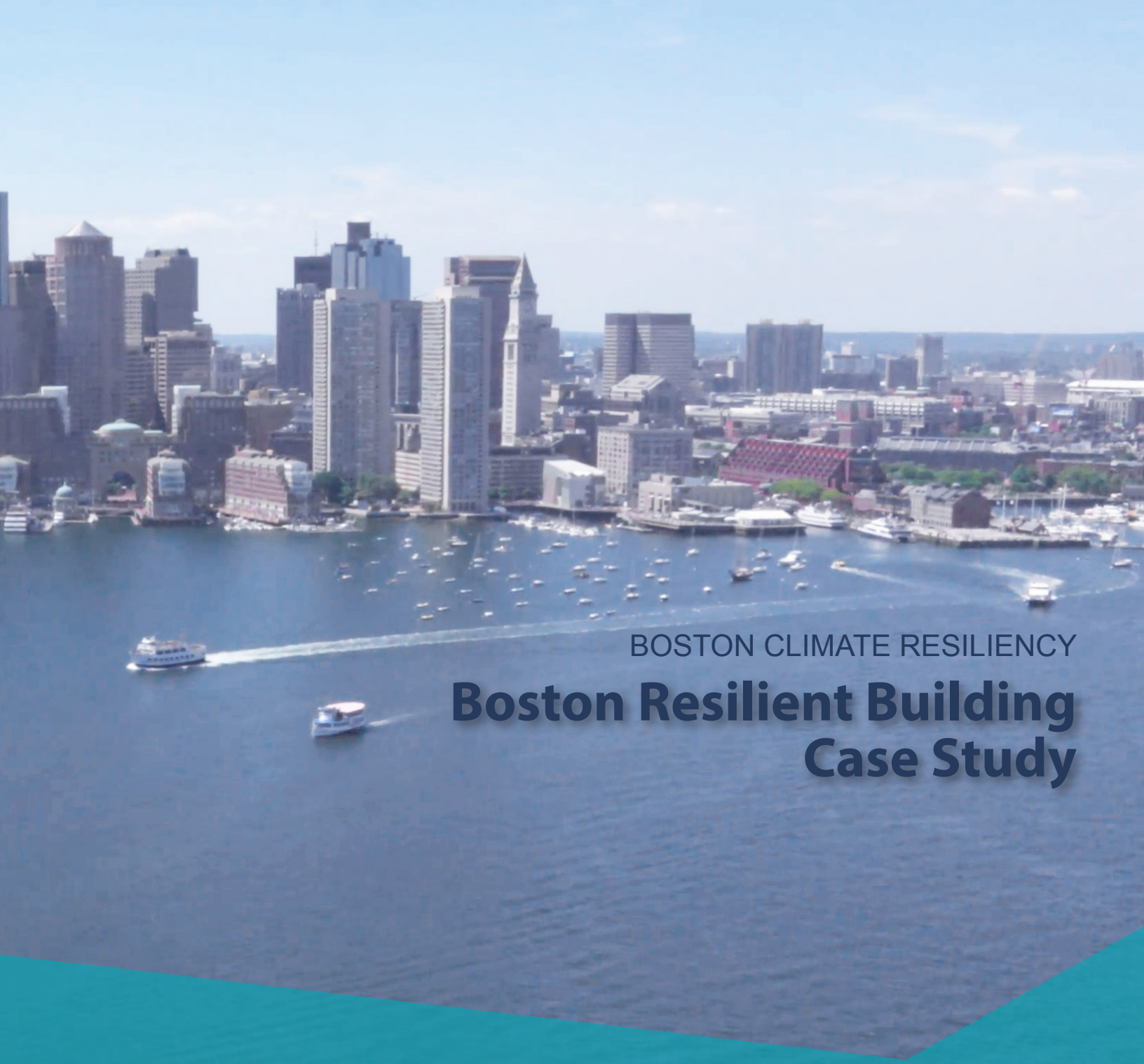


BOSTON CLIMATE RESILIENCY

Boston Resilient Building Case Study

boston planning & development agency

April 2022

RESIDENTIAL

11 EAST LENOX

11 E Lenox St Boston, MA 02118

RESILIENCY
Resilient Infrastructure, Solar PV

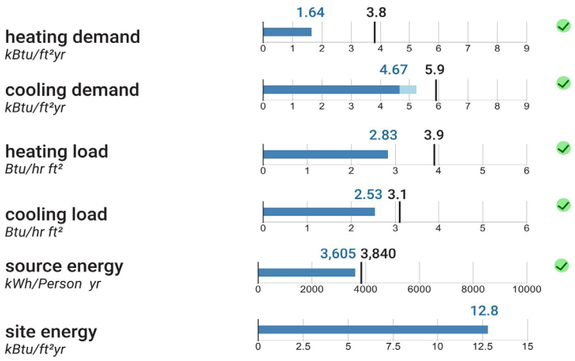
SUSTAINABILITY
Green Building, Carbon Reduction

Team:
Owner: BREC LLC
General Contractor & Civil: HAYCON
Architect: MONTE FRENCH DESIGN STUDIO
Structural Engineer: H+O STRUCTURAL ENGINEERING
MEP/ FA/ FB: BLW ENGINEERS
Code: CODE RED CONSULTANTS
Energy & Sustainability: PASSIVE TO POSITIVE
Status: Under Construction

RESIDENTIAL

Zero Net Carbon Approach

by Kure Creative/ H+O



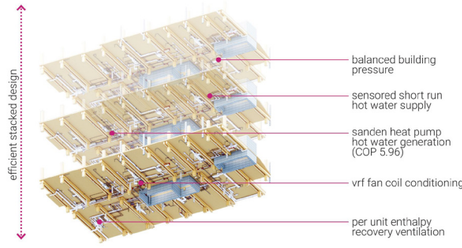
by Passive to Positive

Carbon Performance Reduction

- PHIUS+ 2018 Pre-Certified
- Predicted Building Performance:

pCEI (kg CO2e/sf-yr)	2022	2035
w/o renewables	0.95 kg	0.68 kg
pEUI (kBtu/sf-yr)	12.8 kBtu	

- 66,292 kWh/year renewable generation
- Strategies: optimized & efficient building geometry, super insulated and airtight building envelope, high efficiency decentralized ERV ventilation, central VRF heat pump heating and cooling, heat pump hot water generation, heat pump dryers and Energy star appliances, thermally broken triple-pane windows, integrated interior shading



by MFDS

by MFDS

Climate Adaptation

Mass Timber Installation by Haycon

Unit rendering by MFDS

Unit Construction Progress by Haycon

Embodied Carbon Reduction & Mass Timber Benefits

