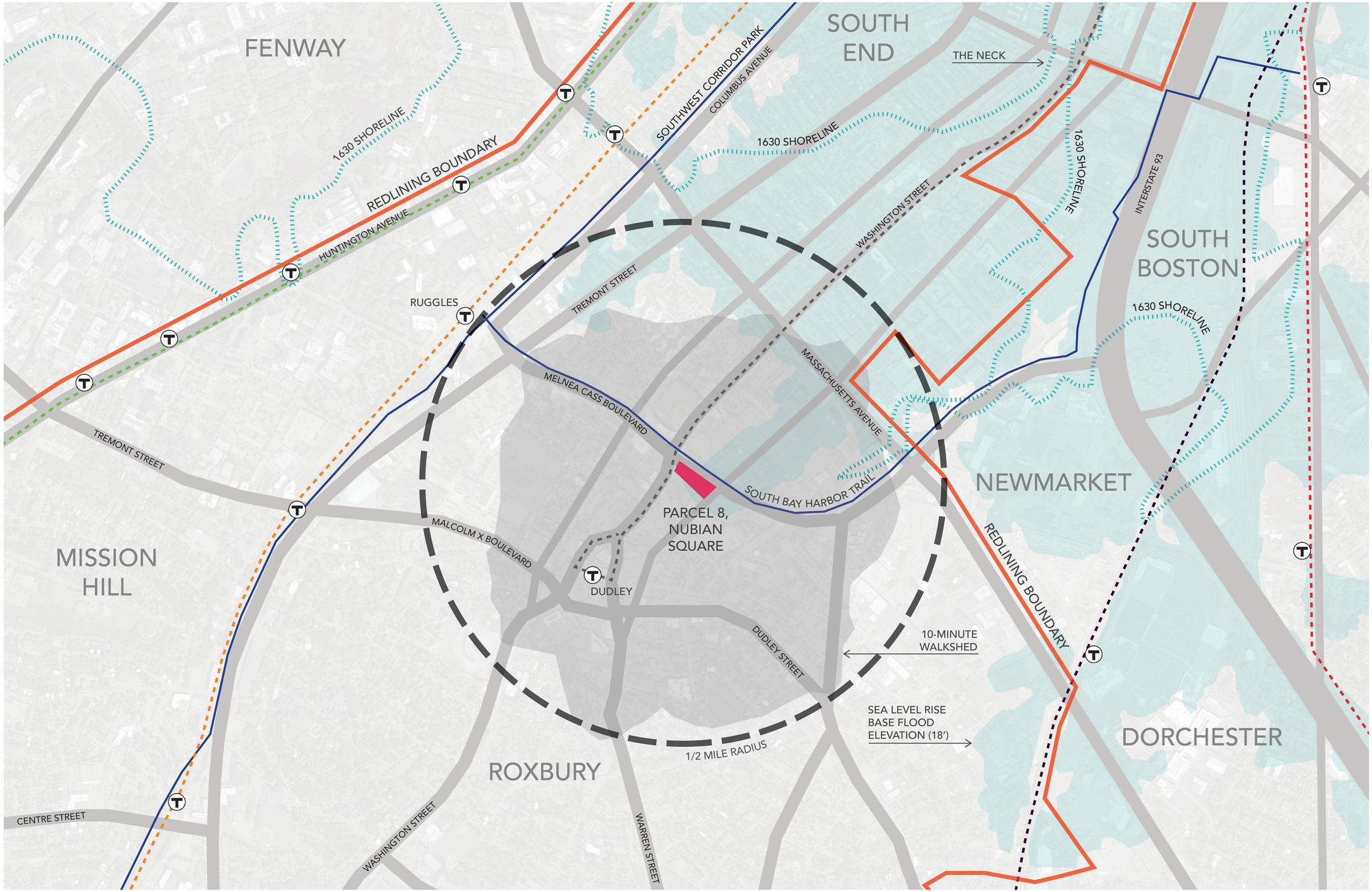
PARCEL 8 | NUBIAN SQUARE
DESIGN SUBMISSION

NUGATEWAY

24 JUNE 2020



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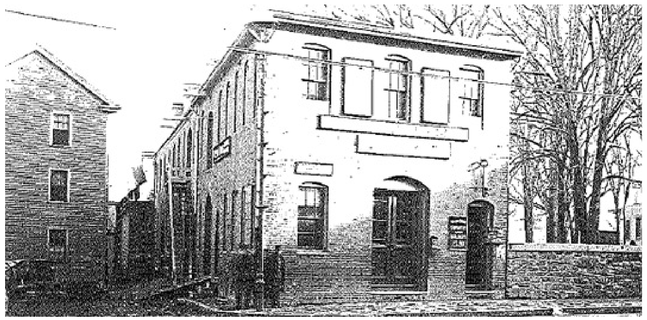
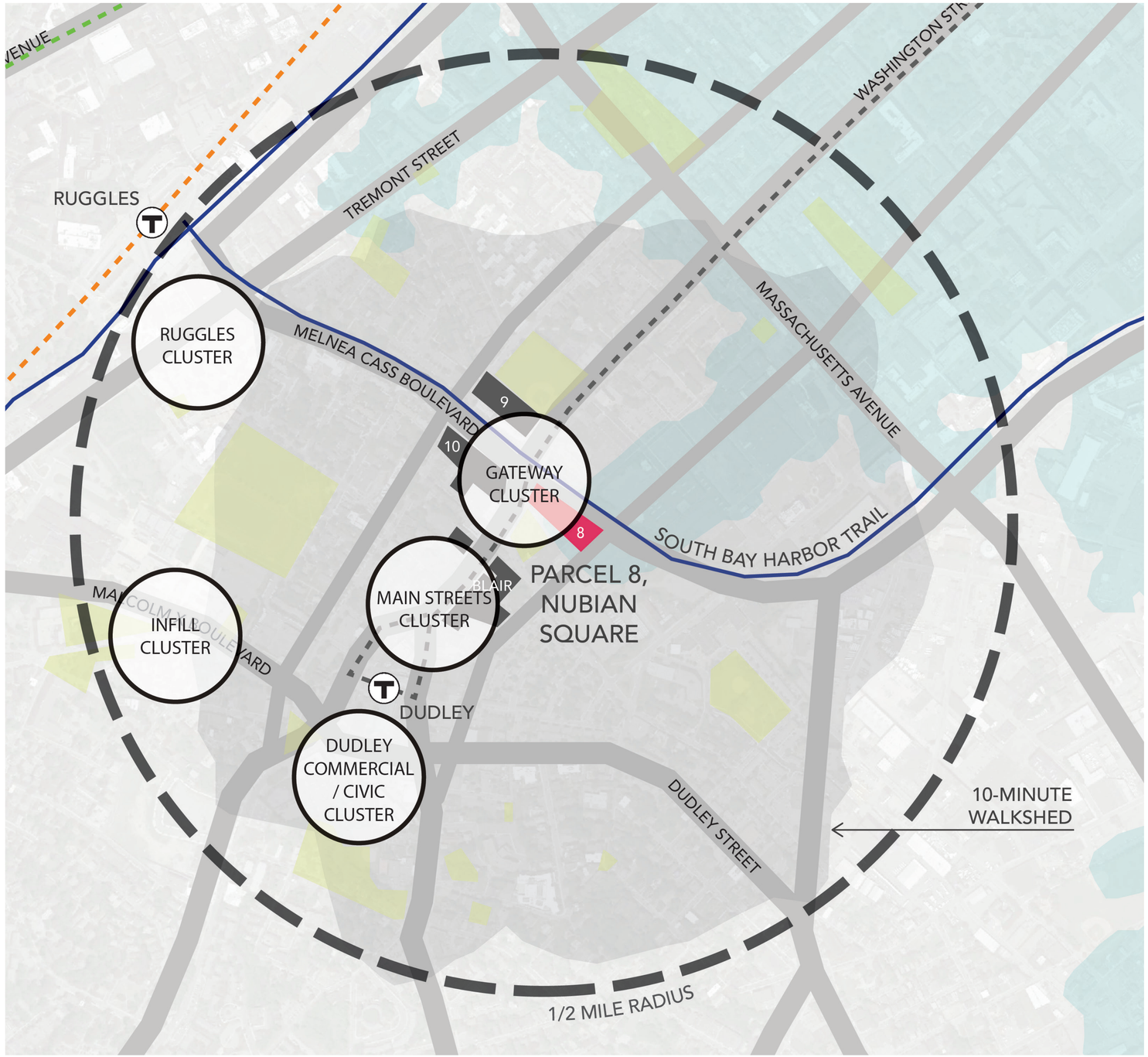
SITE CONTEXT


OWEN NAWN FACTORY SITE




SWAIN & CO.
STORAGE WAREHOUSE
OLD GRIST MILL
RYE FLAKES
S. CIGAR


DUDLEY


RUGGLES
TREMONT STREET
WASHINGTON STR
RUGGLES CLUSTER
MELNEA CASS BOULEVARD
MASSACHUSETTS AVENUE
9
10
GATEWAY CLUSTER
8
SOUTH BAY HARBOR TRAIL
BLAIR
MAIN STREETS CLUSTER
PARCEL 8, NUBIAN SQUARE
INFILL CLUSTER
DUDLEY
DUDLEY COMMERCIAL / CIVIC CLUSTER
DUDLEY STREET
10-MINUTE WALKSHED
1/2 MILE RADIUS
OPEN SPACE
10-MINUTE WALKSHED
SEA LEVEL RISE - BASE FLOOD ELEVATION
MBTA SILVER LINE
N
SCALE 1" = 200'-0"
200' 100' 0' 200' 400'

Benjamin Franklin Inst. of Tech.

Historic Boston Inc. (HBI)

Historic Eliot Burying Grounds

Eustis St

Washington St

Melnea Cass Blvd

Harrison Cass Chop House

Residential High Rise

Nubian Public Market

Flex Co-Working Office

NUArts Center

Roxbury History Cafe (HBI)

