

How to Use this Table:

- ❖ The building types listed in blue define a broad building activity category. Some of the broader building type categories are broken down into more specific building activities.
- ❖ When identifying your building within this table, first identify where your building’s function falls within the broader blue categories. Then determine if you are able to identify your building’s function more specifically by the white categories underneath. Matching your building’s main use activities most closely with the building use descriptions below, will give you the most accurate energy performance target.

2003 CBECS¹ National Average Source Energy Use and Performance Comparisons by Building Type			
Building Use Description²	Average Source EUI³ (Kbtu/Sqft)	Average Percent Electric	Average Site EUI (Kbtu/SqFt)
Education	170	63%	76
K-12 School	See Target Finder / Portfolio Manager		
College/university (campus-level)	280	63%	120
Food sales	681	86%	225
Grocery store/food market	See Target Finder / Portfolio Manager		
Convenience store (with or without gas station)	753	90%	241
Food service	786	59%	351
Restaurant/cafeteria	612	53%	302
Fast food	1306	64%	534
Inpatient health care (hospital/ rehabilitation)	See Target Finder / Portfolio Manager		
Lodging	194	61%	87
Dormitory/fraternity/sorority	See Target Finder / Portfolio Manager		
Hotel, Motel or inn	See Target Finder / Portfolio Manager		
Mall (Strip Mall and Enclosed)	271	71%	107
Nursing/Assisted Living	255	54%	124

Office	See Target Finder / Portfolio Manager		
Outpatient and health care	183	72%	73
Clinic/other outpatient health	219	76%	84
Medical Office	See Target Finder / Portfolio Manager		
Public Assembly	143	57%	66
Entertainment/culture	265	63%	95
Library	246	59%	104
Recreation	136	55%	65
Social/meeting	102	57%	52
Public order and safety	189	57%	90
Fire station/police station	157	56%	78
Service (vehicle repair/service, postal service)	150	63%	77
Storage/Shipping/Nonrefrigerated warehouse	56	56%	25
Self-storage	12	44%	4
Non-refrigerated warehouse	See Target Finder / Portfolio Manager		
Distribution/shipping center	90	61%	44
Refrigerated warehouse	See Target Finder / Portfolio Manager		
Religious worship	83	52%	46
Retail (non-mall stores, vehicle dealerships)	191	67%	82
Other⁴	213	56%	104

2003 CBECS National Average Source and Site Energy Use and Performance Comparisons by Building Type

Notes:

¹ **Commercial Building Energy Consumption Survey (CBECS)**, conducted in 2003, was used to calculate values presented in this table. The data is gathered from the Dept. of Energy's – Energy Information Administration (EIA). These are building types that are not currently available in EPA's Portfolio Manager.

² **Buildings Use Descriptions** are taken from valid building activities as defined by EIA in the 2003 CBECS data. The average Source EUI and Site EUI are calculated in kBtu/sqft as weighted averages across all buildings of a given type in the 2003 CBECS data set. The building type listed in blue is defined according to the CBECS variable for "Principal Building Activity" (PBA8) which is a broader defined category. The subset of building types listed below those broader categories are defined according to the CBECS variable for PBAPLUS8. These are defined as a more specific building activity within the broader PBA8 category. Note all building type definitions can be found at:

http://www.eia.doe.gov/emeu/cbecs/building_types.html

³ **Source Energy** is a measure that accounts for the energy consumed on site in addition to energy consumed during generation and transmission in supplying energy to the site. **Converting site to source energy:**

Source energy value are calculated using a conversion factor for electricity of 1 kBtu site energy = 3.34 kBtu source energy; a conversion factor for natural gas of 1 kBtu site energy = 1.047 kBtu source energy; a conversion factor for district heat of 1 kbtu site energy = 1.40 source energy; and a conversion factor for fuel oil of 1 kbtu site energy = 1.01.

Explanation of Source Energy: The source energy intensity target cannot simply be converted into an equivalent site energy value because different design strategies may yield different fuel mixes. Thus the different fuel mixes translate into the corresponding site to source ratios for a specific building. It is important to note that reducing source energy by 50% is not always mathematically equivalent to reducing site energy by 50%. For the most equitable peer comparison, the associated fuel mix should be used to convert the modeled site energy into the total source energy. The source energy use can then be compared to the values in this table.

⁴ **Other:** For all building types not defined by the list above, these buildings may choose to use the performance benchmark categorized by "other". Note that this category is not well defined therefore source energy use varies greatly with source EUI ranging over 1500 kBtu/sqft. As categorized by EIA, "other" may include airplane hangers, laboratory, crematorium, data center, etc.