City of Boston
Planning Department

BOSTON GREEN BUILDINGS:

2024 Summary Of Sustainable Building Practices

The City of Boston Planning Department would especially like to thank the community, committed project proponents and their design, engineering & construction teams, for partnering with the City of Boston to improve the sustainability and resiliency outcomes of past, present, and future projects.

The City of Boston Planning Department plans and guides inclusive growth in our city - creating opportunities for everyone to make Boston home. Through our future-focused, city-wide lens, we engage communities, implement new solutions, partner for greater impact and track progress.

The following information is a summary of the Sustainable Development practices from January 1, 2024 through December 31, 2024. The recently enacted Net Zero Carbon (NZC) zoning changes are not applicable to any of the following information. The information provided in this report is the best available at the time of its publication. All or partial use of this report must be cited.

For more information about Article 37 Green Building and Climate Resiliency Guidelines, please visit our Article 37 webpage or our website, BostonPlans.org

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Cover Image: Parcel O Building, Courtesy of Marcus Partners

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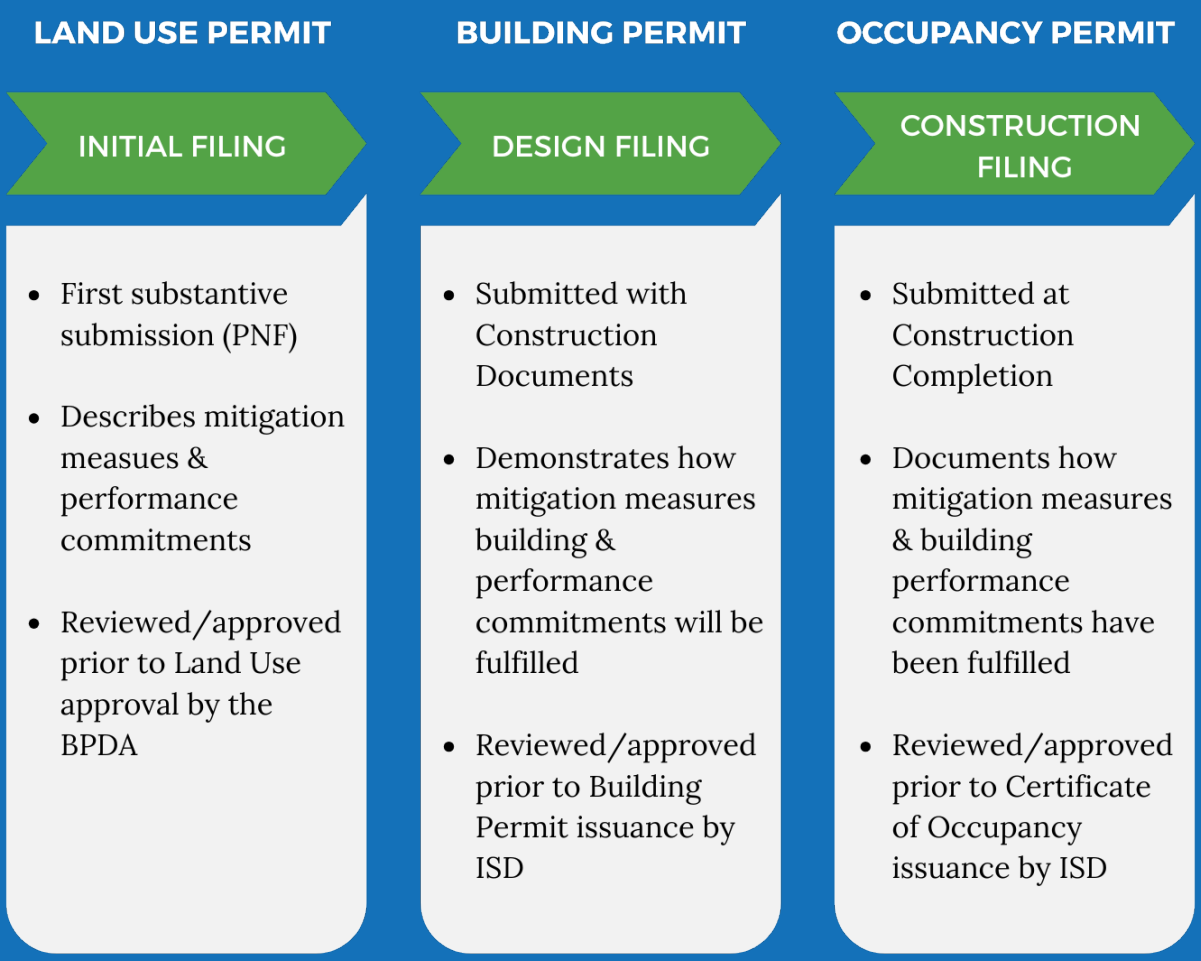


ARTICLE 37 REVIEW PROCESS

WHAT IS ZONING ARTICLE 37 GREEN BUILDINGS?

