



Boston Civic Design Commission Monthly Meeting

July 7, 2020

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Report from Review Committee



**boston planning &
development agency**

Presentation to the Commission



**boston planning &
development agency**



**boston planning &
development agency**

Herb Chambers Honda of Boston, Dorchester

*BPDA Urban Design staff will introduce the project,
then the project team will present*

Herb Chambers Honda Topics of Staff Review



The standard corporate Honda front façade faces the parking lot, while the project architect has developed a custom design for the remaining facades of a very atypical, vertically integrated dealership.

Urban Design Focus Areas

1. Exploration of strategies to activate multiple “front” facades and allow the building to engage public streets.
2. Better synthesis of the standard Honda corporate façade with the architect’s updated elevations.
3. Simplification of site access both ingress/egress as well as movement within the project boundaries.







Herb Chambers



HONDA

HONDA



Service Center





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CHAMBERS HONDA

BOSTON MASSACHUSETTS

START DATE : 2/11/19
DRAWN : JFT

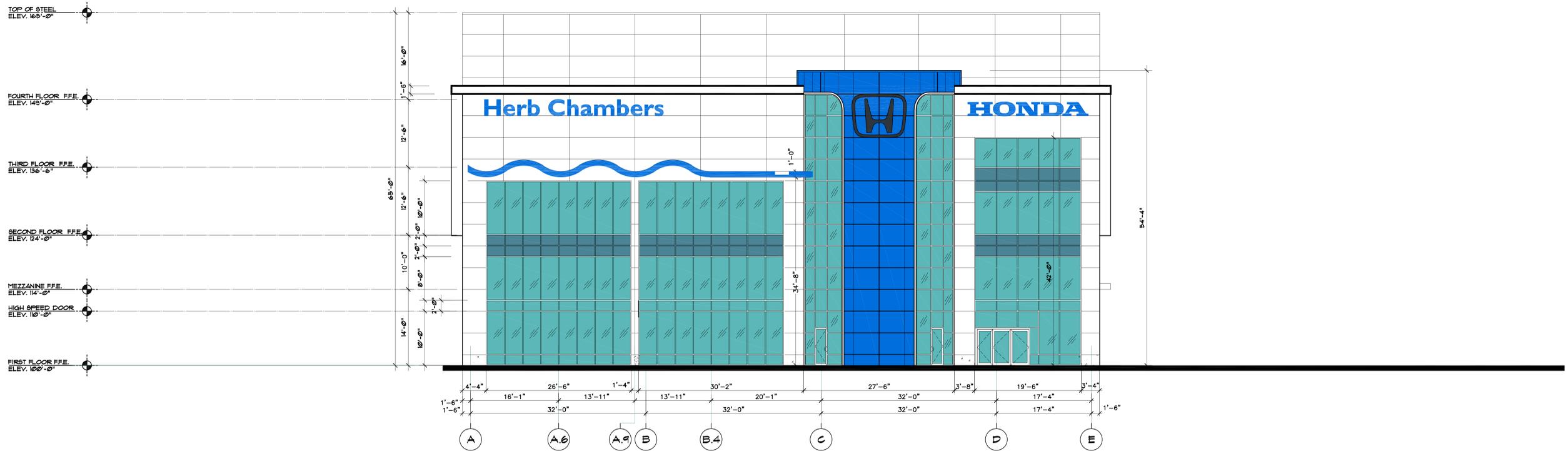
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NO DATE REVISIONS
01/27/19 50% PRICING SET
02/16/20 BUDGETING SET

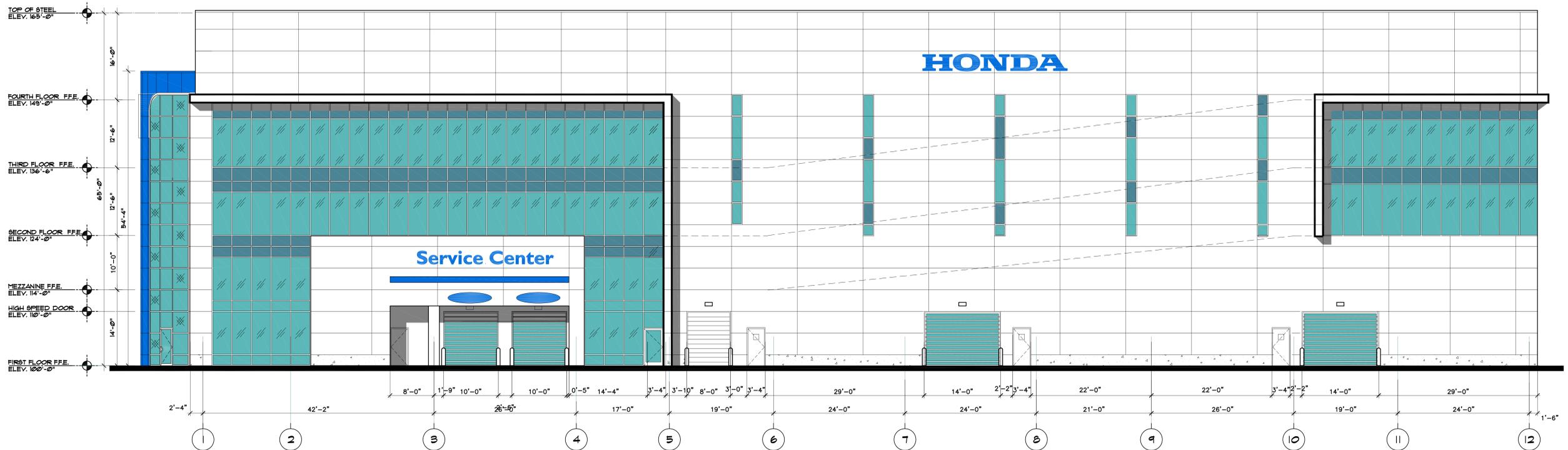
SEAL

ELEVATIONS

A-7
1811



NORTH FRONT ELEVATION - VICTORY ROAD



WEST SIDE ELEVATION - MORRISSEY BOULEVARD

**THE CURTIS
ARCHITECTURAL
GROUP**

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BOSTON MASSACHUSETTS

START DATE : 2/11/19
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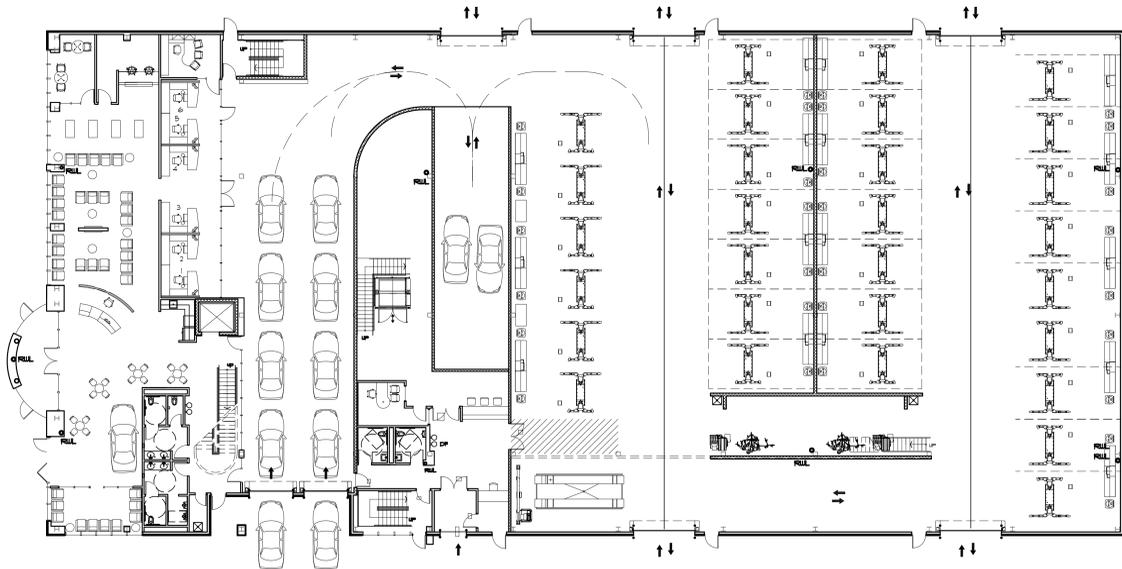
NO	DATE	REVISIONS
01	2/3/19	50% PRICING SET

SEAL

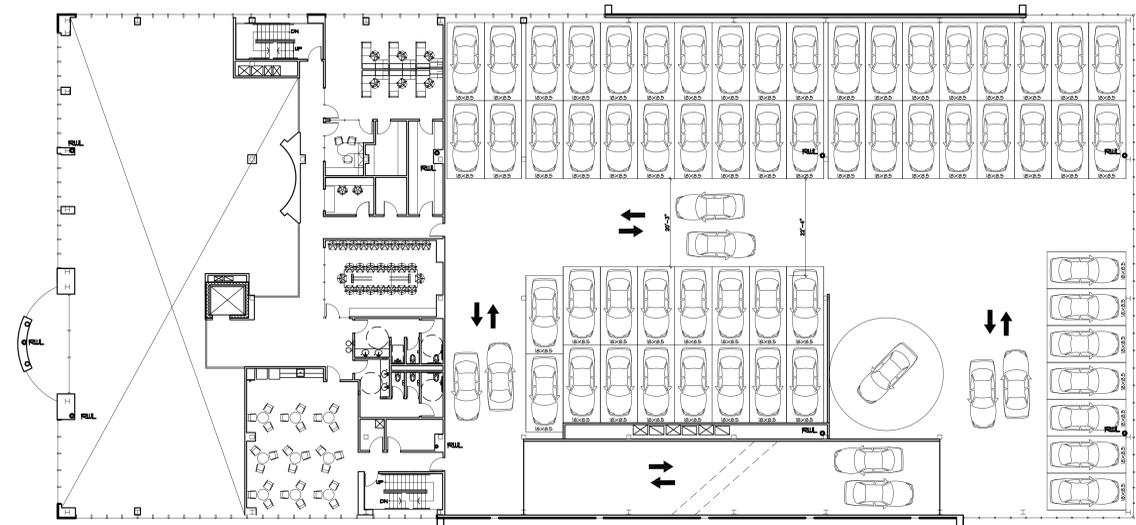
FLOOR PLANS

A1

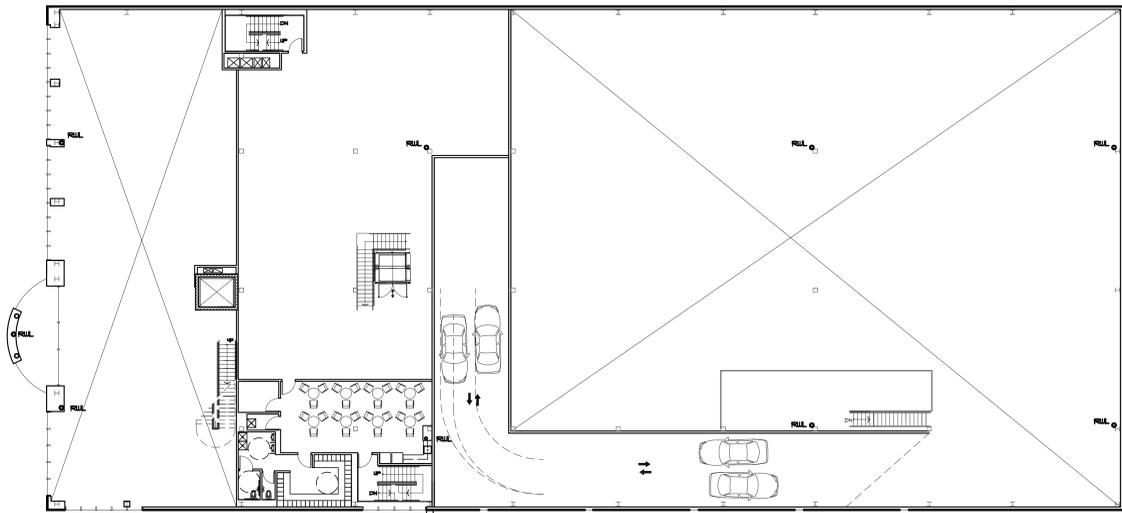
1811



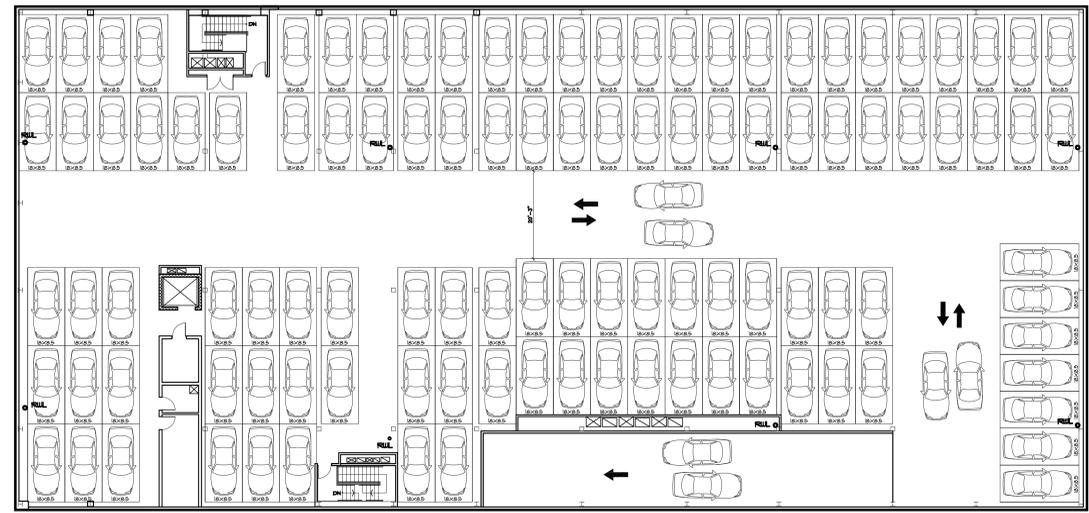
FIRST FLOOR 28,500 SF
1/16"=1'-0"



