ELCAP Database User Manual

March 2013

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ELCAP Overview

The Bonneville Power Administration undertook the End-Use Load and Consumer Assessment Program (ELCAP) from 1986 through 1989, in an effort to obtain hourly and subhourly electricity demand information from a variety of residential and commercial end uses. Since that time, the data from this project has been stored in various digital and written formats that were not readily accessible.

In 2012, the Regional Technical Forum (RTF) contracted with Cadmus to compile all the various components of ELCAP project information into one location. Cadmus created a database after reviewing all the available ELCAP data and determining the best method of indexing and converting it to a readily accessible, sortable, and searchable format. The database includes individual site characteristic and hourly end-use data for 499 residential and 126 commercial facility sites, as well as hourly energy and peak profile data for typical residential and commercial facility types, and a series of hard copy and scanned documents describing and documenting the ELCAP project. Cadmus uploaded the ELCAP data and reports to the database and formatted them for use by the RTF, the Northwest Power Planning Council, Northwest utilities, and other analysts.

Getting Started

ELCAP Website Overview

The ELCAP database is accessible via any Web browser: rtf.nwcouncil.org/elcap. There are five menu options in the main navigation area: Home, About, Queries, Reports, and Account (Figure 1).

Figure 1. Navigation Area

The **Home** page provides a brief history of the ELCAP project and the development of this database and Website.

The **About** page describes the contents of the ELCAP database and the pivot grid feature that allows users to create custom queries from the data. From this page, users can download the Microsoft Word® document prepared by Cadmus titled "*ELCAP Data Assembly and Conversion Project Report on File Contents,*" the Microsoft Excel® file containing the report appendices, and this user manual.

The **Queries** menu lists the available pivot grids in a drop-down menu. Instructions for using the pivot grids are discussed in the proceeding pages of this user manual. Users are prompted to log in to the Website in order to access the pivot grids.

The **Reports** page displays a chart of ELCAP report files and their descriptions. The reports provide the results of analysis conducted on the ELCAP data and background information on the project. Users can download the reports by clicking on the file names.

The **Account** page allows users to log in to the Website and change their password, if desired.

Creating a Username and Password

Users must register a username and password to access the Queries and Reports pages' contents.

1. Click Log In from the main navigation area (Figure 2).
2. Click the blue Register link (Figure 2).

Figure 2. Register an Account

3. Fill out the Account Information form in the spaces provided (Figure 3).
4. Click Create User (Figure 3).

**Figure 3. Create a New Account**

5. The Website will then redirect the user to the Home page. The main navigation area will now state "*Welcome [USERNAME]!*" and provides a Log Out link.

ELCAP Database Pivot Grids

Accessing Pivot Grids

To access a pivot grid, move the cursor over the Queries menu (Figure 4). A drop-down list will appear showing the four types of pivot grids to choose from: Commercial Site Meter, Residential Site Meter, Residential Site Characteristic, and Weather Station.

Figure 4. Queries
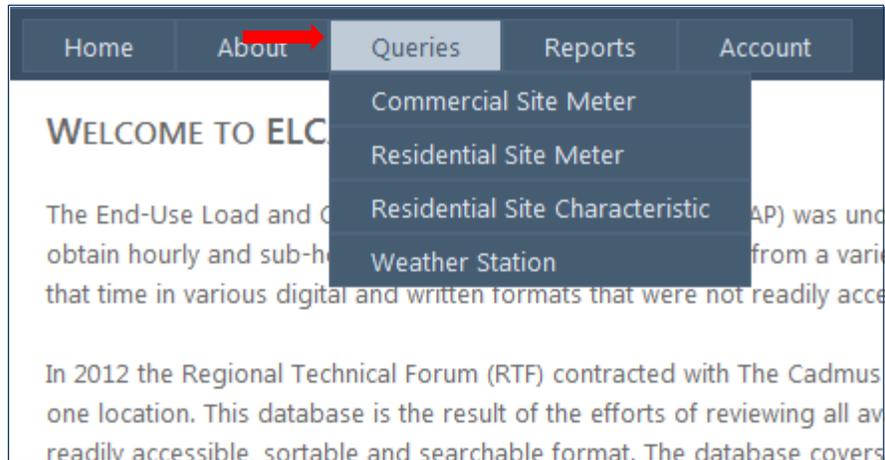
The **Commercial Site Meter** pivot grid allows users to analyze hourly metered loads for commercial sites in the ELCAP study.

The **Residential Site Meter** pivot grid allows users to analyze hourly metered loads for residential sites in the ELCAP study.

The **Residential Site Characteristic** pivot grid allows users to analyze the residential site characteristics of sites in the ELCAP study.

The **Weather Station** pivot grid allows users to analyze weather data from weather stations included in the ELCAP study.

The pivot grids function similarly to Excel pivot tables.

The PivotGrid Field List

Note: While the Commercial Site Meter pivot grid is referenced in the following instructions, all four of the pivot grids function in the same manner.

