

Cambridge, MA Sustainable Buildings Metadata

File Name: Sustainable Buildings Open Data.xlsx

Current as of: 4/1/21. All data and Information in this dataset are accurate to the best of our knowledge at the time of publication and is subject to revision or retraction at any time.

Frequency of Update: Annual

Overview:

In this dataset, Cambridge GIS Building IDs serve as unique identifiers for certified sustainable buildings. More than one street address can be associated with a single building and Building ID. In most cases, a Building ID is associated with one physical structure.

For inclusion in this data set, a building must meet at least one of the following criteria:

- Receive approval from the City's Article 22 regulatory process
- Receive certification from the Passive House program;
- Receive certification from Enterprise Green Communities; or
- Receive LEED certification under a LEED system that requires the whole building to meet sustainability standards.

Some buildings meet two or more of these criteria. Information provided about the applicable sustainable building programs for qualifying buildings includes certification levels, certification types, ratings, or scores. Additionally, this data set contains information about other certifications (ENERGY STAR, Fitwel, and WELL) that may apply to covered buildings. If a covered building participates in the City's BEUDO regulatory process, this data set provides two key emissions figures for the building.

Sources:

The Community Development Department assembles information from various sources to create this dataset, as outlined below. A web link is included for each pertinent source:

- [Cambridge Building Energy Use Disclosure Ordinance \(BEUDO\)](#): This dataset contains compliance status and energy and water use data gathered through the Building Energy Use Disclosure Ordinance (BEUDO). Property details, energy use and water use data are submitted annually by property owners or managers, whose properties are subject to BEUDO. Properties are subject to BEUDO if they meet one of the following criteria:
 - One or more non-residential building(s) where such building(s) singly or together contain 25,000 to 49,999.99 square feet.
 - One or more non-residential building(s), where such building(s) singly or together contain 50,000 or more square feet.
 - One or more residential building(s) that singly or together contain 50 or more residential Dwelling Units whether they are rental Dwelling Units or Dwelling Units owned as condominiums, cooperatives or otherwise.
- [Article 22 Green Building Review Projects](#): The Cambridge Zoning Ordinance's Section 22.20 – Green Building Requirements ensures that major new projects and substantially rehabilitated buildings are

planned, designed, and constructed using environmentally sustainable and energy-efficient practices. Projects fall under these requirements when:

- They exceed 25,000 square feet of gross floor area AND
- Require a Special Permit under any provision of the Zoning Ordinance OR
- Are subject to Section 19.50 – Building and Site Requirements

The City of Cambridge does not mandate that projects achieve Certification through a sustainable building rating program. Rather, the intent of the ordinance is to use these rating systems as the technical framework to ensure that buildings throughout the City achieve a high level of building energy use efficiency, overall sustainability, and resiliency.

- [ENERGY STAR Certified Buildings & Plants](#): To be eligible for ENERGY STAR certification, a building must earn an ENERGY STAR score of 75 or higher on EPA’s 1 – 100 scale, indicating that it performs better than at least 75 percent of similar buildings nationwide. This 1 – 100 ENERGY STAR score is based on actual, measured energy use of a building. The ENERGY STAR program requires annual recertification.
- [Enterprise Green Communities](#): Enterprise Green Communities (EGM) is a sustainable building certification program designed explicitly for affordable housing construction. EGM defines affordable housing as projects serving residents at or below 60 percent AMI for rental projects and at or below 80 percent AMI for homeownership projects. All projects seeking Green Communities Certification must meet mandatory criteria. New construction projects must achieve at least 40 optional points, and Substantial and Moderate Rehab projects must achieve at least 35 optional points. *(Note: There is no public directory of buildings certified by Enterprise Green Communities. To procure a list of certified buildings, you will need to reach out to the organization directly.)*
- [Fitwel Certified Projects](#): The Fitwel Scorecards include 55+ evidence-based design and operational strategies that enhance buildings by addressing a broad range of health behaviors and risks. Fitwel addresses health as an interconnected system, with no single dominant category or area of focus, and, as such, all strategies are voluntary, with no individual prerequisites.
- [LEED \(Leadership in Energy and Environmental Design\)](#): LEED is the most widely used sustainable building rating system in the world. Available for virtually all building types, LEED provides a framework for healthy, highly efficient, and cost-saving green buildings. Only buildings where the entire building meets a LEED standard are included here; certifications based on operations and maintenance or partial interior renovations are excluded from this data set.
- [Passive House Certified Projects](#): Buildings that meet the PHIUS+ (Passive House Institute US, Inc.) standard use 40-60 percent less energy for space conditioning than conventional buildings. PHIUS+ buildings provide superior indoor air quality, resilience during power outages, and an extremely quiet, comfortable indoor environment.
- [WELL Projects Directory](#): The WELL Building Standard is a vehicle for buildings and organizations to deliver more thoughtful and intentional spaces that enhance human health and well-being. WELL includes strategies that aim to advance health by setting performance standards for design

interventions, operational protocols and policies and a commitment to fostering a culture of health and wellness. *(Note: As of April 2021, there are no buildings in Cambridge that have achieved WELL certification. There are building that have been registered for the WELL Health-Safety Rating, but only information on buildings that have achieved WELL Certifications will be included in this database. [Click here for details about the differences between these programs.](#))*

Data from the above listed programs are included in this data set in an effort to provide a complete listing of certified environmentally sustainable (and, in the case of WELL and Fitwel, human health-oriented) buildings in Cambridge.

