MIT
KENDALL SQUARE
BUILDING 5

DESIGN SUBMISSION
FEBRUARY 3, 2017

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MIT KENDALL BUILDING 5

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I. Building 5 Design Review - Overview

A. Project Summary

The Building 5 project is a proposed mixed use building project containing 436,265 square feet of Gross Floor Area located on Building Site 5 in the PUD-5 District of Kendall Square. It is one of five building projects approved by the Planning Board as part of Special Permit #303. The site is bounded by Main Street to the north, the T-Stop and the former layout of Carleton Street to the east, Dock Street and the Kendall Square Hotel to the west and Deacon Street and the MIT Health building to the south. Building 5 is also the present location of a nondescript single-story office building and MIT academic and commercial parking lots.

Building 5 will be the new home to the MIT Museum, vibrant ground floor active uses as well as commercial office uses. The building's ground floor will be transparent with the elevations designed to enhance the visual and physical connections between interior and exterior spaces. Along Main Street, the ground floor will include a building lobby and active retail space. Activating the ground floor along the MBTA entrance, the Museum will have publically accessible exhibits that will spill out onto the Gateway as well as related retail, Museum bookstore, café and MIT Press bookstore. The majority of MIT museum will occupy a plinth on the second and third floor of the building which will relate in height and scale to the Kendall Hotel and MIT Press building, as well as the historic buildings adjacent to the site. The upper floors, floors four through seventeen, will contain office space.

Parking for Building 5 uses will be included in the 1,459 aggregate spaces approved for the SoMa development and will be accommodated in a six-level underground parking garage located below Building 3 and open space to the south designed to serve Site 5 and adjacent Sites 3, 4 and 6. Automobiles utilizing the parking will access the underground garage via the ramps on Amherst Street located to the west of its intersection with Hayward Street and below the new portion of the Building 3 project at Wadsworth Street. Loading facilities, all of which are situated below grade, are accessed from a ramp off Hayward Street and the entry to the loading ramp is incorporated into the Building 4 project. Through this investment in locating parking and loading below grade in a combined structure, the need for a loading dock or garage entry for Building 5 is eliminated resulting in an improved ground floor condition. The parking garage and loading design is consistent with what was approved through the PUD Special Permit and Final Development Plan process and has progressed through the administrative review process. Related enabling activities and garage construction has begun.

No fewer than the approximately 117 of the long term bicycle parking spaces in the garage required per the program components of Building 5 will be available upon Building 5 occupancy. Likewise the Building 5 program requires 37 short term bicycle parking spaces but will include the 40 required by the Special Permit. These will be provided near the main entries of Building 5 as part of the landscape construction under separate Planning Board review.

Construction of Building 5 is expected to begin in 2017, with completion expected in late 2019. MIT has worked closely with each of the individual retail tenants in its Main Street buildings over the past year to devise smooth exits or relocations from their current locations.

Consistency with Special Permit

Special Permit #303 provides for a Building 5 Project having a total approved Gross Floor Area of 390,000 square feet of which 10,000 square feet is exempt from the calculation of GFA as Active Uses GFA. As set forth above, the Building 5 Project measures 436,265 square feet of GFA (of which approximately 6,429 square is exempt from the calculation of GFA), and is consistent with the Special Permit per the requirements of its Condition #1.a.vii. Additionally, the building height does not exceed 250 feet, which is the building height approved for Building 5 in the Special Permit. The land area of Site 5 measures approximately 36,002 square feet, which is consistent with the Special Permit.

Planning Board Review

In connection with granting Design Review approval, MIT requests that the Planning Board, pursuant to the provisions of Section 14 of the Special Permit, approve the revised subdivision plan and layout of Building Site 5 as depicted on said Plan, which is consistent with the Building Site Plan that was included and approved in the Special Permit.

Special Permit #303 approved a total of 1,376,000 square feet of total GFA for Development Parcels south of Main. This submission increases the total GFA of Building 5 by 46,265 square feet. The building massing remains substantially the same as the Special Permit filing except that the footprint has increased to the south by 5' which accounts for approximately 16,000 sf of the difference (slightly less than 1,000 sf per floor). The rest of the increase is related to additional efficiencies inside the building gained since schematic design and improved accuracy of GFA calculations since the Special Permit. The GFA increase represents only approximately 3.4% of the total approved GFA for south of Main in the Special Permit. The Planning Board is authorized to approve this change as a Minor Amendment, pursuant to the

provisions of Sections 1.a.vi. and 1.c.vii. of the Special Permit Decision. Combined with the GFA increase of 18,319 in the previously submitted Building 3, the GFA increase of Buildings 3 and 5 represent only approximately 4.7% of the total approved GFA for south of Main in the Special Permit.

The Special Permit requires the review of Publically Beneficial Open Space located on a particular building site to be reviewed as part of the design review process for each individual building site. Further, open space between Building Sites 4 and 5 shall be reviewed prior to the issuance of a building permit for either Building 4 or 5. Landscape materials for the above referenced areas have been submitted to the City and were reviewed by the Planning Board at its November 29, 2016 meeting.

Status of Mitigation and Commitments

Housing Contribution

As the Building 5 Project will be considered an Incentive Project pursuant to Section 11.201 of the Zoning Ordinance, the new commercial GFA included in the Building 5 project will require the payment of a Housing Contribution pursuant to Section 11.203.1 of the Ordinance. As indicated in the Dimensional Table included with this Design Review submission, Building 5 will contain approximately 365,306 square feet of new commercial GFA. That commercial GFA will result in a Housing Contribution of approximately $4,748,978, which will be payable, pursuant to the requirements of Section 11.203.1.3. of the Zoning Ordinance at the time that Building 5 receives its Certificate of Occupancy.

Traffic

Appendix B of Special Permit #303 enumerates certain transportation mitigation and monitoring requirements that may be triggered at Certificate of Occupancy of the Building 5 project components. MIT will work with the City's Traffic, Parking and Transportation department on the design and timing of required items.

Community Fund Payments and Community Benefit Organization Contributions

As required by Section 13.810.2 of the Ordinance and Paragraph G of the Commitment Letter, respectively, the first and second Community Fund Payments and Community Benefit Organization Contributions have been made by MIT to the City, with the first being paid in July 2013, and the second being paid in April 2016. As a result of the above, MIT has satisfied its payment and contribution obligations relative to each of these items until such time as MIT applies for a building permit for new commercial square footage in excess of 500,000 square feet. The commercial space contained in Building 5 on its own will not result in the aggregate new commercial square footage exceeding 500,000 square feet. However, in the event that Buildings 3 and 4 apply for Building Permit before it, Building 5 would trigger a Community Fund Payment and a Community Benefit Organization Contribution.

Other April 8, 2013 Commitments

All other commitments contained in the Commitment Letter from MIT to the City of Cambridge dated April 8, 2013, have been and continue to be satisfied by MIT to the extent implicated by the proposed development on Building Site 5.

Dimensional Form

The Standard Cambridge Form as modified for PUD-5 projects is included in this submission.

II. Building 5 Urban Design Objectives/Design Intent

The development of this new Kendall Square / MIT precinct represents a new paradigm in the transformation of Kendall Square's increasingly lively, mixed use urban district. Cities like Cambridge and institutions like MIT have long recognized the synergies of dense urban settings and innovative research, and the creation of this new district capitalizes on the vital intersections between MIT's academic research strengths and the entrepreneurial spirit evident in the Kendall Square district. Located on Main Street, Building 5, in conjunction with the Press Building transformation and rejuvenated T-Stop, will define the new gateway to the heart of this precinct that will become a new destination to welcome the entire Kendall Square and MIT community.

The quickly evolving Kendall Square, with its impressive collection of world-class biotechnology and health technology firms, creates an opportunity to embrace the productive convergence of both city and campus. This new mixed use project on Site 5 will create settings where commerce and academia converge to create community and innovation.

Existing Conditions and Land Use

The strategic location of Site 5 within East Campus/Kendall Square offers an opportunity to simultaneously collaborate with the scale and character of the historic and contemporary buildings on Main Street and to connect to the MIT campus, creating a gateway to a new emerging campus and city district. A part of the larger development that will engage Kendall Square's innovation hub, MIT, and the community at large, Site 5 is currently an on grade parking lot with the one story Cambridge Trust Company building located on the north-west corner. The site is bounded by Main Street to the north,

the T-Stop and the former layout of Carleton Street to the east, Dock Street and the Kendall Square Hotel to the west and the Deacon Street and the MIT Health building to the south.

Site 5 is located within a neighborhood of varied architectural styles, scales, and material palates. Site 5 has full frontage on Main Street. To the east of the site, three 3-6 story early 1900's industrial era buildings of historic significance line Main Street. The MIT Press is directly east of the site, formerly the Suffolk Engraving Co, and to the east of it, two red brick buildings continue this mid-rise urban street front, the former J.L. Hammett building and the former Manufacturer's National Bank Building. To the west of Site 5 is the Kendall Hotel, distinguished by pitched roofs and dormers. This former fire house, Engine 7 built in 1895, is separated into two masses, one historic three story structure on Main Street and a recent seven story structure set back from the street, which shares the lot line with Site 5. To the west of the Kendall Hotel, a different style emerges with the Ford Building. A seven story concrete and brick building from the 1950's, this represents a style formerly common in Kendall Square.

On the north side of Main Street, directly opposite Site 5, is the Marriott Hotel, which was developed as part of the Cambridge Center, a collection of late twentieth century high-rise structures. These high rises are set back from the street and tied together with a 3-story plinth that lines Main Street from Ames Street to Broadway. At the ground plane this plinth is set back slightly from the street, revealing transparent façades with active retail. The Marriott, the tallest of the structures at twenty-five stories, is set back even further from Main Street, framing a plaza that incorporates the outbound Kendall/MIT T-Stop entry. Opposite the Marriott Plaza, and directly to the east of Site 5, is the existing inbound Kendall/MIT T-Stop. Setting up Site 5 as an opportune hinge site for the Kendall Square and MIT community.

Design Approach

The design will leverage the site's fortuitous location at the Kendall Square T Station, Main Street and the proposed central green space. Building 5 will reveal and build upon the existing community of innovation by creating a vibrant gateway to the MIT campus and the emerging Kendall Square district.

Over the past decade, Kendall Square has quickly evolved as new development by MIT, private developers, and the City of Cambridge have turned an area previously characterized largely by numerous surface parking lots, into an emerging mixed-use community. At a critical threshold between the campus and Kendall Square, the Site 5 building is poised to serve as catalyst and gateway for entrepreneurship, innovation, and vibrant urban life.

Building 5 will create a setting that supports retail, institutional, and commercial uses to form a new model for a multiuse building - one that reflects the active research and innovation that is prolific throughout this district. Building 5 has the unique opportunity to capitalize on MIT's leadership in research to attract the most active science and technology industries.

The Street Level

At street level, Building 5 is envisioned as a dynamic multiuse destination with an active streetscape, vibrant retail, transparent and visible entrances to the MIT Museum and to the building lobby. Retail will maximize street frontage on the north east and north-west corners of Main Street, wrapping around the east corner with frontage on the pedestrian thoroughfare leading to the T-Stop node. The retail and other active uses will be accessible and permeable through multiple entrances. A visible office lobby centered on Main Street between retail will be an active point of orientation and circulation, providing secure access to the floors above.

The MIT Museum will have an address on the new Gateway and will be visible from Main Street and the adjacent T-Stop. There will be outdoor space in the Gateway adjacent to Building 5 that will be designed to accommodate programmed museum activities, acting as an extension of the public open space into Building 5 and drawing the public into the museum. The MIT Museum will become an active destination for visitors, school groups, students, faculty, and staff. The museum will be an important site linking MIT's legacy of innovation to its future engagement in the Kendall Square neighborhood.

The building's ground floor is transparent with the north and east elevations designed to enhance the visual and physical connections between interior and exterior spaces. Continuous glass frontage provides street level views into the building's lobby, museum and retail spaces that front the public north and east facades of the building. The building engages the horizon with a rooftop silhouette scaled to the greater metropolitan context and adherent to the Kendall Square Guidelines and Zoning.

The Plinth

The two museum levels occupy the plinth of the building mass, giving an independent expression and distinct identity to the MIT Museum. The plinth is distinguished from the tower above through a horizontal terrace, one floor in height, allowing the Tower to set back 16' from Main Street. This terrace creates a large outdoor amenity with amazing views of this vibrant district.

The plinth establishes an urban scale compatible with adjacent historic buildings. The plinth and terrace are positioned to extend the existing horizontal datum created by the low rise historic buildings on Main Street, directly adjacent to Site 5. The museum, located on the second and third floor, is treated with an articulated pattern of opaque and transparent panels calibrated to the exhibition's daylight requirements. This pattern is highly articulated, creating a tactility that relates to the human scale along Main Street. The plinth also creates an overhang shelter for the central office entry, outdoor seating, and retail entries.

The Tower

Above the plinth, the office tower sets back 16' from Main Street. The tower façade compliments the pattern of the museum façade and, as it travels up the building, it gradients to a more transparent pattern at the corners to maximize daylight and capture panoramic views of both Boston and Cambridge. The tower façade will include a combination of metal, reflective and acid etched glass, and fins of varied depths. These materials will de-materialize the tower by alternately reflecting the sky and adjacent structures. The folds on the north and south façades of the tower, and those on the east and west façades, not only allow the plinth and tower to read as distinct but also meter the façades into a scale and rhythm consistent with the context on Main Street.

The Class A commercial office space, and potentially, academic use space, in the tower portion of the Building 5 will be open and loft like, and as efficient and flexible as possible. The building will maximize natural daylighting on all office floors. Large expanses of glass and high floor to floor dimensions create an optimal work environment and provide expansive views. Large floor plates support the needs of variously-sized tenants, creating floors that appeal to multiple tenants as easily as to a single, larger tenant. Column free floor plans and flexible mechanical systems will accommodate the widest possible range of potential users while promoting an open, sustainable, and collaborative atmosphere. The building is planned to have 17 occupiable floors and a height of approximately 250'.

As Kendall Square has a variety of architectural styles and material types, Building 5 integrates the warmer chroma of the adjacent Kendall Square historic buildings as an accent color to counteract the modern reflective glass and metal. The plinth and tower each have complimentary identities and materials with one another. Both are clad in a curtain wall system that is comprised of reflective low-E and acid etch glass which is complimented with fins that accentuate the chroma at oblique views, provides sustainable shading devices, and breaks down the overall massing.

Roof Screen Wall

The building engages the horizon with a rooftop silhouette scaled to the greater metropolitan context. The screen wall tower top shields the mechanical equipment and locks into a horizontal datum of both existing towers, like the Marriott across the street, and planned towers in this new district. The building's northeast corner is sculpted to further extend the urban scale.

Site 5 Planning

Building 5 is a hinge between the new East Campus Green to the south, and the vibrant commercial life of Kendall Square and Main Street to the north, and will redefine the arrival to the Kendall Square T-Station. At the pedestrian scale, the plinth and ground floor fold back from the north east corner to create a generous sidewalk connection between Main Street and the T-Stop and the new public plaza space beyond. The Tower cantilever is pulled well above the street scape to allow sun to reach the new T-Stop and Main Street Plaza and to give the ground floor retail full street frontage exposure. Arriving from the west side of Main Street, the building pulls back at this north east corner to frame the historic MIT Press Building, further inviting pedestrians into the plaza and T-Stop Headhouse. New sidewalks on the west and south sides of the building will be constructed with significant depths to facilitate pedestrian activities and enhance circulation surrounding Site 5. New trees will line Main Street and the new Gateway Plaza to the east will be enriched by hardscape and trees, adjacent to the T-Stop.

The building has been designed to mitigate adverse environmental impacts upon its neighbors. The projected shadow is consistent with the shadow studies presented as part of the Special Permit submission as is shown in the updated shadow study included in this submission. Since the granting of the Special Permit the team, in collaboration with RWDI, has continued to test planting, landscape and other design changes in order to further improve wind conditions at the Gateway. Building 5 integrates mitigation techniques including the movement of the northeast corner of the plinth and the inclusion of a windscreen at the northeast corner. The main building lobbies will have revolving doors or vestibules and the retail entries will have double doors typical to the retail stores in the area. The outdoor seating at the north east corner at the ground level will be located and protected below the first floor overhang. An update wind study test for SoMa that reflects design review buildings and landscape has been submitted.

Mechanical equipment will be carefully designed to minimize noise and exhaust. The emergency generators, cooling tower and air handling units will be located within wells. Exhaust for ambient garage air will be centered 13 feet above sidewalk at the west facade. An acoustical report for Building 5 is included in this submission. Waste and recycling compactors and loading docks are located below grade, at Level P1 of the parking garage.

Building Sustainability

MIT's Kendall Square Initiative is designed to be a leader in urban sustainability revitalization and renewal. MIT has made sustainability an integral part of the project and Building 5's design process and is committed to developing buildings that are sustainably designed, energy efficient, environmentally conscious and healthy for the occupants and visitors that enhance the community.

MIT has embraced an integrated design process and includes technical experts who are actively engaged with the design process of both the site and overall SoMa District. This comprehensive view allows the development to incorporate sustainability best practices in design and operation, stormwater capture and reuse, transportation and landscape strategies.

The thoughtful design of Building 5 and sustainable technology are complementary. This concept will function on all levels of the building design, from comprehensive systems engineering and envelope design to material selection and detailing. State-of-the-art building enclosures and HVAC systems will maximize building efficiency. A high-performance curtain wall will target a high R-value and use innovative fritting and coatings to minimize heat gain while maximizing views and natural light to interior spaces.

MIT established a minimum commitment to Leadership in Energy and Environmental Design (LEED) Gold and Building 5 will achieve a LEED Gold Rating under the v4 system. The team's efforts have been in developing a building that is sustainably designed, energy efficient, environmentally conscious, and healthy for the occupants, visitors, and community and committed to earn the buildings at least 60 credit points under the more stringent LEED v4 system, for LEED Gold ratings.

As required by Special Permit #303 included in this submission are a LEED Checklist and Narrative for Building 5 consistent with Article 22.20. These materials address the sustainability standards contained in Section 13.89.4 and the sustainability strategies and guidelines set forth in Appendix D of Special Permit #303.

Dimensional Form for SoMa Building 5

	Allowed/ Required	Existing*	Removed **	Proposed Building 5	Total
Land Area	25,000	36,002	0	0	36,002
Total Non-Exempt GFA	380,000	6,804	6,804	429,836	429,836
Residential	N/A	0	0	0	0
Commercial	348,619	6,804	6,804	365,681	365,681
Office	*305,000*	*6,804*	*6,804*	*359,252*	*359,252*
Lab	*0*	*0*	*0*	*0*	*0*
Innovation	*0*	*0*	*0*	*0*	*0*
Retail	*10,000*	*0*	*0*	*6,429*	*6,429*
Academic (all types)	65,000	0	0	64,155	64,155
Non-Exempt Dormitory	N/A	0	0	0	0
Structured Parking	N/A	0	0	0	0
Total Non-Exempt FAR	Max. 3.9 across PUD-5	**.19**	**.19**	**12.0**	**12.0**
Total Exempt GFA * **	**10,000**	**0**	**0**	**6,429**	**6,429**
Retail	10,000	0	0	6,429	6,429
Public Transportation	N/A	0	0	0	0
Residential/ Dormitory	N/A	0	0	0	0
Innovation	N/A	0	0	See Note 1	See Note 1
Total Dwelling Units	N/A	0	0	0	0
Market Rate Units	No max. or min.	0	0	0	0
Affordable Units	N/A	0	0	0	0
Dormitory Beds/Units	N/A	0	0	0	0
Publicly Beneficial Open Space	**15% in PUD-5 total**	**See Note 2 Below**	**See Note 2 Below**	**See Note 2 Below**	**See Note 2 Below**
Max Height	**250 ft.**	**N/A**	**N/A**	**200 ft.**	**200 ft.**
Min Yard Setbacks	**0**	**0**	**0**	**0**	**0**
Off Street Parking	**See Note 3**	**See Note 3**	**See Note 3**	**See Note 3**	**See Note 3**
Bicycle Parking	**143**	**0**	**0**	**157**	**157**

**GFA that is existing on Building Site 3 as of January 1, 2013*

***Building Site GFA that is demolished or renovated*

**** Proposed retail GFA is conceptually estimated at 50% exempt. Actual exemption will be known at building occupancy.*

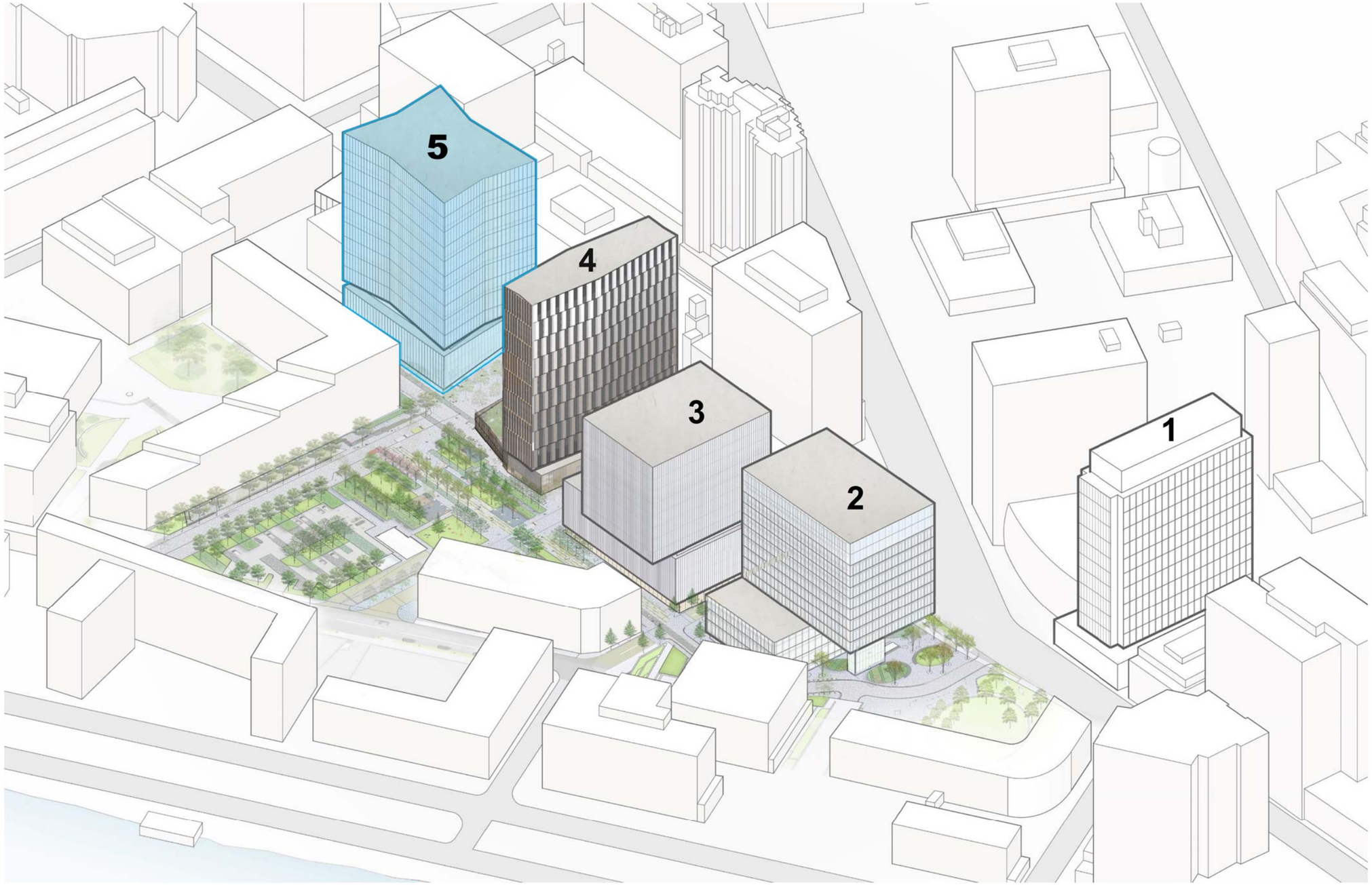
Note 1: Innovation Space as required by section 13.89.3 of the Ordinance is provided in PUD-5 as described in Special Permits #303 and #302.

Note 2: Site 5 will include no less than the 9,495 sf of publicly beneficial open space anticipated in Special Permit #303.

