

## City of Boston Finalizing Zero Emissions Buildings Guide

### *Thornton Tomasetti and Placetaylor Lead the Creation of Zero Carbon Affordable Housing Design Standards*

**(Boston, Mass. – April 21, 2020)** – The City of Boston Department of Neighborhood Development (DND) has released the first-ever [guidebook for Zero Emissions Buildings](#) (ZEBs) in support of Mayor Martin Walsh’s commitment to achieve carbon neutrality in Boston by 2050. The guide is part of the city's green building initiatives program to reduce the carbon footprint of its development activities.

Created in consultation with architectural, engineering and construction experts from Placetaylor, Elton Hampton Architects, Thornton Tomasetti and Bensonwood, as well as the Boston Planning and Development Agency and Boston Environment Department, DND intends for this document to set the groundwork for the zero carbon affordable housing design standards.

The guidebook for ZEBs analyzes best practices and provides recommendations on the type of systems and typical wall section assemblies that reduce energy use and eliminate carbon emissions in residential buildings that are typically part of DND’s portfolio of affordable housing projects.

The study team identified performance criteria - tailored to Boston’s specific climate, portfolio, density and resiliency goals - based upon proven, cost-effective design and construction strategies for buildings that are zero carbon, healthier for occupants and more efficient. The resulting recommendations vary between building types based on cutting-edge parametric energy modeling by Thornton Tomasetti. Placetaylor contributed overall guidebook production, graphics and text to create a comprehensive resource for high-performance design and construction through transparent case study information.

The guidebook incorporates cost data from Zero Net Energy and Passive House projects completed by Placetaylor and Thornton Tomasetti in New England. The findings show there is little-to-no cost increase for building to ZEB standards. Total construction cost increases range from 2.5% or less. Rebates and incentives currently available have the potential to make these buildings less expensive to build, with additional long-term operational savings.

Many of the criteria for these guidelines align with the development of stretch energy codes and standard best building practices. The study points out that careful consideration to just a few areas (some at low-to-zero cost) can have the greatest impact on the performance of ZEBs. Specifically, window performance, window-to-wall ratio and air tightness can significantly improve building efficiency.

The ZEB guidebook provides developers, designers, and builders with a resource for developing zero emission buildings. While performed independently, this study produced results that align with similar studies undertaken by the United Nations’ Intergovernmental Panel on Climate Change (IPCC), the Rocky Mountain Institute (RMI), and the Massachusetts chapter of the United States Green Building Council (USGBC).

In 2017, Mayor Walsh set a goal of carbon neutrality in Boston by 2050. The 2019 Carbon Free Boston Summary Report outlined the reasoning, framework and broad strategies for leading the way in reducing carbon emissions and warding off the worst effects of climate change.

Buildings account for more than two-thirds of the Boston's total carbon emissions and the city has been in the midst of a major building boom, adding four million to six million square feet of new space per year since 2014. Advancing new buildings to high-energy performance standards, including net-zero or net-positive, will result in fewer emissions and prevent the need for future retrofits in these buildings.

The City of Boston Department of Neighborhood Development is soliciting feedback on the [guidebook for Zero Emissions Buildings](#) from residential builders through June 1, 2020.

### **Supporting Materials**

Thornton Tomasetti

[www.ThorntonTomasetti.com](http://www.ThorntonTomasetti.com)

Placetailor

<https://www.placetailor.com/>

ZEB Guidebook

<https://www.boston.gov/departments/neighborhood-development/purchase-or-develop-property#zero-emissions-buildings>

### **About Thornton Tomasetti**

Thornton Tomasetti optimizes the design and performance of structures, materials and systems for projects of every size and level of complexity. An employee-owned organization of engineers, scientists, architects and other professionals collaborating from offices worldwide, we support clients by drawing on the diverse expertise of our integrated practices. We are committed to be a sustainable and enduring organization and the global driver of innovation in our industry.

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### **About Placetailor**

Placetailor is a Boston-based development, design, and construction cooperative dedicated to delivering carbon neutral housing. For over a decade we've demonstrated the power of the integrated business model and a practice-based R&D process, focusing exclusively on zero energy, Passive House, and workforce housing. Occupy The Future.

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