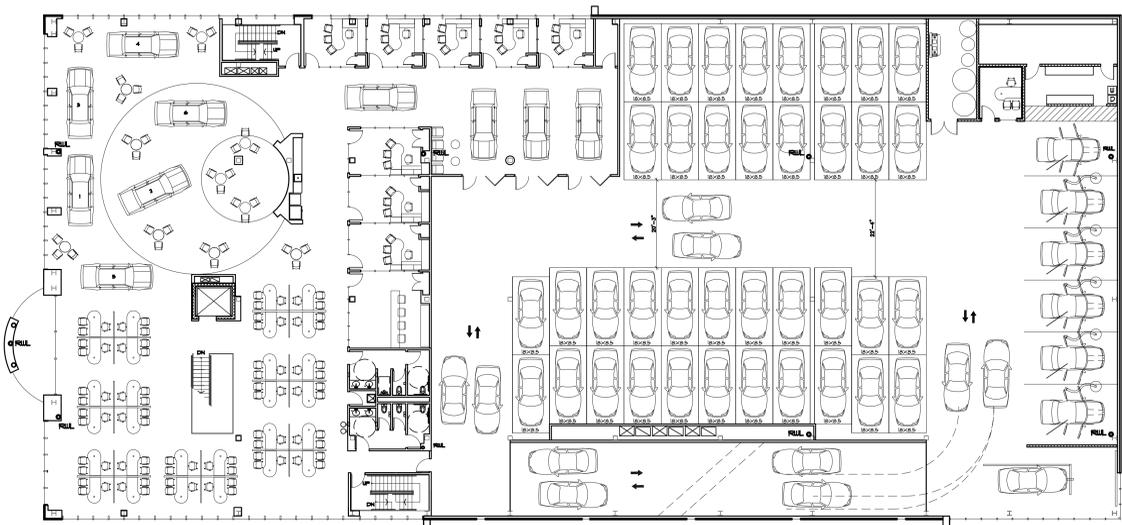
THIRD FLOOR 21,200 SF
1/16"=1'-0"



MEZZANINE 5,500 SF



FOURTH FLOOR 28,700 SF
1/16"=1'-0"



SECOND FLOOR 28,700 SF
1/16"=1'-0"



boston planning &
development agency

Commission Q&A

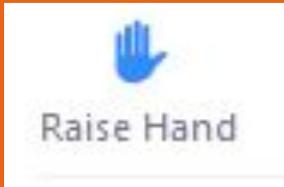
Commissioners will ask the project team questions and offer feedback on their proposal. Public comments will follow shortly.



**boston planning &
development agency**

Public Comments

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115 Winthrop Square, Downtown

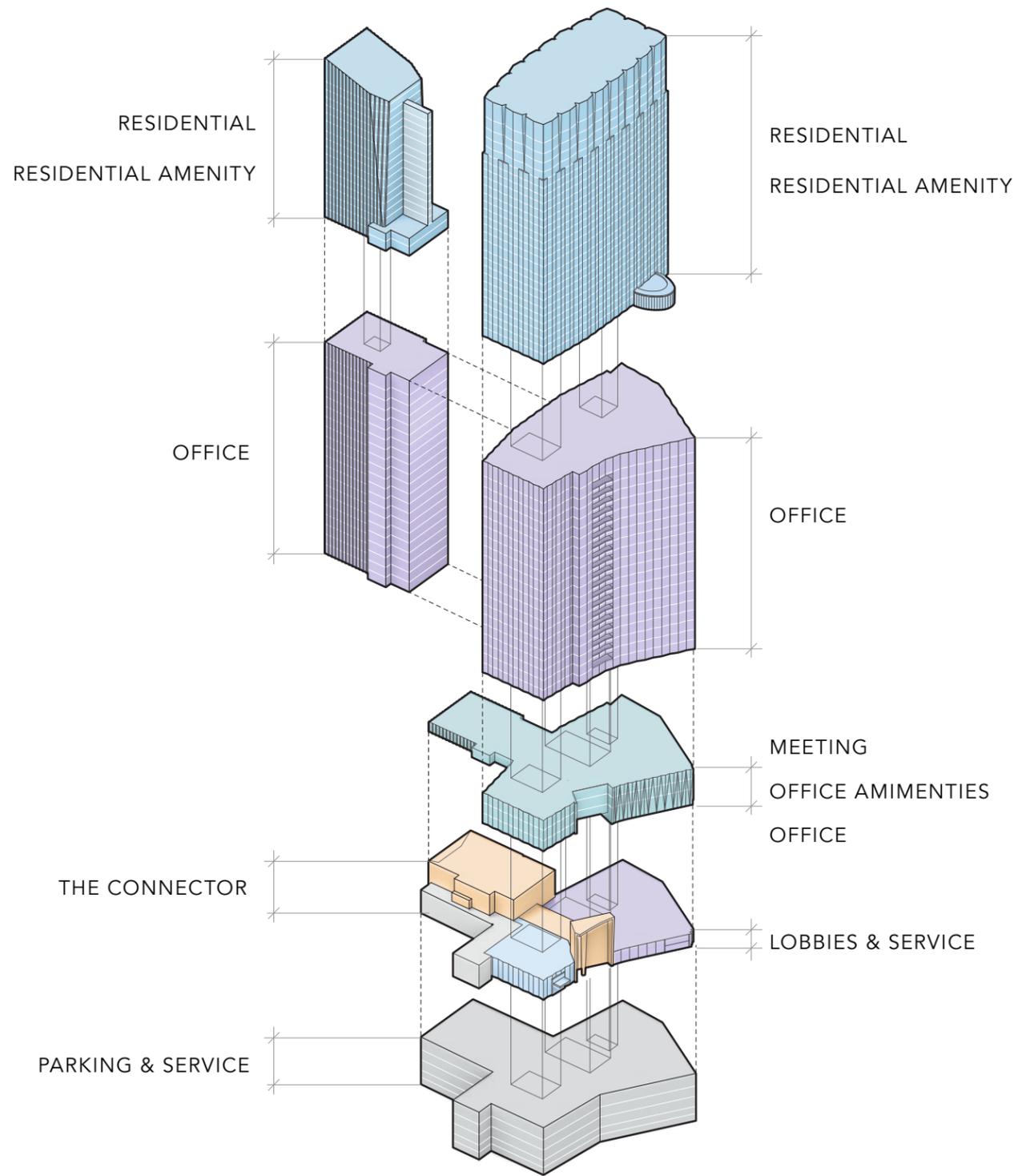
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then the project team will present*

WINTHROP CENTER

BCDC

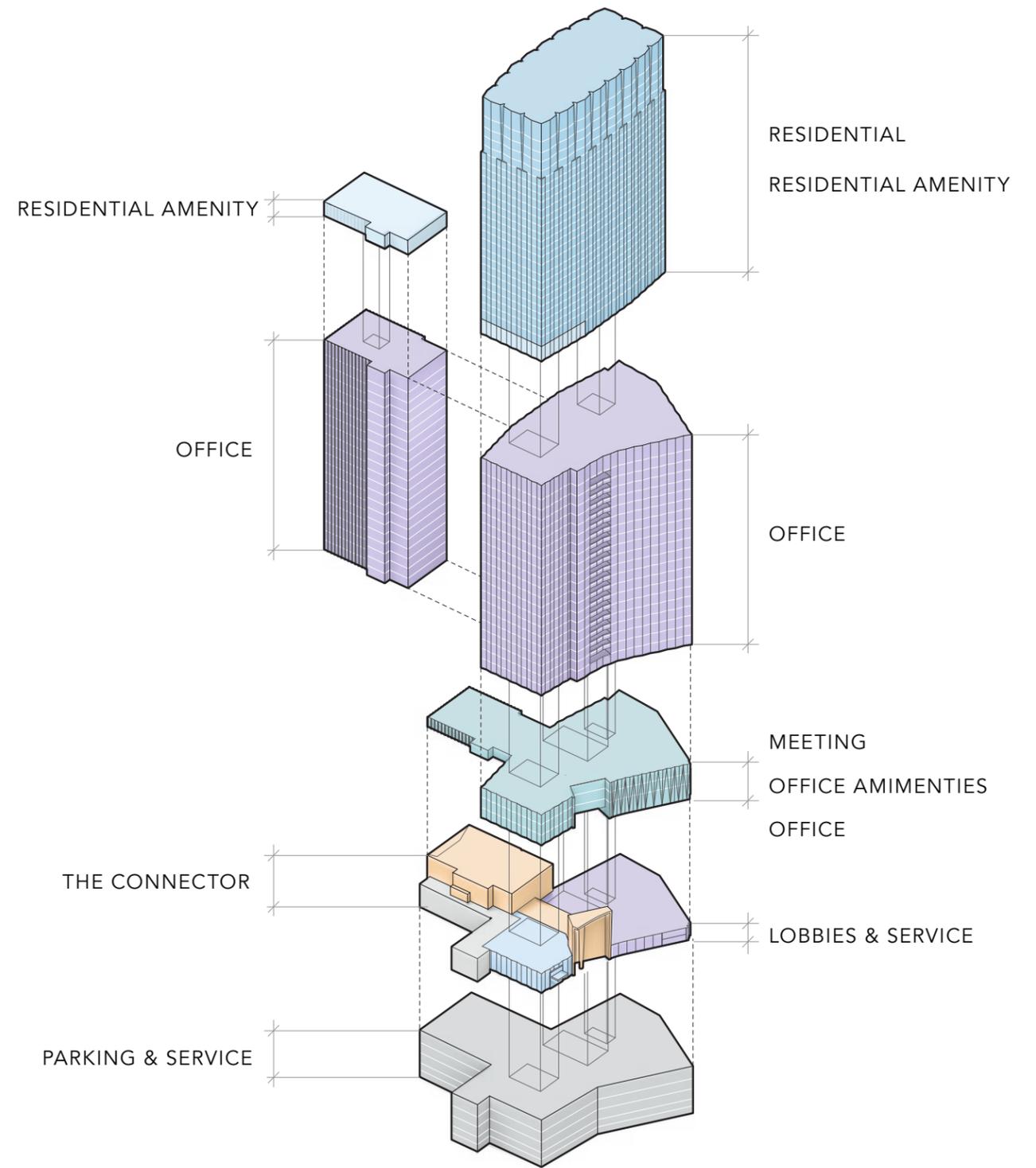
07/07/2020

HANDEL ARCHITECTS



PREVIOUS

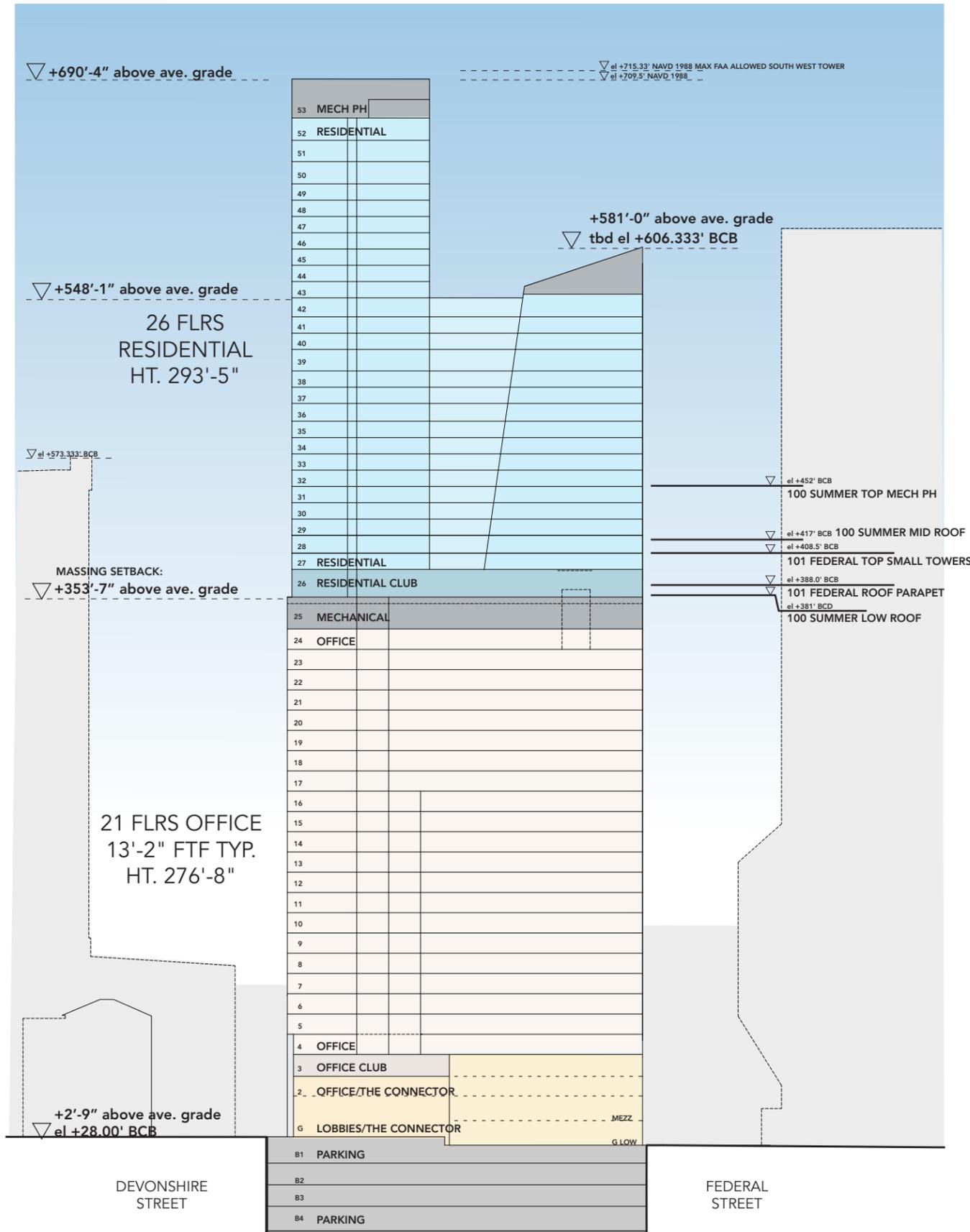
TOTAL AREA: 1,545,021 SF
RESIDENTIAL AREA: 662,825 SF
OFFICE AREA: 772,422 SF
RETAIL/CONNECTOR: 40,650 SF
BELOW-GRADE PARKING: 4 LEVELS