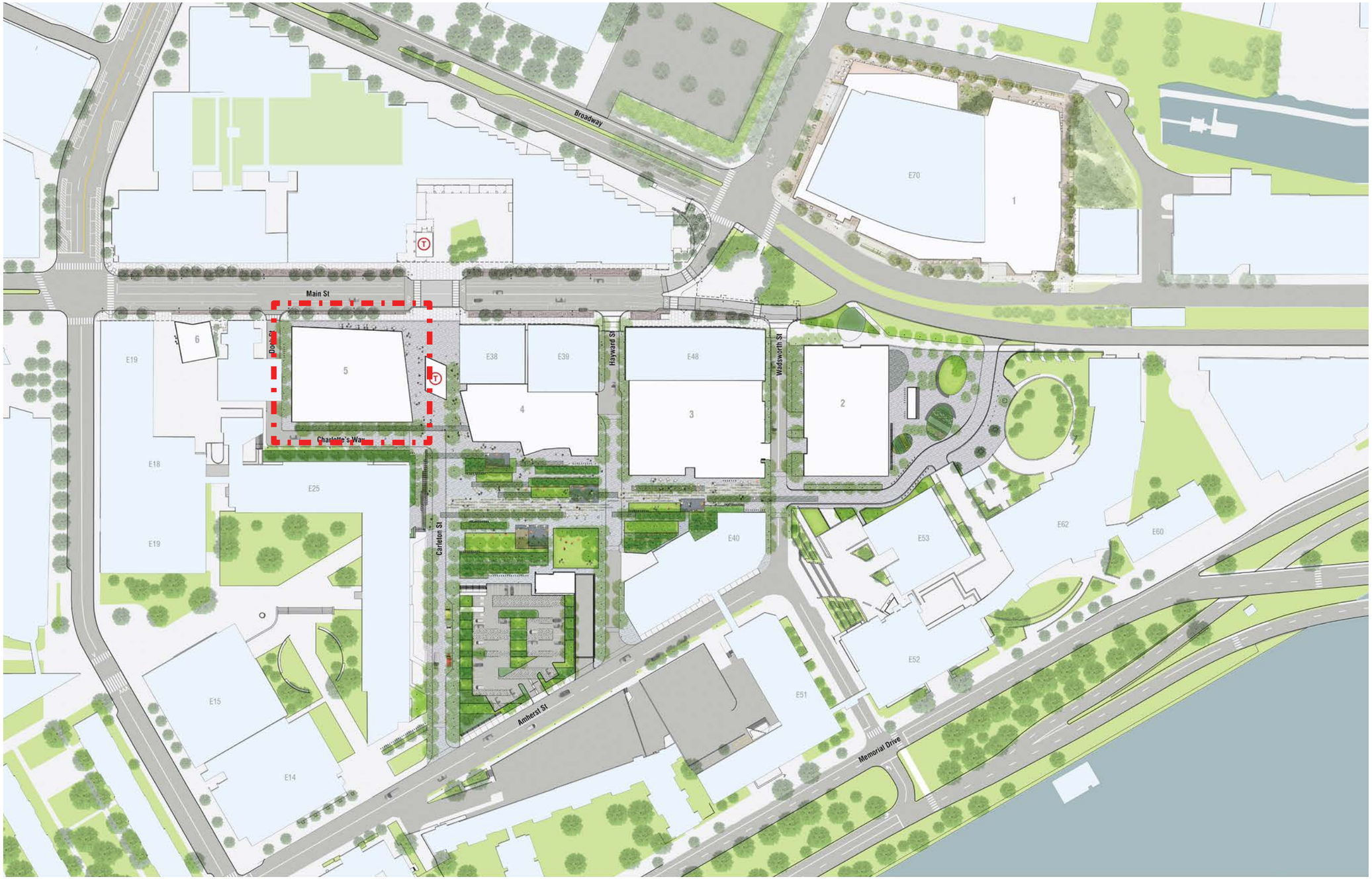
Note 3: 14 commercial and 60 academic parking spaces exist on Building Site 5. These are being discontinued as part of the SoMa enabling and garage construction that has progressed separately through the administrative review process. Parking for Building 5 uses will be located in subsurface garage following construction of same.

DESIGN REVIEW GRAPHIC MATERIALS

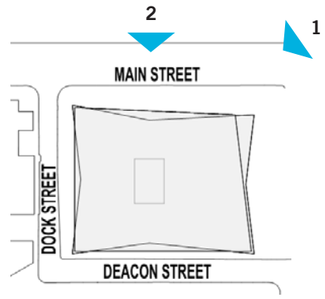
KENDALL SQUARE BUILDING 5



PUD SITE AXON

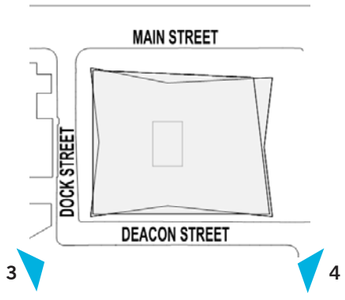


SITE 5 IN OPEN SPACE PLAN

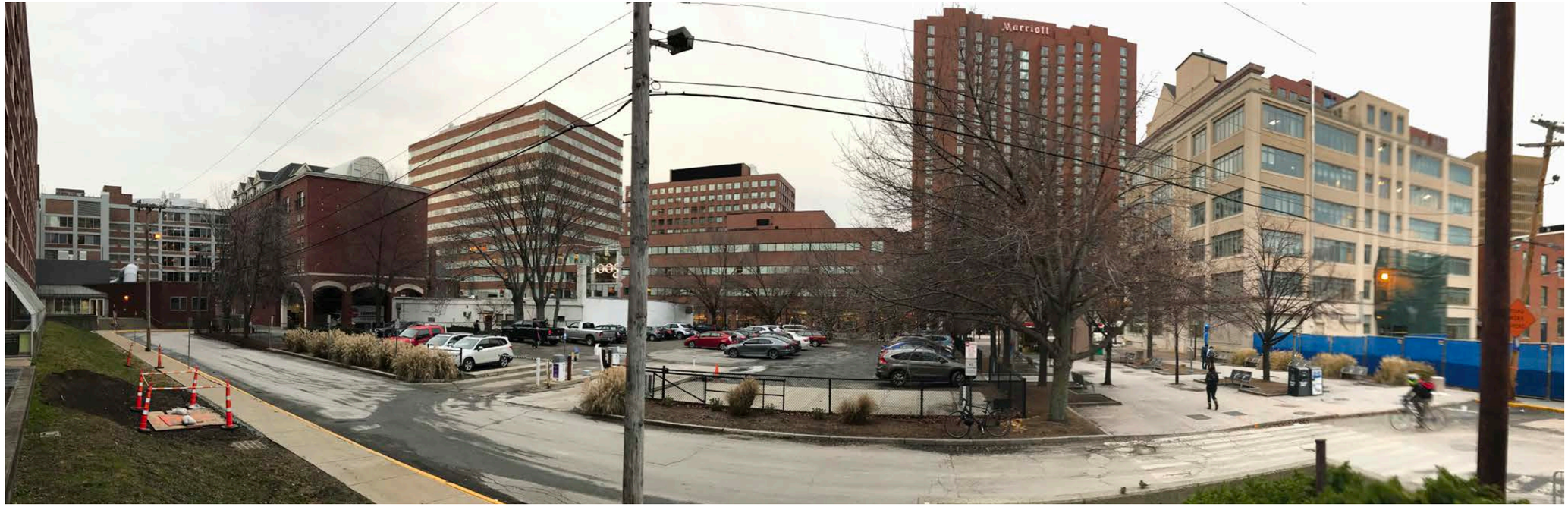


1 - LOOKING SOUTHWEST FROM MAIN STREET IN FRONT OF T STOP

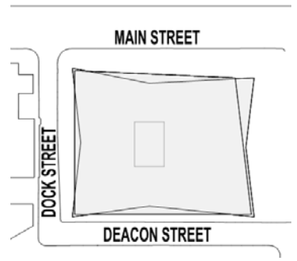
2 - LOOKING SOUTH FROM MAIN STREET IN FRONT OF THE MIT COOP



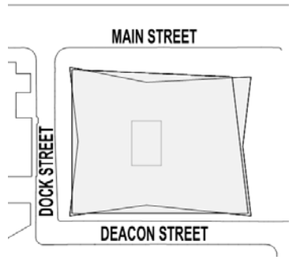
3 - LOOKING NORTHEAST FROM THE CORNER OF DEACON AND DOCK STREETS



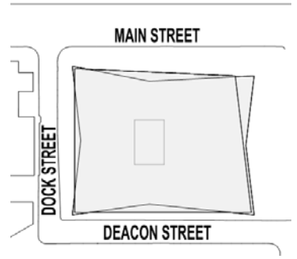
4 - LOOKING NORTHWEST FROM THE CORNER OF DEACON AND CARLETON STREETS



PERSPECTIVE - SOUTHWEST DOWN MAIN STREET



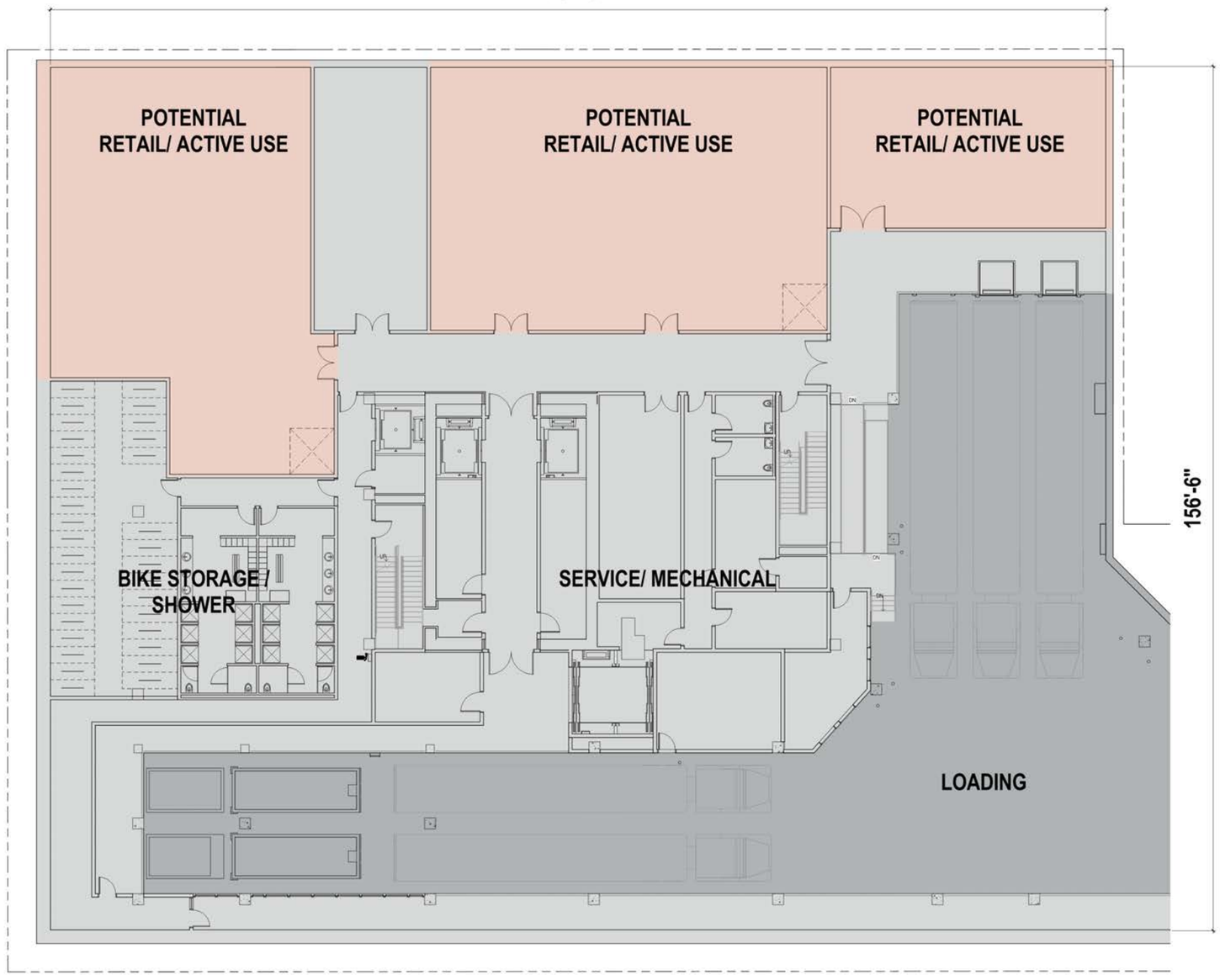
PERSPECTIVE - SOUTHWEST FROM MARRIOTT PLAZA



PERSPECTIVE - NORTHWEST FROM OPEN SPACE

MAIN STREET

191'-0"



DOCK STREET

DEACON STREET

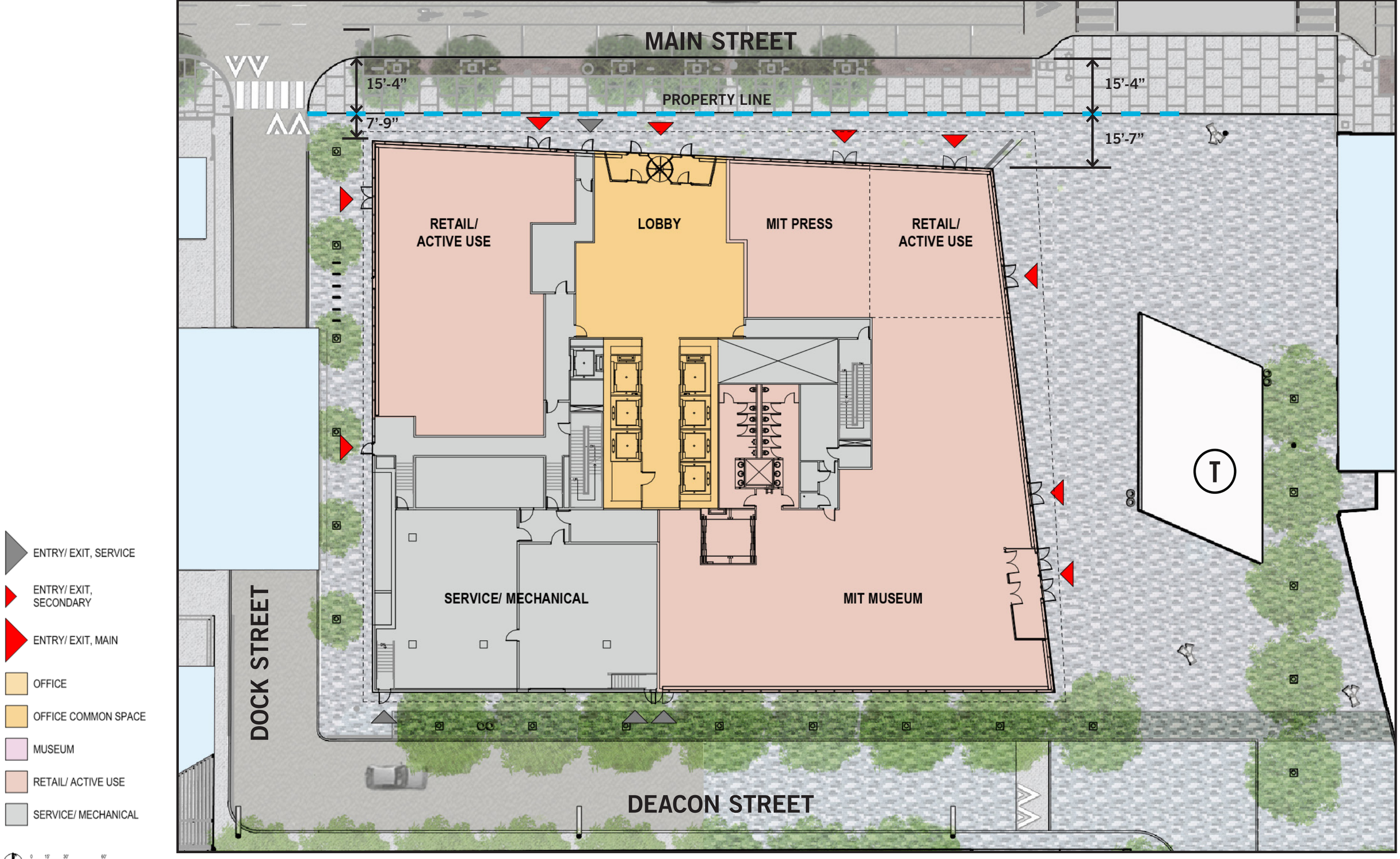
OFFICE

OFFICE COMMON SPACE

MUSEUM

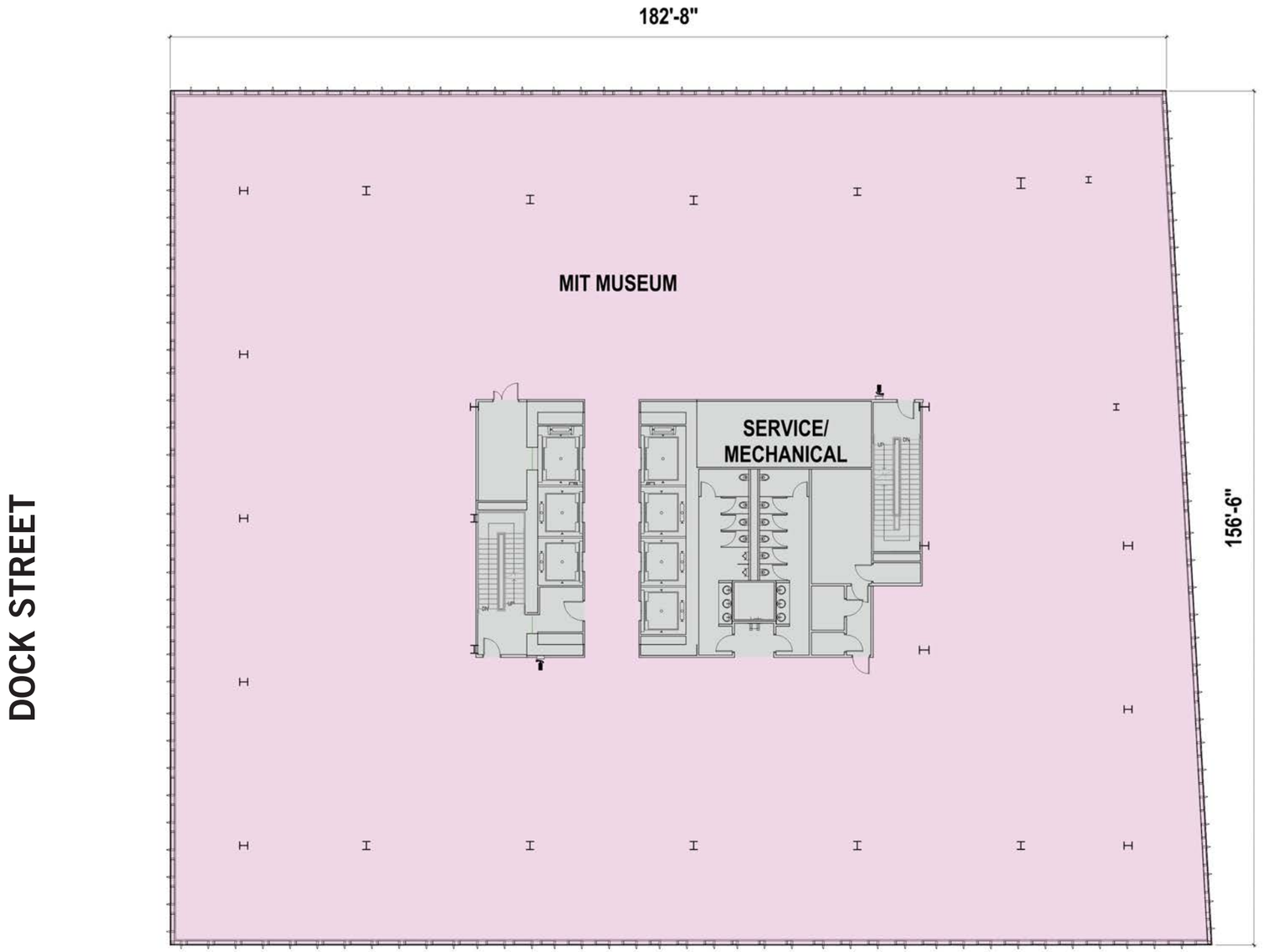
RETAIL/ ACTIVE USE

SERVICE/ MECHANICAL



BUILDING 5 GROUND FLOOR PLAN

MAIN STREET



DEACON STREET

OFFICE

OFFICE COMMON SPACE

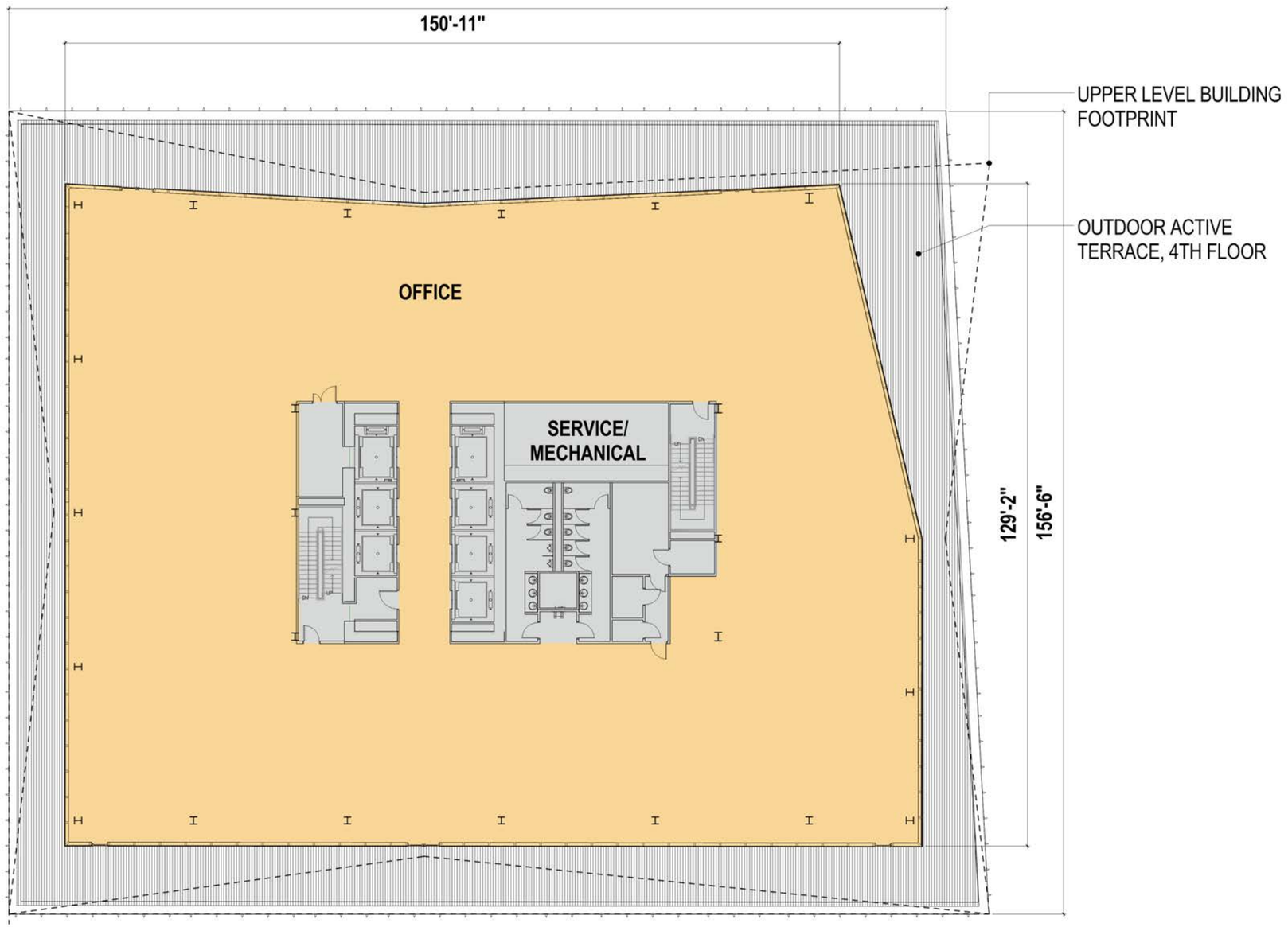
MUSEUM

RETAIL/ ACTIVE USE

SERVICE/ MECHANICAL

0 15' 30' 60'

