Method for Grouping Property Types

Standards are calculated by property type "group"; some groups include multiple property types.

When a building benchmarks through ENERGY STAR Portfolio Manager, Portfolio Manager assigns a primary property type based on the building's function. In St. Louis, the benchmarking data includes 44 property types. Many of these encompass only a small number of buildings: 33 of the 44 property types have fewer than 10 buildings.

To ensure that the standards for each property type could be set based on data from a sufficiently large number of buildings (determined by the Board to be 10 buildings), the Board categorized property types into larger groupings based on the groupings used by the U.S. Environmental Protection Agency (EPA) to determine a building's ENERGY STAR Score.[1] This process reduced the number of property types in the St. Louis dataset from 44 to 23, and the number with fewer than 10 buildings from 33 to 12. Two additional property types were broken out following public comment, yielding a final list of 25 property types, 14 of which have fewer than 10 buildings. Table 1 presents the property type groups used in the approved standards.

Additional detail on the methodology used to categorize property types is provided below.

Table 1. Property Type Groups

Portfolio Manager Property Type	BEPS Property Type Group
College/University	College/university
Residence Hall/Dormitory	Dormitory
Adult Education	Education
Vocational School	
Food Service	Food service
Restaurant	
Supermarket/Grocery Store	Grocery store
Hospital (General Medical & Surgical)	Hospital
Hotel	Hotel
K-12 School	K-12 school
Laboratory	Laboratory
Manufacturing/Industrial Plant	Manufacturing/industrial
Multifamily Housing	Multifamily housing
Data Center	Data center
Wastewater Treatment Plant	Wastewater treatment
Self-Storage Facility	Nonrefrigerated warehouse
Distribution Center	
Non-Refrigerated Warehouse	
Financial Office	Office
Office	
Medical Office	Outpatient healthcare
Urgent Care/Clinic/Other Outpatient	
Veterinary Office	
Library	Library
Museum	Museum

[1] ENERGY STAR Scores are generally calculated according to the "Primary Building Activity" (PBA) reference categories from the national Commercial Buildings Energy Consumption Survey (CBECS). CBECS is administered regularly by the U.S. Energy Information Administration.

Bar/Nightclub	Public assembly
Indoor Arena	
Performing Arts	
Stadium (Open)	
Fitness Center/Health Club/Gym	
Social/Meeting Hall	
Police Station	Public order and safety
Courthouse	
Prison/Incarceration	
Refrigerated Warehouse	Refrigerated warehouse
Worship Facility	Religious worship
Personal Services (Health/Beauty, Dry Cleaning, etc.)	Retail/service
Repair Services (Vehicle, Shoe, Locksmith, etc.)	
Wholesale Club/Supercenter	
Retail Store	
Automobile Dealership	
Senior Care Community	Senior care/residential care
Residential Care Facility	
Strip Mall	Strip shopping mall

Detailed Methodology Notes

To categorize property types, the Board used the national reference categories that form the basis of EPA's ENERGY STAR Score calculations. Most of these reference categories come from the national Commercial Buildings Energy Consumption Survey (CBECS). CBECS categories are presented at two levels of detail: broader "Primary Building Activity" (PBA) super-categories, and more specific "PBA Plus" sub-categories. Each Portfolio Manager property type is assigned to one national reference category by ENERGY STAR.

To categorize the St. Louis buildings:

- The Board assigned each of the 44 Portfolio Manager property types present in St. Louis to its corresponding national reference category.
- Property types with fewer than 10 buildings were reassigned from PBA Plus sub-categories to PBA super-categories.
- For property types that still had fewer than 10 buildings after this reassignment, the Board reviewed national site EUI data (provided by ENERGY STAR) and combined property types based on the similarity of building function and EUI benchmarks:
  - Retail and Service facilities were grouped into a Retail/Service super-category
  - Senior Care and Residential Care facilities were grouped into a Senior/Residential Care super-category
- Following public comment, Museums and Libraries were moved from the Public Assembly super-category into their own individual property types

This process resulted in the groupings shown in Table 1.

Method for Setting the BEPS Targets

Standards are calculated such that at least 65% of buildings have to improve their energy performance.

For property type groups with 10 or more buildings, standards are set using local benchmarking data. Mathematically, standards are calculated as the 35th percentile site EUI value for that property type group. (Because lower EUI values represent more efficient buildings, the 35th percentile is the value at which 65% of buildings have to improve their performance.)

For property type groups with fewer than 10 buildings, standards are calculated as the maximum of either the *local* 35th percentile or the *national* 35th percentile site EUI value. National 35th percentile values were provided for each property type by ENERGY STAR.[2]

Two property types with fewer than 10 buildings – Wastewater Treatment and Data Centers – do not have national site EUI benchmarks and therefore do not have BEPS standards.

Table 2 identifies the number of buildings in each group and the type of data used to set the BEPS.

Table 2. Property Type Groups – Number of Buildings and Benchmark Type

Property Type Group	Number of Buildings	Benchmark Type
College/university	19	Local
Data center	1	NA
Dormitory	12	Local
Education	5	Local
Food service	2	National
Grocery store	5	Local
Hospital	5	Local
Hotel	22	Local
K-12 school	72	Local
Laboratory	23	Local
Library	3	National
Manufacturing/industrial	18	Local
Multifamily housing	105	Local
Museum	4	Local
Nonrefrigerated warehouse	57	Local
Office	68	Local
Outpatient healthcare	11	Local
Public assembly	16	Local
Public order and safety	7	Local
Refrigerated warehouse	1	National
Religious worship	3	Local
Retail/service	6	Local
Senior care/residential care	6	Local
Strip shopping mall	4	Local
Wastewater treatment	1	NA

---

[2] EUI benchmarks were provided for national reference property type categories (e.g., CBECS PBA and PBA Plus categories), not Portfolio Manager property types.