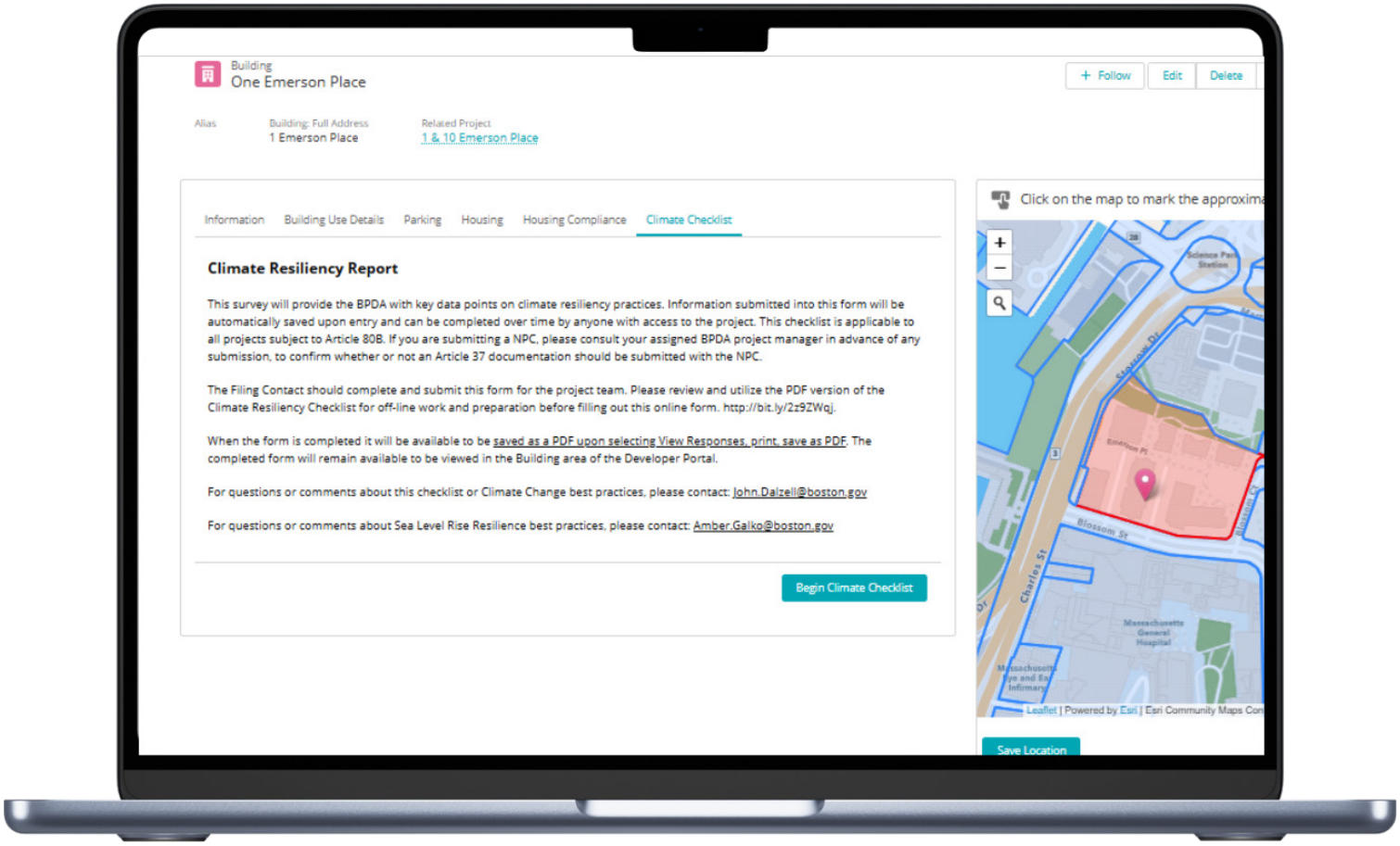
Boston Zoning Article 37 (A37) is purposed to reducing the adverse environmental impacts of new construction building projects. In 2024, A37 compliance was required for large building projects 50,000 square feet or larger in area, with reviews conducted at three filing stages:

- Initial - prior to land-use approval,
- Design / Building Permit - prior to building permit issuance, and
- Construction / Certificate of Occupancy - prior to occupancy permit issuance

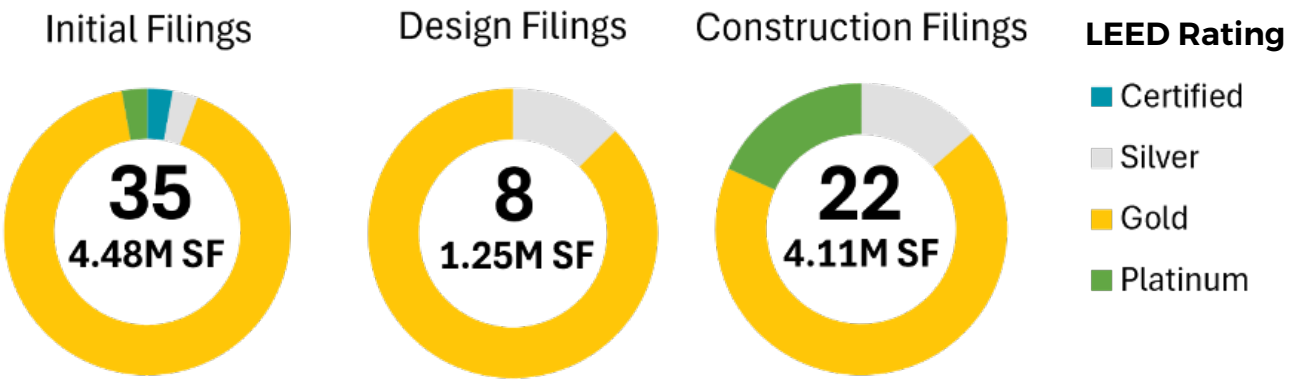
The review process ensures standards have been met and that exemplary projects and practices are recognized.

In March of 2024, staff launched a new version of the Climate Resiliency Checklist (CRC) and integrated it into the Developer Portal platform. Updates to the CRC focused on improving user experience and the quality of data surrounding building performance. A new section dedicated to the building's 2035 predicative Carbon Emissions Intensity (pCEI) has been added with emissions data fields for up to three use-types and an area-weighted whole building 2035 pCEI value. With these changes, we can better understand building performance and best practices, as well as align with Boston's Building Emissions Reduction & Disclosure Ordinance (BERDO) emissions standards for new buildings in the City of Boston.