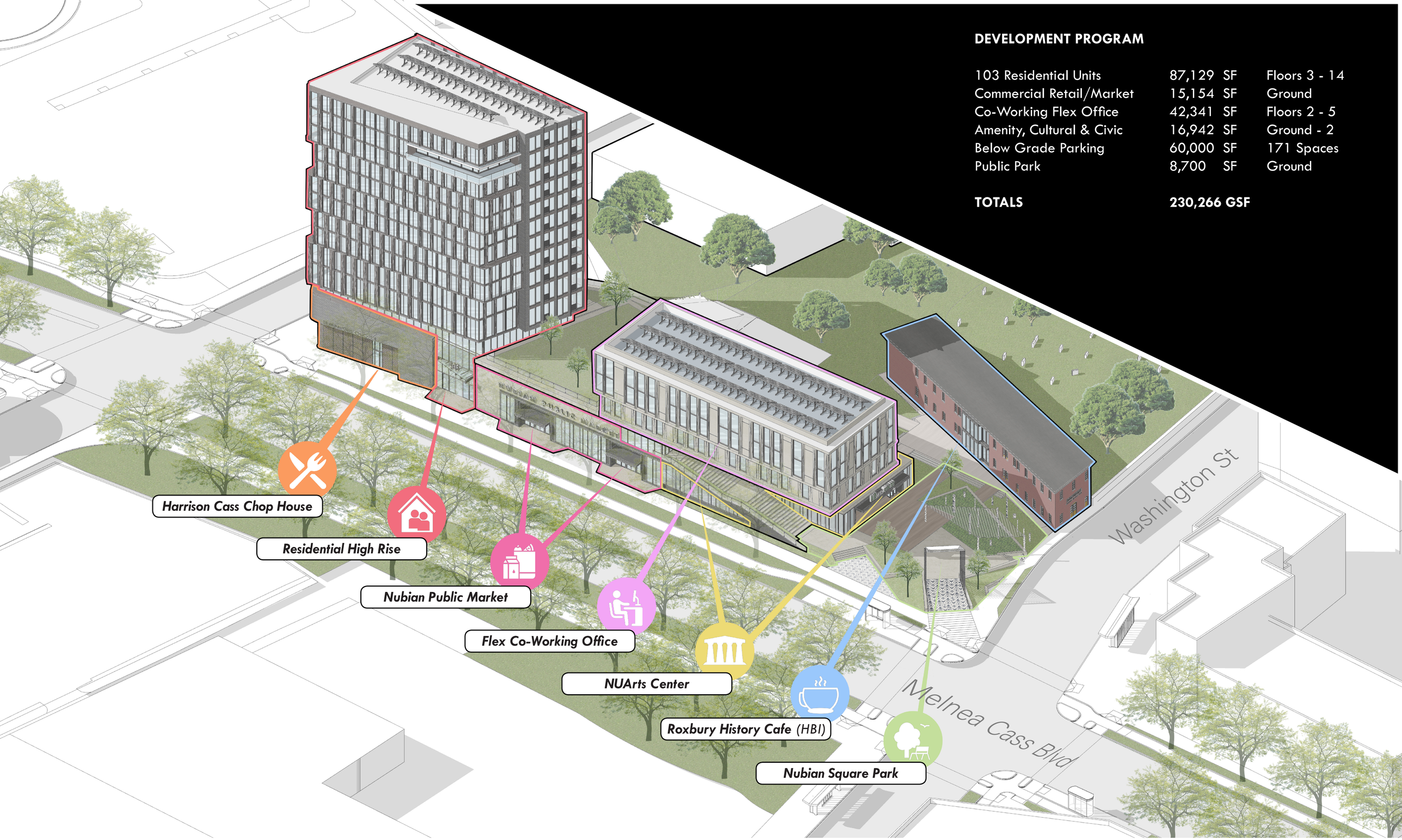
Nubian Square Park

NUGATEWAY

MIXED-USE PROGRAM/ACTIVATED PUBLIC REALM

DEVELOPMENT PROGRAM

103 Residential Units	87,129	SF	Floors 3 - 14
Commercial Retail/Market	15,154	SF	Ground
Co-Working Flex Office	42,341	SF	Floors 2 - 5
Amenity, Cultural & Civic	16,942	SF	Ground - 2
Below Grade Parking	60,000	SF	171 Spaces
Public Park	8,700	SF	Ground
TOTALS	**230,266**	**GSF**	



NUGATEWAY MIXED-USE PROGRAM/ACTIVATED PUBLIC REALM

MELNEA CASS BOULEVARD

Public Bike Parking

UP

NUBIAN

PUBLIC

MARKET

11,200 SF

NUARTSCENTER

8,350 SF

Resi.
Lobby
2,170 SF

Harrison Cass Chop House
Fine Dining Restaurant
4,000 SF

Kitchen

BOH

Parking Access

DN

UP

Nubian Square Park

NAC Storage

NPM Storage

Nawn Factory
Roxbury History Cafe
(HBI)

WASHINGTON STREET

HARRISON AVENUE

NUGATEWAY

GROUND FLOOR

MELNEA CASS BOULEVARD

WASHINGTON STREET

HARRISON AVENUE

Service

Bikes

171 Space Resident/Office & Public
Below Grade Parking Deck

UP

Bikes

DN.

Bikes

DN.

NUGATEWAY

BICYCLE & VEHICULAR PARKING

MELNEA CASS BOULEVARD

WASHINGTON STREET

HARRISON AVENUE

Co-Working Office
14,205 SF

Residential Amenity
Club Room/Media/Fitness
4,000 SF

Resident Business Center
1,100 SF

DN

Office Outdoor Deck

Resident Outdoor Deck

Nawn Factory
Roxbury History Cafe
(HBI)

NUGATEWAY

LEVEL 2

MELNEA CASS BOULEVARD

Flex Office/Arts Courtyard

Co-Working Office
9,740 SF

ALW 1BR
628 SF

ALW Studio
473 SF

ALW Studio
509 SF

ALW 2BR+
1,031 SF

ALW Studio
455 SF

ALW 2BR
906 SF

ALW 1BR
680 SF

ALW 2BR
932 SF

Artist Live/Work Units

WASHINGTON STREET

HARRISON AVENUE

Nawn Factory
Roxbury History Cafe
(HBI)

NUGATEWAY

LEVEL 3

MELNEA CASS BOULEVARD

WASHINGTON STREET

HARRISON AVENUE

Co-Working Office
9,200 SF

ALW
1BR
645 SF

ALW
Studio
540 SF

ALW
Studio
530 SF

ALW
Studio
480 SF

ALW
2BR
950 SF

ALW
2BR
973 SF

ALW
1BR+
700 SF

ALW Studio
578 SF

ALW
1BR
680 SF

Artist Live/Work Units

Nawn Factory
Roxbury History Cafe
(HBI)

NUGATEWAY

LEVELS 4-5

MELNEA CASS BOULEVARD

WASHINGTON STREET

HARRISON AVENUE

Office Low-Rise
(Below)

Nawn Factory
Roxbury History Cafe
(HBI)

1BR
645 SF

Studio
540 SF

Studio
530 SF

Studio
480 SF

2BR
950 SF

2BR
973 SF

1BR+
700 SF

Studio
578 SF

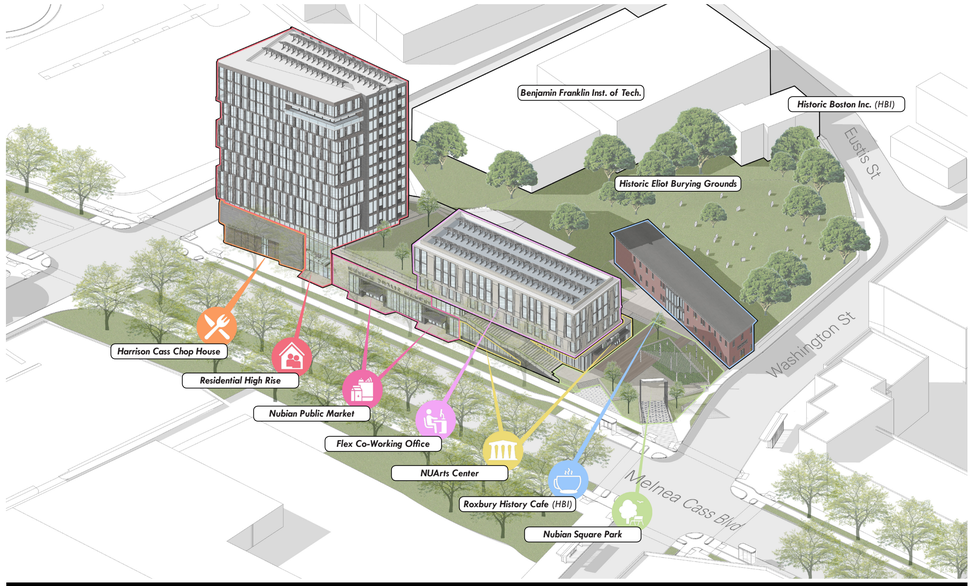
1BR
680 SF

NUGATEWAY

LEVELS 6-14

URBAN DESIGN VISION

The **NUGateway** (as in NUBIAN Gateway) concept for Parcel 8 Nubian Square wholeheartedly embraces the City and local communities' vision for truly affordable housing in close proximity to public transit supported by a vibrant collection of mixed-use cultural and civic components. Given our understanding that this important parcel in many ways forms the Gateway experience into Nubian Square we strongly believe the site and all of its built elements should symbolize and physically embody; universal accessibility, multimodal transportation access, open space, urban ecology and strategic density throughout the site. From the outset the NUGateway team committed to formalizing a conceptual approach to programming and density that was both respectful of the history of the neighborhood as well as forward-looking in the way smart growth 21st Century urban living, working and playing is experienced. We see the longitudinal nature of Melnea Cass Boulevard as an exciting opportunity to animate the streetscape with a dynamic mix of ground and upper level public realm uses as illustrated below.



NUGATEWAY **MIXED-USE PROGRAM/ACTIVATED PUBLIC REALM**

Our vision for **Nubian Square Park** affords the neighborhood and others visiting a unique opportunity to gather with friends, listen or participate in an open-air performing arts venue at the NUArts Center, grab a bite at Nubian Public Market or perhaps just pause within the work day under a shade structure and take in the cultural arts history of the Square. ***Nubian Square Park is the Gateway***! To us it represents more than just a physical space—as a landmark it speaks to access to opportunity, diversity, inclusivity and becomes a mixing-chamber for all races and classes of people.

- The **NUArts Center** is envisioned as flexible civic space that works to create a vibrant atmosphere conducive to a celebration of the arts. Similar to District Hall, Seaport we this is space being able to accommodate a myriad of functions from dance, to theater, tech exhibits and coding workshops to community-sized events featuring visiting artists and innovators.

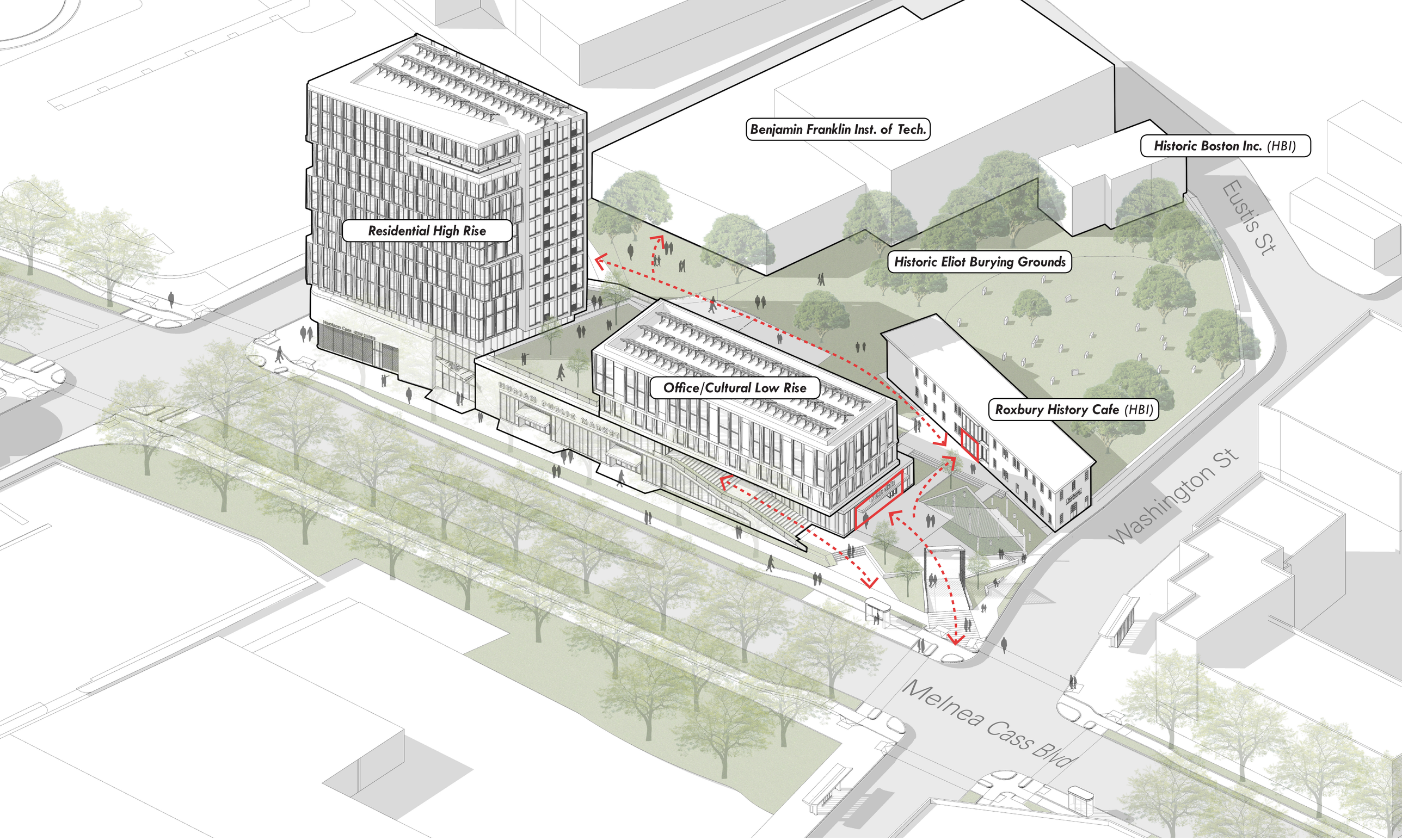
- **Nubian Public Market** builds on local food experiences like the Boston Public Market with a focus on creating one-of-a-kind small business entrepreneur opportunities in the Square to market signature creations and in-turn helping to create a "Food Hub" in this part of the City. The market will encompass opportunities to eat on-site both indoors as well as a compliment of outdoor seating along Melnea Cass and Nubian Square Park.