MAIN STREET



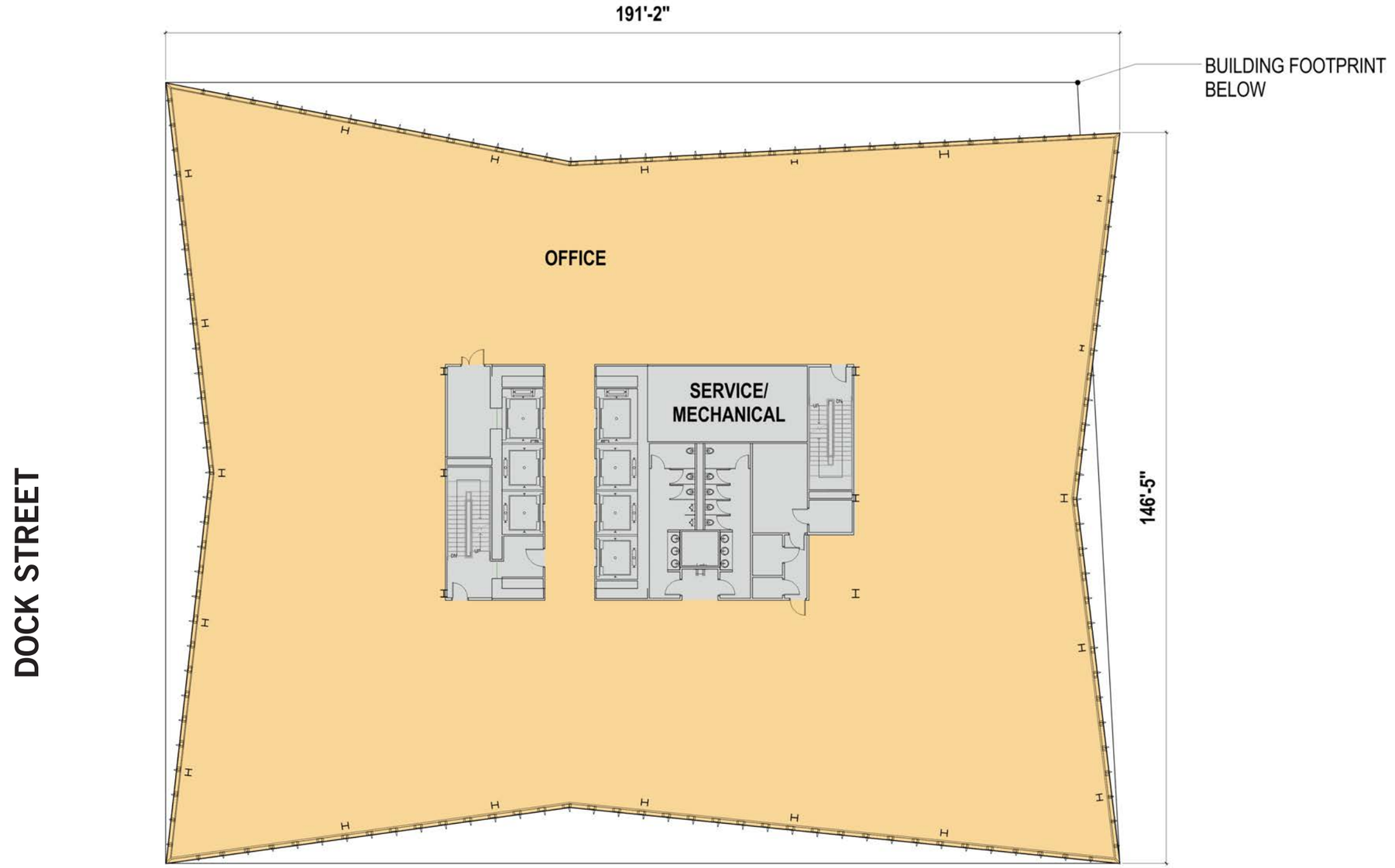
DOCK STREET

DEACON STREET

OFFICE
OFFICE COMMON SPACE
MUSEUM
RETAIL/ ACTIVE USE
SERVICE/ MECHANICAL

LEVEL 4 FLOOR PLAN

MAIN STREET



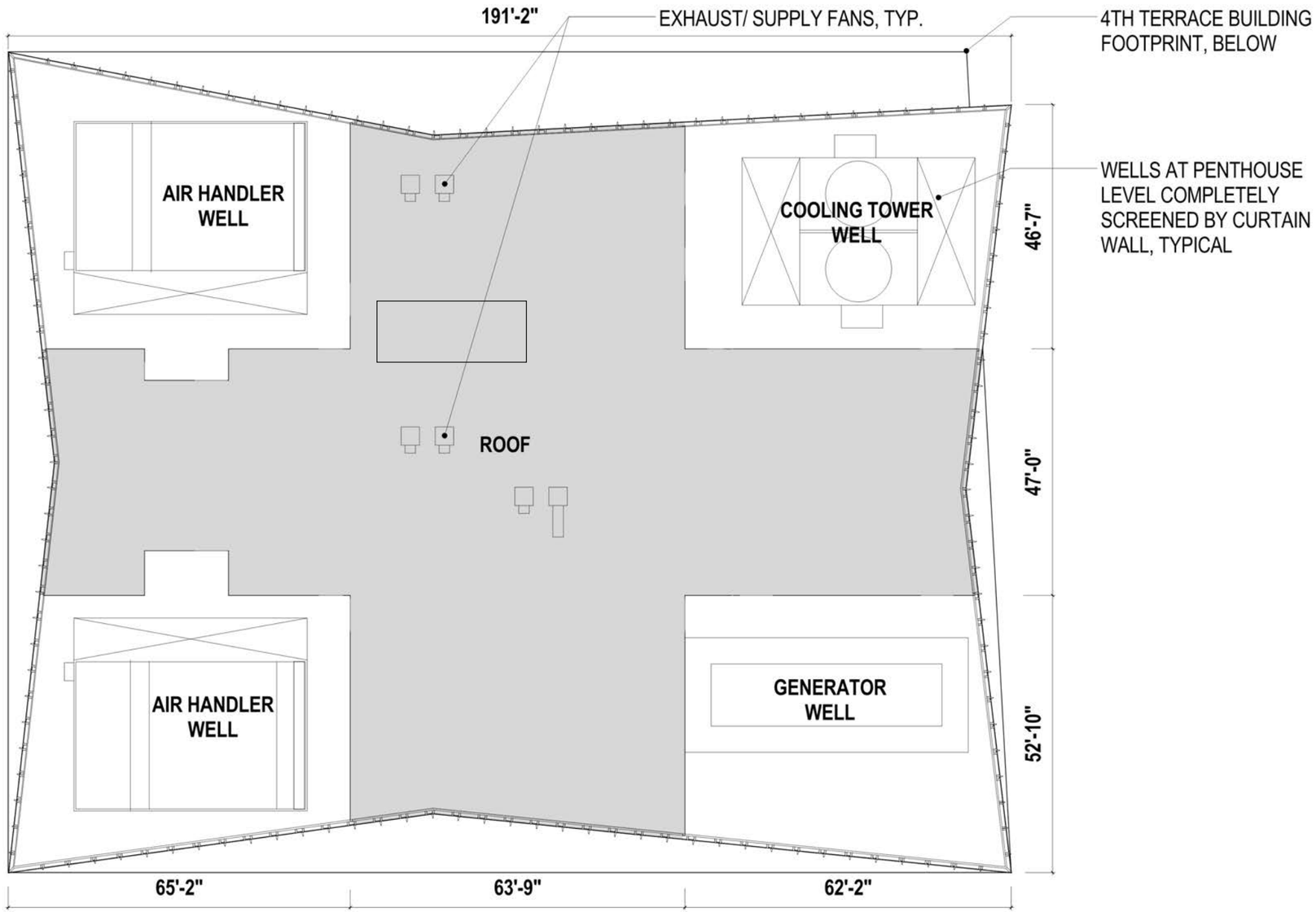
DEACON STREET

- OFFICE
- OFFICE COMMON SPACE
- MUSEUM
- RETAIL/ ACTIVE USE
- SERVICE/ MECHANICAL

0 15' 30' 60'

TYPICAL UPPER FLOOR PLAN

MAIN STREET



DOCK STREET

DEACON STREET

OFFICE

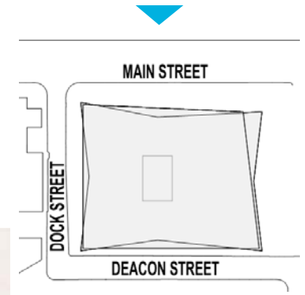
OFFICE COMMON SPACE

MUSEUM

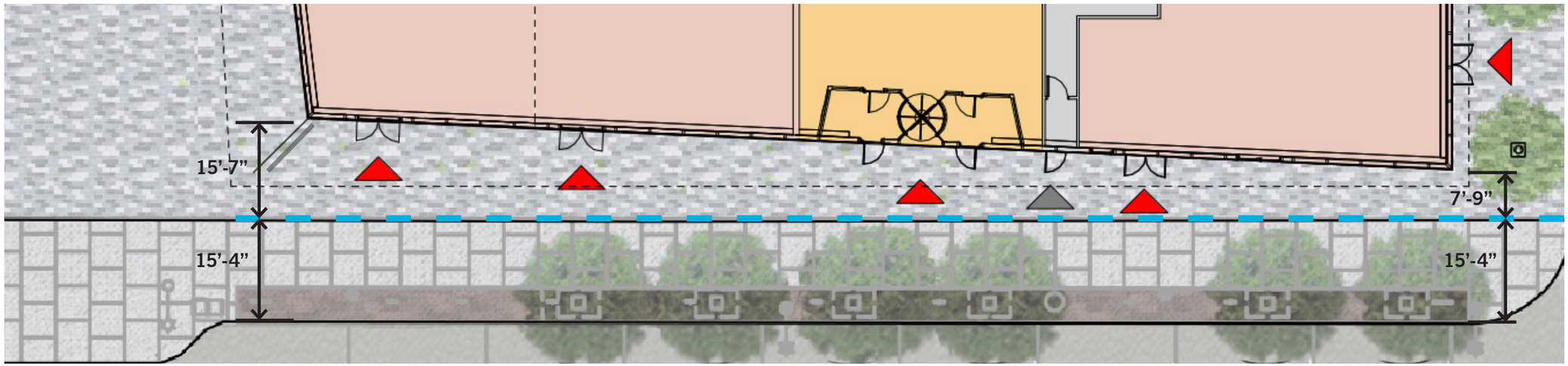
RETAIL/ ACTIVE USE

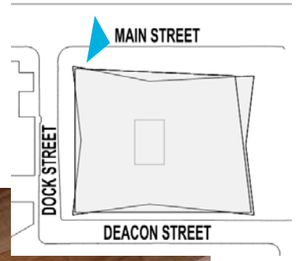
SERVICE/ MECHANICAL

0 15' 30' 60'

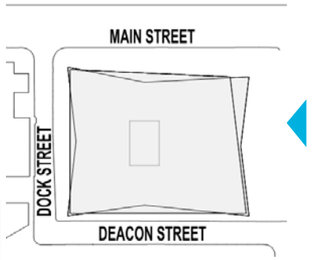

MAIN STREET
DOCK STREET
DEACON STREET

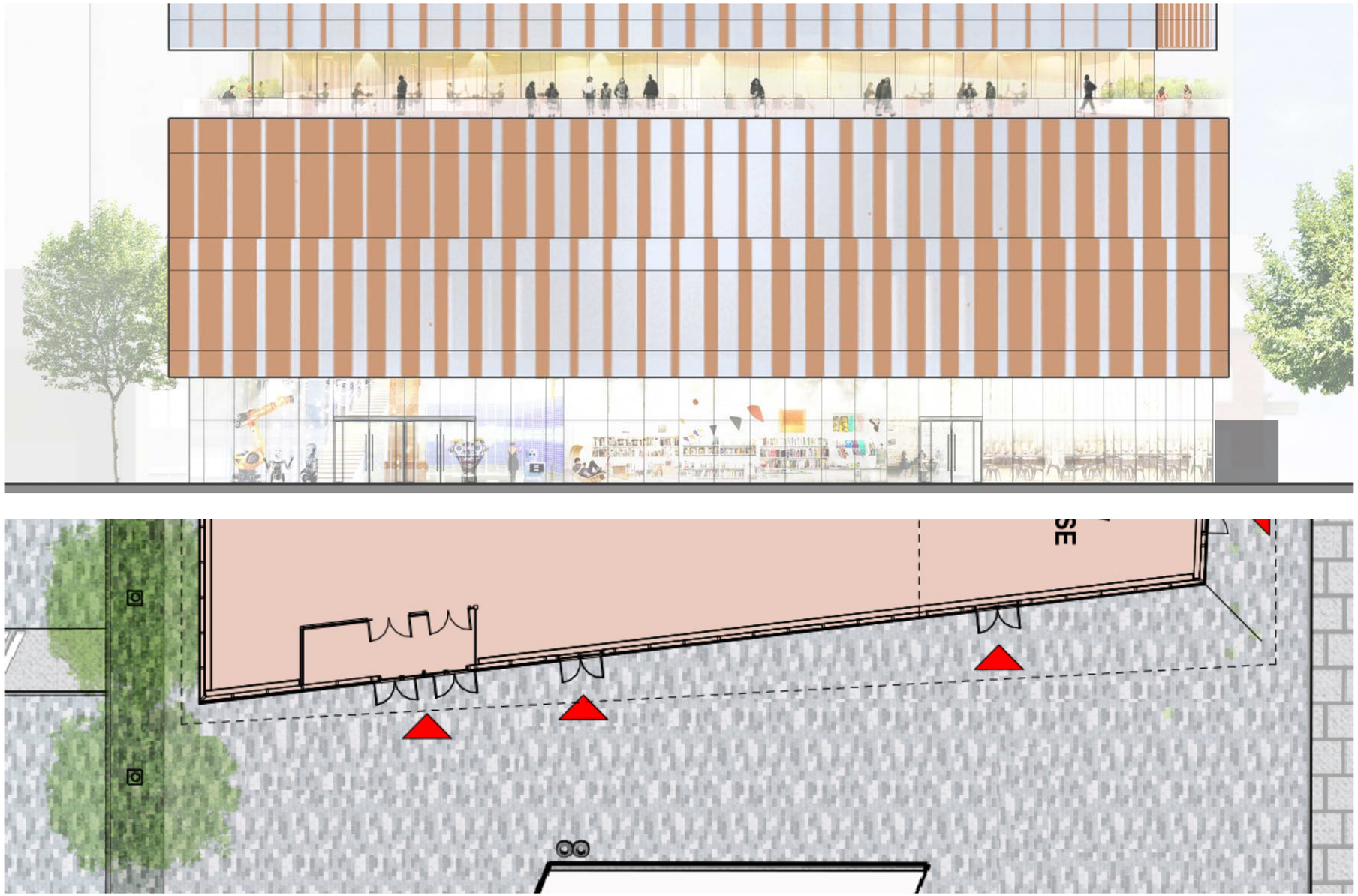

314

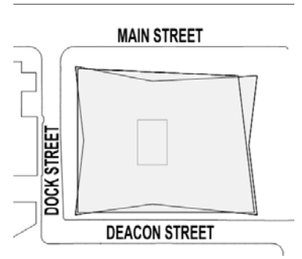

15'-7"
15'-4"
7'-9"
15'-4"



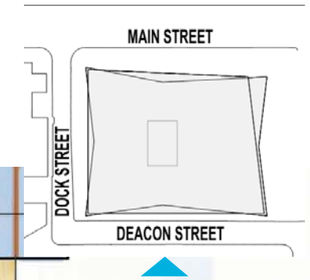
PERSPECTIVE: LOBBY ENTRY, LOOKING EAST

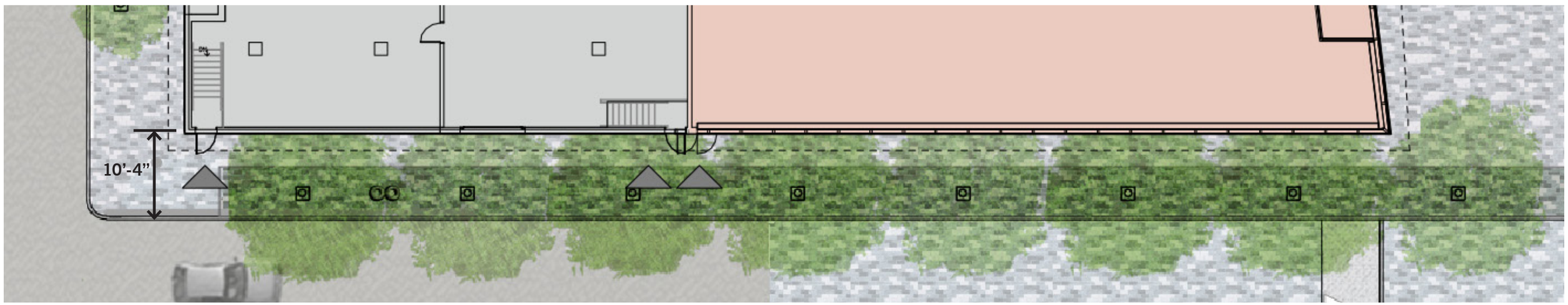

MAIN STREET
DOCK STREET
DEACON STREET

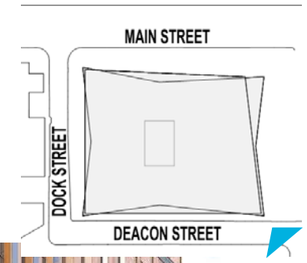




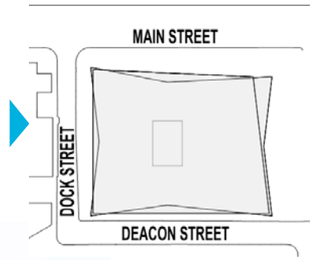
PERSPECTIVE: GATEWAY, LOOKING WEST

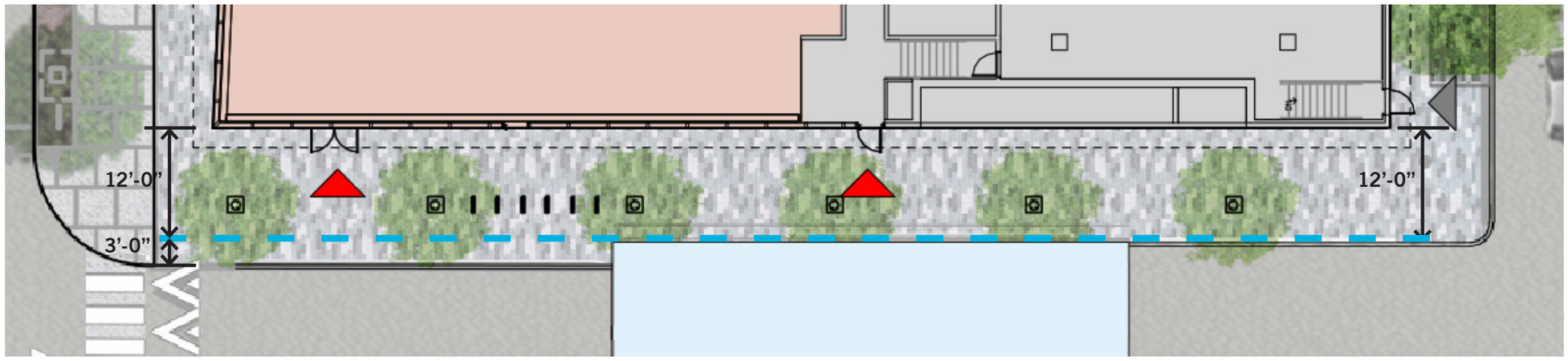

MAIN STREET
DOCK STREET
DEACON STREET


10'-4"

