strip shopping centers.	
<p>Does this building have any specialized laboratory equipment that requires extra energy consumption?</p> <p>◆ EXP: [Some examples are fume hoods, gas chromatographs, centrifuges, spectrometers, and analysis equipment.]</p> <p>1 Yes 2 No</p>		
NEXT	IF CBECS Activity = Education; Laboratory; Retail; OR Service ➔ E24 [Machine equipment] IF CBECS Activity = Public Assembly OR B15 [Health care type] = Outpatient rehabilitation center OR Inpatient rehabilitation center ➔ E25 [Indoor pool] IF CBECS Activity = Outpatient health care OR Inpatient health care ➔ E29 [Sterilizers or autoclaves] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes ➔ E30 [Verify no electricity] OTHERWISE ➔ E31 [Refrigeration]	

E24	Machine equipment	MCHEQP
ASK	IF Any energy used & CBECS Activity = Education; Laboratory; Nonrefrigerated warehouse; Refrigerated warehouse; Retail OR Service On public use file: in addition to the above activities, this variable also applies to strip shopping centers.	
<p>Does this building have any machine or shop equipment such as woodworking tools, metalworking tools, arc welders, or any other types of power tools?</p> <p>1 Yes 2 No</p>		
NEXT	IF CBECS Activity = Education ➔ E25 [Indoor pool] OTHERWISE: IF Electricity NOT used & D84 [Energy for generation] ≠ Yes ➔ E30 [Verify no electricity] OTHERWISE ➔ E31 [Refrigeration]	

E25	Indoor pool	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?		
<ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → E26 [Heated pool] IF No OR DK/RF: IF CBECS Activity = Education; Lodging; OR Public assembly → E28 [Indoor ice rink] IF B15 [Health care type] = Outpatient rehabilitation center OR Inpatient rehabilitation center → E29 [Sterilizers or autoclaves]	

E26	Heated pool	HTPOOL
ASK	IF E25 [Indoor pool] =Yes	
Is it a heated pool?		
<ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → E27 [Pool energy source] IF No OR DK/RF: IF CBECS Activity = Education; Lodging; OR Public assembly → E28 [Indoor ice rink] IF B15 [Health care type] = Outpatient rehabilitation center OR Inpatient rehabilitation center → E29 [Sterilizers or autoclaves]	

E27	Pool energy source	POOLSRC
ASK	IF E26 [Heated pool] =Yes	
What energy source is used to heat the pool?		
◆ Read choices if necessary		
<ul style="list-style-type: none"> 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 → E28 [Indoor ice rink] OTHERWISE → E29 [Sterilizers or autoclaves]	

E28	Indoor ice rink	<i>RINK</i>
ASK	IF Any energy used & CBECS Activity = Education; Lodging; Enclosed mall OR Public assembly	
<p>Does this building contain an indoor ice skating rink?</p> <p>1 Yes 2 No</p>		
NEXT	IF CBECS Activity = Enclosed mall & Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] IF CBECS Activity = Enclosed mall & Electricity used → E31 [Refrigeration] OTHERWISE → E29 [Sterilizers or autoclaves]	

E29	Sterilizers or autoclaves	STRLZR
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	
<p>Does this building use any sterilizers or autoclaves?</p> <ul style="list-style-type: none"> ◆ 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.] <p>1 Yes 2 No</p>		
NEXT	IF Electricity NOT used & D84 [Energy for generation] ≠ Yes → E30 [Verify no electricity] OTHERWISE → E31 [Refrigeration]	

E30	Verify no electricity	<i>NOELEC</i>
ASK	IF Any energy used & Electricity NOT used & D84 [Energy for generation] ≠ Yes	
<p>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?</p> <p>1 True, electricity is <u>not</u> used 2 False, electricity is used</p>		
NEXT	IF True, electricity is not used OR DK/RF → E83 [Window glass type] IF False, electricity is used → E31 [Refrigeration]	

E31	Refrigeration	RFGEQP
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [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 → E32 [Refrigeration types] IF No OR DK/RF & NOT(B24 [Completely vacant] = Yes & C18 [Months in use] = Zero OR DK/RF) → E44 [Computers used] OTHERWISE: IF C29 [No operating hours] ≠ True, no operating hours & C30 [Total hours open per week] > Zero → E70 [Percent lit when open] OTHERWISE → E73 [Percent lit off hours]	

E32	Refrigeration types	<i>see below</i>
ASK	IF E31 [Refrigeration] = Yes	
		[F1]-HELP
 SHOW CARD E2		
Looking at Show Card E2, please tell me which types of refrigeration or freezer equipment are found in this building.		
◆ PROBE for any others ◆ ENTER all that apply		
1 Full-size residential-type refrigerators/freezers 2 Half-size or compact refrigerators 3 Walk-in refrigeration/freezer units 4 Open refrigerated/freezer cases or cabinets 5 Closed refrigerated/freezer cases or cabinets 6 Refrigerated vending machines 7 Commercial ice makers 8 Large cold storage areas		RFGRES RFGCOMP RFGWI RFGOP RFGCL RFGVEN RFGICE RFGSTO
NEXT	IF Residential-type selected → E33 [Number residential refrigerators] IF Compact size selected → E34 [Number compact size refrigerators] IF Walk-in units selected → E35 [Number walk-in units] IF Open cases or cabinets selected → E36 [Number open cases] IF Closed cases or cabinets selected → E37 [Number closed cases] IF Refrigerated vending machines selected → E38 [Number vending] IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E33	Number residential refrigerators	RFGRSN
ASK	IF Residential-type IN E32 [Refrigeration types]	
<p>How many residential-type refrigerators or freezers are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 9,999	
NEXT	IF Compact size selected → E34 [Number compact size refrigerators] IF Walk-in units selected → E35 [Number walk-in units] IF Open cases or cabinets selected → E36 [Number open cases] IF Closed cases or cabinets selected → E37 [Number closed cases] IF Refrigerated vending machines selected → E38 [Number vending] IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E34	Number compact size refrigerators	RFGCOMPN
ASK	IF Compact size IN E32 [Refrigeration types]	
<p>How many half-size or compact refrigerators are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 9,999 On public use file: 99995 = More than 1000	
NEXT	IF Walk-in units selected → E35 [Number walk-in units] IF Open cases or cabinets selected → E36 [Number open cases] IF Closed cases or cabinets selected → E37 [Number closed cases] IF Refrigerated vending machines selected → E38 [Number vending] IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E35	Number walk-in units	RFWIN
ASK	IF Walk-in units IN E32 [Refrigeration types]	
<p>How many walk-in refrigeration or freezer units are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999	
NEXT	IF Open cases or cabinets selected → E36 [Number open cases] IF Closed cases or cabinets selected → E37 [Number closed cases] IF Refrigerated vending machines selected → E38 [Number vending] IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E36	Number open cases	RFGOPN
ASK	IF Open cases or cabinets IN E32 [Refrigeration types]	
<p>How many open refrigerated or freezer cases or cabinets are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999	
NEXT	IF Closed cases or cabinets selected → E37 [Number closed cases] IF Refrigerated vending machines selected → E38 [Number vending] IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E37	Number closed cases	RFGLN
ASK	IF Closed cases or cabinets IN E32 [Refrigeration types]	
<p>How many closed refrigerated or freezer cases or cabinets are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999	
NEXT	IF Refrigerated vending machines selected → E38 [Number vending] IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E38	Number vending	RFVNN
ASK	IF Refrigerated vending machines IN E32 [Refrigeration types]	
<p>How many refrigerated vending machines are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999	
NEXT	IF Commercial ice makers selected → E39 [Number ice makers] IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E39	Number ice makers	RFGIN
ASK	IF Commercial ice makers IN E32 [Refrigeration types]	
<p>How many commercial ice makers are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999	
NEXT	IF Large cold storage areas selected → E40 [Percent cold storage] IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] IF DK/RF → E44 [Computers used]	

E40	Percent cold storage	RFGSTP
ASK	IF Large cold storage areas IN E32 [Refrigeration types]	
<p>About what percent of the total floorspace in the building is used for cold storage?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 100	
NEXT	IF CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel → E41 [Waste heat recovery] OTHERWISE → E44 [Computers used]	

E41	Waste heat recovery	WHRECOV
ASK	IF E31 [Refrigeration] = Yes & CBECS Activity = Food sales OR B18 [Lodging type] = Motel or inn OR Hotel OR B20 [Residential type] = Motel or inn OR Hotel	
<p>Refrigeration equipment gives off excess heat that can be used to supplement other equipment in the building. Is there such a waste heat recovery system associated with the refrigeration equipment?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → E42 [Waste heat use] IF No OR DK/RF → E44 [Computers used]	

E42	Waste heat use	
ASK	IF E41 [Waste heat recovery] = Yes	
<p>What is the waste heat used for - space heating, water heating, or some other use?</p> <p>◆ ENTER all that apply</p> <p>1 Space heating 2 Water heating 3 Some other use</p>		
NEXT	IF Some other use → E43 [Other waste heat use] OTHERWISE → E44 [Computers used]	

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WHOT

E43	Other waste heat use	
ASK	IF E43 [Waste heat use] = Some other use	
<p>What is the other use for the waste heat?</p> <p>◆ RECORD in open box</p>		
NEXT	→ E44 [Computers used]	

E44	Computers used	PCTERM
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used & NOT(B24 [Completely vacant] = Yes & C18 [Months in use] = Zero OR DK/RF)	
<p>Are there any computers used in this building?</p> <ul style="list-style-type: none"> ◆ EXP: [Even if only laptops are used, answer Yes.] ◆ EXP: [Do not include tablet computers or inventory, such as in retail stores.] <p>1 Yes 2 No</p>		
NEXT	IF Yes → E45 [Number of computers] IF No OR DK/RF → E55 [Dedicated servers]	

E45	Number of computers	PCTERMN
ASK	IF E44 [Computers used] = Yes On public use file: for buildings where Computers used was No, this variable has been coded as zero.	
<p>Not counting any dedicated servers or laptop computers, about how many computers are used in this building?</p> <ul style="list-style-type: none"> ◆ EXP: [Do not include tablet computers or 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 → E46 [Computers category] IF > Zero → E47 [Multiple monitors] IF Zero → E51 [Number of laptops]	

E46	Computers category	PCTRMC
ASK	IF E45 [Number of computers] = DK/RF On public use file: for all buildings that were asked Computers used, the number of computers has been coded into the corresponding category.	
 SHOW CARD E3 Looking at Show Card E3, which category best describes the number of computers used in this building? [Note: The Zero category did not appear for this question during the interview, but was added to the variable on the public use file. Also, for the interview, the upper categories were split into "2,500 to 4,999" and "5,000 or more," but these were combined for the public use file.]		
00 Zero 01 1 to 4 02 5 to 9 03 10 to 19 04 20 to 49 05 50 to 99 06 100 to 249 07 250 to 499 08 500 to 999 09 1,000 to 2,499 10 2,500 or more		
NEXT	→ E47 [Multiple monitors]	

E47	Multiple monitors	MLTMON
ASK	IF E45 [Number of computers] > Zero OR E46 [Computers category] = Any category OR DK/RF	
FILL	{Computers} IF E45 [Number of computers] = One = Does the computer OTHERWISE = Do any of the computers	
{Computers} use more than one monitor? 1 Yes 2 No		
NEXT	IF Yes & E45 [Number of computers] > One → E48 [Multiple monitor category] IF E45 [Number of computers] = One → E49 [Flat screen] IF No OR DK/RF & E45 [Number of computers] > One → E50 [Flat screen category]	

E48	Multiple monitor category	MLTMNC
ASK	IF E47 [Multiple monitors] = Yes & E45 [Number of computers] > One On public use file: for buildings with just one computer who answered Yes to the previous question, this variable has been coded as All.	
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	→ E50 [Flat screen category]	

E49	Flat screen	FLAT1PC
ASK	IF E45 [Number of computers] = One	
FILL	{FlatQuestion} IF E47 [Multiple monitors] = Yes = Are any of the monitors of this type? IF E47 [Multiple monitors] ≠ Yes = Does the computer have this type of monitor?	
 SHOW CARD E4		
Please look at Show Card E4 which shows a picture of a flat screen monitor. {FlatQuestion}		
◆ DEF: [A flat screen monitor, also known as a liquid crystal display or 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	→ E51 [Number of laptops]	

E50	Flat screen category	<i>FLATG1PC</i>
ASK	IF E45 [Number of computers] > One OR E46 [Computers category] = Any category OR DK/RF	
 SHOW CARD E4 Please look at Show Card E4 which shows a picture of a flat screen monitor. Would you say that all of the monitors are flat screen, most of them, some of them, just a few, or none? ◆ DEF: [A flat screen monitor, also known as a liquid crystal display or 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 All 2 Most 3 Some 4 A few 5 None		
NEXT	→ E51 [Number of laptops]	

	Flat screen category	FLATC
The previous two questions, Flat screen and Flat screen category have been combined into this one variable for the public use file. For buildings with one computer, when Flat screen=Yes, this new variable=All; when Flat screen=No, this new variable=None.		
1 All 2 Most 3 Some 4 A few 5 None		

E51	Number of laptops	LAPTPN
ASK	IF E44 [Computers used] = Yes On public use file: for buildings where Computers used was No, this variable has been coded as zero.	
About how many laptop computers are used in this building? ◆ EXP: [Do not include tablet computers or inventory, such as in retail stores.]		
RANGE	0 to 9,999,999	
NEXT	IF DK/RF → E52 [Laptops category] IF Number given → E53 [Number of printers]	

E52	Laptops category	LAPTPC
ASK	IF E51 [Number of laptops] = DK/RF On public use file: for all buildings that were asked Computers used, the number of laptops has been coded into the corresponding category.	
 SHOW CARD E3 Looking at Show Card E3, which category best describes the number of laptop computers used in this building? [Note: The Zero category did not appear for this question during the interview, but was added to the variable on the public use file. For the interview, the upper categories were split into "1,000 to 2,499," "2,500 to 4,999," and "5,000 or more," but these were combined for the public use file.]		
00 Zero 01 1 to 4 02 5 to 9 03 10 to 19 04 20 to 49 05 50 to 99 06 100 to 249 07 250 to 499 08 500 to 999 09 1,000 or more		
NEXT	→ E53 [Number of printers]	

E53	Number of printers	PRNTRN
ASK	IF E44 [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 → E54 [Type of printers] IF Zero OR DK/RF → E55 [Dedicated servers]	

E54	Type of printers	PRNTYP
ASK	IF E53 [Number of printers] ≥ 1	
FILL	{IsAre} IF E53 [Number of printers] = 1 = Is this an IF E53 [Number of printers] > 1 = Are these mainly {Printers} IF E53 [Number of printers] = 1 = printer IF E53 [Number of printers] > 1 = printers	
		[F1]-HELP
	{IsAre} inkjet or laser {Printers}? 1 Inkjet 2 Laser 3 IF VOLUNTEERED: Some other type 4 IF VOLUNTEERED: Half inkjet, half laser	
NEXT	→ E55 [Dedicated servers]	

E55	Dedicated servers	SERVER
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used & NOT(B24 [Completely vacant] = Yes & C18 [Months in use] = Zero OR DK/RF)	
	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 → E56 [Number of servers] IF No OR DK/RF: IF E44 [Computers used] = Yes: IF E45 [Number of computers] = DK/RF OR E51 [Number of laptops] = DK/RF OR BOTH KNOWN & E45 [Number of computers] + E51 [Number of laptops] > 4 → E58 [Separate computer areas] IF CBECS Activity = Education → E61 [Interactive whiteboards] OTHERWISE → E64 [TV or video displays] IF E44 [Computers used] ≠ Yes → E64 [TV or video displays]	

E56	Number of servers	SERVERN
ASK	IF E55 [Dedicated servers] = Yes On public use file: for buildings where Dedicated servers was No, this variable has been coded as zero.	
About how many dedicated servers are used in this building?		
RANGE	1 to 9,999,999	
NEXT	IF DK/RF → E57 [Servers category] IF Number given → E58 [Separate computer areas]	

E57	Servers category	SERVERC
ASK	IF E56 [Number of servers] = DK/RF On public use file: for all buildings that were asked the Dedicated servers question, number of servers has been coded into the corresponding category.	
 SHOW CARD E3 Looking at Show Card E3, which category best describes the number of servers used in this building? [Note: The Zero category did not appear for this question during the interview, but was added to the variable on the public use file. For the interview, the upper categories were split into "500 to 999," "1,000 to 2,499," "2,500 to 4,999," and "5,000 or more," but these were combined for the public use file.]		
00 Zero 01 1 to 4 02 5 to 9 03 10 to 19 04 20 to 49 05 50 to 99 06 100 to 249 07 250 to 499 08 500 or more		
NEXT	→ E58 [Separate computer areas]	