CLIMATE RESILIENCY REPORT ON DEVELOPER PORTAL



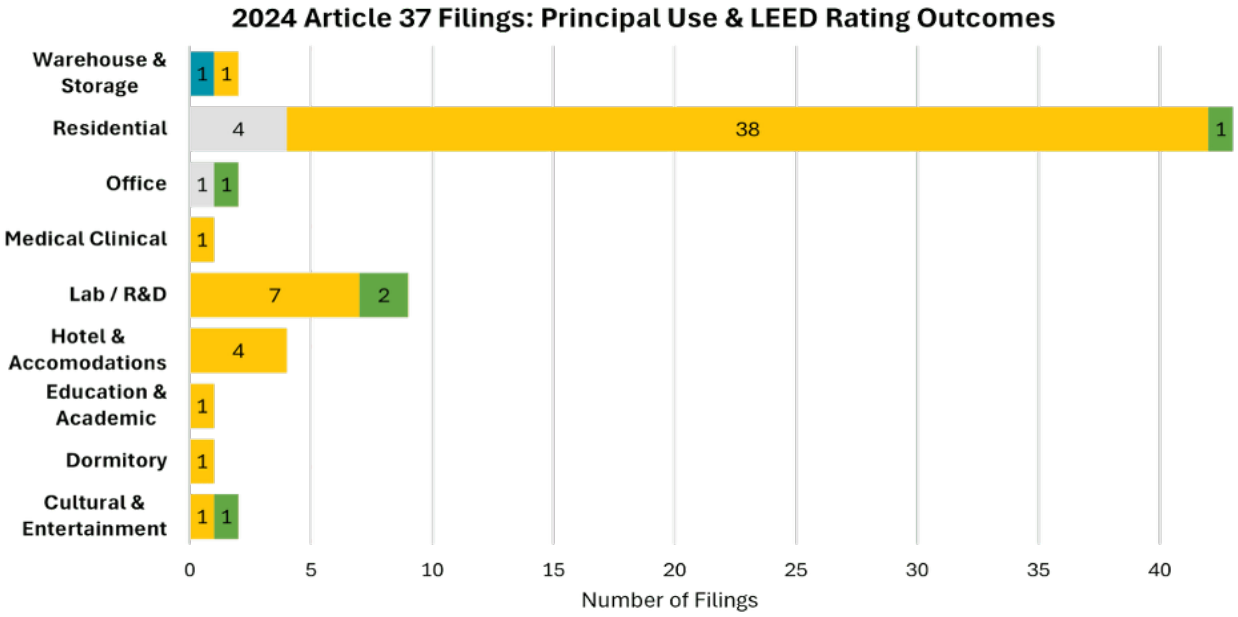
GREEN BUILDING OUTCOMES IN 2024



LEED RATING GRAPH

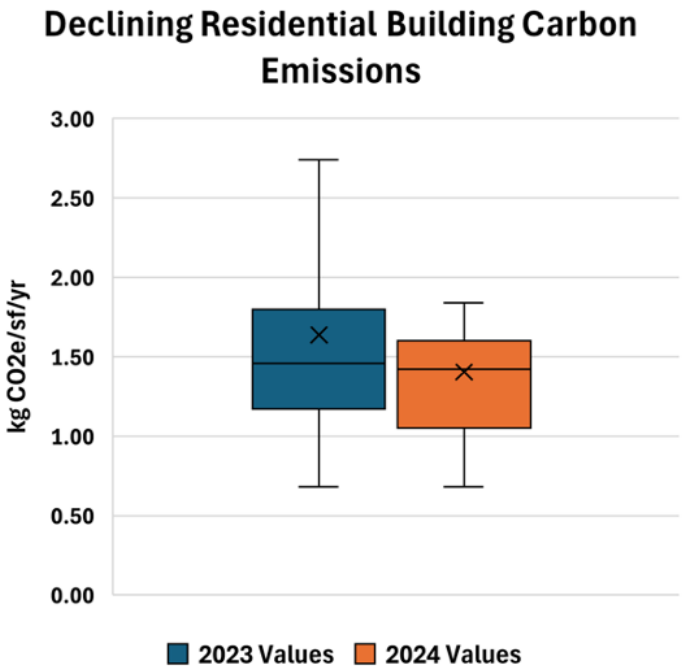
In 2024, the Article 37 team reviewed 65 project filings that total to 9.84 million SF. In a continued trend of new projects striving for a Leadership in Energy and Environmental Design (LEED) Gold rating, we saw an increase from 86 percent in 2023 to 91 percent of Initial and Design Filings committing to achieving LEED Gold, and five buildings achieving LEED Platinum. This trend represents a continuing shift in practice where building performance is elevated to a primary design goal, rather than an after-thought.

With Mayor Wu's sharp focus on new and affordable housing production, residential project filings exceed all other filings in total. In 2024 there were 43 project filings that will add 5.2 million SF of new housing for Boston residents.