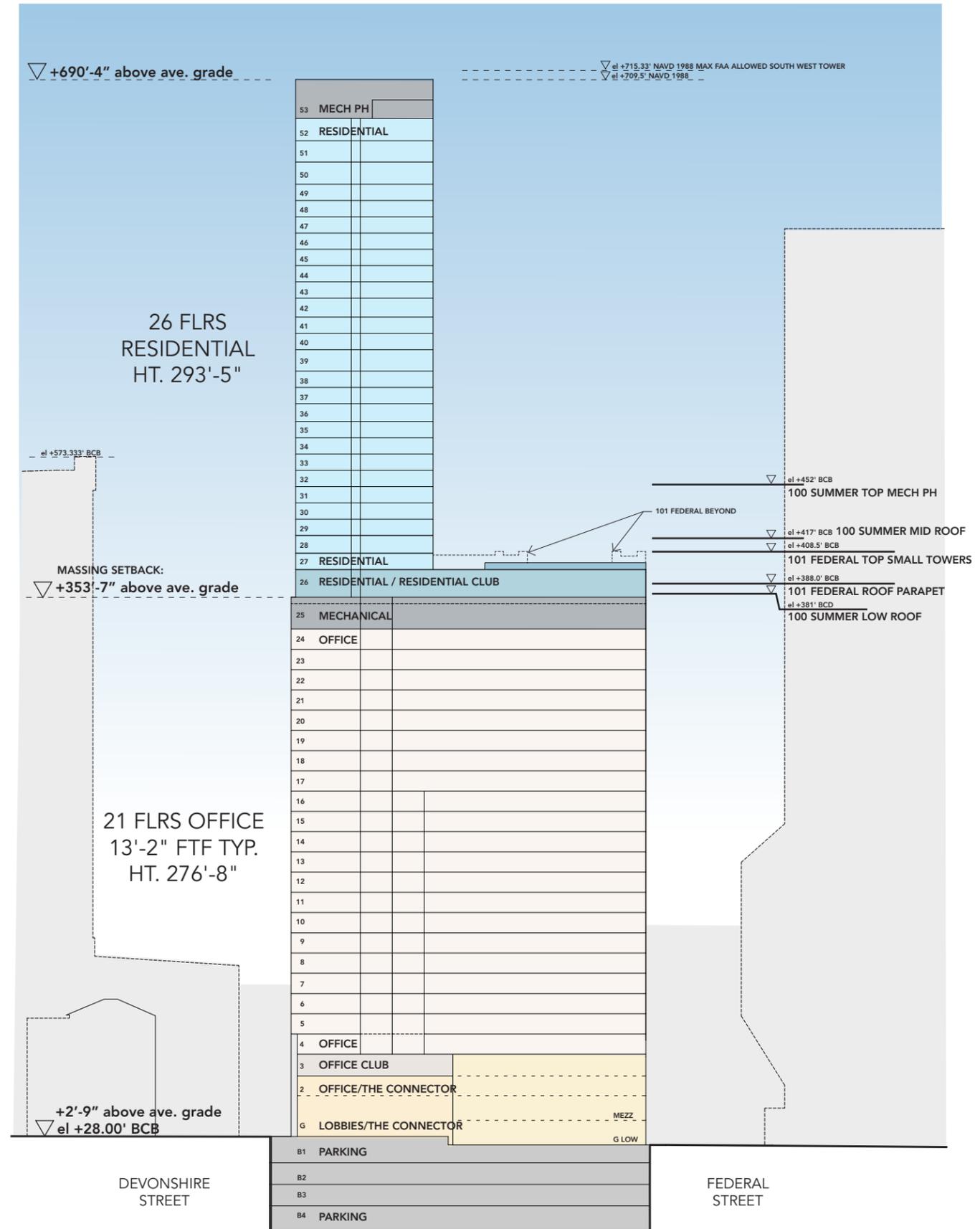
PROPOSED

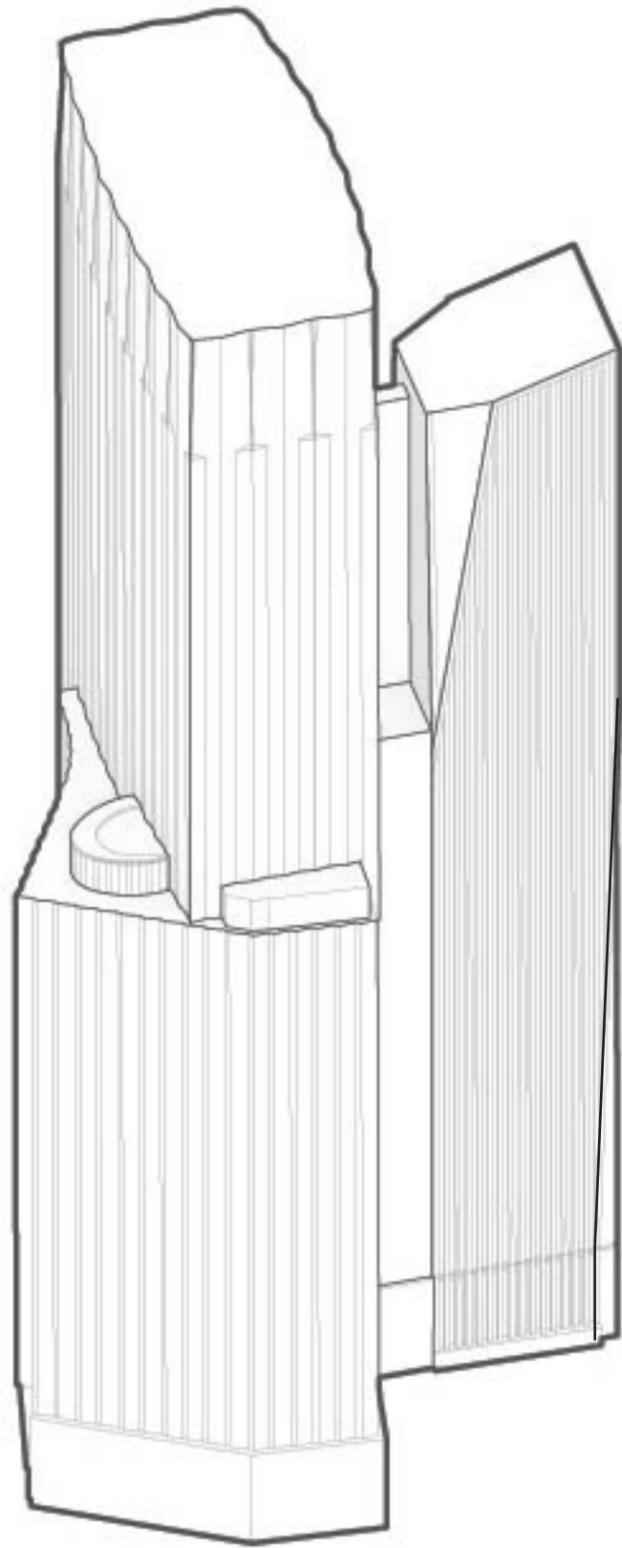
TOTAL AREA: 1,447,000 SF (APPROX.)
RESIDENTIAL AREA: 573,238 SF
OFFICE AREA: 772,422 SF
RETAIL/CONNECTOR: 40,650 SF
BELOW-GRADE PARKING: 4 LEVELS

SECTION - PREVIOUS

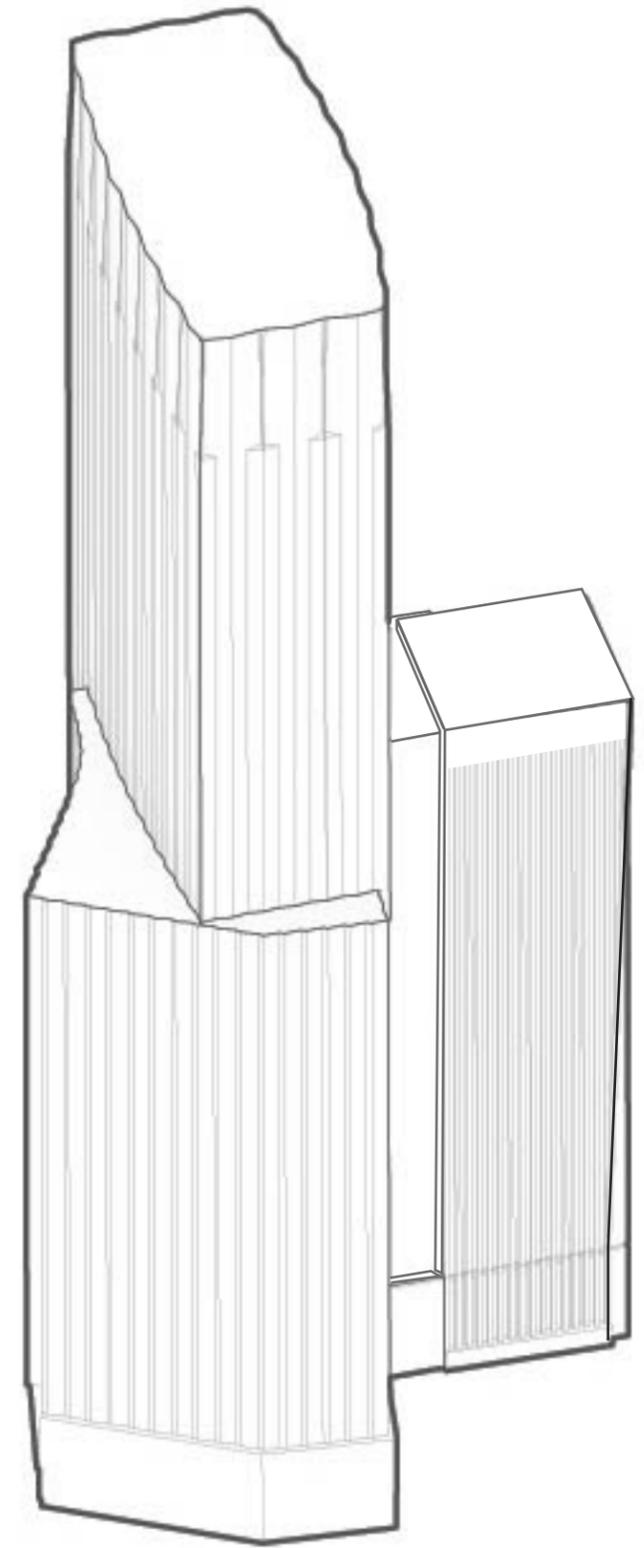
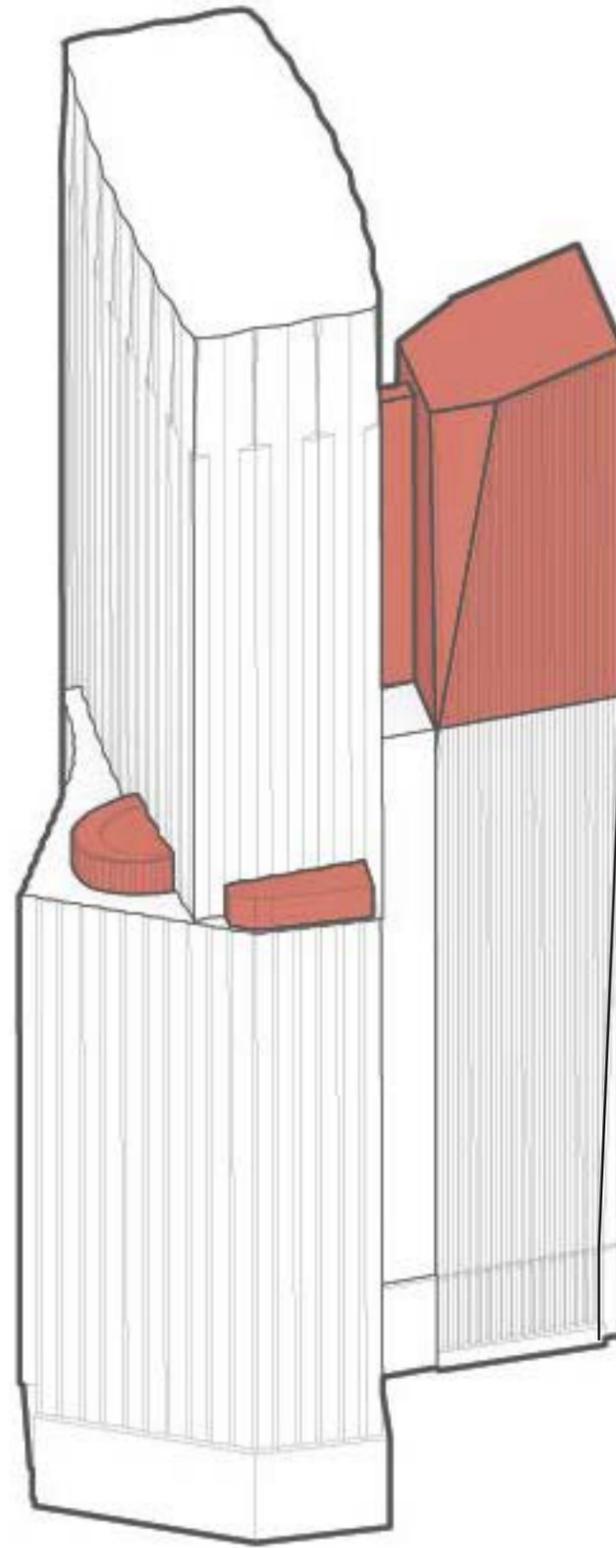


