

BOSTON CLIMATE RESILIENCY

# Boston Resilient Building Case Study



**boston planning &  
development agency**

July 2022

# OFFICE LAB

## Landmark Center Phase III

421 Park Drive

Team:  
Development Team: Alexandria Real Estate Equities, Inc. and Samuels and Associates  
Architect: Elkus Manfredi Architects  
Landscape Architect: LeBlanc Jones Landscape Architects  
Sustainability Consultant: The Green Engineer  
Permitting, Transportation, Civil Engineering, Cultural Resources, Air/Noise: VHB, Inc. MEP Engineer: WSP  
Geotechnical Engineer: McPhail Associates  
Status: Under Construction

RESILIENCY  
Living Shoreline, Resilient Infrastructure

SUSTAINABILITY  
Green Building, Carbon Reduction



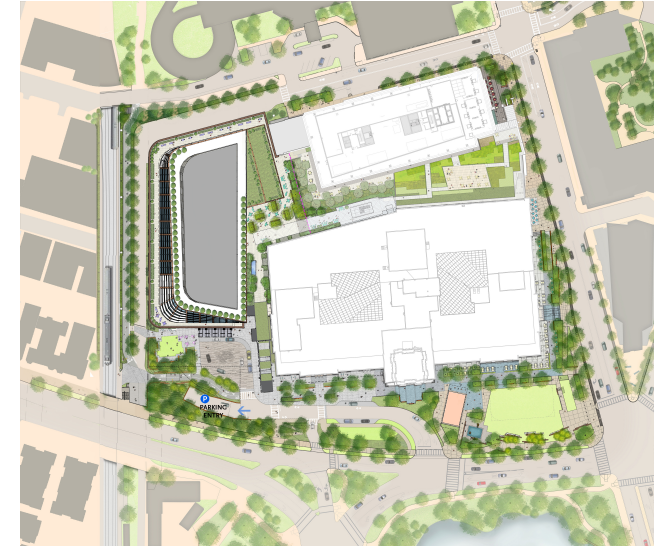
### Carbon Reduction

- EUI (Energy Use Intensity): 101 kBtu/SF
- 50.6% energy reduction compared to baseline by applying high-performance glazing system, high-efficiency LED fixtures, dedicated outdoor air system with heat recovery, high-efficiency chillers, and cooling tower
- 42.6% in stationary source GHG emissions
- To accomplish net-zero carbon status, the project team is committed to supplying 100% of the electricity used from renewable sources and/or purchasing Renewable Energy Certificates. The remaining on-site natural gas consumption of the building will be offset with the purchase of carbon credits.

### Design Approach

- The building's design process compared performance of each alternative including 90% electric, geothermal, and all-electric by Energy, Energy Cost, and GHG Emissions.

## Climate Adaptation



### Extreme Heat

- 25,000 SF of green/vegetated roof area
- Light-colored pavers on ground floor and amenity terrace areas
- Paved areas are shaded by street trees, trees in planting beds, and standalone shade trees
- Highly reflective roof materials

### Extreme Precipitation

- In addition to green roof and pervious areas, equipment that is critical to the operation of the building, such as transformers, switchgear rooms, telecommunications, and mechanical rooms, will be raised to a minimum of 17.5 feet Boston City Base (BCB) to the maximum extent practicable.
- Domestic hot water tanks and the standby generator will be located on either the top floor (mechanical penthouse) or the roof of the building.

### Green Building

- Targeting LEED V4 BD+C Gold Certification
- Targeting Fitwel Certification

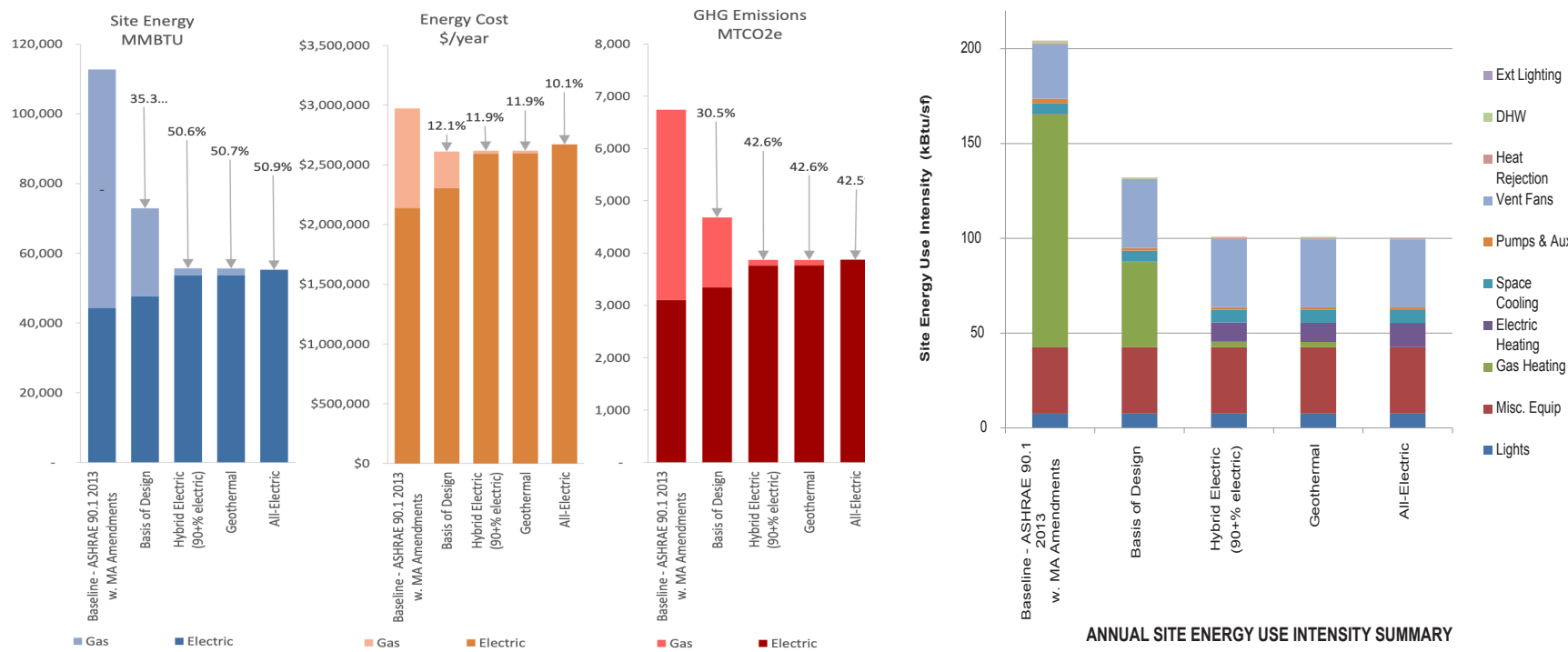


Figure 1: Performance of Each Alternative by Energy, Energy Cost and GHG Emissions

Figure 2: Site EUI Performance by End-Use