After selecting a pivot grid from the Queries menu drop-down list, the PivotGrid Field List will appear in a pop-up window on top of the default pivot grid view. The PivotGrid Field List contains a list of all the fields available for data analysis based on the type of pivot grid selected from the Queries menu.

1. The **Hidden Fields** box lists all the fields not already included in the Filter Area, Column Area, Row Area, or Data Area boxes below the Hidden Fields section (Figure 5).

    a. ⊞ **Fields** organize the data by specific metering, timing, and site characteristics. The user places fields in the Filter Area, Column Area, and Row Area boxes.

    b. ◰ **Measures** provide the data counts, sums, and averages. The user can only place measures in the Data Area box. Note that the pivot grid technology automatically labels this section *Measures.* The label implies that the measures in this list are numerical measurements of the other fields in the pivot grid.

2. Search for fields by clicking the ⊞ and ⊟ buttons to expand and collapse field headings (Figure 5).

Figure 5. PivotGrid Field List
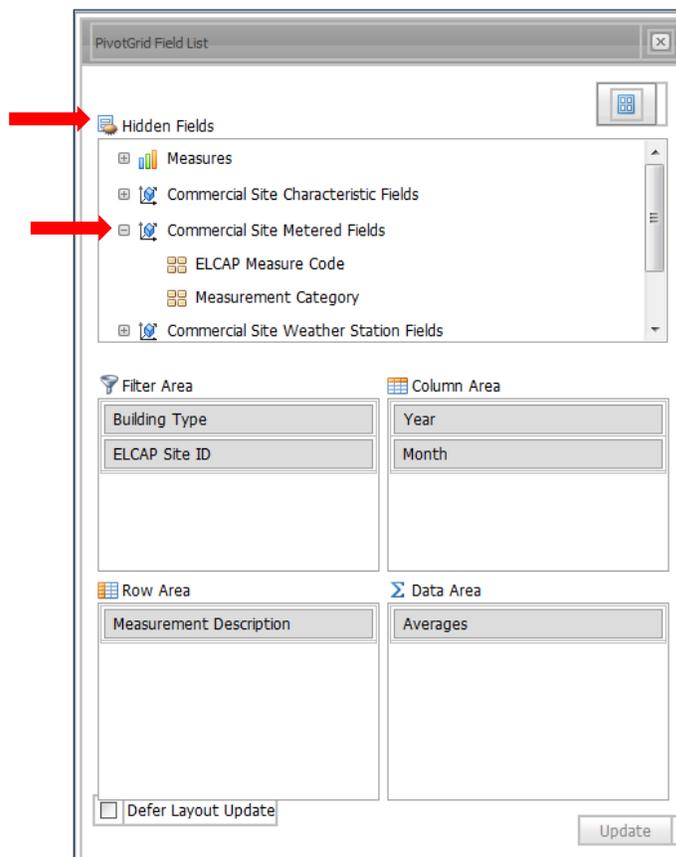
3. To add a field to the displayed pivot grid, click and drag the selected field into its appropriate box.

4. To remove a field from the displayed pivot grid, click on the field and drag it back into the Hidden Fields box.

5. The actual pivot grid (shown behind the PivotGrid Field List) is automatically updated when the user adds or removes fields from the boxes. Click the Defer Layout Update checkbox that is under the Row Area and Data Area boxes to force pivot grid updates to occur manually. When the Defer Layout Update checkbox is clicked, the pivot grid will not apply any changes until the user clicks the Update button (Figure 6).

Figure 6. Defer Layout Update

6. To change the layout of the PivotGrid Field List, click the [button] button and choose a different layout option from the drop-down list (Figure 7).

Figure 7. PivotGrid Field List Layout
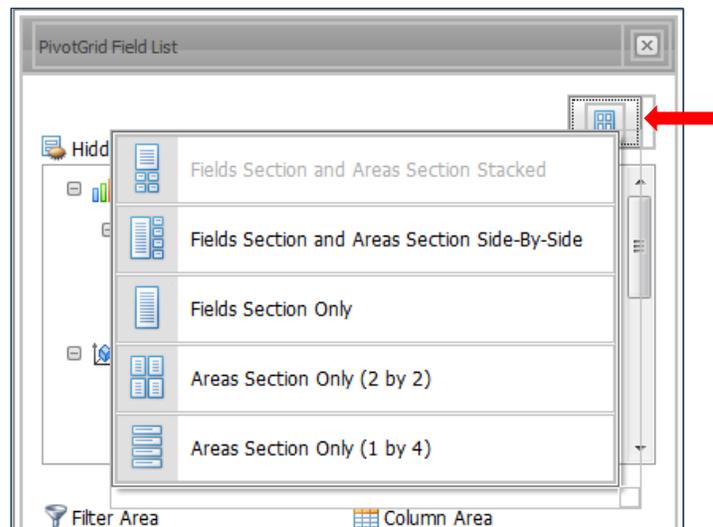
7. Click [×] in the top right corner of the pop-up window to exit the PivotGrid Field List. Users can also move the PivotGrid Field List by clicking on the gray bar at the top of the pop-up window and dragging it to a new location (Figure 8).