SECTION - PROPOSED





PREVIOUS



PROPOSED

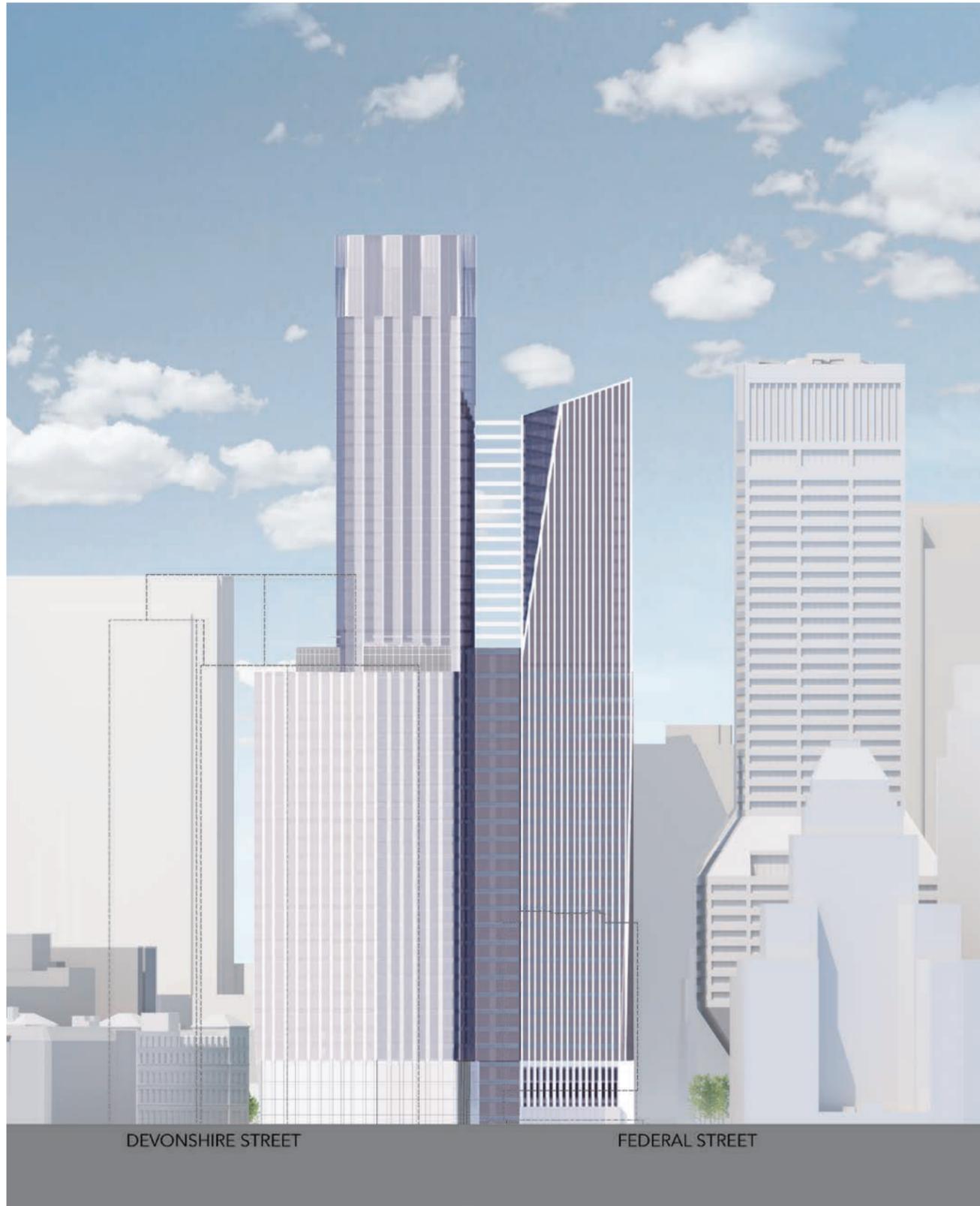
EAST ELEVATION - PREVIOUS



EAST ELEVATION - PROPOSED



SOUTH ELEVATION - PREVIOUS



SOUTH ELEVATION - PROPOSED





PREVIOUS



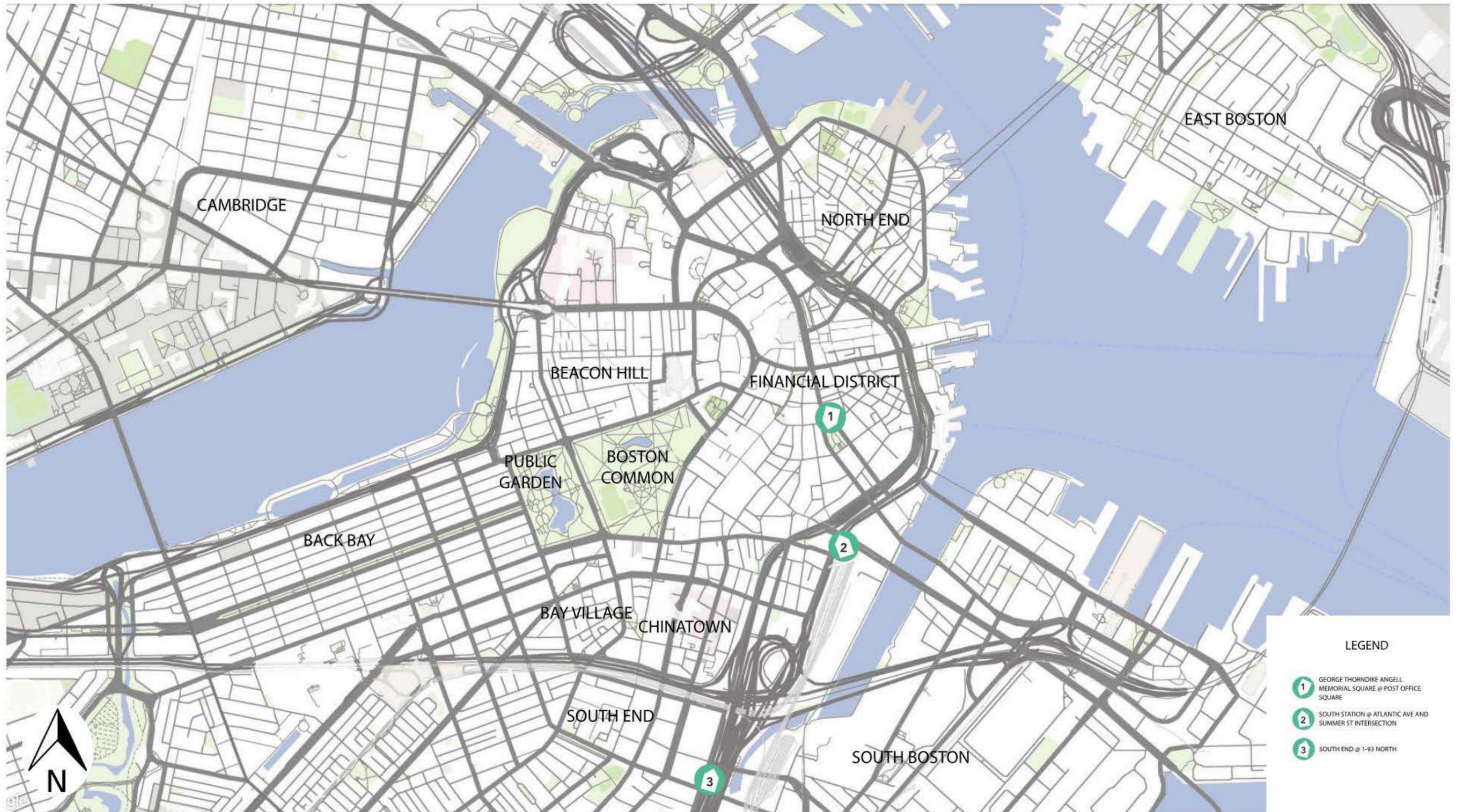
PROPOSED



PREVIOUS



PROPOSED



LEGEND

- 1 GEORGE THORNDIKE ANGELL MEMORIAL SQUARE @ POST OFFICE SQUARE
- 2 SOUTH STATION @ ATLANTIC AVE AND SUMMER ST INTERSECTION
- 3 SOUTH END @ I-93 NORTH

