

Excerpt from Planning Board Decision (Conditions 3-d and 3-e):

During the design review process, the Board shall consider:

- i. The architectural design of building façades, with special attention to the ground level.
- ii. The placement of rooftop mechanical equipment, along with the design of penthouses and other features meant to screen such equipment, and any other exterior features within or surrounding the building site.
- iii. The configuration and design of pedestrian, bicycle and vehicular modes of access and egress.
- iv. The design of open spaces, landscape elements, and modifications to abutting street or sidewalk rights of way, with attention to pedestrian and bicycle circulation and comfort and management of potential conflicts between pedestrian and bicycle paths of travel.
- v. Any potential impacts of the proposed design on the public realm or on properties outside of the PUD, including but not limited to visual impacts, noise impacts, wind impacts, and effects on the safety and comfort of pedestrians, bicyclists and motorists in the area, and measures that are being taken to mitigate such impacts.
- vi. The measures being implemented to promote highly sustainable design and development reflecting the goals and objectives established by the City that are included in the Final Development Plan and referenced in this Decision.

As described in Section 13.810.3, the Planning Board's review shall be guided by the design standards specified in the Final Development Plan, which are summarized in Appendix C, Urban Design Guidelines and Appendix D, Sustainability Strategies, and by the Kendall Square Design Guidelines, provided that in the event of any conflict between any guidelines and the provisions of Section 13.80, the provisions of Section 13.80 shall govern.

Kendall Square PUD-5 Design Guidelines

May 12, 2016



INTRODUCTION

These MIT Kendall Square Development Design Guidelines (“MIT Kendall Guidelines”) build on the Kendall Square Design Guidelines 2013 (“K2 Guidelines”) that were developed by the City of Cambridge to guide development in the entire Kendall Square area as designated in the K2 planning process. These MIT Kendall Square Guidelines are an urban design framework that reflect the K2 Guidelines but are specific to the MIT Kendall Square Development area (PB #302 and PB #303) and provide additional illustration of design components that may be applicable to the MIT Kendall Square Development.

These guidelines are not intended to impose a strict limitation on building form and style. Other creative design solutions, or measures, not noted here may also be utilized to achieve the same goals at the discretion of the Planning Board, especially in the interest of enhancing architectural diversity and pedestrian amenity in the area.

PURPOSE

The MIT Kendall Guidelines will be used to guide the detailed design of the buildings and public realm in PUD-5. The guidelines represent a consensus regarding development in PUD-5 in Kendall Square as a result of several years of rezoning, planning, community outreach and permitting processes. The guidelines are based on the building and landscape designs presented in the PUD and Article 19 Special Permit processes for the PUD-5 NoMa and SoMa projects and will be used as a guide as these designs are further refined for the purposes of Planning Board Design Review and construction.

It is understood that the application of these principles, including dimensional and numerical guidelines, can vary with the context of specific building proposals in ways that nevertheless fully respect the policy’s intent. It is intended that proponents of projects, City staff, the Planning Board and the general public, where public review and approval is required, should be open to creative variations from the detailed provisions presented herein as long as the core values expressed are being served.

The attached guidelines consist of three components as described below. Architects and reviewers should refer to additional documents including the K2 Guidelines, the Final Development Plans and Special Permits for the PUD-5 NoMa and SoMa projects (PB #302 and PB #303).

PART ONE:

GUIDELINES TEXT

The Guidelines Text is based on the K2 Guidelines and provides the goals and strategies that should guide the design of the buildings and public realm in PUD-5. The Guidelines Text is the controlling component of this guidelines package and where there are discrepancies between the Text and the Catalog of Images or Specific Building Guidelines, the Guidelines Text will rule.

PART TWO:

CATALOG OF IMAGES

PART THREE:

SPECIFIC BUILDING GUIDELINES

The Specific Building Guidelines illustrate how the guidelines can be applied to each building. These guidelines also highlight the unique characteristics particular to each site?. The Specific Building Guidelines reflect the dimensions and design intent for the buildings at the time of the PUD and Article 19 Special Permits for the NoMa and SoMa Projects. It is anticipated that the building designs will continue to evolve in advance of Planning Board Design Review and construction

PART ONE:

I. OVERALL MIT KENDALL SQUARE PROJECT DEVELOPMENT GOALS

- Preserve and enhance the rich architectural history of the Industrial Age represented by the existing historic fabric while creating a harmonious example of urban buildings that reflect collectively and individually the future of Cambridge.
- Create a vibrant urban place with a strong sense of arrival that promotes gathering, and also provides the connective link between the Institute, Kendall Square, the Cambridge community and the Charles River
- Enhance the ground floor public realm and provide the foundation for continuous streetwall and related ground floor retail and active uses on the south side of Main Street
- Increase the amount of publicly beneficial open space, and create a contiguous and well-connected public realm with a focus on community interaction and programming
- Increase the amount of MIT graduate student housing and locate it in the center of Kendall Square
- Provide critical space to accelerate MIT's innovation impact, strengthen the innovation ecosystem, and enable stronger interaction and collaboration between the MIT campus community and the Kendall Square community

II. DESIGN OBJECTIVES AND STRATEGIES

A. Site Planning and Open Space

Design Objectives

- Transform existing parking lots and streets into new publicly accessible and porous open space that will extend the network of open spaces currently existing within and adjacent to the PUD-5 District.
- Design the landscape to be a cohesive and pedestrian-oriented open space, the connective tissue of the Kendall Square Development, connecting the MIT east and main campuses, and connecting the campus, the community and the Charles River.

- Create a series of places designed to become gateways and gathering spaces for the MIT and Cambridge communities, and anchors for various locations within the PUD area. Each space should have a unique sense of place designed to complement the surrounding architecture, but also to provide a unifying element between individual buildings across the PUD development parcels. The series of spaces include:
 - **Gateway:** The Gateway is designed to be an area where the academic, neighborhood, visitor and worker communities can intersect and interact. The area is anchored by the entrance to the MBTA Kendall station. The surrounding plaza will be designed to enable efficient flow through the space and to/from the station. The Gateway area will be framed by the historic Suffolk Building and a new Building 5, the ground levels of which will contain active uses which will spill out into and animate the Gateway area throughout the day, week and year. The area will contain plenty of seating and other elements that reflect and invite the public to experience the groundbreaking activities of MIT ("MIT-ness"). The space will be designed to draw people from Main Street into the larger MIT Kendall open space system beyond.
 - **Activity Area (south of building 4):** This activity area will be the largest component of the open space system and the epicenter for programmed events in the open space. It will be designed to contain a mix of hardscape and softscape, corridors for passage and areas of respite (streams and eddys). It will be activated by the entrance to the new dormitory and the active uses and associated spill out from the ground floor of Building 4, including the MIT Forum. It will include permanent and temporary seating and design features and will be activated by small and large events.
 - **Promenade:** The Promenade will continue the energy of the MIT Kendall open space system by providing a generous connection between the main activity areas. It will be activated by various uses on the ground floor of building 3 and will include ample seating and creative lighting.
 - **Activity Area (adjacent to Building 2):** This activity area will be an arrival point into the City of Cambridge from Boston across the Longfellow Bridge and will reflect the diversity of open space and programs that are inherent to Kendall Square and Cambridge. This area will be designed to reflect both the character of the newly created MIT Kendall open space and the existing Sloan School open space. Framed by Building 2, which will contain active ground floor uses and spill out space on its western side and will blend into passive seating areas of lawn and plaza with movable furniture. The lawn areas and paved areas will be generous enough for programming which will animate this area through the day, week and year.

- o **Broad Canal Area (NoMa):** The Broad Canal area benefits from existing activities at the water's edge and active retail on the north side of Broad Canal Way. The MIT open space system will create a new connection to the Broad Canal via a new pedestrian crossing of Main Street and a new generous and activated pedestrian pathway between Building 1 and the Luke Building, owned and occupied by the American Red Cross. The Broad Canal area will be enhanced with active ground floor retail uses along the passageway and the south side of Broad Canal Way through the addition of Building 1 and a new retail liner on the north edge of the existing One Broadway building.
- **Main Street/Broadway/Third Street Edges:** The primary streets surrounding the new and existing MIT Kendall buildings are important connectors in the open space system. Existing, new and historic buildings will contain active ground floor uses that will spill out into the public realm where space allows. These active uses will visually and practically connect the more formal open space elements in order to create a fully activated open space ecosystem. Strengthen the connection to and interface with the Kendall T Station as a key gateway with strong potential to create a more active urban place that is centered on the station.
- Design connecting pathways and streets to be welcoming and comfortable for all users, including pedestrians and people traveling by bicycle.
- Enhance and improve wayfinding for all users, including bicyclists, to make it easier to find the campus, the river, neighborhoods and the center of Kendall Square.

Strategies

- Change portions of Hayward Street and Carleton Street into shared streets, and evaluate opportunities to prioritize the experience for people walking or bicycling on Wadsworth Street and Amherst Street.
- Design a rich ground plane to include a variety of textured paving, discrete lawns and native and adaptive plantings to accommodate passive sitting and socializing. Include a balance of hardscape paving and softscape vegetation throughout the core open space to maximize the flexible use of the space and promote year-round activities such as outdoor classes, farmers markets, innovation demonstrations, and other programmed activities.
- Incorporate temporary and/or permanent art and technology installations reflective of MIT's depth of knowledge in both.
- Design the public realm to accommodate a diversity of destinations and program opportunities for a broad range of anticipated users: residents, neighbors, workers, visitors, faculty and students.

- With the advice of the Open Space and Retail Advisory Committee, include cultural, educational, and recreational programming including active events such as festivals, lectures, and outdoor symposia, while accommodating more passive daily activities such as eating lunch on a bench or relaxing on the lawn under the shade of a tree.
- Site furnishings should include moveable tables and chairs in addition to fixed seating.
- Include appropriate vehicular and pedestrian lighting to ensure a safe, public environment 24-hours a day. Lighting levels should achieve the standards required for safety and comfort, while remaining below levels that will contribute to light pollution for adjacent properties or users, and promoting energy conservation. Lighting throughout the open space should also contribute to wayfinding, district identity, and public realm activation and enjoyment.
- Ensure clear and unobstructed travel paths through the main plaza area for people traveling through by foot or bicycle, with special attention paid to ensuring that there is sufficient space to avoid conflicts between "staying" users and "traveling" users.
- Areas beneath cantilevers should be designed to be human-scaled and activated with art or other features in order to frame and contribute to public spaces.
- Any covered outdoor areas should work in tandem with adjacent retail and adjacent public realm to form gathering spaces and activity zones.
- Strengthen connections to the Charles River by activating the south side of Broad Canal Way and strengthening the experience for people walking or cycling along Wadsworth Street. In addition, the plan should include improved crossings to get to the river path and enhance the connection across Main Street by aligning the pedestrian network with the new crosswalk between Sloan and the Red Cross building.
- Balance the need for clear and flexible circulation and program space with ample green open space to help manage stormwater. Trees and vegetated softscape should be distributed and designed to catch stormwater, and should be augmented by areas of permeable pavers to mitigate runoff.
- Include significant number of new trees in the open space with a range of species that contribute to the biodiversity of the urban canopy of Cambridge. Street trees should be selected from the preferred street tree list for Cambridge. Preference for plant selections should be given to native or adaptive species, minimizing irrigation and maintenance needs.
- Incorporate short-term bicycle parking to make access to each building easy and convenient for users. Bicycle rack styles may be selected to complement other street furniture or buildings, as long as the racks meet Cambridge requirements.

- Incorporate public bicycle sharing stations at locations that work rationally with the regional bike share system, are convenient to users (both MIT and general public), and meet functional and technical requirements (e.g., solar access). The City and MIT shall identify mutually acceptable locations for the stations.
- Visitor, tour and shuttle bus stop locations to be created where they will not interfere with the safety of public road users, particularly those on foot and on bicycle. Where possible, MIT-related bus services should be provided with stops and loading/unloading areas out of the public way and layover areas off of any primary public streets unless otherwise approved by TP&T.

B. Built Form - Ground Level Design and Uses

Design Objectives

- Establish a seamlessly integrated pattern of robust retail and active uses that contribute to an active and pleasant ground floor environment from Ames Street to the Sloan School on the south side of Main Street.
- Enhance the area around the MBTA station where Main Street and Carleton Street connect as a crossroads of Kendall Square – the nexus where business, academic, community and visitors connect.
- Complement the successful uses along the north side of Broad Canal Way and create a two-sided retail corridor with retail and active uses on the south side of Broad Canal Way.
- Where possible, activate the Third Street and Broadway sides of the NoMa development with enhanced retail and active uses.
- To the greatest extent possible, activate the edges of secondary streets and the interior open spaces to provide activity and interest for pedestrians.

Strategies

- Special attention should be given to the design of ground floors of Buildings 4 and 5 and the public area between the buildings to ensure that MIT's identity is clearly defined and the public is made to feel welcome.

- Although any proposed Kendall Station design must be approved by the MBTA, the station should be highly visible from both Main Street and the newly created open space and should have a high degree of transparency and clear signage. It should also include at-grade landing area sufficient to provide weather protection and allow people time to orientate themselves in the plaza. Access and egress should be designed to be convenient and comfortable for all users.
- To the extent possible, the ground floors of Buildings 2, 3 and 4 should be designed to provide active uses on their south side as they open onto the open space. By activating both sides of the new buildings, a porous and unique environment will be created to allow all users to enjoy the retail from both the hustle and bustle of Main Street, as well as the relaxing open space on the south side of the buildings.
- In general, retail spaces should be designed to facilitate small retailers. However, ground floors should also be flexible in order to accommodate larger format retailers that are consistent with articulated neighborhood needs.
- To foster accessibility and permeability, and to bring new life and activity into the historic structures, the ground floors of the existing buildings should be dropped to accommodate ground floor retail to the greatest extent feasible.
- The ground floor spaces and the adjacent open spaces should be designed to work together to encourage spill out of ground floor building activity into the public realm, providing flexible zones along the building faces.
- Provide multiple door and window openings at the ground floor to emphasize the connection to the public realm and create a feeling of transparency between inside and outside. Maximize clear glass operable glazing, and opportunities to occupy both ground floor and immediate exterior space as part of a diverse range of district destination attractors.
- Ground floors should reflect interior active use through the design of unique and transparent storefronts in the first story height zone. Façades should be carefully designed and detailed to create interest in light and shadow, and textural changes, so that large areas of undifferentiated facade are not created.
- Building entries should be clearly articulated and clearly visible from the public realm, with main pedestrian entrances and lobbies accentuated through changes in wall plane or building massing, projections, differentiation in material and/or color, and a greater level of detail.

- Where possible, incorporate pass-throughs into the design of ground floors, to enhance physical and visual porosity through buildings.
- Special attention should be given to the location of exhaust vents and mechanical equipment, as these can cause noise and other environmental impacts, such as odor, that impair the goal of activating the public realm.
- Ground floor heights of all buildings proposed should be at least 15' floor-to-floor.

C. Built Form – Siting, Scale and Massing

Objectives

- Employ creative siting and massing approaches that maximize physical and visual porosity on Main Street, both at grade and volumetrically.
- Site and shape buildings to minimize their impact on the historical buildings, as well as the public realm, particularly associated with Main Street and Broad Canal Way.
- Create a strong pedestrian scaled street wall throughout the PUD area and particularly on Main Street to align with the existing historic fabric, and achieve the level of public realm activity desired in the heart of Kendall Square.
- Enhance the pedestrian experience along the secondary streets.

Strategies

- Create welcoming and comfortable streetscape environments, including wider sidewalks where feasible, for people traveling by foot or bicycle on Carleton, Hayward, and Wadsworth Streets to encourage travel by active transportation, and enhance street life along essential urban corridors where the active ground floor experience of buildings engages the public realm.
- Site and orient new buildings to be consistent with the established streetscape and to enhance the goals of walkability.
- The existing street hierarchy should be respected with a special emphasis on the connections to the river. By wrapping retail and active uses around secondary streets where possible, and incorporating building stepbacks, the designs should encourage walking and bicycling activity into the publicly-accessible open spaces within the development and to the Broad Canal and Charles River.

- In plan, align the upper volumes of buildings 4 and 5 along Main Street, while stepping back Buildings 2 and 3 to frame and celebrate the historic clock tower in the Kendall Building.
- Use building form, stepbacks and orientation to allow more light and air to, and also minimize shadows on, Main Street and Broad Canal Way.
- All buildings should have a clearly defined base that relates to the height of the key historic buildings on Main Street and is distinguished volumetrically from the top volume.
- Building bases should be designed with human-scaled design elements and architectural details to maximize opportunities to engage the pedestrian and create an active and vibrant streetscape.
- Where building stepbacks occur at upper floors encourage use of these areas for roof terraces.
- Avoid sheer tower facades that are uninterrupted to street level as these can negatively impact on the pedestrian environment.
- In elevation, the tops of the towers should be aligned in groups in order to lock them to the skyline of both the campus and Kendall Square. The residential towers should rise above the others with similar volumes and north-south orientations. The upper volumes of Buildings 2 and 3 should work together with One Broadway to create a lower three-some within the bookends of Buildings 1 and 4, framing the important Main Street, Broadway, and Third Street intersection.

D. Built Form - Architectural Character

Objectives

- Create a family of buildings that work harmoniously together while allowing for individual character and definition to be developed and celebrated
- Integrate and celebrate the existing ensemble of historical buildings on Main Street to preserve and honor this important industrial heritage while simultaneously preparing for the groundbreaking work of the future — the work that defines MIT's mission and that of its many innovative partners in this district and beyond.
- Create an architectural approach that will distinctly represent Kendall Square, employing innovative, contemporary architecture and the latest cost-effective green building design technologies.

- Enable each building to maintain a distinct character due to its unique context, use and relationship to the public realm. This could include integration with the historic buildings or the specific uses programmed for the building, such as the MIT Museum or academic housing or a significant ground floor retail or active use.

Strategies

- Overlay secondary design strategies, such as, projections, balconies, sunshades, vertical and horizontal façade patterns and textures to make each building distinct, and create more liveliness, depth and interest across facades.
- Up close, the individual character of each building should become apparent. Although the facades of several of the buildings will be glass curtain wall, each building should incorporate rich architectural detailing, through use of color, texture, fins, type of glass (e.g., clear, fritted, or spandrel), and material changes to differentiate it from the others.
- Clean and restore the exterior masonry of historical buildings, recreate original fenestration patterns, and design appropriate storefronts to accommodate first-floor access directly from the sidewalk where possible.

III. ENVIRONMENTAL QUALITY

Consistent with the K2 Design Guidelines, Kendall Square is a highly urbanized smart growth center and as new development is added there will inevitably be increases in shadows, wind, noise etc. as is the case in any new urban development. However, new projects should be carefully designed to avoid unnecessary environmental impacts. The goal is to evaluate each design decision to find outcomes that balance the positive aspects of building near a transit hub with the changes in the environment that result from more housing, retail and business uses in relatively dense new structures located in close proximity to one another.

The MIT Kendall Square Development will be guided by Section II Environmental Quality of the K2 Design Guidelines for shadow, wind, vegetative cover and noise as well as the following:

- Comply with Section 13.89.1 Rooftop Mechanical Equipment Noise Mitigation and Section 8.16, Noise Control of the Ordinance as well as meet MassDEP Noise Guidelines.
- Meet specifications for mechanical equipment includes cooling towers, air handling units, exhaust fans, and all mechanical room louver openings outlined in Section 8.16 of the Ordinance.
- Strategies to mitigate wind impacts should first consider modifications to built form, particularly along important pedestrian connections .

- Submit an acoustical report, including field measurements, demonstrating compliance of such building with all applicable noise requirements prior to the issuance of the first certificate of occupancy consistent with the Zoning Ordinance.
- Encourage operational practices to reduce noise including delivery hours consistent with those included in the Cambridge Noise Ordinance and idling related to loading and unloading activities.