Embodied Carbon Reductions in Mass Timber:

- 844 metric tons of CO2 stored in timber;
- 327 metric tons of CO2 offset by utilizing mass timber in lieu of concrete or steel Carbon sequestering structural frame with lower embodied carbon footprint
- Lightweight construction with less excavation, foundation work, and concrete
- Exposed wood structure for a warm, integrated finish
- Drastically reduced construction time minimizing disruptions to street and area
- Other embodied carbon reductions: upcycled/ reused rigid foam insulation; recycled glass aggregate sub-slab insulation; overstock brick cladding

Extreme Temps

- Stormwater water mitigation and groundwater recharge system
- Permeable pavers
- Rooftop solar
- Heat island reducing-white roof & ventilated white rainscreen facade

Leadership

- The first ground-up mass timber structure in the City of Boston, demonstrating a sustainably sourced carbon-neutral alternative to concrete and steel mid/high-rise construction
- in the first wave of Passive House Certified multi-family residential buildings in the City of Boston.
- In meeting Passive House building criteria, performance will far exceed the more prescriptive Massachusetts Stretch Energy Code and LEED building requirements, with energy consumption that is nearly 10% of that of typical new construction.
- Electric vehicle charging stations
- Quiet, comfortable living environment
- High indoor air quality
- Energy efficient
- Reduced utility costs for tenants