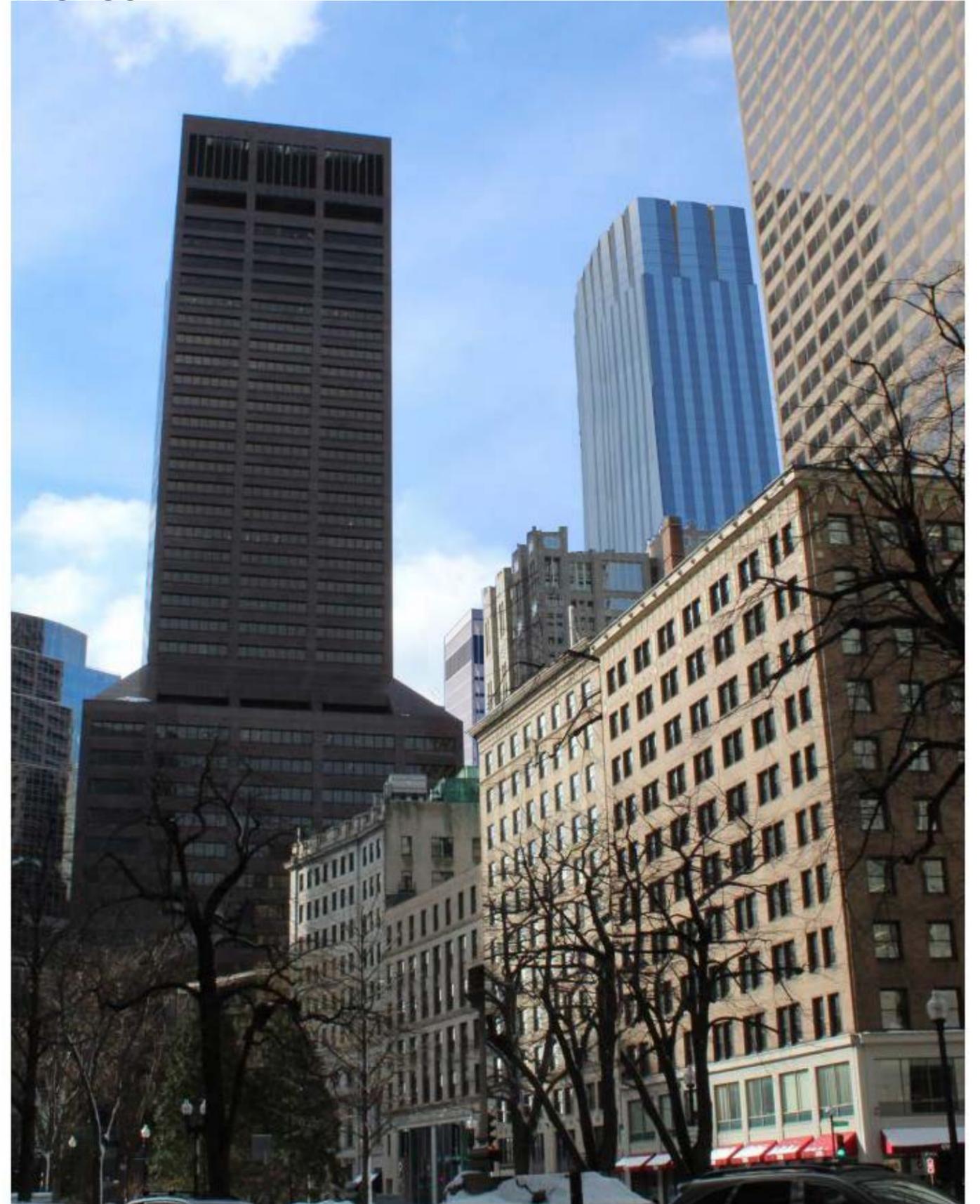
VIEW KEY MAP

VIEW FROM GEORGE THORNDIKE ANGELL MEMORIAL SQUARE @ POST OFFICE SQUARE

PREVIOUS



PROPOSED

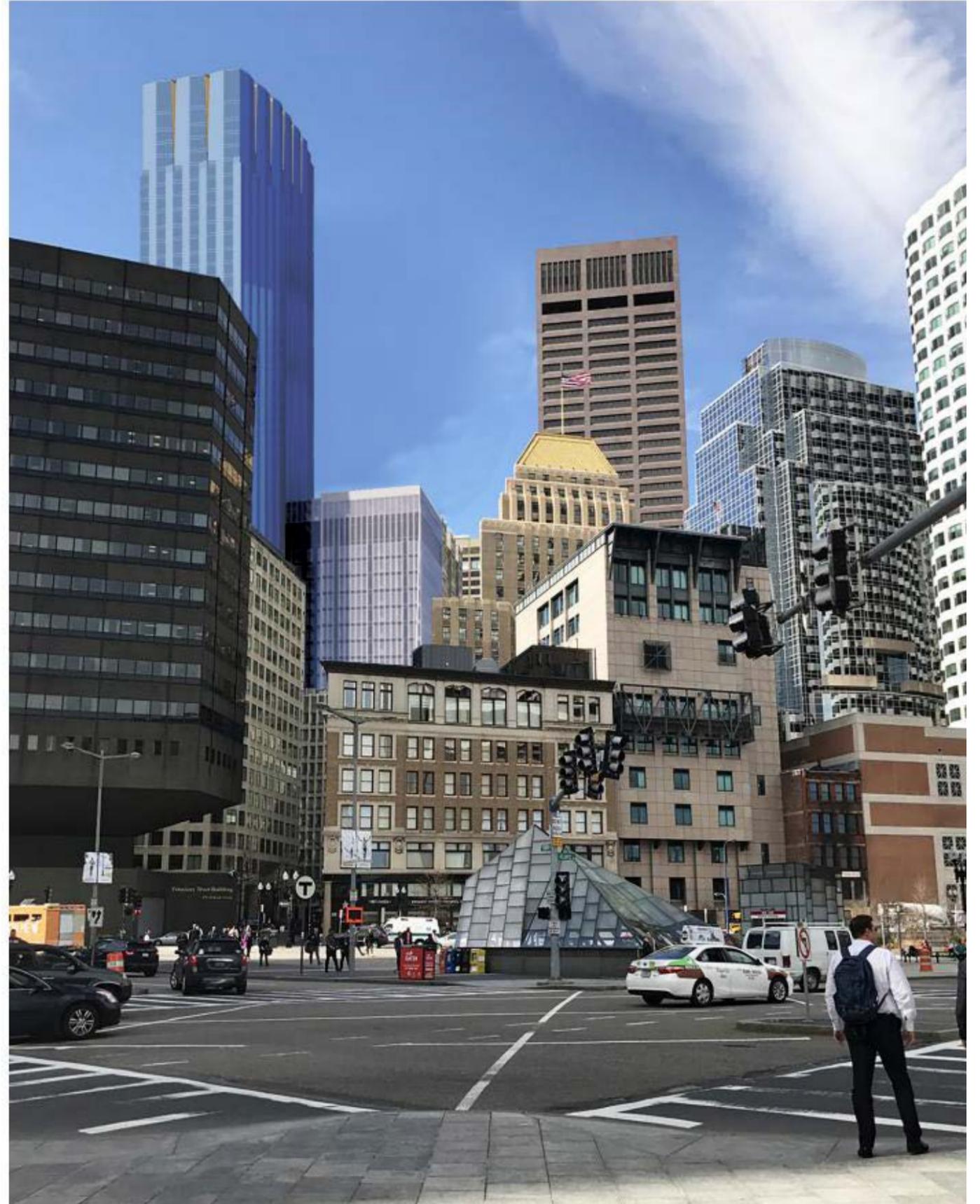


VIEW FROM SOUTH STATION @ ATLANTIC AVE & SUMMER ST INTERSECTION

PREVIOUS



PROPOSED

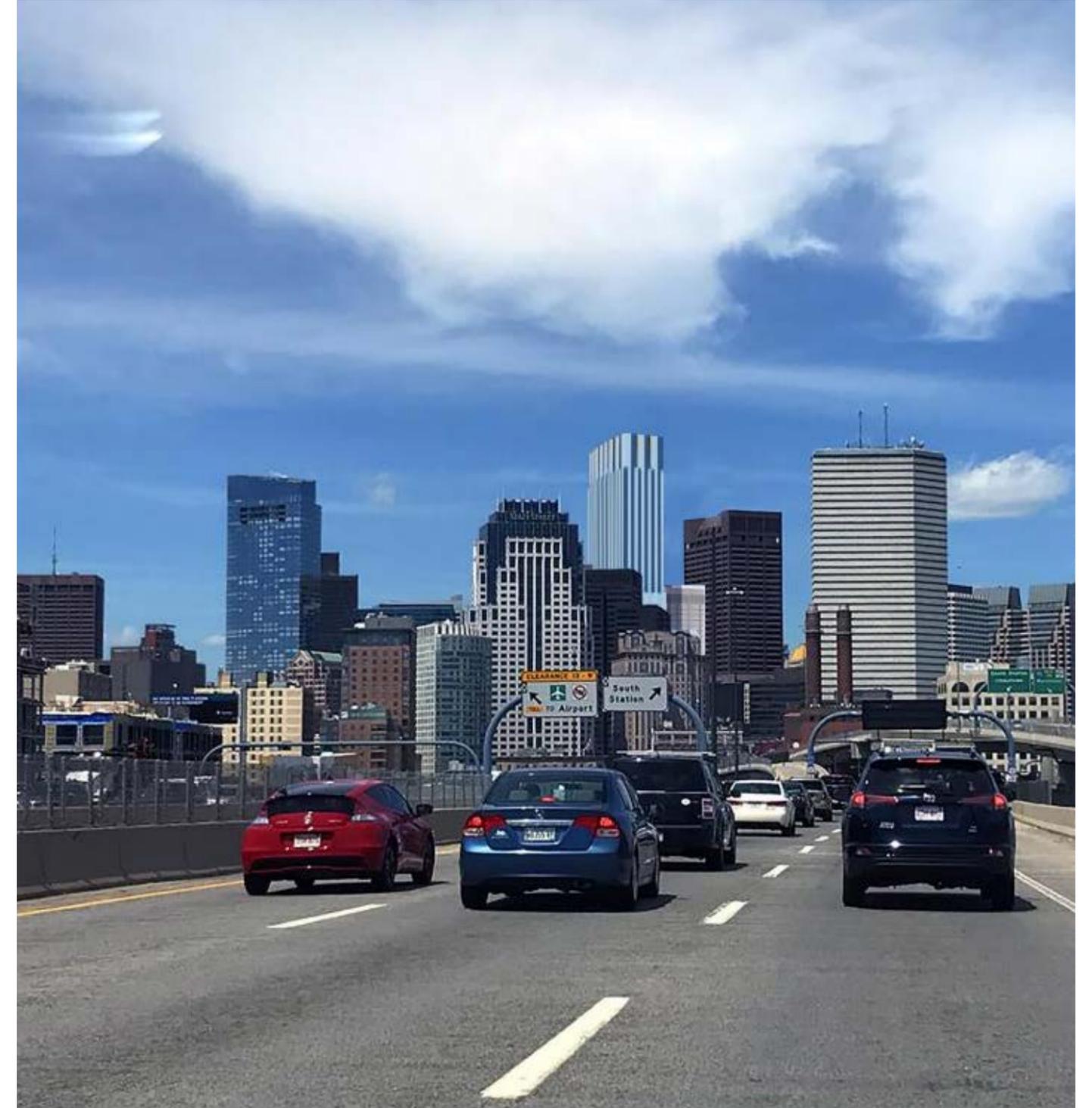


VIEW FROM SOUTH END @ I-93 NORTH

PREVIOUS



PROPOSED







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development agency**

Commission Q&A

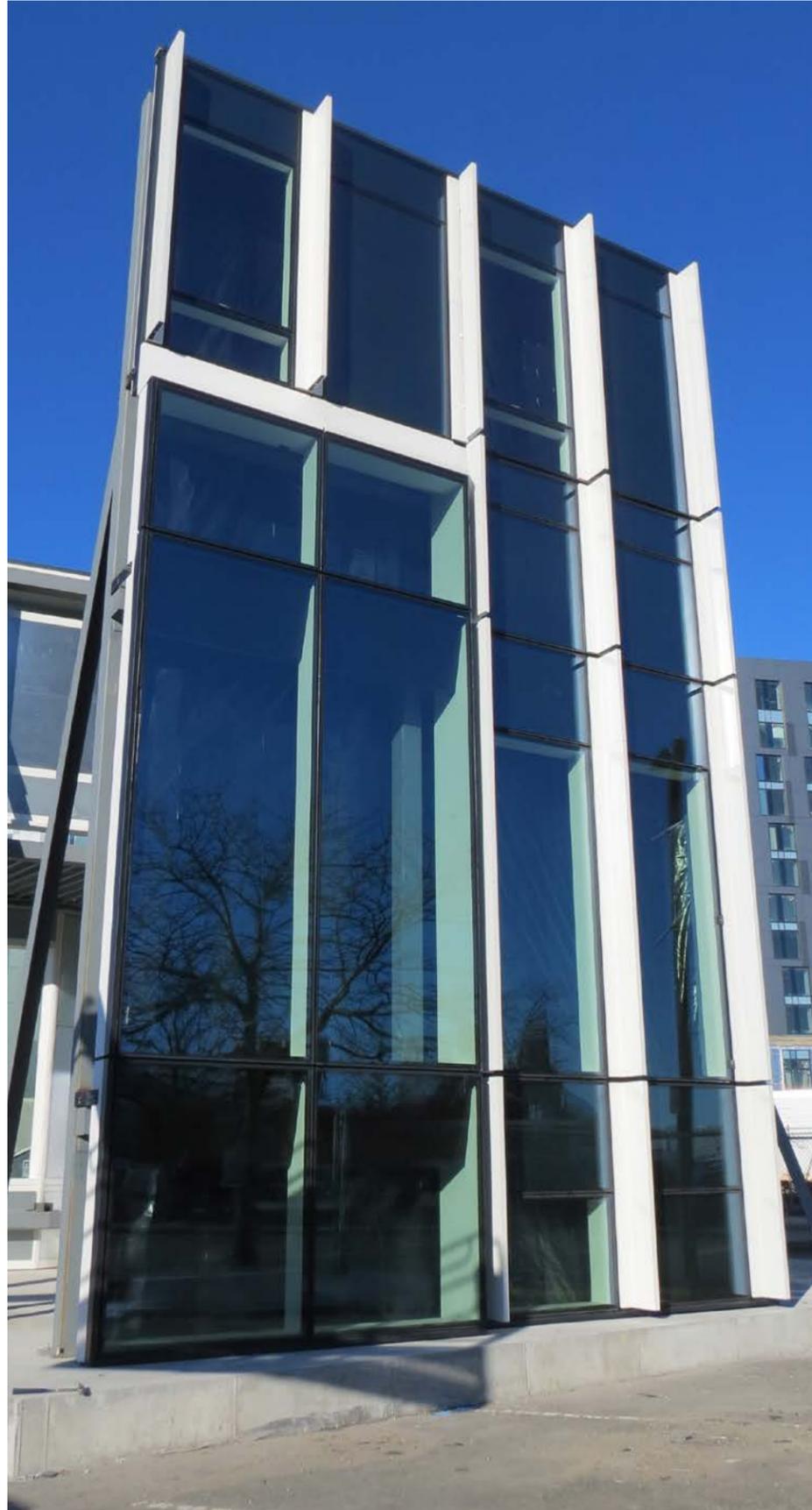
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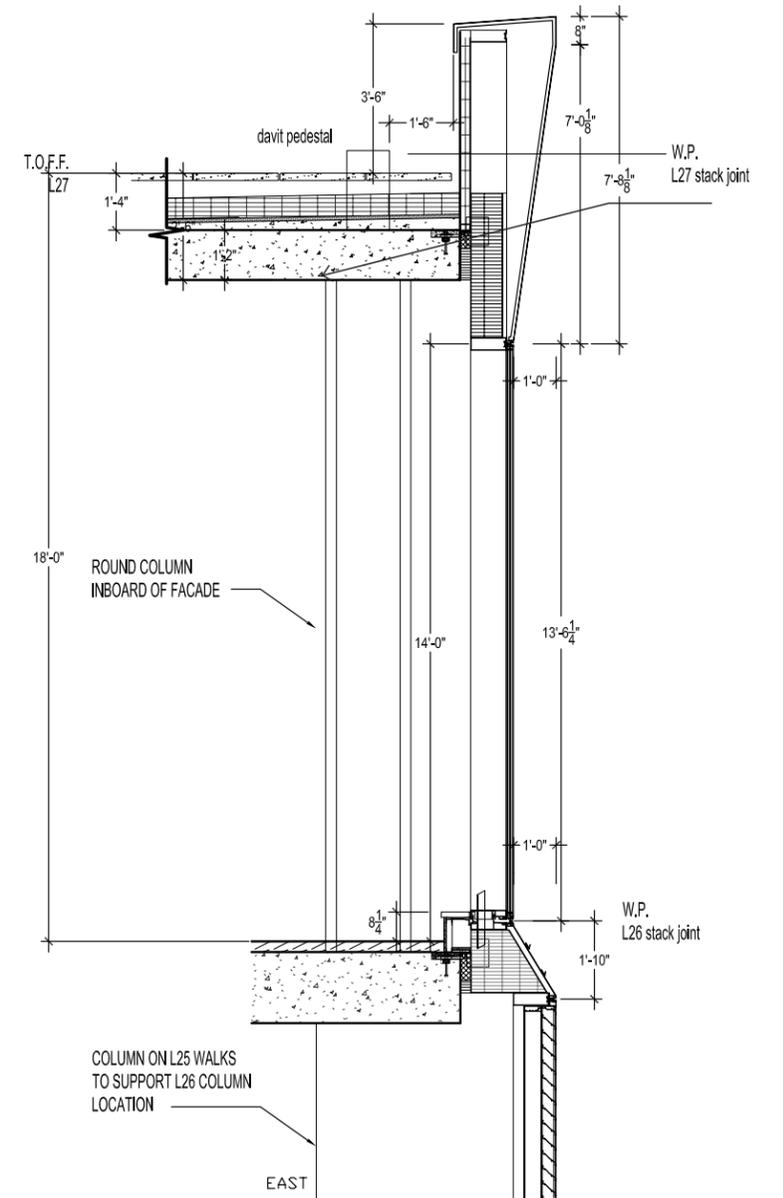
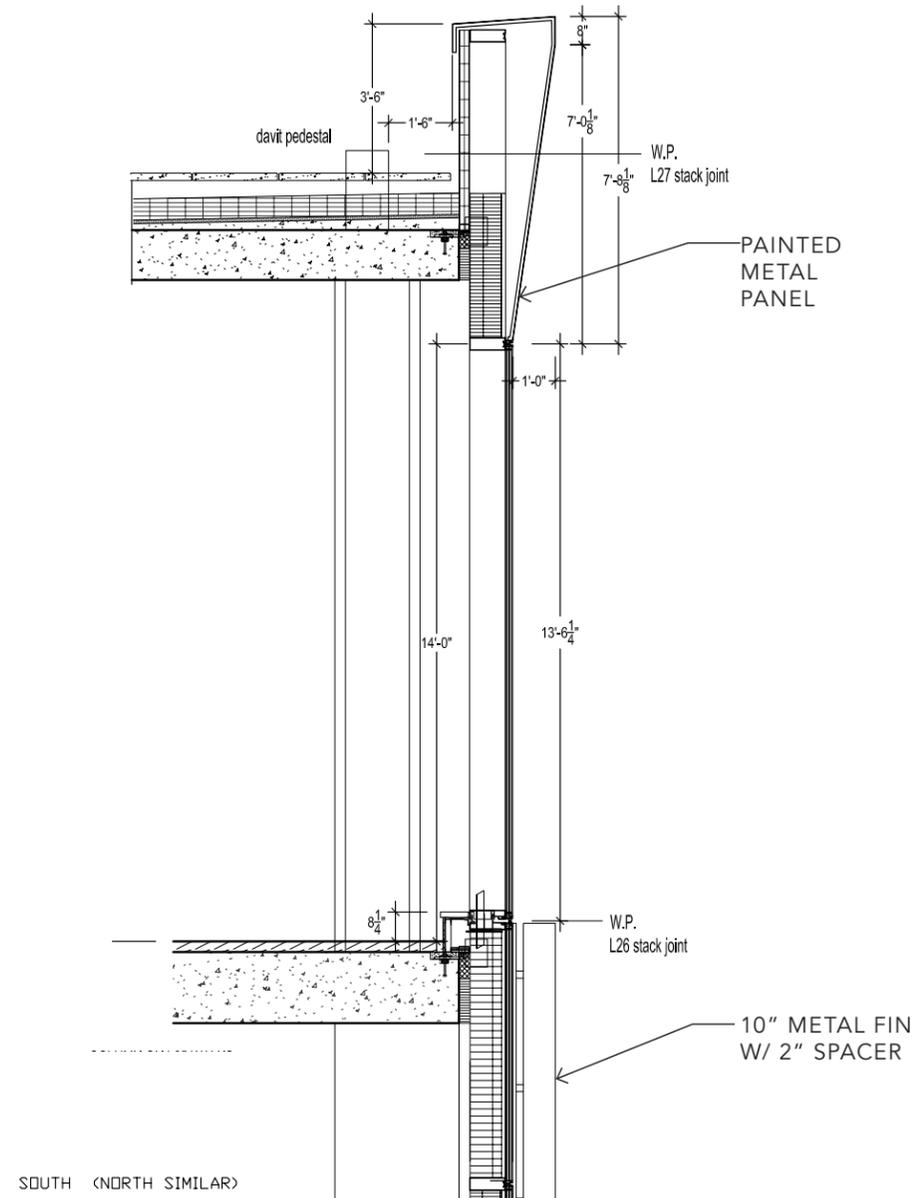