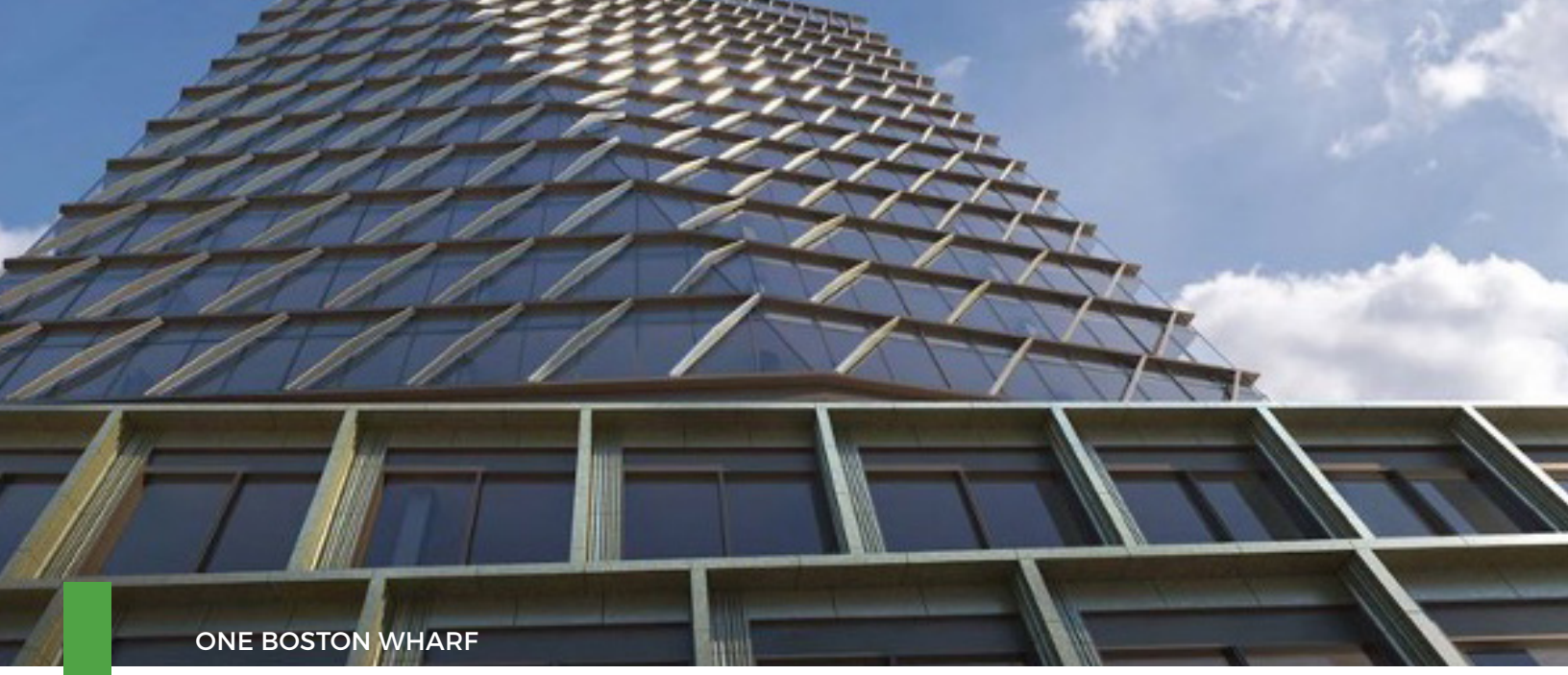
Not only did 2024 mark an improvement in early LEED score commitments, but there was also an improvement in building performance. With the new version of the CRC, we are able to better track building predictive Carbon Emission Intensity (pCEI) which allows us to better identify best practices. pCEI represents the annual carbon emissions from a building's modeled operational energy use per square foot. The benchmark year 2035 allows for year-to-year comparisons and per square foot allows comparison across similar building use types.

Launching the newest version of the CRC has improved tracking building performance by typology. Building use typologies have been expanded from three use-types to nine, aligning with BERDO use-type categories for seamless transition from Planning Department review to BERDO reporting. Additionally, this provides for better understanding and accuracy of building performance reporting across different typologies.



In 2024, projects performed better with lower pCEI values than 2023 projects. Additionally, the variability in performance across residential buildings drastically decreased. These improvements reflect the City's and industry's efforts to increase building performance and are becoming the industry standard of practice.

We anticipate building performance to continue to improve and our increased focus on the use of renewable energy sources to drive down building operational carbon emissions.



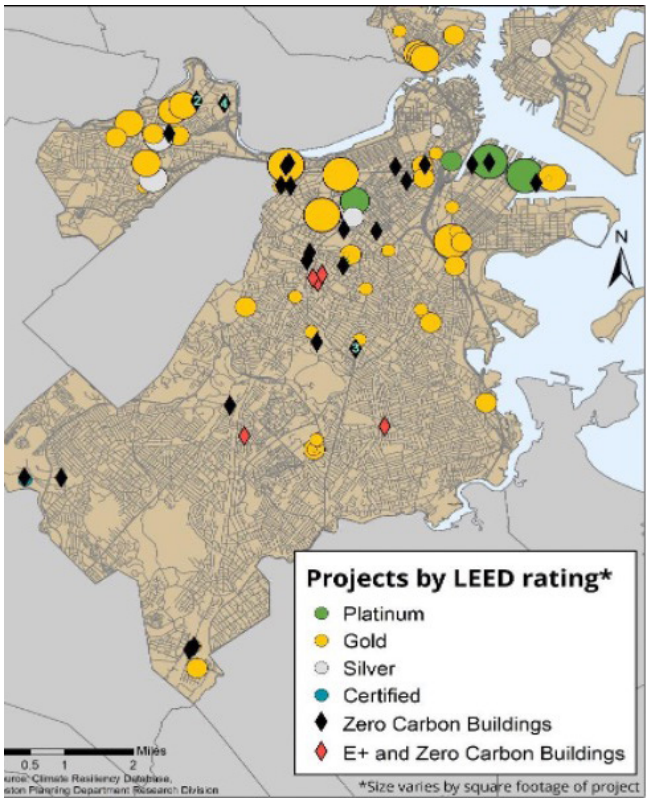
ONE BOSTON WHARF

BOSTON'S CARBON-NEUTRAL PROGRESS

Boston continues to progress towards our Carbon Neutral 2050 goal with the completion of several new carbon neutral buildings, developer commitments to carbon neutrality, and the July 1, 2025 enactment of our new Article 37 Net Zero Carbon Building Zoning standards.