Figure 8. Exit the PivotGrid Field List
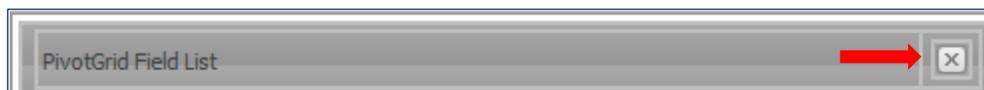
The Measurement Description field in the Commercial Site Meter pivot grid (under the Commercial Site Metered Fields heading) and in the Residential Site Meter pivot grid (under the Residential Site Metered Fields heading) **must always be in a Filter Area, Column Area, or Row Area box** because the values in

these fields are measured in different units (watts, degrees, etc.). Without including this field in a query, users will be adding or summing values with different units. This rule also applies to the Characteristic Description field in the Residential Site Characteristic pivot grid and the Weather Reading Description field in the Weather Station pivot grid.

Introduction to the Pivot Grid Report

The pivot grids organize data from the fields selected in the PivotGrid Field List. Please reference Figure 9 for the following four steps.

1. The field(s) moved into the Filter Area box are listed here.
2. The measure(s) moved into the Data Area box are listed here and represented in the Grand Total column.
3. The field(s) moved into the Row Area box are listed here and represented in the following rows.
4. The field(s) moved into the Column Area box are listed here and represented in the following columns.

Figure 9. Pivot Grid*

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

Measurement Description △	⊞ 1987	⊞ 1988	⊞ 1989	Grand Total
AUXILIARIES (Watts)	2815.57	2658.22	2716.49	2725.25
BUILDING TOTAL (Watts)	63779.91	61066.45	59428.83	61536.69
COOLING (Watts)	8088.51	5410.02	7412.84	6802.63
DATA PROCESSING (Watts)	1945.74	2085.91	2151.74	2058.31
DATA RECONSTRUCTION		7923.78		7923.78
DQ FLAG (Quality Rating)	1.31	1.45	1.61	1.45
DQ LEVEL (Quality Rating)	2.08	2.28	2.55	2.29
ENERGY ENDUSE SUM-CHECK (Watts)	816.74	2393.15	1526.22	1655.56
EXTERIOR LIGHTING (Watts)	2401.97	2437.3	2261.78	2379.51
EXTERIOR TEMP#1 (Degrees)	606.26	580.73	601.37	594.51
FOOD PREPARATION (Watts)	2590.58	2535.98	2206.62	2467.16
GENERAL-MIXED (Watts)	6382.77	6406.36	6382.86	6392.71
GLOBAL HORIZ RADIATION (Watts/Square Meter)	140.4	111.86	147.99	130.11
HEATING (Watts)	3935.46	4889.06	5888.53	4835.8
HEATING (PROXY) (Watts)	69.31	93.38	130.52	96.66
INTERIOR LIGHTING (Watts)	21490.49	20147.92	18525.71	20172.89
INTERIOR TEMP#1 (Degrees)	713.06	704.2	709.77	708.52
INTERIOR TEMP#10 (Degrees)	689.72	693.71	719.57	699.74
INTERIOR TEMP#11 (Degrees)	714.15	694.84	725.68	709.97
INTERIOR TEMP#12 (Degrees)	707.09	687.59	703.45	698.71
INTERIOR TEMP#13 (Degrees)	694.9	706.92	714.32	704.76
INTERIOR TEMP#14 (Degrees)	750.95	747.63	723.6	741.62
INTERIOR TEMP#15 (Degrees)	721.85	727.41	706.1	719.92
INTERIOR TEMP#16 (Degrees)	726.88	735.21	728.43	730.69
INTERIOR TEMP#17 (Degrees)	710.04	717.31	703.14	711.1
INTERIOR TEMP#18 (Degrees)	720.64	745.18	735.92	732.73
INTERIOR TEMP#19 (Degrees)	717.49	727.13	719.82	721.01

Filter Area fields: Building Type, ELCAP Site ID
Data Area: Averages
Column Area: Year △, Month △

* This pivot grid represents the PivotGrid Field List from Figure 5.

5. To open the PivotGrid Field List again, right-click on any of the fields or measures and click Show Field List (Figure 10).

Figure 10. Open the PivotGrid Field List
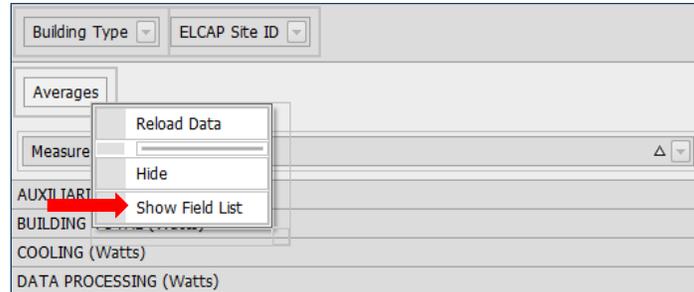
Organizing the Pivot Grid

1. The pivot grids can be changed dynamically by dragging fields to new locations and changing their order.

   a. For example, dragging the Month field in front of the Year field alters the pivot grid by first displaying each month, then organizing by year. This result is displayed in in Figure 11.