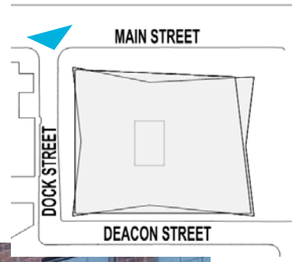


PERSPECTIVE: MIT MUSEUM, LOOKING NORTHWEST

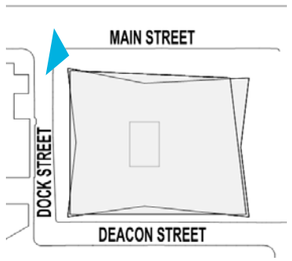




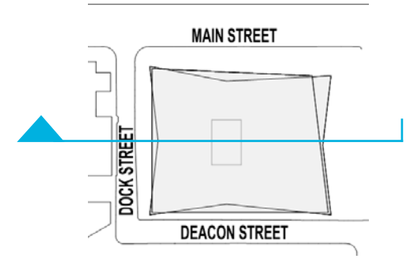
WEST ELEVATION - DETAIL

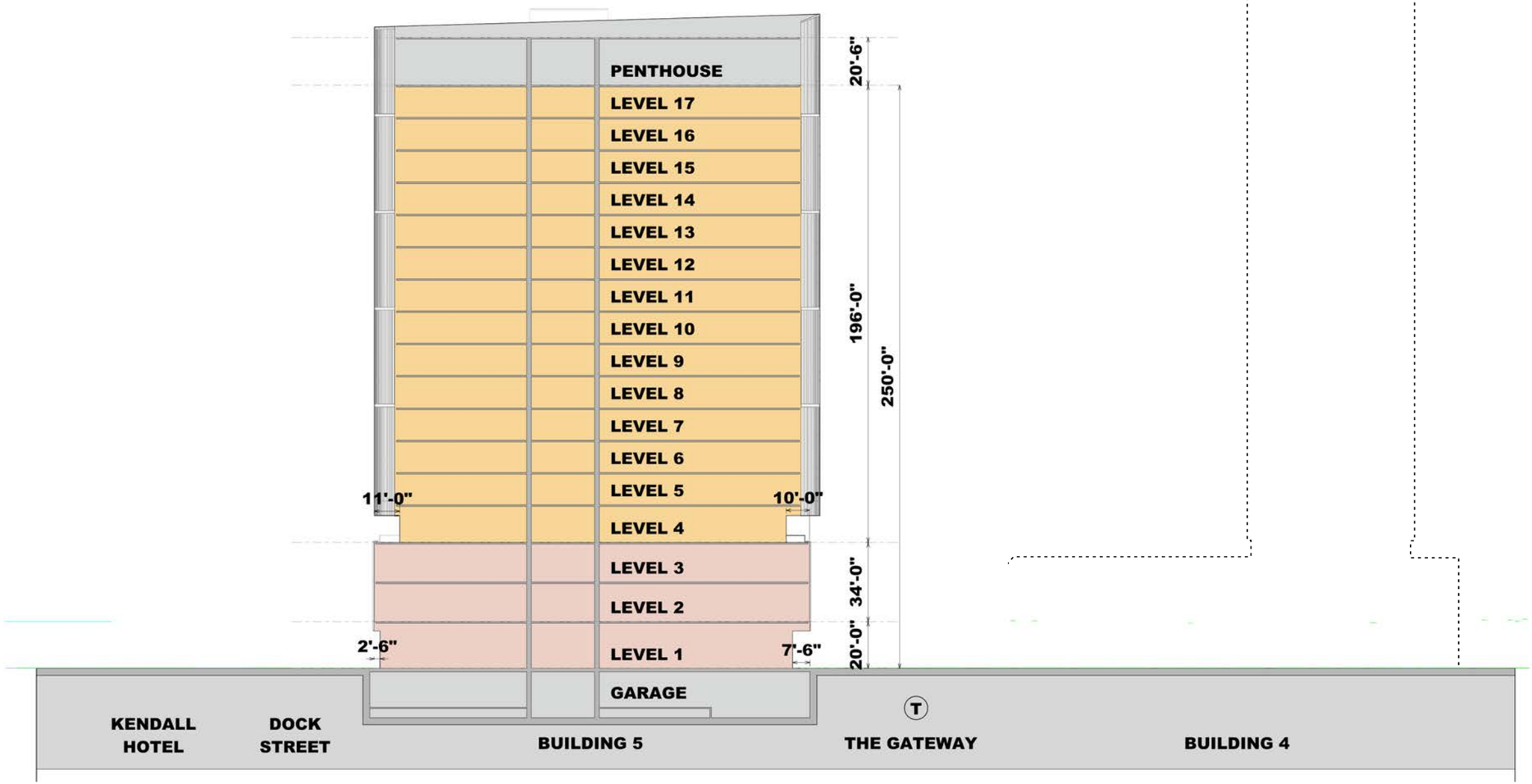


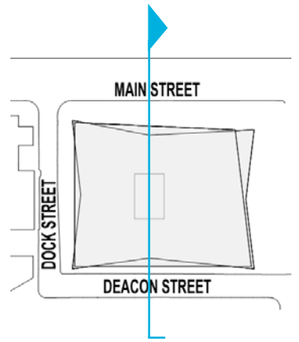
PERSPECTIVE: MIT MUSEUM, LOOKING NORTHWEST

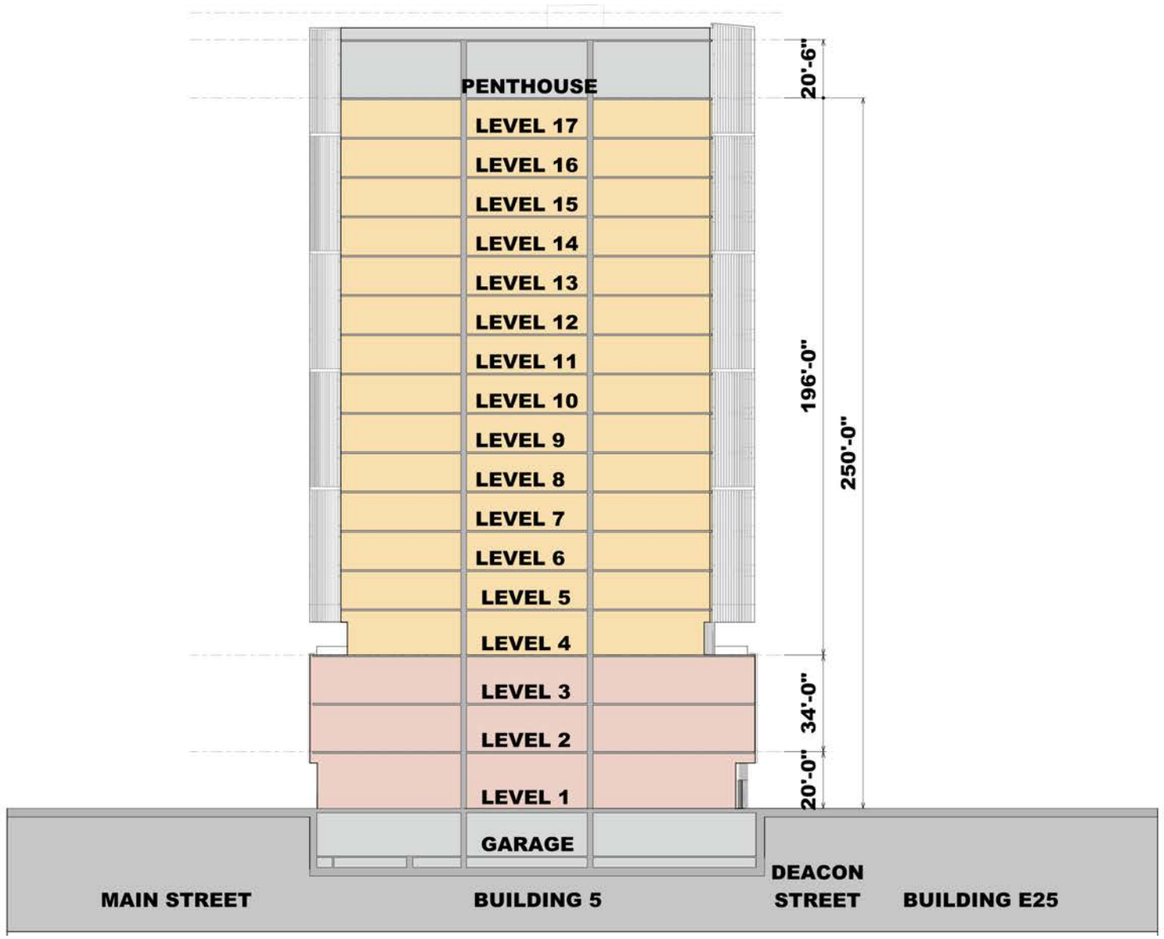


PERSPECTIVE: CORNER RETAIL, LOOKING SOUTHEAST


MAIN STREET
DOCK STREET
DEACON STREET


PENTHOUSE
LEVEL 17
LEVEL 16
LEVEL 15
LEVEL 14
LEVEL 13
LEVEL 12
LEVEL 11
LEVEL 10
LEVEL 9
LEVEL 8
LEVEL 7
LEVEL 6
LEVEL 5
LEVEL 4
LEVEL 3
LEVEL 2
LEVEL 1
GARAGE
11'-0"
10'-0"
2'-6"
7'-6"
20'-6"
196'-0"
250'-0"
34'-0"
20'-0"
KENDALL HOTEL
DOCK STREET
BUILDING 5
THE GATEWAY
BUILDING 4
OFFICE
OFFICE COMMON SPACE
MUSEUM
RETAIL/ ACTIVE USE
SERVICE/ MECHANICAL





OFFICE

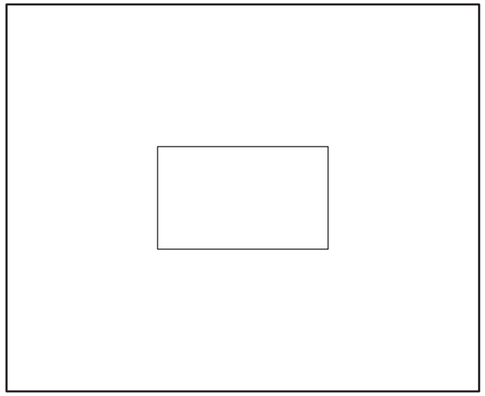
OFFICE COMMON SPACE

MUSEUM

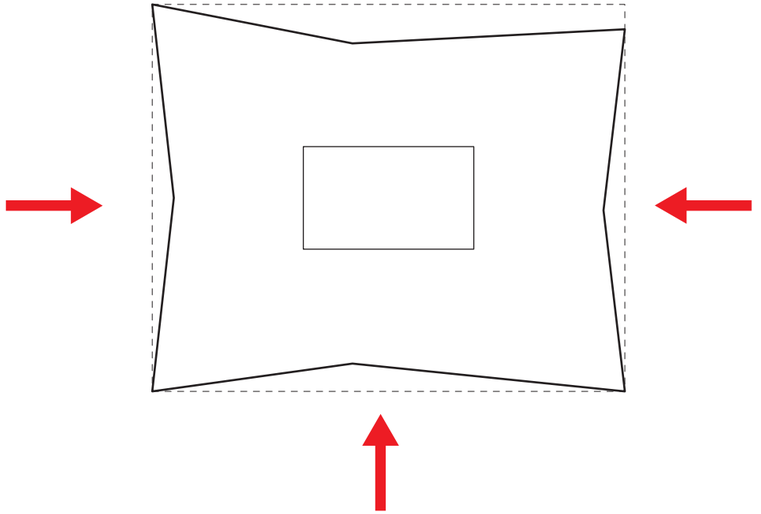
RETAIL/ ACTIVE USE

SERVICE/ MECHANICAL

BUILDING SECTION - EAST WEST



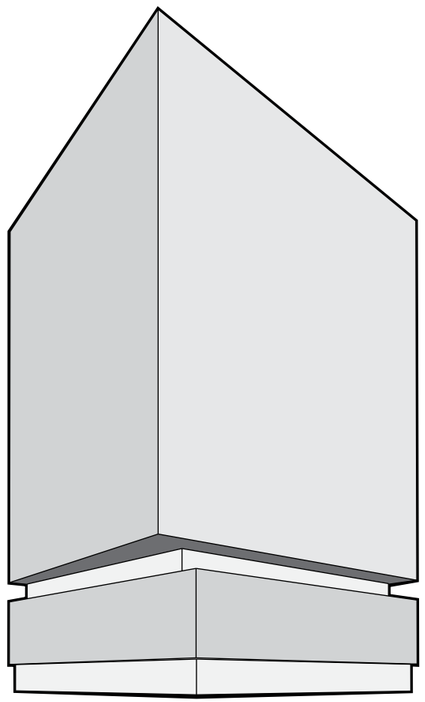
TYPICAL OFFICE TOWER PLAN

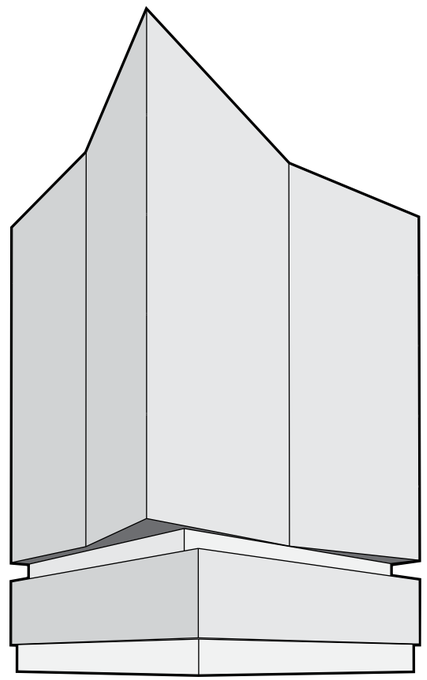


SITE 5 TOWER PLAN

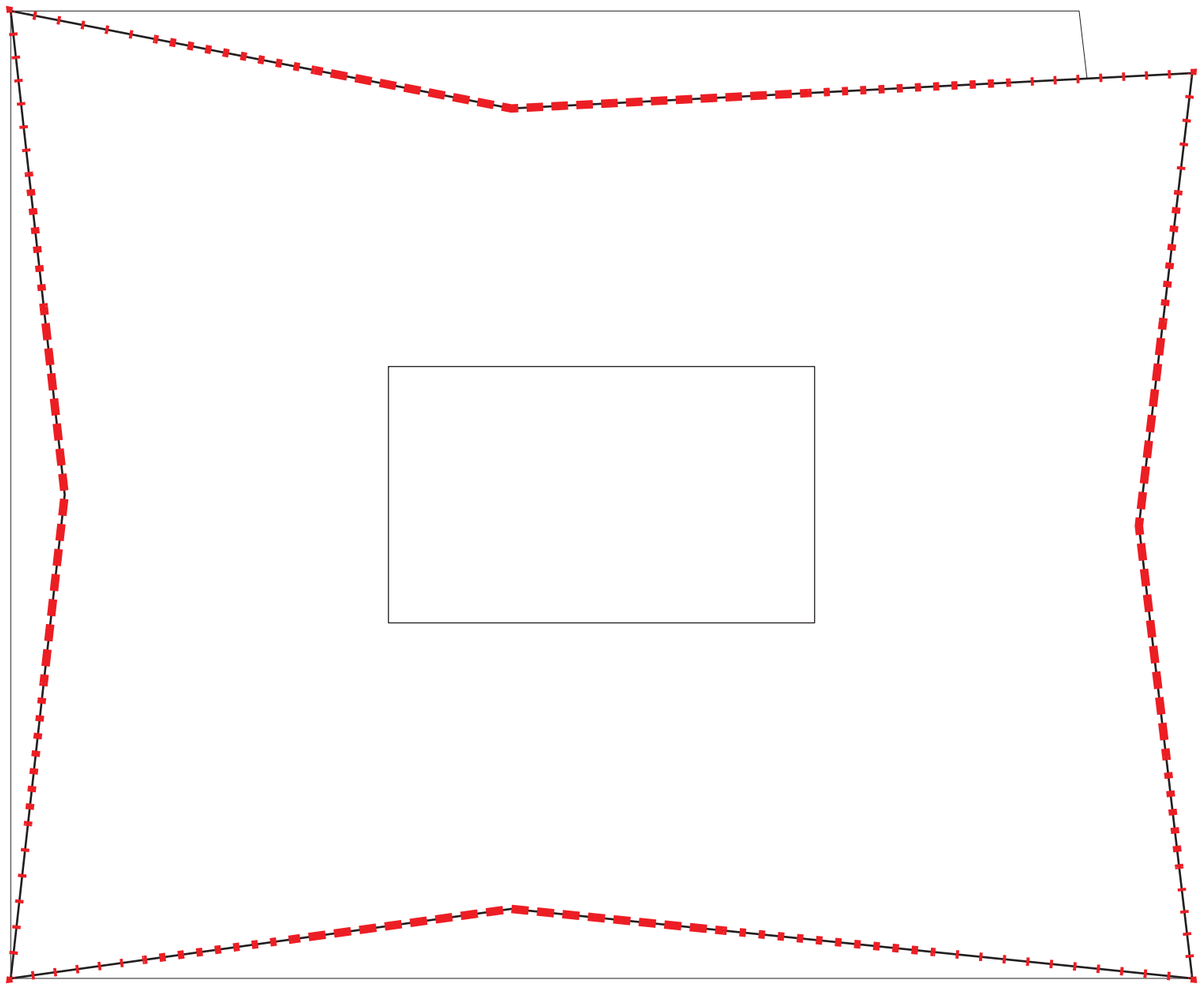
FACADE IS INFLECTED INWARD ON ALL FACES TO REDUCE OVERALL MASSING OF BUILDING.

FOLDS PROVIDE INCREASED IMPACT OF TOWER FINS ON THE OBLIQUE

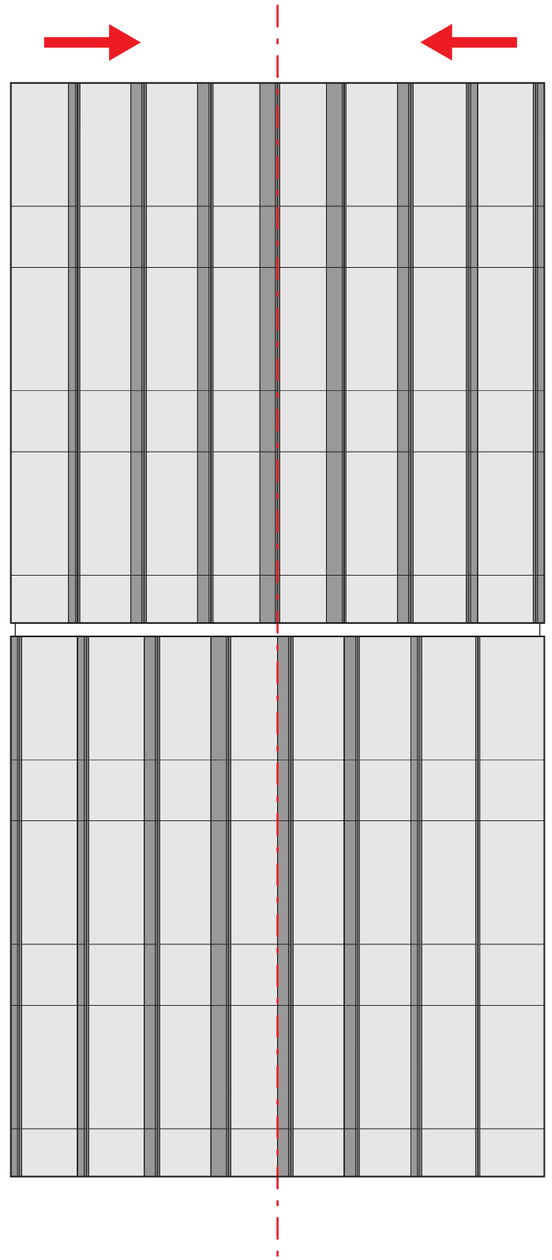




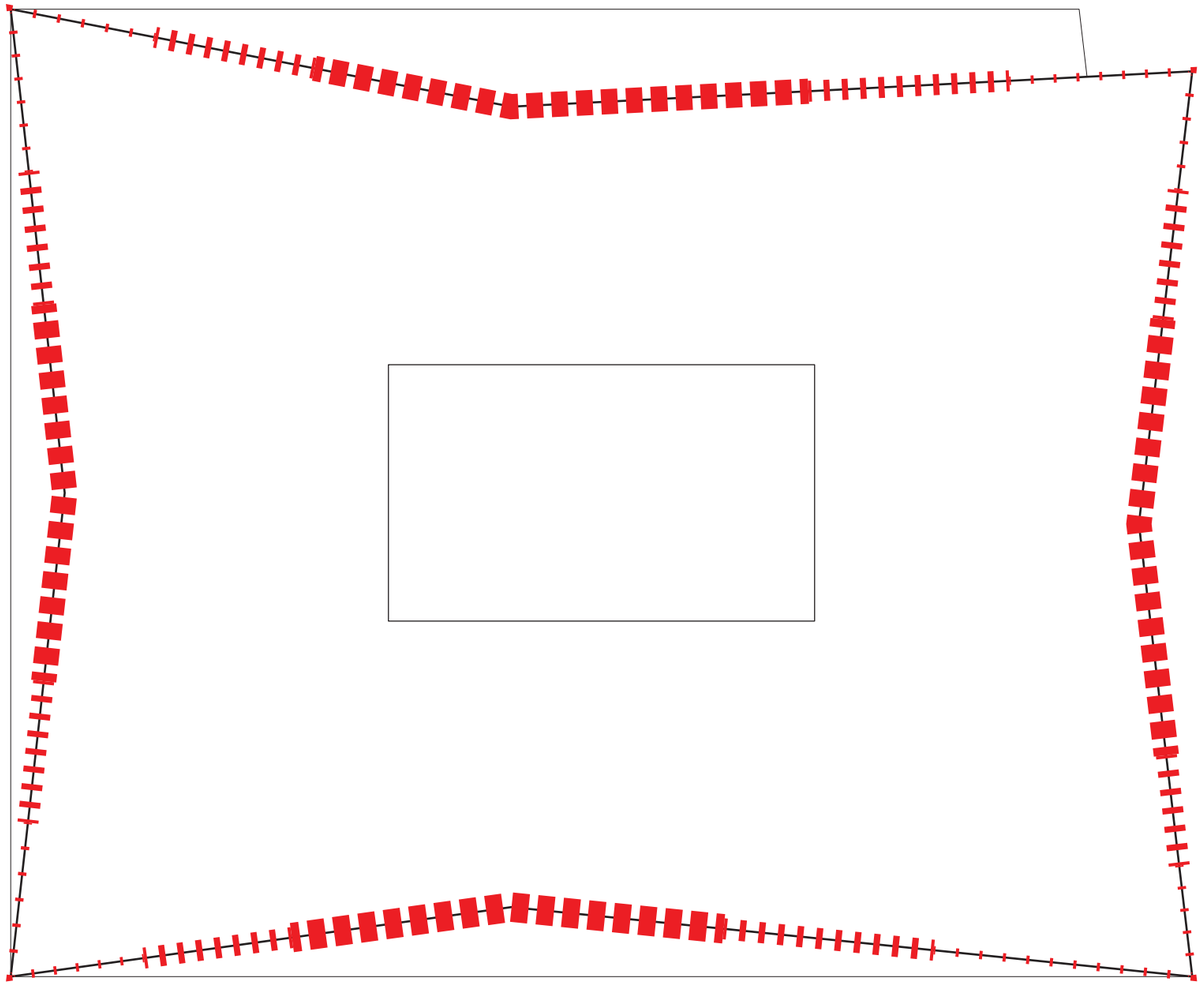
THE TOWER'S ACID ETCH, OPAQUE PANELS DENSIFY TOWARDS THE CENTER OF THE BUILDING'S FOLDS TO MAXIMIZE THE BUILDING'S VIEWS AT THE CORNERS WHILE PROVIDING A HIGH PERFORMANCE AND ENERGY EFFICIENT CURTAIN WALL.



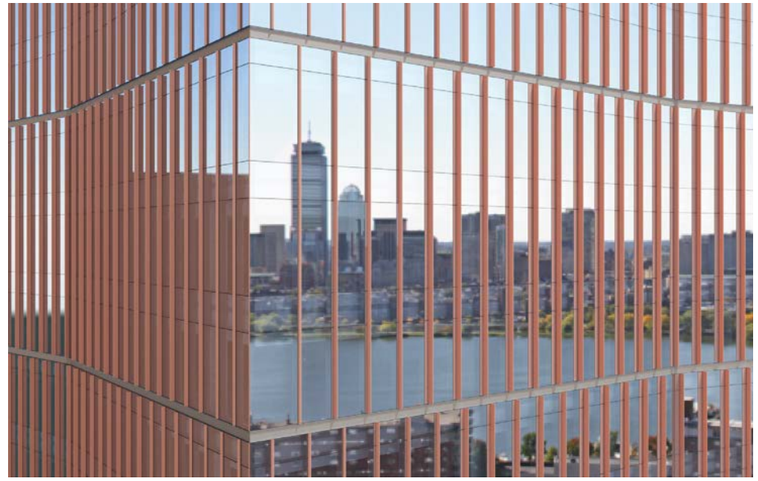
DENSITY OF OPACITY INCREASES TOWARDS FOLD OF BUILDING



THE FIN DEPTH CORRESPONDS WITH THE WIDTH OF ACID ETCH PANELS (LARGER ETCH, DEEPER FINS) IN ORDER TO MAXIMIZE THE CHROMATIC EFFECT OF THE BUILDING FROM DIFFERENT ANGLES AND ALLOW CHANGES OF LIGHT AND SHADOW TO OCCUR THROUGHOUT THE DAY.