IV. PARKING AND LOADING

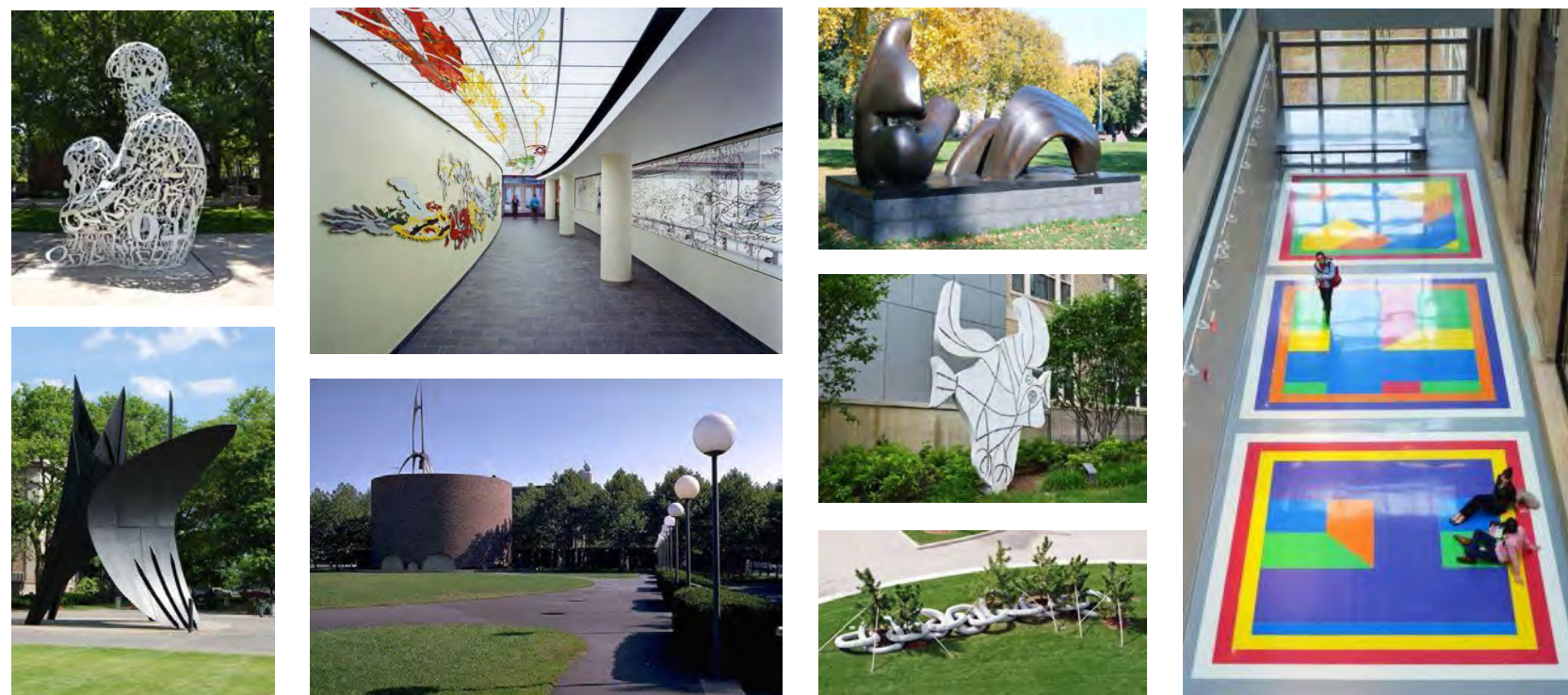
The MIT Kendall Square Development will be guided by Article 13.88 of the Zoning Ordinance as well as the following:

- Where possible, parking and loading entries should be located on secondary streets and consolidated. The location of driveways should not preclude or negatively impact possible future visual and physical connections to the Charles River.
- Above-grade parking should be carefully screened to minimize the visual impact.
- Underground parking for buildings 3-6 should be consolidated where possible with access points off the secondary streets.
- Loading should be internal to buildings.
- Loading should be consolidated where possible and located below grade with consolidated access.
- At-grade loading facilities should not be more than 30 feet wide and should have the ability to be closed off when not in use.
- There should be no turnaround or drop-off facilities on public streets.
- Loading dock areas should have adequate visibility and sightlines for pedestrians on the sidewalk, vehicles and cyclists on the street and trucks entering/exiting. Vehicle exiting warning devices should be used as appropriate to improve public safety when trucks are exiting a loading dock.
- All truck turning movements should be located on-site and not on public streets.
- Parking and loading dock areas should be actively managed.

COMMITMENT TO PUBLIC PROGRAMMING



COMMITMENT TO PUBLIC ART



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

May 12, 2016



COMMITMENT TO ACTIVE USES



RETAIL COMMITMENT



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May 12, 2016

SPILL OUT & ACTIVE EDGES



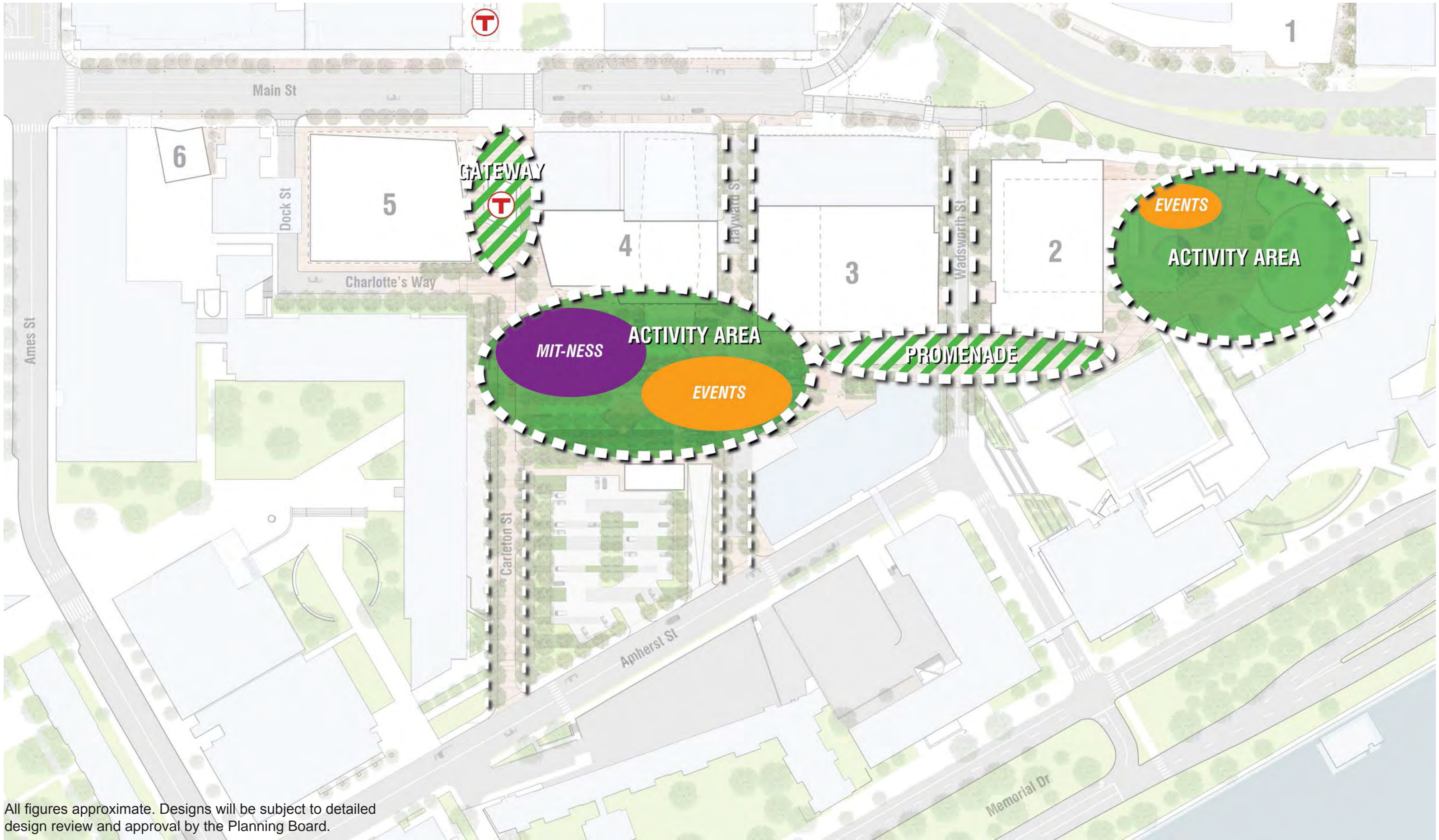
OPEN SPACE POTENTIAL PROGRAMMING



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

May 12, 2016



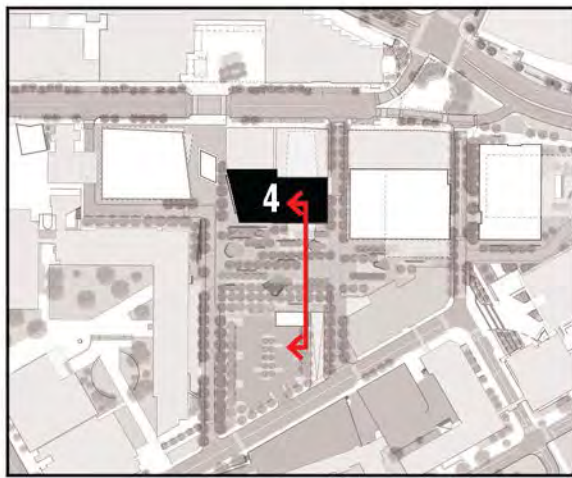


All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.


May 12, 2016



ACTIVITY AREAS



← to Amherst Street

to Main Street / Kendall Square  →

BUILDING 4

E23
connect to
MIT Main Campus

PROPOSED SURFACE LOT
FOOD TRUCKS
LIVING LABORATORY

TREE GROVE / OPEN LAWN
URBAN GARDENS
MOVEABLE CHAIRS
EVENTS ON LAWN
STORMWATER DEMONSTRATION
PUBLIC ART

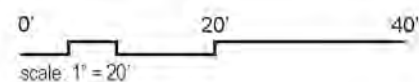
OPEN EVENT PLAZA
CANOPY OVER PLAZA
EVENTS / FESTIVALS
VARIED SEATING
INTERACTIVE FEATURES
TEMPORARY INSTALLATIONS

**GROUND FLOOR
ACTIVATION ZONE**
SPILL OUT FROM BUILDINGS
MOVEABLE TABLES/CHAIRS
EVENTS
BIKE RACKS

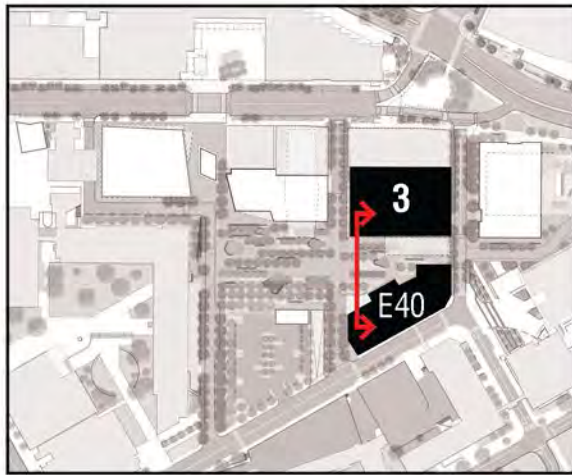


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May 12, 2016



**OPEN SPACE
SITE SECTION A**



← to Main Street / Kendall Square 

**GROUND FLOOR
ACTIVATION ZONE**
SPILL OUT FROM BUILDINGS
MOVEABLE TABLES/CHAIRS
EVENTS / PARTIES
BIKE RACKS

OPEN EVENT PLAZA
CANOPY OVER PLAZA
URBAN GARDENS
EVENTS / FESTIVALS
VARIED SEATING
INTERACTIVE FEATURES
TEMPORARY INSTALLATIONS

E40 SERVICE AREA
SERVICE ACCESS
PEDESTRIAN ACCESS

to Charles River →

connect to
MIT Sloan School

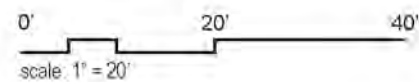
BUILDING 3

BUILDING E40



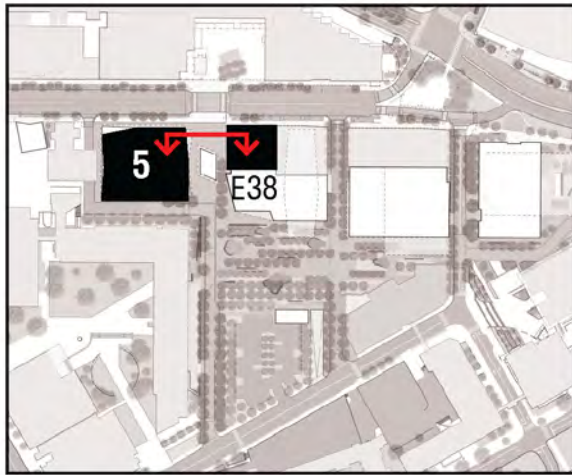
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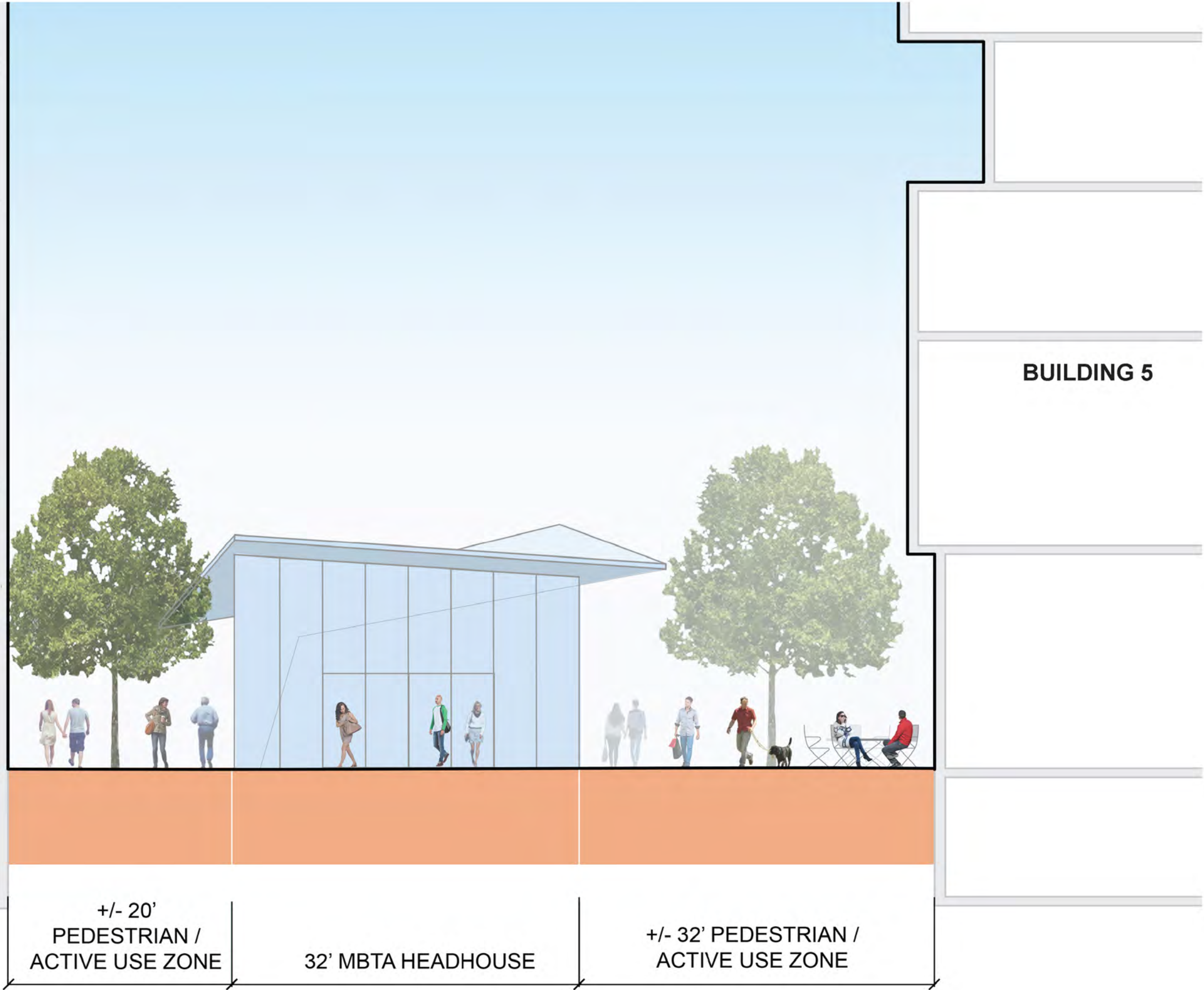
**OPEN SPACE
SITE SECTION B**





BUILDING E38

BUILDING 5



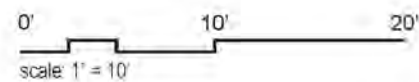
+/- 20'
PEDESTRIAN /
ACTIVE USE ZONE

32' MBTA HEADHOUSE

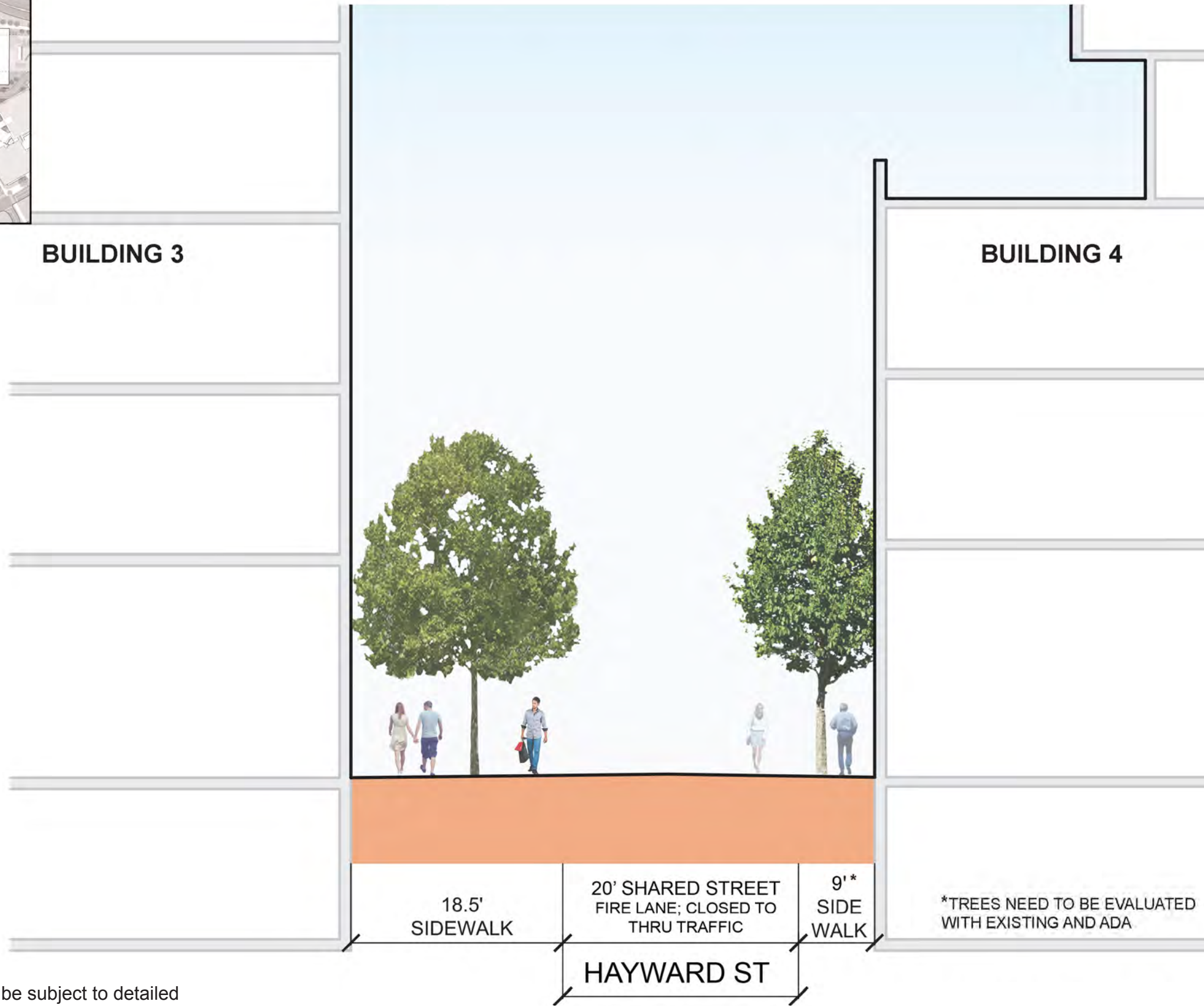
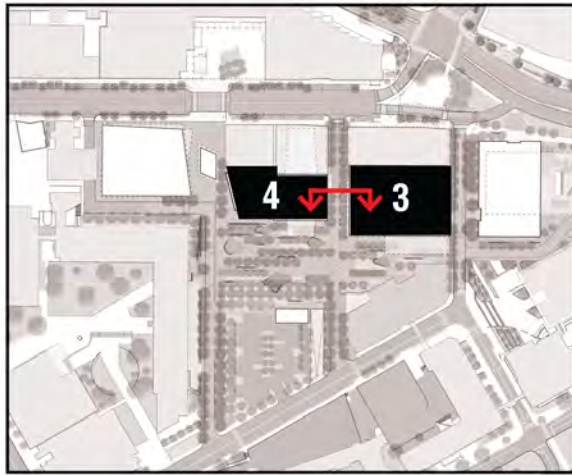
+/- 32' PEDESTRIAN /
ACTIVE USE ZONE

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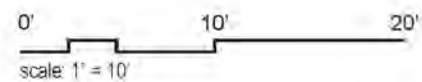