E58	Separate computer areas	<i>see below</i>
ASK	IF (E44 [Computers used] = Yes & (E45 [Number of computers] = DK/RF OR E51 [Number of laptops] = DK/RF) OR BOTH KNOWN & E45 [Number of computers] + E51 [Number of laptops] > 4) OR E55 [Dedicated servers] = Yes	
 SHOW CARD E5 Please look at Show Card E5 and tell me if any of these types of separate computer areas are found in this building.		
<ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <ol style="list-style-type: none"> 1 Data center or server farm 2 Computer-based training room 3 Student or public computer center 4 Trading floor 5 None of these types of areas 		
NEXT	IF Data center/server farm selected → E59 [Data center square footage] IF Trading floor selected → E60 [Trading floor square footage] IF B30 [CBECS Activity] = Education OR Office → E61 [Interactive whiteboards] OTHERWISE → E63 [TV or video displays]	

DATACTR
TRNGRM
STDNRM
TRDFLR

E59	Data center square footage	<i>DCNTRSF</i>
ASK	IF Data center or server farm IN E58 [Separate computer areas]	
What is the square footage of the data center or server farm you just mentioned?		
RANGE	10 to 999,999,999	
NEXT	IF Trading floor IN E58 [Separate computer areas] → E60 [Trading floor square footage] OTHERWISE: IF E44 [Computers used] = Yes & B30 [CBECS Activity] = Education → E61 [Interactive whiteboards] OTHERWISE → E63 [TV or video displays]	

Data center or server farm sqft category		DCNTRSF
See previous question. For the public use file, data center square footage was coded into the following categories.		
<ol style="list-style-type: none"> 1 500 square feet or less 2 501 to 1,500 square feet 3 1,501 to 3,000 square feet 4 3,001 to 10,000 square feet 5 Over 10,000 square feet 		

E60	Trading floor square footage	<i>TRDFLRSF</i>
ASK	IF Trading floor IN E58 [Separate computer areas]	
What is the square footage of the trading floor you just mentioned?		
RANGE	10 to 999,999,999	
NEXT	IF E44 [Computers used] = Yes & B30 [CBECS Activity] = Education OR Office → E61 [Interactive whiteboards] OTHERWISE → E63 [TV or video displays]	

E61	Interactive whiteboards	WBOARDS
ASK	IF E44 [Computers used] = Yes & B30 [CBECS Activity] = Education OR Office On public use file: in addition to the above activities, this variable also applies to strip shopping centers.	
Are there any interactive whiteboards that connect to a computer and projector?		
<ul style="list-style-type: none"> ◆ DEF: [An interactive whiteboard is a large interactive display that connects to a computer and a projector. The computer's desktop is projected onto the board's surface where users control the computer using a pen, finger, or other device.] 		
1 Yes 2 No		
NEXT	IF Yes → E62 [Number of interactive whiteboards] IF No OR DK/RF → E63 [TV or video displays]	

E62	Number of interactive whiteboards	<i>WBOARDSN</i>
ASK	IF E61 [Interactive whiteboards] = Yes	
How many interactive whiteboards are used in this building?		
<ul style="list-style-type: none"> ◆ PROBE for estimate if DK 		
RANGE	1 to 999	
NEXT	→ E63 [TV or video displays]	

E63	TV or video displays	TVVIDEO
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used & NOT(B24 [Completely vacant] = Yes & C18 [Months in use] = Zero)	
Are there any televisions or video displays, other than computer monitors? 1 Yes 2 No		
NEXT	IF Yes → E64 [Number of TV or video displays] IF No OR DK/RF → E65 [Cash registers]	

E64	Number of TV or video displays	TVVIDEO
ASK	IF E63 [TV or video displays] = Yes	
How many televisions or video displays are used in this building? ◆ PROBE for estimate if DK		
RANGE	1 to 9,999 On public use file: 995 = More than 200	
NEXT	→ E65 [Cash registers]	

E65	Cash registers	RGSTR
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used & NOT(B24 [Completely vacant] = Yes & C18 [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 → E66 [Number of cash registers] IF No OR DK/RF → E67 [Photocopiers]	

E66	Number of cash registers	RGSTRN
ASK	IF E65 [Cash registers] = Yes	
<p>About how many cash registers or "point-of-sales" terminals are used in this building?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 9,999	
NEXT	→ E67 [Photocopiers]	

E67	Photocopiers	COPIER
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used & NOT(B24 [Completely vacant] = Yes & C18 [Months in use] = Zero)	
<p>Are there any photocopiers, other than small desktop copiers, used in this building?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → E68 [Number of photocopiers] IF No OR DK/RF → E69 [FAX machines]	

E68	Number of photocopiers	COPIERN
ASK	IF E67 [Photocopiers] = Yes	
<p>About how many photocopiers are there?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 9,999	
NEXT	→ E69 [FAX machines]	

E69	FAX machines	FAX
ASK	IF Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used & NOT(B24 [Completely vacant] = Yes & C18 [Months in use] = Zero)	
<p>Are there any FAX machines used in this building?</p> <p>1 Yes 2 No</p>		
NEXT	IF C29 [No operating hours] ≠ True, no operating hours & C30 [Total hours open per week] > Zero → E70 [Percent lit when open] OTHERWISE → E73 [Percent lit off hours]	

E70	Percent lit when open	LTOHRP
ASK	IF C29 [No operating hours] ≠ True, no operating hours & C30 [Total hours open per week] > Zero & (Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used)	
FILL	{SqFt} IF A6 [Square footage] known = "A6 [Square footage] square feet" IF A6 [Square footage] = DK/RF = "square footage"	
		[F1]-HELP
<p>The next questions are about the lighting inside the building.</p> <p>What percent of the {SqFt} in this building is lit when the building is normally open?</p> <ul style="list-style-type: none"> ◆ 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 → E71 [Lit when open category] IF Percent given: IF C26 [Open 24 hours a day] = Yes OR C30 [Total hours open per week] = 168 OR C31 [Weekly hours category] = 168 → E72 [Lights off during 24 hours] OTHERWISE → E73 [Percent lit off hours]	

E71	Lit when open category	LOHRPC
ASK	IF E70 [Percent lit when open] = DK/RF On public use file: all buildings that were asked Percent lit when open have been coded into the corresponding category.	
		[F1]-HELP
 SHOW CARD E6		
<p>Looking at Show Card E6, what is your best estimate of the percent of the square feet in this building that is lit when the building is normally open?</p> <ol style="list-style-type: none"> 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 when it is normally open 		
NEXT	IF C26 [Open 24 hours a day] = Yes OR C30 [Total hours open per week] = 168 OR C31 [Weekly hours category] = 168 → E72 [Lights off during 24 hours] OTHERWISE → E73 [Percent lit off hours]	

E72	Lights off during 24 hours	LTNR24
ASK	<p>IF C26 [Open 24 hours a day] = Yes OR C30 [Total hours open per week] = 168 OR C31 [Weekly hours category] = 168 & (Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used)</p>	
<p>Are there any periods during a normal 24-hour day when some of the lights are turned off?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Yes → E73 [Percent lit off hours] IF No OR DK/RF: IF E70 [Percent lit when open] > 0 OR E71 [Lit when open category] ≠ Not lit → E75 [Lighting types] OTHERWISE → E80 [Percent of exterior lighted]</p>	

E73	Percent lit off hours	LTNHRP
ASK	<p>IF (C26 [Open 24 hours a day] ≠ Yes & C30 [Total hours open per week] ≠ 168 & C31 [Weekly hours category] ≠ 168) OR E72 [Lights off during 24 hours] = Yes & (Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used)</p>	
FILL	<p>{SqFt} IF A6 [Square footage] known = "A6 [Square footage] square feet" IF A6 [Square footage] = DK/RF = "square footage" {OffHours} IF C26 [Open 24 hours a day] = Yes OR C30 [Total hours open per week] = 168 OR C31 [Weekly hours category] = "the time during a 24-hour period when some lights are turned off" OTHERWISE = "the hours when the building is not normally open"</p>	
[F1]-HELP		
<p>What percent of the {SqFt} is lit during off hours, that is {OffHours},? Exclude the space lit by emergency lighting.</p> <p>◆ If lit square footage is known but not the percent, RECORD square footage in comments, then code DK</p>		
RANGE	0 to 100	
NEXT	<p>IF DK/RF → E74 [Lit off hours category] IF 1-100 → E75 [Lighting types] IF Zero: IF E70 [Percent lit when open] > 0 OR E71 [Lit when open category] ≠ Not lit → E75 [Lighting types] OTHERWISE → E80 [Percent of exterior lighted]</p>	

E74	Lit off hours category	LNHRPC
ASK	IF E73 [Percent lit off hours] = DK/RF On public use file: all buildings that were asked Percent lit off hours have been coded into the corresponding category.	
<div style="text-align: right;">[F1]-HELP</div> <p> SHOW CARD E6</p> <p>Looking at Show Card E6, what is your best estimate of the percent lit during off hours?</p> <ol style="list-style-type: none"> 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 → E75 [Lighting types] IF Not lit at all: IF E70 [Percent lit when open] > 0 OR E71 [Lit when open category] ≠ Not lit → E75 [Lighting types] OTHERWISE → E80 [Percent of exterior lighted]	

E75	Lighting types	<i>see below</i>														
ASK	IF E70 [Percent lit when open] > 0 OR E71 [Lit when open category] = 1 to 100 OR DK/RF OR E73 [Percent lit off hours] > 0 OR E74 [Lit off hours category] = 1 to 100 OR DK/RF															
 SHOW CARD E7		[F1]-HELP														
<p>Looking at Show Card E7, what types of lighting were used to light any of the space in this building?</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">1 Fluorescent lighting other than compact fluorescent bulbs</td> <td style="width: 30%; text-align: center;">FLUOR</td> </tr> <tr> <td>2 Compact fluorescent bulbs</td> <td style="text-align: center;">CFLR</td> </tr> <tr> <td>3 Incandescent light bulbs, other than halogen bulbs</td> <td style="text-align: center;">BULB</td> </tr> <tr> <td>4 Halogen bulbs</td> <td style="text-align: center;">HALO</td> </tr> <tr> <td>5 High intensity discharge (HID) lights such as high pressure sodium, metal halide or mercury vapor</td> <td style="text-align: center;">HID</td> </tr> <tr> <td>6 Light-emitting diode (LED) lights</td> <td style="text-align: center;">LED</td> </tr> <tr> <td>7 Other type of lighting</td> <td style="text-align: center;">OTLT</td> </tr> </table>			1 Fluorescent lighting other than compact fluorescent bulbs	FLUOR	2 Compact fluorescent bulbs	CFLR	3 Incandescent light bulbs, other than halogen bulbs	BULB	4 Halogen bulbs	HALO	5 High intensity discharge (HID) lights such as high pressure sodium, metal halide or mercury vapor	HID	6 Light-emitting diode (LED) lights	LED	7 Other type of lighting	OTLT
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6 Light-emitting diode (LED) lights	LED															
7 Other type of lighting	OTLT															
NEXT	IF Other type of lighting selected → E76 [Other bulb type] OTHERWISE: IF More than one type selected → E77 [Percent lit by bulb type] IF Only one type selected: IF D66 [Building automation system] = Yes → E78 [BAS controls lighting] OTHERWISE → E79 [Lighting controls]															

E76	Other bulb type	<i>OTLTX</i>
ASK	IF Other type of lighting IN E75 [Lighting types]	
<p>What type of bulb is the other type of lighting?</p> <ul style="list-style-type: none"> ◆ RECORD in space below 		
NEXT	IF More than one type selected → E77 [Percent lit by bulb type] IF Only one type selected: IF D66 [Building automation system] = Yes → E78 [BAS controls lighting] OTHERWISE → E79 [Lighting controls]	

E77	Percent lit by bulb type FLUORP, CFLRP, BULBP, HALOP, HIDP, LEDP, OTLTP
ASK	For each lighting type given in E75 [Lighting types]
FILL	<p>{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</p> <p>{Explanation} IF First lighting type and E70 [Percent lit when open] \neq 100 = “We are talking only about the <u>lighted portion</u> 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 <u>more</u> than 100.” IF First lighting type and E70 [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 <u>more</u> than 100.” OTHERWISE = BLANK</p> <p>{BulbType} IF Fluorescent IN E75 [Lighting types] = “fluorescent lighting” IF Compact fluorescent bulbs IN E75 [Lighting types] = “compact fluorescent bulbs” IF Incandescent light bulbs IN E75 [Lighting types] = “incandescent bulbs” IF Halogen bulbs IN E75 [Lighting types] = “halogen lighting” IF High intensity discharge (HID) lights IN E75 [Lighting types] = “high intensity discharge lights” IF Light-emitting diode (LED) lights IN E75 [Lighting types] = “LED lights” IF Other type of lighting IN E75 [Lighting types] = “other lighting type”</p>
 SHOW CARD E8 {Introduction} {Explanation} Please look at Show Card E8. 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 D66 [Building automation system] = Yes → E78 [BAS controls lighting] OTHERWISE → E79 [Lighting controls]

E78	BAS controls lighting	EMCSLT
ASK	IF (E70 [Percent lit when open] > 0 OR E71 [Lit when open category] ≠ Not lit OR E73 [Percent lit off hours] > 0 OR E74 [Lit off hours category] ≠ Not lit) & D66 [Building automation system] = Yes	
<p>Does the Building Automation System, or BAS, that you mentioned earlier also control the interior lighting system?</p> <p>◆ DEF: [Building Automation Systems are most often used to control the mechanical, electrical, and plumbing systems in buildings, but they can also be used to provide lighting control based on an occupancy schedule.]</p> <p>1 Yes 2 No</p>		
NEXT	→ E79 [Lighting controls]	

E79	Lighting controls	<i>see below</i>									
ASK	IF (E70 [Percent lit when open] > 0 OR E71 [Lit when open category] ≠ Not lit OR E73 [Percent lit off hours] > 0 OR E74 [Lit off hours category] ≠ Not lit)										
<p> SHOW CARD E9</p> <p>Looking at Show Card E9, please tell me which of these lighting controls or lighting control strategies, if any, are used in this building.</p> <p>◆ PROBE for any others</p> <p>◆ ENTER all that apply</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">1 Scheduling</td> <td rowspan="8" style="vertical-align: middle; text-align: center;"> SCHED OCSN DIM DAYHARV TRIM PLGCTRL DRLGHT </td> </tr> <tr> <td>2 Occupancy sensors that reduce lighting when rooms are unoccupied</td> </tr> <tr> <td>3 Multi-level lighting or dimming</td> </tr> <tr> <td>4 Daylight harvesting</td> </tr> <tr> <td>5 High-end trimming or light-level tuning</td> </tr> <tr> <td>6 Plug-load control</td> </tr> <tr> <td>7 Demand responsive lighting</td> </tr> <tr> <td>8 None of these</td> </tr> </table>			1 Scheduling	SCHED OCSN DIM DAYHARV TRIM PLGCTRL DRLGHT	2 Occupancy sensors that reduce lighting when rooms are unoccupied	3 Multi-level lighting or dimming	4 Daylight harvesting	5 High-end trimming or light-level tuning	6 Plug-load control	7 Demand responsive lighting	8 None of these
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5 High-end trimming or light-level tuning											
6 Plug-load control											
7 Demand responsive lighting											
8 None of these											
NEXT	→ E80 [Percent of exterior lighted]										

E80	Percent of exterior lighted	LTEXPC
ASK	IF (Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used)	
<p>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?</p> <p>1 Less than 10 percent 2 10 to 25 percent 3 25 to 50 percent 4 More than 50 percent</p>		
NEXT	→ E81 [Lighted parking area]	

E81	Lighted parking area	PKLT
ASK	IF (Electricity used OR D84 [Energy for generation] = Yes OR E30 [Verify no electricity] = False, electricity is used)	
<p>Is there a parking area associated with the building that is lighted with fixtures powered through the building's electrical service?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → E82 [Vehicle parking capacity] IF No → E83 [Window glass type]	

E82	Vehicle parking capacity	PKLTN
ASK	IF E81 [Lighted parking area] = Yes	
<p>What is the vehicle capacity of the parking area, that is, the number of parking spaces?</p>		
RANGE	1 to 999,999	
NEXT	→ E83 [Window glass type]	

E83	Window glass type	WINTYP
ASK	All Buildings	
<p> SHOW CARD E10</p> <p>The picture on Show Card E10 shows a window with multi-layer glass. Do the exterior windows in this building contain single layer glass, multi-layer glass, or a combination of both of these types?</p> <ol style="list-style-type: none"> 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 → E84 [Daylighting features] IF No windows OR DK/RF → F1 [Section F Routing]	

E84	Daylighting features	<i>see below</i>
ASK	IF E83 [Window glass type] ≠ (No windows OR DK/RF)	
<p> SHOW CARD E10</p> <p>Looking at the list at the bottom of Show Card E10, please tell me which of these daylighting or conservation features are present in this building.</p> <ul style="list-style-type: none"> ◆ PROBE for any others ◆ ENTER all that apply <ol style="list-style-type: none"> 1 Tinted window glass 2 Reflective window glass 3 External overhangs or awnings 4 Skylights or atriums designed to provide light 5 IF VOLUNTEERED: None of these 		
NEXT	→ E85 [Percent daylight]	

TINT
REFL
AWN
SKYLT

E85	Percent daylight	DAYLTP
ASK	IF E83 [Window glass type] ≠ (No windows OR DK/RF)	
<p>What percent of the building receives enough outside light so that the interior lights do not need to be turned on?</p> <ul style="list-style-type: none"> ◆ If none, ENTER "0" ◆ PROBE for estimate if DK 		
RANGE	0 to 100	
NEXT	→ F1 [Section F Routing]	