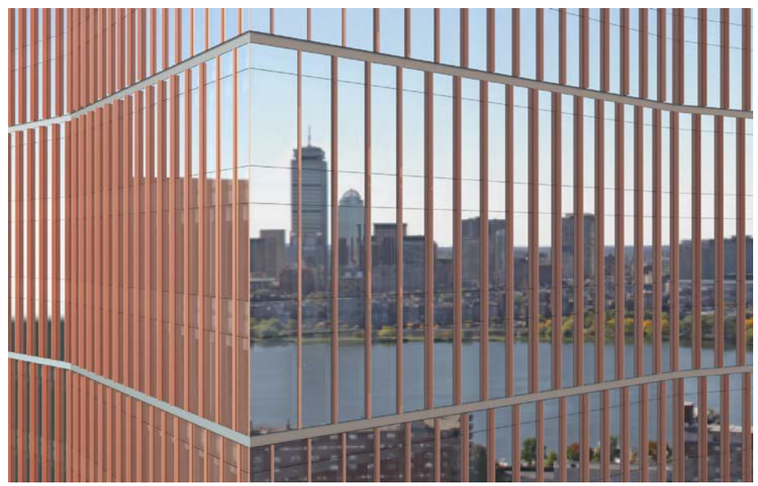


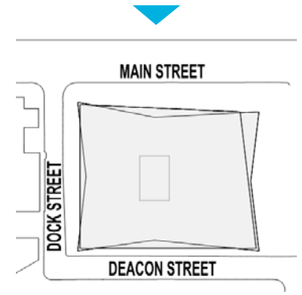
10AM

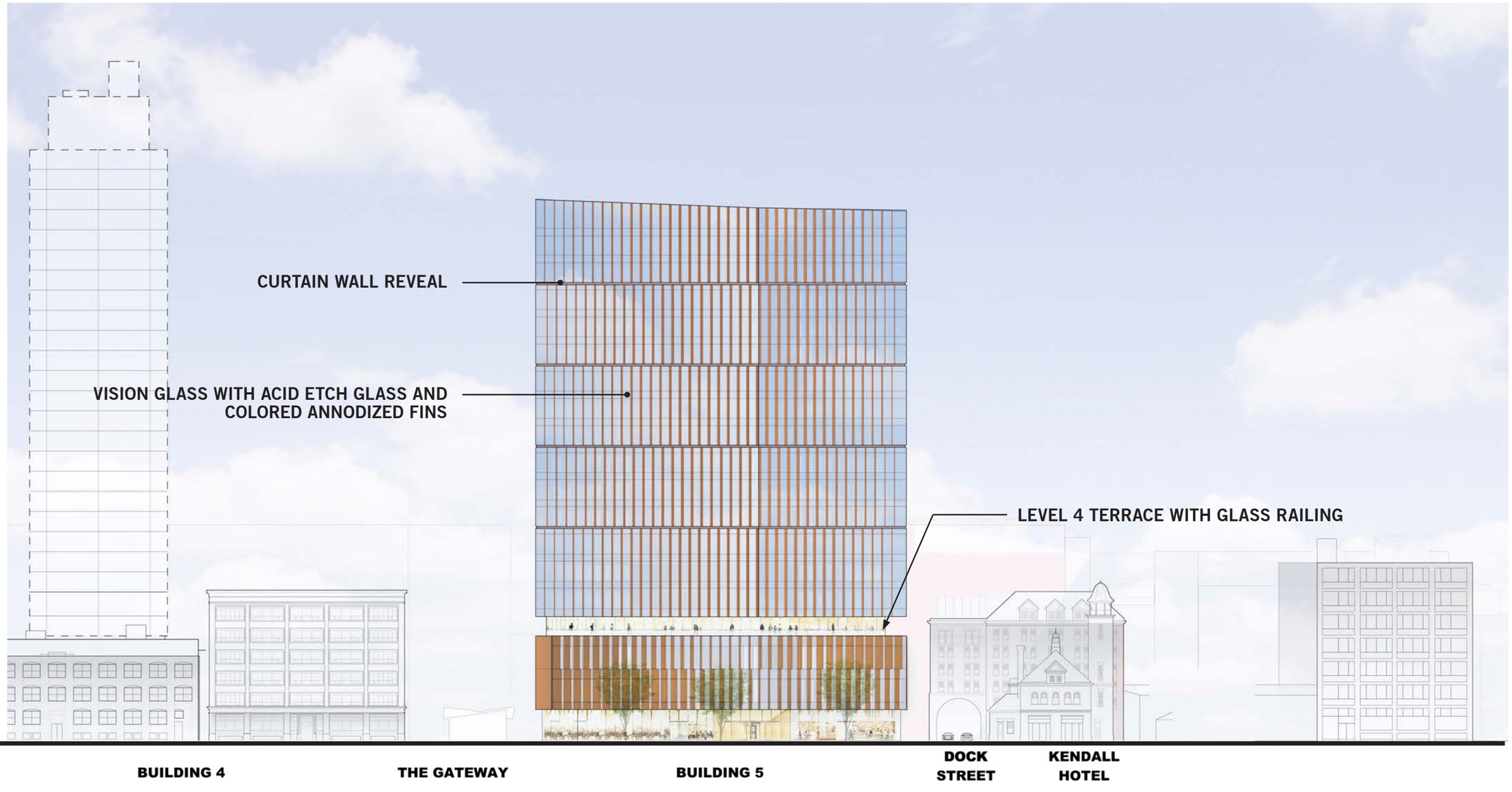


1PM

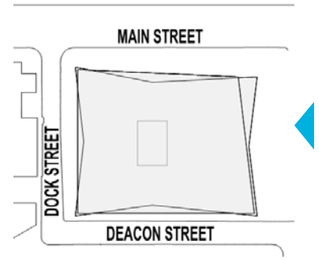
4PM

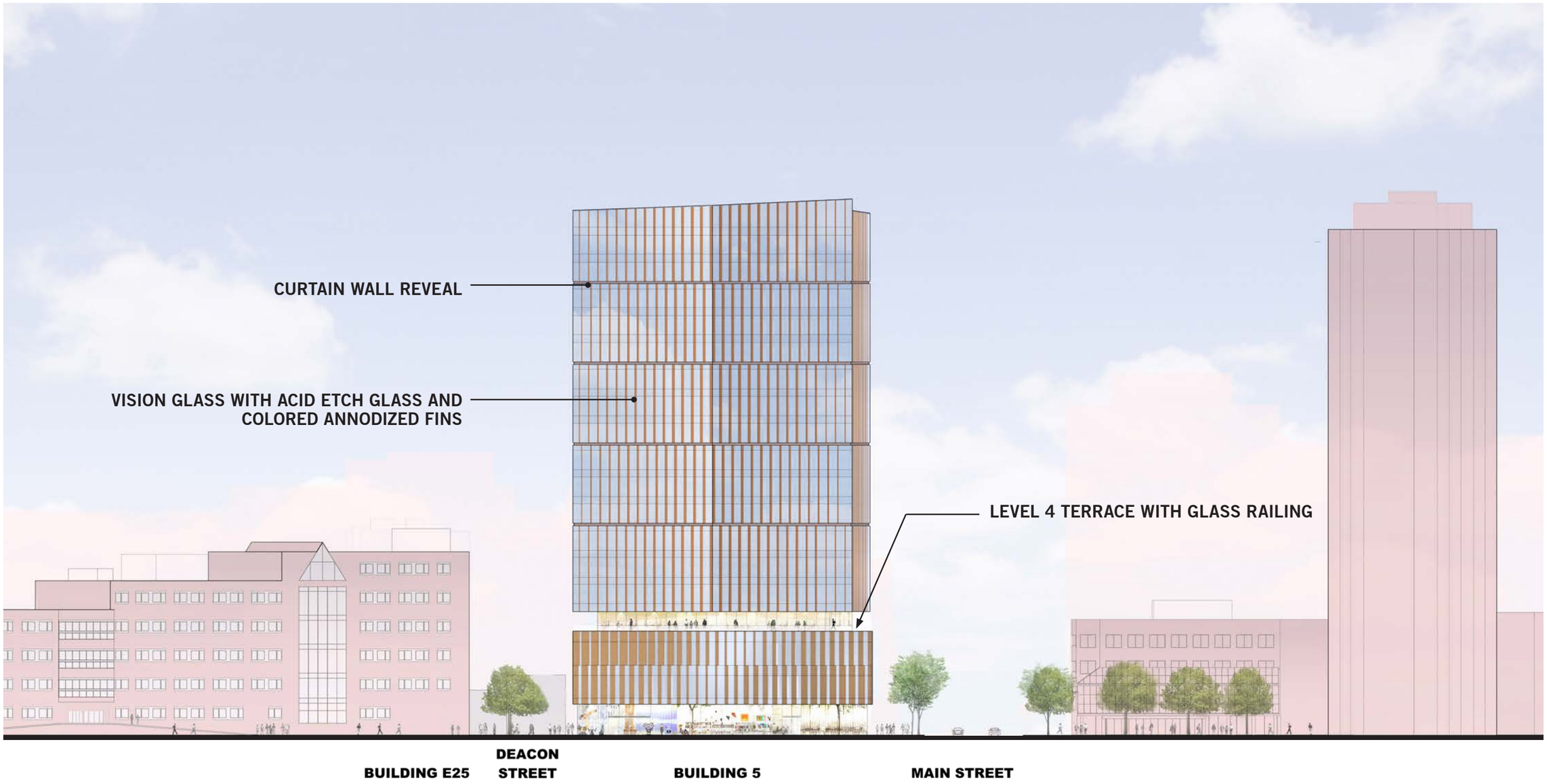




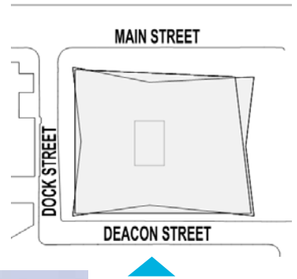


NORTH ELEVATION





EAST ELEVATION



CURTAIN WALL REVEAL

VISION GLASS WITH ACID ETCH GLASS AND COLORED ANNODIZED FINS

LEVEL 4 TERRACE WITH GLASS RAILING

KENDALL HOTEL

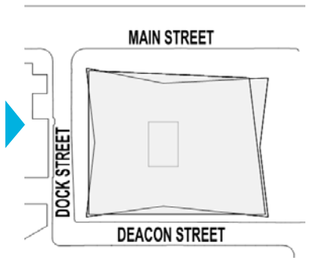
DOCK STREET

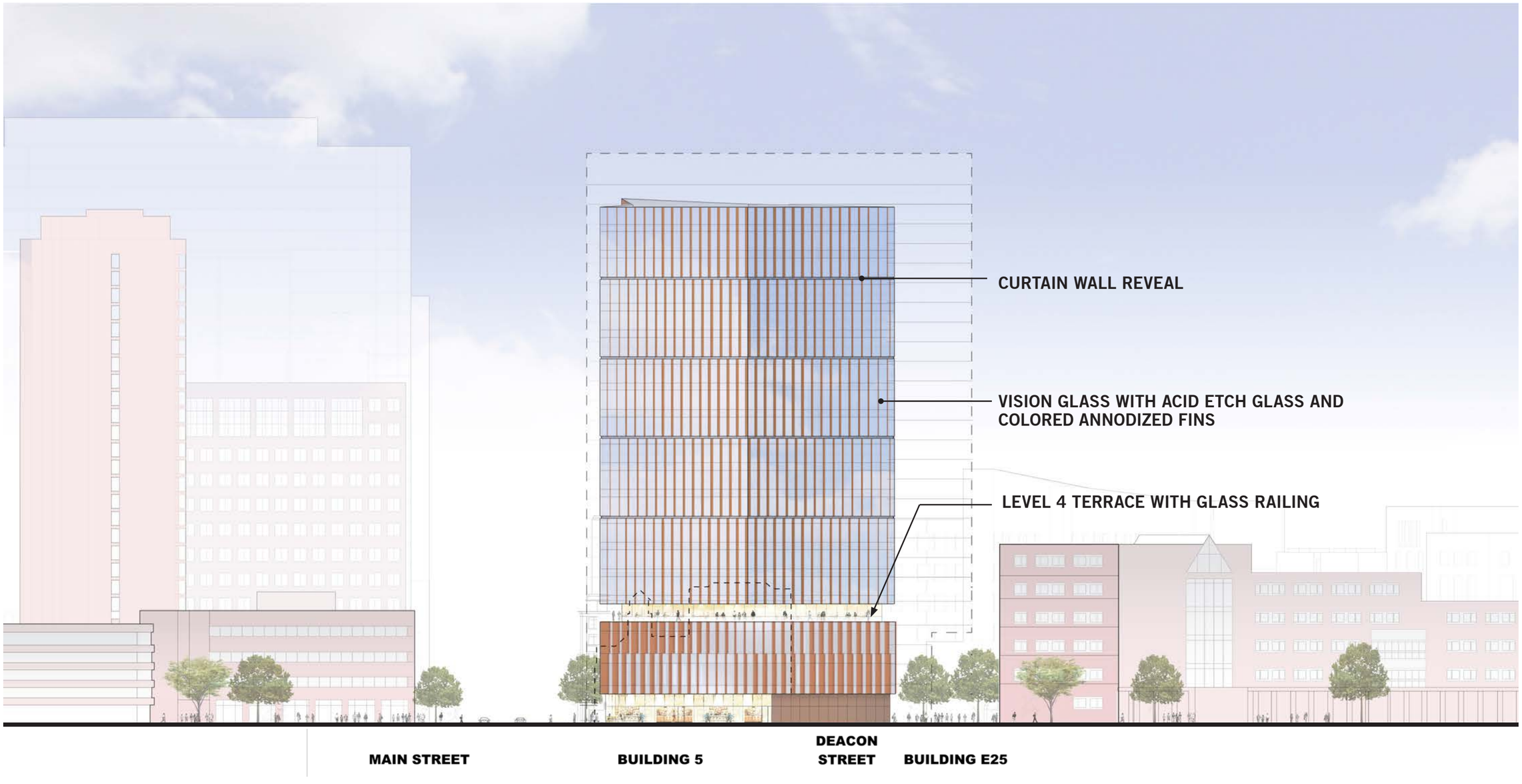
BUILDING 5

THE GATEWAY

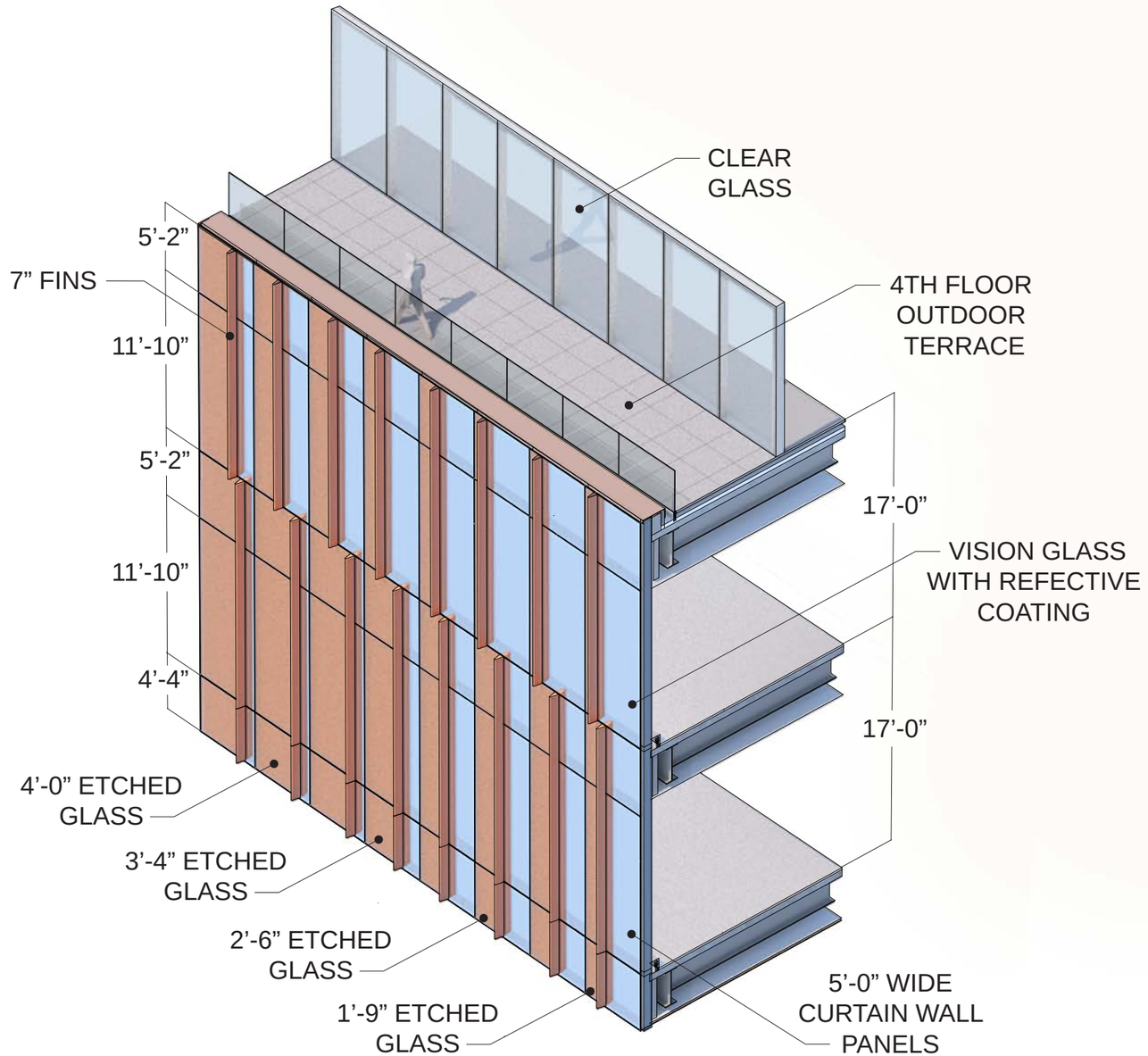
BUILDING 4

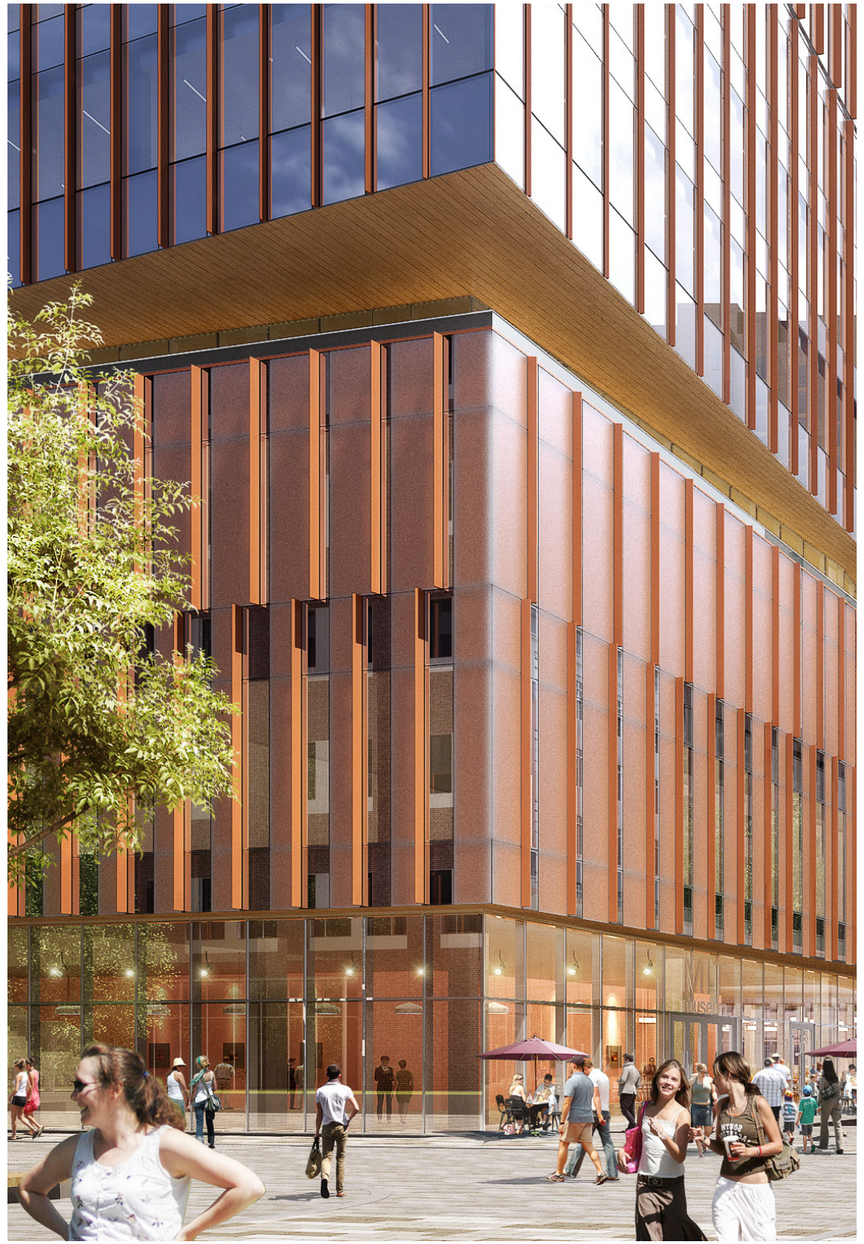
SOUTH ELEVATION



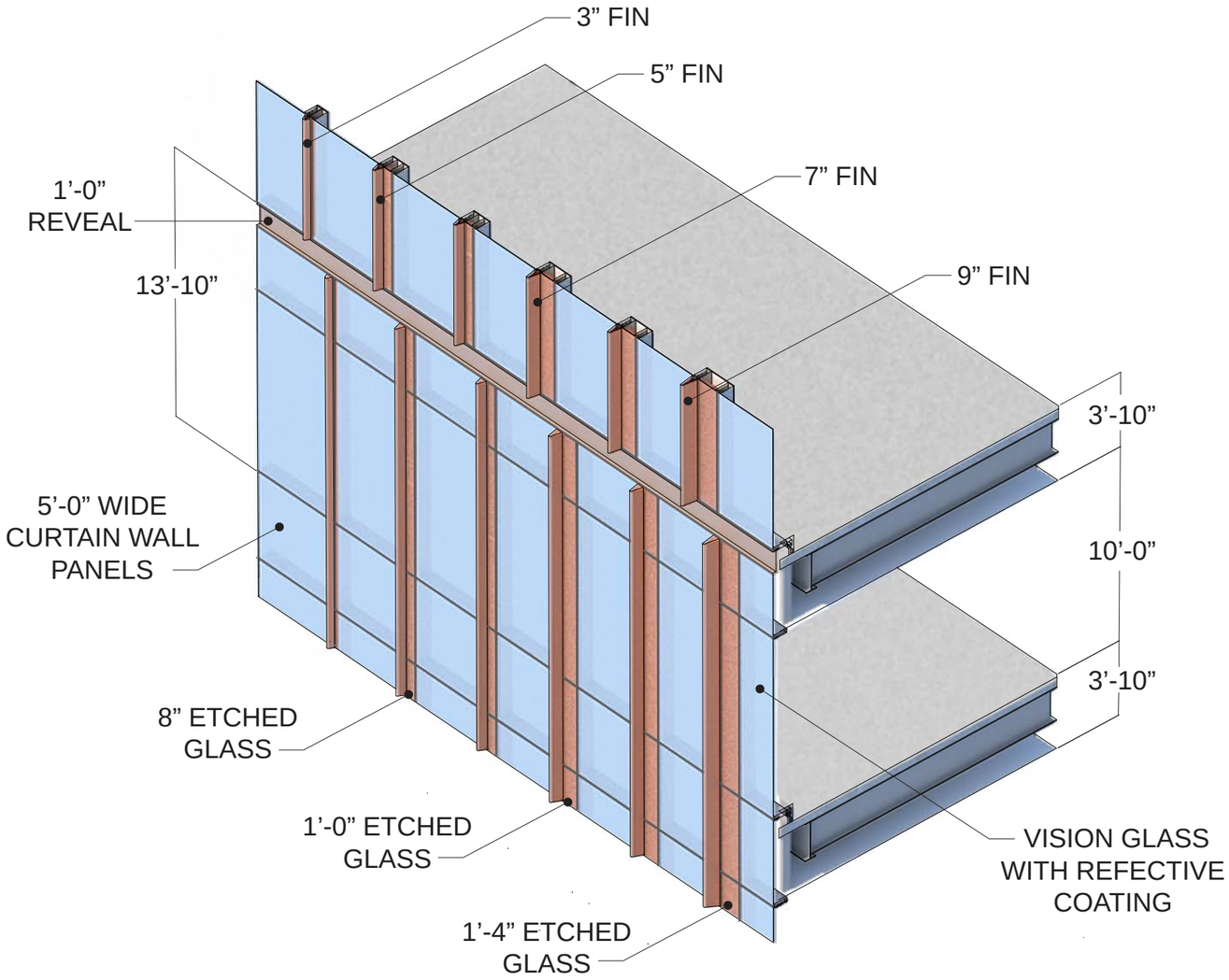


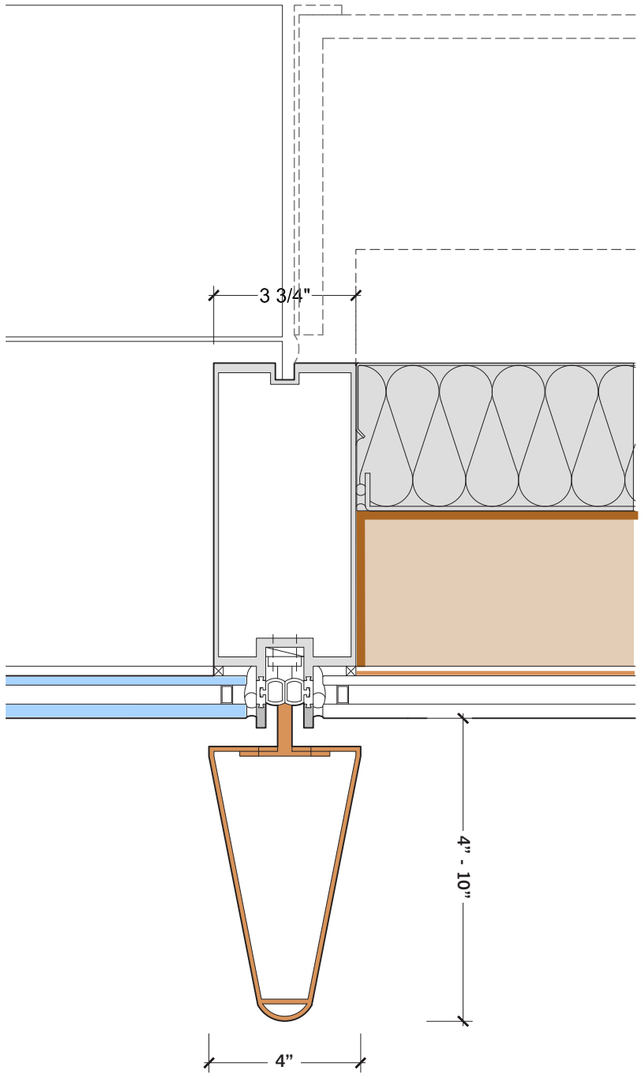
WEST ELEVATION



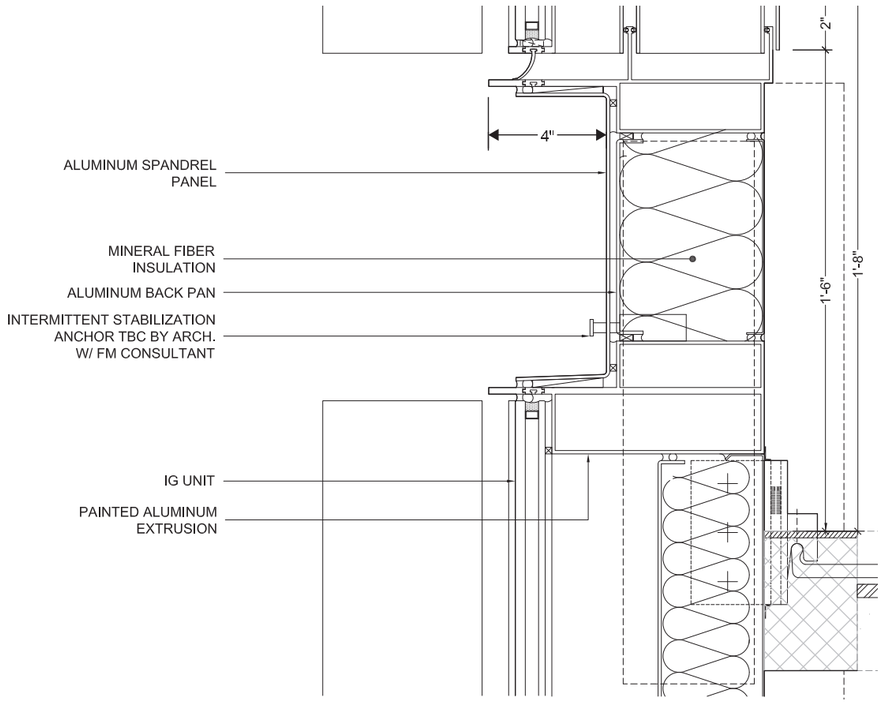


WALL DETAIL AXONOMETRIC - PLINTH


3” FIN
5” FIN
7” FIN
9” FIN
1’-0”
REVEAL
13’-10”
5’-0” WIDE
CURTAIN WALL
PANELS
3’-10”
10’-0”
3’-10”
8” ETCHED
GLASS
1’-0” ETCHED
GLASS
1’-4” ETCHED
GLASS
VISION GLASS
WITH REFECTIVE
COATING