**CARLENTON STREET / GATEWAY
SITE SECTION E**

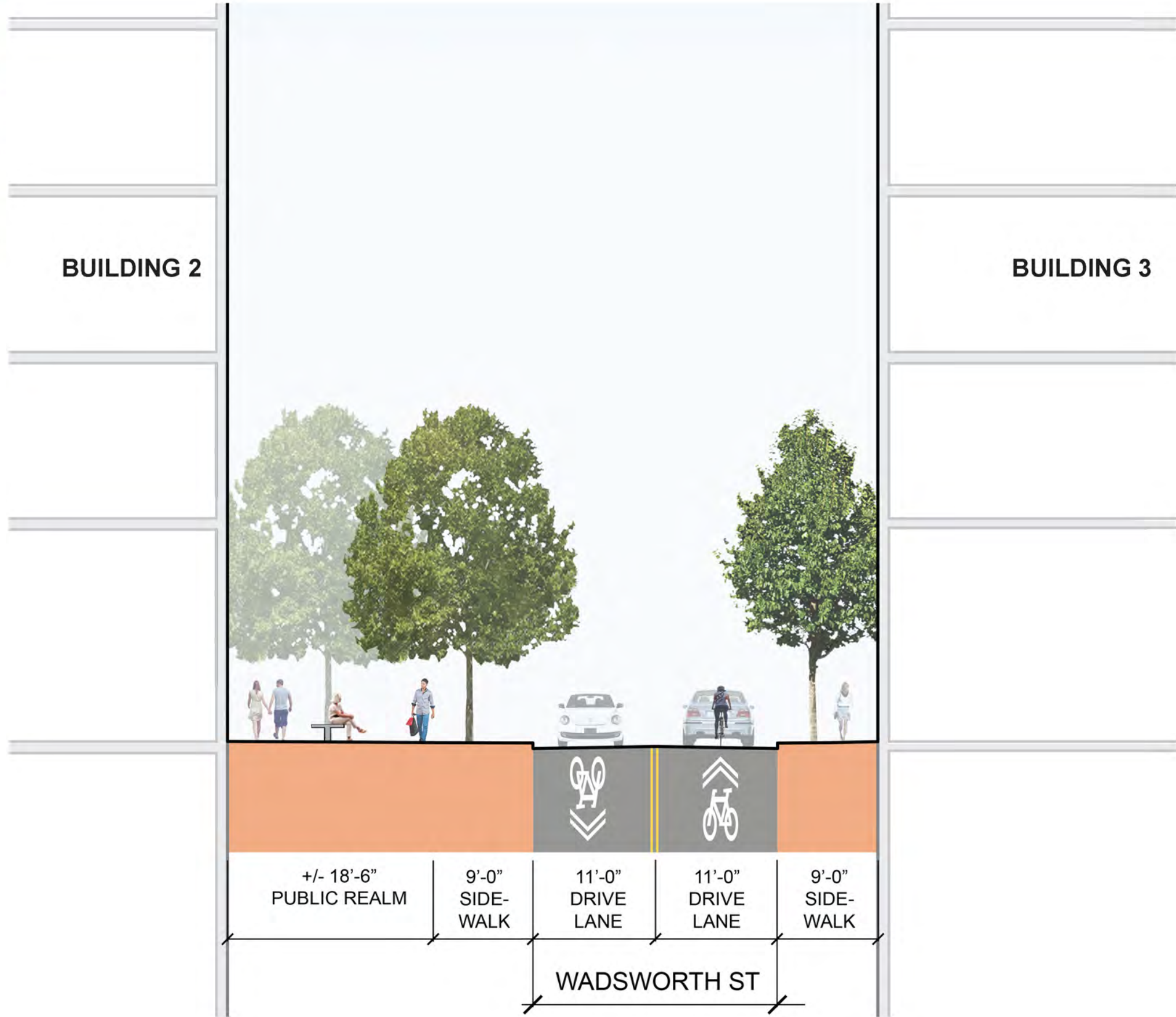
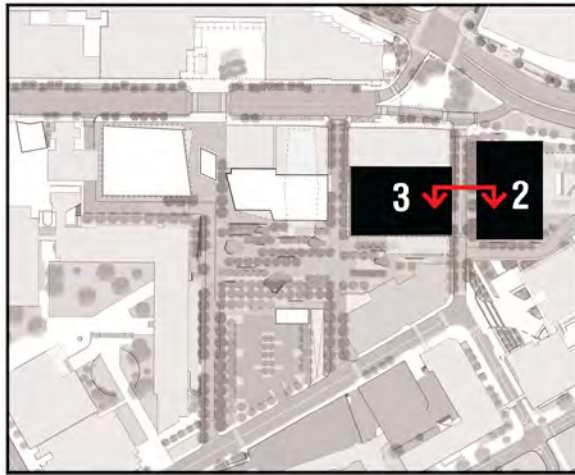


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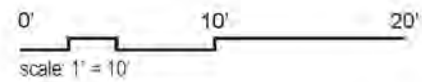


**HAYWARD STREET 2
SITE SECTION G**



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

May 12, 2016



**WADSWORTH STREET 1
SITE SECTION H**

BUILDING 1 GUIDELINES

Approximate Dimensions

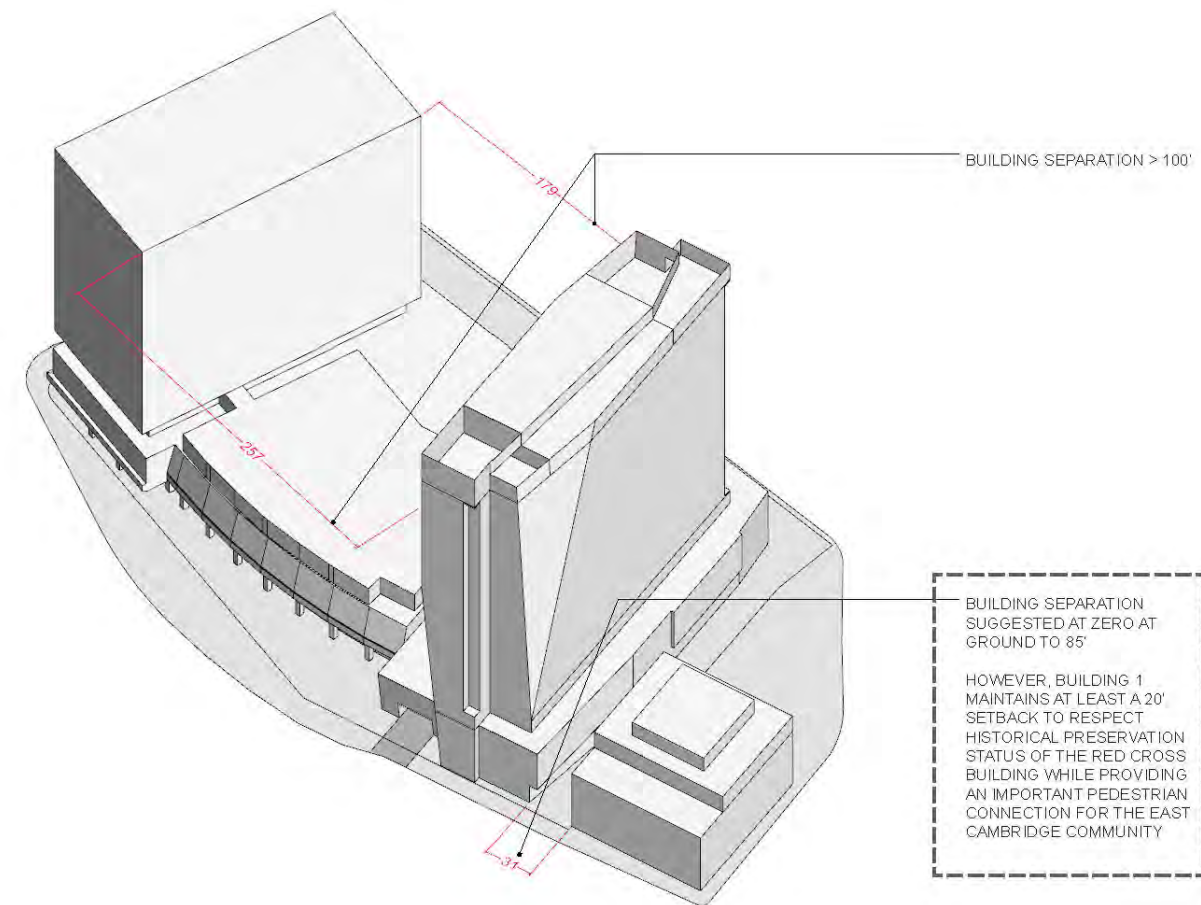
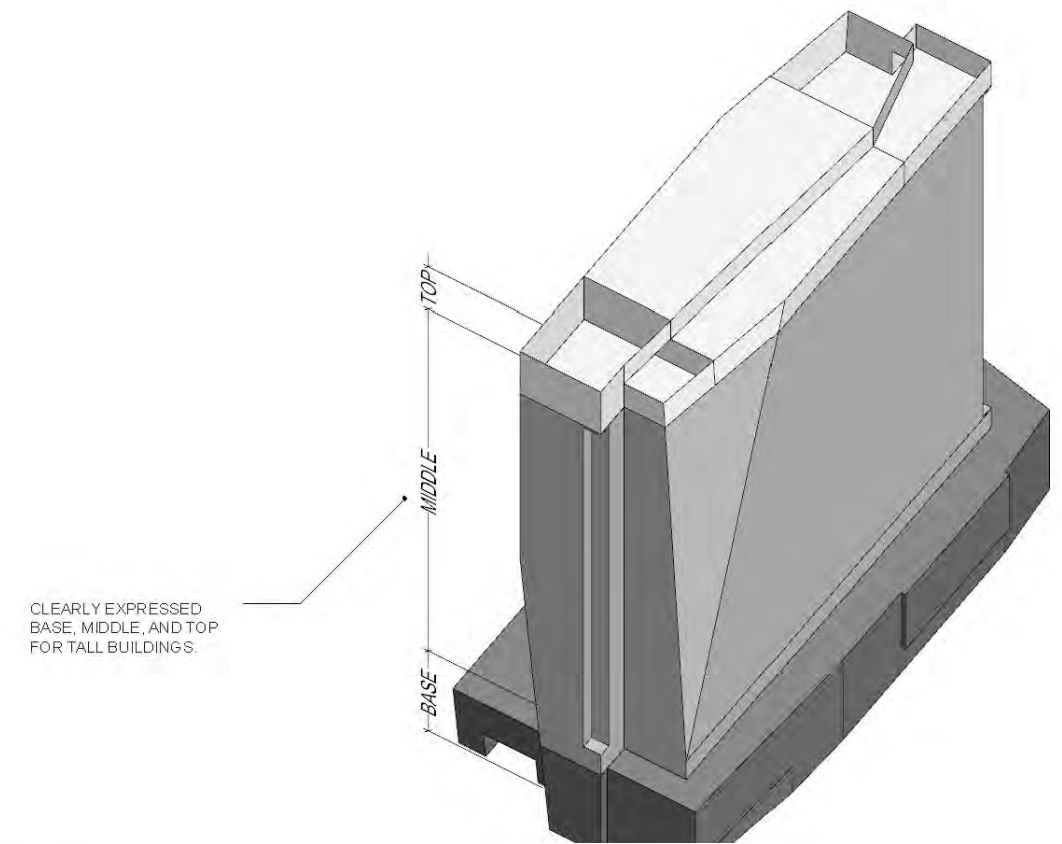
GFA:	Approximately 390,550 sf (plus above grade parking and associated One Broadway retail additions)
Max. Height:	250'
Uses:	Residential, Retail/Active Use
Parking:	Above Grade

Building 1 will occupy the existing surface parking area that fronts Main Street and Broad Canal Way and abuts One Broadway and the Luke Building (currently owned and occupied by the American Red Cross). Building 1 will be predominantly residential with ground floor retail and will continue the above grade parking at the adjacent One Broadway building. Associated with Building 1 is the construction of a one story retail building along the northerly face of the existing One Broadway parking garage, fronting on Broad Canal Way. Related renovations and additions to existing One Broadway will include expanding the retail space at grade level on the southwest and south portions of the building, relocating the office lobby and façade renovations replacing the precast concealing the parking podium that faces Broadway. These elements taken together provide an opportunity to activate the ground floor of and public realm around entire combined block.

Building 1 should be designed to reduce its perceived mass to the extent possible. Techniques to achieve this may include gradual tapering so that the upper portions of the building have a slightly reduced volume. Potential strategies may include sculpted massing and the use of balconies. Building 1 massing should activate the street edge of Broad Canal Way to create a double sided street with ground floor uses and an improved path to the Broad Canal from Third Street.

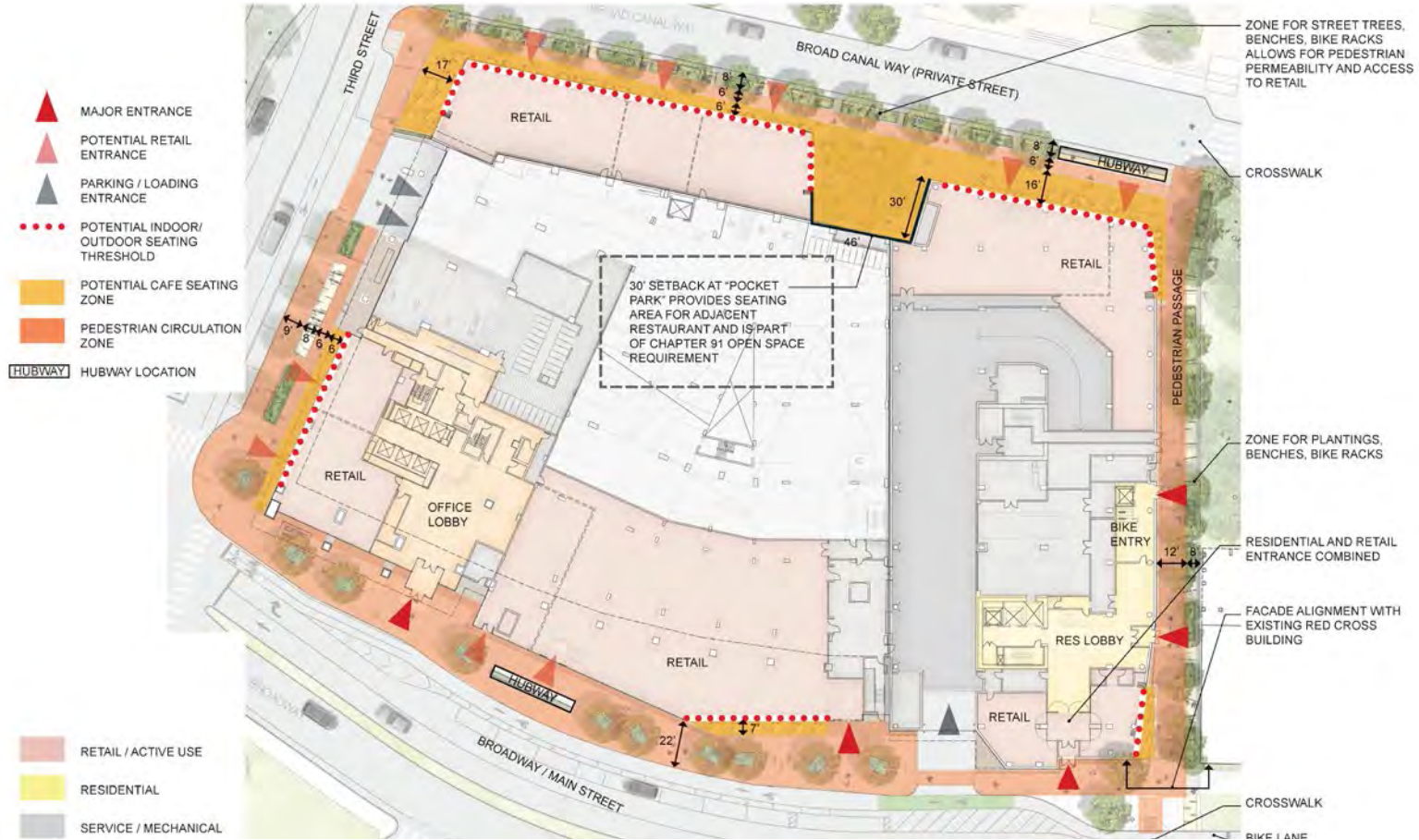
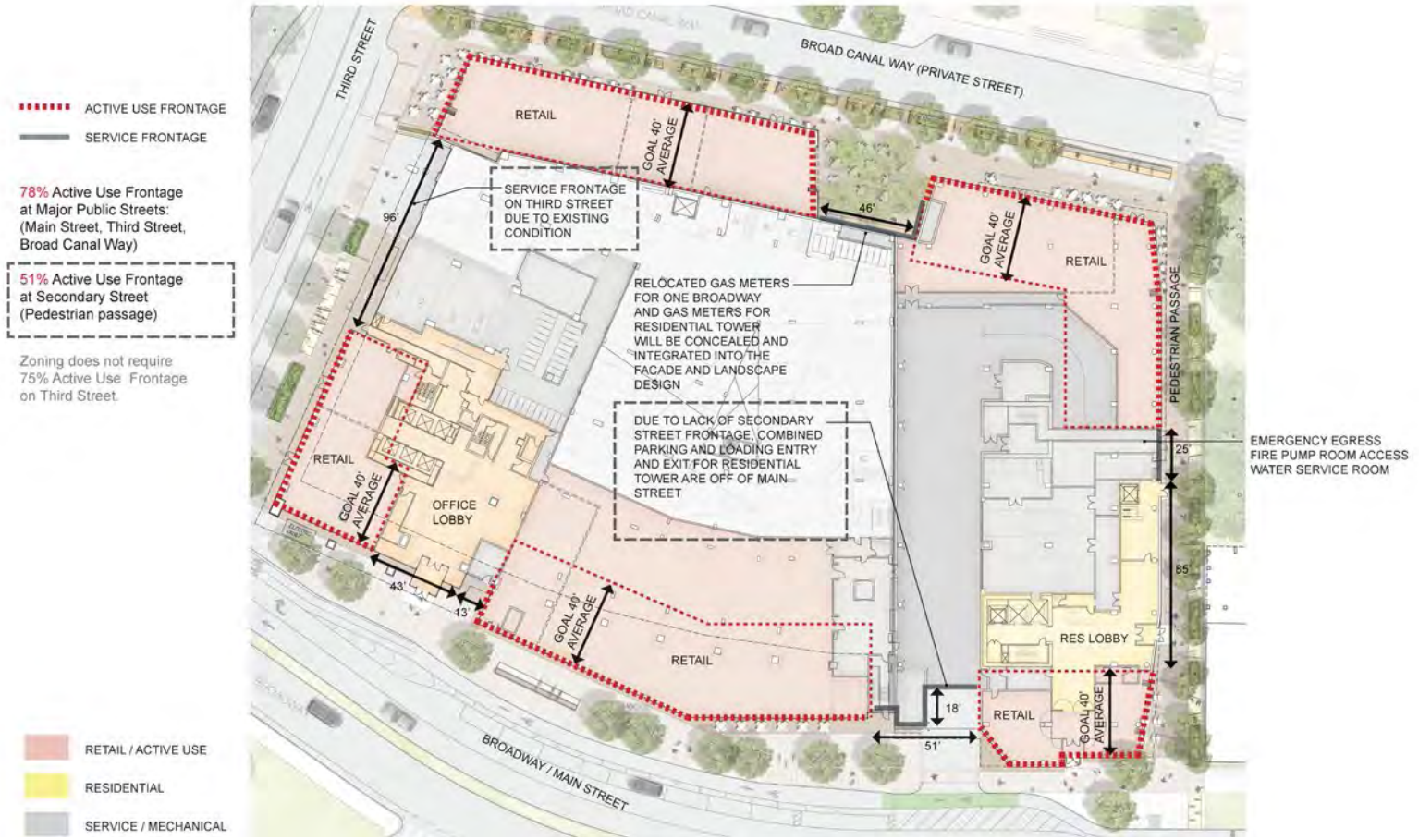
The project should be sensitive to the adjacent Luke Building while also reinforcing and enhancing the complex urban aspects of Cambridge as it has historically developed. The podium of the new building should respond to the height of the Luke Building and maintain a pedestrian scale along Main Street. The podium contains above grade parking. The podium should be designed in a way that relates to the public realm and animates the façade.

The new building should be set back at the Luke Building, separated by a 20-foot wide pedestrian passage, consistent with zoning for the site and urban design objectives. The setback between the two buildings allows for an eclectic historic combination of a smaller scale historic structure and a larger scale contemporary residential building to coexist harmoniously along the same pedestrian passage. The new pathway connecting Main Street to Broad Canal Way is an ideal location for a retailer or other family-friendly activities that complement the active lifestyle of Kendall Square's residents, workers and visitors. The site should be landscaped and lighted to encourage pedestrian usage throughout the day.



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

The various retail additions to One Broadway seek to enhance the streetscape. Materials used in these additions should provide warmth to the retail liner and the potential grocery addition while also concealing the mechanical equipment on the roof.



May 12, 2016

All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.



BUILDING 1

KENDALL SQUARE PUD - 5 DESIGN GUIDELINES

PART THREE

BUILDING 2 GUIDELINES

Approximate Dimensions

GFA:	Approximately 316,000 sf
Max. Height:	250'
Uses:	Commercial, Institutional, Retail/Active Use
Parking:	Below Grade

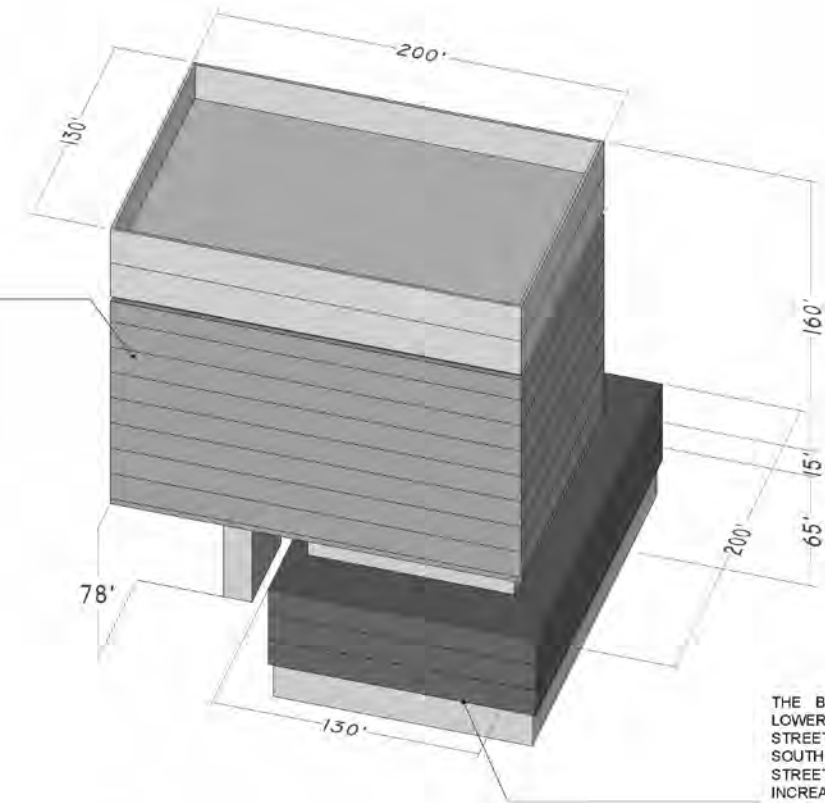
The Eastgate graduate student housing tower and a parking lot currently occupy Parcel 2. The existing parking and roadway system on the site also services as emergency vehicle access, building service access, and parking access to MIT's existing East Garage.