Figure 11. Dragging Month in Front of Year

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

Measurement Description	⊞ 01	⊞ 02	⊞ 03	⊞ 04	⊞ 05	⊞ 06	⊞ 07	⊞ 08	⊞ 09	⊞ 10	⊞ 11	⊞ 12	Grand Total
AUXILIARIES (Watts)	2230.03	1898.44	2335.59	2479.74	2872.4	3207.86	3208.98	3254.28	3504.13	2637.56	2032.8	2260.4	2725.25
BUILDING TOTAL (Watts)	64619.48	63060.05	58655.79	59434.01	60224.75	61506.69	63021.12	63354.88	60809.04	59904.09	60292.99	64016.37	61536.69
COOLING (Watts)	2286.48	2729.85	2857.98	5033.73	7202.33	9822.8	11470.15	12262.95	9521.65	5885.56	3071.22	2126.31	6802.63
DATA PROCESSING (Watts)	2128.8	2127.76	2162.85	2143.62	2128.81	2033.51	2037.8	2008.26	1820.16	2067.78	2076.91	1934.08	2058.31
DATA RECONSTRUCTION				6862.41	7164.89	8937.74	8233.41						7923.78
DQ FLAG (Quality Rating)	1.3	1.37	1.42	1.43	1.51	1.56	1.55	1.56	1.59	1.46	1.28	1.21	1.45
DQ LEVEL (Quality Rating)	2.21	2.27	2.32	2.32	2.4	2.3	2.24	2.34	2.32	2.24	2.22	2.18	2.29
ENERGY ENDUSE SUM-CHECK (Watts)	2262.95	1570.7	1184.62	582.71	1839.91	2052.9	1417.64	1730.42	1987.3	1834.48	1284.36	2460.63	1655.56
EXTERIOR LIGHTING (Watts)	3134.3	2909.85	2672.54	2293.09	2110.13	1893.78	1886.9	1980.65	2192.09	2468.16	2859.22	3145.52	2379.51
EXTERIOR TEMP#1 (Degrees)	478.78	514.8	516.56	564.57	601.53	669.13	691.23	691.92	663	599.31	526.77	457.92	594.51
FOOD PREPARATION (Watts)	2416.45	2410.59	2390.14	2470.61	2476.04	2338.02	2359.4	2455.28	2609.5	2603.31	2620.18	2573.33	2467.16
GENERAL-MIXED (Watts)	5879	6353.97	6686.1	6813.72	6384.59	6465.04	6449.4	6448.02	6516.13	6365.28	6288.78	5724.87	6392.71
GLOBAL HORIZ RADIATION (Watts/Square Meter)	27.17	56.9	85.72	146.36	184.58	217.61	211.83	187.22	136.16	75.7	32.21	23.57	130.11
HEATING (Watts)	11801.19	11541.04	7998.4	4430.86	2806.52	1734.76	1276.34	1202.81	1374.89	3295.35	6578.06	11055.4	4835.8
HEATING (PROXY) (Watts)	195.11	188.49	132	74.29	75.97	63.86	66.82	74.1	56.43	65.06	105.65	146.07	96.66
INTERIOR LIGHTING (Watts)	19158.39	18925.04	19674.01	20762.77	19731.36	20302.1	19994.36	20515.42	20809.79	21147.29	21146.95	19449.16	20172.89
INTERIOR TEMP#1 (Degrees)	668.93	671.87	680.53	700.52	716.28	736.34	743.83	743.57	728.13	707.7	680.74	667.29	708.52
INTERIOR TEMP#10 (Degrees)	667.31	662.48	672.19	691.33	712.84	728.81	737.97	733.33	722.72	699.11	667.91	649.08	699.74
INTERIOR TEMP#11 (Degrees)	669.82	670.08	689.72	711.05	723.8	737.93	740.07	746.59	725.83	703.64	672.29	659.35	709.97
INTERIOR TEMP#12 (Degrees)	629.13	652.1	666.14	703.69	716.57	734.53	745.52	739.17	721.15	704.38	647.93	633.1	698.71
INTERIOR TEMP#13 (Degrees)	693.34	694.02	701.95	704.34	707.34	709.93	713.74	714.71	710.56	702	696.65	691.29	704.76
INTERIOR TEMP#14 (Degrees)	731.01	725.27	731.4	736.23	739.96	746.57	753.85	753.68	755.51	744.09	739.91	735.38	741.62
INTERIOR TEMP#15 (Degrees)	709.89	707.53	711.83	719.91	715.55	728.44	728.38	725.37	737.32	727.24	712.26	702.54	719.92
INTERIOR TEMP#16 (Degrees)	732.44	732.04	734.94	725.45	722.65	732.24	732.59	737.42	736.6	732.61	725.31	723.51	730.69
INTERIOR TEMP#17 (Degrees)	718.43	713.83	716.09	711.83	709.82	712.04	711.95	717.16	714.49	702.33	693.05	706.88	711.1
INTERIOR TEMP#18 (Degrees)	738.87	738.45	733.51	733.44	725.33	728.1	728.36	727.34	719.44	759.63	731.41	731.16	732.73

b. Another example is to drag the Year and Month fields from the Column Area box to the Row Area box, and move the Measurement Description field from the Row Area box to the Column Area box. Now the Year values are listed in rows and the Measurement Description values are listed in columns. This result is displayed in Figure 12.