SECTION F. ELECTRICITY

F1	Section F Routing
NEXT	IF Electricity used → F2 [WS2 electricity filled out] OTHERWISE → G1 [Section G Routing]

F2	WS2 electricity filled out	<i>WS2ELCE</i>
ASK	IF Electricity used	
<p>Do you have Worksheet 2 with you and filled out for electricity?</p> <p>1 Yes 2 No</p>		
NEXT	IF No OR DK/RF → F3 [Provide electricity figures] IF Yes → F4 [Electricity consumption]	

F3	Provide electricity figures	<i>ELFIGS</i>
ASK	IF F2 [WS2 electricity filled out] = No OR DK/RF	
<p>The next questions are about electricity usage in the building during calendar year 2012. Would you be able to give me an approximate figure of how much electricity was used or how much was spent on it?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → F4 [Electricity consumption] IF No OR DK/RF → F30 [Number electricity suppliers]	

F4	Electricity consumption	<i>ELCNS</i>
ASK	IF F2 [WS2 electricity filled out] = Yes OR F3 [Provide electricity figures] = Yes	
		[F1]-HELP
	Please give me the total number of kilowatthours of electricity used in calendar year 2012.	
	<ul style="list-style-type: none"> ◆ 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 <u>digit by digit</u> 	
RANGE	1 to 99,999,999,999	
NEXT	→ F5 [Electricity expenditures]	

F5	Electricity expenditures	<i>ELEXP</i>
ASK	IF F2 [WS2 electricity filled out] = Yes OR F3 [Provide electricity figures] = Yes	
		[F1]-HELP
	Please give me the total dollars spent on electricity in calendar year 2012. This should include state and local taxes and the following charges: fuel adjustment, system, distribution, and demand.	
	<ul style="list-style-type: none"> ◆ Do <u>not</u> enter cents ◆ VERIFY number <u>digit by digit</u> 	
RANGE	0 to 999,999,999	
NEXT	IF F4 [Electricity consumption] = DK/RF & F5 [Electricity expenditures] = DK/RF → F30 [Number electricity suppliers] OTHERWISE → F6 [Starting date for electricity figures]	

F6	Starting date for electricity figures	<i>ELSTDAT</i>
ASK	IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given	
		[F1]-HELP
	What is the starting date for these electricity usage figures?	
	<ul style="list-style-type: none"> ◆ 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	<i>ELENDAT</i>
ASK	IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given	
		[F1]-HELP
	<p>What is the ending date [for these electricity usage figures]?</p> <ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY <input type="checkbox"/> ◆ VERIFY that this is the <u>last</u> day of the last billing period ◆ If the day is not known, ENTER "15" for DD 	
NEXT	<p>IF CBECS Activity ≠ Enclosed mall & (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]</p> <p>IF CBECS Activity = Enclosed mall & (C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One) → F10 [Electricity covers whole mall]</p> <p>OTHERWISE → F14 [Other bldgs electricity included]</p>	

F8	All occupants electricity included	<i>ELALL</i>
ASK	IF CBECS Activity ≠ Enclosed mall & (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)	
	<p>Do these figures include the electricity for all of the businesses or organizations in this building?</p> <p>1 Yes 2 No</p>	
NEXT	IF No → F9 [Sq ft not included] OTHERWISE → F14 [Other bldgs electricity included]	

F9	Sq ft not included	<i>ELNISF</i>
ASK	IF F8 [All occupants electricity included] = No	
	<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <ul style="list-style-type: none"> ◆ PROBE for estimate if DK 	
RANGE	1 to 999,999,999	
NEXT	→ F14 [Other bldgs electricity included]	

F10	Electricity covers whole mall	<i>ELMALLINC</i>
ASK	IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given) & CBECS Activity = Enclosed mall & (C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One)	
FILL	{FoodCourt} IF B41 [Food court] = Yes = "food court," OTHERWISE = BLANK	
<p>Do these figures include the energy for the entire mall building, including the anchor stores, {FoodCourt} common areas, and individual stores?</p> <p>1 Yes 2 No</p>		
NEXT	IF No → F11 [Not included in mall electricity] OTHERWISE → F14 [Other bldgs electricity included]	

F11	Not included in mall electricity	<i>see below</i>										
ASK	IF F10 [Electricity covers whole mall] = No											
<p>Which of these is <u>not</u> included?</p> <p>◆ ENTER all that apply</p> <table style="width: 100%;"> <tr> <td style="width: 70%;">1 Anchor stores</td> <td style="width: 30%;"><i>ELMLLANC</i></td> </tr> <tr> <td>2 Food court</td> <td><i>ELMLLFC</i></td> </tr> <tr> <td>3 Common areas</td> <td><i>ELMLLCOM</i></td> </tr> <tr> <td>4 Individual stores</td> <td><i>ELMLLST</i></td> </tr> <tr> <td>5 Other</td> <td><i>ELMLOT</i></td> </tr> </table>			1 Anchor stores	<i>ELMLLANC</i>	2 Food court	<i>ELMLLFC</i>	3 Common areas	<i>ELMLLCOM</i>	4 Individual stores	<i>ELMLLST</i>	5 Other	<i>ELMLOT</i>
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4 Individual stores	<i>ELMLLST</i>											
5 Other	<i>ELMLOT</i>											
NEXT	IF Other selected → F12 [Other not included in mall electricity] OTHERWISE → F13 [Mall sq ft not included]											

F12	Other not included in mall electricity
ASK	IF Other IN F11 [Not included in mall electricity]
<p>Please describe the other type of area that is not included.</p> <p>◆ RECORD in space below</p>	
NEXT	→ F13 [Mall sq ft not included]

F13	Mall sq ft not included	<i>ELNMLLSF</i>
ASK	IF F10 [Electricity covers whole mall] = No	
<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ F14 [Other bldgs electricity included]	

F14	Other bldgs electricity included	<i>ELOTBD</i>
ASK	IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given	
<p>Is any consumption from other buildings included in these figures?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Yes → F15 [Sq ft of other included]</p> <p>IF No OR DK/RF: B48 [Central physical plant] = Yes & B51 [Plant produces chilled water] = Yes & B53 [Central plant in building] = No → F16 [Central plant electricity included] OTHERWISE → F17 [Include other major electricity]</p>	

F15	Sq ft of other included	<i>ELOTSF</i>
ASK	IF F14 [Other bldgs electricity included] = Yes	
<p>What is the approximate square footage of the <u>other</u> buildings that are included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	<p>IF B48 [Central physical plant] = Yes & B51 [Plant produces chilled water] = Yes & B53 [Central plant in building] = No → F16 [Central plant electricity included] OTHERWISE → F17 [Include other major electricity]</p>	

F16	Central plant electricity included	<i>PLTELINC</i>
ASK	IF B48 [Central physical plant] = Yes & B51 [Plant produces chilled water] = Yes & B53 [Central plant in building] = No	
<p>Earlier you mentioned that there is a central plant on this campus. Do these figures include any electricity that was used in the central plant?</p> <p>◆ EXP: [We do not want the energy used in the central plant. This question is for verification purposes.]</p> <p>1 Yes 2 No</p>		
NEXT	→ F17 [Include other major electricity]	

F17	Include other major electricity	<i>ELOTUS</i>
ASK	IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given	
<p>Do these figures include charges for any <u>other</u> major electricity usage outside the building, such as parking lot lights, exterior lights, signs or billboards, large pumps, or swimming pools?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Yes → F18 [Outside uses included in electricity]</p> <p>OTHERWISE:</p> <p>IF D87 [Use of generated electricity] = Whenever electricity was used → F20 [Generated electricity included]</p> <p>IF Independent power producer or non-local utility OR Bought from someone else</p> <p>IN D94 [How purchase electricity] → F21 [Include all non-local electricity]</p> <p>IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → F23 [Electricity regression check]</p> <p>OTHERWISE:</p> <p>IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included]</p> <p>IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]</p>	

F18	Outside uses included in electricity	<i>see below</i>																		
ASK	IF F17 [Include other major electricity] = Yes																			
<p>Which of these outside uses is included?</p> <p>◆ ENTER all that apply</p> <table> <tr> <td>1</td> <td>Parking lot lights</td> <td><i>ELOUTPRK</i></td> </tr> <tr> <td>2</td> <td>Exterior lights</td> <td><i>ELOUTLTS</i></td> </tr> <tr> <td>3</td> <td>Signs or billboards</td> <td><i>ELOUTSGN</i></td> </tr> <tr> <td>4</td> <td>Large pumps</td> <td><i>ELOUTPMP</i></td> </tr> <tr> <td>5</td> <td>Swimming pools</td> <td><i>ELOUTSWM</i></td> </tr> <tr> <td>6</td> <td>Other</td> <td><i>ELOUTOT</i></td> </tr> </table>			1	Parking lot lights	<i>ELOUTPRK</i>	2	Exterior lights	<i>ELOUTLTS</i>	3	Signs or billboards	<i>ELOUTSGN</i>	4	Large pumps	<i>ELOUTPMP</i>	5	Swimming pools	<i>ELOUTSWM</i>	6	Other	<i>ELOUTOT</i>
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NEXT	<p>IF Other selected → F19 [Other type of outside electricity use] OTHERWISE IF D87 [Use of generated electricity] = Whenever electricity was used → F20 [Generated electricity included] IF Independent power producer or non-local utility OR Bought from someone else IN D94 [How purchase electricity] → F21 [Include all non-local electricity] IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → F23 [Electricity regression check] OTHERWISE: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]</p>																			

F19	Other type of outside electricity use
ASK	IF Other IN F18 [Outside uses included in electricity]
<p>Please describe this other type of outside electricity use.</p> <p>◆ RECORD in space below</p>	
NEXT	<p>IF D87 [Use of generated electricity] = Whenever electricity was used → F20 [Generated electricity included] IF Independent power producer or non-local utility OR Bought from someone else IN D94 [How purchase electricity] → F21 [Include all non-local electricity] IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → F23 [Electricity regression check] OTHERWISE: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]</p>

F20	Generated electricity included	<i>ELGENINC</i>
ASK	IF F4 [Electricity consumption] given & D87 [Use of generated electricity] = Whenever electricity was used	
FILL	{EIcons} = F4 [Electricity consumption]	
<p>Earlier you mentioned that the building generates electricity whenever electricity is used. Does the {EIcons} kilowatthours include just the purchased electricity or does it also include the electricity that was generated on-site?</p> <ol style="list-style-type: none"> 1 Figures cover only purchased electricity 2 Figures include purchased and generated electricity 		
NEXT	IF Independent power producer or non-local utility OR Bought from someone else IN D94 [How purchase electricity] → F21 [Include all non-local electricity] IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → F23 [Electricity regression check] OTHERWISE: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]	

F21	Include all non-local electricity	<i>ELNONU</i>
ASK	IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given) & (Independent power producer or non-local utility OR Bought from someone else IN D94 [How purchase electricity])	
<p>Do these figures include all the electricity from the independent power producer, non-local utility, or broker?</p> <ol style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF No → F22 [What not included] IF Yes OR DK/RF: IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → F23 [Electricity regression check] OTHERWISE: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]	

F22	What not included	
ASK	IF F21 [Include all non-local electricity] = No	
<p>What was not included?</p> <p>◆ RECORD the additional charges in the open box</p>		
NEXT	IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → F23 [Electricity regression check] OTHERWISE: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]	

F23	Electricity regression check
ASK	IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given) & (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF
<p>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:</p> <p>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</p>	
NEXT	IF FAIL (HIGH) → F24 [Anything unusual high] IF FAIL (LOW) → F25 [Anything unusual low] IF PASS: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]

F24	Anything unusual high	<i>ELHIGH</i>
ASK	IF F23 [Electricity regression check] = FAIL (HIGH)	
<p>These usage figures seem high for what you have told me about this building. Is there anything unusual that might explain this high usage?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → F26 [What is unusual] IF No OR DK/RF: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]	

F25	Anything unusual low	<i>ELLOW</i>
ASK	IF F23 [Electricity regression check] = FAIL (LOW)	
<p>These usage figures seem low for what you have told me about this building. Is there anything unusual that might explain this low usage?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → F26 [What is unusual] IF No OR DK/RF: IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]	

F26	What is unusual
ASK	IF F24 [Anything unusual high] = Yes OR F25 [Anything unusual low] = Yes
<p>Please tell me [what is out of the ordinary about this building].</p> <p>◆ RECORD in open box</p>	
NEXT	IF F2 [WS2 electricity filled out] = Yes → F27 [Monthly electricity included] IF F2 [WS2 electricity filled out] = No OR DK/RF → F28 [Monthly electricity available]

F27	Monthly electricity included	<i>ELINC12</i>
ASK	IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given) & F2 [WS2 electricity filled out] = Yes	
<p>Did you include your monthly electricity usage on Worksheet 2?</p> <p>1 Yes 2 No</p>		
NEXT	IF No OR DK/RF → F28 [Monthly electricity available] IF Yes: IF F23 [Electricity regression check] = FAIL (HIGH) OR FAIL (LOW) OR F9 [Sq ft not included] / A6 [Square footage] > 0.25 → F30 [Number electricity suppliers] IF F23 [Electricity regression check] = PASS → F29 [Electricity bill available]	

F28	Monthly electricity available	<i>ELHAV12</i>
ASK	IF (F4 [Electricity consumption] given OR F5 [Electricity expenditures] given) & (F2 [WS2 electricity filled out] = No OR DK/RF OR F27 [Monthly electricity included] = No OR DK/RF)	
<p>Can you provide a record of the monthly electricity use to help us better understand the seasonal patterns of electricity use?</p> <p>◆ 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</p> <p>1 Yes, monthly electricity available 2 No, will not be able to provide monthly electricity</p>		
NEXT	IF ((A6 [Square footage] = DK/RF & A12 [Square footage category] = DK/RF) OR D1 [Heating] = DK/RF OR D2 [Cooling] = DK/RF OR D3 [Water heating] = DK/RF OR F23 [Electricity regression check] = FAIL (HIGH) OR FAIL (LOW) OR F9 [Sq ft not included] / A6 [Square footage] > 0.25 → F30 [Number electricity suppliers] OTHERWISE → F29 [Electricity bill available]	

F29	Electricity bill available	<i>ELBILL</i>
ASK	IF F4 [Electricity consumption] given OR F5 [Electricity expenditures] given & F23 [Electricity regression check] = PASS	
<p>Can you provide a copy of one electricity bill? There is information on some utility bills that may help energy researchers who use these data.</p> <ul style="list-style-type: none"> ◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	→ G1 [Section G Routing]	

F30	Number electricity suppliers	<i>ELNUMSP</i>
ASK	IF F3 [Provide electricity figures] = No OR DK/RF OR F4 [Electricity consumption] = DK/RF & F5 [Electricity expenditures] = DK/RF OR F23 [Electricity regression check] = FAIL (HIGH) OR FAIL (LOW) OR (A6 [Square footage] = DK/RF & A12 [Square footage category]) OR D1 [Heating] = DK/RF OR D2 [Cooling] = DK/RF OR D3 [Water heating] = DK/RF OR F9 [Sq ft not included] / A6 [Square footage] > 0.25	
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 2012?		
RANGE	1 to 4	
NEXT	Number given → F31 [Electricity suppliers] DK/RF → G1 [Section G Routing]	

F31	Electricity suppliers	<i>EL1LKP—EL4LKP</i>
ASK	IF F30 [Number electricity suppliers] given	
FILL	{FirstNext} IF Only one supplier = BLANK IF First supplier given = "first" OTHERWISE = "next"	
<p>What is the name of the {FirstNext} supplier that provided electricity in calendar year 2012?</p> <ul style="list-style-type: none"> ◆ 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 → F33 [Supplier name] IF Supplier found in look-up table → F32 [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 F31 [Electricity suppliers] again for next supplier	

F32	Verify electricity supplier	
ASK	IF Supplier found in F31 [Electricity suppliers] look-up table	
FILL	{Supplier} = Supplier name from F31 [Electricity suppliers] look-up table	
<p>Just to verify, I have selected that your electricity supplier is {Supplier}. Is that correct?</p> <ul style="list-style-type: none"> ◆ If No, you will be taken back to the previous screen to select again <p>1 Yes 2 No</p>		
NEXT	IF Yes → F39 [Number electricity accounts] IF No → F31 [Electricity suppliers]	

F33	Supplier name	<i>EL1NEW—EL4NEW</i>
ASK	IF NOT ON LIST selected in F31 [Electricity suppliers]	
<p>◆ ENTER the name of the supplier</p>		
NEXT	IF Name given → F34 [Street address] IF DK/RF: IF Only one supplier or last supplier → G1 [Section G Routing] IF More suppliers left to answer for → Back to F31 [Electricity suppliers] for next supplier	

F34	Street address	<i>EL1AD1—EL4AD1</i>
ASK	IF NOT ON LIST selected in F31 [Electricity suppliers]	
FILL	{Supplier} = "F33 [Supplier name]"	
What is the address for {Supplier}, beginning with the street?		
NEXT	→ F35 [P.O. Box or Suite]	