As envisioned by the Kendall Square Initiative planning process, Building 2 has potential to serve as a gateway to the Campus and Kendall Square, as well as the opportunity to maximize publically accessible uses at the ground level in order to activate the streetscape and public realm. Building 2 should be sited on its parcel in such a way as to define and activate the corner (urban edge) of Main Street and Wadsworth Street, in a way that the current use of the site (Eastgate) does not. It should also incorporate setbacks along the northerly edge to allow for views to the historic clock tower (the Kendall Building at 238 Main Street) for visitors to Cambridge arriving from the east, and along the westerly edge to create a streetscape environment on Wadsworth Street, with wider sidewalk and outdoor seating, to enhance the connection for people walking or bicycling from the neighborhood to the north and the Charles River to the south. Additionally, Building 2 massing should contribute to the extension and integration of the open space fronting the MIT Sloan School to connect it as part of the open space system that extends from the MBTA Kendall Station to the Broad Canal.

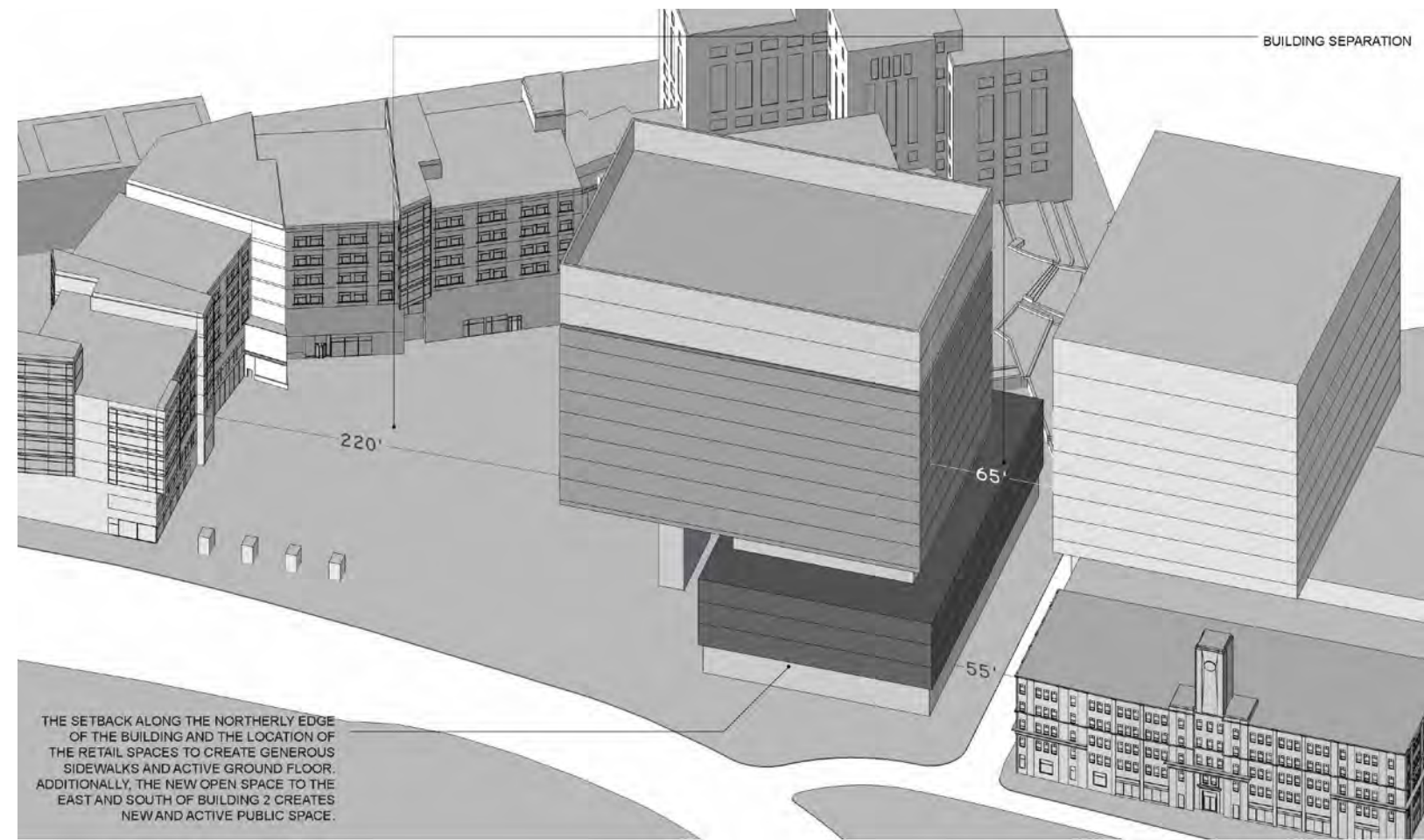
The primary building massing may be composed of two volumes in order to relate to the historic streetwall of adjacent buildings and enhance open space. The base volume should be composed of a lower mass that relates to the height of the existing buildings fronting the south side of Main Street. The upper volume may be rotated 90 degrees to the lower volume to create a dynamic cantilever that could serve to define a unique and dynamic ground level open space and reduce the overall building massing impact on the surroundings. Efforts to mitigate the perceived bulk of the upper volume as it presents to Main Street should be employed.

The ground floor should include a mix of uses including retail, campus active uses, building lobby, and necessary functional access including minimal mechanical space, loading, and access to below-grade parking. The cantilever space, including the underside of the building, should not be used for corporate advertising.

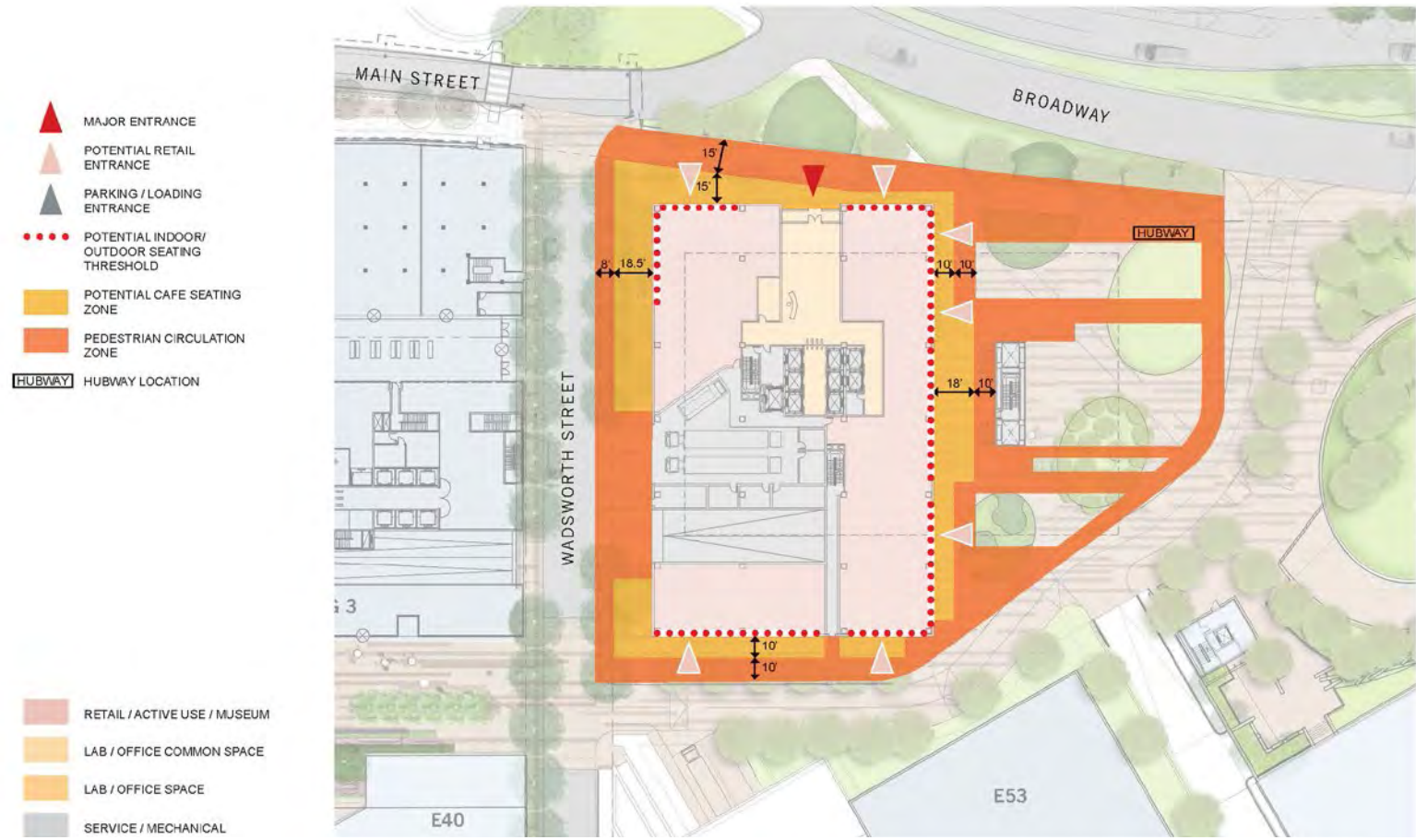
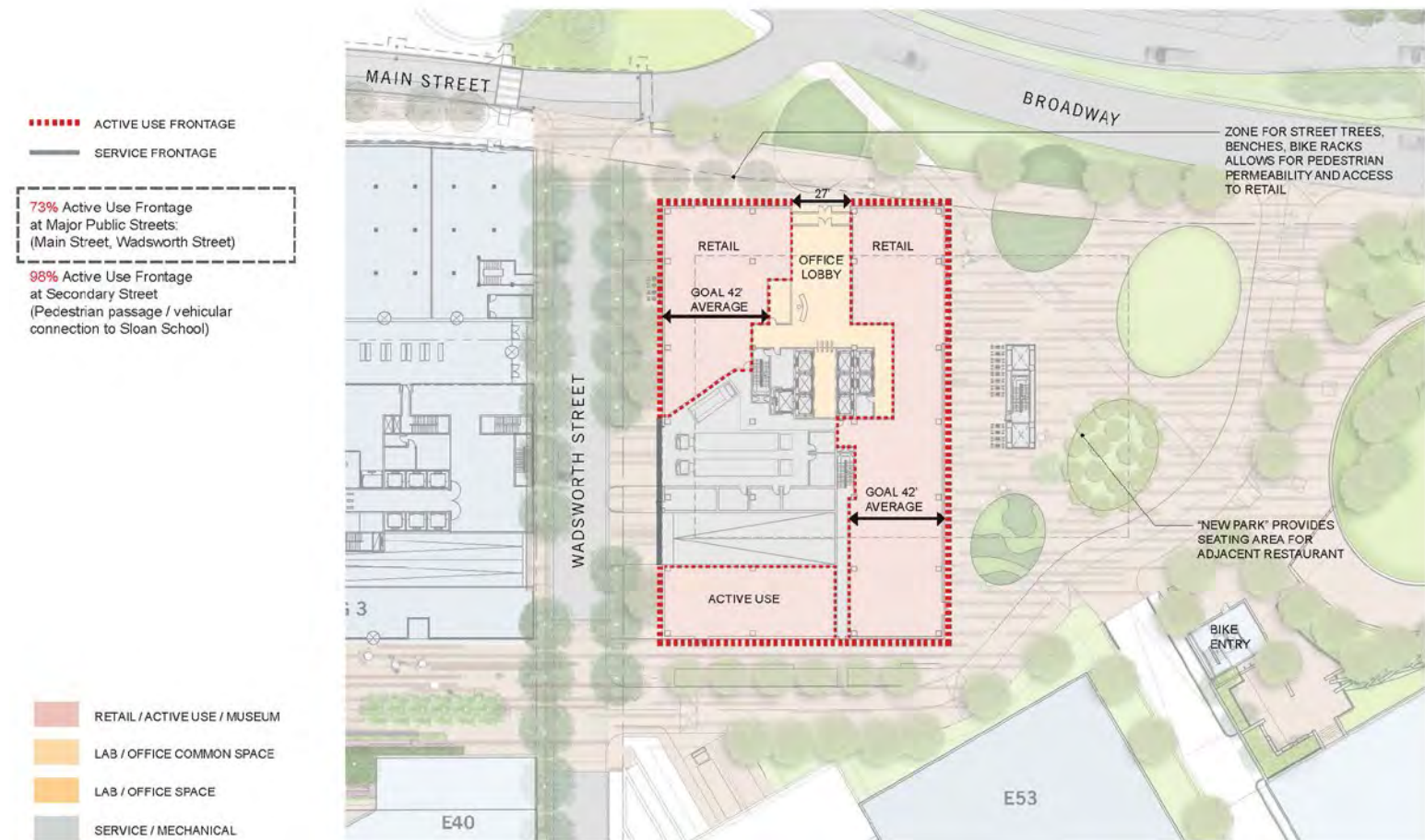
THE UPPER VOLUME IS ROTATED 90 DEGREES TO THE LOWER VOLUME ORIENTATING THE BUILDING MASS TO CONFORM TO THE PRIMARY MAIN STREET FRONTAGE. THE JUXTAPOSITION OF THE BUILDING MASSING CREATES A DYNAMIC CANTILEVER AND REDUCES THE OVERALL VISUAL IMPACT ON THE SURROUNDS. ADDITIONALLY, THE SHIFTING OF THE MASSES CREATES UNIQUE OUTDOOR SPACE ON THE ROOF OF THE LOWER MASS AND AT THE BUILDING CANTILEVER.



THE BASE VOLUME IS COMPOSED OF A LOWER MASS SIMILAR IN HEIGHT TO 238 MAIN STREET AND IS ORIENTATED IN A NORTH-SOUTH DIRECTION PARALLEL TO WADSWORTH STREET. THIS ORIENTATION ALLOWS FOR AN INCREASED GROUND LEVEL OPEN SPACE TO THE EAST CREATING AN EXTENSION OF THE EXISTING OPEN SPACE FRONTING THE MIT SLOAN SCHOOL.



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.



May 12, 2016



BUILDING 2

All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

BUILDING 3 GUIDELINES

Approximate Dimensions

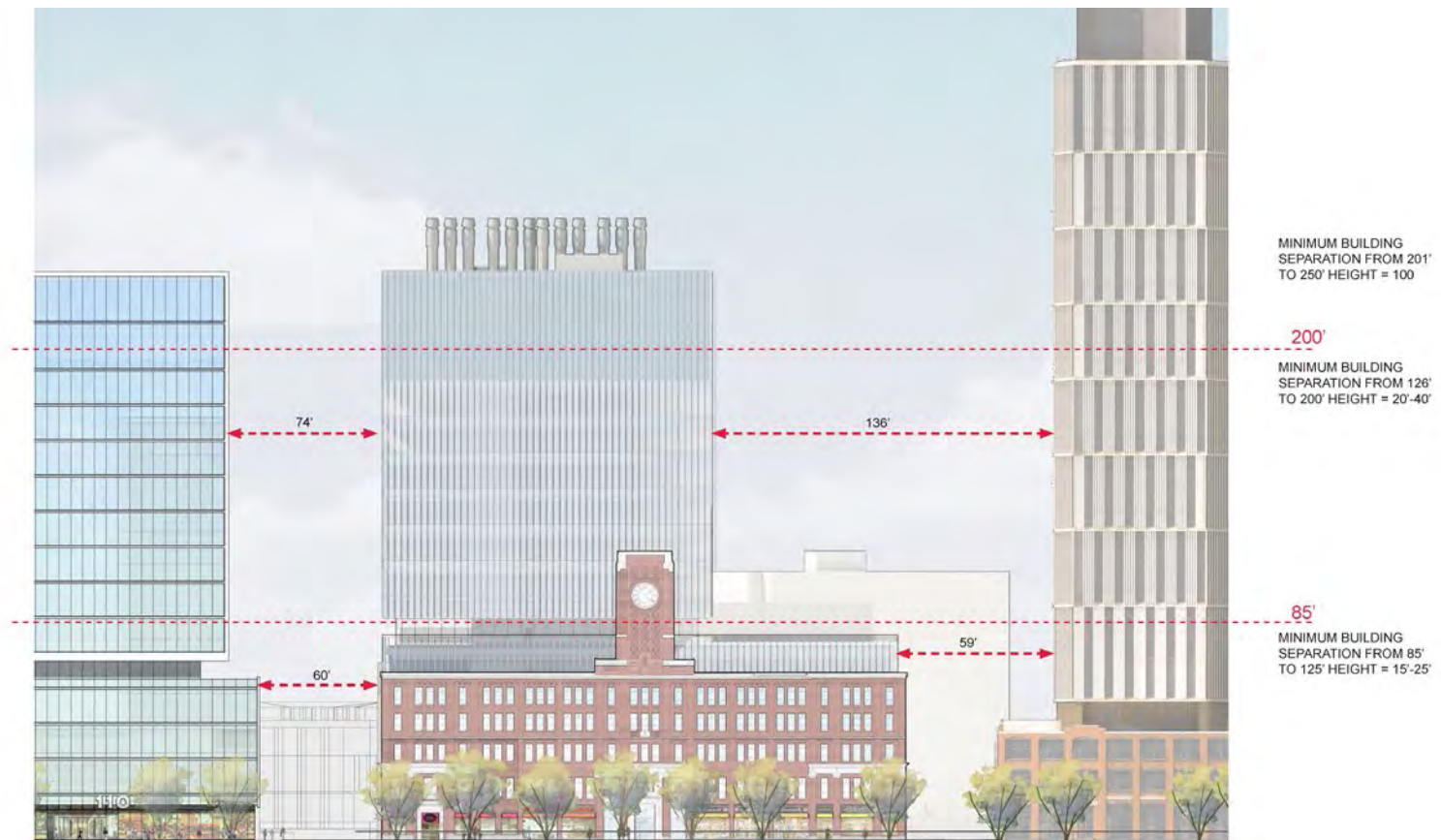
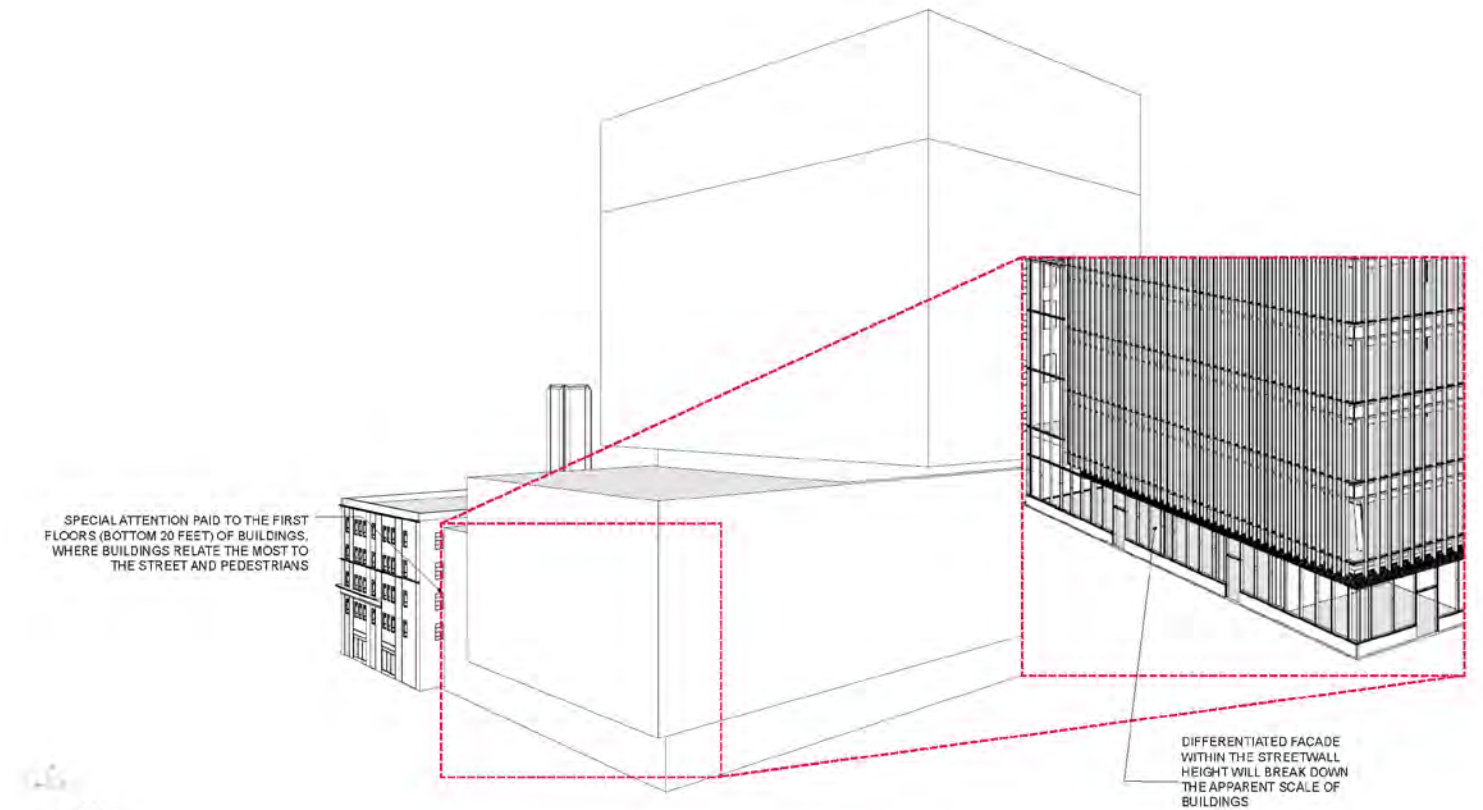
GFA:	Approximately 297,000 sf
Max.Height:	250'
Uses:	Commercial, Institutional, Retail/Active Use
Parking:	Below Grade in Shared Garage

Building 3 should reinforce the scale and character of Main Street by celebrating and preserving the Kendall Building. This could be achieved by locating the new building on the surface parking to its south and connecting it with a glass atrium that allows abundant light into each building. The Kendall Building, an early 1900's building with a unique clock tower, could become the main entry to the complex. The atrium between the old and new structures should provide ground floor entrances to the tenants in both buildings. The ground floor in both buildings should expand upon the existing retail activity with retail and active uses on Main Street, Hayward Street, Wadsworth Street, and the public open space to the south to the extent possible.