Figure 12. Swapping Column Area and Row Area Fields

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

		AUXILIARIES (Watts)	BUILDING TOTAL (Watts)	COOLING (Watts)	DATA PROCESSING (Watts)	DATA RECONSTRUCTION	DQ FLAG (Quality Rating)	DQ LEVEL (Quality Rating)	ENERGY ENDUSE SUM-CHECK (Watts)	EXTERIOR LIGHTING (Watts)
⊞ 1987		2815.57	63779.91	8088.51	1945.74		1.31	2.08	816.74	2401.97
⊞ 1988		2658.22	61066.45	5410.02	2085.91	7923.78	1.45	2.28	2393.15	2437.3
⊞ 1989		2716.49	59428.83	7412.84	2151.74		1.61	2.55	1526.22	2261.78
Grand Total		2725.25	61536.69	6802.63	2058.31	7923.78	1.45	2.29	1655.56	2379.51

2. To toggle a field's values between ascending order and descending order, click the field order arrow displayed next to the field name, as shown in Figure 13.

Figure 13. Field Order Arrow
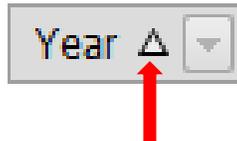
a. For example, clicking the Year field order arrow changes the displayed order of the values from 1987 – 1989 to 1989 – 1987. This result is displayed in Figure 14.

Figure 14. Changing the Order of the Year Field

b. Another example is to click the Measurement Description field order arrow. The order changes the values from Auxiliaries – Wind Speed to Wind Speed – Auxiliaries. This result is displayed in Figure 15.

Figure 15. Changing the Order of the Measurement Description Field

3. The ⊞ and ⊟ buttons next to fields should be used to expand and collapse individual columns and rows to display the unique values of the specified field (Figure 16).

Figure 16. Expand and Collapse Buttons

a. For example, clicking the ⊞ button next to 1987 expands the 1987 column. Now the pivot grid displays every month data was collected in 1987. The sum of data collected every month in 1987 is shown in the 1987 Total column. This result is displayed in Figure 17.

Figure 17. Expanding the 1987 Column

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

Building Type | ELCAP Site ID |

Averages   Year △ | Month △ |

Measurement Description △	⊟ 1987									1987 Total	⊞ 1988	⊞ 1989	Grand Total
	04	05	06	07	08	09	10	11	12				
AUXILIARIES (Watts)	2352.1	2710.82	2900.28	3254	3626.11	3753.1	2665.55	1975.07	2128.84	2815.57	2658.22	2716.49	2725.25
BUILDING TOTAL (Watts)	61397.12	60207.73	63147.25	67736.5	65691.49	62079.36	60297.44	62587.75	70878.88	63779.91	61066.45	59428.83	61536.69
COOLING (Watts)	4841.22	7901.05	10888.93	12442.47	13460.35	11503.07	6063.51	3319.09	2020.83	8088.51	5410.02	7412.84	6802.63
DATA PROCESSING (Watts)	2044.8	1918.01	1932.79	1979.62	1884.23	1670.57	1919.07	2047.06	2100.83	1945.74	2085.91	2151.74	2058.31
DATA RECONSTRUCTION											7923.78		7923.78
DQ FLAG (Quality Rating)	1.32	1.22	1.28	1.35	1.37	1.43	1.31	1.27	1.25	1.31	1.45	1.61	1.45
DQ LEVEL (Quality Rating)	2.21	2.02	2.03	2.11	2.21	2.22	1.97	1.88	2.02	2.08	2.28	2.55	2.29
ENERGY ENDUSE SUM-CHECK (Watts)	407.68	703.74	1186.54	676.45	109.08	801.83	1537.3	766.28	1193.25	816.74	2393.15	1526.22	1655.56
EXTERIOR LIGHTING (Watts)	2421.16	2109.37	1940.58	2024.29	2052.22	2156.5	2460.36	2981.45	3491.23	2401.97	2437.3	2261.78	2379.51
EXTERIOR TEMP#1 (Degrees)	576.99	586.16	642.72	657.24	677.69	667.86	620.26	559.76	472.22	606.26	580.73	601.37	594.51
FOOD PREPARATION (Watts)	2577.34	2621.5	2603.94	2621.56	2600.16	2621.38	2565.37	2562.94	2539.5	2590.58	2535.98	2206.62	2467.16
GENERAL-MIXED (Watts)	6715	6359.6	6260.14	6456.21	6310.53	6679.27	6450.38	5946.22	6273.6	6382.77	6406.36	6382.86	6392.71
GLOBAL HORIZ RADIATION (Watts/Square Meter)	149.04	196.01	236.95	195.32	200.18	141.11	94.33	34.46	26.01	140.4	111.86	147.99	130.11
HEATING (Watts)	4077.52	2209.54	1465.06	1593.43	1270.06	1387.98	3739.36	7046.22	12378.99	3935.46	4889.06	5888.53	4835.8