- The corner of Melnea Cass Blvd. and Harrison Ave. is anchored by a residential high-rise and signature dinner restaurant at the ground floor referred to herein as **Harrison Cass Chop House**. We are very committed to delivering unique high-quality destinations for the local community and visitors alike.

The design team has paid close attention to the strategic placement of density on the site to both preserve views and blue sky to and through the site as well as appropriate areas to explore height in a way that mitigates impacts while creating a distinct architectural form. The graduation of scale from Washington St. to Harrison Ave. is intentionally designed to mitigate shadow impacts to Nubian Square Park and preserve views to the proposed Nawn Factory revitalization. From there the office low-rise tops out at 6 stories in direct correlation to the Residence Inn diagonally adjacent at 2001 Washington St. The residential component is envisioned as a 14-story high rise strategically located at the corner of Melnea Cass and Harrison Ave. Given its placement on the opposite end of the public park and Nubian Square nexus we believe the scale and massing of the residential high-rise is appropriate and creates and visible landmark both coming in and out of the Square.

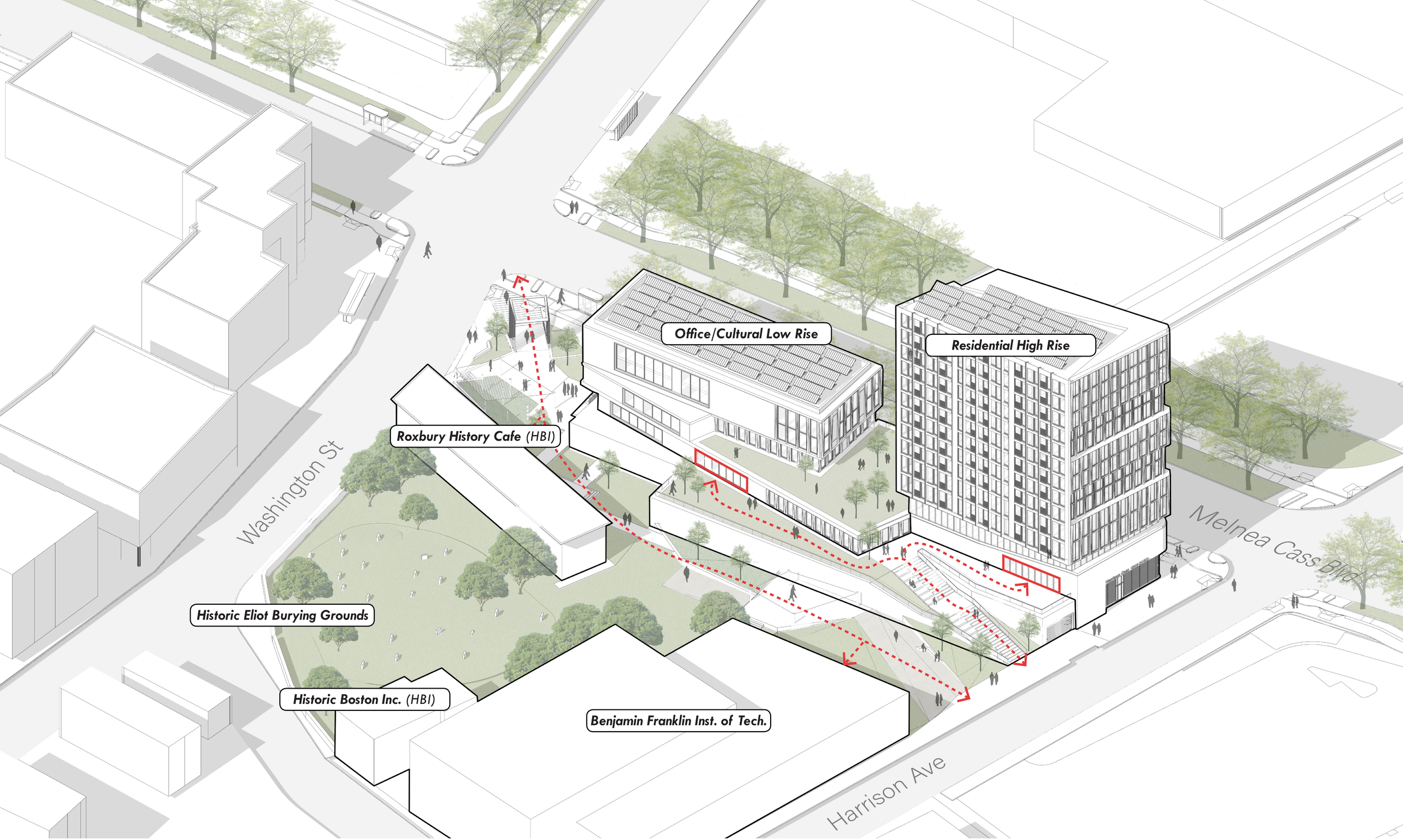
NUGATEWAY

MELNEA CASS BLVD.