With the completion of WS Development's One Boston Wharf building, there is more than 1.4 million SF of occupied carbon neutral buildings in Boston. Several new carbon neutral buildings also began construction in 2024, totaling 1.9 million SF. With new developments committing to carbon neutral outcomes and additional projects in permitting and planning, the number of carbon neutral projects in Boston rose to 30, nearly 6 million SF, including residential, hotel, commercial office, research lab, and academic uses.

2024 PROJECTS, & TO-DATE ZERO CARBON BUILDINGS

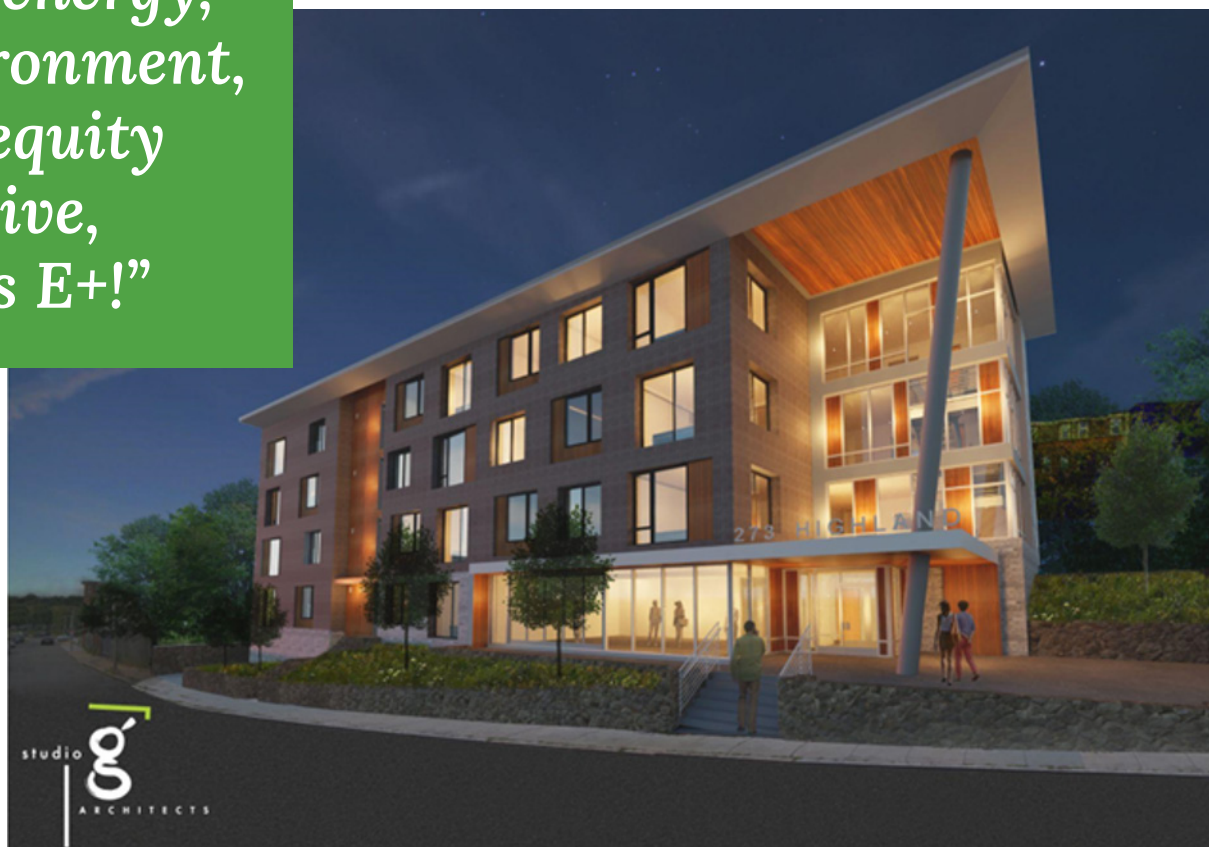


RENEWABLE ELECTRICITY / SOLAR PV

Boston is also decarbonizing using on-site renewable energy generation, principally with solar PV systems. By installing roof mounted Solar PV systems, building owners and residents can access affordable renewable electricity. As building energy efficiency decreases electricity demand and solar PV technology innovations increase system electricity output, buildings can significantly reduce carbon emissions, grid demand, and costs. At four stories, E+ Highland Marcela, Boston's newest E+ Green Building now in construction, is demonstrating midrise multifamily residential buildings can annually exceed their electricity demand! Net energy, environment, and equity positive; that's E+!

Since 2013, Article 37 filings have included 127 building projects with plans for solar PV installations. Of those buildings, 35 have installed solar PV systems which annually produce an estimated 4.8 MWh of renewable electricity! Across the City, many more new solar PV systems are being installed on existing buildings.