4. The blue links above the pivot grid expand and collapse all columns and rows at once.

a. For example, clicking Expand All Columns displays every month data was collected in 1987, 1988, and 1989. Figure 18 displays some of this result.
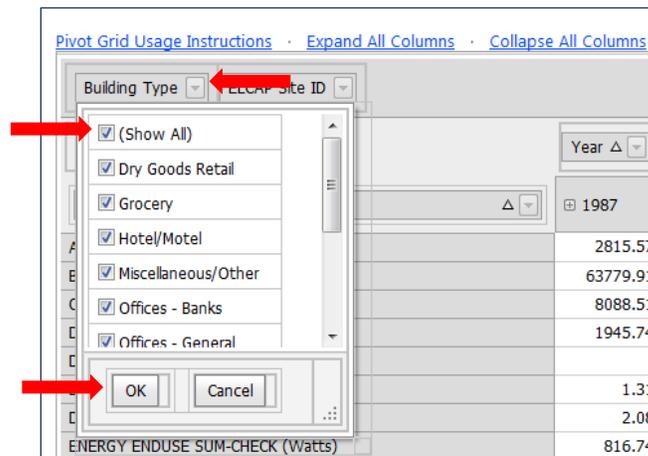
Figure 18. Expanding all Columns

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

Building Type ⌄   ELCAP Site ID ⌄

Averages   Year ⌄   Month △ ⌄

Measurement Description	1987									1987 Total	1988				
	04	05	06	07	08	09	10	11	12		01	02	03	04	05
AUXILIARIES (Watts)	2352.1	2710.82	2900.28	3254	3626.11	3753.1	2665.55	1975.07	2128.84	2815.57	2071.14	2112.16	2214.2	2213.8	2573.1
BUILDING TOTAL (Watts)	61397.12	60207.73	63147.25	67736.5	65691.49	62079.36	60297.44	62587.75	70878.88	63779.91	68835.25	64744.37	57366.71	59813.05	60458.16
COOLING (Watts)	4841.22	7901.05	10888.93	12442.47	13460.35	11503.07	6063.51	3319.09	2020.83	8088.51	2016.43	2511.03	2764.54	3928.28	5584.18
DATA PROCESSING (Watts)	2044.8	1918.01	1932.79	1979.62	1884.23	1670.57	1919.07	2047.06	2100.83	1945.74	2071.45	2132.72	2167.45	2203.98	2209.79
DATA RECONSTRUCTION														6862.41	7164.89
DQ FLAG (Quality Rating)	1.32	1.22	1.28	1.35	1.37	1.43	1.31	1.27	1.25	1.31	1.18	1.26	1.28	1.35	1.57
DQ LEVEL (Quality Rating)	2.21	2.02	2.03	2.11	2.21	2.22	1.97	1.88	2.02	2.08	2.03	2.06	2.06	2.09	2.31
ENERGY ENDUSE SUM-CHECK (Watts)	407.68	703.74	1186.54	676.45	109.08	801.83	1537.3	766.28	1193.25	816.74	2785.72	1472.63	975.65	461.47	2823.49
EXTERIOR LIGHTING (Watts)	2421.16	2109.37	1940.58	2024.29	2052.22	2156.5	2460.36	2981.45	3491.23	2401.97	3129.26	2867.95	2557.61	2434.17	2192.66
EXTERIOR TEMP#1 (Degrees)	576.99	586.16	642.72	657.24	677.69	667.86	620.26	559.76	472.22	606.26	505.73	503.62	478.71	533.62	618.42
FOOD PREPARATION (Watts)	2577.34	2621.5	2603.94	2621.56	2600.16	2621.38	2565.37	2562.94	2539.5	2590.58	2445.38	2528.52	2509.11	2469.91	2491
GENERAL-MIXED (Watts)	6715	6359.6	6260.14	6456.21	6310.53	6679.27	6450.38	5946.22	6273.6	6382.77	5723.77	6535.31	6810.34	6988.15	6634.88
GLOBAL HORIZ RADIATION (Watts/Square Meter)	149.04	196.01	236.95	195.32	200.18	141.11	94.33	34.46	26.01	140.4	30.83	54.89	91.49	125.61	181.33
HEATING (Watts)	4077.52	2209.54	1465.06	1593.43	1270.06	1387.98	3739.36	7046.22	12378.99	3935.46	12277.29	8874.66	6375.6	4921.82	3026
HEATING (PROXY) (Watts)	59.56	56.47	58.15	54.03	56.12	55.7	64.97	90.09	136.28	69.31	181.77	122.27	111.01	75.65	75.11
INTERIOR LIGHTING (Watts)	22176.66	20649.37	20775.07	21058.96	21269.17	21236.82	21468.48	22255.34	22548.78	21490.49	20927.41	20943.14	20126.27	21026.44	19413.99
INTERIOR TEMP#1 (Degrees)	701.69	719.84	736.35	738.23	742.37	730.19	703.85	680.48	663.15	713.06	664.93	677.67	679.57	696.55	712.75
INTERIOR TEMP#10 (Degrees)	675.72	696.45	718.68	720.63	725.88	716.23	681.52	643.49	632.96	689.72	648.16	651.45	660.38	674.07	694.19
INTERIOR TEMP#11 (Degrees)	703.83	710.95	729.7	729.96	739.87	727.2	708.53	695.83	681.26	714.15	676.36	680.25	686.79	699.18	712.56