EAST TOWER ROOF - PROPOSED



EAST TOWER - VISUAL MOCK-UP



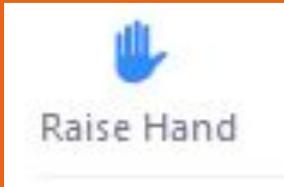




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Public Comments

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Carbon Free Boston & 2019 Climate Action Plan Update

Informational Presentation by BPDA staff

Carbon Free Boston & 2019 Climate Action Plan Update



July 7, 2020

Boston Civic Design Commission



THE BOSTON HARBOR WITH 40" OF SEA LEVEL RISE IN A 1% ANNUAL CHANCE STORM EVENT (2070'S)



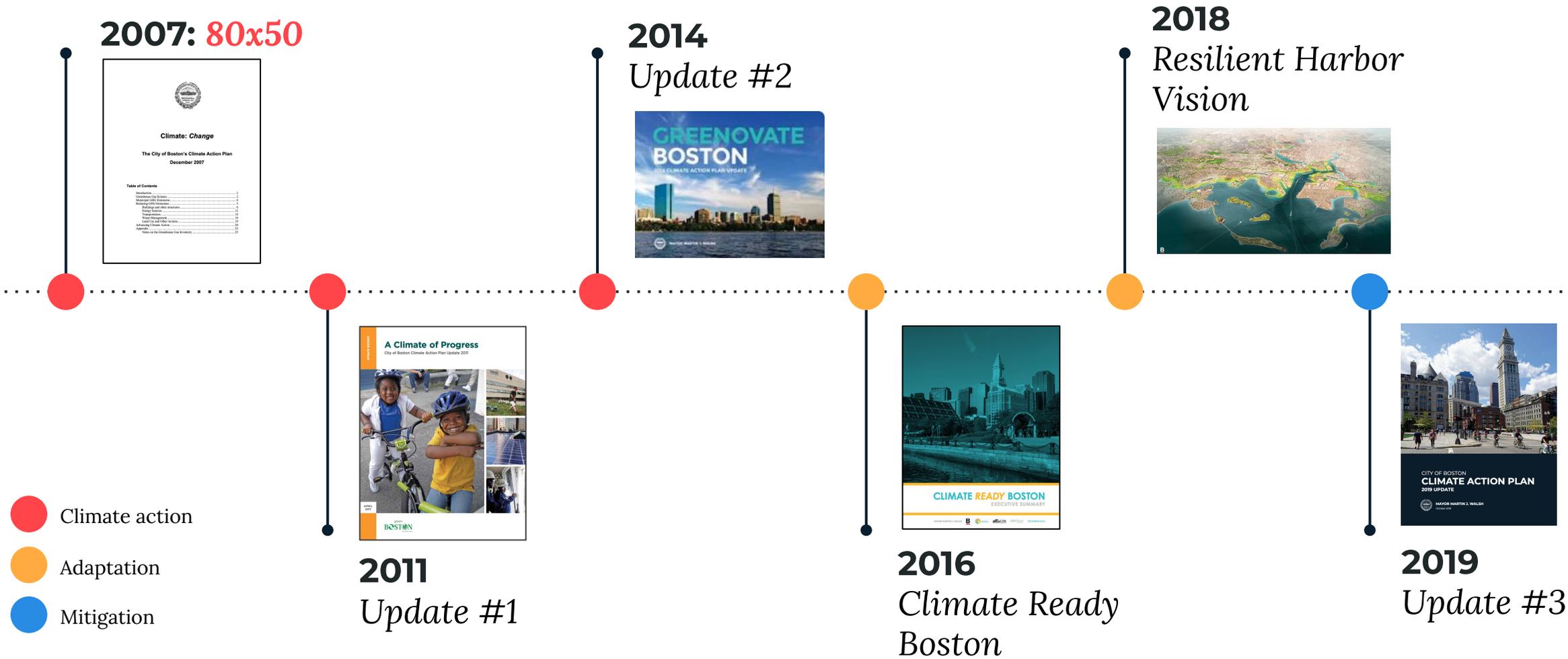
DORCHESTER

SOUTH BOSTON

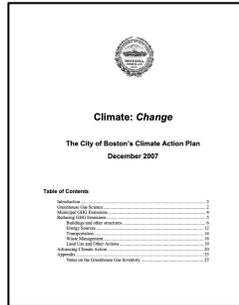
DOWNTOWN

EAST BOSTON

A HISTORY OF CLIMATE PLANNING AND ACTION



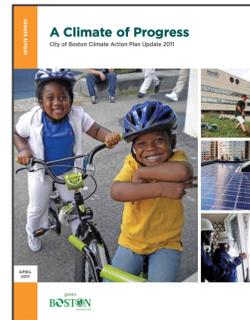
2007: 80x50



2014
Update #2



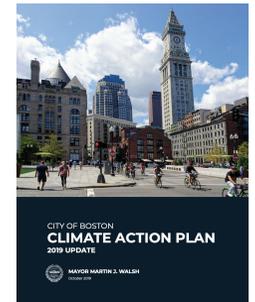
2018
Resilient Harbor Vision



2011
Update #1



2016
Climate Ready Boston

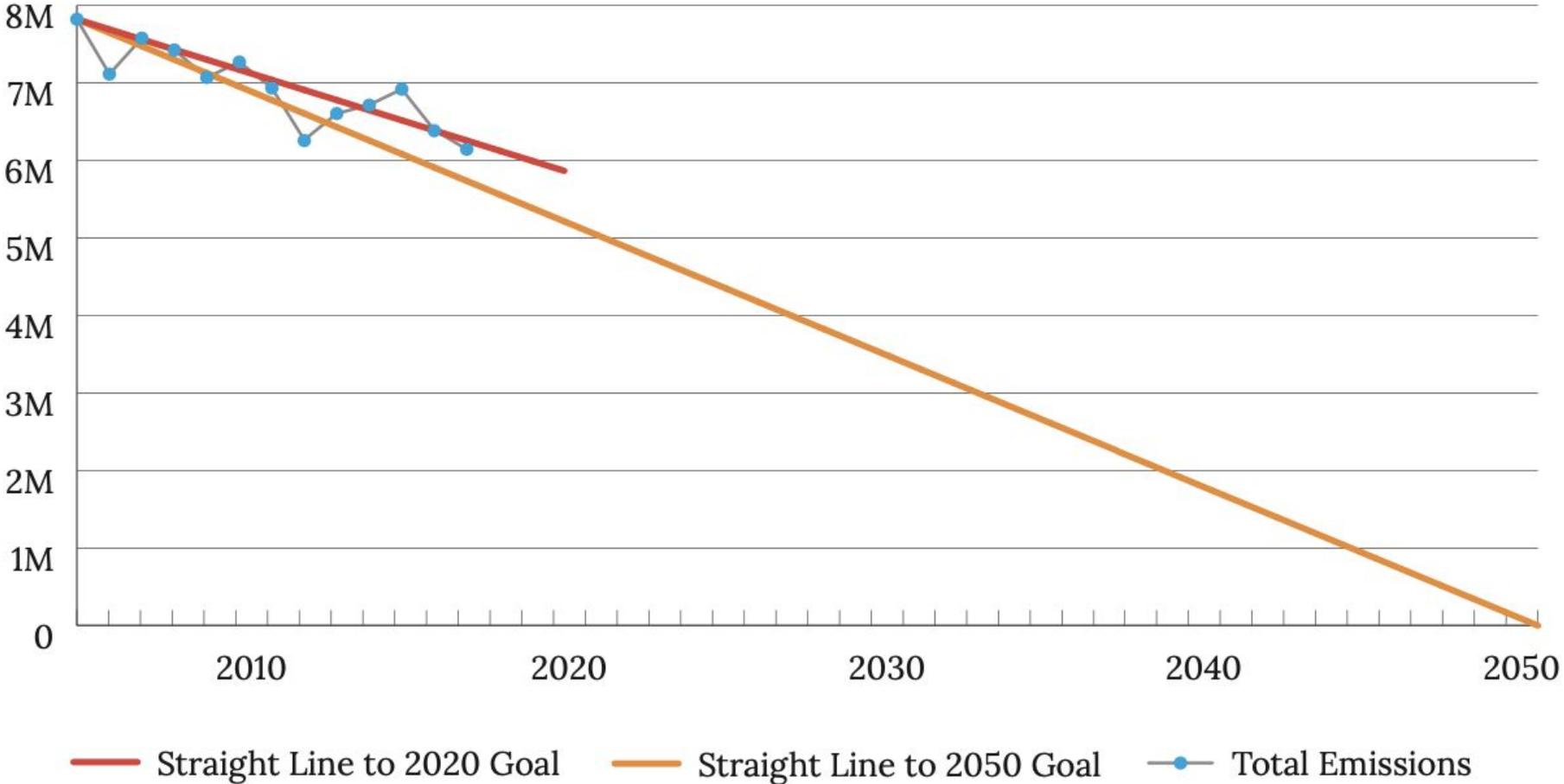


2019
Update #3



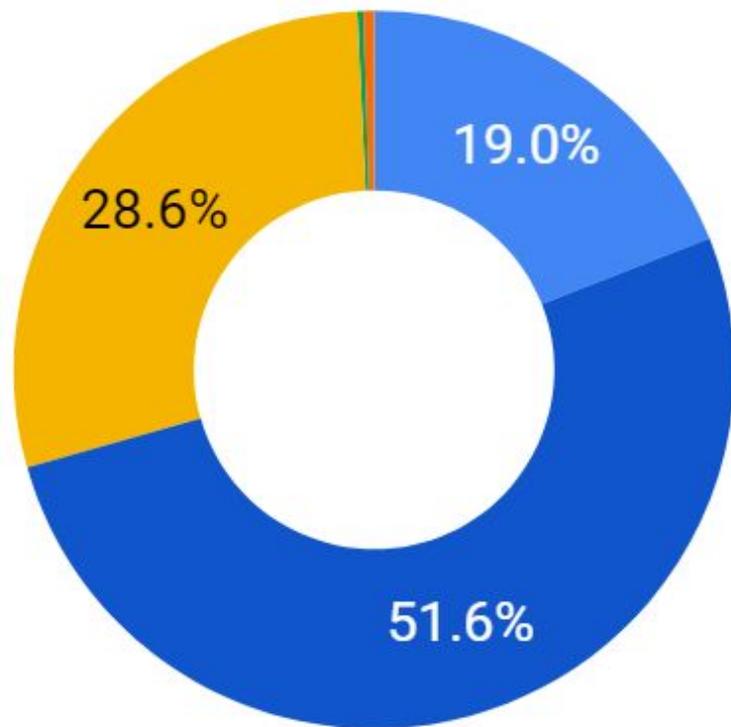
BOSTON'S CARBON FOOTPRINT

Boston Community Carbon Emissions, 2005-2017, and Progress Towards Goals (in metric tons)



BOSTON'S CARBON FOOTPRINT

GHG Emissions by Source, 2017

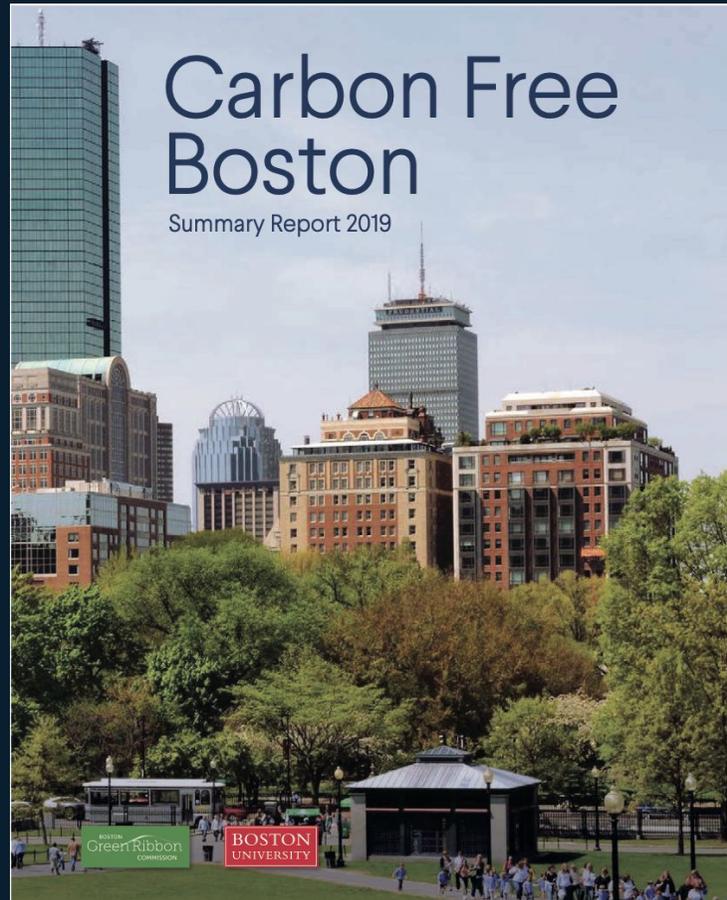


- Small Residential
- Commercial, Industrial a...
- Transportation
- Wastewater Treatment
- Fugitive emissions

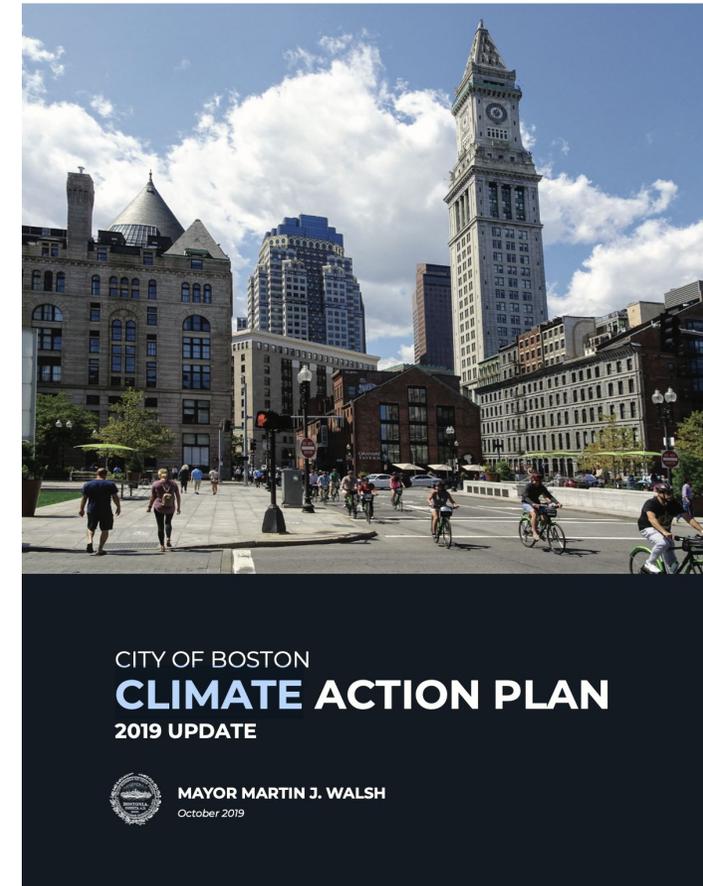
Buildings represent 70% of Boston's emissions.