"Net energy, environment, and equity positive, that's E+!"



RENDERING OF E+ HIGHLAND STREET FROM STUDIO G ARCHITECTS

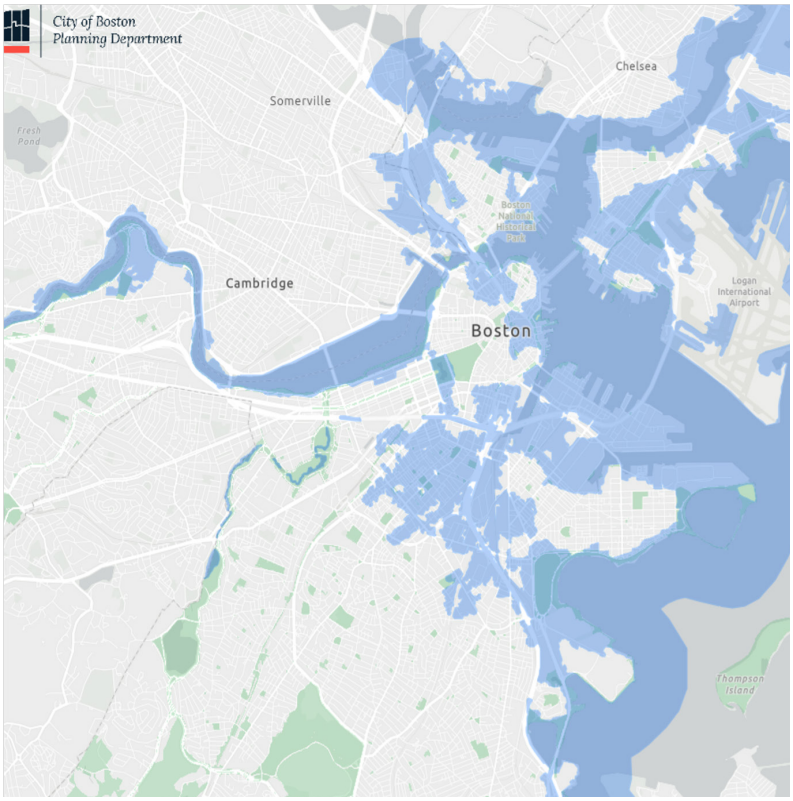
RENDERING OF BOSTON UNIVERSITY'S PARDEE SCHOOL OF GLOBAL STUDIES

MASS TIMBER IN BOSTON

Recognizing the significant carbon emissions due to building construction materials, 23 percent of annual global emissions, and the potential for mass timber construction to significantly reduce those emissions, the City launched the Boston Mass Timber Accelerator program, and in 2022, the first-round participants were selected. The Accelerator program, which focused on broadening awareness, identifying new opportunities, and accelerating the use of mass timber, offered two selection rounds and partnered with ten project teams. The Mass Timber Accelerator program, now a national model, identified both significant mass timber building opportunities and challenges. A Final Report was issued on Earth Day 2024.

In 2024, there was one mass timber building project completed and three new mass timber projects in construction totaling over 260,000 SF. Another seven mass timber buildings are in planning or permitting, increasing the total gross floor area to over 1M SF. The most recently completed building, Leggat McCall's Bunker Hill Housing - Building M, notably employed a hybrid mass timber system to accelerate construction and reduce costs. Proposed projects, including Boston University's Pardee School and the Partnership of Affordable Housing's West End Library Building, will extend mass timber building heights to 12 and 14 stories respectively.