F35	P.O. Box or Suite	<i>EL1AD2—EL4AD2</i>
ASK	IF NOT ON LIST selected in F31 [Electricity suppliers]	
Is there a post office box or suite number? ◆ If not, press [ENTER]		
NEXT	→ F36 [City]	

F36	City	<i>EL1CTY—EL4CTY</i>
ASK	IF NOT ON LIST selected in F31 [Electricity suppliers]	
What is the city?		
NEXT	→ F37 [State abbreviation]	

F37	State abbreviation	<i>EL1STA—EL4STA</i>
ASK	IF NOT ON LIST selected in F31 [Electricity suppliers]	
<p>What is the state?</p> <p>◆ ENTER the two letter abbreviation</p>		
NEXT	→ F38 [ZIP code]	

F38	ZIP code	<i>EL1ZIP—EL4ZIP</i>
ASK	IF NOT ON LIST selected in F31 [Electricity suppliers]	
<p>And what is the ZIP code?</p>		
NEXT	→ F39 [Number electricity accounts]	

F39	Number electricity accounts	<i>EL1NAC—EL4NAC</i>
ASK	IF Supplier found in F31 [Electricity suppliers] look-up table OR F33 [Supplier name] given	
FILL	{Supplier} = Supplier name from F31 [Electricity suppliers] look-up table OR F33 [Supplier name]	
<p>How many different electricity accounts does this building have with {Supplier}?</p>		
RANGE	1 to 999	
NEXT	IF 1 to 10 accounts → F40 [Electricity account number] IF More than 10 accounts OR DK/RF → F45 [Electricity bill available]	

F40	Electricity account number	<i>EL1AC1—EL4AC10</i>
ASK	IF F39 [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 F31 [Electricity suppliers] look-up table OR F33 [Supplier name]	
<p>Please give me the {FirstNext} electricity account number for {Supplier}.</p> <p>◆ VERIFY number <u>digit by digit</u></p>		
NEXT	IF Independent power producer or non-local utility OR Bought from someone else IN D94 [How purchase electricity] → F41 [Supplier is non-local utility] OTHERWISE → F42 [Bills cover only building]	

F41	Supplier is non-local utility <i>EL1NONU—EL4NONU</i>
ASK	IF (Supplier found in F31 [Electricity suppliers] look-up table OR F33 [Supplier name] given) & (Independent power producer or non-local utility OR Bought from someone else IN D94 [How purchase electricity])
FILL	{Supplier} = Supplier name from F31 [Electricity suppliers] look-up table OR F33 [Supplier name]
<p>You mentioned earlier that you purchase electricity from an independent power producer, non-local utility, or broker. Is {Supplier} one of those companies?</p> <p>1 Yes 2 No</p>	
NEXT	→ F42 [Bills cover only building]

F42	Bills cover only building <i>EL10TB—EL40TB</i>
ASK	IF Supplier found in F31 [Electricity suppliers] look-up table OR F33 [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 F31 [Electricity suppliers] look-up table OR F33 [Supplier name]
<p>{Bills} from {Supplier} cover just this building or are other buildings covered as well?</p> <p>1 Just this building 2 Other building(s)</p>	
NEXT	IF Other buildings → F43 [Sq ft of others included] IF Just this building OR DK/RF → F44 [Include other major electricity]

F43	Sq ft of others included <i>EL10TS—EL40TS</i>
ASK	IF F42 [Bills cover only building] = Other buildings
FILL	{Bills} IF Only one account = “bill or statement” IF 2 to 10 accounts = “bills or statements”
<p>What is the approximate square footage of the <u>other</u> buildings included on the {Bills}?</p> <p>◆ PROBE for estimate if DK</p>	
RANGE	1 to 999,999,999
NEXT	→ F44 [Include other major electricity]

F44	Include other major electricity <i>EL10TU—EL40TU</i>
ASK	IF Supplier found in F31 [Electricity suppliers] look-up table OR F33 [Supplier name] given
FILL	{Bills} IF Only one account = “Does the bill or statement” IF 2 to 10 accounts = “Do the bills or statements”
<p>{Bills} include charges for any <u>other</u> major electricity usage outside the building, such as parking lot lights, exterior lights, signs or billboards, large pumps or swimming pools?</p> <p>1 Yes 2 No</p>	
NEXT	→ F45 [Electricity bill available]

F45	Electricity bill available <i>EL1BILL—EL4BILL</i>
ASK	IF (Supplier found in F31 [Electricity suppliers] look-up table OR F33 [Supplier name] given)
FILL	{Supplier} = Supplier name from F31 [Electricity suppliers] look-up table OR F33 [Supplier name]
<p>Can you provide a copy of one electricity bill from {Supplier}? There is information on some utility bills that may help energy researchers who use these data.</p> <ul style="list-style-type: none"> ◆ EXP: [Examples of these items include other 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>1 Yes, bill available 2 No, will not be able to provide bill</p>	
NEXT	IF More suppliers left to answer for → Back to F31 [Electricity suppliers] for next supplier OTHERWISE → G1 [Section G Routing]

SECTION G. NATURAL GAS

G1	Section G Routing
NEXT	IF Natural gas used → G2 [WS2 natural gas filled out] OTHERWISE → H1 [Section H Routing]

G2	WS2 natural gas filled out	<i>WS2NGCE</i>
ASK	IF Natural gas used	
<p>Do you have Worksheet 2 with you and filled out for natural gas?</p> <p>1 Yes 2 No</p>		
NEXT	IF No OR DK/RF → G3 [Provide natural gas figures] IF Yes → G4 [Units for natural gas]	

G3	Provide natural gas figures	<i>NGFIGS</i>
ASK	IF G2 [WS2 natural gas filled out] = No OR DK/RF	
<p>The next questions are about natural gas usage in this building during calendar year 2012. Would you be able to give me an approximate figure of how much natural gas was used or how much was spent on it?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → G4 [Units for natural gas] IF No OR DK/RF → G31 [Number natural gas suppliers]	

G4	Units for natural gas	<i>NGUNIT</i>
ASK	IF G2 [WS2 natural gas filled out] = Yes OR G3 [Provide natural gas figures] = Yes	
<p> SHOW CARD G1</p> <p>Please look at Show Card G1 and tell me the units in which your natural gas is measured.</p> <p>1 Hundred cubic feet (Ccf) 2 Therms 3 Thousand cubic feet (Mcf) 4 Dekatherms 5 Cubic feet (cf) 6 IF VOLUNTEERED: Some other units</p>		
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	<i>NGUNITX</i>
ASK	IF G4 [Units for natural gas] = Some other units	
What are the other units?		
NEXT	→ G6 [Natural gas consumption]	

G6	Natural gas consumption	<i>NGCNS</i>
ASK	IF G2 [WS2 natural gas filled out] = Yes OR G3 [Provide natural gas figures] = Yes	
		[F1]-HELP
Please give me the total amount of natural gas used in calendar year 2012.		
<ul style="list-style-type: none"> ◆ 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 <u>digit by digit</u> 		
RANGE	1 to 99,999,999,999,999	
NEXT	→ G7 [Natural gas expenditures]	

G7	Natural gas expenditures	<i>NGEXP</i>
ASK	IF G2 [WS2 natural gas filled out] = Yes OR G3 [Provide natural gas figures] = Yes	
		[F1]-HELP
Please give me the total dollars spent on natural gas in calendar year 2012. This should include state and local taxes and the following charges: fuel adjustment, system, demand, and distribution.		
<ul style="list-style-type: none"> ◆ Do <u>not</u> enter cents ◆ VERIFY number <u>digit by digit</u> 		
RANGE	0 to 999,999,999	
NEXT	IF G6 [Natural gas consumption] = DK/RF & G7 [Natural gas expenditures] = DK/RF → G31 [Number natural gas suppliers] OTHERWISE → G8 [Starting date for natural gas figures]	

G8	Starting date for natural gas figures	<i>NGSTDAT</i>
ASK	IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given	
		[F1]-HELP
	What is the starting date for these natural gas usage figures?	
	<ul style="list-style-type: none"> ◆ 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	<i>NGENDAT</i>
ASK	IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given	
		[F1]-HELP
	What is the ending date [for these natural gas usage figures]?	
	<ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY <input type="checkbox"/> ◆ VERIFY that this is the <u>last</u> day of the last billing period ◆ If the day is not known, ENTER "15" for DD 	
NEXT	IF CBECS Activity ≠ Enclosed mall & (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 CBECS Activity = Enclosed mall & (C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One) ➔ G12 [Natural gas covers whole mall] OTHERWISE ➔ G16 [Other bldgs natural gas included]	

G10	All occupants natural gas included	<i>NGALL</i>
ASK	IF CBECS Activity ≠ Enclosed mall & 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 CBECS Activity = Enclosed mall & B41 [Food court] = Yes & Natural gas IN D80 [Sources for cooking] ➔ G12 [Natural gas covers food court] OTHERWISE ➔ G16 [Other bldgs natural gas included]	

G11	Sq ft not included	<i>NGNISF</i>
ASK	IF G10 [All occupants natural gas included] = No	
<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	IF CBECS Activity = Enclosed mall & B41 [Food court] = Yes & Natural gas IN D80 [Sources for cooking] → G12 [Natural gas covers food court] OTHERWISE → G16 [Other bldgs natural gas included]	

G12	Natural gas covers whole mall	<i>NGMLLINC</i>
ASK	IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & CBECS Activity = Enclosed mall & (C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One)	
FILL	{FoodCourt} IF B41 [Food court] = Yes = "food court," OTHERWISE = BLANK	
<p>Do these figures include the energy for the entire mall building, including the anchor stores, {food court} common areas, and individual stores?</p> <p>1 Yes 2 No</p>		
NEXT	IF No → G13 [Not included in mall natural gas] OTHERWISE → G16 [Other bldgs natural gas included]	

G13	Not included in mall natural gas	<i>NGMALLEXC</i>										
ASK	IF G12 [Natural gas covers whole mall] = No											
<p>Which of these is <u>not</u> included?</p> <p>◆ ENTER all that apply</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">1 Anchor stores</td> <td style="width: 30%;"><i>NGMLLANC</i></td> </tr> <tr> <td>2 Food court</td> <td><i>NGMLLFC</i></td> </tr> <tr> <td>3 Common areas</td> <td><i>NGMLLCOM</i></td> </tr> <tr> <td>4 Individual stores</td> <td><i>NGMLLST</i></td> </tr> <tr> <td>5 Other</td> <td><i>NGMLLOT</i></td> </tr> </table>			1 Anchor stores	<i>NGMLLANC</i>	2 Food court	<i>NGMLLFC</i>	3 Common areas	<i>NGMLLCOM</i>	4 Individual stores	<i>NGMLLST</i>	5 Other	<i>NGMLLOT</i>
1 Anchor stores	<i>NGMLLANC</i>											
2 Food court	<i>NGMLLFC</i>											
3 Common areas	<i>NGMLLCOM</i>											
4 Individual stores	<i>NGMLLST</i>											
5 Other	<i>NGMLLOT</i>											
NEXT	IF Other selected → G14 [Other not included in mall natural gas] OTHERWISE → G15 [Mall sq ft not included]											

G14	Other not included in mall natural gas
ASK	IF Other IN G13 [Not included in mall natural gas]
<p>Please describe the other type of area that is not included.</p> <p>◆ RECORD in space below</p>	
NEXT	→ G15 [Mall sq ft not included]

G15	Mall sq ft not included	<i>NGNMLLSF</i>
ASK	IF G12 [Natural gas covers whole mall] = No	
<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ G16 [Other bldgs natural gas included]	

G16	Other bldgs natural gas included	<i>NGOTBD</i>
ASK	IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given	
<p>Is any consumption from other buildings included in these figures?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → G17 [Sq ft of other included] IF No OR DK/RF: IF B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → G18 [Central plant natural gas included] OTHERWISE → G19 [Include other major natural gas]	

G17	Sq ft of other included	<i>NGOTSF</i>
ASK	IF G16 [Other bldgs natural gas included] = Yes	
<p>What is the approximate square footage of the <u>other</u> buildings that are included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	IF B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → G18 [Central plant natural gas included] OTHERWISE → G19 [Include other major natural gas]	

G18	Central plant natural gas included	<i>PLTNGINC</i>
ASK	IF B48 [Central physical plant] = Yes & B53 [Central plant in building] = No	
FILL	{Supplier} = Supplier name from G32 [Natural gas suppliers] look-up table OR G34 [Supplier name]	
<p>Earlier you mentioned that there is a central plant on this campus. Do these figures include any natural gas that was used in the central plant?</p> <p>◆ EXP: [We do not want the energy used in the central plant. This question is for verification purposes.]</p> <p>1 Yes 2 No</p>		
NEXT	➔ G19 [Include other major natural gas]	

G19	Include other major natural gas	<i>NGOTUS</i>
ASK	IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given	
<p>Do these figures include charges for any <u>other</u> 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>1 Yes 2 No</p>		
NEXT	<p>IF Yes ➔ G20 [Outside uses included in natural gas]</p> <p>OTHERWISE</p> <p>IF D96 [How purchase natural gas] = Bought from someone else OR Bought both ways ➔ G22 [Include all non-local natural gas]</p> <p>IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF & D17 [Source for main heating] ≠ DK/RF ➔ G24 [Natural gas regression check]</p> <p>OTHERWISE:</p> <p>IF G2 [WS2 natural gas filled out] = Yes ➔ G28 [Monthly natural gas included]</p> <p>IF G2 [WS2 natural gas filled out] = No OR DK/RF ➔ G29 [Monthly natural gas available]</p>	

G20	Outside uses included in natural gas	<i>see below</i>												
ASK	IF G19 [Include other major natural gas] = Yes													
<p>Which of these outside uses is included?</p> <p>◆ ENTER all that apply</p> <table> <tr> <td>1 Kilns</td> <td>NGOUTKLN</td> </tr> <tr> <td>2 Gas space heaters</td> <td>NGOUTHTR</td> </tr> <tr> <td>3 Exterior decorative lights</td> <td>NGOUTLTS</td> </tr> <tr> <td>4 Compressed natural gas vehicles</td> <td>NGOUTVEH</td> </tr> <tr> <td>5 Pumps not used in the building</td> <td>NGOUTPMP</td> </tr> <tr> <td>6 Other</td> <td>NGOUTOT</td> </tr> </table>			1 Kilns	NGOUTKLN	2 Gas space heaters	NGOUTHTR	3 Exterior decorative lights	NGOUTLTS	4 Compressed natural gas vehicles	NGOUTVEH	5 Pumps not used in the building	NGOUTPMP	6 Other	NGOUTOT
1 Kilns	NGOUTKLN													
2 Gas space heaters	NGOUTHTR													
3 Exterior decorative lights	NGOUTLTS													
4 Compressed natural gas vehicles	NGOUTVEH													
5 Pumps not used in the building	NGOUTPMP													
6 Other	NGOUTOT													
NEXT	<p>IF Other selected → G21 [Other type of outside natural gas use] OTHERWISE IF D96 [How purchase natural gas] = Bought from someone else OR Bought both ways → G22 [Include all non-local natural gas] IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF & D17 [Source for main heating] ≠ DK/RF → G24 [Natural gas regression check] OTHERWISE: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]</p>													

G21	Other type of outside natural gas use
ASK	IF Other IN G20 [Outside uses included in natural gas]
<p>Please describe this other type of outside natural gas use.</p> <p>◆ RECORD in space below</p>	
NEXT	<p>IF D96 [How purchase natural gas] = Bought from someone else OR Bought both ways → G22 [Include all non-local natural gas] IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF & D17 [Source for main heating] ≠ DK/RF → G24 [Natural gas regression check] OTHERWISE: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]</p>

G22	Include all non-local natural gas	<i>NGNONU</i>
ASK	IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & (D96 [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 → G23 [What not included] IF Yes OR DK/RF: IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF & D17 [Source for main heating] ≠ DK/RF → G24 [Natural gas regression check] OTHERWISE: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]	

G23	What not included
ASK	IF G22 [Include all non-local natural gas] = No
What was not included?	
◆ RECORD the additional charges in the open box	
NEXT	IF (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF & D17 [Source for main heating] ≠ DK/RF → G24 [Natural gas regression check] OTHERWISE: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]

G24	Natural gas regression check
ASK	IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & (A6 [Square footage] known OR A12 [Square footage category] known) & D1 [Heating] ≠ DK/RF & D2 [Cooling] ≠ DK/RF & D3 [Water heating] ≠ DK/RF & D17 [Source for main heating] ≠ DK/RF
<p>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:</p> <p>IF G6 [Natural gas consumption] > [Predicted consumption] × 8 OR G7 [Natural gas expenditures] > [Predicted expenditures] × 8 → FAIL (HIGH) IF G6 [Natural gas consumption] < [Predicted consumption] ÷ 13 OR G7 [Natural gas expenditures] < [Predicted expenditures] ÷ 13 → FAIL (LOW) OTHERWISE → PASS</p>	
NEXT	IF FAIL (HIGH) → G25 [Anything unusual high] IF FAIL (LOW) → G26 [Anything unusual low] IF PASS: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]