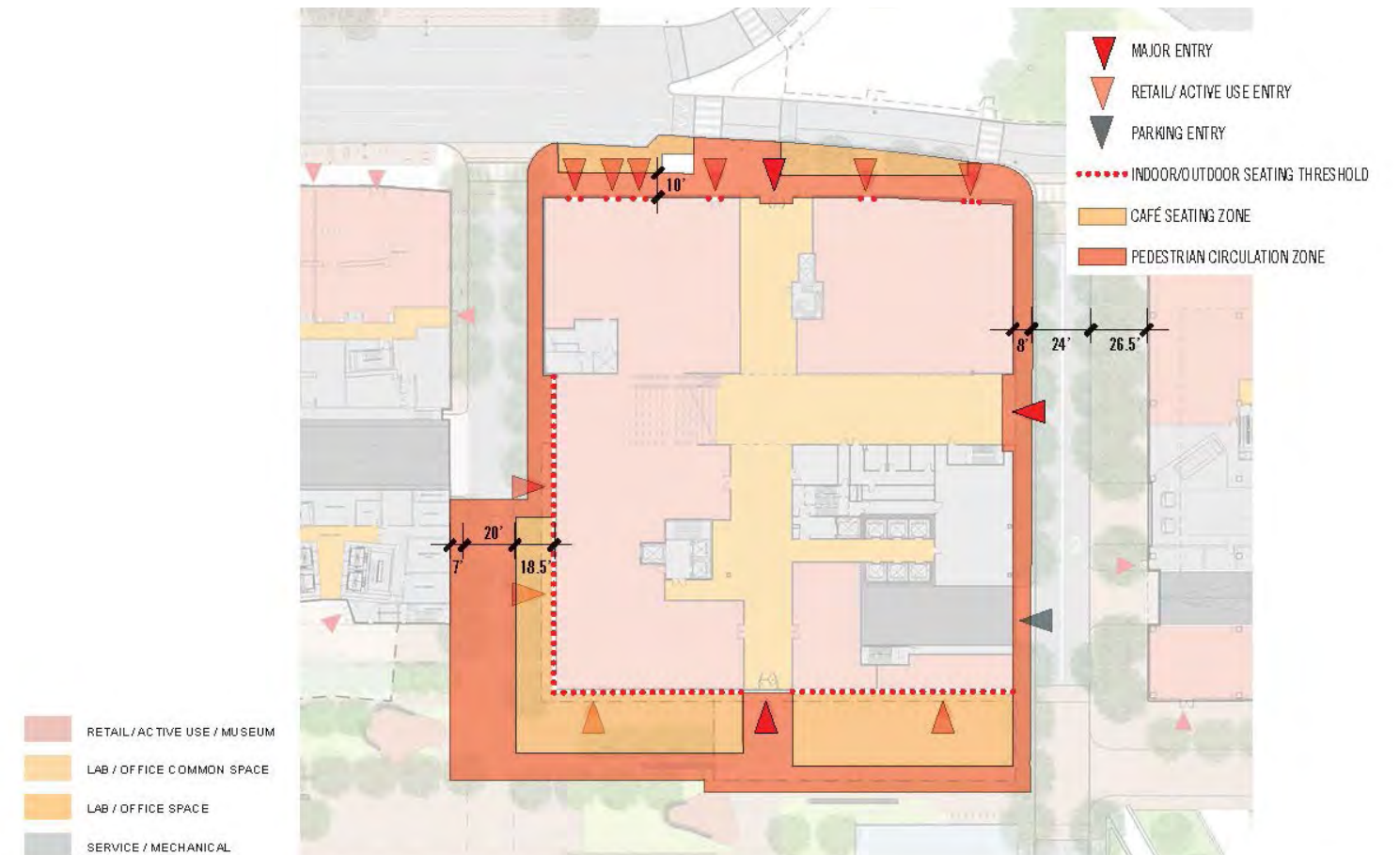
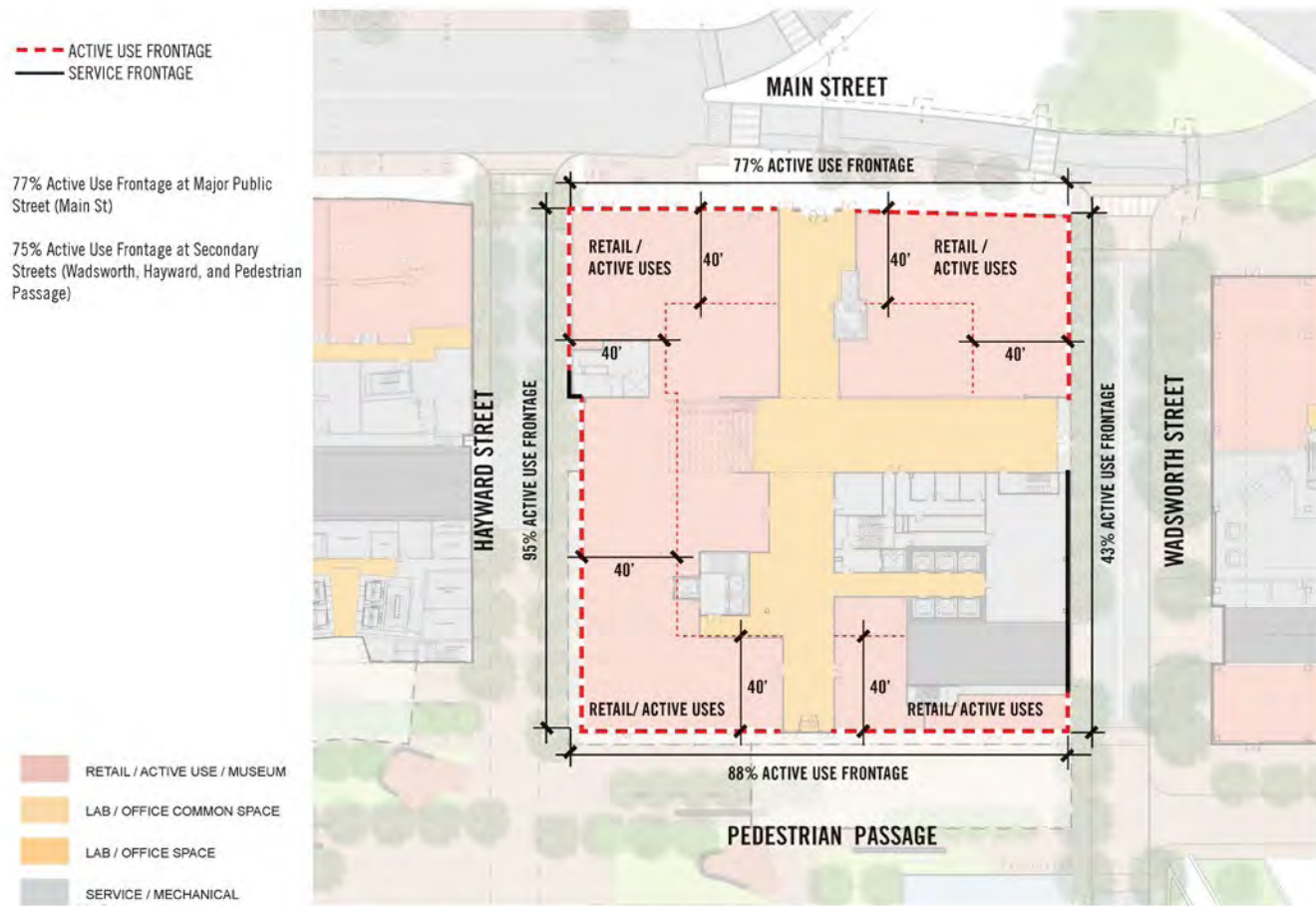
Similar to Building 2, the primary building massing may be composed of two volumes in order to relate to the historic Kendall Building and break up the mass. The base volume should be composed of a lower mass that relates to the height of the existing Kendall Building and also to the Suffolk Engraving Building (E38) and the J.L. Hammett Building (E39) to the northwest, and to the height and scale of the Muckley Building (E40) to the south. The upper volume may be rotated 90 degrees to the lower volume to create a dynamic cantilever that could serve to define a unique and dynamic ground level open space to the south, reduce the overall building massing impact on the surroundings, and reinforce Wadsworth Street as the predominate north-south street connector that links East Cambridge to the Charles River. The upper volume should be positioned and designed to defer to the importance of the clock tower, and maintain a sense of separation and sky views between buildings.

The ground floor spaces should enliven the area with restaurants, service, specialty retail activities and other active uses. The retail design should create a range of pedestrian oriented expansions with canopies, awnings, and entries that announce each retail opportunity.

The fenestration of the lower mass should pick up on the scale of the Kendall Building, through techniques such as highly glazed skin with fins. The upper portion of the mass should continue the module, scale, and materiality of the lower mass in a style such as a transparent, slightly reflective, glass curtain wall.



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.



BUILDING 4 GUIDELINES

Approximate Dimensions

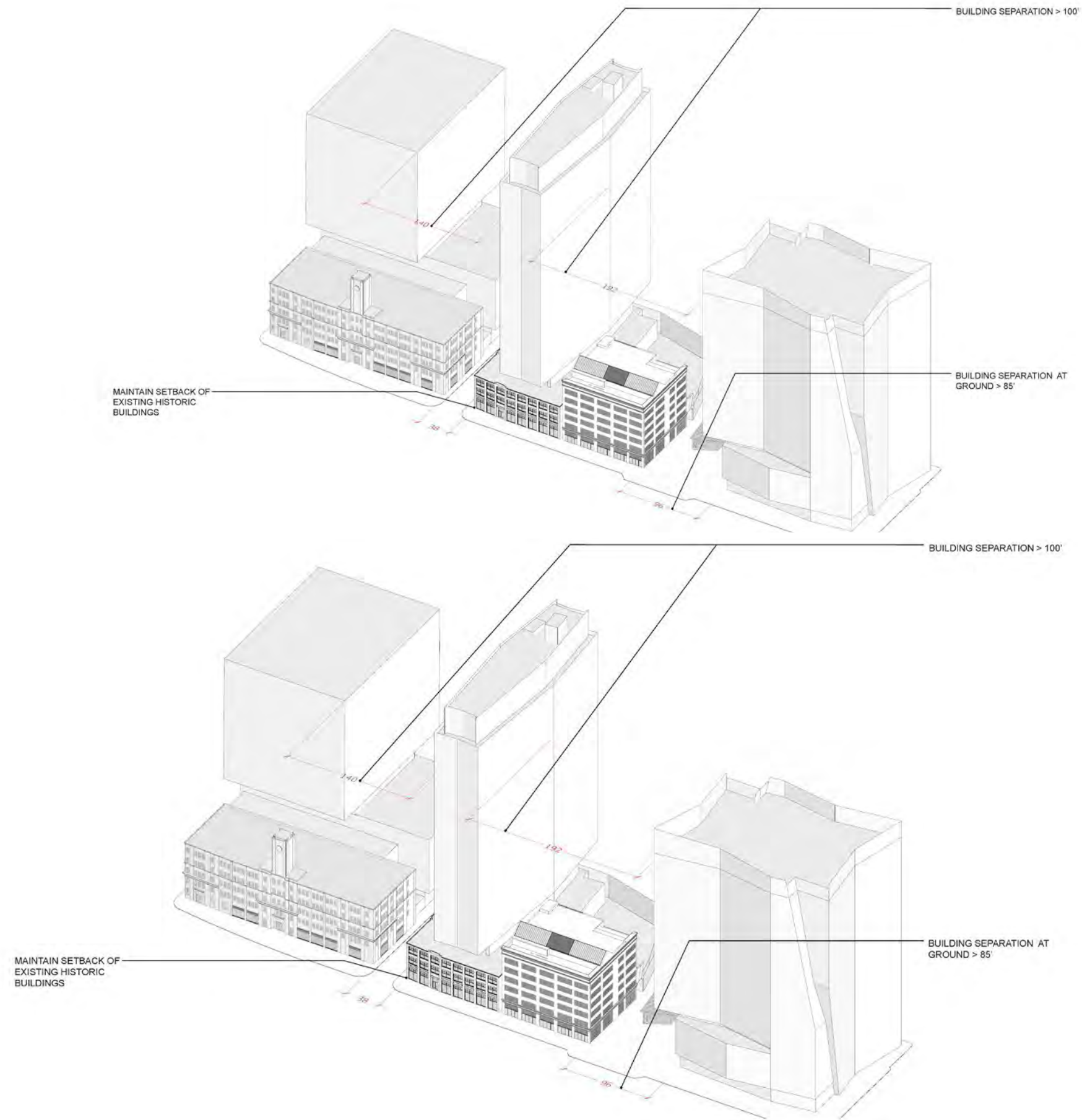
GFA:	Approximately 367,000 sf
Max. Height:	300'
Uses:	Institutional, Floor Retail/ Active Use
Parking:	Below Grade in Shared Garage

Building 4 has the opportunity to combine a rich collection of mixed-use programs, which should add energy and vitality to Kendall Square in a melding of historic and modern buildings. The Building 4 Parcel incorporates the existing Suffolk Building at 292 Main Street (E38) and the Hammett Building at 290 Main Street (E39) and an MIT surface parking lot to the south.

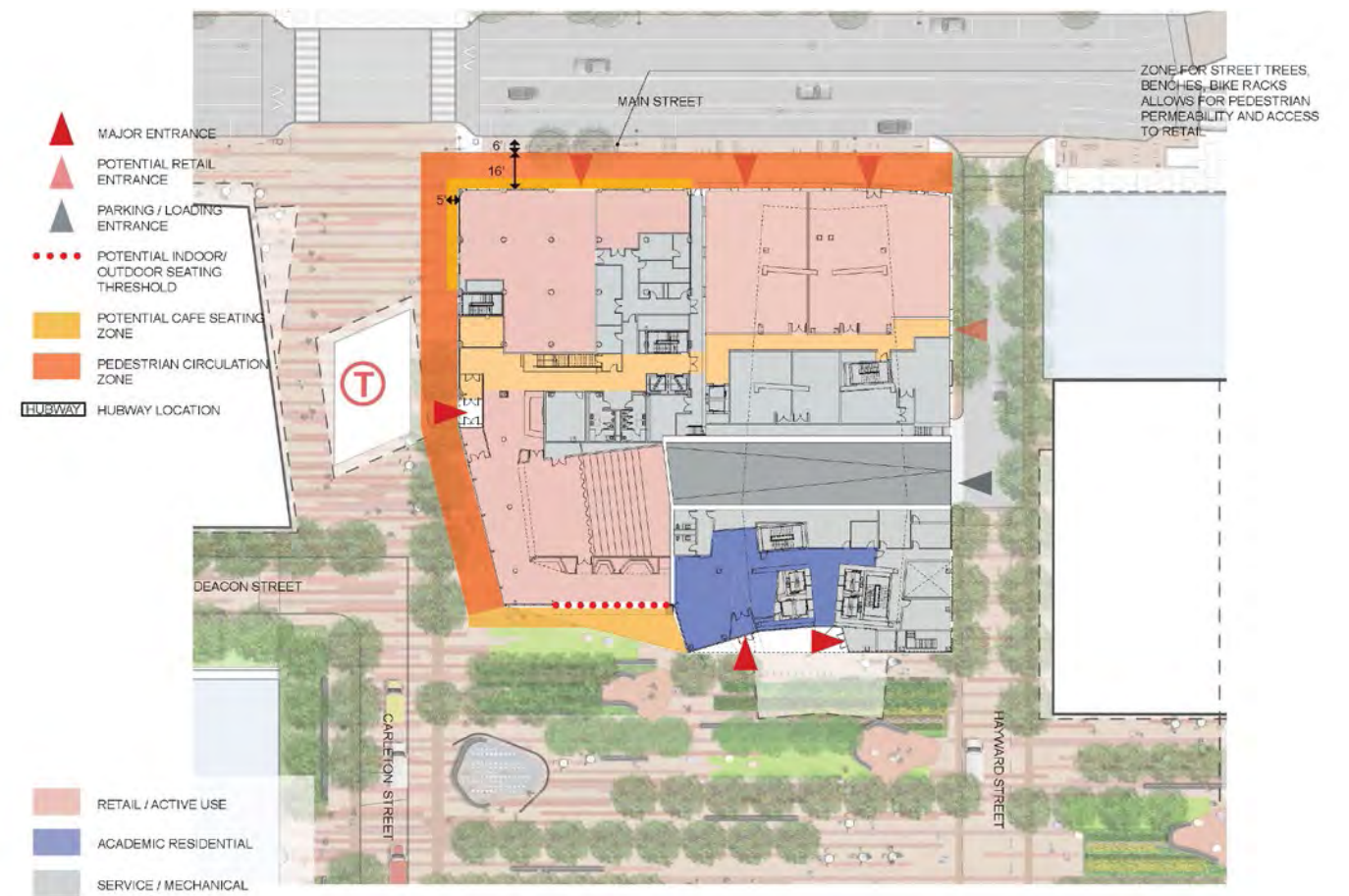
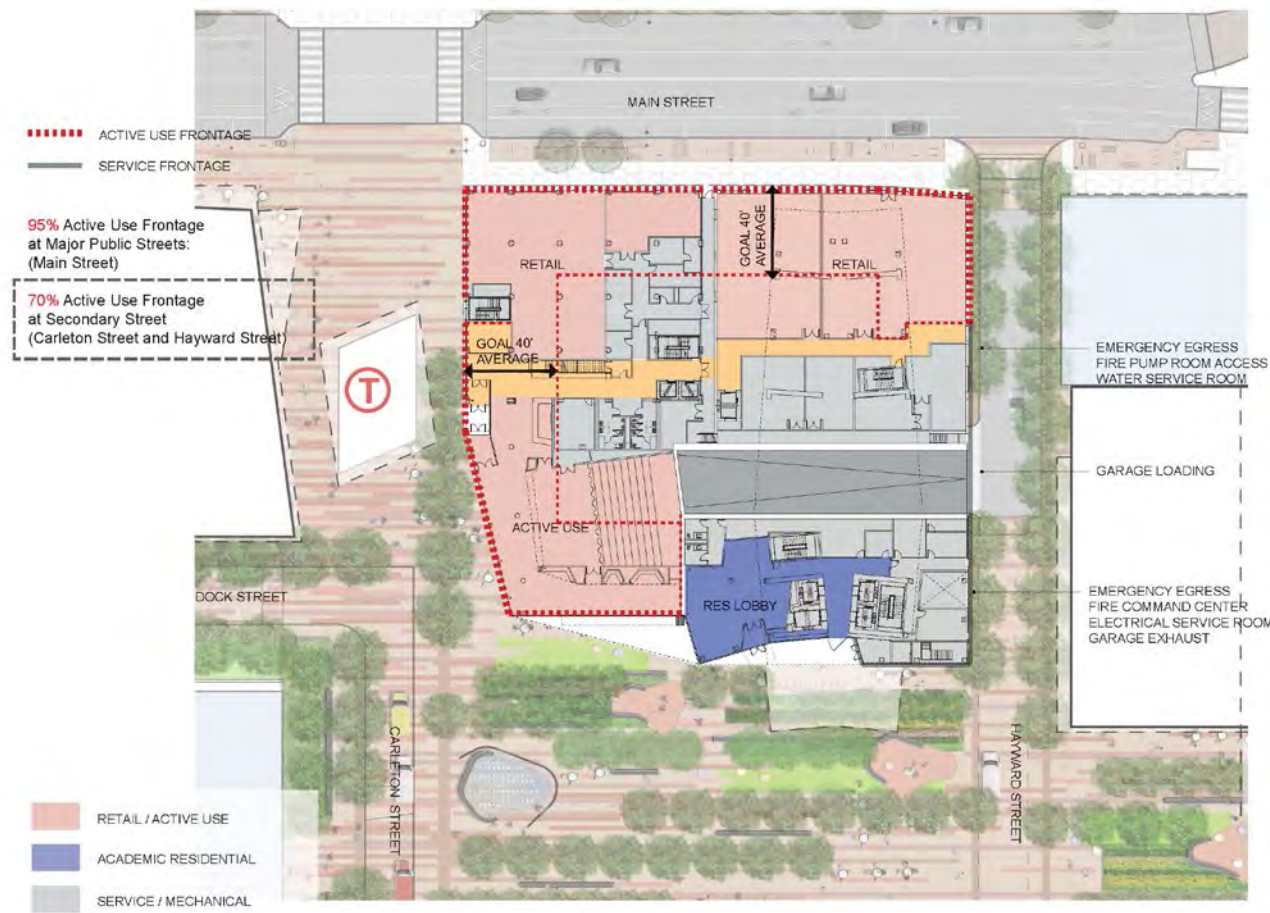
A principal urban design objective of Building 4 is to enhance the quality of Main Street for the Kendall Square community and to frame the plaza space surrounding the new Kendall Square T Station. The design of Building 4 should preserve E38 and E39 and reinforce the historic scale and character of Main Street. Retail along Main Street, currently elevated about 3-4 feet above street level, should be lowered to grade where possible to allow for universal accessibility and to enhance the pedestrian experience.