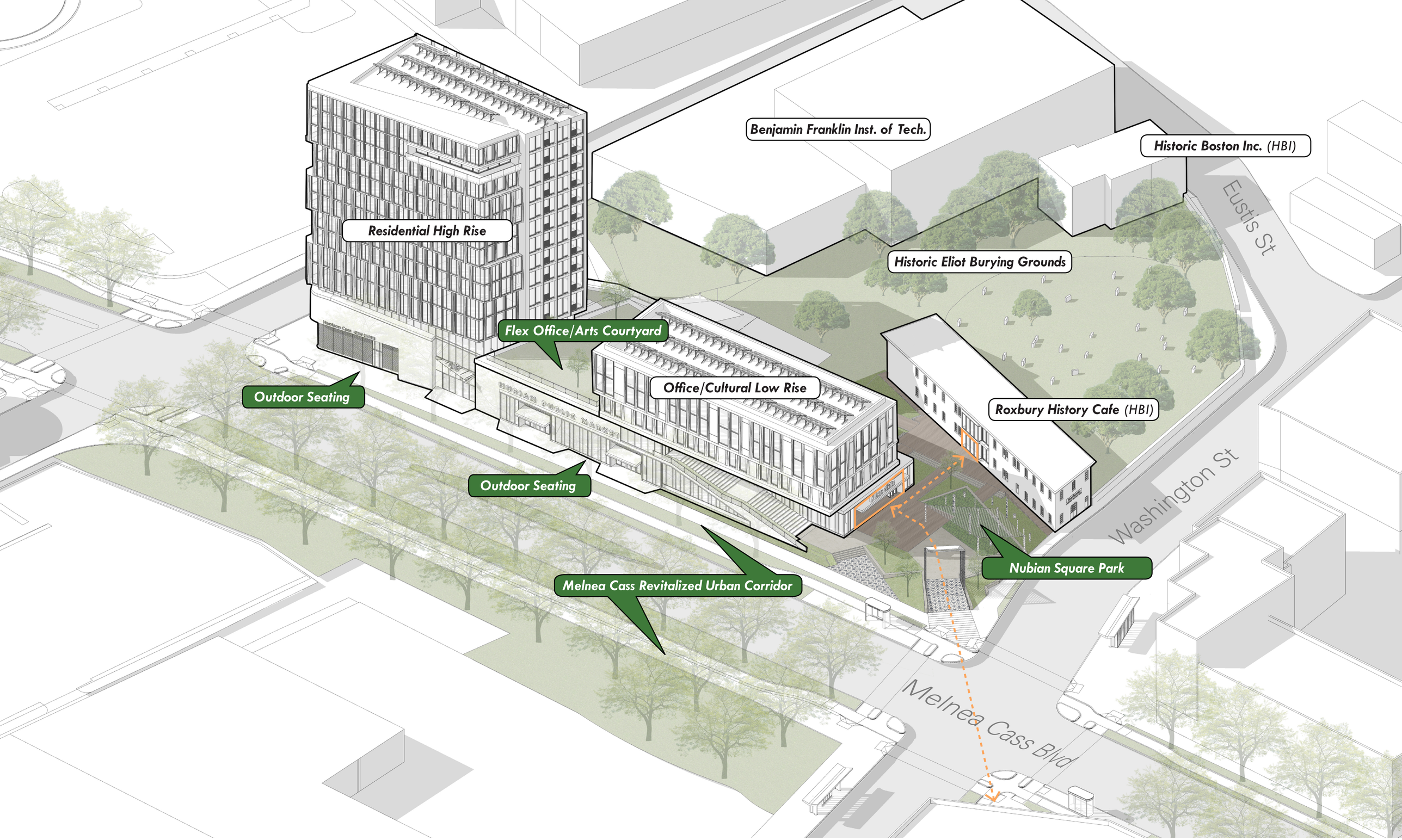
NUGATEWAY

PEDESTRIAN CIRCULATION



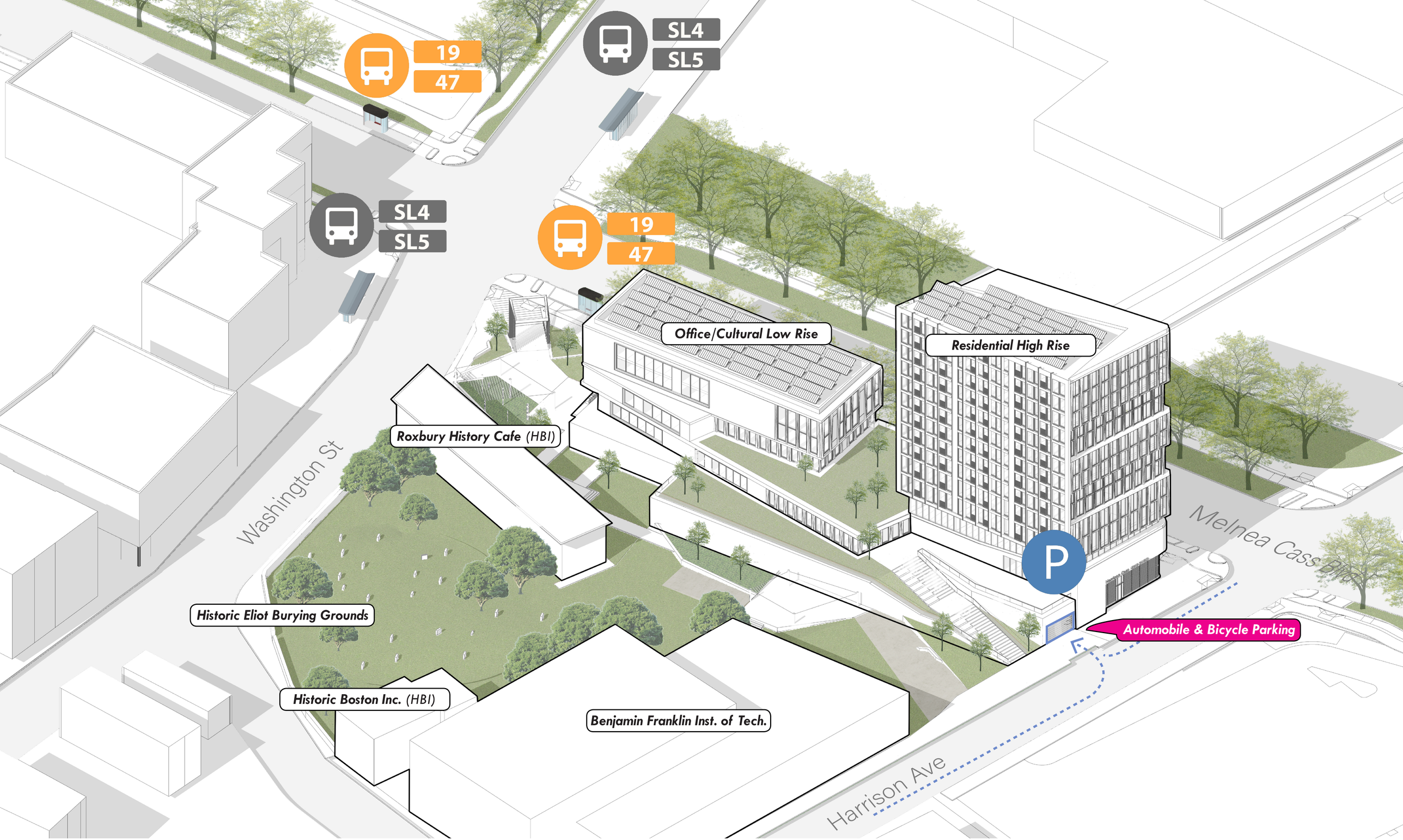
NUGATEWAY

PEDESTRIAN CIRCULATION



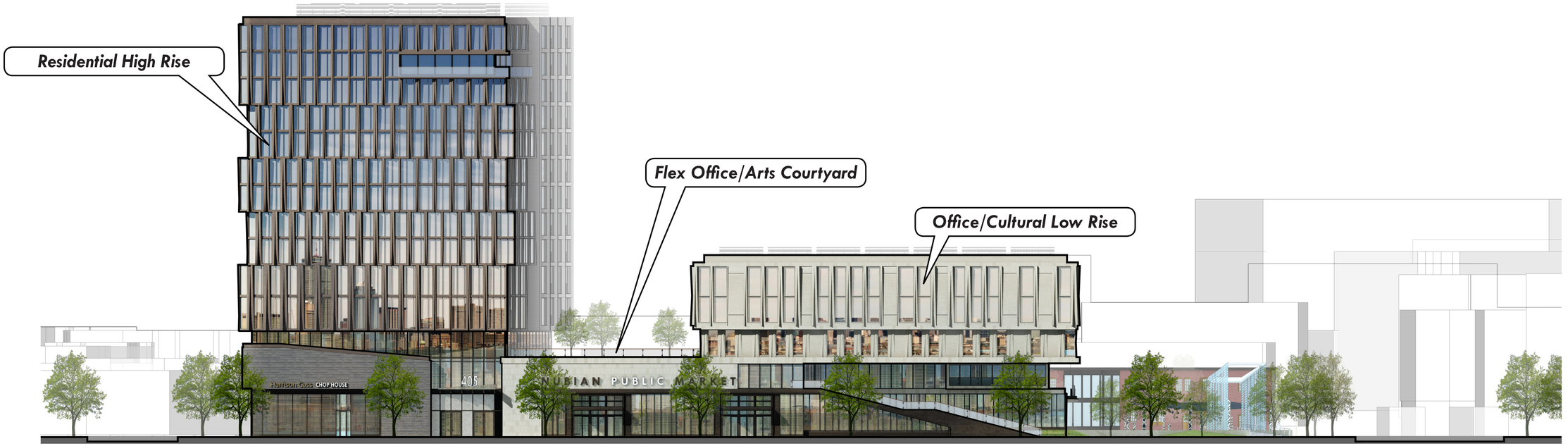
NUGATEWAY

URBAN OPEN SPACE/STREETSCAPE



NUGATEWAY

MULTIMODAL TRANSPORTATION ACCESS



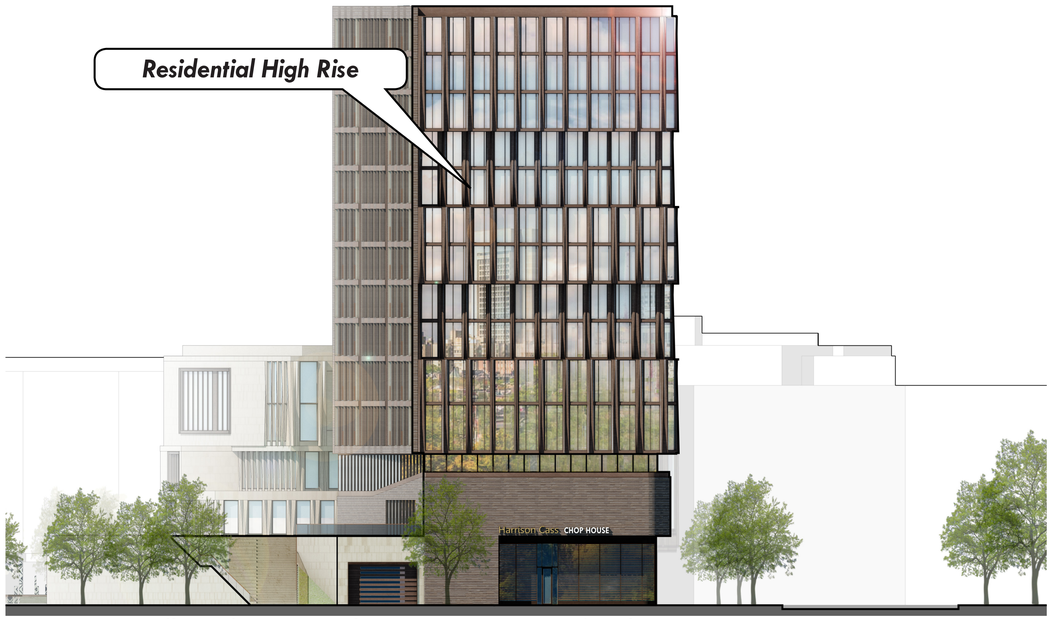
HARRISON AVE. *Fine Dining w/ Outdoor Seating <> Residential Lobby <> Nubian Public Market w/ Outdoor Seating <> Flex Co-Working Office (above) <> NU Arts Center <> Nubian Square Park* WASHINGTON ST.

NUGATEWAY

MELNEA CASS BLVD. ELEVATION

NUGATEWAY

MELNEA CASS BLVD. AT WASHINGTON ST.



Office Deck Access<> Parking Access <> Fine Dining w/ Outdoor Seating

MELNEA CASS BLVD.

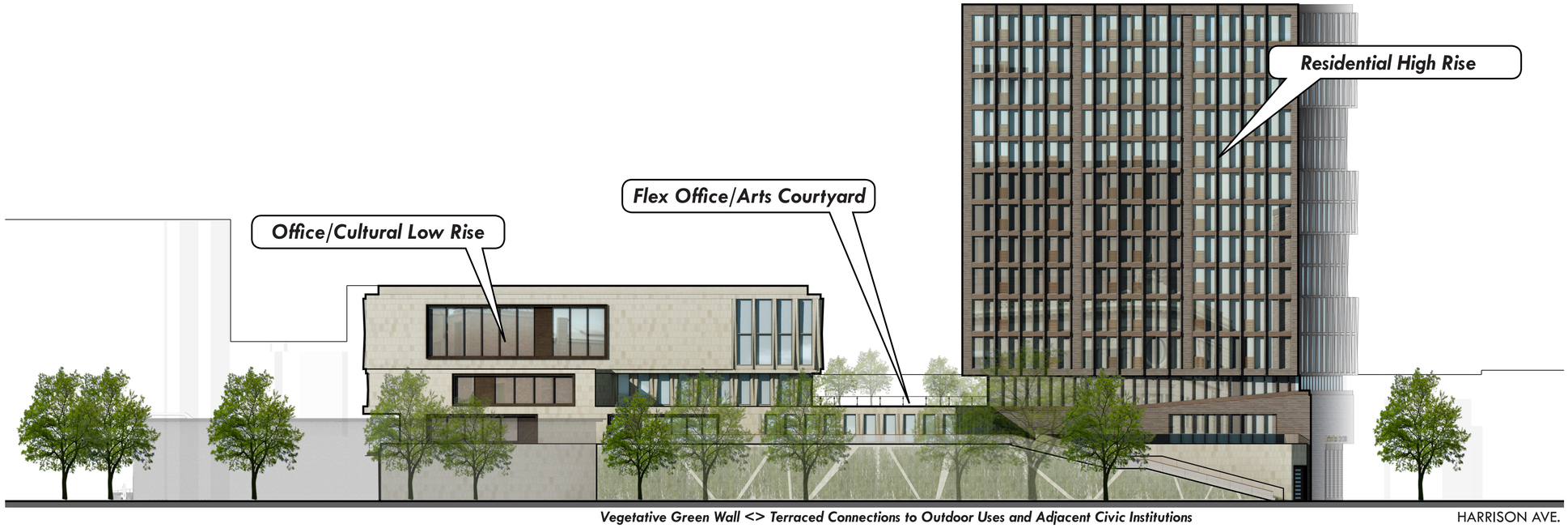
NUGATEWAY

HARRISON AVE. ELEVATION

NU Arts Center <> Flex Co-Working Office (above) <> Nubian Square Park <> Roxbury History Cafe (HBI)
MELNEA CASS BLVD. at WASHINGTON ST.

NUGATEWAY

WASHINGTON ST. ELEVATION



Vegetative Green Wall <> Terraced Connections to Outdoor Uses and Adjacent Civic Institutions

HARRISON AVE.

NUGATEWAY

SOUTH ELEVATION

NUGATEWAY

MELNEA CASS BLVD. AT HARRISON AVE.

NUARTS CENTER

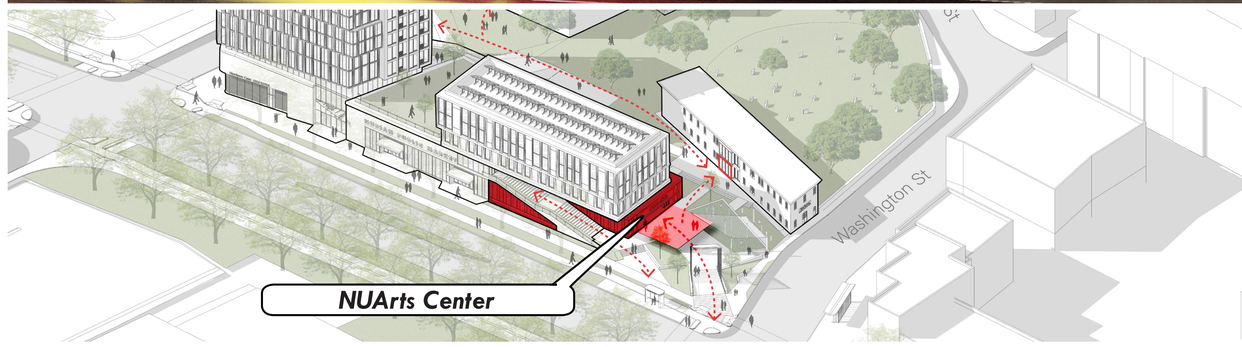
The NUArts Center [NAC] is effectively the theatrical backdrop to Nubian Square. Given the treasured history of arts and cultural expression in the district we see the NAC as core contribution to the vibrancy and creative energy of the neighborhood. Designed as a universally accessible double-height volume with over 8,000 SF of flat-floor performance and exhibition space; the NAC is well-suited as a second home to many of Boston's; arts institutions, non-profits, art expos, lectures and trade shows, individual and group; artists/dancers/sculptors/performers/digital coders/innovators and many more. The warm wood floor works well within the interior performance and exhibition space as well as extends out to the Nubian Square Park landscape for overflow space or an outdoor performance in the Square. NUArts is open to All.