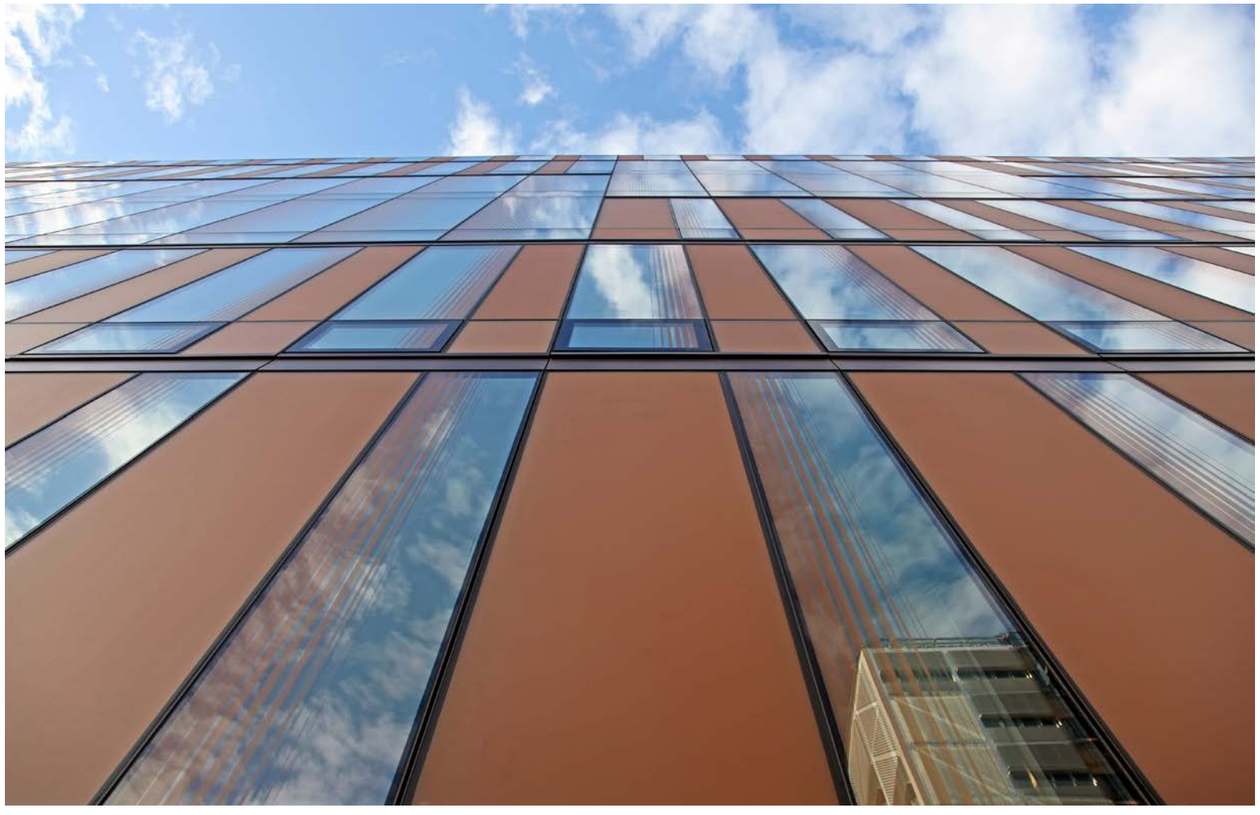
VERTICAL FIN

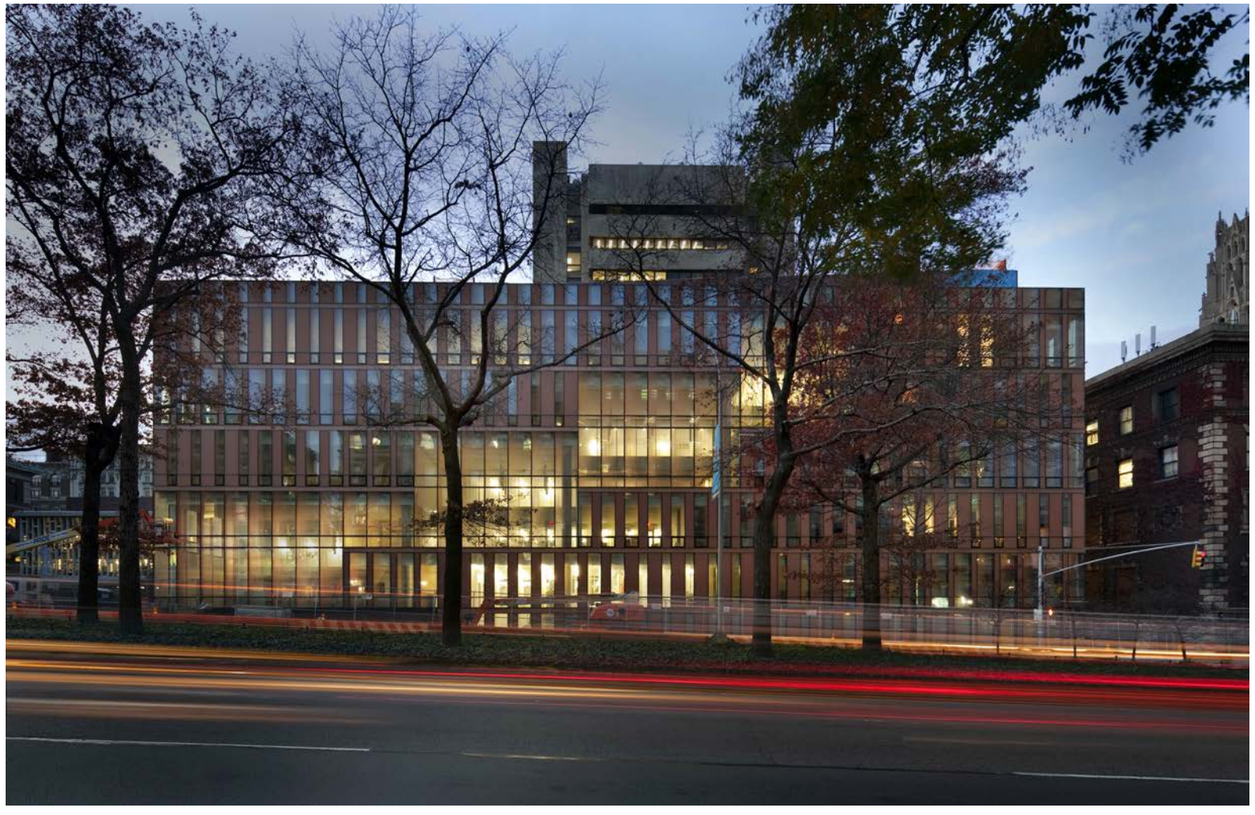


HORIZONTAL BAND

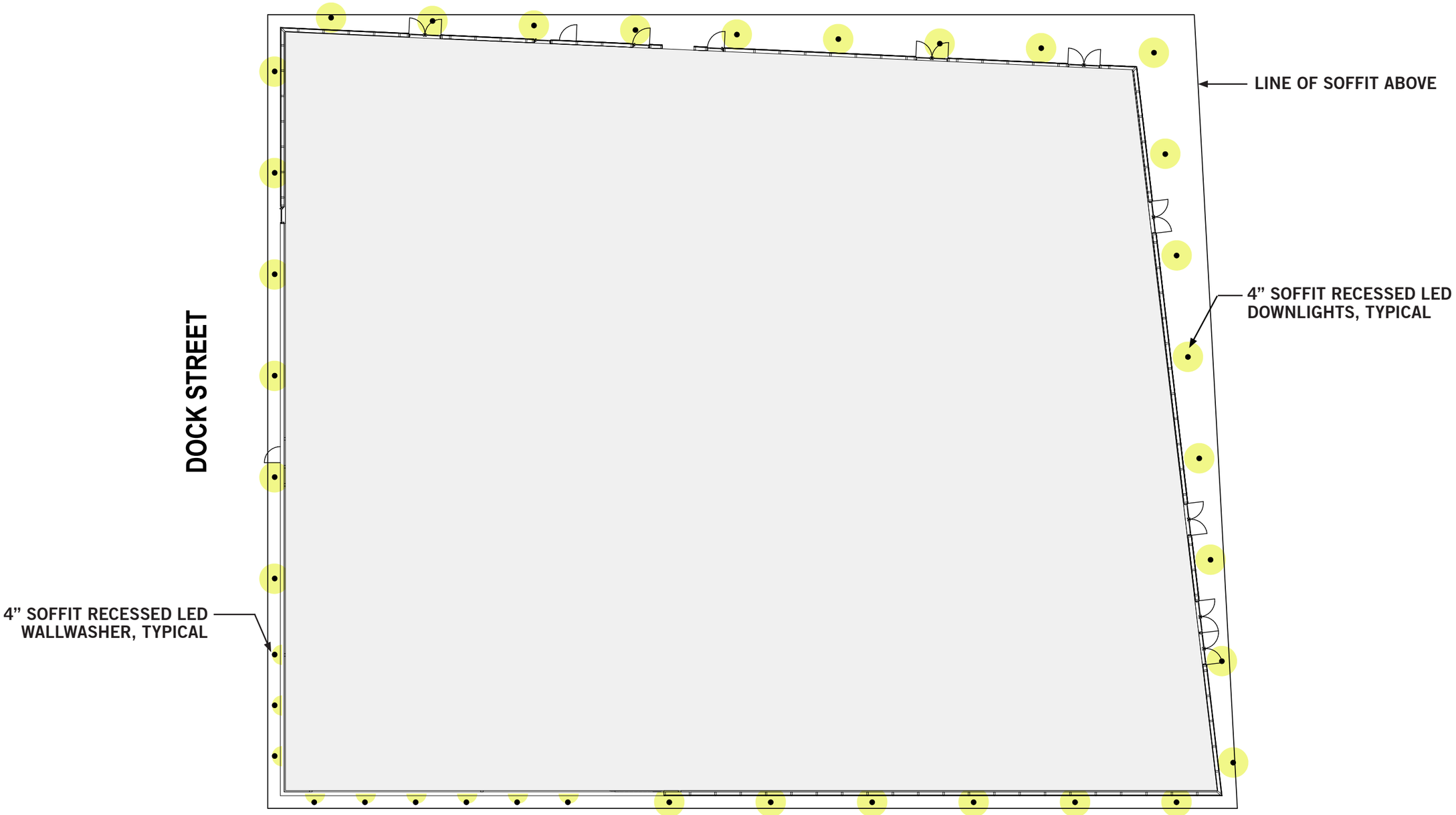
WALL DETAIL - CURTAINWALL


BGT Bischoff Glastechnik
BGT Bischoff Glastechnik
BGT Bischoff Glastechnik





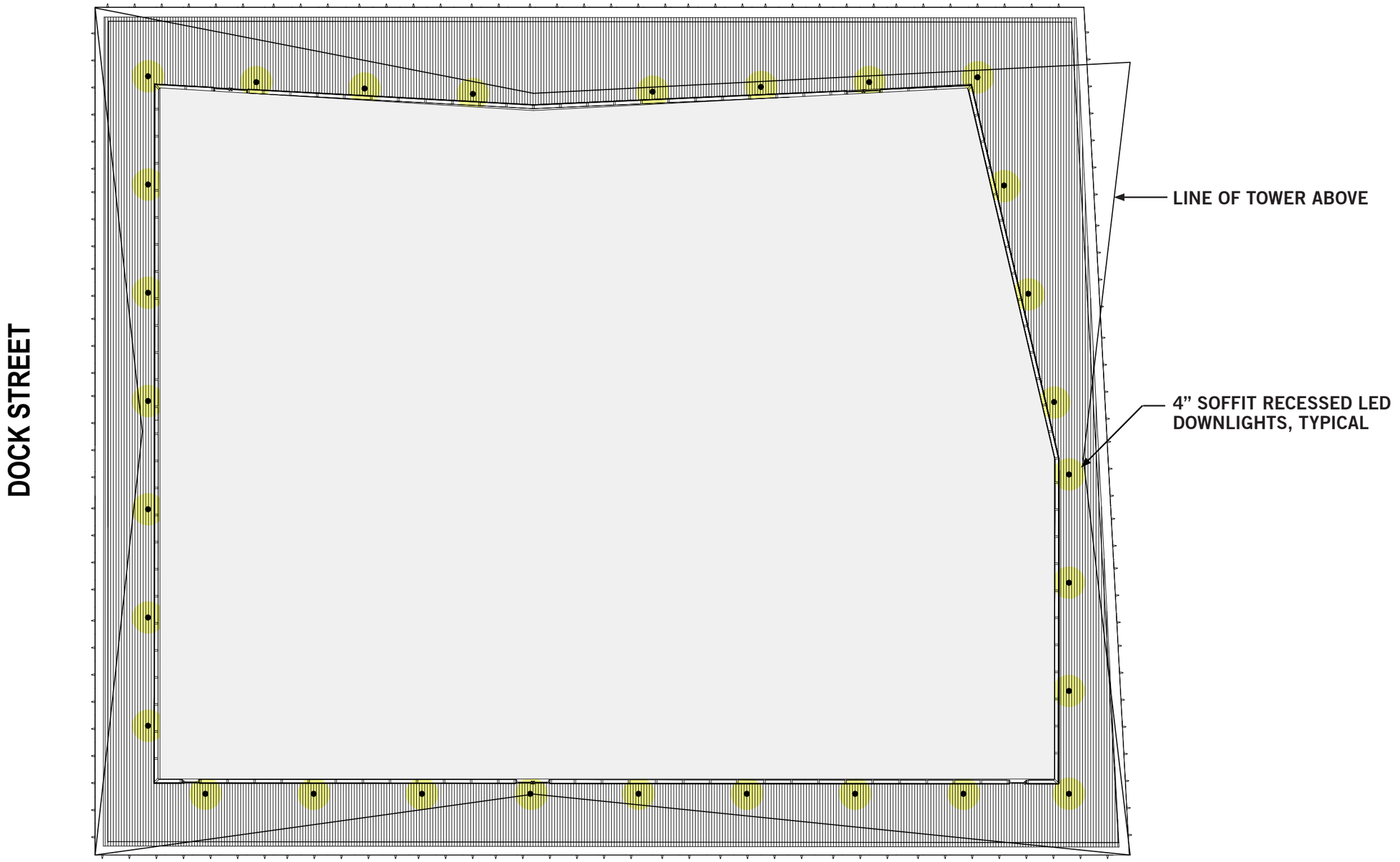
MAIN STREET



DEACON STREET

LIGHTING PLAN - PRELIMINARY - GROUND FLOOR

MAIN STREET



DEACON STREET

SIGNAGE
CALCULATIONS

TOTAL SIGNAGE ALLOWED - 506 SF

TOTAL SIGNAGE SHOWN ON PLAN - 500 SF

TYPES OF SIGNS:

Free standing signs:

Maximum of 2, 30 SF total area allowed, 15’-0” maximum height.

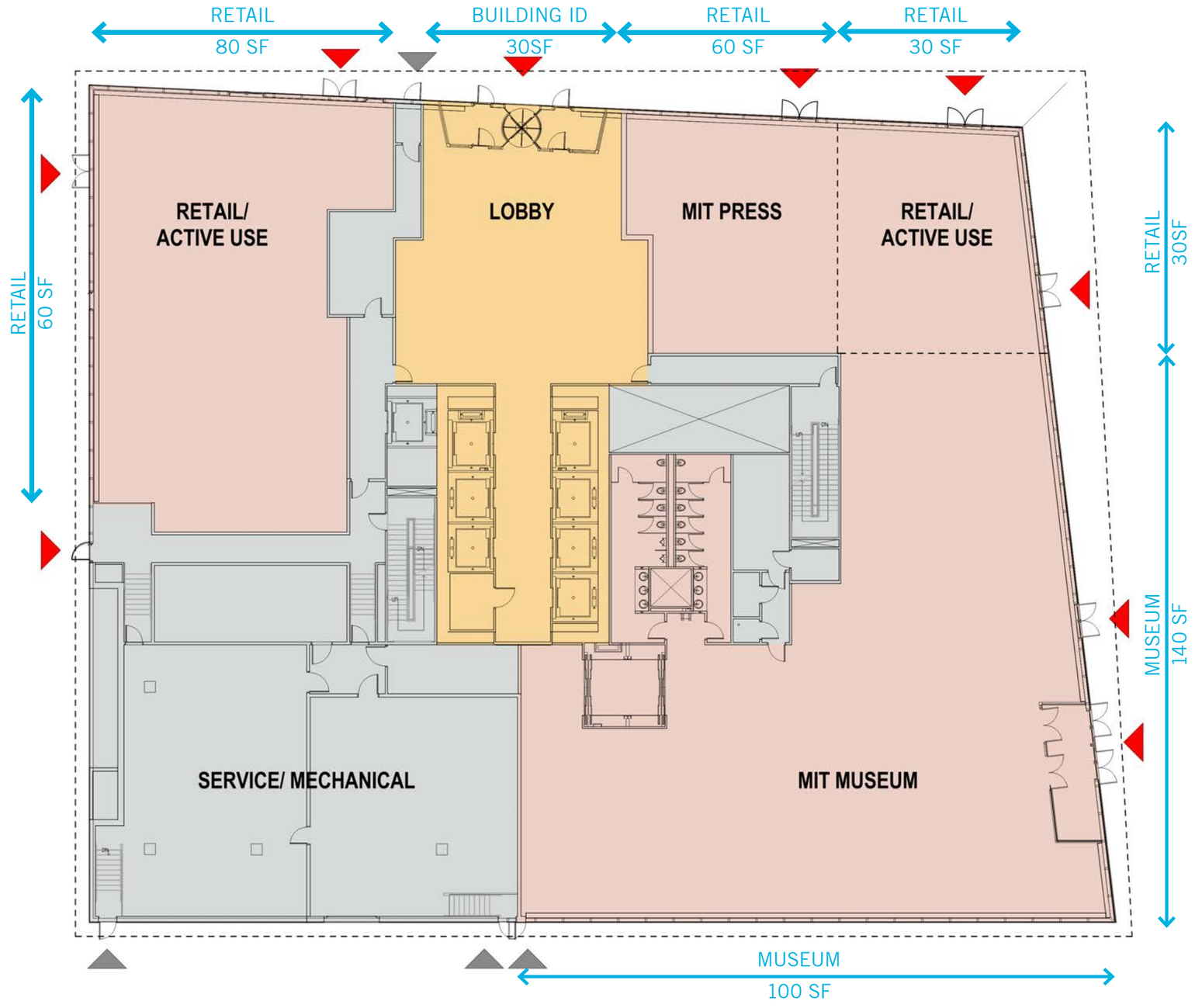
Projected signs:

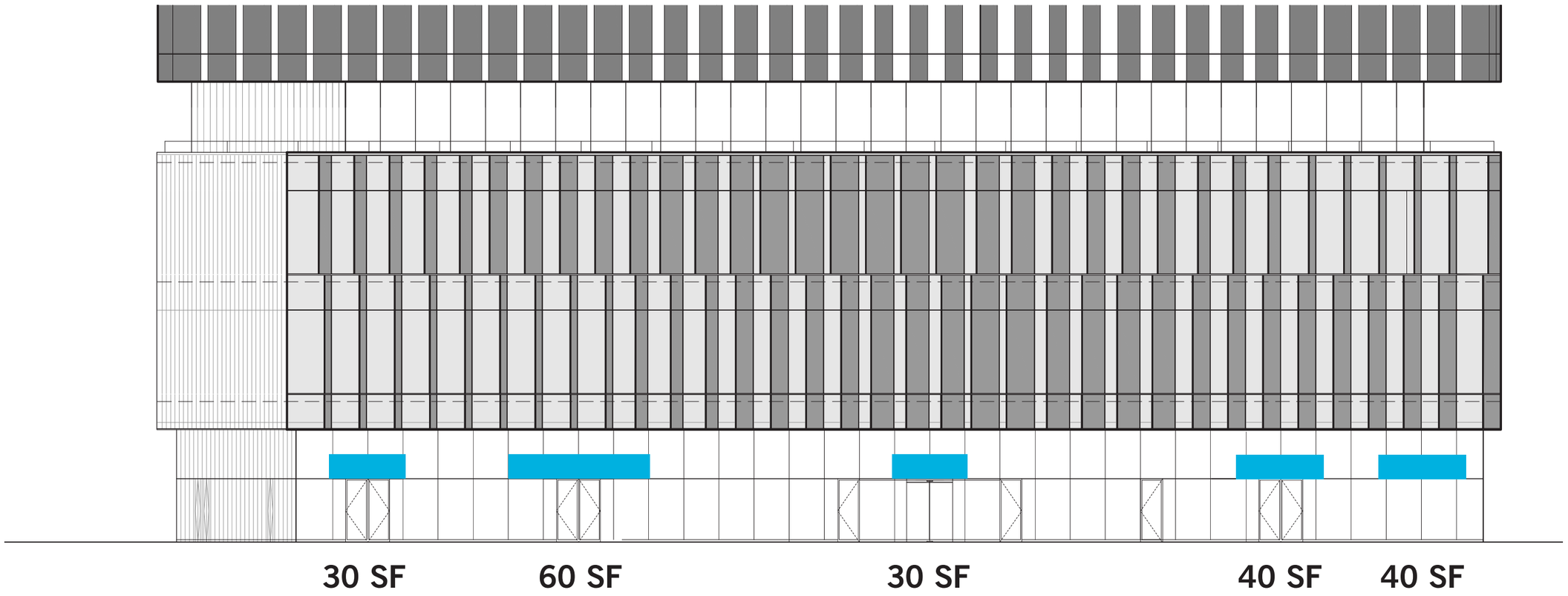
One per ground floor establishment, 13 SF maximum area each sign. One projecting sign is allowed at each public building entrance not serving a ground floor establishment. Height of signs to be less than 20’-0” or below the sill of the second floor windows (Site 5 = 20’-9”).