Data Collection

In the case of BEUDO, energy and water use information is submitted annually by property owners and managers of qualifying buildings.

In the case of Article 22, information comes from submitted documents associated with each large-scale development project subject to Section 22.20 – Green Building Requirements of the Zoning Ordinance. A database of these projects is updated on an “as needed” basis as each project proceeds through the Green Building Review Process (i. e., receipt of a Special Permit, Building Permit, then Certificate of Occupancy).

For other certification programs, data collection protocols and schedules vary. Generally, property owners will apply for certification during the design or construction phase of development and are added to a project registry once certified. Some certification programs, such as ENERGY STAR and Fitwel, require that projects receive re-certification every one to three years.

Limitations of the Data

- This dataset may not necessarily represent a complete listing of all sustainable or “green” buildings throughout the city. Buildings sustainable in practice but that did not seek certification through the above listed programs are not included.
- Except for BEUDO and Article 22, the above listed programs are private-sector and are not subject to City oversight. Thus, we can only assume that sustainability standards are being met as stated.
- Most certification program data are derived from developer applications and may contain erroneous information.

Additional Notes on Fields

- **Building ID:** The Cambridge GIS Building ID associated with the certified sustainable building. Most certification programs provide location information in the form of the street address of the project. Some street addresses are associated with multiple Building IDs, so best efforts were made to identify the Building ID or IDs most closely associated with the certification.
- **Article22 System and Level Equivalency:** Article 22 authorized rating program and standard met by project or building type. The project may or may not be certified by the program listed in this field.

- **Enterprise Green Communities Certification Template:** The Enterprise Green Communities criteria by which the building was certified. Possible certification templates include Certification Workbook 2011, Certification Workbook 2015, and Certification Workbook 2020.
- **Enterprise Green Communities Points Achieved:** Total optional points achieved by the project in addition to meeting mandatory certification requirements. New Construction projects must achieve at least 40 optional points, and Substantial and Moderate Rehab projects must achieve at least 35 optional points to be certified.
- **LEED Total Certifications:** Count of LEED certifications that a building has received. Only certifications with LEED systems that require the *whole building* meet sustainability standards are counted here (e.g. LEED Building Design & Construction falls into this category, but LEED Commercial Interiors does not) It is not uncommon for buildings to receive multiple LEED certifications.
- **LEED Last Certification Date:** The date of the most recent “whole-building” LEED certification obtained by the building.
- **LEED Last System and Version:** LEED system and version of the most recent “whole-building” certification obtained by this building.
- **LEED Last Certification Level:** LEED certification level achieved (Certified, Silver, Gold, or Platinum) during the most recent “whole-building” LEED certification.
- **Passive House Certification Version:** The version(s)/standard(s) used to obtain Passive House certification.
- **ENERGY STAR Count of Years Certified:** Count of years in which a building obtained ENERGY STAR certification.
- **ENERGY STAR Last Year Certified:** The most recent year in which a building obtained ENERGY STAR certification
- **ENERGY STAR Last Certification Score:** ENERGY STAR score received by a building during the most recent year in which the structure was certified. To be eligible for ENERGY STAR certification, a building must earn an ENERGY STAR score of 75 or higher on EPA’s 1 – 100 scale, indicating that it performs better than at least 75 percent of similar buildings nationwide. This 1 – 100 ENERGY STAR score is based on actual, measured energy use of a building.
- **Fitwel Star Rating:** The Fitwel certification level (1, 2 or 3 stars) obtained by the building, based on number of scorecard points achieved by the project.
- **WELL Version:** The version of WELL Building Standards used to obtain WELL certification.
- **WELL Project Type:** The project typology assigned by WELL, including “Core & Shell” or “New and Existing Buildings”.

- **WELL Certification Level:** The level of WELL certification obtained (Certified Pilot, Certified Compliance, Certified Bronze, Certified Silver, Certified Gold, and Certified Platinum).
- **BEUDO Total GHG Emissions Intensity (kgCO₂e/ft²):** Total greenhouse gas emissions intensity reported to the BEUDO program, providing emissions per square foot in kgCO₂e/ft². Generated by ENERGY STAR Portfolio Manager.
- **BEUDO Source EUI (kBtu/ft²):** Source energy use intensity (EUI), the amount of source energy used per square foot, generated by ENERGY STAR Portfolio Manager.
- **Latitude-Longitude:** The latitude and longitude of the building centroid associated with the Building ID.

Summary Statistics

Statistics on buildings (n = 134) included in dataset, current as of 4/1/21:

Certification Program	Certified Buildings
Enterprise Green Communities	6
LEED	92
Passive House	2
ENERGY STAR	10
Fitwel	2
WELL	0

Municipal Regulatory Process	Qualifying Buildings
Article 22	57
Building Energy Use Disclosure Ordinance (BEUDO)	56

Note that a building may be certified and/or regulated by more than one of the above listed programs.

For More Information

For additional information about this data set contact Cliff Cook, Senior Planning Information Manager, at 617/349-4656 or ccook@cambridgema.gov.