REFERENCE: **ARTISTS FOR HUMANITY, BOSTON**

REFERENCE: **BOSTON ARTS ACADEMY**

REFERENCE: **ALVIN AILEY AMERICAN DANCE THEATER**

REFERENCE: **DISTRICT HALL, SEAPORT**



NUGATEWAY

PLACEMAKING

NUBIAN SQUARE PARK

The Parcel 8 landscape design will establish a vibrant community open space and major gateway for the Nubian Square neighborhood. The open space's prominent location at the intersection of Melnea Cass Boulevard and Washington Street provides an opportunity for a new landmark civic space that marks the beginning of neighborhood placemaking strategy and an enhanced pedestrian-focused public realm district that extends southward to Nubian Square.

Nubian Square Park creates a 9,000 square foot public open space offering public benefits such as flexible-use outdoor space; urban heat island cooling strategies; traffic screening; resiliency infrastructure; community-centered public art; and interpretives that engage open space users on an historic and cultural level.

The park features a raised central plaza and green space surrounded by a robustly planted landscape perimeter that buffers the open space from the heavy traffic on Melnea Cass and Washington Street Corridors. The slightly elevated grade of the central open space is accomplished with a monumental sloped walkway with a signature paving pattern that engages the sidewalk and presents itself as a welcoming portal into the space. The portal concept is further punctuated by an iconic civic-scaled landmark element that park users pass through upon entering the space. The portal has the potential to be designed through a community engagement process or commissioned through an art competition. The open space contains trees and an overhead tensile structure that provides dappled shade and a dynamic shadow pattern which changes throughout the course of the day. Varied pavement materials and patterns are used to create and identify smaller gathering spaces and provide a rich tapestry of materials and finishes. The proposed NU Heritage Cultural Center, which engages the park, will have a deck-like flooring that extends outdoors, tying the interior and exterior spaces together as a unified space. The raising of the park's interior space provides an opportunity to improve the site's resilience to the anticipated flood elevations associated with sea level rise and climate change. Rain gardens are proposed along the shared property line with the Nawn Factory parcel for enhanced stormwater management and habitat-supporting landscape.

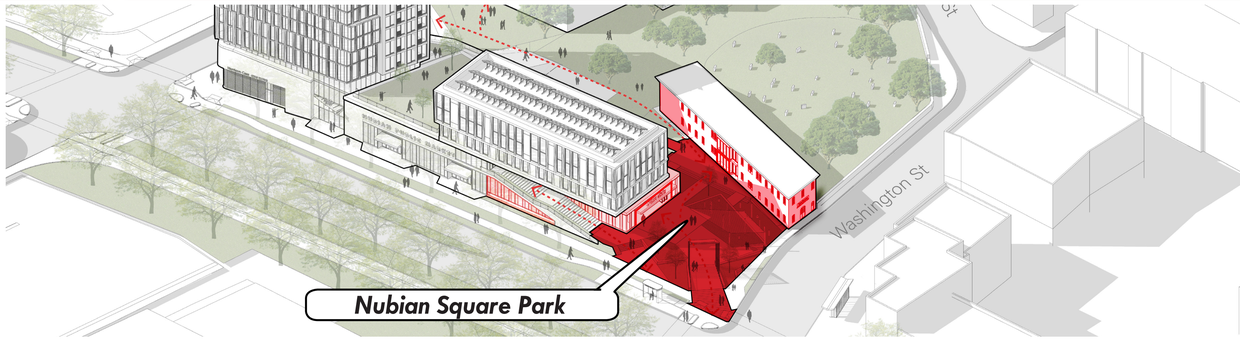
A series of elevated pedestrian walkways spanning above the bioretention area connect with the proposed elevated terrace on the adjacent parcel for a more fully connected open space. At the northeast corner of the park, a monumental stair is presented in the architecture to connect the sidewalk level with the second floor of the building. The monumental stair integrates landscape into its form via a stepped planter that moves up the elevation with the steps and brings the landscape up to the vegetated roof terraces above.

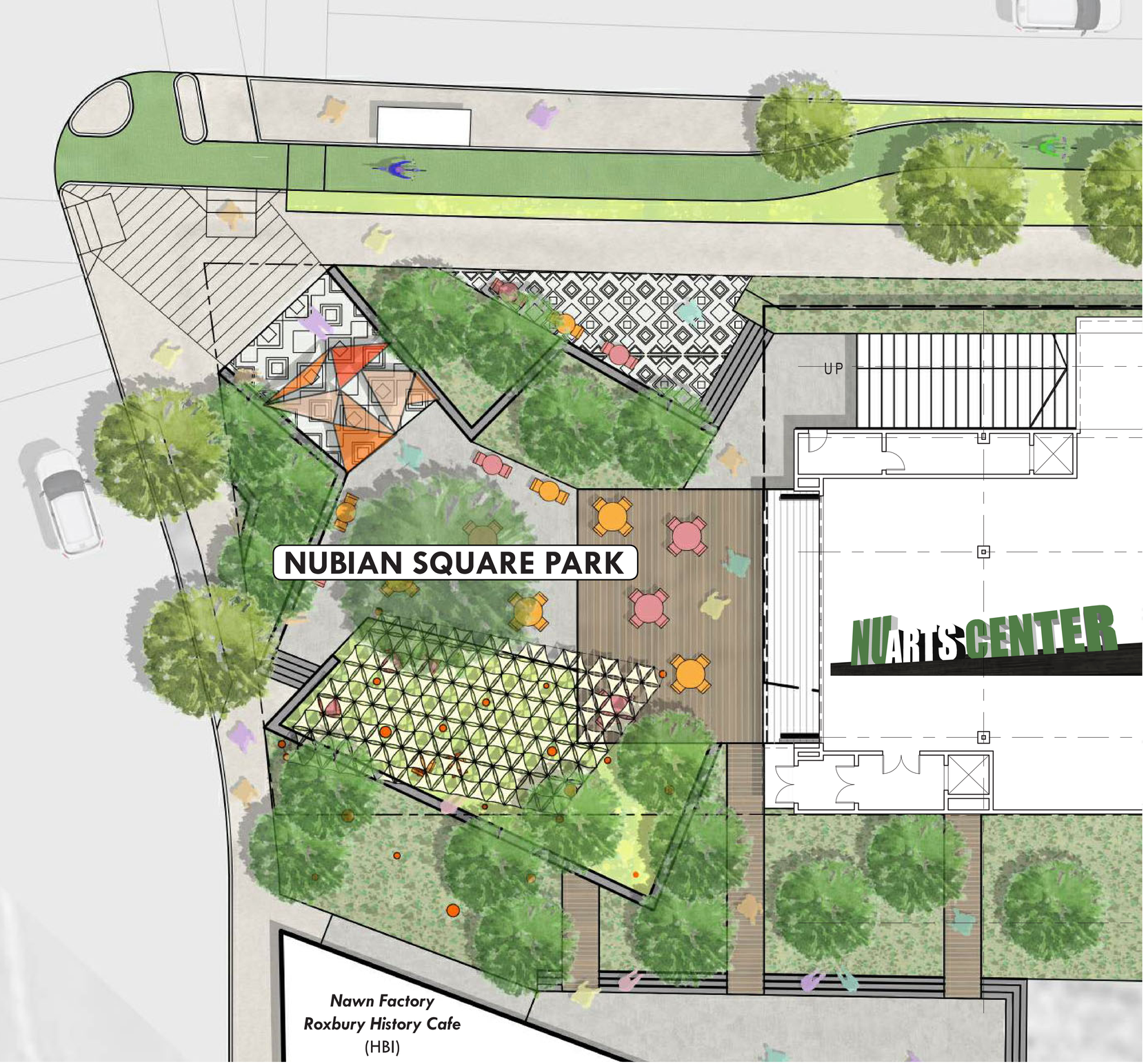
Beyond the Park, a new Complete Streets-compliant streetscape will be incorporated with a broad pedestrian zone along the Melnea Cass frontage, which will be integrated with the proposed Mass DOT corridor improvements. The widened sidewalk condition will offer expanded frontage zones along the building face for café seating to be placed as part of an activated first floor retail program. The streetscape improvements continue around Harrison Avenue and meet with another sloped landscaped element that is cohesive with the architecture.

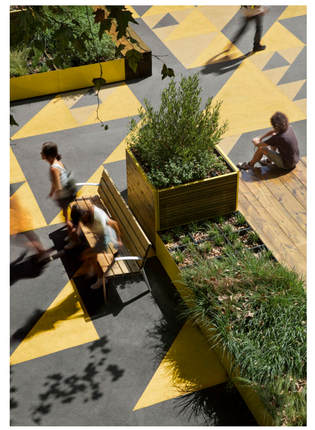
On the southeast corner of the building, landscaped roof terraces step down in elevation and reveal vertical green walls and plantings that cascade down to the sidewalk.

COVID-19

Given the unprecedented adaptations that have unfolded as a result of COVID-19, the critical importance of providing inclusivity and universal access to quality outdoor spaces has been widely acknowledged as an essential public benefit. Effective public open space that supports and promotes health and wellness requires well-integrated social distancing features that allow park users to experience the benefits of outdoor space while maintain a safe distance. The Nubian Square Park will utilize integral pavement patterning and the differentiation of materials to indicate appropriate social distancing.