Filtering the Pivot Grid

1. The Filter Area of the pivot grids allow users to filter the entire table based on certain values in the field. Clicking the ⌄ button next to a Filter Area field opens a box with its values (Figure 19).

2. Use the checkboxes to deselect the value(s) to be excluded. Clicking (Show All) deselects all the values, and clicking (Show All) again reselects all the values. Click OK to apply the selected filters to the pivot grid (Figure 19).

Figure 19. Filter Area

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns

Building Type ⌄   ELCAP Site ID ⌄

- ☑ (Show All)
- ☑ Dry Goods Retail
- ☑ Grocery
- ☑ Hotel/Motel
- ☑ Miscellaneous/Other
- ☑ Offices - Banks
- ☑ Offices - General

OK   Cancel

Year △ ⌄

△ ⌄   ⊞ 1987

2815.57
63779.91
8088.51
1945.74

1.31
2.08
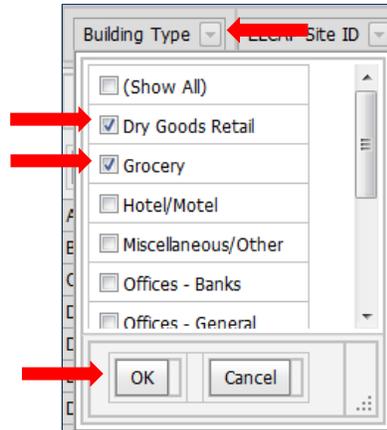ENERGY ENDUSE SUM-CHECK (Watts)   816.74

a. For example, to display only data pertaining to the dry goods retail and grocery building types, click the ⌄ button next to the Building Type field. Then click (Show All) to de-select

all values, re-select the dry goods retail and grocery values, and click OK. Figure 20 shows this example.

Figure 20. Filtering the Building Type Field

b. After clicking OK, the pivot grid will only display data from the dry goods retail and grocery values, as shown in Figure 21.
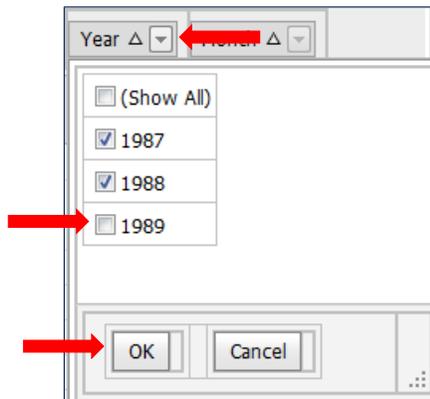
Figure 21. Building Type Filter Pivot Grid

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

Building Type ▼ ELCAP Site ID ▼

Averages

Measurement Description △ ▼	⊕ 1987	⊕ 1988	⊕ 1989	Grand Total
AUXILIARIES (Watts)	2311.97	1893.41	2235.66	2116.64
BUILDING TOTAL (Watts)	96773.35	91144.51	81047.75	90480.55
COOLING (Watts)	5859.2	4038.2	5237.53	4940.74
DATA PROCESSING (Watts)	2691.02	3021.25	3119.49	2936.27
DQ FLAG (Quality Rating)	1.28	1.31	1.8	1.44
DQ LEVEL (Quality Rating)	2.3	2.27	2.73	2.41
ENERGY ENDUSE SUM-CHECK (Watts)	887.26	1526.48	2305.39	1510.32
EXTERIOR LIGHTING (Watts)	3855.32	3985.18	3436.85	3801.14
EXTERIOR TEMP#1 (Degrees)	612.15	595.64	621.89	607.05
FOOD PREPARATION (Watts)	4949.05	4678.24	4098.24	4618.48
GENERAL-MIXED (Watts)	6305.1	6217.25	5892.66	6163.56
GLOBAL HORIZ RADIATION (Watts/Square Meter)	141.67	117.45	146.36	132.12
HEATING (Watts)	2789.45	3803.43	4207.1	3578.83
HEATING (PROXY) (Watts)	17.18	27.77	40.39	28.04
INTERIOR LIGHTING (Watts)	37549.02	34598.31	29725.18	34344.59
INTERIOR TEMP#1 (Degrees)	708.66	698.62	702.94	702.96
INTERIOR TEMP#2 (Degrees)	702.77	694.02	702.07	698.91
INTERIOR TEMP#3 (Degrees)	690.43	687.14	692.03	689.42
INTERIOR TEMP#4 (Degrees)	712.41	706.57	720.77	711.9
INTERIOR TEMP#5 (Degrees)	720.45	710.26	720.49	716.12
INTERIOR TEMP#6 (Degrees)	710.4	703.02	713.21	707.97