The building should incorporate a clearly defined, humanly scaled podium to the south, designed to relate to the height and massing of E38 and E39 and provide a transition to the residential tower above. The residential tower should be oriented north-south in order to allow light and air and minimize the shadow impacts on Main Street, in particular at the plaza in front of the Marriot Hotel. Efforts to mitigate the perceived bulk of the long north-south tower façade should be employed.

The ground level should be largely transparent in order to create a strong visual connection between indoor and outdoor activities. The façade of the tower should be designed to express the residential use within.



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.



May 12, 2016



BUILDING 4

All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

KENDALL SQUARE PUD - 5 DESIGN GUIDELINES

PART THREE

BUILDING 5 GUIDELINES

Approximate Dimensions

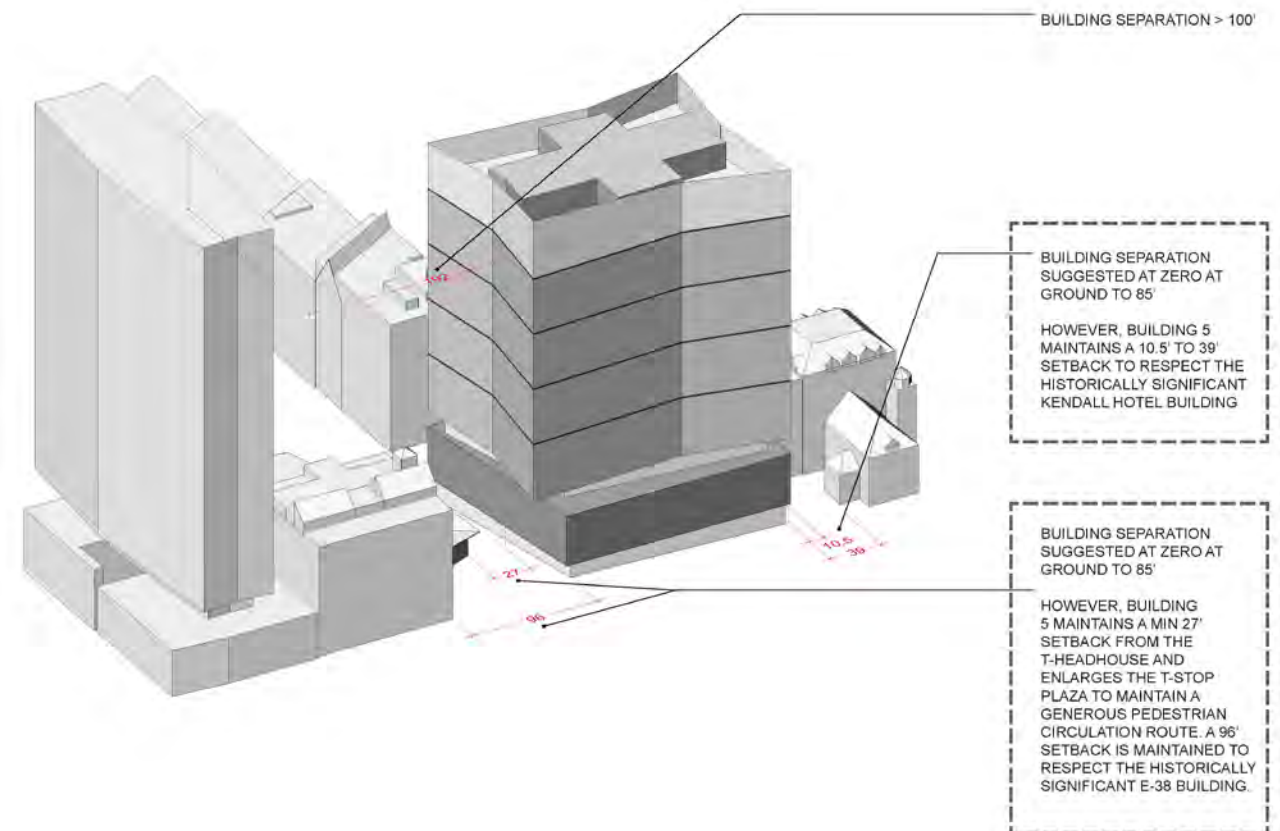
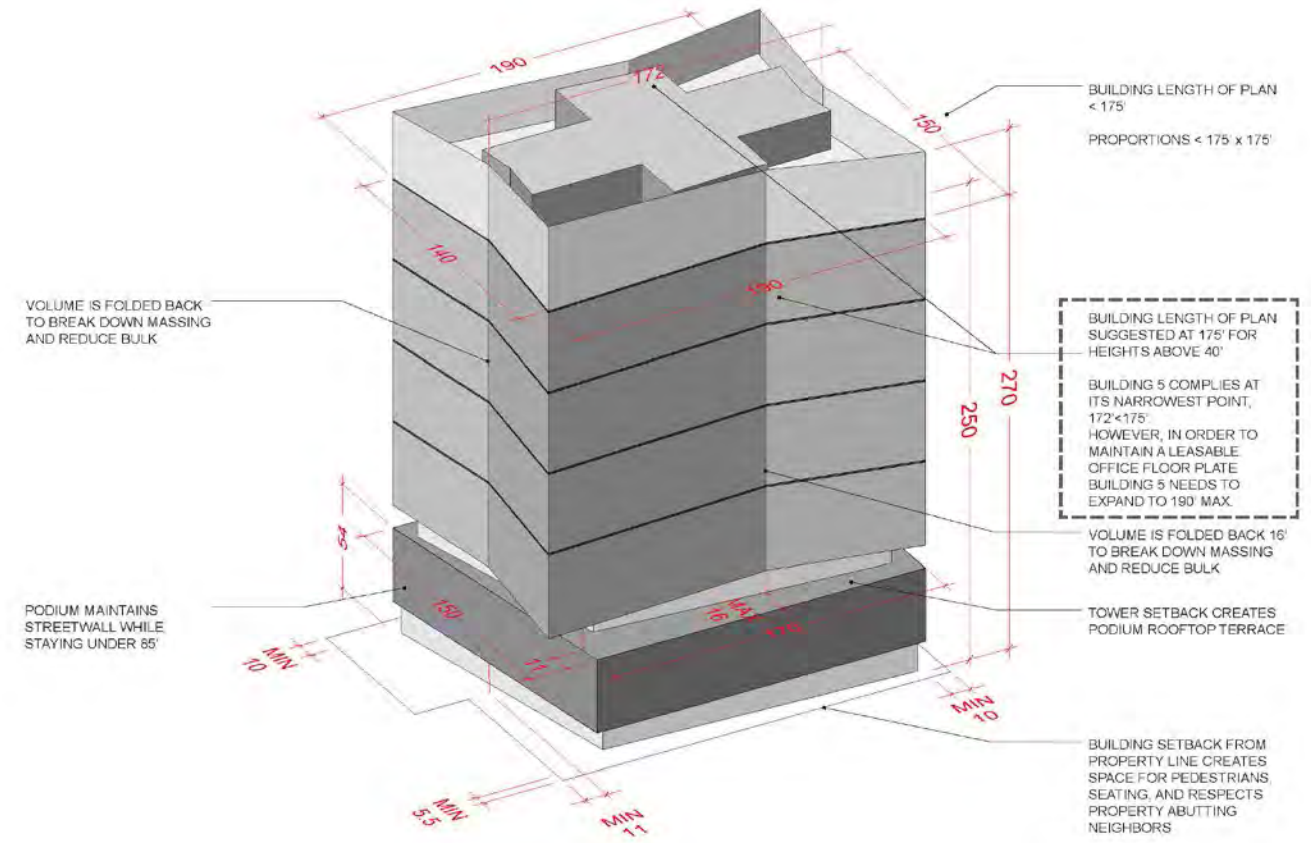
GFA:	Approximately 390,000 sf
Max. Height:	250'
Uses:	Commercial, Institutional, Floor Retail/ Active Use
Parking:	Below Grade in Shared Garage

Building 5 is positioned to be both a gateway on Main Street and a significant presence on the Kendall Square horizon. It welcomes the scale of the pedestrian and joins the urban skyline. The design should leverage the site's fortuitous location on Main Street adjacent to the Kendall Square T-Station. As a corner site, the Building 5 parcel should reveal and build upon the existing community of innovation by creating a pedestrian centric gateway from Main Street to the central green space.

Building 5's ground floor should be transparent on the north and east elevations to enhance the visual and physical connections between interior and exterior spaces. The ground floor should maximize glazing to provide street level views into the interior spaces that front the public north and east faces of the building.

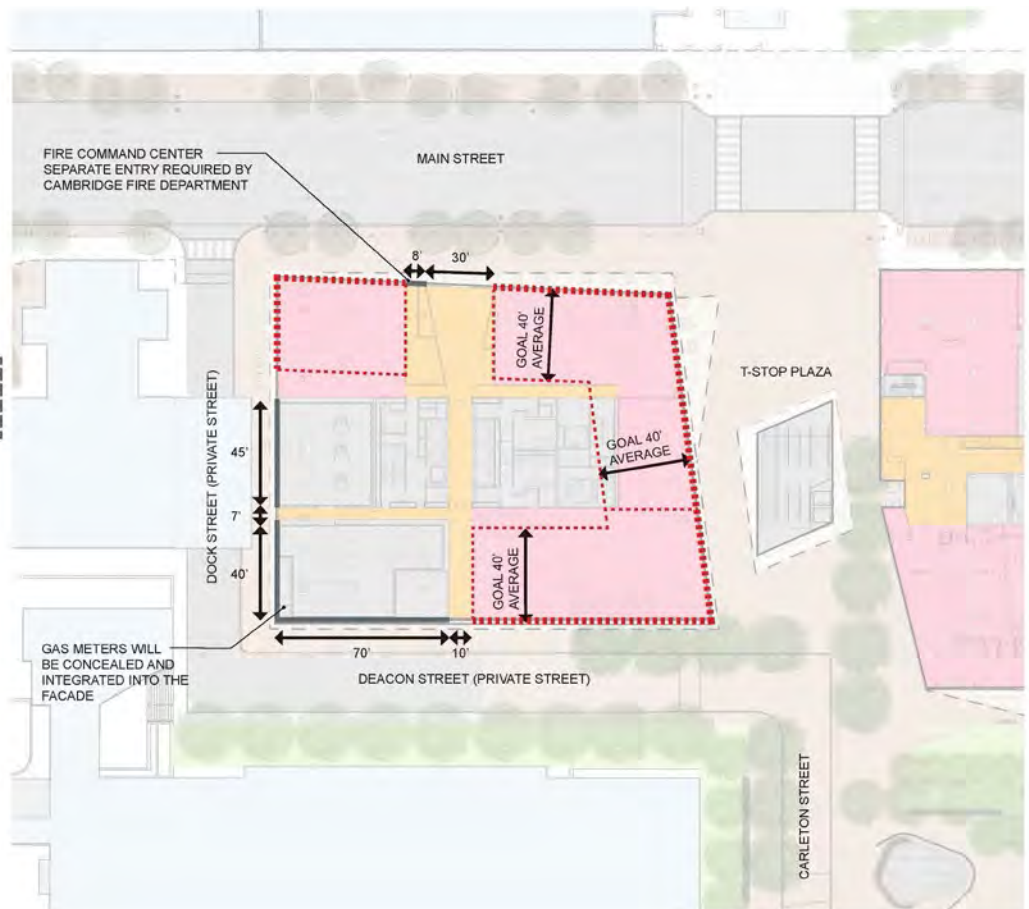
To the extent possible, the massing should give an independent expression and distinct identity to the plinth of the building mass occupied in large part by the MIT Museum. The plinth should also establish an urban scale compatible with adjacent historic buildings and appropriately scaled for pedestrians. It should give special attention to the interface with the new T-Station plaza and positively contribute to the activities, character and scale of that space. The office space occupying the upper volume should be set back at least 16' from Main Street and the plaza consistent with the K2 Design Guidelines. The entrance to the MIT Museum should have a strong architectural response, which should also consider opportunities to mitigate wind impacts .

As Kendall Square has a variety of architectural styles and material types and Building 5 will sit prominently on Main Street, the materials palette should integrate the warmer chroma of the adjacent Kendall Square historic brick buildings as an accent color to counteract the modern glass curtain wall and metal fins.



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

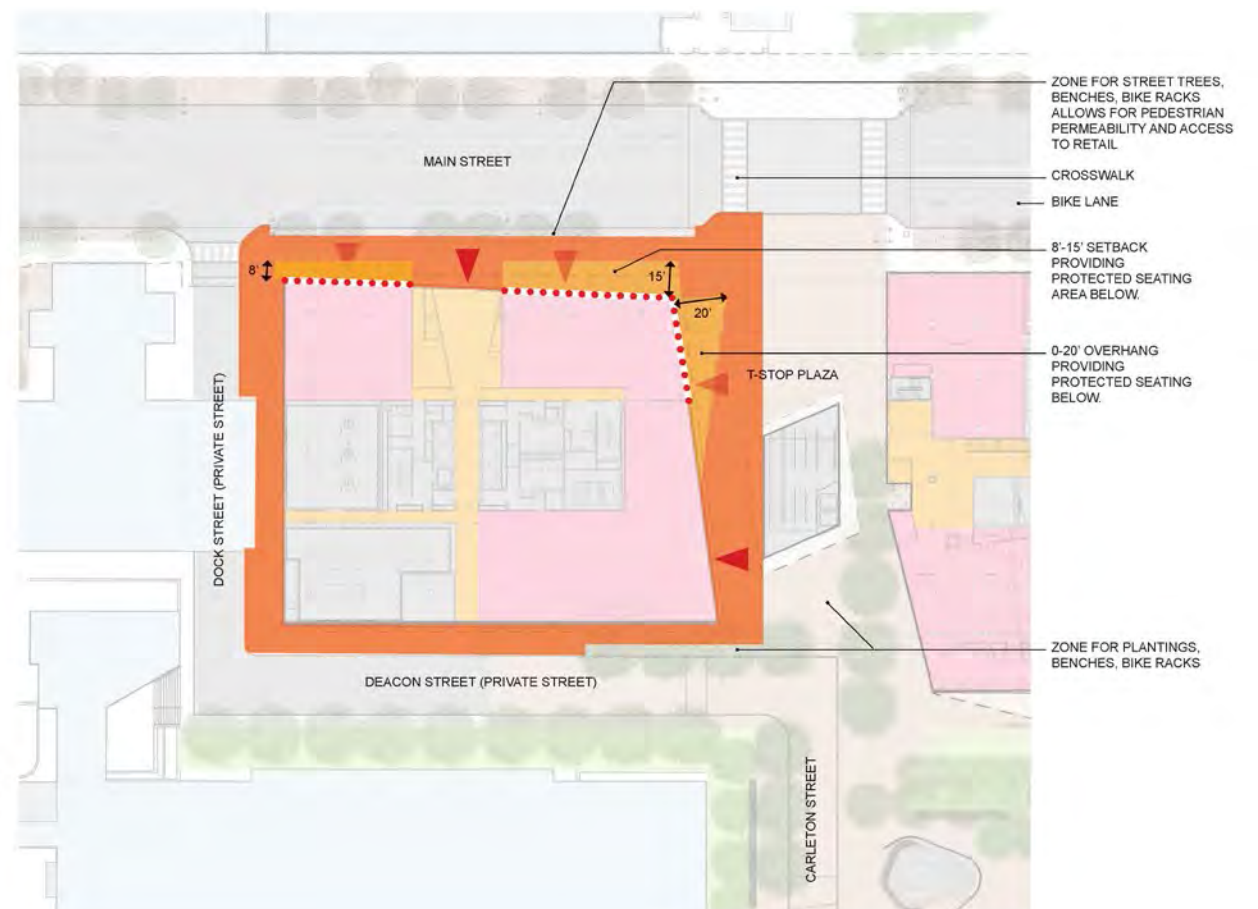
- ACTIVE USE FRONTAGE
- SERVICE FRONTAGE
- 77% Active Use Frontage at Major Public Streets: (Main Street)
- 100% Active Use Frontage at Campus Streets (Carleton Street)
- 47% Active Use Frontage at Secondary Streets (Dock and Deacon Street)



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

- ▲ MAJOR ENTRANCE
- ▲ POTENTIAL RETAIL ENTRANCE
- ▲ PARKING / LOADING ENTRANCE
- POTENTIAL INDOOR/ OUTDOOR SEATING THRESHOLD
- POTENTIAL CAFE SEATING ZONE
- PEDESTRIAN CIRCULATION ZONE

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



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

May 12, 2016



BUILDING 5

KENDALL SQUARE PUD - 5 DESIGN GUIDELINES

PART THREE

BUILDING 6 GUIDELINES

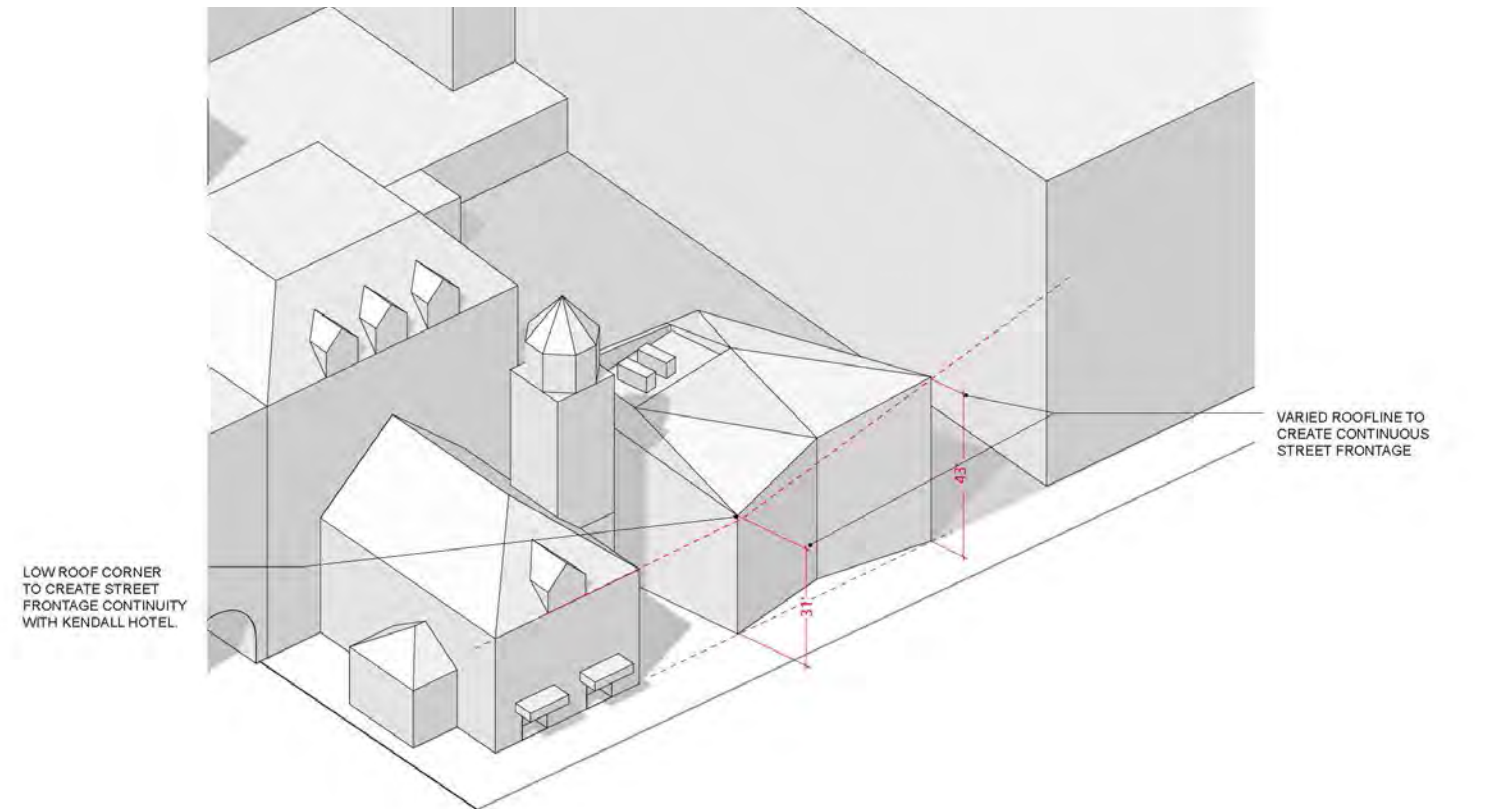
Approximate Dimensions

GFA:	Approximately 6,000sf
Max. Height:	Approximately 50'
Uses:	Retail, Office
Parking:	Below Grade in Shared Garage

Building 6 represents a significant placemaking opportunity for MIT's Kendall Square project. Its ground floor retail programming should activate Main Street, reinforce the street wall to complement the abutting Kendall Hotel, and help screen the heavily utilized loading and service area at the Ford Building (E19).