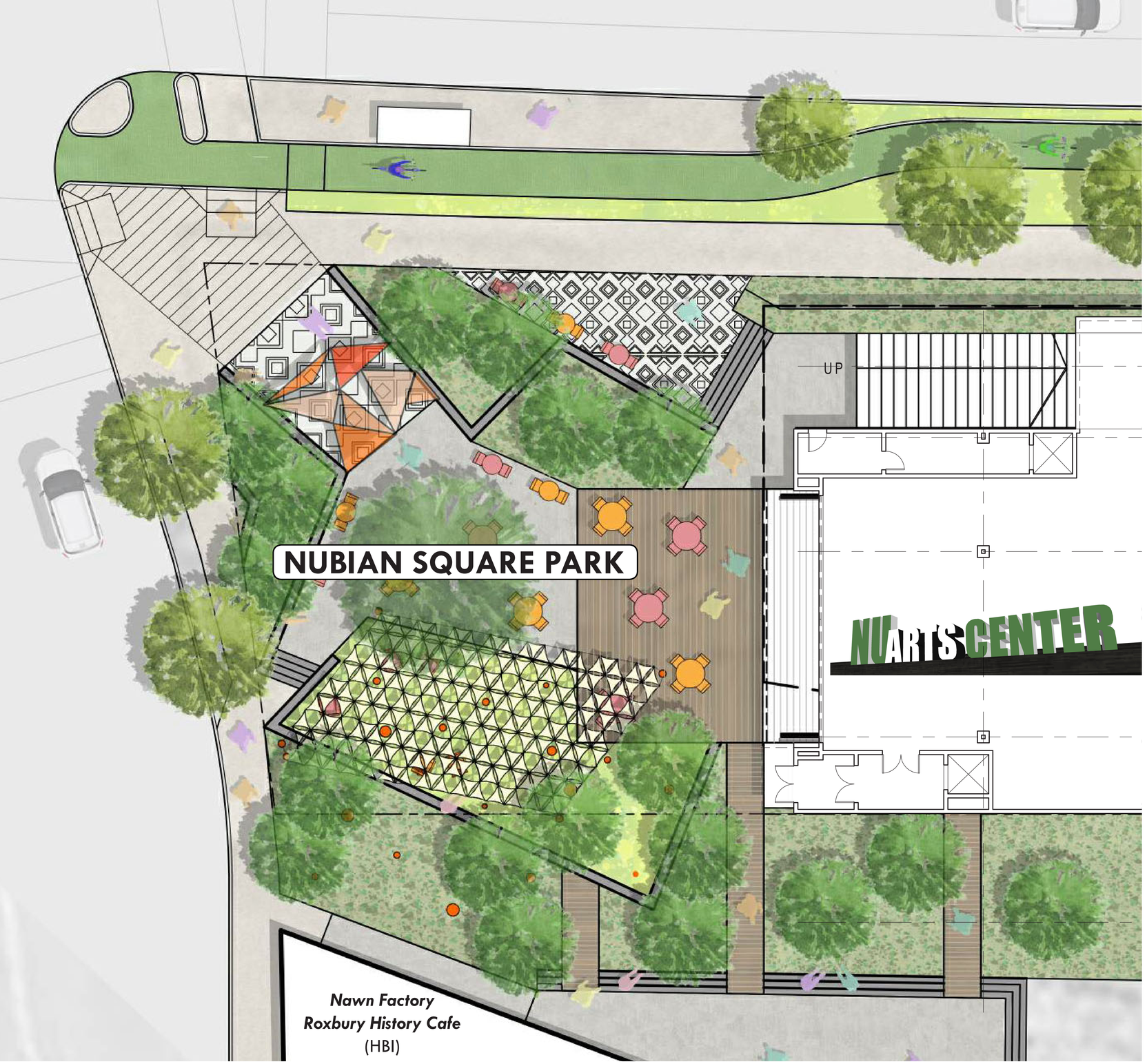






NUGATEWAY

PLACEMAKING



art in the park

NUGATEWAY

PLACEMAKING

NUBIAN PUBLIC MARKET

405

CHOP HOUSE

NUGATEWAY

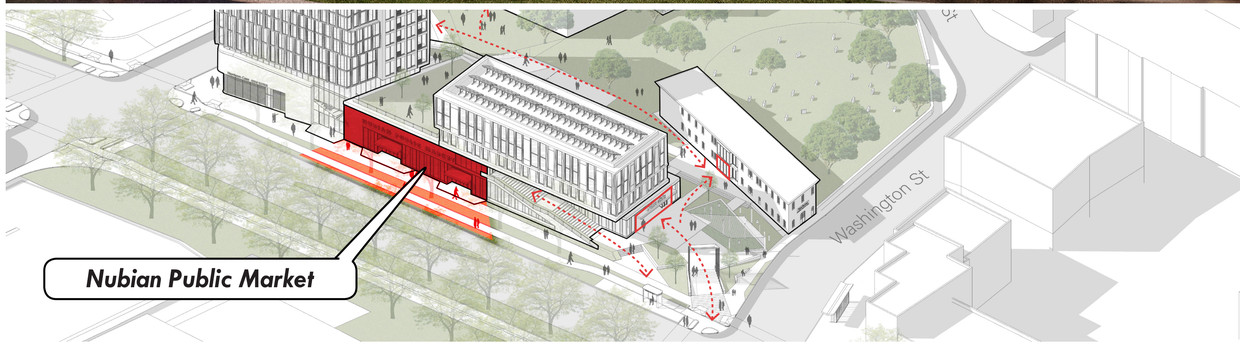
MELNEA CASS BLVD.

NUBIAN PUBLIC MARKET

Envisioned as cultural food emporium designed to offer bite-size leasable spaces for local food artisans and small business entrepreneurs to practice their craft. Food is internationally recognized as a catalyst for connecting people with diverse cultures and backgrounds, fostering informal interactions and creating a sense of place within the urban fabric. We feel this type of use is ideally situated along Melnea Cass complemented by new widened sidewalks, street trees and outdoor seating.
The vibe created both day and night will help to moderate traffic and create a unique meeting place in Nubian Square.

REFERENCE: **CHELSEA MARKET, NYC**

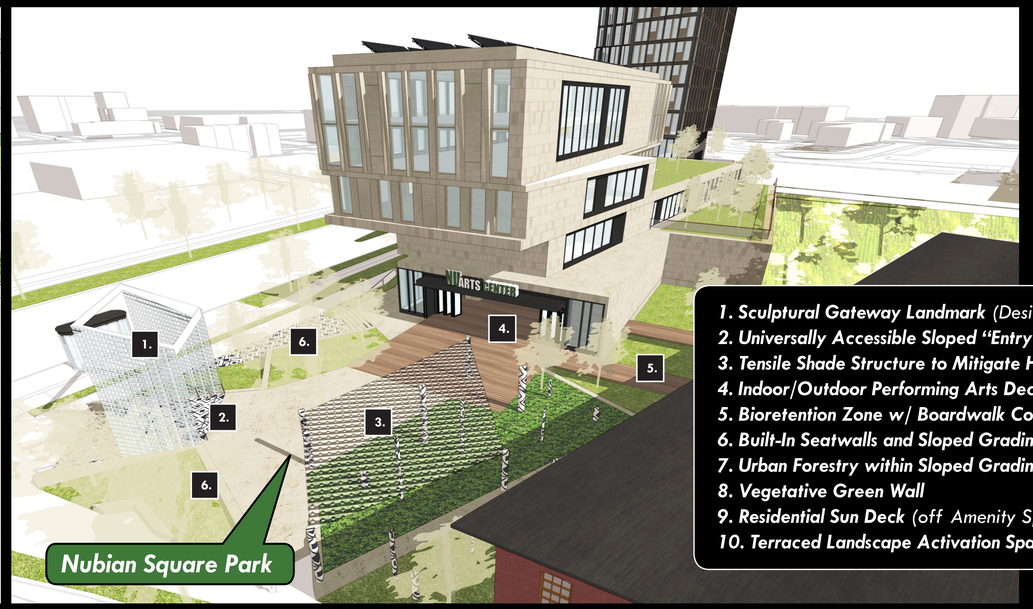
REFERENCE: **BOSTON PUBLIC MARKET**



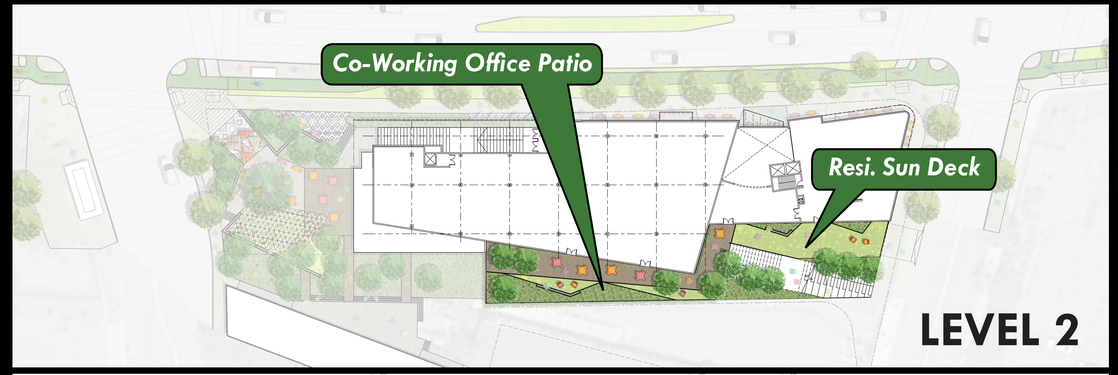
NUBIAN PUBLIC MARKET as WINTER MARKET

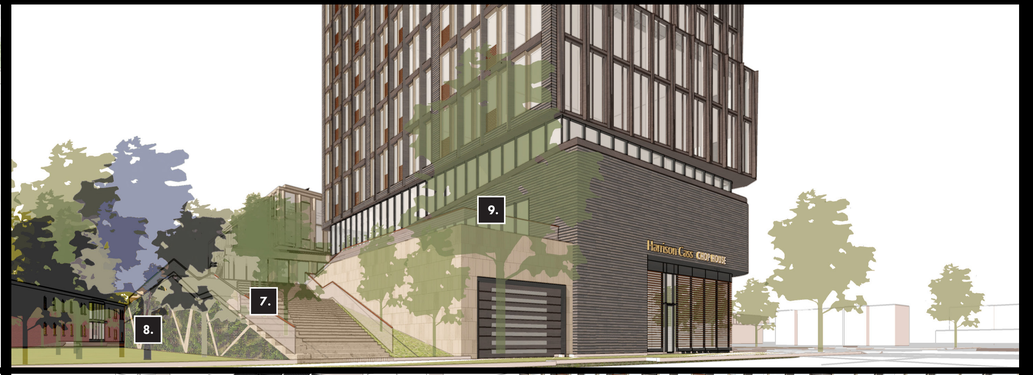
In partnership with an annual outdoor Farmer's Market at Nubian Square Park, Nubian Public Market will be designed to facilitate the indoor complement of the Farmer's Market during late fall into Winter. This is otherwise known as Winter Market.

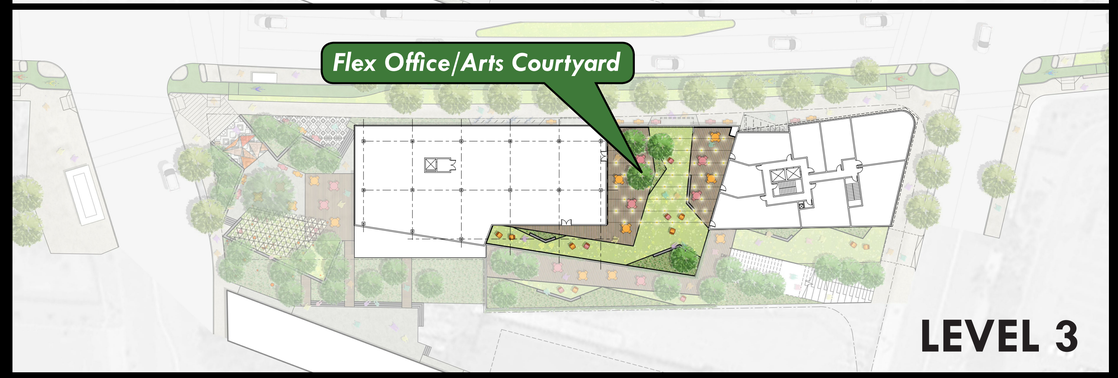
NUBIAN SQUARE PARK & VERTICALLY ORIENTED OPEN SPACES

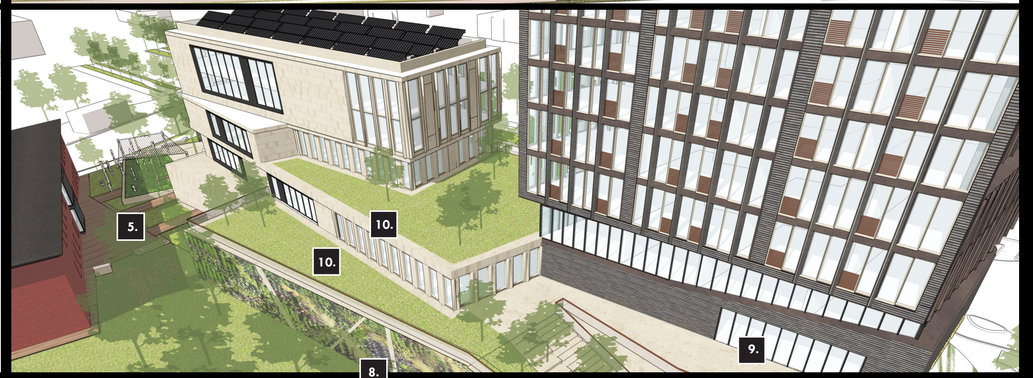


1. ***Sculptural Gateway Landmark*** *(Design in Partnership with AFH and Community)*
2. ***Universally Accessible Sloped "Entry Mat" w/ Signature Paving Pattern***
3. ***Tensile Shade Structure to Mitigate Heat Islands***
4. ***Indoor/Outdoor Performing Arts Deck***
5. ***Bioretention Zone w/ Boardwalk Connection to Roxbury History Cafe***
6. ***Built-In Seatwalls and Sloped Grading***
7. ***Urban Forestry within Sloped Grading***
8. ***Vegetative Green Wall***
9. ***Residential Sun Deck*** *(off Amenity Space)*
10. ***Terraced Landscape Activation Spaces***