G25	Anything unusual high	<i>NGHIGH</i>
ASK	IF G24 [Natural gas regression check] = FAIL (HIGH)	
<p>These usage figures seem high for what you have told me about this building. Is there anything unusual that might explain this high usage?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → G27 [What is unusual] IF No OR DK/RF: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]	

G26	Anything unusual low	<i>NGLOW</i>
ASK	IF G24 [Natural gas regression check] = FAIL (LOW)	
<p>These usage figures seem low for what you have told me about this building. Is there anything unusual that might explain this low usage?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → G27 [What is unusual] IF No OR DK/RF: IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]	

G27	What is unusual
ASK	IF G25 [Anything unusual high] = Yes OR G26 [Anything unusual low] = Yes
<p>Please tell me [what is out of the ordinary about this building].</p> <p>◆ RECORD in open box</p>	
NEXT	IF G2 [WS2 natural gas filled out] = Yes → G28 [Monthly natural gas included] IF G2 [WS2 natural gas filled out] = No OR DK/RF → G29 [Monthly natural gas available]

G28	Monthly natural gas included	<i>NGINC12</i>
ASK	IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & G2 [WS2 natural gas filled out] = Yes	
<p>Did you include your monthly natural gas usage on Worksheet 2?</p> <p>1 Yes 2 No</p>		
NEXT	IF No OR DK/RF → G29 [Monthly natural gas available] IF Yes: IF G24 [Natural gas regression check] = PASS → G30 [Natural gas bill available] IF G24 [Natural gas regression check] = FAIL (HIGH) OR FAIL (LOW) → G31 [Number natural gas suppliers]	

G29	Monthly natural gas available	<i>NGHAV12</i>
ASK	IF (G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given) & (G2 [WS2 natural gas filled out] = No OR DK/RF OR G28 [Monthly natural gas included] = No OR DK/RF)	
<p>Can you provide a record of the monthly natural gas use to help us better understand the seasonal patterns of natural gas use?</p> <p>◆ 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</p> <p>1 Yes, monthly natural gas available 2 No, will not be able to provide monthly natural gas</p>		
NEXT	IF ((A6 [Square footage] = DK/RF & A12 [Square footage category] = DK/RF) OR D1 [Heating] = DK/RF OR D2 [Cooling] = DK/RF OR D3 [Water heating] = DK/RF OR D17 [Source for main heating] = DK/RF) OR G24 [Natural gas regression check] = FAIL (HIGH) OR FAIL (LOW) OR G11 [Sq ft not included] / A6 [Square footage] > 0.25 → G31 [Number natural gas suppliers] OTHERWISE → G30 [Natural gas bill available]	

G30	Natural gas bill available	<i>NGBILL</i>
ASK	IF G6 [Natural gas consumption] given OR G7 [Natural gas expenditures] given & G24 [Natural gas regression check] = PASS	
<p>Can you provide a copy of one natural gas bill? (There is information on some utility bills that may help energy researchers who use these data.)</p> <p>◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]</p> <p>◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	→ H1 [Section H Routing]	

G31	Number natural gas suppliers	<i>NGNUMSP</i>
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 G24 [Natural gas regression check] = FAIL (HIGH) OR FAIL (LOW) OR ((A6 [Square footage] = DK/RF & A12 [Square footage category]) OR D1 [Heating] = DK/RF OR D2 [Cooling] = DK/RF OR D3 [Water heating] = DK/RF OR D17 [Source for main heating] = DK/RF) OR G11 [Sq ft not included] / A6 [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."	
<p>{SuppliersIntro}</p> <p>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 2012?</p>		
RANGE	1 to 4	
NEXT	Number given → G32 [Natural gas suppliers] DK/RF → H1 [Section H Routing]	

G32	Natural gas suppliers	NG1LKP—NG2LKP
ASK	IF G31 [Number natural gas suppliers] given	
FILL	{FirstNext} IF Only one supplier = BLANK IF First supplier given = "first" OTHERWISE = "next"	
<p>What is the name of the {FirstNext} supplier that provided natural gas in calendar year 2012?</p> <ul style="list-style-type: none"> ◆ 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 → G34 [Supplier name] IF Supplier found in look-up table → G33 [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 G32 [Natural gas suppliers] again for next supplier	

G33	Verify natural gas supplier	
ASK	IF Supplier found in G32 [Natural gas suppliers] look-up table	
FILL	{Supplier} = Supplier name from G32 [Natural gas suppliers] look-up table	
<p>Just to verify, I have selected that your natural gas supplier is {Supplier}. Is that correct?</p> <ul style="list-style-type: none"> ◆ If No, you will be taken back to the previous screen to select again <ol style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → G40 [Number natural gas accounts] IF No → G32 [Natural gas suppliers]	

G34	Supplier name	<i>NG1NEW—NG4NEW</i>
ASK	IF NOT ON LIST selected in G32 [Natural gas suppliers]	
<p>◆ ENTER the name of the supplier</p>		
NEXT	IF Name given → G35 [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 G32 [Natural gas suppliers] for next supplier	

G35	Street address	<i>NG1AD1—NG4AD1</i>
ASK	IF NOT ON LIST selected in G32 [Natural gas suppliers]	
FILL	{Supplier} = "G34 [Supplier name]"	
What is the address for {Supplier}, beginning with the street?		
NEXT	→ G36 [P.O. Box or Suite]	

G36	P.O. Box or Suite	<i>NG1AD2—NG4AD2</i>
ASK	IF NOT ON LIST selected in G32 [Natural gas suppliers]	
Is there a post office box or suite number? ◆ If not, press [ENTER]		
NEXT	→ G37 [City]	

G37	City	<i>NG1CTY—NG4CTY</i>
ASK	IF NOT ON LIST selected in G32 [Natural gas suppliers]	
What is the city?		
NEXT	→ G38 [State abbreviation]	

G38	State abbreviation	<i>NG1STA—NG4STA</i>
ASK	IF NOT ON LIST selected in G32 [Natural gas suppliers]	
<p>What is the state?</p> <p>◆ ENTER the two letter abbreviation</p>		
NEXT	➔ G39 [Zip code]	

G39	ZIP code	<i>NG1ZIP—NG4ZIP</i>
ASK	IF NOT ON LIST selected in G32 [Natural gas suppliers]	
<p>And what is the ZIP code?</p>		
NEXT	➔ G40 [Number natural gas accounts]	

G40	Number natural gas accounts	<i>NG1NAC—NG4NAC</i>
ASK	IF Supplier found in G32 [Natural gas suppliers] look-up table OR G34 [Supplier name] given	
FILL	{Supplier} = Supplier name from G32 [Natural gas suppliers] look-up table OR G34 [Supplier name]	
<p>How many different natural gas accounts does this building have with {Supplier}?</p>		
RANGE	1 to 999	
NEXT	IF 1 to 10 accounts ➔ G41 [Natural gas account number] IF More than 10 accounts OR DK/RF ➔ G46 [Natural gas bill available]	

G41	Natural gas account number	<i>NG1AC1—NG4AC10</i>
ASK	IF G40 [Number natural gas 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 G32 [Natural gas suppliers] look-up table OR G34 [Supplier name]	
<p>Please give me the {FirstNext} natural gas account number for {Supplier}.</p> <p>◆ VERIFY number <u>digit by digit</u></p>		
NEXT	IF D96 [How purchase natural gas] = Bought from someone else OR Bought both ways ➔ G42 [Supplier is non-local utility] OTHERWISE ➔ G43 [Bills cover only building]	

G42	Supplier is non-local utility	<i>NG1NONU—NG4NONU</i>
ASK	IF (Supplier found in G32 [Natural gas suppliers] look-up table OR G34 [Supplier name] given) & (D96 [How purchase natural gas] = Bought from someone else OR Bought both ways)	
FILL	{Supplier} = Supplier name from G32 [Natural gas suppliers] look-up table OR G34 [Supplier name]	
<p>You mentioned earlier that you purchase natural gas from a non-utility or broker. Is {Supplier} one of those companies?</p> <p>1 Yes 2 No</p>		
NEXT	➔ G43 [Bills cover only building]	

G43	Bills cover only building	<i>NG10TB—NG40TB</i>
ASK	IF Supplier found in G32 [Natural gas suppliers] look-up table OR G34 [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 G32 [Natural gas suppliers] look-up table OR G34 [Supplier name]	
<p>{Bills} from {Supplier} cover just this building or are other buildings covered as well?</p> <p>1 Just this building 2 Other building(s)</p>		
NEXT	IF Other buildings ➔ G44 [Sq ft of others included] IF Just this building OR DK/RF ➔ G45 [Include other major natural gas]	

G44	Sq ft of others included	<i>NG10TS—NG40TS</i>
ASK	IF G43 [Bills cover only building] = Other buildings	
FILL	{Bills} IF Only one account = “bill or statement” IF 2 to 10 accounts = “bills or statements”	
<p>What is the approximate square footage of the <u>other</u> buildings included on the {Bills}?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	➔ G45 [Include other major natural gas]	

G45	Include other major natural gas <i>NG10TU—NG40TU</i>
ASK	IF Supplier found in G32 [Natural gas suppliers] look-up table OR G34 [Supplier name] given
FILL	<p>{Bills} IF Only one account = “Does the bill or statement” IF 2 to 10 accounts = “Do the bills or statements”</p> <p>{Bills} include charges for any <u>other</u> 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>1 Yes 2 No</p>
NEXT	→ G46 [Natural gas bill available]

G46	Natural gas bill available <i>NG1BILL—NG4BILL</i>
ASK	IF (Supplier found in G32 [Natural gas suppliers] look-up table OR G34 [Supplier name] given)
FILL	<p>{Supplier} = Supplier name from G32 [Natural gas suppliers] look-up table OR G34 [Supplier name]</p> <p>Can you provide a copy of one natural gas bill from {Supplier}? (There is information on some utility bills that may help energy researchers who use these data.)</p> <ul style="list-style-type: none"> ◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>
NEXT	IF More suppliers left to answer for → Back to G32 [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.

H1	Section H Routing
NEXT	IF Fuel oil used → H2 [WS2 fuel oil filled out] OTHERWISE → I1 [Section I Routing]

H2	WS2 fuel oil filled out	<i>WS2FKCE</i>
ASK	IF Fuel oil used	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
<p>Do you have Worksheet 2 with you and filled out for {FuelOilType}?</p> <p>1 Yes 2 No</p>		
NEXT	IF No OR DK/RF → H3 [Provide fuel oil figures] IF Yes → H4 [Fuel oil purchases]	

H3	Provide fuel oil figures	<i>FKFIGS</i>
ASK	IF H2 [WS2 fuel oil filled out] = No OR DK/RF	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
<p>The next questions are about {FuelOilType} purchases in this building during calendar year 2012. Would you be able to give me an approximate figure of how much {FuelOilType} was purchased or how much was spent on it?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → H4 [Fuel oil purchases] IF No OR DK/RF: IF D17 [Source for main heating] = Fuel oil OR D18 [Other source for main heating] = Fuel oil OR D75 [Sources for water heating] = Fuel oil OR D76 [Other water heating source] = Fuel oil OR (D85 [Sources for electricity generation] = Fuel oil → H20 [Number fuel oil suppliers] OTHERWISE → I1 [Section I Routing]	

H4	Fuel oil purchases	<i>FKCNS</i>
ASK	IF H2 [WS2 fuel oil filled out] = Yes OR H3 [Provide fuel oil figures] = Yes	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
		[F1]-HELP
	Please give me the total number of gallons of {FuelOilType} purchased in calendar year 2012.	
	<ul style="list-style-type: none"> ◆ 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 <u>digit by digit</u> 	
RANGE	0 to 99,999,999,999	
NEXT	➔ H5 [Fuel oil expenditures]	

H5	Fuel oil expenditures	<i>FKEXP</i>
ASK	IF H2 [WS2 fuel oil filled out] = Yes OR H3 [Provide fuel oil figures] = Yes	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
		[F1]-HELP
	Please give me the total dollars spent on {FuelOilType} in calendar year 2012, including state and local taxes.	
	<ul style="list-style-type: none"> ◆ Do <u>not</u> enter cents ◆ VERIFY number <u>digit by digit</u> 	
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 2012] IF H4 [Fuel oil purchases] = DK/RF & H5 [Fuel oil expenditures] = DK/RF ➔ I1 [Section I Routing] OTHERWISE ➔ H7 [Starting date for fuel oil figures]	

H6	Purchased before 2012	<i>FKSTORD</i>
ASK	IF H4 [Fuel oil purchases] = Zero & H5 [Fuel oil expenditures] = Zero (OR one is Zero and one is DK/RF)	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
	Was any {FuelOilType} used in 2012 that was purchased or delivered in 2011 or before?	
	1 Yes 2 No	
NEXT	➔ I1 [Section I Routing]	

H7	Starting date for fuel oil figures	<i>FKSTDAT</i>
ASK	IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given) & Not both zero	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
		[F1]-HELP
	What is the first delivery date for these {FuelOilType} purchases?	
	<ul style="list-style-type: none"> ◆ 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	<i>FKENDAT</i>
ASK	IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given) & Not both zero	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
		[F1]-HELP
	What is the last delivery date [for these {FuelOilType} purchases]?	
	<ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY ◆ 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) ➔ H9 [All occupants fuel oil included] OTHERWISE ➔ H11 [Other bldgs fuel oil included]	

H9	All occupants fuel oil included	<i>FKALL</i>
ASK	IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given & (C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One)	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
	Do these figures include the {FuelOilType} for all of the businesses or organizations in this building?	
	<ul style="list-style-type: none"> 1 Yes 2 No 	
NEXT	IF No ➔ H10 [Sq ft not included] IF Yes OR DK/RF ➔ H11 [Other bldgs fuel oil included]	

H10	Sq ft not included	<i>FKNISF</i>
ASK	IF H9 [All occupants fuel oil included] = No	
<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ H11 [Other bldgs fuel oil included]	

H11	Other bldgs fuel oil included	<i>FKOTBD</i>
ASK	IF H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given	
<p>Is any consumption from other buildings included in these figures?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Yes → H12 [Sq ft of other included]</p> <p>IF No OR DK/RF: IF B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → H13 [Central plant fuel oil included]</p> <p>OTHERWISE → H14 [Include other major fuel oil]</p>	

H12	Sq ft of other included	<i>FKOTSF</i>
ASK	IF H11 [Other bldgs fuel oil included] = Yes	
<p>What is the approximate square footage of the <u>other</u> buildings that are included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	<p>IF B48 [Central physical plant] = Yes & B53 [Central plant in building] = No → H13 [Central plant fuel oil included]</p> <p>OTHERWISE → H14 [Include other major fuel oil]</p>	

H13	Central plant fuel oil included	<i>PLTFKINC</i>
ASK	IF B48 [Central physical plant] = Yes & B53 [Central plant in building] = No	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
<p>Earlier you mentioned that there is a central plant on this campus. Do these figures include any {FuelOilType} that was used in the central plant?</p> <p>◆ EXP: [We do not want the energy used in the central plant. This question is for verification purposes.]</p> <p>1 Yes 2 No</p>		
NEXT	→ H14 [Include other major fuel oil]	

H14	Include other major fuel oil	<i>FKOTUS</i>
ASK	IF H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
<p>Do these figures include charges for any <u>other</u> major {FuelOilType} usage outside the building, such as for kilns, welding, pumps, or motors?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF D17 [Source for main heating] = Fuel oil OR D18 [Other source for main heating] = Fuel oil OR D75 [Sources for water heating] = Fuel oil OR D76 [Other water heating source] = Fuel oil OR (D85 [Sources for electricity generation] = Fuel oil & D87 [Use of generated electricity] = Whenever electricity was used) & A12 [Square footage category] ≠ DK/RF & D1 [Heating] ≠ DK/RF & D3 [Water heating] ≠ DK/RF → H15 [Fuel oil regression check]</p> <p>IF (D17 [Source for main heating] = Fuel oil OR D18 [Other source for main heating] = Fuel oil OR D75 [Sources for water heating] = Fuel oil OR D76 [Other water heating source] = Fuel oil OR (D85 [Sources for electricity generation] = Fuel oil) & (H10 [Sq ft not included] / A6 [Square footage] > 0.25 OR A12 [Square footage category] = DK/RF OR D1 [Heating] = DK/RF OR D3 [Water heating] = DK/RF) → H20 [Number fuel oil suppliers]</p> <p>OTHERWISE → H19 [Fuel oil bill available]</p>	

H15	Fuel oil regression check
DO	IF H4 [Fuel oil purchases] given & A12 [Square footage category] given & D17 [Source for main heating] = Fuel oil OR D18 [Other source for main heating] = Fuel oil & D1 [Heating] ≠ DK/RF & D3 [Water heating] ≠ DK/RF
<p>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:</p> <p>IF H4 [Fuel oil purchases] > (Predicted consumption × 10) → FAIL (HIGH) IF H4 [Fuel oil purchases] < (Predicted consumption ÷ 20) → FAIL (LOW) OTHERWISE → PASS</p>	
NEXT	IF FAIL (HIGH) → H16 [Anything unusual high] IF FAIL (LOW) → H17 [Anything unusual low] IF PASS & H10 [Sq ft not included] / A6 [Square footage] > 0.25 → H20 [Number fuel oil suppliers] OTHERWISE → H19 [Fuel oil bill available]