Wall signs:

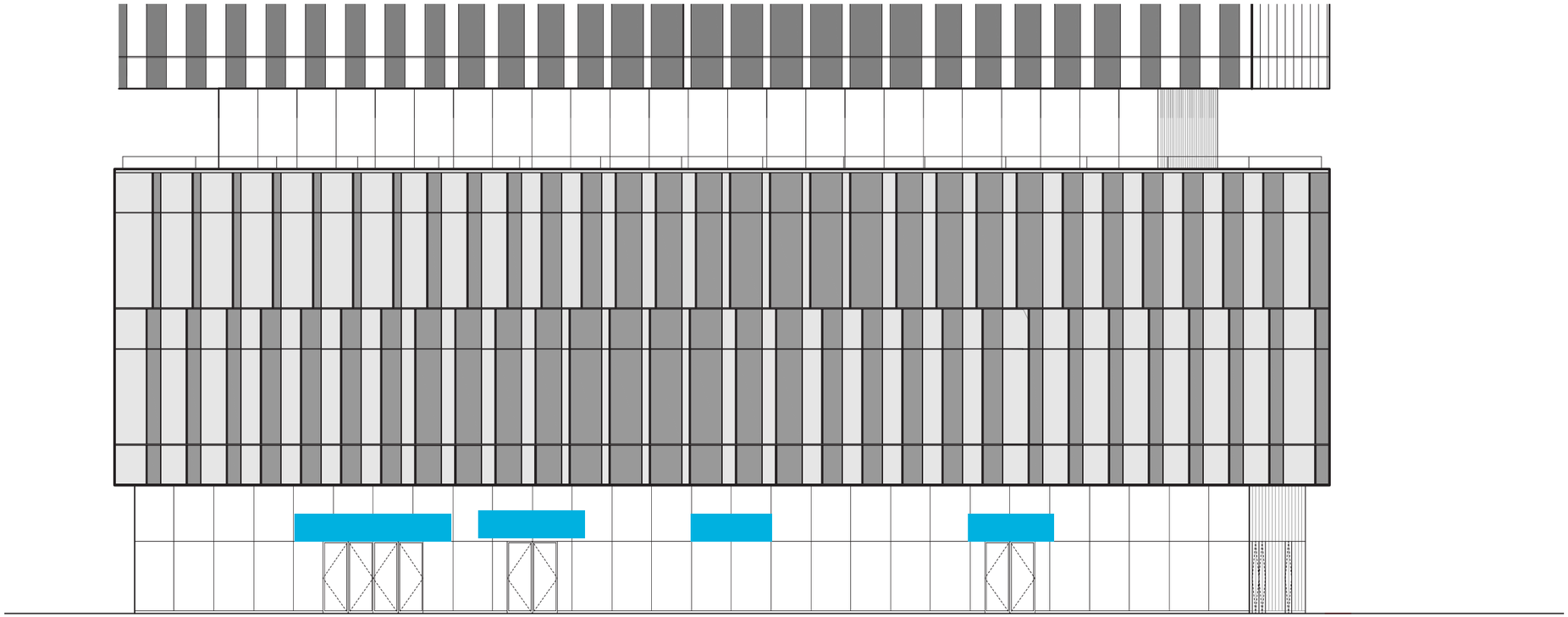
Maximum area = 60 SF each, no limit on quantity.

Height of signs to be less than 20’-0” orbelow the sill of the second floor windows. (Site 5 = 21’-3”).





SIGNAGE - NORTH


60 SF
40 SF
30 SF
30 SF

SoMa Building 5

Sustainability Narrative and Article 22: Green Building Report

Table of Contents

I Project Overview

Introduction

MIT's SoMa Planned Unit Development includes multiple Building Sites to be developed in phases over a 10 year period. Each Building will meet the applicable Green Building standards required by zoning, and the SoMa PUD committed to using LEED version 4 as a starting baseline.

Building 5 is proposed as a 436,265 sf commercial office building. The ground floor will include an entrance lobby for the office tenants as well as a café and lobby entrance to the MIT Museum. The museum tenant plans to occupy a portion of the ground floor and the first two full floors of the building.

Building 5 is part of a multi-block Kendall Square master plan that includes streetscape and landscape improvements and an extensive below grade parking and loading structure that spans through the master site development. Ample parking and bicycle storage will be provided for the building projects associated with the Master site.

The project will include energy efficient base building systems, high efficiency plumbing fixtures and a high performance building envelope. The building's exterior façade is a glazed curtain wall with insulated spandrel glass and metal panel spandrel system Site improvements include a number of streetscape improvements.

MIT is committed to developing projects that are sustainably designed and energy efficient with interior environments that are healthy for the building employees and visitors.

Sustainability Design Overview

This memo provides an overview of the sustainability efforts and decisions related to the Building 5 project.

MIT established a minimum commitment to LEED, (Leadership in Energy and Environmental Design) version 4 Gold level certification under the v4 Core and Shell rating system. The team's efforts are focused on developing buildings that are sustainably designed, energy efficient, environmentally conscious and healthy for occupants, visitors and the community.

MIT's Kendall Square Initiative will be one of the largest LEED v4 collections of projects on the East Coast that incorporates the latest energy standards and new sustainability approaches such as material content disclosure, designed to encourage transparency across the building materials industry. In addition to achieving the LEED project goals, the Building 5 design team has addressed the City of Cambridge's Sustainability requirements and guidelines throughout the design process.

II. Consistency with Zoning Requirements

The Building 5 project incorporates best practices for Energy and Emissions, Urban Site and Landscaping, Healthy Living and Working, Transportation, Promotion of Sustainability Awareness, Cool Roofs and Monitoring in alignment with the City of Cambridge sustainability initiatives. The team has addressed these sustainability issues with the following integrated design measures to minimize the project's impact on the environment and to enhance the project's environmental performance.

Energy + Emissions

In tandem with exploring opportunities for building level efficiency improvements, the district team performed a comprehensive district energy study that evaluated a wide range of options against multiple criteria, including energy use, emissions, space requirements, regulatory context, market drivers, phasing, and cost. The options evaluated included steam, chilled water, gas, and electricity sourced from on-site district energy plants, MIT's central utility plant, local district steam providers, building by building plants, the local energy utility, and combinations of those different sources. While the design for many of the SoMa buildings is still ongoing, the current results of the study provide a clear direction for further development. Based on the analysis of all criteria, a hybrid approach to the SoMa buildings results in the optimum overall performance including greenhouse gas emissions.

While still not formally adopted, Building 5 is designed to meet the requirements of the 9th Edition of the Massachusetts State Energy code. The Energy Efficiency requirements of the State Code roughly align with ASHRAE 90.1-2013. The Stretch code overlay requires projects demonstrate a 10% site- or source-energy improvement over the ASHRAE 90.1-2013 baseline.

The reference standard for LEED v4 is ASHRAE 90.1-2010, the project will make impactful efforts to reduce energy consumption in order to ensure that the desired energy reduction levels are met. At a minimum, the project will meet the LEED prerequisite building performance requirement of a 2% annual energy cost savings when compared to a baseline calculated using the methodology outlined in Appendix G of ASHRAE Standard 90.1-2010.

Building improvements in energy efficiency will bet met through a highly considered sustainably-conscious building design, efficient base-building systems and equipment, improved thermal performance of the building envelope, and a required reduction in tenant lighting power density from the code minimum. Throughout the design process, the design team will run several iterations of the energy model in order to consider the benefits of any additional proposed energy conservation measures (ECMs). This project is planning to implement high efficiency MEP systems including chilled beams and an energy recovery system. We are using an eQuest DOE-2 energy simulation model for calculating the building performance. The building geometry, materials, and HVAC systems included in the design model are based on the design documents for this project.

Energy Supply: The project is actively exploring renewable energy sources including the viability of a roof top photovoltaics array. CHP is not included in this project since a CHP system is not viable for projects with very limited domestic hot water demand, such as an office building.

Energy Storage Strategies: Energy Storage strategies are not included in this project.

Strategies for Transitioning to Net Zero: Strategies to a net zero building would include the addition of renewable resources such as solar PV, wind turbines, etc. However, due to the small footprint of the project and dense project neighborhood, these strategies will only

provide some of the necessary energy demand for the building and its future tenants. The design team investigated the feasibility of incorporating a geothermal. However, given the site constraints, the area required to meet a significant portion of the building's heating and cooling load, appears to exceed what is available.

Urban Site + Landscaping – Water Management

The Kendall Square project improves upon the existing paved surface area with the inclusion of increased landscape area hat provides habitat and pedestrian tree canopy cover, active outdoor recreation areas, and stormwater management and reuse strategies. As part of the overall development, the design of Building 5 will include rainwater management and site landscaping strategies while employing strategies to reduce domestic potable water consumption. The current proposed design incorporates potable water use reductions, stormwater management in SoMa open space areas, native vegetation, and contributes to the reuse of stormwater for non-potable demands as outlined in the Zoning Requirements.

Building 5 is an important contributor to the overall SoMa district rainwater management approach. Overall, the development project will achieve a 68-70% annual average reduction in site runoff through stormwater reuse and site infiltration. All stormwater falling on the SoMa site areas will either be infiltrated through permeable pavement installations into the fill between the garage and surface hardscape, directed to planted areas that include low level native plantings or trees within the open space, or directed to catchment grilles that will direct runoff into a district stormwater tank.

To reduce demand on the already strained municipal stormwater system, rainwater from roof areas (including Buildings 3, 4, and 5) will be diverted along with site runoff from the open space areas into a district stormwater retention tank located in the below grade garage. The collected water will be filtered and stored for reuse as cooling tower makeup water on the roof of Building 3 for year-round building heat rejection. Cooling tower makeup water is the primary demand for water in the SoMa district, over building domestic water and irrigation water. In addition, comparing seasonal rainfall to demand profiles for irrigation reuse versus cooling tower reuse shows that the demand for cooling tower makeup water is a better fit to maximize the amount of captured stormwater. Moreover, cooling towers do not require drinkable (potable) water, and stormwater requires less treatment than greywater (sink/shower water) or blackwater (toilet/kitchen water) prior to being reused in building applications. Therefore, stormwater reuse for the cooling towers on top of Building 3 is the optimal rainwater management and potable water reduction reuse strategy for the SoMa district.

Healthy Living + Working

Providing healthy living and working environments is a further defining factor of high performance buildings. The Building 5 project incorporates envelope design that maximizes access to daylight and views while managing occupant thermal comfort and energy use. The design provides access to daylight while enhancing visual and thermal comfort through the use of a strategically designed high performance, glazed curtainwall design. The team has balanced extruded mullions with insulated shadow boxes at the sill area and above the vision area of the glazing while maintaining clear glazing in the vision area. The team has set a goal of a center of glass U-value of 0.36 overall. The glazing at the top of the window contributes to deeper daylight penetration to provide more natural light to interior spaces to maximize the perimeter daylight zone while reducing the need for electric lighting. Direct views through the glazing provides connection to the outdoors for occupants, including quality views to the site open space and neighboring streetscapes. In contrast, external shading has been designed to have limited impact on views while shading the glazing from solar gain and occupants from excessive direct solar glare. This shading will improve thermal comfort for occupants with workstations or offices situated along the perimeter who would otherwise be in direct sunlight.

Transportation

Located within an existing dense urban area, the Kendall development contributes to the reduction of traffic impact on the community while accommodating alternative transportation strategies to reduce mobility related Greenhouse gas emissions associated with transit to this new destination. The SoMa district's advantageous position in Kendall Square locates it at a nexus of MBTA Redline subway, bus, shuttle service and transit connectivity.

MIT will improve bicycle infrastructure to support and extend the successful bicycle connectivity of the Cambridge and Boston metro areas to support the decreasing reliance on personal vehicles in transit. Bicycle parking provided in the garage us in an area dedicated to each building while street level bicycle racks will provide short-term bike storage to visitors to the various buildings. In addition there will be two new Hubway stations located with the SoMa district to further encourage the casual rider to make use of the regional bike share system.

By moving all existing parking below grade from the surface lots covering the majority of the district, the development is able to provide an expansive open space with vegetation, room for programming and community engagement, and quality exterior environments. Building 5 is directly connected to the open space which benefits the entire community, through pedestrian friendly access to amenities and retail.

Low-emitting and fuel-efficient vehicles will be provided with preferred locations in the below grade garage. Charging stations for electric vehicles will be dispersed throughout the garage, and the team has designed for flexibility to increase the number of charging stations in the future as demand for electric vehicles rises.

Promotion of Sustainability Awareness

The Site 5 project will support sustainability awareness by sharing, through public engagement, the energy efficiency and sustainable design measures incorporated into the site 5 building project. The project will provide a written set of Tenant Design and Construction Guidelines for the future building tenants to encourage or require (as dictated by LEED V4 standards) sustainable and energy efficient measures be incorporated into fit out design and construction. Tenants will also have the opportunity to monitor their energy use

through the installation of energy and water use meters in their individual MEP designs.

Cool Roofs
The design team has taken several steps to include building-specific strategies to help reduce the project's impact on the local heat island effect. The project aims to achieve this through the use of a light-colored roofing membrane with a minimum solar reflective index (SRI) of 78, hardscape materials with an initial solar reflectance (SR) of 0.33 or greater. Additionally, locating the parking in a below grade parking structure mitigates the need for dark asphalt paved uncovered on-site parking, allowing for additional site landscaping areas and shading measures.

Potable Water Use Reduction

The project will reduce potable water use through installation of low-flow high efficiency plumbing fixtures. As per the minimum requirements of the LEED v4 Indoor Water Use Reduction prerequisite, the project must implement water use reduction strategies that use a minimum of 20% less potable water than the baseline calculated after meeting Energy Policy Act of 1992 fixture performance requirements. All newly installed toilet and urinal flush-valves, and showerheads will be WasterSense labeled. Preliminary calculations (as shown in the Article 22 report) indicate the project is targeting over a 30% reduction in potable water use. To align with the base building water use reduction goals, the Museum tenant and future office and retail tenants will be required to comply with set limits on installed fixtures flush and flow rates. Additional water conservation measures and higher-efficiency fixtures are being considered in order to achieve a greater reduction in potable water use for the project.

Daylight and Visual and Thermal Comfort
Access to thermal comfort will be provided by a building automated system that will employ local thermostats to maintain a comfortable temperature and relative humidity within the building. Tenants will be encouraged to design their fit-out to maximize daylight and quality views due to the high amount of glazing in the project design.

Monitoring
The project will comply with the City of Cambridge's Building Energy Use Disclosure Ordinance and commit to sharing building energy data annually as per the ordinance. Monitoring building energy data and sharing with the City allows for not only accountability in energy performance but consistency internally in building operations and ongoing identification of operational deficiencies. MIT and the design team understand the importance of metering building energy data to evaluate whether the building is being operated as efficiently as designed. Building meters will be installed to measure water and energy consumption in line with the LEED v4 requirements as well as additional metering of building performance data for the tenant spaces and building systems. Having sufficient meters in place will allow building operation to be continuously evaluated over time, evolving to improve performance, increase efficiency and reduce emissions. Building meters can also be paired with lobby scoreboard features to display energy performance real-time for occupants, going beyond the City disclosure requirement and creating tenant awareness around energy conservation.

III. Consistency with Sustainability Guidelines

This section outlines the design team's considerations, strategies and benchmarks with respect to MIT's Kendall Square Initiative Sustainability Guidelines. The Building 5 design process includes ongoing integrated design efforts to incorporate proposed strategies from the Net-Zero Action Plan and the likely climate change conditions as described in the Cambridge Climate Vulnerability Assessment. A summary of the decision making process is included below for the primary sustainability guideline measures including how the team investigated and incorporated strategies or where the investigation demonstrated a more efficient or effective opportunity.

Energy Performance
Building 5 has established a 10% target for reduction in energy cost from the more stringent ASHRAE 90.1-2010/LEED v4 Baseline. The design team will continue to evaluate additional energy efficiency measures as described in the above section *Design Response to Zoning Requirements: Energy + Emissions*. The team is collaborating with Eversource to refine the numerous possibilities where the building systems design can best be maximized to reduce energy demand and mitigate Greenhouse gas emissions.

In keeping in alignment with the new State Stretch code requirement, the team has also evaluated the proposed design against the ASHRAE 90.1-2013 Appendix G baseline. The project is estimating 14% site energy reduction savings. This savings assumes future tenants will be required to design interior lighting not to exceed a reduced lighting power density allowable maximum. The new stretch code requirement is a 10% improvement in site or source energy use. As designed the project is in compliance.

Energy Supply
To date, the design has considered alternative sources of energy, such as solar, district steam, and geothermal heating and cooling.

Given the limitations on an urban site for locating equipment, photovoltaics or solar thermal panels provide limited energy savings. The design team is investigating opportunities to include PVs in the future on open roof areas. The team agrees that future solar installations for amenity areas or site areas could provide educational opportunities while supplying energy for site features. In addition, as efficiency of solar panels and energy storage improves, there is a potential for low-voltage powered LED lighting to be installed operating on DC power.

The team performed a comprehensive analysis of potential district steam connections, as outlined in the above section Design Response to Zoning Requirements: Energy + Emissions. Due to the proximity of the Charles River waterfront, the team discussed rejecting heat to the river, however, this approach is not permitted under current environmental regulations.

Energy Storage
Energy storage is not feasible for the building due to space considerations. As energy storage technologies improve, the team will continue to consider opportunities to incorporate energy storage, possibly paired with advancements in solar renewable technologies.

Commissioning
MIT has adopted the Enhanced Commissioning standards as outlined in LEED v4. An on-going commissioning plan for mechanical, electrical, plumbing, and renewable energy systems will be drafted and implemented for Site 5 in accordance with the LEED-CS v4 requirements for the EAp1 Fundamental Commissioning prerequisite and EAc1 Enhanced Commissioning credit. Through on-going operations MIT will consider opportunities for re-commissioning of building systems to maintain performance and ensure maximum energy savings and emissions reductions. MIT understands the value of strong commissioning practices and therefore, the building 5 team has initiated the commissioning process by engaging with a Commissioning agent early to allow for a thorough review of the proposed systems design.

To further ensure the building is constructed in alignment with their Owner Project Requirements and energy efficiency goals, MIT plans to engage a Building Envelope Commissioning agent, (BECxA). The BECxA will review the project documents and provide recommendations for improvements. Additionally, the BECxA will witness the on-site testing of building envelope mock-ups and review testing results.

The project intends to pursue both the monitoring-based and building envelope commissioning options of the enhanced commissioning credit.

Transitioning to Net Zero
The location of the building in a dense urban area presents challenges for achieving net-zero energy completely on site. The proposed design reflects new construction being built to the best of currently available technology and efficiency given market and program restraints. The design team continues to evaluate opportunities to reduce energy consumption and greenhouse gas emissions.

In concert with the district energy studies, the team has brainstormed pathways for potential emissions reductions and net zero energy goals, including speculation about future technologies, future greening of the grid, and what it would take to fully electrify the building. In terms of future technologies, the team anticipates that chilled beams will become the new standard in office tenant fit-out spaces and has adopted this system within the building design. Additional energy savings are likely to be seen in advancement of building controls and active personalization of the interior work environment. New energy efficient technologies have the opportunity to be tested and incorporated as tenant turnover happens to bring spaces up to the most current integrated systems.

There are other on-going internal team discussions for transitioning to Net Zero to reduce initial demand on fossil fuel sources, including roof top photovoltaics, geothermal through a PPA, fan coil units driven by chilled beams (for tenant fit out) thermal storage, and possibly, battery storage.

Resilience
The main mechanical utility room is located on the 18th floor. Critical electrical equipment (transformers and switchgear) will be located on level one of the building but above elevation 26'-0".

A diesel emergency generator is located in a weather proof enclosure on the roof of the building. The tenants will have the ability, (space to have separate emergency generator power if desired.

E. Zoning Code Standards Compliance

The building is compliant with the Cambridge Zoning Ordinance and PUD 5 referenced in the Ordinance.

Connecting to Existing Steam

Feasibility of connecting to steam has been evaluated and is not likely because:

- Steam would need to be brought to the building from 3rd street which would be a large upfront cost and is very difficult given the need to cross Main Street and the MBTA tunnel
- Veolia rates for steam are very expensive and would be a financial detriment to the project.
- Relying on a 3rd party to supply steam would be a reliability concern.
- Veolia relies on fossil fuel sources for the plant, increasing challenges to transition to Net Zero energy in the future.
- Team working to understand GHG calculation methodology for the Veolia plant to confirm if continued consideration is necessary.

J. Sustainability Features

Please refer to the project data and narrative included below and the LEED-CS v4 project scorecard (Appendix A) included below for more detailed information on this category.

K. Landscape Specific

- Portable Water Use Reduction: **included in Master Site/Landscape narrative**
- Stormwater Management System: **included in Master Site/Landscape narrative**
- Native Vegetation: **included in Master Site/Landscape narrative**
- Stormwater for Irrigation: **included in Master Site/Landscape narrative**
- Meet DPW Standard for Pre + Post Construction Runoff: **included in Master**

Site/Landscape narrative

II. Site 5 LEED CS v4 Scorecard Summary

The Project anticipates exceeding the Gold Certification threshold of 60 credit points by attempting 62 'yes' credit points, additionally the project has earmarked 9 'likely' and 6 'maybe' credit points that require further research; these credits will remain under consideration as the design continues to evolve. Please refer to the attached LEED Core and Shell (CS) v4 Project Scorecard in Appendix A.

The breakdown of attempted credit points by LEED category are as listed below:

Integrative Process	1 point	*0 'maybe' points*
Location and Transportation	17 points	*0 'maybe' points*
Sustainable sites	9 points	*1 'maybe' points*
Water Efficiency	6 points	*2 'maybe' point*
Energy and Atmosphere	13 points	*5 'maybe' points*
Materials & Resources	4 points	*4 'maybe' points*
Indoor Environmental Quality	5 points	*0 'maybe' points*
Innovation in Design	5 points	*1 'maybe' point*
Regional Priority	2 points	*2 'maybe' points*
Total Points	**62 points**	***15 'maybe' points***

IV Site 5 LEED Credit Narrative

The project meets the LEED CS v4 Minimum Program Requirements and each of the required Prerequisites.

This project is part of a LEED Master Site project. Several Location and Transportation and Sustainable Sites credits will be attempted through the LEED Master Site documentation process and be applied to each of the individual building projects associated with the Master Site.

The project is anticipating reaching the Gold Certification level by targeting over 60 credit points. There are several additional credits which are still being researched as to whether or not the project may attempt them; it may be determined that some of these credits under consideration are not attainable. Please refer to the attached LEED CS v4 Project Scorecard included in Appendix A.

Integrative Process

Credit 1 Integrative Process 1 point

The project will meet the intent of this credit through identification of cross discipline opportunities to design a sustainable building project. The project will use early energy modeling to assess areas where energy loads may be significantly reduced including lighting and plug load demand. Additionally, the project will perform a water budget analysis to aid in establishing water use reduction targets.

Location and Transportation

Credit 2 Sensitive Land Protection 2 points

The project meets the intent of this credit through compliance with Option 1 it is located on previously developed land.

Credit 3 High Priority Site 3 points

The development area contains contaminated soils and/or groundwater; it will be appropriately remediated. This credit may be pursued as part of the Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 4 Surrounding Density and Diverse Uses 6 points

The project will meet Option 1 for Surrounding Density by being located in an area with an average density greater than 35,000 sf/acre. Additionally, the project will meet Option 2 for Diverse Uses by being located within ½ mile walking distance of at least 10 publically available diverse uses.

Credit 5 Access to Quality Transit 3 points

The project is located within ½ mile walking distance of the Kendall/MIT MBTA station. This transit station provides occupants with access to greater than 144 weekday and 108 weekend trips via the MBTA Redline, and MBTA bus lines 64, 68, 85 and CT2.