PRELIMINARY ZONING SUMMARY			
Zoning District ***Roxbury Neighborhood***			
Zoning SubDistrict ***Roxbury Heritage State Park CF***			
Dimensional Criteria	**Subdistrict Type Community Facilities**	**Parcel 8_ NUGateway**	**Zoning Relief Required?**
Maximum Floor Area Ratio	2.0	✓	Yes
Maximum Building Height	45 Feet	✓	Yes
Minimum Lot Size	None	✓	
Minimum Lot Area Per Add'tl Dwelling Unit	None	✓	
Minimum Usable Open Space (SF per Dwelling Unit)	50 SF	✓	
Minimum Lot Width	None	✓	
Minimum Lot Frontage	None	✓	
Minimum Front Yard	None	✓	
Minimum Side Yard	None	✓	
Minimum Rear Yard	20 Feet	✓	Yes

Executive Summary

The Nubian Square - Parcel 8 proposed project is located at Nubian Square in Roxbury, MA. It includes the construction of an approximately 163,170 GSF, fourteen-story mixed-use building. The first level houses a cultural center, retail and lobby spaces. Levels two through five will be leased to office tenants. Levels six through fourteen are residential apartments.

This project team plans to target aggressive sustainability and net-zero goals. The basis of design for the building systems is VRF air source heat pumps, with heat pump water heaters and all-electric systems. Choosing all electric systems allows the project to attempt net-zero energy consumption through the use of both on and off-site renewables. Other proposed energy conservation measures will include high efficiency LED lighting, plumbing fixtures with low flush and flow rates, a high efficiency envelope, and energy recovery. The roof of the low building will be dedicated to on-site renewable energy with the installation of PV panels.

The Green Engineer (TGE) performed a conceptual analysis comparing the zero-carbon ready all-electric building design to the stretch code baseline. Preliminary results indicate the design will outperform the stretch code baseline by **32.5%** on a site energy basis before accounting for on-site renewables, and 37.5% on a site energy basis with the implementation of on-site renewables, (photovoltaics).

I. Low Energy Building

A. Energy Conservation Measures

The following ECM's have been identified for the project:

- Increased wall and roof insulation
- High performance glazing system
- Reduced infiltration
- Significantly reduced interior lighting through the use of high efficiency LED fixtures
- Low flow plumbing fixtures and hybrid heat pump electric resistance water heaters
- Energy star residential appliances
- Dedicated outdoor air systems with heat recovery
- High efficiency, VRF air-source heat pumps

The Green Engineer
Sustainable Design Consulting
www.greenengineer.com

B. Energy Analysis Inputs

Nubian Square - Parcel 8		
Building Type: Mixed-Use Residential		
INPUT SUMMARY		
Building Component	**Baseline - ASHRAE 90.1 2013 w. MA Amendments**	**VRV with Enhanced Envelope (All-Electric)**
Gross Square Foot	Cultural Center: 8,850 gsf Residential and Amenity: 69,200 gsf Office: 69,220 gsf Parking: 60,000 gsf	
Space description	Residential M-Sun: 24/7 Office and Amenity: M-F: 8a-5p; Sat/Sun/Hol: Closed Retail M-F: 8a-7p; Sat: 10a-5p; Sun/Hol: Closed	
Temperature Setpoints	Cooling: 75 F Heating: 70 F	
EXTERIOR ENVELOPE		
Roof Assembly	R 30 c.i. above deck	R 40 c.i. above deck
Wall Assembly	U-0.055 (R-13 Batt + R-10 c.i.)	R-26 Walls
Level 1 Floor	U-0.038 (R-30)	U-0.025 (R-40)
Wall-to-Window Ratio	24% to 40%	40%
Windows and Glazing Description	Metal Framing (Fixed): U-0.42 SHGC: 0.4	Metal Framing: U-0.27 SHGC: 0.35
Infiltration[1]	0.25 cfm/sf at 75 Pa With third-party testing	0.25 cfm/sf at 75 Pa With third-party testing
LIGHTING		
Automatic Lighting Shutoff	As per ASHRAE 90.1 2010 mandatory requirements	Identical to Baseline
LPD (W/SF)	Residential core: 0.55 W/sf Residential units: 0.55 W/sf Office: 0.71 W/sf Retail: 0.86 W/sf Parking: 0.15 W/sf	Residential core: 0.4 W/sf Residential units: 0.55 W/sf Office: 0.55 W/sf Retail: 0.86 W/sf Parking: 0.10 W/sf
Daylight Dimming Controls	As per ASHRAE 90.1 2010 mandatory requirements	All daylit spaces
Exterior Lighting	5 kW estimated load	33% Reduction
HVAC SYSTEM AND CONTROLS		
HVAC System Description[2]	Residential, core and amenity: System #2 - PTHP with DOAS Retail, office, cultural: System #8 - PSZ HP	Air-source VRF DOAS with heat recovery and heat pumps
Outdoor Air Design Min Ventilation	ASHRAE 62.1 Minimum	Identical to Baseline
Exhaust Air Recovery	Yes, 50% effectiveness	Yes, 75% effectiveness
Supply Air Temperature	System #8: 55 F Ventilation air: 70 F	Ventilation Air: 70 F
Demand Control Ventilaiton	Where required by code	All occupied spaces

INPUT SUMMARY		
Building Component	**Baseline - ASHRAE 90.1 2013 w. MA Amendments**	**VRV with Enhanced Envelope (All-Electric)**
SERVICE HOT WATER		
DHW System Type	Electric resistance storage water heaters	Hybrid heat pump/electric resistance storage water heaters
Equipment Efficiency & Temp Controls	1.0 EF; 120F Supply	2.5 EF; 120F Supply
DHW Flow	Lav: 2.2 gpm Kitchen sink: 2.2 gpm Shower: 2.5 gpm Standard appliances	Lav: 1.5 gpm Kitchen sink: 1.5 gpm Shower: 1.75 gpm Energy Star appliances
MISCELLANEOUS		
Equipment Loads (W/SF)	Residential Units: 0.6 W/sf Office: 1.0 W/sf MER: 2.5 W/sf Retail: 0.5 W/sf	Residential Units: Reduction for Energy Star appliances Office, MER, Retail: Identical to baseline
Escalators and Elevators	40 hp x 4	Identical to Baseline
Notes: Additional Efficiency Options Included in Baseline Model.		
1. Additional Efficiency Package Option-1 (per C406.1): Reduced air-infiltration.		
2. Additional Efficiency Package Option-2 (per C406.1): Provision of a dedicated outdoor air system.		
3. Additional Efficiency Package Option-3 (per C406.1): 10% improvement over ASHRAE 90.1 2013 HVAC system efficiency.		

Table 1: Table of Inputs

II. Renewable and Clean Energy Sources and Storage

A. On-site Renewable and Clean Energy Systems

On-site photovoltaic (PV) system:
Part of the roof over the cultural center will be dedicated to PV systems to provide renewable energy to the project. It is estimated that this area of 9,200 sf will house a 78 kW PV system. This system provides **7.5%** of the project energy consumption.

B. Off-site Renewable and Clean Energy Sources and Credits

Off-site renewable project:
To accomplish net-zero carbon status, the project will consider entering into a contract with a power provider to supply 100% of the electricity used from renewables, through the purchase of Renewable Energy Certificates (RECs) that help to fund a renewable energy facility. Since the net-zero carbon design incorporates an all-electric building system design, 100% of the energy being used by the building would be sourced from renewable energy sources.

III. Annual Net Performance Calculation

Simulation Results

Figure 1 provides a comparison of Energy Use Intensity by end-use of the proposed design against the code baseline. Table 2 provides a detailed comparison of the baseline and proposed cases, with resulting building energy performance, overall site energy performance, and greenhouse gas emissions reductions indicated.

The results show a source energy use intensity (EUI) of 118 kBtu/sf for the baseline and 79 kBtu/sf for the design, or 74 kBtu/sf with on-site renewables.

The Green Engineer
Sustainable Design Consulting
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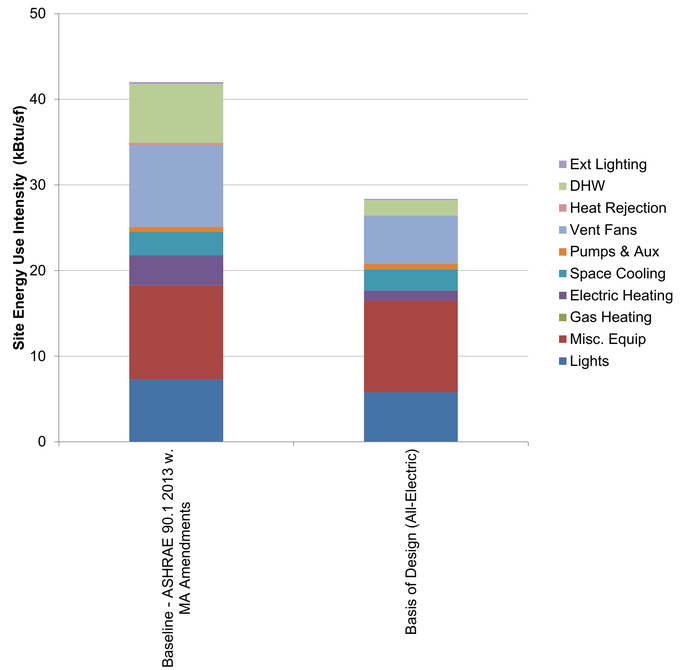

Figure 1: Site EUI Performance by End-Use

Energy Use, GHG Reduction and Cost Summary				
Description		**Baseline - ASHRAE 90.1 2013 w. MA Amendments**	**Basis of Design (All-Electric)**	**Basis of Design (Including On-Site PV)**
Annual Site Energy Summary				
Electricity	kWh	2,008,832	1,356,210	1,255,047
Natural Gas	MMBtu	-	-	-
Total Site Energy use	MMBtu	6,856	4,629	4,629
Total Site EUI	kBtu/sf	42	28	26
Annual Energy Cost Reduction				
Electricity	$/year	$367,616	$248,186	$229,674
Natural Gas	$/year	$0	$0	-
Total Energy Cost	$/year	**$367,616**	**$248,186**	**$229,674**
Site Energy Cost Savings (%)			**32.5%**	**37.5%**
Annual Source Energy Reduction				
Total Source Energy use	MMBtu	19,197	12,960	11,994
Total Source EUI	kBtu/sf	118	79	74
Source Energy Savings (%)			**32.5%**	**37.5%**
Green House Gas (GHG) Reduction				
Total GHG Emissions	MTCO2e	513.3	346.6	320.7
GHG Reduction(%)			**32.5%**	**37.5%**

Table 2: Performance Metrics Summary

COMMITMENT TO SUSTAINABILITY

The narrative below outlines the anticipated project Resiliency, energy efficiency and sustainable design and construction approaches and measures this project is committed to implement and/or aggressively explore.
The proposed **NUGateway** mixed use project for Parcel 8 Nubian Square will be responsibly designed and constructed; it will address such concerns as energy efficiency, sustainable design and construction, resiliency and the health and wellness of the occupants and residents. Our team is proposing a design that actively supports **Mayor Walsh's Carbon Neutral 2050 plan**.

