

## Summary of Municipal Sustainable Building Guidelines

### *Wellesley Sustainable Energy Committee*

**Background:** Wellesley is a leader in promoting sustainability and has a goal (adopted in 2011 and revised in 2014) to reduce the community's greenhouse gas emissions. To achieve this goal and align with the town's long-standing commitment to sustainability, the municipality must plan, construct and operate its building projects in a cost-effective way that conserves resources, preserves the surrounding environment and enhances the safety, health and productivity of building occupants.

**Objective:** Establish Municipal Sustainable Building Guidelines (MSBG) for:

- New buildings;
- Major renovations affecting 15,000 square feet or more with significant upgrades to the mechanical systems and building envelope;
- Large additions of 10,000 square feet or more;
- New roofs: exploration of solar-ready and photovoltaic installations; and
- Private development on Town-owned land;

such that applicable projects will strive to be:

- Leadership in Energy and Environmental Design Version 4 (LEEDv4) Platinum certifiable (with a LEEDv4 Silver minimum); and
- Zero Net Energy (primarily for new buildings) with:
  - Building energy use intensity (EUI) of 25 to 30 kBtu/sq. ft. /yr.; and
  - Net Present Value analysis of installing renewable energy on-site or off-site to meet the site energy use of the project.

#### **Method:**

- Follow a sustainable design process:
  - Commit to sustainability and involve project stakeholders in earliest stages of project development to establish sustainability goals
  - Select Feasibility Study and Schematic Design consultants with proficiency in LEED, Zero Net Energy and high-performance building design
  - Engage peer review/commissioning professionals to oversee sustainability throughout Schematic Design, Construction and Commissioning phases
- Establish sustainable operating and building user practices to ensure MSBG are maintained throughout building life
- Review the Guidelines periodically and make revisions as needed.

## Definitions

**Leadership in Energy Efficient Design (LEED):** The United States Green Building Council developed LEED which is the most widely used green building rating system in the world. Available for virtually all buildings, community and home project types, LEED provides a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement.

LEED projects earn points across nine basic areas that address key aspects of green buildings. There are 110 Total Points available.

- Integrative process 1
- Location and transportation 15
- Sustainable sites 12
- Water efficiency 12
- Energy and atmosphere 31
- Materials and resources 13
- Indoor environmental quality 16
- Innovation 6
- Regional priority 4

There are four levels of LEED certification:

- Certified (40–49 points)
- Silver (50–59 points)
- Gold (60–79 points)
- Platinum (80+ points)

**Zero Net Energy (ZNE):** A zero net energy building is one that is optimally efficient, and over the course of a year, generates energy onsite, using clean renewable resources, in a quantity equal to or greater than the total amount of energy consumed onsite (MA DOER, 2019).

**Energy Use Intensity (EUI):** EUI is the measure of the total energy consumed in a building, expressed as energy per gross square foot of building area, typically expressed in kBtu/sq.ft./yr. EUI targets represent total metered energy inputs (chilled water, steam, electricity, and natural gas) for building heating, cooling, ventilation systems, water heating, lighting, receptacle loads, and process energy use.

**Net Present Value (NPV):**

- NPV is determined by calculating the costs (negative cash flows) and benefits (positive cash flows) for an investment over time. For decisions on building design it is used to compare options. The cost of an option subtracted from the savings from that option (due to energy or operations cost reduction) over the life span.