To reach carbon neutrality, we need to decarbonize Boston's building sector.

Understanding what it takes to get to carbon neutrality...



... to inform our Climate Action Plan update



What does it take to get carbon neutrality?

Boston needs to pursue 3 strategies **simultaneously**:



Reduce demand for energy by increasing **efficiency**;



Convert nearly everything that runs on fossil fuels to run on **electricity**;



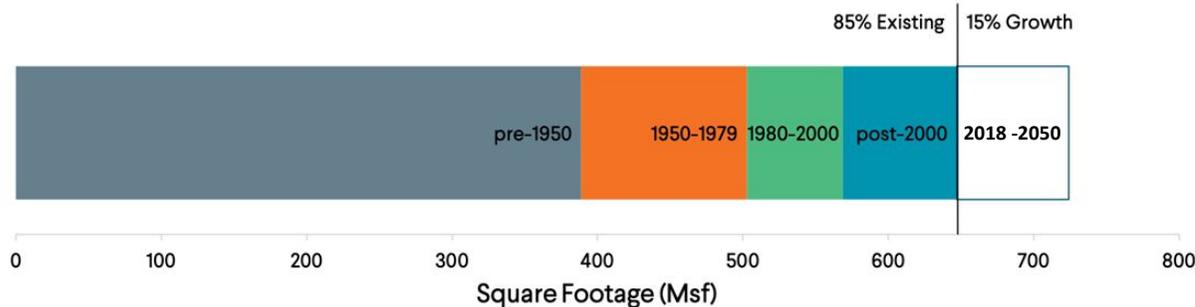
Buy **100% clean energy**

Carbon neutrality can be achieved with the technologies of today and is essential to a healthy, thriving and resilient Boston.

Building Sector Analysis

Current building stock

Boston's building stock is old.



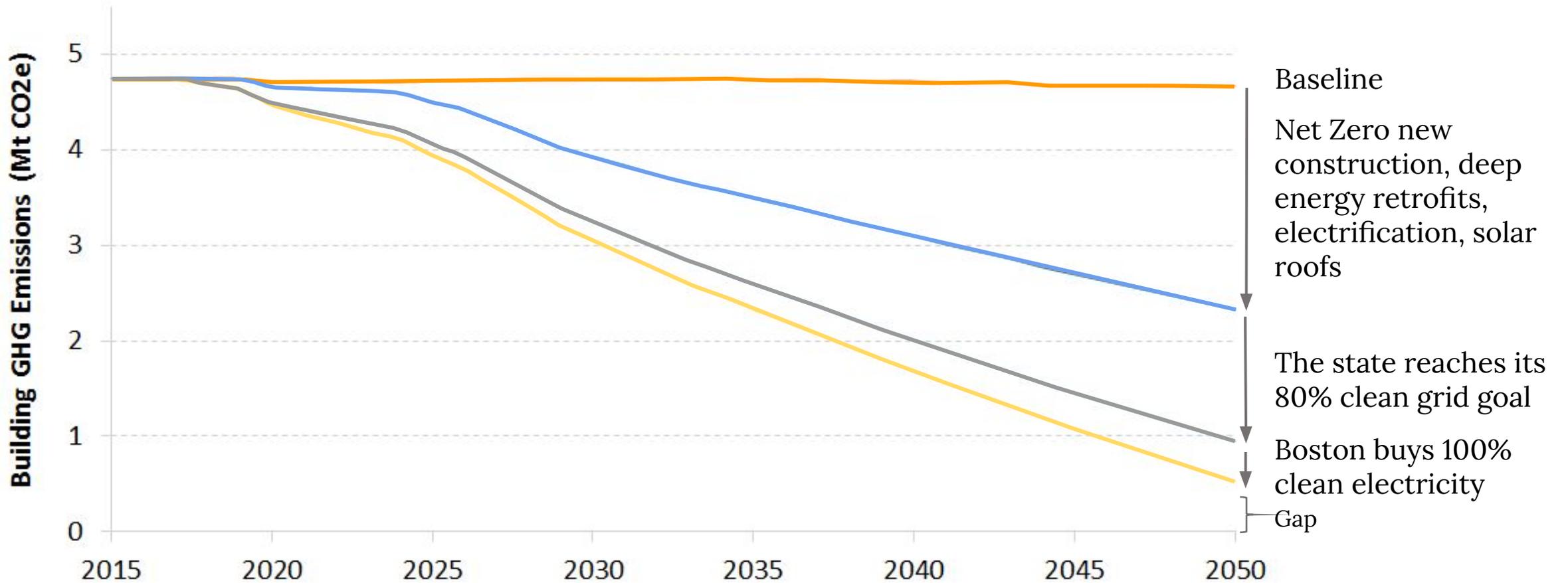
- 1/2 of existing floor space was built before 1950.
- 85% of floor space that will exist in 2050 has already been built.





Decarbonizing the building sector

Potential path to 2050:



Building sector takeaways

What the analysis tells us:

- Any new building that is not carbon-neutral (“zero net carbon”) will have to be retrofit.
- Acting sooner is cheaper.
- Pairing retrofits and electrification is key to success. Whole building approaches are more cost-effective than individual energy conservation measures.
- Retrofits can pay for themselves over their lifetime.

2019 Climate Action Plan Update



Seven building sectors strategies

- 3 City-led strategies
- 1 strategy for net-zero large new construction
- 1 strategy for decarbonizing existing large buildings
- 1 strategy for state advocacy

Leading by example

1 CONSTRUCT NEW MUNICIPAL BUILDINGS TO A ZERO NET CARBON STANDARD

2 ADOPT A ZERO NET CARBON STANDARD FOR CITY-FUNDED AFFORDABLE HOUSING IN BOSTON

4 INVEST IN ENERGY EFFICIENCY AND RENEWABLE ENERGY GENERATION IN MUNICIPAL BUILDINGS

New city-owned buildings will be carbon-neutral under updated climate plan

By Milton J. Valencia Globe Staff. Updated October 8, 2019, 12:00 a.m.



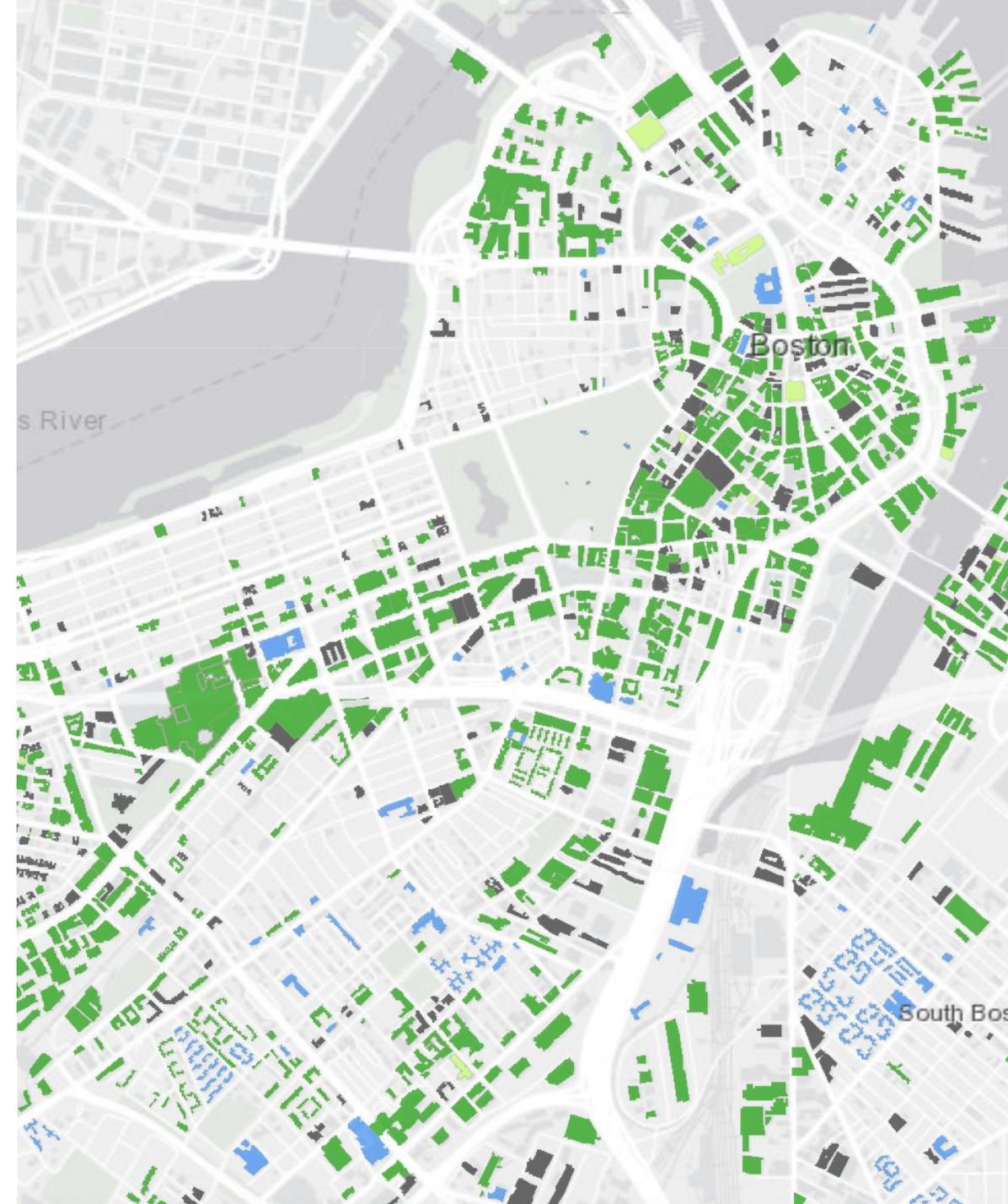
Boston City Hall MATTHEW J. LEE/GLOBE STAFF/GLOBE STAFF

All of Boston's new city-owned buildings will be constructed with new carbon-neutral designs, under an update to the city's climate plan Mayor Martin J. Walsh will announce Tuesday to help the city reach its goal of going carbon-neutral by 2050.

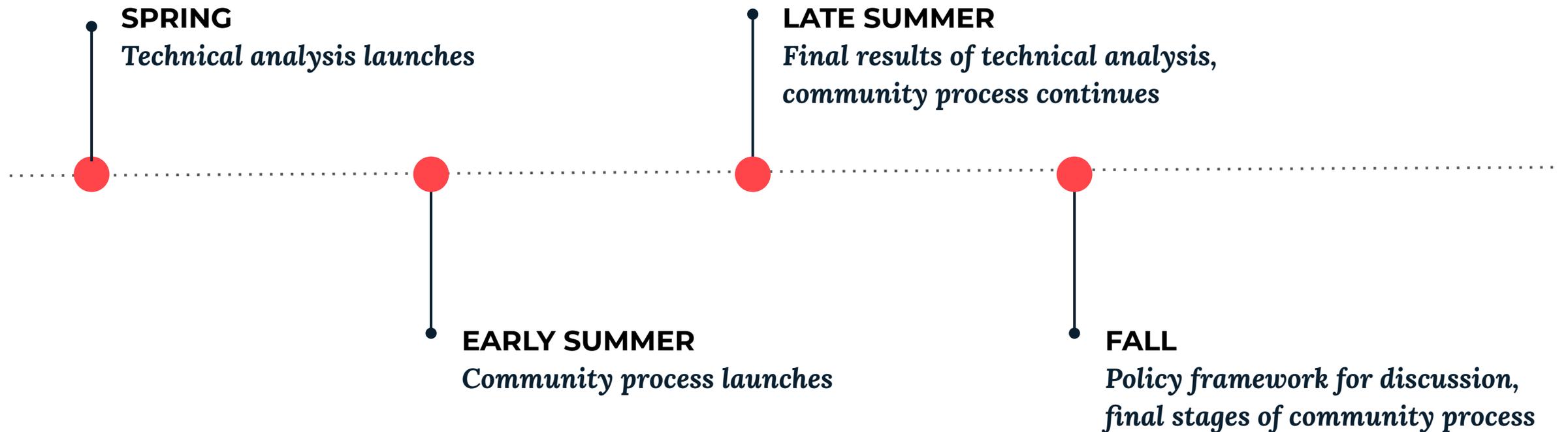
5

DEVELOP A CARBON EMISSIONS PERFORMANCE STANDARD TO DECARBONIZE EXISTING LARGE BUILDINGS

- Current policy: Building Energy Reporting and Disclosure Ordinance
- Goal: develop a carbon emissions performance standard
 - *Develop specific targets for different building types*
 - *Evaluate covering more buildings*
 - *Develop new support programs*
 - *Pilot deep energy retrofits*



Timeline for policy development



3 | STRENGTHEN GREEN BUILDING ZONING REQUIREMENTS TO A ZERO NET CARBON STANDARD

Article 37 within Article 80B review:

- LEED-certifiable
- Resiliency checklist
- Carbon-neutral building assessment
- Integration with Smart Utilities

Steps to adopt a ZNC standard:

- Engage consultants for technical analysis of standards and phasing
- Launch stakeholder engagement



Recent changes to Article 37

2013: Board approves the Climate Resiliency Checklist

2017: Updates to the Checklist

- Reflect evolution of science, research, modeling, and mapping
- Include performance targets, best practices
- Launch Boston Sea Level Rise Flood Hazard Area Map

2019: Carbon Neutral Building Assessment

- Model low- to zero-carbon building solutions
 - *Assess onsite renewable generation, offsite renewables or carbon offsets*
- Adverse Impact Mitigation - implement feasible strategies
- Focus on integrated project planning and integrated project review

Carbon Neutral Building Assessment

Included with the Preliminary Energy Model:

Low / Zero Carbon Building

- *Improved Building Envelope (AU values)*
- *Reduced / Efficient Mechanical Systems*
- *Dedicated Outside Air Systems with ERV*
- *All Electric / Clean Heating, Cooling & DHW*

Onsite Solar Renewable Energy

- *Building Design Optimized for Solar PV*
- *Installed Systems!*

Off-site Renewable Energy

- *Owned Assets*
- *Purchased RECs and Offsets*

Executive Summary

The Data Sciences Center project at Boston University includes the construction of an approximately 345,000 GSF mixed-use high-rise office building at 695 Commonwealth Ave. in Boston, MA. The project consists of 2 below-grade levels, a podium consisting of five (5) stories, and a fourteen (14) story tower that will house classrooms, collaboration spaces, computer labs, research spaces, meeting rooms, a cafe, receiving, and mechanical space. The project has completed the Design Development phase. Boston University has decided to pursue certification under the LEED for New Construction v4 rating system, targeting the highest certification threshold of LEED Platinum.