Our design centers on a dynamic, all electric building with a robust envelope design and on-site renewables.

We understand the neighborhood need for a resilient building that will help support the surrounding community with current and future standing and emergency needs. To address immediate concerns, and mitigate heat island effect, the design of the corner commons/park space will provide outdoor community spaces that provide physical shade structures and tree canopy. Site rainwater will be collected for reuse in irrigation systems and/or a site water feature. We plan to explore 'greening' the building edge with vertical gardens and planted roofscapes. To support local and regional artists, the proposed program includes a ground floor cultural space immediately adjacent to the outdoor commons. In the face of a catastrophic event, the cultural space can be easily converted for use as an emergency neighborhood shelter and/or a central location for food/water distribution.

The project is committed to identifying a viable pathway to achieve LEED-NC v4 Platinum certification. Our preliminary LEED project scorecard includes 76 targeted 'yes' credit points with an additional 16 in the 'likely' and 'maybe' categories, ensuring the project will attempt LEED-NC v4 Platinum Certification with over 80 final 'yes' credit points. Below we provide more detail on the resiliency, energy efficiency sustainable design and construction approaches and measures we are actively evaluating and planning to implement for this project.

Integrative Process (IP)

To date the project team has collaborated on the preliminary concept design including the landscape architect and the sustainable design consultant. The team plans to continue their work together to identify and use opportunities to achieve synergies across disciplines and energy-related and water-related building systems. Preliminary energy modeling and water budgeting will be completed during further concept design work. We will take an iterative approach to assess multiple scenarios and provide the team with the capacity to make informed decisions. During schematic design energy and water use targets will be further refined and set. These analyses will inform the owner's project requirements (OPR), and the project basis of design (BOD).

Location and Transportation (LT)

The project will take advantage of the existing infrastructure in the well established Roxbury community. The location of the Project at the edge of Nubian Square on a previously developed parcel provides an opportunity to create a gateway landmark project that reflects and embodies the neighborhood.
The previously developed parcel will be transformed into a vibrant hub that supports and represents the local neighborhood, with interior and exterior healthy and safe community spaces. The location is pedestrian friendly and easily accessible via multiple MBTA bus routes. Boston City streets have a restricted 25 MPH and are being upgraded to include bike lanes and with the inclusion of plentiful bike racks the project is extremely bike friendly. Interior amenities will include showers and changing rooms. **On-site parking will be below grade; a minimum of 25% the parking will be designated for electric vehicle charging stations.**

Sustainable Sites (SS)

The development team has considered the features of the existing site and the surrounding context and are proposing a building that is sustainable and environmentally conscious while aligning with the scale of the surrounding neighborhood. The development team is committed to evaluating measures to capture and re-use site rainwater including for irrigation and possibly a water feature in the park. The park and multiple green roofs will provide accessible outdoor space including plentiful shaded areas, for community and resident use. In addition to providing areas of respite the vegetated landscaped areas will help both mitigate heat island effect and assist in retaining rainwater on site through infiltration. Site lighting will include pedestrian level fixtures, general light pollution will be abated through the incorporation of dark sky compliant fixtures.

Water Efficiency (WE)

To reduce the burden on municipal water supply and wastewater systems, the project may include rainwater retention and treatment tanks. To reduce potable water demand, the project will specify and install high efficiency, low-flow domestic plumbing fixtures, Exterior vegetation will be comprised of regionally appropriate, drought tolerant, indigenous plants, irrigation water demand will be provided mainly through rainwater capture and reuse.

Energy and Atmosphere (EA)

The building systems shall be designed to optimize energy performance and reduce energy consumption through high efficiency all electric building systems and a high performance building envelope. **The proposed project will be Net Zero Emissions, with zero on-site combustion. Both the low and high-rise roof structures will be designed to accommodate Photovoltaic arrays; the output from which will be used to offset a portion of the annual electrical demand of the building. The project will meet and/or exceed the requirements of the Massachusetts Stretch Energy code.** The proposed residential building will include VRF systems and all electric appliances. For the building envelope design the project will evaluate Passive House insulation and infiltration measures for inclusion in the final design. The team will work with the local utility companies to ensure applicable incentive programs are pursued. By designing the project to be all electric the project will mitigate Greenhouse Gas Emissions and actively contribute to the City of Boston's goal towards Carbon Neutrality. The proponent plans to implement the use of a whole building energy modeling to document the annual energy use and cost savings. To ensure the building is designed and constructed as per the Owner's Project Requirements, the team will engage a building commissioning agent to ensure the proper installation and operation of the building envelope, HVAC, lighting, PV and plumbing systems. Building level energy and water meters will be included and the project will explore opportunities for the inclusion of a demand response program.

COMMITMENT TO SUSTAINABILITY

Materials and Resources (MR)

The proposed project will be thoughtful about the selection of building materials for the structure, enclosure and interior finishes. The team will evaluate the embodied energy and other possible environmental impacts associated with the extraction, processing, transport, maintenance, and disposal of building materials. The team will endeavor to include design and construction requirements that support a life-cycle approach that improves performance and promotes resource efficiency. Each specific focus will be a component of the larger context of a life-cycle approach to environmental impact reduction.

Indoor Environmental Quality (EQ)

As a primarily residential building the comfort and well-being of the residents is critical. Elements such as the air quality, access to natural light, exterior views and thermal comfort that make up the interior environment will be carefully studied and considered. Low-emitting interior finish materials will be carefully evaluated before specification and inclusion to promote the health and wellness for all occupants. The project mechanical systems will be carefully designed and maintained to ensure a high level of indoor air quality. The building and grounds will be non-smoking and the building design will include measures to mitigate the entry of pollutants into the building and maintain a healthy interior environment. Additionally, construction practices will promote a high level of indoor air quality during construction.

Innovation in Design (IN)

The project will explore opportunities to be innovative and engage with and/or support the local community. For example, if there are food service establishments on site, they could collect their compostable material and donate it to local community gardens. Other innovative strategies may include integrated pest management, green cleaning policies and using all LED lamps. During the process of assessing building materials the team will further analyze them for integrated properties and endeavor to install products within the building that have documented qualitative analysis of the potential health, safety, and environmental impacts of the product in five stages of the products life cycle.
We are providing a preliminary LEED-NC v4 project scorecard to demonstrate that this project will meet the requirement to be "LEED certifiable". The proposed project will target LEED Platinum Certification with LEED Gold minimum; the supporting LEED scorecard demonstrates that the proposed project will meet the Gold threshold minimum requirement with over credit points and is able to target LEED Platinum by exploring an additional 20 credit points for the project to consider for inclusion. As demonstrated by the draft LEED-NC Scorecard, the project plans to target a total of 76 LEED credit points and has identified an additional 16 'Likely/Maybe' points for continued evaluation for inclusion in the final project design.

LEED v4 BD+C: New Construction
Project Checklist

Project Name: **Parcel 8 Nubian Square**
Address: Roxbury, MA
Date: 6/12/2020

Y	?+	?-	N			
1	0	0	0	**Integrative Process**		**1**
				Credit 1	Integrative Process	1
13	0	0	3	**Location and Transportation**		**16**
x	x	x	x	Credit 1	LEED for Neighborhood Development Location	16
1				Credit 2	Sensitive Land Protection	1
1			1	Credit 3	High Priority Site	2
4			1	Credit 4	Surrounding Density and Diverse Uses	5
4			1	Credit 5	Access to Quality Transit	5
1				Credit 6	Bicycle Facilities	1
1				Credit 7	Reduced Parking Footprint	1
1				Credit 8	Green Vehicles	1
9	0	0	1	**Sustainable Sites**		**10**
Y				Prereq 1	Construction Activity Pollution Prevention	Required
1				Credit 1	Site Assessment	1
1			1	Credit 2	Site Development - Protect or Restore Habitat	2
1				Credit 3	Open Space	1
3				Credit 4	Rainwater Management	3
2				Credit 5	Heat Island Reduction	2
1				Credit 6	Light Pollution Reduction	1
6	0	1	5	**Water Efficiency**		**11**
Y				Prereq 1	Outdoor Water Use Reduction	Required
Y				Prereq 2	Indoor Water Use Reduction	Required
Y				Prereq 3	Building-Level Water Metering	Required
2				Credit 1	Outdoor Water Use Reduction	2
3		1	3	Credit 2	Indoor Water Use Reduction	6
			2	Credit 3	Cooling Tower Water Use	2
1				Credit 4	Water Metering	1
22	3	5	3	**Energy and Atmosphere**		**33**
Y				Prereq 1	Fundamental Commissioning and Verification	Required
Y				Prereq 2	Minimum Energy Performance	Required
Y				Prereq 3	Building-Level Energy Metering	Required
Y				Prereq 4	Fundamental Refrigerant Management	Required
5	1			Credit 1	Enhanced Commissioning	6
12	1	2	3	Credit 2	Optimize Energy Performance	18
1				Credit 3	Advanced Energy Metering	1
	1	1		Credit 4	Demand Response	2
2		1		Credit 5	Renewable Energy Production	3
		1		Credit 6	Enhanced Refrigerant Management	1
2				Credit 7	Green Power and Carbon Offsets	2

Y	?+	?-	N			
6	1	1	5	**Materials and Resources**		**13**
Y				Prereq 1	Storage and Collection of Recyclables	Required
Y				Prereq 2	Construction and Demolition Waste Management Planning	Required
2	1		2	Credit 1	Building Life-Cycle Impact Reduction	5
1			1	Credit 2	Building Product Disclosure and Optimization - EPD	2
		1	1	Credit 3	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1			1	Credit 4	Building Product Disclosure and Optimization - Material Ingredients	2
2				Credit 5	Construction and Demolition Waste Management	2
10	1	3	2	**Indoor Environmental Quality**		**16**
Y				Prereq 1	Minimum Indoor Air Quality Performance	Required
Y				Prereq 2	Environmental Tobacco Smoke Control	Required
2				Credit 1	Enhanced Indoor Air Quality Strategies	2
2		1		Credit 2	Low-Emitting Materials	3
1				Credit 3	Construction Indoor Air Quality Management Plan	1
2				Credit 4	IAQ Assessment	2
1				Credit 5	Thermal Comfort	1
1			1	Credit 5	Interior Lighting	2
		2	1	Credit 5	Daylight	3
1				Credit 5	Quality Views	1
	1			Credit 5	Acoustic Performance	1
6	0	0	0	**Innovation**		**6**
1				Credit 1	Exemplary Performance: TBD	1
1				Credit 2	Exemplary Performance: TBD	1
1				Credit 3	Innovation Credit: TBD	1
1				Credit 4	Innovation Credit: TBD	1
1				Credit 5	Pilot Credit: TBD	1
1				Credit 6	LEED Accredited Professional	1
3	0	1	0	**Regional Priority (earn up to 4 points)**		**4**
1				Credit 1	Based on project Location	1
1				Credit 2		1
		1		Credit 3		1
1				Credit 4		1

Y	?+	?-	N			
76	5	11	19	**TOTALS**	Possible Points:	**110**

Certified: 40 to 49 points , **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

NUGATEWAY

A NU URBAN VISION