Credit 6 Bicycle Facilities 1 point

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 7 Reduced Parking Footprint 1 point

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 8 Green Vehicles 1 point

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Sustainable Sites

Prerequisite 1: Construction Activity Pollution Prevention Required

The Construction Manager will be required to submit and implement a compliant SWPPP/Erosion and Sedimentation Control (ESC) Plan for construction activities related to the construction of the Site 3 Building project. The ESC Plan will conform to the erosion and sedimentation requirements of the applicable regulations and specific municipal requirements for the City of Cambridge. Additionally, the ESC Plan will address management/containment of dust and/or

particulate matter generated by on site demolition and construction activities. Civil design drawings will include measures for the implementation of the ESC plan.

Credit 1: Site Assessment 1 point

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 2: Site Development Protect or Restore Habitat 1 point

The project will pursue this credit through option 2 Financial Support. The project will provide financial support to a locally recognized land trust or conservation organization equal to $0.40 per square foot area of the total site area within the LEED project boundary.

Credit 3 Open Space 1 point

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 4 Rainwater Management 2 points

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 5 Heat Island Reduction 2 points

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 8 Light Pollution Reduction 1 point

This credit may be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details. Research is on-going. If it is determined the Master Site project will not pursue this credit it will be attempted on a project specific basis.

Credit 7 Tenant Design and Construction Guidelines 1 point

The project will provide Tenant Design and Construction Guidelines for distribution and review will potential building tenants. The guidelines will outline the sustainable design and energy efficiency measures implemented in the core and shell building and provide detailed guidance for the Tenants to design and build in alignment with the project sustainability goals.

Water Efficiency

Prerequisite 1 Outdoor Water Use Reduction, 30% Required

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Prerequisite 2 Indoor Water Use Reduction, 20% Reduction Required

Through the specification of low flow and high efficiency plumbing fixtures, the project will implement water use reduction strategies that use, at a minimum, 20% less potable water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements. Summary target water use calculations provided below.

Flush Fixture Type	Baseline GPF	Design GPF	Uses/ Day	Baseline Daily Water Use*	Design Daily Water Use	
Water Closet	1.6	1.28	**2559**	*4094*	3274	
Urinal	1	.125	1299	1299	163	
Sub-TOTAL annual flush water use				**1,968,284 gal/yr**	**1,254,636 gal/yr**	
Flow Fixture Type	**Baseline GPM/ GPC**	**Design GPM/ GPC**	**Uses/ Day**	**Baseline Daily Water Use***	**Design Daily Water Use**	**% Savings**
Public Lavatory	.5gpm	.35gpm	3858	965	675	
Shower for FTEs	2.5gpm	1.5gpm	1214	1518	911	
FTE Kitchen Sink	2.2gpm	2.2gpm	122	668	456	
Sub-TOTAL annual flow water savings				**1,149,586 gal/yr**	**744,890 gal/yr**	
TOTAL annual water savings				**3,117,870 gal/yr**	**1,999,526 gal/yr**	**35.8%**

* *measured in gallons*

Prerequisite 3 Building Level Water Metering Required

The project will comply with the requirements of this prerequisite by installing permanent water meters to measure total potable water use for the building and site.

Credit 1 Outdoor Water Use Reduction 50% 1 point

This credit will be pursued as part of the Development LEED Master Site application. Please refer to the Master Site narrative provided by Atelier 10 for details.

Credit 2 Indoor Water Use Reduction 30-50% 3 points

Through the specification of low flow and high efficiency plumbing fixtures, the project will implement water use reduction strategies that target 35% less potable water use annually when compared to EPA baseline fixtures for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements. Refer to the summary water use calculations provided with WEp1.

Credit 3 Cooling Tower Water Use 1 point

The project will test the water used by the cooling tower and calculate the cycles of concentration. A minimum of five of the following control parameters will be assessed: Ca, Total alakalinity, SiO_2, Ci, and Conductivity.

Credit 4 Water Metering 1 point

The project will comply with the requirements of this credit by installing end use water meters for two of the following water sub-systems: irrigation, indoor plumbing fixtures/fittings, domestic

hot water, reclaimed water, other process water or a boiler with an aggregate projected annual water use of 100,000 gallons or more.

Energy and Atmosphere

Prerequisite 1 Fundamental Commissioning and verification Required

A third party Commissioning Agent, (CxA) will be engaged by the owner for purposes of providing fundamental commissioning services for the building energy related systems including HVAC, lighting, domestic hot water systems and building envelope. The CxA will be required to perform the scope of work required to comply with the prerequisite in accordance with ASHRAE Guideline 0-2005 and ASHRAE Guideline 1.1-2007 for HVAC & R systems

Prerequisite 2 Minimum Energy Performance Required

The project will use a whole building energy model to assess the annual predicted energy use. The model will demonstrate at a minimum, a 2% improvement in annual energy use cost when compared to a baseline building performance as calculated using the rating method in Appendix G of ANSI/ASHREA/IESNA Standard 90.1-2010. This requirement will be met by the selection of efficient building systems equipment and design and a high performance building envelope.

The HVAC systems will include

- Enthalpy Wheel Energy Recovery System
- High Efficiency Chiller plant
- High Efficiency gas-fired condensing boilers
- Chilled Beam terminal units

Additional Energy Conservation Measures include

- Lighting Power Density targets below code maximums in both core and tenant fit-out areas
- High performance window glazing
- Opaque wall and Roof Insulation levels above code minimums
- Water conserving flow and flush plumbing fixtures

Prerequisite 3 Building Level Energy Metering Required

To meet the requirements of this prerequisite, the project will install whole building energy meters for gas and electricity use by the core and shell project.

Prerequisite 4 Fundamental Refrigerant Management Required

The specifications for refrigerants used in the building HVAC & R systems do not permit the use of CFC based refrigerants. The proposed design of the HVAC systems will most likely achieve the prerequisite however, if applicable, compliant selections of any walk in freezers/coolers (installed by possible restaurant tenants), will be required. The specified chiller units use HCFC-123.

Credit 1 Enhanced Commissioning 5 points

A Commissioning Agent, (CxA), has been engaged and the commissioning scope of work will include the enhanced commissioning requirements for the building systems. The CxA's role will include reviewing the owner's project requirements, and the basis of design, creating, distributing and implementing a commissioning plan, performing a design review of the project documents, witnessing on-site installations and testing and performing commissioning of installed HVAC, lighting, lighting controls and domestic hot water systems.

Additionally the project owner may engage a Building Envelope commissioning agent to pursue building envelope commissioning for an additional two credit points. To meet the requirements for building envelope commissioning the anticipated scope of work will include the activities required to meet the credit requirements.

Credit 2 Optimize Energy Performance est. 6 points

This project is planning to attempt 6 credit points of the possible Optimize Energy Performance credits by investing in high efficiency MEP systems including an energy recovery system. We are using an eQuest DOE-2 energy simulation model for calculating the building performance. The building geometry, materials, and HVAC systems included in the design model are based on the design documents for this project. The energy cost savings is estimated to be 13% as *compared to a baseline model built per ASHRAE 90.1-2010 requirements.*

Credit 3 Advanced Energy Metering *1 maybe point*

This project is planning to install meters for future tenant spaces so that tenants will be capable of independently measuring consumption of electricity, chilled and or condenser water for cooling, and hot water for heating. Electricity will be measured for both consumption and demand and all data will be recorded at a minimum of one hour or less with a remotely accessible building automation system.

Credit 6 Enhanced Refrigerant Management *1 maybe point*

The project will specify building systems components with compliant refrigerants that are used in quantities below the maximum levels allowed by the credit requirements. Final calculations to confirm compliance will be completed when final equipment selections are made.

Credit 7 Green Power and Carbon Off Sets 2 points

The owner is intending to purchase of 'carbon off-sets' through a 5-year contract to offset a minimum of 50% of the building's energy use from renewable sources.

Materials and Resources

Prerequisite 1 Storage and Collection of Recyclables Required

Storage of collected recyclables will be accommodated on the basement level of the project in an area adjacent to the loading dock, Tenants will bring their recyclables to the designated location. On a regularly scheduled basis, a contracted waste management company will collect the recyclables.

Prerequisite 2 Construction and Demolition Waste Management Planning

The project will meet the requirements of this prerequisite by including a Construction Waste Management section in Division 1 of the project manual. The specification will include direction for the Construction manager to submit and implement a compliant waste management plan for the duration of construction.

Credit 1 Building Life Cycle Impact Reduction*3* *maybe points*

The project will meet the credit requirements by implementing a Whole building life-cycle assessment of the structure and enclosure to demonstrate a 10% reduction. The assessment will include at least three of the following six impact categories: global warming potential, depletion of the stratospheric ozone layer, acidification, eutrophication, formation of tropospheric ozone and depletion of nonrenewable energy resources.

Credit 2 Building Product Disclosure and Optimization: Environmental Product Declaration 1 point

The project will attempt this credit via Option 1. The technical specifications will include direction for the Construction Manager and their sub-contractors to provide/submit materials and products Environmental Product Declarations that conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope. The project will work to provide documentation for 20 different permanently installed products sourced from at least five different manufacturers.

Credit 3 Building Product Disclosure and Optimization: Sourcing of Raw Materials *1 maybe point*

The project will attempt this credit via Option 2. The technical specification will include information for applicable products and materials to meet one of the following extraction criteria: Extended producer responsibility, Bio-Based materials, FSC wood, Materials reuse, Recycled Content, or regionally extracted and manufactured (within 100 miles of the project site).

Credit 4 Building Product Disclosure and Optimization: Material Ingredients 1 point

The project will attempt this credit via Option 2. The project manual will include the information and direction for the Construction Manager and their sub-contractors to provide/submit materials and products documentation identifying the chemical make-up. The documentation may be the manufacturer's inventory, Health Product Declarations or Cradle to Cradle certification

Credit 5 Construction and Demolition Waste Management 2 points

The project will meet the requirements of this prerequisite by including a Construction Waste Management section in Division 1 of the project manual. The specification will include direction for the Construction manager to divert a minimum of four waste streams and 75% of the demolition and construction waste generated on site from area landfills.

Indoor Environmental Quality

Prerequisite 1 Minimum IAQ Performance Required

The building mechanical systems are designed to meet or exceed the requirements of ASHRAE Standard 62.1-2010 sections 4 through 7 and/or applicable building codes. Outdoor air flow must be monitored in accordance with the requirements pertaining to the particular system. The project will be equipped with a ventilation systems that provided 100% outside air and include an energy recovery unit.

Prerequisite 2 Environmental Tobacco Smoke (ETS) Control Require d

The entire building and the associated site will be non-smoking. This policy will be enforced through posted signage.

Credit 1 Enhanced Indoor Air Quality Strategies 2 points

The project will attempt this credit through compliance with Option 1 for mechanical ventilation. The project will incorporate permanent entryway systems, properly enclosed and ventilated chemical use/storage areas and compliant filtration media.

Additionally, the project may choose to implement one of the following indoor air quality measures: exterior contamination prevention, increased ventilation, carbon dioxide monitoring or additional source control and monitoring.

Credit 2 Low Emitting Materials 1 point

The project will attempt this credit through meeting the compliance criteria for a minimum of two of the possible six compliance categories:

- Interior paints and coatings
- Interior adhesives and sealants
- Flooring
- Composite wood
- Ceilings, walls, thermal and acoustic insulation
- Furniture

Credit 3 Construction Indoor Air Quality Management Plan 1 point

The project manual will include direction for the Construction Manager to develop and implement an Indoor Air Quality Management plan in compliance with applicable control measures as stated in the SMACNA IAQ Guidelines for Occupied Buildings under construction 2nd Edition, 2007 ANSI/SMACNA 008-2008 Chapter 3. Additional measures will be required to be implemented to ensure absorptive materials will be protected from moisture damage.

Credit 5 Quality Views 1 point

The project will use a test fit tenant layout plan to demonstrate compliance with the credit requirements to provide quality views for 75% of the regularly occupied building floor area. The quality views out of the building may include landscaped areas, sky, pedestrian walkways, and or streetscapes,

Innovation & Design Processes 4 points

Green Education
The owner may explore providing two publically accessible educational outreach programs

Green Housekeeping/Operations
The owner may explore the use green cleaning products and equipment in the common areas and provide a package for residents explaining the 'green living' components of the project.

Integrated Pest Control
The owner may explore implementing a compliant sustainable low impact pest control program for the project

Organic Landscape Management

The owner may explore implementing compliant, sustainable low-impact landscape management protocols for the project site.

Credit 2 LEED Accredited Professional 1 point

A LEED AP will provide administrative services to oversee the LEED credit documentation process.

Regional Priority Credits 2 points

Regional Priority Credits, (RPC) are established LEED credits designated by the USGBC to have priority for a particular area of the country. When a project team achieves one of the designated RPCs and additional credit is awarded to the project. RPCs applicable to the Cambridge area include: Regional Priority applicable to 02139 include: Renewable Energy Production; Optimize Energy Performance 8pt threshold; High Priority Site; Building Life-Cycle impact reduction; Rainwater Management; Cooling Tower Water Use. This project anticipates achievement of two RPCs: Rainwater Management and High Priority Site.

LEED v4 for Core and Shell Development
Project Scorecard

Project Name: MITIMCo: Kendall Site 5
Project Address:
Date Updated: 1/30/2017

Legend

Master Site credits *itlalcized* in GREEN.
Credit not applicable or not pursued

PROJECT TOTALS

Yes	Likely	Maybe	No
62	9	6	33

					GENERAL PROJECT DOCUMENTATION			Responsible
D	Y				PI form 1	Minimum Program Requirements	Req'd	Team

Yes	Likely	Maybe	No		INTEGRATIVE PROCESS		1	Responsible
1	0	0	0					
D	1				Credit 1	Integrative Process	1	Team

Yes	Likely	Maybe	No		LOCATION & TRANSPORTATION		15	Responsible
17	0	0	3					
D				N	Credit 1	LEED for Neighborhood Development Location	15	Team
D	2				Credit 2	Sensitive Land Protection	2	A10
D	3				*Credit 3*	*High Priority Site*	2-3	A10
D	6				Credit 4	Surrounding Density and Diverse Uses	1-6	TGE
D	3			3	Credit 5	Access to Quality Transit	1-6	TGE
D	1				*Credit 6*	*Bicycle Facilities*	1	A10 / PW
D	1				*Credit 7*	*Reduced Parking Footprint*	1	A10
D	1				*Credit 8*	*Green Vehicles*	1	A10

Phase	Yes	Likely	Maybe	No		SUSTAINABLE SITES		11	Responsible
	9	1	0	1					
C	Y				*Prereq 1*	*Construction Activity Pollution Prevention*	Req'd	A10
D	1				*Credit 1*	*Site Assessment*	1	A10
D	1			1	Credit 2	Site Development - Protect or Restore Habitat	1-2	Civil/LA
D	1				*Credit 3*	*Open Space*	1	A10
D	2	1			*Credit 4*	*Rainwater Management*	2-3	A10
D	2				*Credit 5*	*Heat Island Reduction*	1-2	A10 / PW / LA
D	1				*Credit 6*	*Light Pollution Reduction*	1	A10
D	1				Credit 7	Tenant Design and Construction Guidelines	1	Owner/TGE

Yes	Likely	Maybe	No		WATER EFFICIENCY		12	Responsible
6	2	0	3					
D	Y				*Prereq 1*	*Outdoor Water Use Reduction*	Req'd	A10 / Civil
D	Y				Prereq 2	Indoor Water Use Reduction	Req'd	AHA/TGE
D	Y				Prereq 3	Building-level Water Metering	Req'd	AHA/Owner
D	1	1			*Credit 1*	*Outdoor Water Use Reduction*	1-2	A10 / Civil
D	3	1		2	Credit 2	Indoor Water Use Reduction	1-6	Owner/AHA
D	1			1	Credit 3	Cooling Tower Water Use	1-2	AHA
D	1				Credit 4	Water Metering	1	AHA

Yes	Likely	Maybe	No		ENERGY & ATMOSPHERE		33	Responsible
13	1	4	15					
C	Y				Prereq 1	Fundamental Commissioning and Verification	Req'd	CxA
D	Y				Prereq 2	Minimum Energy Performance	Req'd	AHA
D	Y				Prereq 3	Building-level Energy Metering	Req'd	AHA/Owner
D	Y				Prereq 4	Fundamental Refrigerant Management	Req'd	AHA
C	5			1	Credit 1	Enhanced Commissioning	2-6	CxA
D	6		3	9	Credit 2	Optimize Energy Performance	1-18	AHA
D			1		Credit 3	Advanced Energy Metering	1	AHA
C				2	Credit 4	Demand Response	1-2	Owner
D				3	Credit 5	Renewable Energy Production	1-3	Owner
D		1			Credit 6	Enhanced Refrigerant Management	1	MEP
C	2				Credit 7	Green Power and Carbon Offsets	1-2	Owner

Kendall Building 5

Phase	Yes	Likely	Maybe	No		MATERIALS & RESOURCES		14	Responsible
	4	3	1	6					
D	Y				Prereq 1	Storage & Collection of Recyclables	Req'd	Owner
C	Y				Prereq 2	Construction and Demolition Waste Management Plan	Req'd	A10
C		3		3	Credit 1	Building Life-Cycle Impact Reduction	2-6	Team
C	1			1	Credit 2	Building Product Disclosure & Optimization-EPD's	1-2	CM
C			1	1	Credit 3	Building Product Disclosure & Optimization-Raw Materials	1-2	CM
C	1			1	Credit 4	Building Product Disclosure & Optimization-Material Ingrediants	1-2	CM
C	2				Credit 5	Construction and Demolition Waste Management	1-2	CM

Yes	Likely	Maybe	No		INDOOR ENVIROMENTAL QUALITY		14	Responsible
5	0	0	5					
D	Y				Prereq 1	Minimum IAQ Performance	Req'd	AHA
D	Y				Prereq 2	Environmental Tobacco Smoke (ETS) Control	Req'd	A10
D	2				Credit 1	Enhanced IAQ Strategies	1-2	AHA/Owner/PW
C	1			2	Credit 2	Low-Emitting Materials	1-3	CM
C	1				Credit 3	Construction IAQ Management Plan	1	CM
D				3	Credit 7	Daylight	1-3	PW/TGE/Owner
D	1				Credit 8	Quality Views	1	PW/TGE

Yes	Likely	Maybe	No		INNOVATION IN DESIGN		6	Responsible
5	1	0	0					
D	1				*Credit 1*	*Innovation in Design: Green Education*	1	A10
D	1				*Credit 2*	*Innovation in Design: Green Cleaning*	1	A10
D	1				*Credit 3*	*Innovation in Design: Organic Landscape Maintenance*	1	A10
C	1				*Credit 4*	*Innovation in Design: Intergrated Pest Management*	1	A10
C		1			Credit 5	Innovation in Design: To be determined	1	Team
C	1				Credit 6	LEED Accredited Professional	1	TGE

Yes	Likely	Maybe	No		REGIONAL PRIORITY		4	Responsible
2	1	1	0		Zip code - 02142: LTc3, SSc4, WEc3, MRc1 (3 pts), EAc2 (17%), EAc5 (3%)			
D		1			*Credit 1*	*Regional Priority Credit: MRc1*	1	-
D	1				Credit 2	*Regional Priority Credit: LTc3*	1	-
D	1				*Credit 3*	*Regional Priority Credit: SSc4*	1	-
D			1		Credit 4	Regional Priority Credit: EAc2 17% (8 points)	1	-

Yes	Likely	Maybe	No	PROJECT TOTALS (Certification Estimates)	110
62	9	6	33		

Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points

ACENTECH

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December 20, 2016

Jeff Kim
Perkins + Will
225 Franklin Street
Boston, MA 02110

Subject Environmental Sound Review and Recommendations
MITIMCo South of Main (SoMA) Site 5 Project
Cambridge, MA
Acentech Project No. 626023

Dear Jeff:

This letter presents the outdoor equipment sound evaluation for the MITIMCo Site 5 project in Cambridge, MA. This project site needs to comply with the City of Cambridge noise regulation as well as the Massachusetts state regulation. A more detailed evaluation of the entire South of Main (SOMA) sound impact to the neighborhood was conducted in 2015 and included in the Article 19 submission (dated July 13, 2015). This report confirms some earlier assumptions and provides updated evaluations for Site 5.

APPLICABLE NOISE REGULATION

Massachusetts

The Massachusetts Department of Environmental Noise Policy (MassDEP) defines noise pollution by the condition resulting when:

- The equipment increases broadband sound level by more than 10 dB(A) above ambient, or
- The equipment with tonal sound - when any octave band center frequency sound pressure level exceeds the two adjacent bands by 3 dBA or more

For this project, we confirmed the existing background sound levels are high enough in the project area that the meeting the City of Cambridge Noise Regulation would be the more stringent. We will need to comply with the MassDEP regulation for the emergency generators.

City of Cambridge

The City of Cambridge Noise Regulation has fixed sound emissions level limits for daytime and nighttime hours. There are different limits based on the zoning district. Based on the City of Cambridge Zoning Map, the equipment of our project should meet the Residential Zoning District at the closest residential buildings and hotels. The rest of the buildings should meet the Business Zoning District.

Daytime is defined by the City as the period between the hours of 7AM and 6PM except Sunday and holidays.

It is our understanding that the emergency generator does not need to meet the City of Cambridge noise regulation as long as they are only used for emergency purposes and testing, and that the generator will only need to meet the MADEP noise limits.

PREDICTED SOUND EMISSION LEVELS

Your engineer has provided us with some of the outdoor equipment sound data. We have predicted the sound emission levels of the future equipment to the property lines. We have assumed that for nighttime conditions, all mechanical equipment will operate at full capacity in the worst-case scenario. For worst-case daytime condition, the same rooftop equipment will be operating, as well as the emergency generator (per testing).

The list below shows equipment used in our acoustic analysis.

- Two custom energy recovery air handling units (Haakon Industries or equal) located on the penthouse level of the tower with integral sound attenuators, 120,000 cfm each.
- Two cells of cooling towers similar to Marley NC8412 with Quiet Fan option.
- One outdoor 1500 kW diesel emergency generator with sound attenuated enclosure that achieves an average of 70 dB(A) overall sound levels at 50 ft. The generators will only be tested during the daytime hours.

Exhaust and supply fans have not been selected but will be provided with sound attenuators as needed to meet the City of Cambridge noise regulation.

The figure below shows the project location and the closest adjacent commercial and residential/ hotel receivers. The sound levels predicted from Site 5 are projected to the nearest receiver locations and accounts for the building heights in order to predict for the worst-case receivers that are located closest to the sound sources.

Predicted Equipment Sound Levels

Based on the equipment sound data and the sound control measures described above, we predicted the rooftop equipment sound emission levels to the closest receivers (Table 1) excluding the emergency generator. Receivers 1, 2, and 3 are all hotel receivers. Receiver 4 is a MIT future residential tower.

Receiver Location	Overall daytime and nighttime sound emission levels excluding the emergency generator (dBA)	Sound Limits (dBA)
1	44 dBA	60 dBA (day) 50 dBA (night)
2	37 dBA	
3	47 dBA	
4	49 dBA	

Table 1. Predicted sound pressure levels to the receivers with all noise control measured provided as described in this report.

The predicted A-weighted levels with the noise control described above will be within the allowable daytime and nighttime sound limits.

Table 2 shows the predicted sound levels with the emergency generator turned on.

Receiver Location	Overall daytime sound emission levels including the emergency generator (dBA)	Sound Limits (dBA)
1	45 dBA	60 dBA*
2	43 dBA	
3	53 dBA	
4	59 dBA	

Table 2. Predicted sound pressure levels to the receivers with all noise control measured provided as described in this report.

* Based on our discussions with the City of Cambridge, we understand that emergency generators in a commercial area with no residences nearby do not need to meet the daytime and nighttime noise regulation due to the emergency nature. However, the generators must only be tested during the daytime hours. The generator must still adhere to the MassDEP noise guidelines. Based on the MassDEP guidelines and the results of our ambient sound survey from 2015, we recommend designing for 60 dBA at the community residences.

Tone Evaluation

Based on the equipment sound data and the predicted sound levels to the closest receivers, we do not anticipate the equipment to emit tonal sound as defined by the state of Massachusetts.

CONCLUSION

Based on our evaluation of the mechanical equipment and emergency generators proposed for SOMA MITIMCo Site 5 project, the equipment sound emission to the community are within the acceptable sound limits and will not produce any tonal sound.

* * * * *

I trust this letter provides the information that you need at this time. If you have questions, please call me on my direct line at 617.499.8080.

Sincerely,

Rose Mary Su
Senior Consultant

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