The building systems have been extensively studied by the design team and have been selected to maximize energy efficiency while providing essential heating, cooling, and ventilation needs. Plumbing fixtures with low flush and flow rates will be specified to minimize the demand for potable water for sewage conveyance and process uses.

The Green Engineer (TGE) performed building energy analysis comparing the design to a code compliant baseline. The baseline references ASHRAE 90.1-2013, Appendix G, plus the Massachusetts stretch energy code amendment (3rd edition). Preliminary results indicate the building outperforms the code baseline by 38% on a site energy basis before incorporating the proposed production from on-campus photovoltaic systems. The building outperforms the code baseline by 53.6% with the additional energy production included from the photovoltaic systems.

I. Low Energy Building

A. Energy Conservation Measures

The following ECMs have been identified for the project:

- Diagonal louvers and "sawtooth" shading fins
- Triple-glazed curtain wall system
- Significantly reduced interior lighting through the use of high efficiency LED fixtures
- Geothermal heat recovery chiller
- Active chilled beams
- Dedicated outdoor air system with high efficiency enthalpy and desiccant wheels
- Low flow plumbing fixtures

B. Energy Analysis Inputs

Building Component	Baseline: MA Code compliant ASHRAE 90.1-2013 + MA Amendments	Proposed: Low Energy Building All Electric, Hybrid Geothermal + AD-BI
Building Type	Large Office	
Utility Rates	MA State Average Electricity \$0.15/kWh Gas \$0.99/therm	
Floor Assembly	Continuous Insulation Above Deck R-20 U-0.032	Continuous Insulation Above Deck R-20 (typ) U-0.032
Wall Assembly	Steel Framed R13 cavity + R13 ci U-0.055	Multiple: Steel framed, metal panel, slat tool-panel, shadow box Aggregate Opaque U-Value: U-0.180 Component U-Values provided by Enclave

E+ Green Buildings & Communities



Marcella Highland

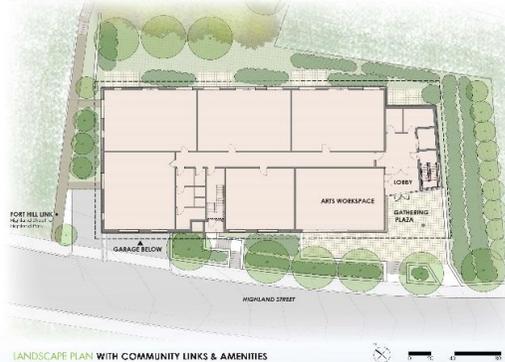
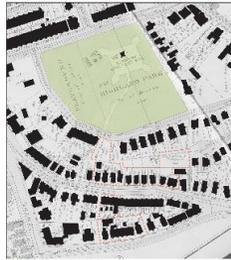
- Rees-Larkin Development
- Studio G Architects

38 units - 80% affordable, co-op ownership

Sustainable features

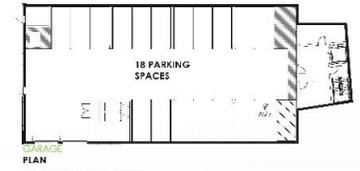
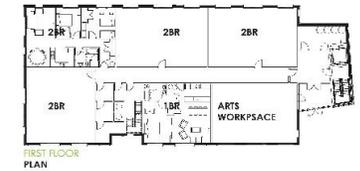
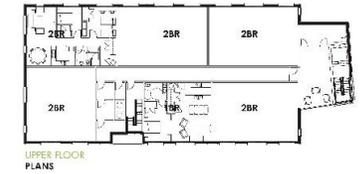
- Low Carbon Building
- On-site Solar PV
- Net Energy Positive
- LEED Platinum

E+
MARCELLA
HIGHLAND



A DIVERSE MIX OF FAMILIES AND INCOMES FOR A SUSTAINABLE COMMUNITY

- PROPOSED UNITS:
- EXTREMELY LOW-INCOME: 3 UNITS
 - LOW-INCOME: 7 UNITS
 - WORKFORCE/MODERATE INCOME: 5 UNITS
 - MARKET (UNRESTRICTED): 8 UNITS



FLOOR PLANS SCALE: 1/8" = 1'-0"

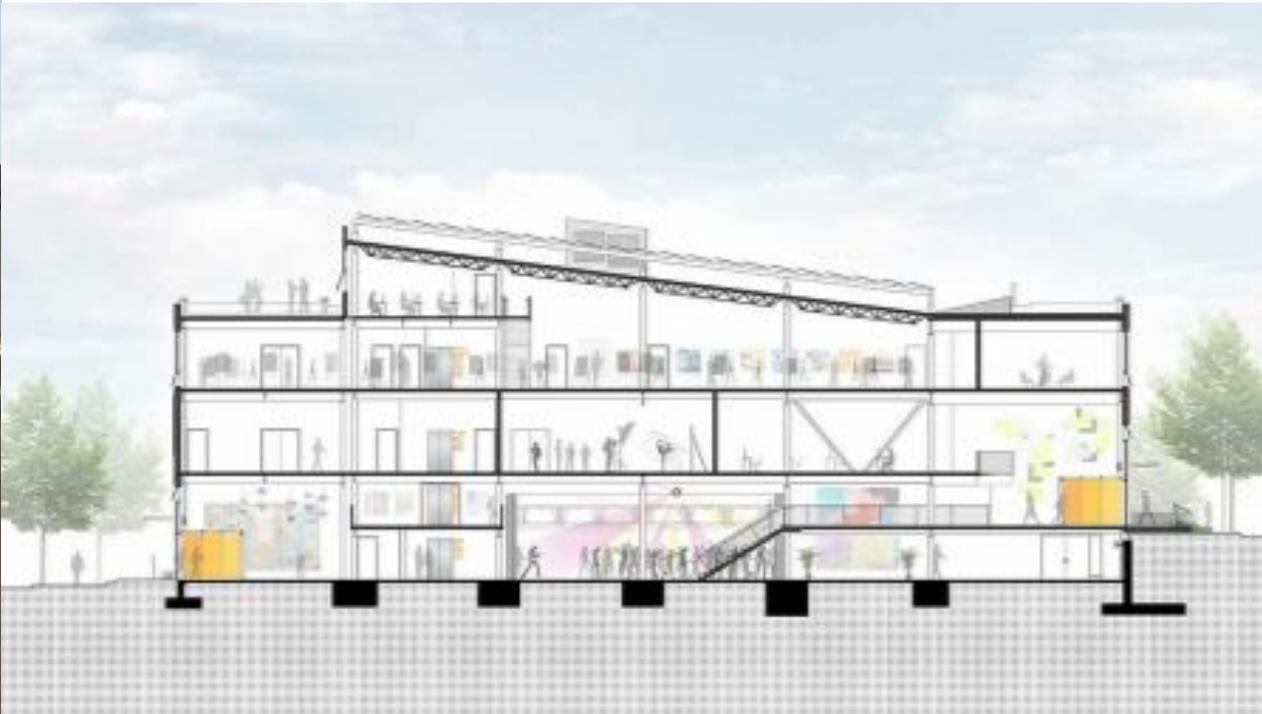


E+ Green Buildings – Market Impact



Artists for Humanity Addition
BEHNISCH Architekten

Low Carbon Building
On-site Solar PV



E+ Green Buildings & Communities

Proving the Feasibility for Energy, Environment & Equity Positive Development in Boston

Program Status

- 14 Units - Completed
- 100+ Units - Pre-Construction
- 40 Units - Permitting
- More in planning

RFP Disposition / Design Comp

- Energy Positive / Carbon Negative
- LEED Platinum & Deep Green
- Building Community Equity



LOCATION

Building new homes in compact neighborhoods that are connected to nearby transit service and local amenities reduces transportation-related energy use, pollution, and saves homeowners money. Redeveloping vacant parcels saves land, reduces sprawl, revitalizes existing neighborhoods, and promotes sustainable communities.

156 HIGHLAND STREET



64 CATHERINE STREET



61 MARCELLA STREET



“Often, when your goal is driving real change in the marketplace, it’s best to show – not just tell...E+ is another example of Boston’s leadership under Mayor Menino.”

Carbon Neutral Buildings

BU Center for Computation & Data Science

Low Carbon Building

- Excellent Building Enclosure
- Smaller Efficient Mechanical Systems
- Dedicated Fresh Air with ERV
- All Electric Systems
- Ground Source Geothermal Wells
- Heat Pump Renewable Energy

Onsite Solar Renewable Energy

- Installed on Campus Existing Buildings

Off-site Renewable Energy

- Owned assets

Low Carbon Building
On Campus Solar PV
Achieving Zero Net Carbon



TALLEST BUILDING IN BOSTON DESIGNED TO ACHIEVE
ZERO NET ENERGY
LEED V4 PLATINUM 100% RENEWABLE ELECTRICITY

ON-CAMPUS SOLAR
OFF-CAMPUS WIND

100% Electric
DUAL-WHEEL DOAS
ACTIVE CHILLED BEAMS
EXTERIOR SHADING
FAN COILS
TRIPLE GLAZING
1,500 FT DEEP CLOSED LOOP GEOTHERMAL

BOSTON UNIVERSITY
CENTER FOR COMPUTING
AND DATA SCIENCE
Boston, MA

HEALTH + WELLNESS
Optimized daylight + views
Cross-ventilation + exterior shading
and filtered shade
Thermal comfort from high-glossing
insulated glass panels + operable
windows every floor
Generous social and public spaces

TRANSPORTATION
Local and regional transportation
local on campus, bus, secure bike
storage, walk
100 parking spaces (reduced
building site footprint)

RESILIENCE
First floor raised 21' (Boston City
Build with "BuildIt") foundation
Generators support life safety and
basic building operations, including
hoisting

WATER EFFICIENCY
35-40% reduction for re-water
70% reduction for low-water
consumption, due to geothermal

PROJECT TEAM
ARCHITECTS
HOK
OWNER
Walter A. Riddick
Richard B. Rice

2018 LEED
Platinum
The Green Engineer
Mitsch Engineering

Solution Lightworks
General Engineer
Finnegan + Johnson
Sublet Construction

pEUI
67
42
31
0

2015 LEED
Platinum
Project 08
re-water
2016 LEED
Platinum
Project 01
re-water

Carbon Neutral Buildings

BU Center for Computation & Data Science

*“...achieved at a
cost premium
well below 1% of
construction cost”*

**this is before utility
incentives / rebates*



Carbon Neutral Buildings

Bunker Hill Housing – Leggat McCall & Corcoran Company



**boston planning &
development agency**



LEED Gold and Passive House

Low Carbon Building

51% better than code / EUI – 19.1

- *Excellent Building Enclosure*
- *22% Window / Wall Ratio*
- *Continuous Insulation / Airtight*
- *Good Windows & Doors*
- *Energy Recovery Ventilation*
- *Clean heating & cooking*

Onsite Solar Renewable Energy

- *81 kW PV System (Building F)*



Carbon Neutral Buildings

Bunker Hill Housing – Leggat McCall & Corcoran Company

LEED Gold and Passive House

Organizational Commitment

“Construct highly energy efficient and resilient buildings engineered for resident comfort, lower living costs and a low-carbon future.”



A low-angle, upward-looking photograph of several modern skyscrapers with glass facades, reaching towards a clear blue sky with some light clouds. The perspective creates a sense of height and architectural grandeur.

Thank you!

Katherine Eshel, Carbon Neutrality Program
Manager
City of Boston Environment Department
katherine.eshel@boston.gov

John Dalzell, Sr. Architect for Sustainable
Development
Boston Planning and Development Agency
john.dalzell@boston.gov



**boston planning &
development agency**

Commission Q&A

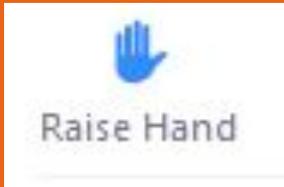
Commissioners will ask the project team questions and offer feedback on their proposal. Public comments will follow shortly.



**boston planning &
development agency**

Public Comments

IF YOU WOULD LIKE TO COMMENT:



Please click on the HAND ICON through your control panel. Prior to your turn, staff will announce your name and unmute your microphone. You will have 2 minutes to speak.



Boston Civic Design Commission Monthly Meeting

July 7, 2020