The building should maximize retail street frontage along Main Street by locating the building core at the south end of the building resulting in a reduced width of loading dock access. Building design should make special efforts to respond to the varying existing building heights and materials of the Kendall Hotel and the Ford Building.

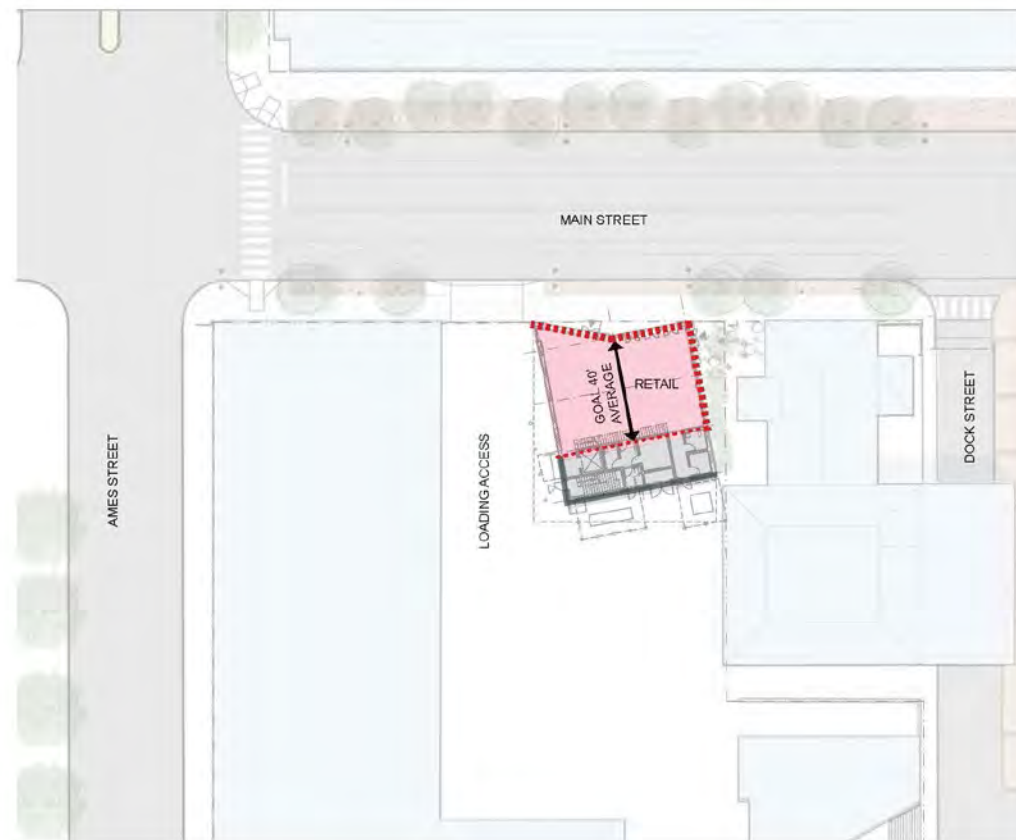
Building 6 should be designed to create a lively sidewalk courtyard, activated by entrance doors to retail at the ground level. A gradient of fenestration across the façade would provide maximum transparency at the ground level along Main Street, but opacity along the loading dock access. The window sizes may take cues from the Kendall Hotel and the Ford Building to further integrate the building within its context while providing a dynamic and engaging façade to help it stand out, not apart.



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

- ACTIVE USE FRONTAGE
 - SERVICE FRONTAGE
- 100% Active Use Frontage
at Major Public Streets:
(Main Street)
- No Secondary Street Frontage

- RETAIL
- SERVICE / MECHANICAL



- ▲ MAJOR ENTRANCE
- ▲ POTENTIAL RETAIL ENTRANCE
- ▲ PARKING / LOADING ENTRANCE
- POTENTIAL INDOOR/
OUTDOOR SEATING
THRESHOLD
- POTENTIAL CAFE SEATING
ZONE
- PEDESTRIAN CIRCULATION
ZONE

- RETAIL
- SERVICE / MECHANICAL



All figures approximate. Designs will be subject to detailed design review and approval by the Planning Board.

APPENDIX D

SUSTAINABILITY GUIDELINES

MIT's NoMa and SoMa Planned Unit Developments contain a total of six (6) Building Sites to be developed in phases over a 10-year period. Each individual Building Site will come before the Planning Board for design review and approval prior to issuance of a building permit for a particular Building, which will include a review of the applicable sustainability standards. Each Building will meet the applicable Green Building standards required by zoning, and the NoMa and SoMa PUDs have committed to using LEED version 4 as a starting baseline.

Building Site Review

When the design of each individual Building Site is submitted to the Planning Board for Design Review and approval, it will include a Sustainability Narrative describing how the zoning requirements are being met, and also describing how the building performs in relation to the following guidelines. These guidelines are meant to demonstrate the manner and extent to which the Permittee considered, in connection with its design of each Building, the proposed strategies in the Net Zero Action Plan and likely future climate conditions as described in the Cambridge Climate Vulnerability Assessment, also recognizing that best practices for sustainable development will evolve over time.

- Energy Performance: Each Building should be designed to target a 10-20% reduction in energy from the LEED v4 baseline, with the expectation that later phases of development would at a minimum meet any more stringent baseline standards in effect at the time Design Review is conducted.
- Energy Supply: Renewable and/or low carbon energy sources for all building and site energy needs are encouraged to the greatest extent possible. The following items, at a minimum, will be addressed in the Narrative.
 - Solar: Building rooftops that have appropriate solar access should be designed to accommodate the future installation of photovoltaic and solar thermal energy systems. Strategies include, but are not limited to, enhanced structural loading, pitch and orientation, a conduit to accommodate pipes and cables, and dedicated space in mechanical rooms.
 - Steam: Connecting to existing steam lines, either from a local utility or from campus cogenerating facilities, is encouraged where feasible. A feasibility assessment will be provided for each Building as required in the PUD-5 zoning.

- Geothermal: The feasibility of geothermal energy systems should be assessed for each Building Site, including the feasibility of shared geothermal with other Building Sites.
- Energy Storage: Incorporating energy storage systems into buildings or sites, either at the time of construction or in the future, is encouraged.
- Commissioning: A verification program and ongoing commissioning plan for mechanical, electrical, plumbing, and renewable energy systems should be developed for each building prior to occupancy, according to the standards of the LEED Enhanced Commissioning credit or comparable standard.
- Transitioning to Net Zero: Buildings and sites should be designed with sufficient flexibility that buildings can transition to contributing toward net zero greenhouse gas emissions over time. The Sustainability Narrative will analyze, to the extent practical and utilizing appropriate technologies and processes available at the time that a Building and/or Building Site is submitted for Design Review, possible technical decarbonization pathways, including redesign of building energy systems, storage and energy procurement strategies.
- Resilience: Buildings and sites should be designed and operated to incorporate resiliency strategies that are protective of building occupants, activities and systems, and that contribute positively to the resiliency of the surrounding district, in anticipation of long-term climate impacts including precipitation-driven flooding, sea-level rise and storm surge flooding increased heat and other likely climate change impacts.
- Evolving Standards: The Net Zero Action Plan anticipates that new benchmarks for sustainability will be set over time. Design guidelines are expected to evolve as part of future resiliency planning in response to the Climate Change Vulnerability Assessment and related planning work. Therefore, Building and Building Site designs will be expected to meet the most up-to-date standards, as set forth in the Zoning Ordinance, at the time the Buildings are submitted for Design Review.

ONGOING ASSESSMENT

At the time a Building and/or Building Site design is submitted for Planning Board Design Review, it should include a report assessing the sustainability and resiliency of those portions of the PUD Development Plans that have been completed to date; provided, however, that in no event shall the Permittee be required to provide more than one (1) assessment/update per calendar year. Upon

completion of all of the improvements authorized by the PUD Development Plans, commencing on the year in which the final Building receives its Certificate of Occupancy, and once every five (5) years thereafter until 2050, the Permittee should continue to provide updated assessments. The purpose of this assessment will be to inform MIT's planning for future phases of development and to support the City's objective of continually improving sustainability over time by learning from past experience and incorporating new strategies.

- The scope of the above Sustainability and Resiliency Assessment shall be determined by the Permittee and City Staff and, at a minimum, will address the following.
- An assessment of the sustainability performance of all completed and occupied development, including energy consumption, greenhouse gas emissions and other aspects of building sustainability.
- A detailed and up-to-date analysis of options for reducing greenhouse gas emissions through district and renewable energy system implementation, electrical micro grids, on-site energy storage, or other measures.
- A detailed and up-to-date analysis of options for improving district resiliency from climate change impacts.
- MIT's participation in collaborative efforts to promote sustainability, where applicable.

MIT will also work with the City to convene a working group of industry stakeholders, research institutions and industrial hygienists to collaborate on new standards for reducing energy use in buildings with high energy use.



Kendall Square
Central Square
Planning Study

KENDALL SQUARE

DESIGN GUIDELINES 2013

Cambridge Community Development Department
344 Broadway, Cambridge, MA 02139
617-349-4600
www.cambridgema.gov/cdd

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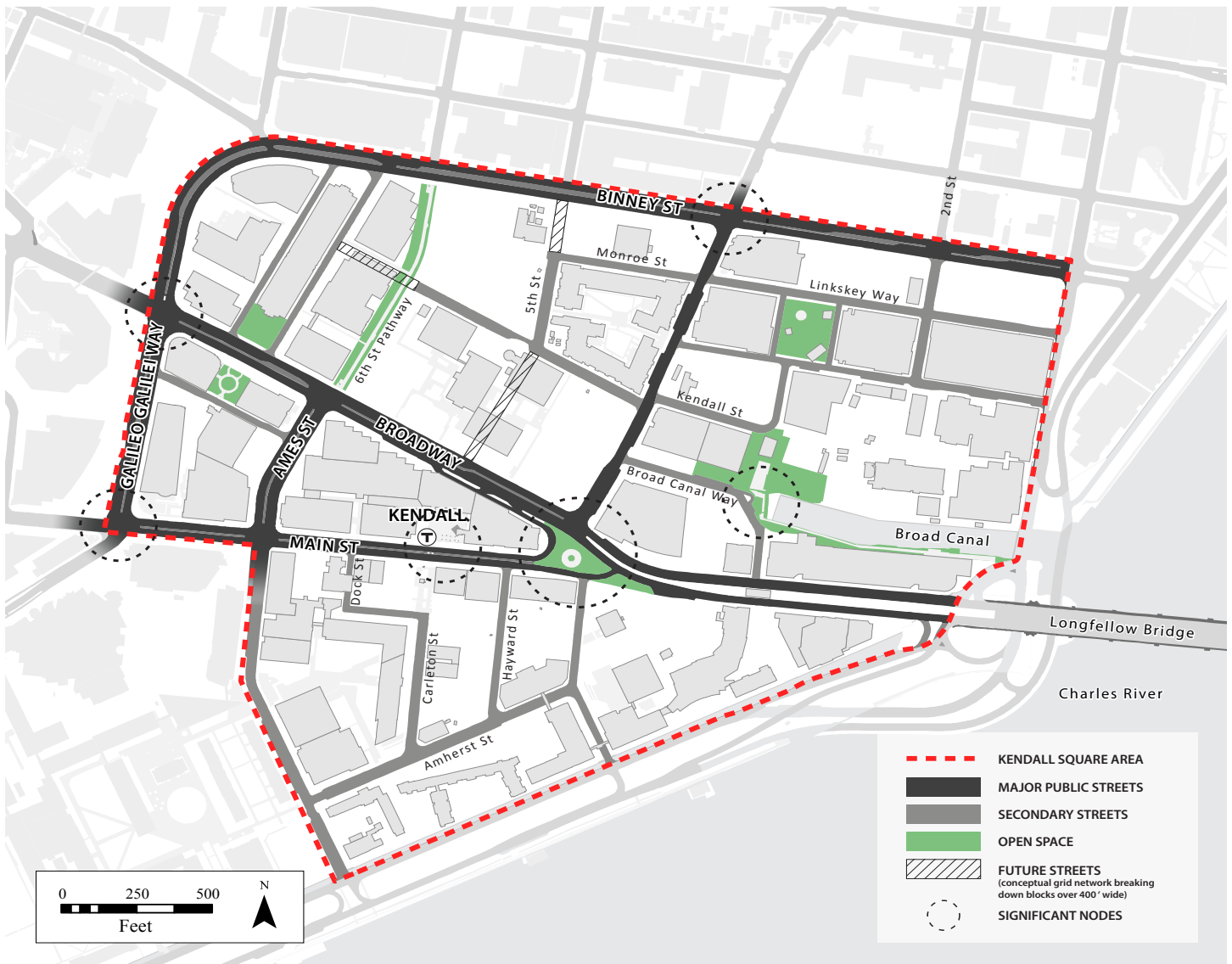
1. Introduction

The Kendall Square Design Guidelines 2013 are created as part of the City of Cambridge's comprehensive Kendall Square Central Square Planning Study (K2C2) to inform property owners, business owners, developers, and the general public about the desired form and character of development in Kendall Square. These guidelines will help guide development activities in this area, aiming to create consistently high-quality public environments, and to ensure that development contributes to the character and vitality of the surrounding community. The guidelines will be referenced in the City's Zoning Ordinance in the Project Review Special Permit section and in the PUD texts where applicable and will be used by the Planning Board in their review of all discretionary permits such as special permit and PUD applications for projects in the Kendall Square area.

The Kendall Square Design Guidelines 2013 guidelines articulate the design and site planning **goals** for Kendall Square, and **measures** to achieve them. The guidelines aim to create a positive mixed use district where tall buildings with large floorplates can be good neighbors to public spaces, smaller existing buildings, and adjacent residential neighborhoods. Therefore, the guidelines are particularly geared to sensitively manage the impacts of bulk and height and animate the major streets and public spaces through encouraging active ground floors.

However, the guidelines are not intended to impose a strict limitation on the building form and style. Other creative design solutions, or measures, not noted here may also be utilized to achieve the same goals at the discretion of the Planning Board, especially in the interest of enhancing architectural diversity in the area.

A major goal of the Kendall Square Central Square Planning Study is to enhance the quality of public street and park spaces. Buildings and private open spaces adjacent to streets and parks have a significant impacts on adjacent public spaces through their physical design and internal uses, particularly at ground level. Therefore, the design guidelines focus heavily on relationships between private buildings/open spaces and public streets/parks. Four distinct types of streets and edges deserve different criteria, addressed separately in the guidelines:



- **Major Public Street** – Street with block edges where the most intensive, and highest-priority, active ground level uses are present and desirable. These typically include locations where retail uses are most viable from a market standpoint. In the study area, major public streets include Main Street, Broadway, Third Street, Ames Street, Binney Street, and Galileo Galilei Way. Major public street edges should create a well-defined streetwall to help frame Kendall Square’s major public streets as public spaces. They should also provide adequate space along sidewalks for outdoor activity associated with active ground level uses. Major public street edges are intended to engage a high volume of pedestrian traffic, and to support public activity throughout the day and evening.
- **Secondary Street** – Street with block edges where active ground level uses are present or desirable, but may require more time to mature. This may depend upon stronger market conditions or development of more appropriate spaces, where ground-level residential or other uses can support an attractive and walkable public space network. Secondary streets are intended to engage a moderate to high volume of pedestrian traffic and to support public activity throughout the day and evening, now and in the future. They should also provide adequate space along sidewalks for compact residential stoops, porches and gardens, and outdoor uses associated with retail or institutional uses.
- **Campus streets** have a different character and urban form than the mixed-use commercial uses and densities anticipated and desired for Main Street, Third Street, and Broadway. The Campus Streets include Ames south of Main, Carleton, Hayward, Amherst and Wadsworth. At the block corners with Main Street, it is anticipated that the retail use fronting Main Street will wrap 30 to 40 feet around the corner onto Ames Street, Hayward and Wadsworth Streets but is not expected to continue down the streets in academic buildings. It is also not expected that retail will front academic buildings on Carleton and Amherst Streets. In addition, the fact that the campus is under single ownership helps make it possible to create an attractive pedestrian experience, through providing street trees and other planting, providing transparent glazing with direct views between the sidewalk and interior building spaces, limiting the length of blank walls, differentiating the sidewalk level of buildings with signage, furniture, materials, seating opportunities, awnings and transparency and locating courtyards and open spaces to maximize sun exposure. For building facades along the lot lines, it may be possible to use building stepbacks and horizontal breaks to differentiate and enliven the building wall, respecting existing building heights and setbacks on the streets to create a more gracious pedestrian scale environment along the sidewalk.
- **Park Edges** – Throughout Kendall Square, there are parks and plazas that need to be better designed, managed, and connected to each other. Where new buildings abut these open space resources, special attention should be paid to activating the ground floors of the building. Furthermore, the scale and massing design should be carefully considered to minimize negative impacts to the nearby parks and plazas.

2. Environmental Quality

Goal: Kendall Square is a highly urbanized smart growth center, and, as new development is added, there will inevitably be increases in shadows, wind, noise, etc. as is the case in any new urban development. However, new projects should be carefully designed to avoid unnecessary environmental impacts. The goal is to evaluate each design decision to find outcomes that balance the positive aspects of building near a transit hub with the changes in the environment that result from more housing, retail, and business uses in relatively dense new structures located in close proximity to one another.

– *Shadow*

Measure: Locate and shape buildings to minimize shadows on existing public parks and plazas such as Point Park, the North and South Plazas at Cambridge Research Park, and the Broad Canal area. On the Volpe site, create a master plan that configures the required new park space with a view towards maximizing solar access, while balancing the need for logical pedestrian circulation and spatial organization of new buildings.

– *Wind*

Measure: Design new buildings and open spaces to minimize negative wind impacts on streets and public spaces. Proponents should explain how proposals have been conceived with regard to prevailing winds and any strategies to avoid excessive wind impacts on pedestrians, to the extent practicable.

– *Vegetative Cover*

Measure: To deal positively with each site, development should be designed to provide vegetative cover, improve stormwater infiltration, and reduce heat island effect. It is understood that, in this urban setting, not all projects will be able to achieve all these measures. Projects should be considered for the feasibility of both at-grade and rooftop interventions.

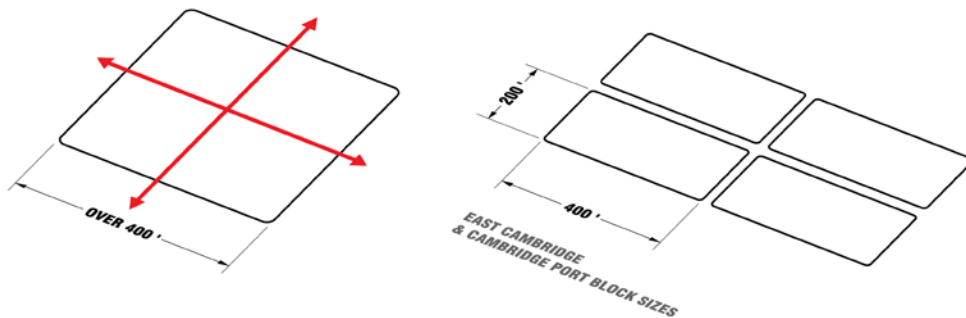
– *Noise*

Measure: Projects should attempt to minimize noise generated from rooftop mechanical equipment. In particular, mechanical equipment on buildings near residential uses should be designed, selected, located, and acoustically-screened to protect neighbors from noise impacts.

3. Walkability

– Connections / Block Sizes

Goal: New development and redevelopment of sites should break up large blocks and increase permeability by creating pedestrian and bicycle connections through the site.



– Loading and Servicing

Goal: Loading and service are critical elements that need to be accommodated for the functioning of the district. They should be located and designed to support the walkability of the area and minimize dead zones, particularly away from major public streets and pedestrian corridors wherever possible.

Measures:

- Locate loading and servicing areas away from major public streets and significant promenades; use secondary streets or, preferably, internal alleyways for loading and service.
- Encourage consolidated off-street loading areas serving multiple buildings. Avoid creating loading/servicing areas exceeding two bays or 30 feet wide. Occupied ground level spaces with windows should occur between loading/servicing areas wherever possible to help diminish their impact.
- Loading/servicing bays should be provided with architectural doors designed to complement the overall façade composition. Doors should be customarily closed when loading/servicing bays are not in use.
- Driveway turnaround and vehicle drop-off facilities along public streets are discouraged to avoid disrupting the continuity of the sidewalk space.

– **Street Activity**

Goal: The vision for Kendall Square includes an emphasis on activation of the district beyond the work day. Site planning and building design should support pedestrian flow throughout the district and provide access to outdoor and indoor public spaces that allow people to gather, and encourage public activity throughout the day and evening.