H16	Anything unusual high	<i>FKHIGH</i>
ASK	IF H15 [Fuel oil regression check] = FAIL (HIGH)	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
<p>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?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → H18 [What is unusual] IF No OR DK/RF → H20 [Number fuel oil suppliers]	

H17	Anything unusual low	<i>FKLOW</i>
ASK	IF H15 [Fuel oil regression check] = FAIL (LOW)	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
<p>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?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → H18 [What is unusual] IF No OR DK/RF → H20 [Number fuel oil suppliers]	

H18	What is unusual
ASK	IF H16 [Anything unusual high] = Yes OR H17 [Anything unusual low] = Yes
<p>Please tell me [what is out of the ordinary about this building].</p> <p>◆ RECORD in open box</p>	
NEXT	→ H20 [Number fuel oil suppliers]

H19	Fuel oil bill available	<i>FKBILL</i>
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene]	
ASK	<p>IF (H4 [Fuel oil purchases] given OR H5 [Fuel oil expenditures] given & ((D17 [Source for main heating] ≠ Fuel oil & D18 [Other source for main heating] ≠ Fuel oil) OR ((D17 [Source for main heating] = Fuel oil OR D18 [Other source for main heating] = Fuel oil) & H10 [Sq ft not included] / A6 [Square footage] ≤ 0.25 & A12 [Square footage category] ≠ DK) & D3 [Water heating] ≠ DK) OR (H4 [Fuel oil purchases] given & H15 [Fuel oil regression check] = PASS & H10 [Sq ft not included] / A6 [Square footage] ≤ 0.25)</p>	
<p>Can you provide a copy of one {FuelOilType} bill? (There is information on some utility bills that may help energy researchers who use these data.)</p> <p>◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]</p> <p>◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	→ I1 [Section I Routing]	

H20	Number fuel oil suppliers	<i>FKNUMSP</i>
ASK	IF D17 [Source for main heating] = Fuel oil OR D18 [Other source for main heating] = Fuel oil OR D75 [Sources for water heating] = Fuel oil OR D76 [Other water heating source] = Fuel oil OR (D85 [Sources for electricity generation] = Fuel oil & D87 [Use of generated electricity] = Whenever electricity was used) & (H3 [Provide fuel oil figures] = No OR DK/RF OR H4 [Fuel oil purchases] = DK/RF & H5 [Fuel oil expenditures] = DK/RF OR A12 [Square footage category] = DK OR D3 [Water heating] = DK OR H15 [Fuel oil regression check] = FAIL (LOW) OR FAIL (HIGH) OR H10 [Sq ft not included] / A6 [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 = "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 D10 [Fuel oil, diesel, or kerosene]	
{SuppliersIntro} How many different companies supplied {FuelOilType} to building during calendar year 2012?		
RANGE	1 to 4	
NEXT	Number given → H21 [Fuel oil supplier name] DK/RF → I1 [Section I Routing]	

H21	Fuel oil supplier name	<i>FK1SUP—FK4SUP</i>
ASK	IF H20 [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 D10 [Fuel oil, diesel, or kerosene]	
What is the name of the {FirstNext} supplier that provided {FuelOilType} during 2012? ◆ ENTER the name of the supplier		
NEXT	IF Name given → H22 [Street address] IF DK/RF: IF Only one supplier or last supplier → I1 [Section I Routing] IF More suppliers left to answer for → Ask H21 [Fuel oil supplier name] again for next supplier	

H22	Street address	<i>FK1AD1—FK4AD1</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
FILL	{Supplier} = H21 [Fuel oil supplier name]	
What is the address for {Supplier}, beginning with the street?		
NEXT	➔ H23 [P.O. Box or Suite]	

H23	P.O. Box or Suite	<i>FK1AD2—FK4AD2</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
Is there a post office box or suite number?		
◆ If not, press [ENTER]		
NEXT	➔ H24 [City]	

H24	City	<i>FK1CTY—FK4CTY</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
What is the city?		
NEXT	➔ H25 [State abbreviation]	

H25	State abbreviation	<i>FK1STA—FK4STA</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
What is the state?		
◆ ENTER the two letter abbreviation		
NEXT	➔ H26 [ZIP code]	

H26	ZIP code	<i>FK1ZIP—FK4ZIP</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
And what is the zip code?		
NEXT	➔ H27 [Number fuel oil accounts]	

H27	Number fuel oil accounts	<i>FK1NAC—FK4NAC</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene] {Supplier} = H21 [Fuel oil supplier name]	
How many different {FuelOilType} accounts does this building have with {Supplier}?		
NEXT	IF 1 to 10 accounts → H28 [Fuel oil account number] IF More than 10 accounts OR DK/RF → H32 [Fuel oil bill available]	

H28	Fuel oil account number	<i>FK1AC1—FK4AC10</i>
ASK	IF H27 [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 D10 [Fuel oil, diesel, or kerosene] {Supplier} = H21 [Fuel oil supplier name]	
Please give me the {FirstNext} {FuelOilType} account number for {Supplier}. ◆ VERIFY number <u>digit by digit</u>		
NEXT	→ H29 [Bills cover only building]	

H29	Bills cover only building	<i>FK10TB—FK40TB</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
FILL	{Bills} IF Only one account = "Does the bill or statement" IF 2 to 10 accounts = "Do the bills or statements" {Supplier} = H21 [Fuel oil 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 → H30 [Sq ft of others included] IF Just this building OR DK/RF → H31 [Include other major fuel oil]	

H30	Sq ft of others included	<i>FK10TS—FK40TS</i>
ASK	IF H29 [Bills cover only building] = Other buildings	
FILL	{Bills} IF Only one account = “bill or statement” IF 2 to 10 accounts = “bills or statements”	
<p>What is the approximate square footage of the <u>other</u> buildings included on the {Bills}?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ H31 [Include other major fuel oil]	

H31	Include other major fuel oil	<i>FK10TU—FK40TU</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
FILL	{Bills} IF Only one account = “Does the bill or statement” IF 2 to 10 accounts = “Do the bills or statements”	
<p>{Bills} include charges for any <u>other</u> major fuel oil usage outside the building, such as for kilns, welding, pumps, or motors?</p> <p>1 Yes 2 No</p>		
NEXT	→ H32 [Fuel oil bill available]	

H32	Fuel oil bill available	<i>FK1BILL—FK4BILL</i>
ASK	IF Name given in H21 [Fuel oil supplier name]	
FILL	{FuelOilType} = Type or types specified in D10 [Fuel oil, diesel, or kerosene] {Supplier} = H21 [Fuel oil supplier name]	
<p>Can you provide a copy of one {FuelOilType} bill from {Supplier}? (There is information on some utility bills that may help energy researchers who use these data.)</p> <p>◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]</p> <p>◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
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

I1	Section I Routing
NEXT	IF District steam used → I2 [WS2 district steam filled out] OTHERWISE → J1 [Section J Routing]

I2	WS2 district steam filled out	<i>WS2STCE</i>
ASK	IF District steam used	
Do you have Worksheet 2 with you and filled out for district steam?		
<ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF No OR DK/RF → I3 [Provide district steam figures] IF Yes → I4 [Units for district steam]	

I3	Provide district steam figures	<i>STFIGS</i>
ASK	IF I2 [WS2 district steam filled out] = No OR DK/RF	
The next questions are about district steam usage in this building during calendar year 2012. Would you be able to give me an approximate figure of how much district steam was used or how much was spent on it?		
<ul style="list-style-type: none"> 1 Yes 2 No 		
NEXT	IF Yes → I4 [Units for district steam] IF No OR DK/RF: IF D15 [From central plant] = No OR D16 [Purchase from offsite] = Yes → I15 [District steam supplier name] OTHERWISE → J1 [Section J Routing]	

I4	Units for district steam	<i>STUNIT</i>
ASK	IF I2 [WS2 district steam filled out] = Yes OR I3 [Provide district steam figures] = Yes	
 SHOW CARD I1 Please look at Show Card I1 and tell me the units in which your district steam is measured.		
<ul style="list-style-type: none"> 1 Thousand pounds 2 Pounds 3 Million Btu 4 IF VOLUNTEERED: Some other units 		
NEXT	IF Some other units → I5 [Other district steam units] OTHERWISE → I6 [District steam consumption]	

I5	Other district steam units	<i>STUNITX</i>
ASK	IF I4 [Units for district steam] = Some other units	
What are the other units?		
NEXT	➔ I6 [District steam consumption]	

I6	District steam consumption	<i>STCNS</i>
ASK	IF I2 [WS2 district steam filled out] = Yes OR I3 [Provide district steam figures] = Yes	
		[F1]-HELP
Please give me the total amount of district steam used in calendar year 2012.		
<ul style="list-style-type: none"> ◆ 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 <u>digit by digit</u> 		
RANGE	1 to 99,999,999,999,999	
NEXT	➔ I7 [District steam expenditures]	

I7	District steam expenditures	<i>STEXP</i>
ASK	IF I2 [WS2 district steam filled out] = Yes OR I3 [Provide district steam figures] = Yes	
		[F1]-HELP
Please give me the total dollars spent on district steam in calendar year 2012, including state and local taxes.		
<ul style="list-style-type: none"> ◆ Do <u>not</u> enter cents ◆ VERIFY number <u>digit by digit</u> 		
RANGE	0 to 999,999,999	
NEXT	IF I6 [District steam consumption] = DK/RF & I7 [District steam expenditures] = DK/RF: IF D15 [From central plant] = No OR D16 [Purchase from offsite] = Yes ➔ I15 [District steam supplier name] OTHERWISE ➔ J1 [Section J Routing] OTHERWISE ➔ I8 [Starting date for district steam figures]	

I8	Starting date for district steam figures	<i>STSTDAT</i>
ASK	IF I6 [District steam consumption] given OR I7 [District steam expenditures] given	
		[F1]-HELP
	What is the starting date for these district steam usage figures?	
	<ul style="list-style-type: none"> ◆ 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	<i>STENDAT</i>
ASK	IF I6 [District steam consumption] given OR I7 [District steam expenditures] given	
		[F1]-HELP
	What is the ending date [for these district steam usage figures]?	
	<ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY <input type="checkbox"/> ◆ VERIFY that this is the <u>last</u> 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	<i>STALL</i>
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?	
	<ul style="list-style-type: none"> 1 Yes 2 No 	
NEXT	IF No ➔ I11 [Sq ft not included] OTHERWISE ➔ I12 [Other bldgs steam included]	

I11	Sq ft not included	<i>STNISF</i>
ASK	IF I10 [All occupants steam included] = No	
<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ I12 [Other bldgs steam included]	

I12	Other bldgs steam included	<i>STOTBD</i>
ASK	IF I6 [District steam consumption] given OR I7 [District steam expenditures] given	
<p>Is any consumption from other buildings included in these figures?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → I13 [Sq ft of other included] IF No OR DK/RF → I14 [District steam bill available]	

I13	Sq ft of other included	<i>STOTSF</i>
ASK	IF I12 [Other bldgs steam included] = Yes	
<p>What is the approximate square footage of the <u>other</u> buildings that are included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ I14 [District steam bill available]	

I14	District steam bill available	<i>STBILL</i>
ASK	IF I6 [District steam consumption] given OR I7 [District steam expenditures] given	
<p>Can you provide a copy of one district steam bill? (There is information on some utility bills that may help energy researchers who use these data.)</p> <ul style="list-style-type: none"> ◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	→ J1 [Section J Routing]	

I15	District steam supplier name	<i>STSUP</i>
ASK	IF D15 [From central plant] = No OR D15 [Purchase from offsite = Yes] & (I3 [Provide district steam figures] = No OR DK/RF OR I6 [District steam consumption] = DK/RF & I7 [District steam expenditures] = DK/RF)	
<p>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.</p> <p>What is the name of the supplier that provided district steam in calendar year 2012?</p> <ul style="list-style-type: none"> ◆ ENTER the name of the supplier 		
NEXT	IF Name given → I16 [Street address] IF DK/RF → J1 [Section J Routing]	

I16	Street address	<i>STAD1</i>
ASK	IF Name given in I15 [District steam supplier name]	
FILL	{Supplier} = I15 [District steam supplier name]	
<p>What is the address for {Supplier}, beginning with the street?</p>		
NEXT	→ I17 [P.O. Box or Suite]	

I17	P.O. Box or Suite	<i>STAD2</i>
ASK	IF Name given in I15 [District steam supplier name]	
<p>Is there a post office box or suite number?</p> <p>◆ If not, press [ENTER]</p>		
NEXT	➔ I18 [City]	

I18	City	<i>STCTY</i>
ASK	IF Name given in I15 [District steam supplier name]	
<p>What is the city?</p>		
NEXT	➔ I19 [State abbreviation]	

I19	State abbreviation	<i>STSTA</i>
ASK	IF Name given in I15 [District steam supplier name]	
<p>What is the state?</p> <p>◆ ENTER the two letter abbreviation</p>		
NEXT	➔ I20 [ZIP code]	

I20	ZIP code	<i>STZIP</i>
ASK	IF Name given in I15 [District steam supplier name]	
<p>And what is the ZIP code?</p>		
NEXT	➔ I21 [Number district steam accounts]	

I21	Number district steam accounts	<i>STNAC</i>
ASK	IF Name given in I15 [District steam supplier name]	
FILL	{Supplier} = I15 [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 → I22 [District steam account number] IF More than 10 accounts OR DK/RF → I25 [District steam bill available]	

I22	District steam account number	<i>STAC1—STAC10</i>
ASK	IF I21 [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} = I15 [District steam supplier name]	
Please give me the {FirstNext} district steam account number for {Supplier}.		
◆ VERIFY number <u>digit by digit</u>		
NEXT	→ I23 [Bills cover only building]	

I23	Bills cover only building	<i>STOTB</i>
ASK	IF Name given in I15 [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} = I15 [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 → I24 [Sq ft of others included] IF Just this building OR DK/RF → I25 [District steam bill available]	

I24	Sq ft of others included	<i>STOTS</i>
ASK	IF I23 [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 <u>other</u> buildings included on the {Bills}? ◆ PROBE for estimate if DK		
RANGE	1 to 999,999,999	
NEXT	➔ I25 [District steam bill available]	

I25	District steam bill available	<i>STBILL2</i>
ASK	IF Name given in I15 [District steam supplier name]	
Can you provide a copy of 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 AND CHILLED WATER

J1	Section J Routing
NEXT	<p>IF District hot water used → J2 [WS2 district hot water filled out] IF District chilled water used & B51 [Plant produces district chilled water] = Yes → J24 [District chilled water from plant] IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes → J26 [District chilled water from utility] OTHERWISE → K1 [Section K Routing]</p>

J2	WS2 district hot water filled out	<i>WS2HWCE</i>
ASK	IF District hot water used	
<p>Do you have Worksheet 2 with you and filled out for district hot water?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF No OR DK/RF → J3 [Provide district hot water figures] IF Yes → J4 [District hot water consumption]</p>	

J3	Provide district hot water figures	<i>HWFIGS</i>
ASK	IF J2 [WS2 district hot water filled out] = No OR DK/RF	
<p>The next questions are about district hot water usage in this building during calendar year 2012. 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?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Yes → J4 [District hot water consumption] IF No OR DK/RF: IF D15 [From central plant] = No OR D16 [Purchase from offsite] = Yes → J13 [District hot water supplier name] IF District chilled water used & B51 [Plant produces district chilled water] = Yes → J24 [District chilled water from plant] IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes → J26 [District chilled water from utility] OTHERWISE → K1 [Section K Routing]</p>	

J4	District hot water consumption	<i>HWCNS</i>
ASK	IF J2 [WS2 district hot water filled out] = Yes OR J3 [Provide district hot water figures] = Yes	
		[F1]-HELP
	Please give me the total amount, in million Btu, of district hot water used in calendar year 2012.	
	<ul style="list-style-type: none"> ◆ 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 <u>digit by digit</u> 	
RANGE	1 to 99,999,999,999	
NEXT	➔ J5 [District hot water expenditures]	

J5	District hot water expenditures	<i>HWEXP</i>
ASK	IF J2 [WS2 district hot water filled out] = Yes OR J3 [Provide district hot water figures] = Yes	
		[F1]-HELP
	Please give me the total dollars spent on district hot water in calendar year 2012, including state and local taxes.	
	<ul style="list-style-type: none"> ◆ Do <u>not</u> enter cents ◆ VERIFY number <u>digit by digit</u> 	
RANGE	0 to 999,999,999	
NEXT	IF J4 [District hot water consumption] = DK/RF & J5 [District hot water expenditures] = DK/RF: IF D15 [From central plant] = No OR D16 [Purchase from offsite] = Yes ➔ J13 [District hot water supplier name] IF District chilled water used & B51 [Plant produces district chilled water] = Yes ➔ J24 [District chilled water from plant] IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes ➔ J26 [District chilled water from utility] OTHERWISE ➔ K1 [Section K Routing] OTHERWISE ➔ J6 [Starting date for district hot water figures]	