COASTAL FLOOD RESILIENCY MEASURES



In October 2021 the City adopted Zoning Article 25A Coastal Flood Resilience Overlay District (CFROD) to protect persons and structures from the adverse effects of sea level rise and storm surge associated with climate change. The CFROD identifies areas of the City of Boston anticipated to flood during a 1 percent chance storm event with 40-inches of sea level rise, conditions which are expected by 2070. The standards establish use and dimensional regulations that apply to projects within the defined areas, formalize the Coastal Flood Resilience Design Guidelines, and establish sea level rise Design Flood Elevations. Part of the Article 80 Review process, the Article 25A review occurs in tandem with Article 37 and Urban Design's Design reviews.

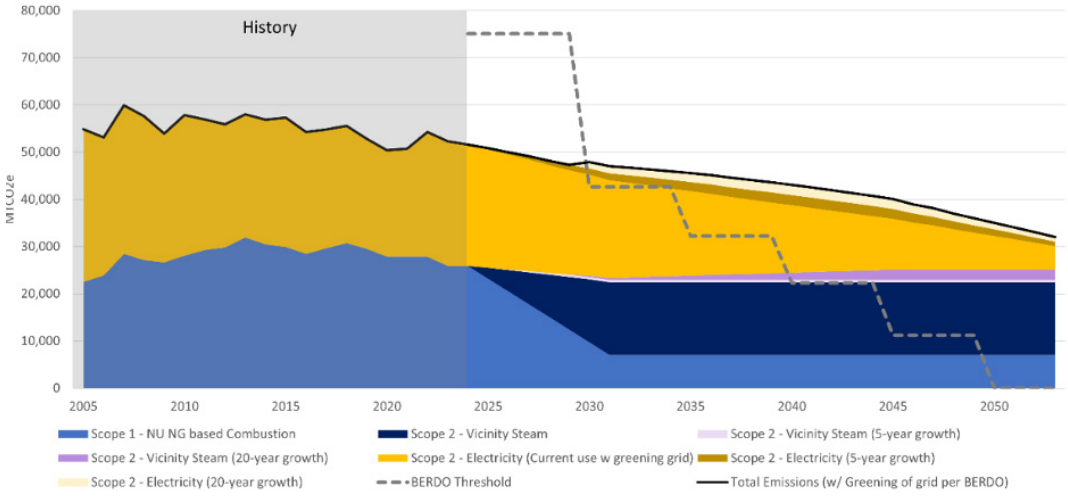
In 2024, 88 projects were reviewed for sea level rise resiliency strategies in compliance with zoning Article 25A. To address rising sea levels, there are a variety of resilience strategies that can be applied to projects. The Boston Coastal Flood Resilience Design Guidelines help Boston property owners and developers make informed, forward-looking flood protection decisions for new and existing buildings. The Guidelines outline a variety of flood resilience strategies which are organized into three major categories: wet floodproofing, dry floodproofing, and site adaptation strategies.

CAMPUS SUSTAINABILITY

In 2024, the Article 37 Review Team began piloting new Institutional Master Plan (IMP) Sustainability Review Guidance to integrate Boston's climate resiliency and Carbon Neutrality 2050 goals. As part of this initiative, all IMP filings—new, amended, or extended—are now required to include detailed sustainability plans, outlining decarbonization action plans that include operational emissions, embodied carbon, renewable energy, and resiliency.

Recent IMP filings reflect strong alignment with the updated IMP Sustainability Guidelines, which prioritize net zero carbon planning, electrification, and climate resilience. For example, Beth Israel Deaconess committed to a 50% emissions reduction by 2030, and net-zero Scope 1 and Scope 2 emissions by 2050. Alternatively, Northeastern University introduced a Climate Justice Action Plan, proposing upgrades to older buildings for energy efficiency, and proposed a compelling "Zero Over Time" plan to track emission sources and reduction strategies (see illustration). This IMP-focused guidance facilitates a stronger alignment between institutional planning and Boston's climate goals.

While construction may have slowed in 2024 compared to 2023, building performance continues to improve each year. Additionally, in January of 2025, the City of Boston's Zoning Commission approved an amendment to the zoning code that includes Net Zero Carbon (NZC) Zoning. The NZC zoning will introduce updated sustainability requirements for new projects that will support Boston's goal of being Carbon Neutral by 2050 and went into effect on July 1, 2025. Between a continuing trend of increased performance and new NZC Zoning requirements, Boston continues to be a leader in urban sustainability and resiliency moving forward.



NORTHEASTERN UNIVERSITY'S 'ZERO OVER TIME' GRAPH