3. The same filtering process can be applied to the fields in the Row Area and Column Area boxes.

   a. For example, to create a pivot grid that only displays data from 1987 and 1988, click the ⬛ button next to the Year field. Then deselect 1989 and click OK. Figure 22 shows this example and Figure 23 displays the results.

Figure 22. De-Selecting 1989

Figure 23. 1987-1988 Filtering Results

Pivot Grid Usage Instructions · Expand All Columns · Collapse All Columns · Expand All Rows · Collapse All Rows

Measurement Description	⊞ 1987	⊞ 1988	Grand Total
AUXILIARIES (Watts)	2815.57	2658.22	2728.24
BUILDING TOTAL (Watts)	63779.91	61066.45	62259.69
COOLING (Watts)	8088.51	5410.02	6580.42
DATA PROCESSING (Watts)	1945.74	2085.91	2024.93
DATA RECONSTRUCTION		7923.78	7923.78
DQ FLAG (Quality Rating)	1.31	1.45	1.39
DQ LEVEL (Quality Rating)	2.08	2.28	2.19
ENERGY ENDUSE SUM-CHECK (Watts)	816.74	2393.15	1699.92
EXTERIOR LIGHTING (Watts)	2401.97	2437.3	2421.71
EXTERIOR TEMP#1 (Degrees)	606.26	580.73	592.55
FOOD PREPARATION (Watts)	2590.58	2535.98	2560.07
GENERAL-MIXED (Watts)	6382.77	6406.36	6396.17
GLOBAL HORIZ RADIATION (Watts/Square Meter)	140.4	111.86	124.67
HEATING (Watts)	3935.46	4889.06	4467.35
HEATING (PROXY) (Watts)	69.31	93.38	83.36
INTERIOR LIGHTING (Watts)	21490.49	20147.92	20738.09
INTERIOR TEMP#1 (Degrees)	713.06	704.2	708.09
INTERIOR TEMP#10 (Degrees)	689.72	693.71	691.95
INTERIOR TEMP#11 (Degrees)	714.15	694.84	704.1
INTERIOR TEMP#12 (Degrees)	707.09	687.59	696.93
INTERIOR TEMP#13 (Degrees)	694.9	706.92	701.15
INTERIOR TEMP#14 (Degrees)	750.95	747.63	749.2
INTERIOR TEMP#15 (Degrees)	721.85	727.41	724.97
INTERIOR TEMP#16 (Degrees)	726.88	735.21	731.55

4. Multiple filters can be applied to the pivot grid simultaneously.

   a. For example, to add another filter to the example shown in Figure 23 that displays only the Auxiliaries subfield, click the ▾ button next the Measurement Description field. Then click (Show All) to deselect all values, and reselect Auxiliaries and click OK. Figure 24 shows this example and Figure 25 displays the results.

Figure 24. Selecting Auxiliaries
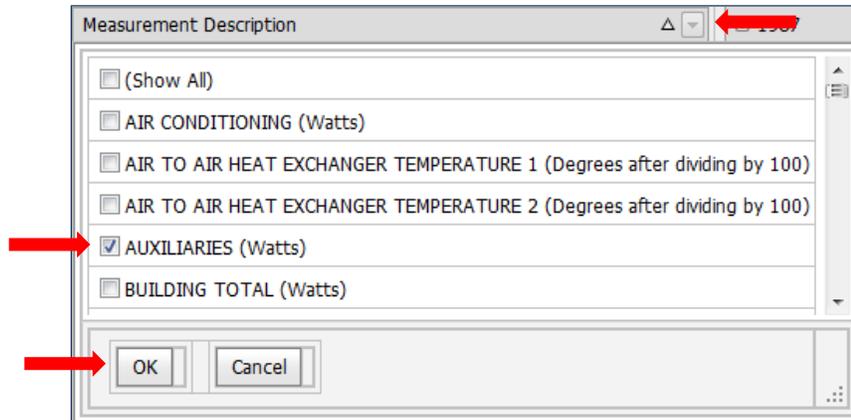
Figure 25. Auxiliaries Filtering Results

Exporting the Pivot Grid

1. The pivot grid can be exported using the Export Box above the pivot grid.

2. Click the ▾ button next to the Export to: to select a file format from the drop-down box of options (Figure 26).

3. Use the checkboxes next to Export Options to modify the format of the exported pivot grid (Figure 26).

4. Click Save to save the file or click Open to view the file without saving it first (Figure 26).

Figure 26. Export Box