J6	Starting date for district hot water figures	<i>HWSTDAT</i>
ASK	IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given	
		[F1]-HELP
	What is the starting date for these district hot water usage figures?	
	<ul style="list-style-type: none"> ◆ 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	<i>HWENDAT</i>
ASK	IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given	
		[F1]-HELP
	<p>What is the ending date [for these district hot water usage figures]?</p> <ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY <input type="checkbox"/> ◆ VERIFY that this is the <u>last</u> 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 → J8 [All occupants hot water included] OTHERWISE → J10 [Other bldgs hot water included]	

J8	All occupants hot water included	<i>HWALL</i>
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	
	<p>Do these figures include the district hot water for all of the businesses or organizations in this building?</p> <p>1 Yes 2 No</p>	
NEXT	IF No → J9 [Sq ft not included] OTHERWISE → J10 [Other bldgs hot water included]	

J9	Sq ft not included	<i>HWNISF</i>
ASK	IF J8 [All occupants hot water included] = No	
	<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <ul style="list-style-type: none"> ◆ PROBE for estimate if DK 	
RANGE	1 to 999,999,999	
NEXT	→ J10 [Other bldgs hot water included]	

J10	Other bldgs hot water included	<i>HWOTBD</i>
ASK	IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given	
<p>Is any consumption from other buildings included in these figures?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → J11 [Sq ft of other included] IF No OR DK/RF → J12 [District hot water bill available]	

J11	Sq ft of other included	<i>HWOTSF</i>
ASK	IF J10 [Other bldgs hot water included] = Yes	
<p>What is the approximate square footage of the <u>other</u> buildings that are included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ J12 [District hot water bill available]	

J12	District hot water bill available	<i>HWBILL</i>
ASK	IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given	
<p>Can you provide a copy of one district hot water bill? (There is information on some utility bills that may help energy researchers who use these data.)</p> <p>◆ EXP: [Examples of these items include miscellaneous charges, past months data, and units of measure.]</p> <p>◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	IF District chilled water used & B51 [Plant produces district chilled water] = Yes → J24 [District chilled water from plant] IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes → J26 [District chilled water from utility] OTHERWISE → K1 [Section K Routing]	

J13	District hot water supplier name	<i>HWSUP</i>
ASK	IF D15 [From central plant] = No OR D15 [Purchase from offsite = Yes] & (J3 [Provide district hot water figures] = No OR DK/RF OR J4 [District hot water consumption] = DK/RF & J5 [District hot water expenditures] = DK/RF)	
<p>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.</p> <p>What is the name of the supplier that provided district hot water in calendar year 2012?</p> <p>◆ ENTER the name of the supplier</p>		
NEXT	IF Name given → J14 [Street address] IF DK/RF: IF District chilled water used & B51 [Plant produces district chilled water] = Yes → J24 [District chilled water from plant] IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes → J26 [District chilled water from utility] OTHERWISE → K1 [Section K Routing]	

J14	Street address	<i>HWAD1</i>
ASK	IF Name given in J13 [District hot water supplier name]	
FILL	{Supplier} = J13 [District hot water supplier name]	
<p>What is the address for {Supplier}, beginning with the street?</p>		
NEXT	→ J15 [P.O. Box or Suite]	

J15	P.O. Box or Suite	<i>HWAD2</i>
ASK	IF Name given in J13 [District hot water supplier name]	
<p>Is there a post office box or suite number?</p> <p>◆ If not, press [ENTER]</p>		
NEXT	→ J16 [City]	

J16	City	<i>HWCTY</i>
ASK	IF Name given in J13 [District hot water supplier name]	
<p>What is the city?</p>		
NEXT	→ J17 [State abbreviation]	

J17	State abbreviation	<i>HWSTA</i>
ASK	IF Name given in J13 [District hot water supplier name]	
<p>What is the state?</p> <p>◆ ENTER the two letter abbreviation</p>		
NEXT	→ J18 [ZIP code]	

J18	ZIP code	<i>HWZIP</i>
ASK	IF Name given in J13 [District hot water supplier name]	
<p>And what is the ZIP code?</p>		
NEXT	→ J19 [Number district hot water accounts]	

J19	Number district hot water accounts	<i>HWNAC</i>
ASK	IF Name given in J13 [District hot water supplier name]	
FILL	{Supplier} = J13 [District hot water supplier name]	
<p>How many different district hot water accounts does this building have with {Supplier}?</p>		
RANGE	1 to 999	
NEXT	IF 1 to 10 accounts → J20 [District hot water account number] IF More than 10 accounts OR DK/RF → J23 [District hot water bill available]	

J20	District hot water account number	<i>HWAC1—HWAC10</i>
ASK	IF J19 [Number district hot water accounts] = 1 to 10 Ask as many times as account numbers given, or until DK/RF	
FILL	<p>{FirstNext}</p> <p>IF Only one account = BLANK</p> <p>IF First account given = "first"</p> <p>OTHERWISE = "next"</p> <p>{Supplier} = J13 [District hot water supplier name]</p>	
<p>Please give me the {FirstNext} district hot water account number for {Supplier}.</p> <p>◆ VERIFY number <u>digit by digit</u></p>		
NEXT	→ J21 [Bills cover only building]	

J21	Bills cover only building	<i>HWOTB</i>
ASK	IF Name given in J13 [District hot water supplier name]	
FILL	{Bills} IF Only one account = "Does the bill or statement" IF 2 to 10 accounts = "Do the bills or statements" {Supplier} = J13 [District hot water 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 → J22 [Sq ft of others included] IF Just this building OR DK/RF → J23 [District hot water bill available]	

J22	Sq ft of others included	<i>HWOTS</i>
ASK	IF J21 [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 <u>other</u> buildings included on the {Bills}? ◆ PROBE for estimate if DK		
RANGE	1 to 999,999,999	
NEXT	→ J23 [District hot water bill available]	

J23	District hot water bill available	<i>HWBILL2</i>
ASK	IF Name given in J13 [District hot water supplier name]	
Can you provide a copy of 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	IF District chilled water used & B51 [Plant produces district chilled water] = Yes → J24 [District chilled water from plant] IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes → J26 [District chilled water from utility] OTHERWISE → K1 [Section K Routing]	

J24	District chilled water from plant	<i>CWPLANT</i>
ASK	IF District chilled water used & B51 [Plant produces district chilled water] = Yes	
<p>The next questions are about district chilled water. I will <u>not</u> be asking you for any usage figures, just a couple basic questions.</p> <p>Earlier I recorded that there is a central plant on this campus or complex that produces chilled water. Is the district chilled water used in this building provided by the central plant?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → J25 [District chilled water metered] OTHERWISE → J26 [District chilled water from utility]	

J25	District chilled water metered	<i>CWMETER</i>
ASK	IF J24 [District chilled water from plant] = Yes	
<p>Is the district chilled water metered so that you would be able to report the amount used only in <u>this building</u>?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → J27 [District chilled water bill available] OTHERWISE → K1 [Section K Routing]	

J26	District chilled water from utility	<i>CWUTIL</i>
ASK	IF District chilled water used & B51 [Plant produces district chilled water] ≠ Yes OR J24 [District chilled water from plant] ≠ Yes	
FILL	{CWIntro} IF B51 [Plant produces district chilled water] ≠ Yes = "The next questions are about district chilled water. I will <u>not</u> be asking you for any usage figures, just a couple basic questions." OTHERWISE = BLANK	
<p>{CWIntro}</p> <p>Is the district chilled water used in this building provided by a district chilled water utility?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → J27 [District chilled water bill available] IF No → J28 [District chilled water from where] OTHERWISE → K1 [Section K Routing]	

J27	District chilled water bill available	<i>CWBILL</i>
ASK	IF J25 [District chilled water metered] = Yes OR J26 [District chilled water from utility] = Yes	
<p>Can you provide a copy of one district chilled water bill or statement? (The information will be used to help plan for the next CBECS.)</p> <p>◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	→ K1 [Section K Routing]	

J28	District chilled water from where
ASK	IF J4 [District hot water consumption] given OR J5 [District hot water expenditures] given
<p>Where does this building get its district chilled water from?</p> <p>◆ RECORD in open box</p>	
NEXT	→ K1 [Section K Routing]

SECTION K. TOTAL WATER

K1	Water used	<i>WTUSED</i>
ASK	All Buildings	
<p>The next questions are about water supplied to the building for everyday use, such as for restrooms, kitchens, laundries, showers, building heating and cooling, and landscape irrigation.</p> <p>Did this building use any water in 2012?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → K2 [Provide water figures] IF No OR DK/RF → SECTION L	

K2	Provide water figures	<i>WTFIGS</i>
ASK	IF K1 [Water used] = Yes	
<p>Would you be able to give me the amount of water used in calendar year 2012? (These questions are found on the third page of Worksheet 2.)</p> <p>◆ EXP: [If water is supplied from multiple sources, provide the total from all sources, including municipally supplied potable, municipally supplied reclaimed, and other sources of freshwater, including wells.]</p> <p>1 Yes 2 No 3 IF VOLUNTEERED: No, because the water comes from a well</p>		
NEXT	IF Yes → K3 [Units for water] OTHERWISE → K19 [Water bill available]	

K3	Units for water	<i>WTUNIT</i>
ASK	IF K2 [Provide water figures] = Yes	
 SHOW CARD K1 Please look at Show Card K1 and tell me the units in which your water is measured. <ol style="list-style-type: none"> 1 Gallons 2 Thousand gallons 3 Million gallons 4 Cubic feet (cf) 5 Hundred cubic feet (Ccf, HCF) 6 Thousand cubic feet (Mcf) 7 IF VOLUNTEERED: Some other units 		
NEXT	IF Some other units → K4 [Other water units] OTHERWISE → K5 [Total water consumption]	

K4	Other water units	<i>WTUNITX</i>
ASK	IF K3 [Units for water] = Some other units	
What are the other units?		
NEXT	→ K5 [Total water consumption]	

K5	Total water consumption	<i>WTCNS</i>
ASK	IF K2 [Provide water figures] = Yes	
Please give me the total volume of water used in 2012. ◆ VERIFY number <u>digit by digit</u>		[F1]-HELP
RANGE	1 to 99,999,999,999,999	
NEXT	IF Amount given → K6 [How water volume determined] OTHERWISE → K19 [Water bill available]	

K6	How water volume determined	<i>WTRMTR</i>
ASK	IF Amount given in K5 [Total water consumption]	
<p>How is the annual water volume determined? Is it metered, estimated, both metered and estimated, or measured in some other way?</p> <p>1 Metered 2 Estimated 3 Both metered and estimated 4 Other</p>		
NEXT	→ K7 [Sewer flow metered]	

K7	Sewer flow metered	<i>SWRMTR</i>
ASK	IF Amount given in K5 [Total water consumption]	
<p>Is the sewer flow metered for this building?</p> <p>1 Yes 2 No</p>		
NEXT	→ K8 [Water used outside]	

K8	Water used outside	<i>WTOUT</i>
ASK	IF Amount given in K5 [Total water consumption]	
<p>Was any of this water used outside the building, such as for a landscape irrigation system, vehicle washing, fountains, pools, or other outdoor uses?</p> <p>◆ EXP: [Do not include water used <u>inside</u> other buildings.]</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → K9 [Outside water metered] IF No OR DK/RF: IF D73 [Cooling tower] = Yes → K11 [Cooling tower water metered] OTHERWISE → K13 [Starting date for water figures]	

K9	Outside water metered	<i>WTOUTMTR</i>
ASK	IF Amount given in K5 [Total water consumption]	
<p>Is the water used outside metered separately?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → K10 [Outside water consumption] IF No OR DK/RF: IF D73 [Cooling tower] = Yes → K11 [Cooling tower water metered] OTHERWISE → K13 [Starting date for water figures]	

K10	Outside water consumption	<i>WTOUTCNS</i>
ASK	IF K9 [Outside water metered] = Yes	
<p>In the same units, how much of this water was used outside the building?</p> <p>◆ VERIFY number <u>digit by digit</u></p>		
RANGE	0 to 99,999,999,999,999	
NEXT	IF D73 [Cooling tower] = Yes → K11 [Cooling tower water metered] OTHERWISE → K13 [Starting date for water figures]	

K11	Cooling tower water metered	<i>WTCTMTR</i>
ASK	IF Amount given in K5 [Total water consumption] & D73 [Cooling tower] = Yes	
<p>Is the water used for the cooling tower metered separately?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → K12 [Cooling tower water consumption] OTHERWISE → K13 [Starting date for water figures]	

K12	Cooling tower water consumption	<i>WTCTCNS</i>
ASK	IF K11 [Cooling tower water metered] = Yes	
<p>In the same units, how much of this water was used for the cooling tower?</p> <p>◆ VERIFY number <u>digit by digit</u></p>		
RANGE	0 to 99,999,999,999,999	
NEXT	→ K13 [Starting date for water figures]	

K13	Starting date for water figures	<i>WTSTDAT</i>
ASK	IF K5 [Total water consumption] given	
		[F1]-HELP
<p>What is the starting date for these water usage figures?</p> <ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY ◆ If the day is not known, ENTER "15" for DD 		
NEXT	➔ K14 [Ending date for water figures]	

K14	Ending date for water figures	<i>WTENDAT</i>
ASK	IF K5 [Total water consumption] given	
		[F1]-HELP
<p>What is the ending date [for these water usage figures]?</p> <ul style="list-style-type: none"> ◆ ENTER date as MMDDYYYY <input type="checkbox"/> ◆ VERIFY that this is the <u>last</u> 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 ➔ K15 [All occupants water included] OTHERWISE ➔ K17 [Other bldgs water included]	

K15	All occupants water included	<i>WTALLOCC</i>
ASK	IF K5 [Total water consumption] given & C5 [Number of businesses] >1 OR C7 [Re-ask number of businesses] > 1 OR C8 [Number of businesses category] ≠ Zero OR One	
<p>Do these figures include the water for all of the businesses or organizations in this building?</p> <p>1 Yes 2 No</p>		
NEXT	IF No ➔ K16 [Sq ft not included] OTHERWISE ➔ K17 [Other bldgs water included]	

K16	Sq ft not included	<i>WTEXCLSF</i>
ASK	IF K15 [All occupants water included] = No	
<p>What is the approximate square footage of the space in the building that is <u>not</u> included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ K17 [Other bldgs water included]	

K17	Other bldgs water included	<i>WTOTBD</i>
ASK	IF K5 [Total water consumption] given	
<p>Is any water use for other buildings included in these figures?</p> <p>1 Yes 2 No</p>		
NEXT	IF Yes → K18 [Sq ft of other included] IF No OR DK/RF → K19 [Water bill available]	

K18	Sq ft of other included	<i>WTOTSF</i>
ASK	IF K17 [Other bldgs water included] = Yes	
<p>What is the approximate square footage of the <u>other</u> buildings that are included in these figures?</p> <p>◆ PROBE for estimate if DK</p>		
RANGE	1 to 999,999,999	
NEXT	→ K19 [Water bill available]	

K19	Water bill available	<i>WTBILL</i>
ASK	IF K2 [Provide water figures] = Yes	
<p>Can you provide a copy of one water bill? (There is information on some utility bills that may help energy researchers who use these data.)</p> <ul style="list-style-type: none"> ◆ 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>1 Yes, bill available 2 No, will not be able to provide bill</p>		
NEXT	→ K20 [Heard of WaterSense]	

K20	Heard of WaterSense	<i>WTRSENS</i>
ASK	All Buildings	
<p>Have you heard of the U.S. Environmental Protection Agency WaterSense program?</p> <p>1 Yes 2 No</p>		
NEXT	→ SECTION L	

SECTION L. COLLECT MATERIALS

L1	Collect materials
ASK	<p>IF WS2 was reported to be filled out for any of the energy sources OR F28 [Monthly electricity available] = Yes OR G29 [Monthly natural gas available] = Yes OR F29 [Electricity bill available]=Yes OR F45 [Electricity bill available]=Yes OR G30 [Natural gas bill available]=Yes OR G46 [Natural gas bill available]=Yes OR H19 [Fuel oil bill available]=Yes OR H32 [Fuel oil bill available]=Yes OR I14 [District steam bill available]=Yes OR I25 [District steam bill available]=Yes OR J12 [District hot water bill available]=Yes OR J23 [District hot water bill available]=Yes OR K19 [Water bill available] = Yes OR Supplier information was provided for any energy source</p>
<p>Now, I just need to collect some of the forms that you filled out ahead of time or that we talked about during this interview.</p> <p>◆ ENTER "1" to continue</p>	
NEXT	➔ L2 [Collect Worksheet 2]

L2	Collect Worksheet 2
ASK	IF WS2 was reported to be filled out for any of the energy sources
<p>Would you please provide me with your completed copy of Worksheet 2? [This is the "Energy Amounts Used and Dollars Spent" worksheet that you filled out before this interview.]</p> <p>◆ IF in-person, ASK to collect worksheet</p> <p>◆ IF phone interview, ASK respondent to mail form using the self-addressed envelope</p> <ol style="list-style-type: none"> 1 Collected WS 2 2 Did not collect WS2 3 Respondent will FAX, mail, or e-mail 	
NEXT	<p>IF F28 [Monthly electricity available] = Yes OR G29 [Monthly natural gas available] = Yes ➔ L3 [Collect monthly records] IF Supplier information was provided for any energy source ➔ L4 [Who signs authorization] OTHERWISE ➔ L13 [Response effort]</p>

L3	Collect monthly records
ASK	IF F28 [Monthly electricity available] = Yes OR G29 [Monthly natural gas available] = Yes
FILL	<p>{ElectricityNaturalGas}</p> <p>IF28 [Monthly electricity available] = Yes & G29 [Monthly natural gas available] ≠ Yes = “electricity”</p> <p>IF28 [Monthly electricity available] ≠ Yes & G29 [Monthly natural gas available] = Yes = “natural gas”</p> <p>IF28 [Monthly electricity available] =Yes & G29 [Monthly natural gas available] = Yes = “electricity and natural gas”</p>
<p>Would you please provide me with the monthly {ElectricityNaturalGas} records that we talked about a few minutes ago?</p> <ul style="list-style-type: none"> ◆ IF in-person, ASK to collect records ◆ IF phone interview, ASK respondent to mail form using the self-addressed envelope <ol style="list-style-type: none"> 1 Collected monthly records 2 Did not collect monthly records 3 Respondent will FAX, mail, or e-mail 	
NEXT	IF Supplier information was provided for any energy source → L4 [Who signs authorization] OTHERWISE → L13 [Response effort]

L4	Who signs authorization
ASK	IF Supplier information was provided for any energy source
<p>As I mentioned earlier, we may need to contact your energy supplier to obtain the energy consumption. In order for the energy companies to release this information to us, we need to have an authorization form signed by you, or by some other representative of your company.</p> <p>Should the authorization form be signed by you or someone else?</p> <ol style="list-style-type: none"> 1 Signed by respondent 2 Signed by someone else 3 IF VOLUNTEERED: Respondent refuses to sign or have anyone else sign 	
NEXT	IF Signed by respondent OR Signed by someone else OR DK/RF → L5 [Prepare authorization form] IF Respondent refuses to sign or have anyone else sign → L13 [Response effort]

L5	Prepare authorization form
ASK	IF L5 [Who signs authorization form] ≠ Respondent refuses to sign or have anyone else sign
<p>Please give me a moment to fill in the energy supplier names on this form.</p> <ul style="list-style-type: none"> ◆ Begin preparing the Authorization Form by recording the information shown below in the box near the top of the form ◆ VERIFY with respondent as you record <p>Establishment address: {Address} City: {City} State: {State} ZIP code: {ZIP} Case ID: {CaseID}</p> <ul style="list-style-type: none"> ◆ ENTER “1” when finished 	
NEXT	IF Electricity supplier information was provided → L6 [Electricity suppliers] IF Natural gas supplier information was provided → L7 [Natural gas suppliers] IF Fuel oil supplier information was provided → L8 [Fuel oil suppliers] IF District steam supplier information was provided → L9 [District steam suppliers] IF District hot water supplier information was provided → L10 [District hot water suppliers]

L6	Electricity suppliers										
ASK	IF L5 [Who signs authorization form] ≠ Respondent refuses to sign or have anyone else sign & Electricity supplier information was provided										
FILL	{Electricity} = "Electricity" for each supplier name that has been provided {SupplierName} = Supplier names given in F31 [Electricity suppliers] OR F33 [Supplier name]										
	<p>◆ Continue preparing the Authorization Form by filling in "Electricity" on the line(s) for "Energy Source" and copying the supplier name(s) shown below in the adjacent box(es)</p> <table> <thead> <tr> <th><u>Energy Source</u></th> <th><u>Supplier</u></th> </tr> </thead> <tbody> <tr> <td>Electricity</td> <td>{SupplierName}</td> </tr> <tr> <td>{Electricity}</td> <td>{SupplierName}</td> </tr> <tr> <td>{Electricity}</td> <td>{SupplierName}</td> </tr> <tr> <td>{Electricity}</td> <td>{SupplierName}</td> </tr> </tbody> </table> <p>◆ ENTER "1" when finished</p>	<u>Energy Source</u>	<u>Supplier</u>	Electricity	{SupplierName}	{Electricity}	{SupplierName}	{Electricity}	{SupplierName}	{Electricity}	{SupplierName}
<u>Energy Source</u>	<u>Supplier</u>										
Electricity	{SupplierName}										
{Electricity}	{SupplierName}										
{Electricity}	{SupplierName}										
{Electricity}	{SupplierName}										
NEXT	IF Natural gas supplier information was provided → L7 [Natural gas suppliers] IF Fuel oil supplier information was provided → L8 [Fuel oil suppliers] IF District steam supplier information was provided → L9 [District steam suppliers] IF District hot water supplier information was provided → L10 [District hot water suppliers] OTHERWISE: IF L4 [Who signs authorization] = Signed by respondent → L11 [Authorization form signed] IF L4 [Who signs authorization] = Signed by someone else → L12 [Contact for authorization]										

L7	Natural gas suppliers										
ASK	IF L5 [Who signs authorization form] ≠ Respondent refuses to sign or have anyone else sign & Natural gas supplier information was provided										
FILL	{Natural gas} = "Natural gas" for each supplier name that has been provided {SupplierName} = Supplier names given in G32 [Natural gas suppliers] OR G34 [Supplier name]										
	<p>◆ Continue preparing the Authorization Form by filling in "Natural gas" on the line(s) for "Energy Source" and copying the supplier name(s) shown below in the adjacent box(es)</p> <table border="0"> <thead> <tr> <th><u>Energy Source</u></th> <th><u>Supplier</u></th> </tr> </thead> <tbody> <tr> <td>Natural gas</td> <td>{SupplierName}</td> </tr> <tr> <td>{Natural gas}</td> <td>{SupplierName}</td> </tr> <tr> <td>{Natural gas}</td> <td>{SupplierName}</td> </tr> <tr> <td>{Natural gas}</td> <td>{SupplierName}</td> </tr> </tbody> </table> <p>◆ ENTER "1" when finished</p>	<u>Energy Source</u>	<u>Supplier</u>	Natural gas	{SupplierName}	{Natural gas}	{SupplierName}	{Natural gas}	{SupplierName}	{Natural gas}	{SupplierName}
<u>Energy Source</u>	<u>Supplier</u>										
Natural gas	{SupplierName}										
{Natural gas}	{SupplierName}										
{Natural gas}	{SupplierName}										
{Natural gas}	{SupplierName}										
NEXT	IF Fuel oil supplier information was provided → L8 [Fuel oil suppliers] IF District steam supplier information was provided → L9 [District steam suppliers] IF District hot water supplier information was provided → L10 [District hot water suppliers] OTHERWISE: IF L4 [Who signs authorization] = Signed by respondent → L11 [Authorization form signed] IF L4 [Who signs authorization] = Signed by someone else → L12 [Contact for authorization]										

L8	Fuel oil suppliers										
ASK	IF L5 [Who signs authorization form] ≠ Respondent refuses to sign or have anyone else sign & Fuel oil supplier information was provided										
FILL	{Fuel oil/Diesel/Kerosene} = "Fuel oil/Diesel/Kerosene" for each supplier name that has been provided {SupplierName} = Supplier names given in H21 [Fuel oil supplier name]										
	<p>◆ Continue preparing the Authorization Form by filling in "Fuel oil/Diesel/Kerosene" on the line(s) for "Energy Source" and copying the supplier name(s) shown below in the adjacent box(es)</p> <table> <thead> <tr> <th><u>Energy Source</u></th> <th><u>Supplier</u></th> </tr> </thead> <tbody> <tr> <td>Fuel oil/Diesel/Kerosene</td> <td>{SupplierName}</td> </tr> <tr> <td>{Fuel oil/Diesel/Kerosene}</td> <td>{SupplierName}</td> </tr> <tr> <td>{Fuel oil/Diesel/Kerosene}</td> <td>{SupplierName}</td> </tr> <tr> <td>{Fuel oil/Diesel/Kerosene}</td> <td>{SupplierName}</td> </tr> </tbody> </table> <p>◆ ENTER "1" when finished</p>	<u>Energy Source</u>	<u>Supplier</u>	Fuel oil/Diesel/Kerosene	{SupplierName}	{Fuel oil/Diesel/Kerosene}	{SupplierName}	{Fuel oil/Diesel/Kerosene}	{SupplierName}	{Fuel oil/Diesel/Kerosene}	{SupplierName}
<u>Energy Source</u>	<u>Supplier</u>										
Fuel oil/Diesel/Kerosene	{SupplierName}										
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{Fuel oil/Diesel/Kerosene}	{SupplierName}										
{Fuel oil/Diesel/Kerosene}	{SupplierName}										
NEXT	IF District steam supplier information was provided → L9 [District steam suppliers] IF District hot water supplier information was provided → L10 [District hot water suppliers] IF L4 [Who signs authorization] = Signed by respondent → L11 [Authorization form signed] IF L4 [Who signs authorization] = Signed by someone else → L12 [Contact for authorization]										

L9	District steam suppliers				
ASK	IF L5 [Who signs authorization form] ≠ Respondent refuses to sign or have anyone else sign & District steam supplier information was provided				
FILL	{SupplierName} = Supplier name given in I15 [District steam supplier name]				
	<p>◆ Continue preparing the Authorization Form by filling in "District steam" on the line(s) for "Energy Source" and copying the supplier name(s) shown below in the adjacent box(es)</p> <table> <thead> <tr> <th><u>Energy Source</u></th> <th><u>Supplier</u></th> </tr> </thead> <tbody> <tr> <td>District steam</td> <td>{SupplierName}</td> </tr> </tbody> </table> <p>◆ ENTER "1" when finished</p>	<u>Energy Source</u>	<u>Supplier</u>	District steam	{SupplierName}
<u>Energy Source</u>	<u>Supplier</u>				
District steam	{SupplierName}				
NEXT	IF District hot water supplier information was provided → L10 [District hot water suppliers] IF L4 [Who signs authorization] = Signed by respondent → L11 [Authorization form signed] IF L4 [Who signs authorization] = Signed by someone else → L12 [Contact for authorization]				

L10	District hot water suppliers
ASK	IF L5 [Who signs authorization form] ≠ Respondent refuses to sign or have anyone else sign & District hot water supplier information was provided
FILL	{SupplierName} = Supplier name given in J13 [District hot water supplier name]
	<p>◆ Continue preparing the Authorization Form by filling in "District hot water" on the line(s) for "Energy Source" and copying the supplier name(s) shown below in the adjacent box(es)</p> <p><u>Energy Source</u> <u>Supplier</u></p> <p>District hot water {SupplierName}</p> <p>◆ ENTER "1" when finished</p>
NEXT	IF L4 [Who signs authorization] = Signed by respondent → L11 [Authorization form signed] IF L4 [Who signs authorization] = Signed by someone else → L12 [Contact for authorization]

L11	Authorization form signed
ASK	IF L5 [Who signs authorization form] = Signed by respondent & Supplier information was provided was provided for any energy source
	<p>◆ Give respondent the Authorization Form and have them record their information and signature in the middle portion of the form</p> <p>Please fill out the rest of this information and sign this form.</p> <ol style="list-style-type: none"> 1 Collected signed authorization form 2 Did not collect signed authorization form 3 Respondent will FAX, mail, or e-mail
NEXT	→ L13 [Response effort]

L12	Contact for authorization
ASK	IF L4 [Who signs authorization] = Signed by someone else & Supplier information was provided was provided for any energy source
<p>Please give me the name, address, and telephone number of the person who should sign the authorization form.</p> <ul style="list-style-type: none"> ◆ RECORD contact information on the Case Assignment Folder ◆ ENTER "1" when completed 	
NEXT	→ L13 [Response effort]

L13	Response effort	<i>REFFORT</i>
ASK	All Buildings	
Including yourself, please tell me how many people were needed to compile the information for this interview.		
RANGE	1 to 99	
NEXT	→ L14 [Green building certification]	

L14	Green building certification	<i>GRNCRT</i>
ASK	All Buildings	
<p>In the past 3 years, has this building been certified as a "green building," such as Energy Star, LEED, or Green Globes?</p> <p>1 Yes 2 No</p>		
NEXT	<p>IF Yes → L15 [Type of green certification] OTHERWISE: IF F29 [Electricity bill available]=Yes OR F45 [Electricity bill available]=Yes OR G30 [Natural gas bill available]=Yes OR G46 [Natural gas bill available]=Yes OR H19 [Fuel oil bill available]=Yes OR H32 [Fuel oil bill available]=Yes OR I14 [District steam bill available]=Yes OR I25 [District steam bill available]=Yes OR J12 [District hot water bill available]=Yes OR J23 [District hot water bill available]=Yes OR K19 [Water bill available] = Yes → L17 [Interview complete with bills] OTHERWISE → L18 [Interview complete]</p>	

L15	Type of green certification	<i>see below</i>												
ASK	IF L14 [Green building certification] = Yes													
<p>Which type of certification did the building receive? Was it Energy Star, LEED, Green Globes, or did it receive some other green building recognition?</p> <p>◆ ENTER all that apply</p> <table> <tr> <td>1</td> <td>Energy Star</td> <td><i>ENGYSTR</i></td> </tr> <tr> <td>2</td> <td>LEED</td> <td><i>LEED</i></td> </tr> <tr> <td>3</td> <td>Green Globes</td> <td><i>GRNGLBS</i></td> </tr> <tr> <td>4</td> <td>Other</td> <td><i>OTCERT</i></td> </tr> </table>			1	Energy Star	<i>ENGYSTR</i>	2	LEED	<i>LEED</i>	3	Green Globes	<i>GRNGLBS</i>	4	Other	<i>OTCERT</i>
1	Energy Star	<i>ENGYSTR</i>												
2	LEED	<i>LEED</i>												
3	Green Globes	<i>GRNGLBS</i>												
4	Other	<i>OTCERT</i>												
NEXT	IF Other selected → L16 [Other certification] OTHERWISE: IF F29 [Electricity bill available]=Yes OR F45 [Electricity bill available]=Yes OR G30 [Natural gas bill available]=Yes OR G46 [Natural gas bill available]=Yes OR H19 [Fuel oil bill available]=Yes OR H32 [Fuel oil bill available]=Yes OR I14 [District steam bill available]=Yes OR I25 [District steam bill available]=Yes OR J12 [District hot water bill available]=Yes OR J23 [District hot water bill available]=Yes OR K19 [Water bill available] = Yes → L17 [Interview complete with bills] OTHERWISE → L18 [Interview complete]													

L16	Other certification	<i>GRNCRTX</i>
ASK	IF Other IN L15 [Type of green certification]	
<p>What was the other type of recognition received by this building?</p> <p>◆ ENTER the type of certification</p>		
NEXT	IF F29 [Electricity bill available]=Yes OR F45 [Electricity bill available]=Yes OR G30 [Natural gas bill available]=Yes OR G46 [Natural gas bill available]=Yes OR H19 [Fuel oil bill available]=Yes OR H32 [Fuel oil bill available]=Yes OR I14 [District steam bill available]=Yes OR I25 [District steam bill available]=Yes OR J12 [District hot water bill available]=Yes OR J23 [District hot water bill available]=Yes OR K19 [Water bill available] = Yes → L17 [Interview complete with bills] OTHERWISE → L18 [Interview complete]	

L17	Interview complete with bills
ASK	IF F29 [Electricity bill available]=Yes OR F45 [Electricity bill available]=Yes OR G30 [Natural gas bill available]=Yes OR G46 [Natural gas bill available]=Yes OR H19 [Fuel oil bill available]=Yes OR H32 [Fuel oil bill available]=Yes OR I14 [District steam bill available]=Yes OR I25 [District steam bill available]=Yes OR J12 [District hot water bill available]=Yes OR J23 [District hot water bill available]=Yes OR K19 [Water bill available] = Yes
<p>That completes our interview. Thank you so much for your time and help.</p> <ul style="list-style-type: none"> ◆ IF in-person, ASK: Now, may I please scan the energy and/or water bill(s) that we talked about a few minutes ago? ◆ IF phone interview, ASK respondent to mail bills using the self-addressed envelope ◆ ENTER "1", [ENTER], then [F10] to Exit 	
NEXT	INTERVIEW COMPLETE

L18	Interview complete
ASK	IF NOT (F29 [Electricity bill available]=Yes OR F45 [Electricity bill available]=Yes OR G30 [Natural gas bill available]=Yes OR G46 [Natural gas bill available]=Yes OR H19 [Fuel oil bill available]=Yes OR H32 [Fuel oil bill available]=Yes OR I14 [District steam bill available]=Yes OR I25 [District steam bill available]=Yes OR J12 [District hot water bill available]=Yes OR J23 [District hot water bill available]=Yes OR K19 [Water bill available] = Yes)
<p>That completes our interview. Thank you so much for your time and help.</p> <ul style="list-style-type: none"> ◆ ENTER "1", [ENTER], then [F10] to Exit 	
NEXT	INTERVIEW COMPLETE