Measures:

- a. Locate courtyards and open spaces to maximize sun exposure.
- b. Connect outdoor public realm with indoor public spaces.
- c. Streets and other public spaces should feel safe in the evening. Appropriate design of lighting and wayfinding is encouraged.
- d. Design to accommodate diverse retail and service offerings that serve current and future Kendall Square residents as well as workers in the neighborhood.

4. Universal Access

Goal: The design of buildings and outdoor spaces (public and private) in and around Kendall Square merits special emphasis on universal access. As the theme of innovation is at the core of Kendall Square’s identity, demonstrating innovations in universal access will enhance Kendall’s identity. Exemplary accessibility is an area where Kendall has particular opportunity to stand out regionally, and perhaps nationally and internationally. Kendall’s flat topography and its existing infrastructure already promote accessibility and provide a strong basis for further accessibility enhancements that will set Kendall apart from its peer communities and enhance opportunity for the interpersonal collaboration important to its success.

Measures:

- a. Ensure that outdoor spaces provide comparable facilities for all people regardless of their ability to climb steps. Use technology to help compensate for limitations in sensory abilities.
- b. Ensure that parks and plazas provide activities and facilities serving people of all ages.
- c. Improve wayfinding signage throughout Kendall Square, and create more direct accessible connections, to make mobility among destinations more convenient and efficient.
- d. Provide audible and tactile information beyond existing requirements at crosswalks and in building elevators.
- e. Ensure that streetscape elements do not conflict with accessible parking.

5. Built Form

The existing Kendall Square embraces various styles of developments, each symbolizing the predominant economy of different eras: industrial and manufacturing, R&D, and now, the knowledge economy. Recently, companies are increasingly seeking buildings with large floor plates to allow greater flexibility to accommodate multiple disciplines, and to provide opportunities for interaction, collaboration, and creativity.

a. Architectural Identity of Kendall Square

Goal: Architectural composition should particularly emphasize a distinct identity for the building as well as for Kendall Square. This identity should be legible from adjacent streets and critical viewpoints, as well as within the overall Kendall Square skyline when seen from a distance.

Measure: Methods of creating a distinct architectural composition include use and proportioning of materials, colors and shapes that differ from those of adjacent buildings.

Goal: Design buildings to help create streetwalls, where appropriate, to help frame the sidewalks, plazas, and other public spaces in Kendall Square.

Measures:

- a. Align new facades with existing ones if doing so helps give a sense of spatial cohesiveness to the sidewalks.
- b. Allow breaks in the streetwall if needed to help define entryways to buildings.
- c. Streetwall design should take into account the need to provide active ground floor uses.

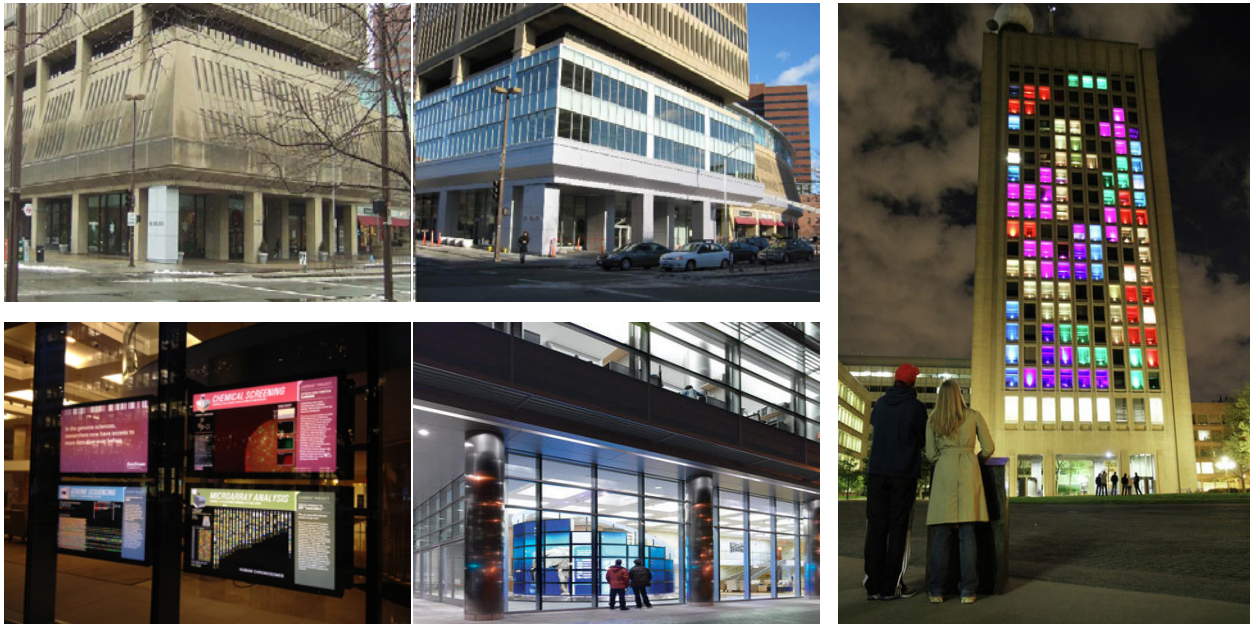


Examples of a distinct architectural composition of Kendall Square (left: view from Watermark plaza near Broad Canal walk, right: view from One Kendall Square plaza, Cambridge)

Goal: Convey the act and spirit of innovation in Kendall Square through transparency that directly reveals activity and displays visual media.

Measures:

- Use transparent building materials.
- Install media displays that show the works being done inside the buildings; avoid “advertising” imagery
- Install interactive media to bring cutting-edge technology closer to the public, directly revealing the scene of innovators at work



From top to bottom, left to right:

- One Broadway represents an effort to convey the spirit of innovation by rehabilitating an old concrete building facade into a transparent and modern one.
- The Broad Institute in Kendall Square installed media displays in the lobby to present the research being done by the Institute. Usage of TV screens need careful consideration because screens are hard to read during daytime.
- MIT students hacked a campus building for active media display. Building facades could be utilized to accommodate high technology and creative ideas, which will bring the public closer to the knowledge economy of the twenty-first century. (Copyright: ©Chris Pentacoff)

b. Scale and Massing

Goal: Encourage building forms and site planning that relate to the surrounding context. New buildings should create sensitive transitions to neighboring uses, especially to existing residential buildings, historical structures, and public parks.

Measures:

- a. Include setbacks to create transitions to adjacent low-scale buildings
- b. Design and locate public and private open space to be responsive to adjacent uses
- c. Use sensitive site planning and building design to reduce impact on significant view corridors from public spaces

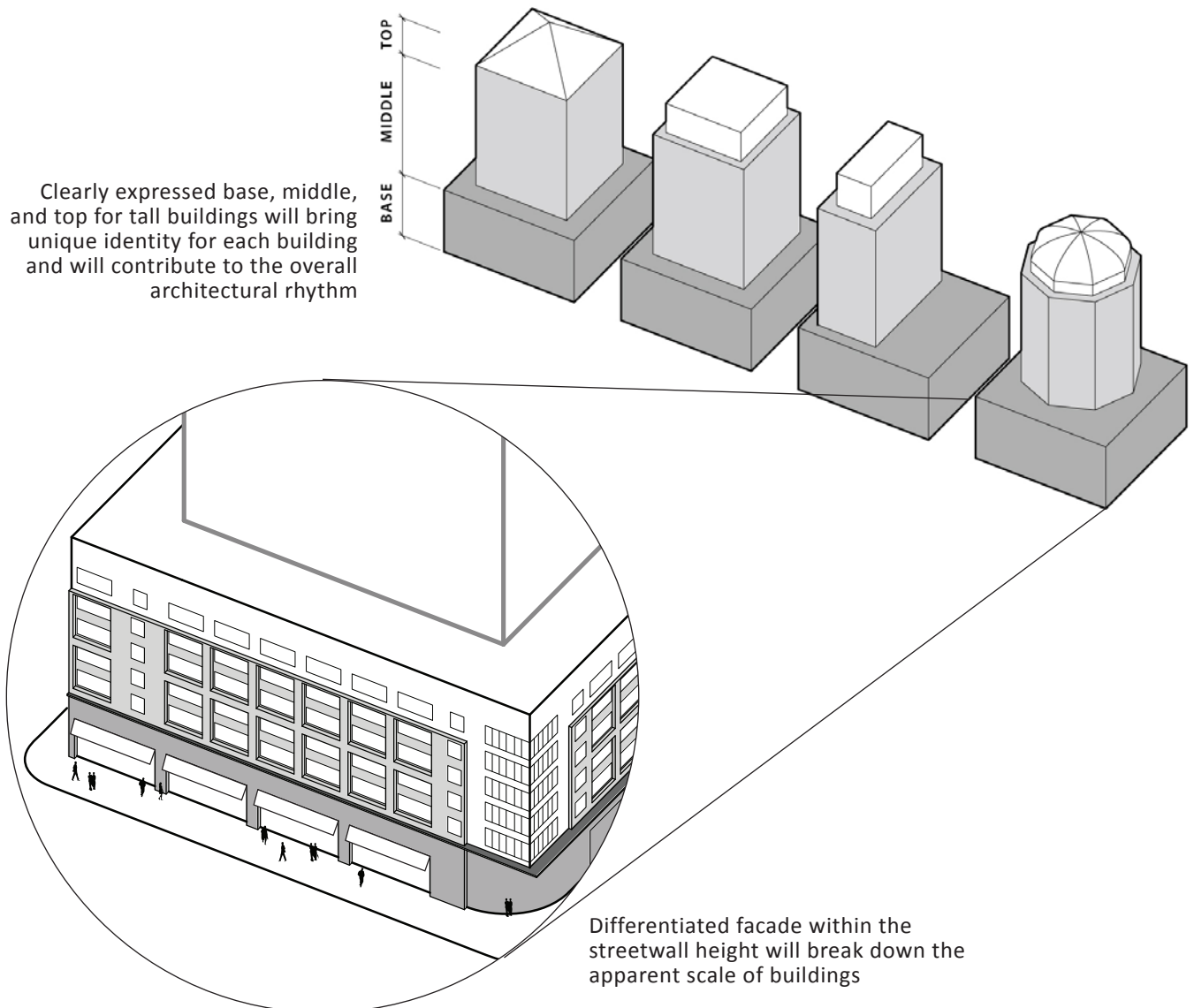


Examples of existing low-scale historical structures in Kendall Square

Goal: Design buildings to minimize monolithic massing and break down the scale of large buildings

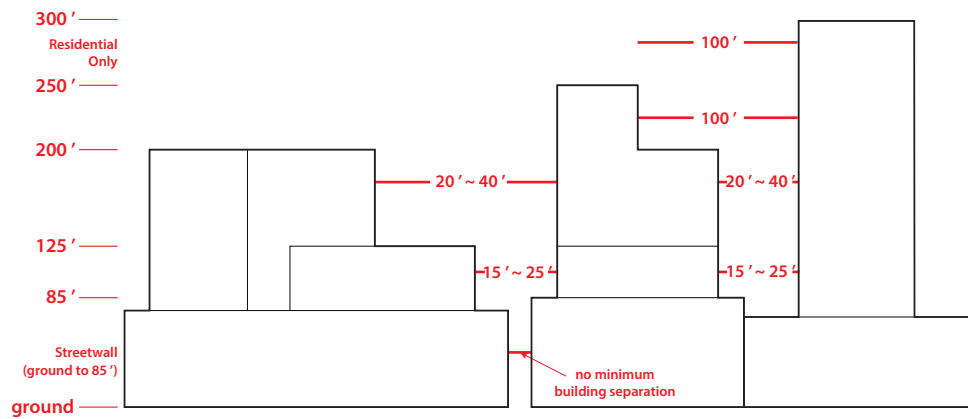
Measures:

- Generally, buildings should have a clearly expressed base, middle, and top. This division should be expressed within the streetwall height zone as well as for buildings exceeding streetwall height.
- Pay special attention to the first floors (bottom 20 feet) of buildings, where buildings relate the most to the street and pedestrians. Different design guidelines may be applicable depending on location and uses of buildings.

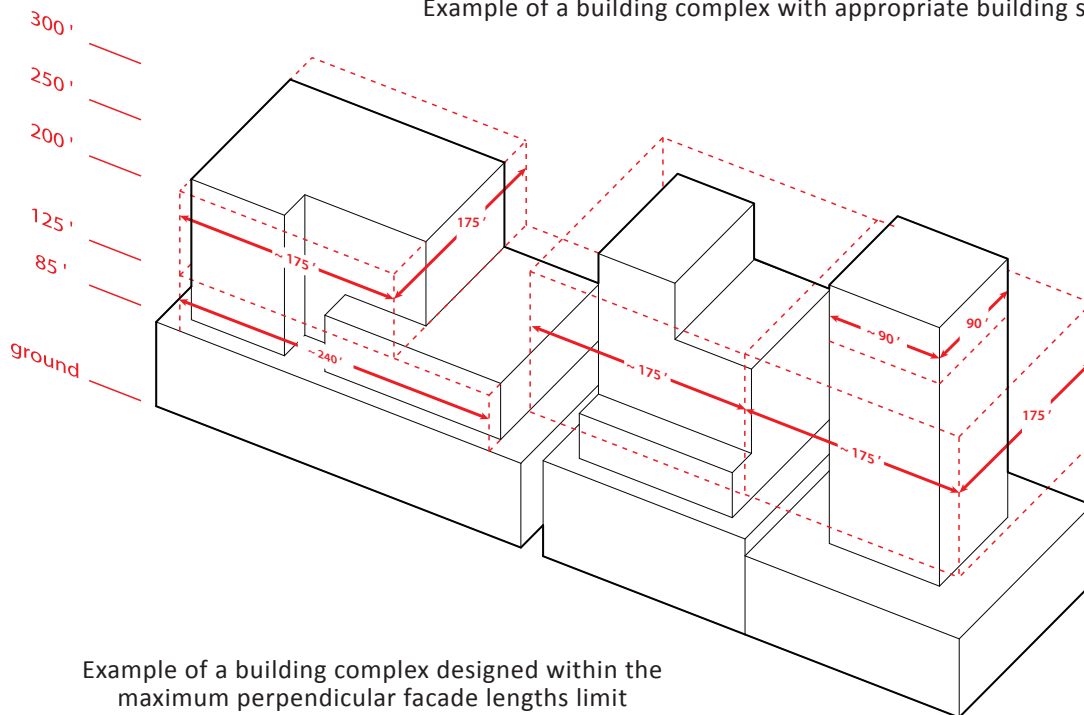


The following maximum façade lengths and minimum building separation are suggested to limit the impact of tall buildings both at the street level within the district and from nearby areas.

Height Range (feet)	Minimum building separation	Maximum length of plan dimension
251' to 300' (for residential use only)	100'	160' x 65' or 90' x 90'
201' to 250'	100'	175' x 175'
126' to 200'	20-40'	175' x 175'
85' to 125'	15-25'	240' x 175'
Streetwall (ground to 85')	None	None



Example of a building complex with appropriate building separation



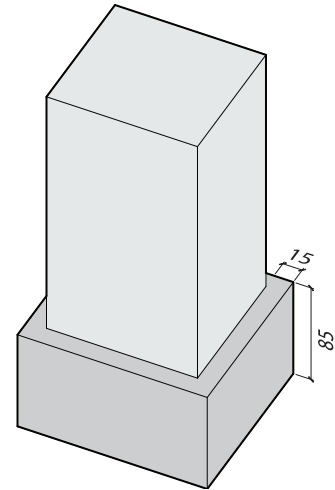
Example of a building complex designed within the maximum perpendicular facade lengths limit

– Major Public Streets

Goal: Create a strong datum by setting back the building at upper floors to create a strong edge to the street and to limit the sense of height at street level.

Measures:

- Set back approximately two-thirds of the building façade above 85 feet from the principal façade by a depth of about 15 feet; flexibility will be considered when street/ground floor setback is provided.
- Façade areas without setback may be appropriate at corners or in specific locations to create architectural variety.
- In instances of infill development on constrained sites, provide distinct horizontal articulation at the datum height that relates to the façade of adjacent or facing buildings through means other than a setback (significant change in material, projecting cornice/fin/shade etc.)

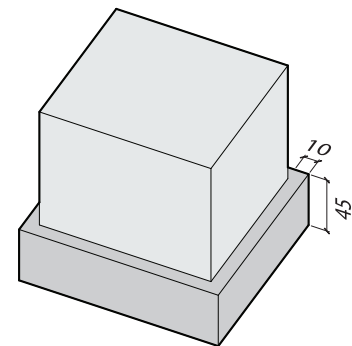


– Secondary Streets

Goal: Create a strong datum by setting back the building at upper floors to create a strong edge to the street and to limit the sense of height at street level.

Measures:

- Set back any portion of the building above 45 feet by approximately 10 feet from the principal façade. Where appropriate, design these setbacks to include balconies and rooftop terraces.
- Create a strong horizontal definition line on the façade at a height of 45' through means other than a step-back if it successfully expresses a scale distinctly more intimate than a major public street (such as significant change in material; projecting cornice, fin or shade etc.).

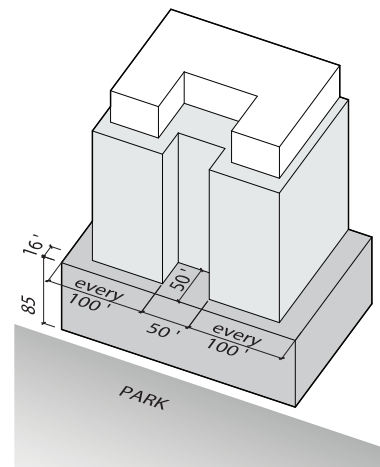


– Park Edges

Goal: Development around parks and plazas should support an environment that is active, safe, and welcoming to a wide spectrum of users throughout the day, week and year.

Measures :

- Pay special attention to scale and shadows of buildings along park edges.
- Set back about two-thirds of the building façade above 85 feet from the principal façade depth of approximately 15 feet
- Create vertical breaks for building volumes above 120' in height facing the park -- façades facing the park exceeding 100' in width should be separated from adjacent façades by a gap of approximately 50 feet, extending back 50 feet from the ground level façade. Residential balconies may project up to 4 feet into setbacks and gaps.
- Façade areas without setback may be appropriate at corners or in specific locations to create architectural variety.



Example of a building massing located at park edges



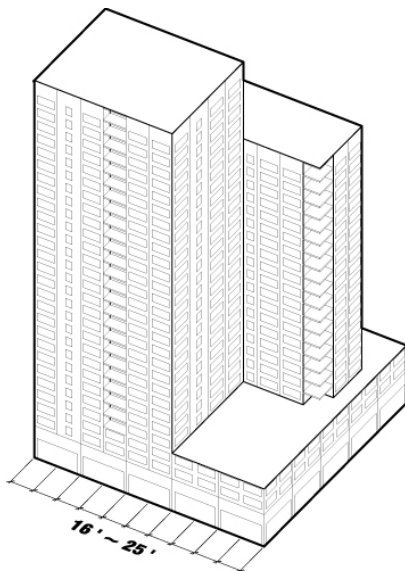
Along park edges, tall building volumes should be set back behind lower ones to reduce shadow impacts. Buildings should also be set back above 85 feet to create intimate walking experience by breaking down the scale of buildings. (left: University Park, Cambridge right: Marathon Landing, Coal Harbour, Vancouver)

c. Visual Interest

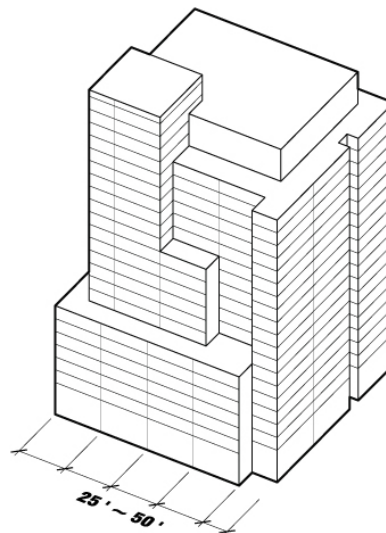
Goal: Buildings should reflect a rhythm and variation appropriate to the urban context.

Measures:

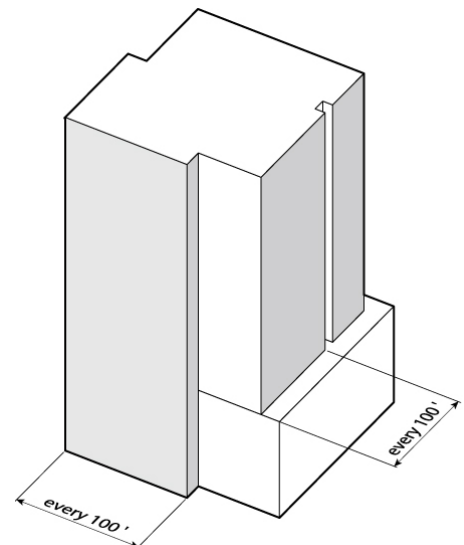
- Express bay widths of 16 to 25 feet in predominantly residential areas and 25 to 50 feet along edges where commercial and institutional uses are prevalent.
- Establish an urban rhythm by creating a major vertical break for every 100' of façade length with a displacement of approximately 8' in depth or that divides building form into major distinct massing elements.



a. Bay widths of 16 to 25 feet for residential uses



a. Bay widths of 25 to 50 feet for commercial and institutional uses

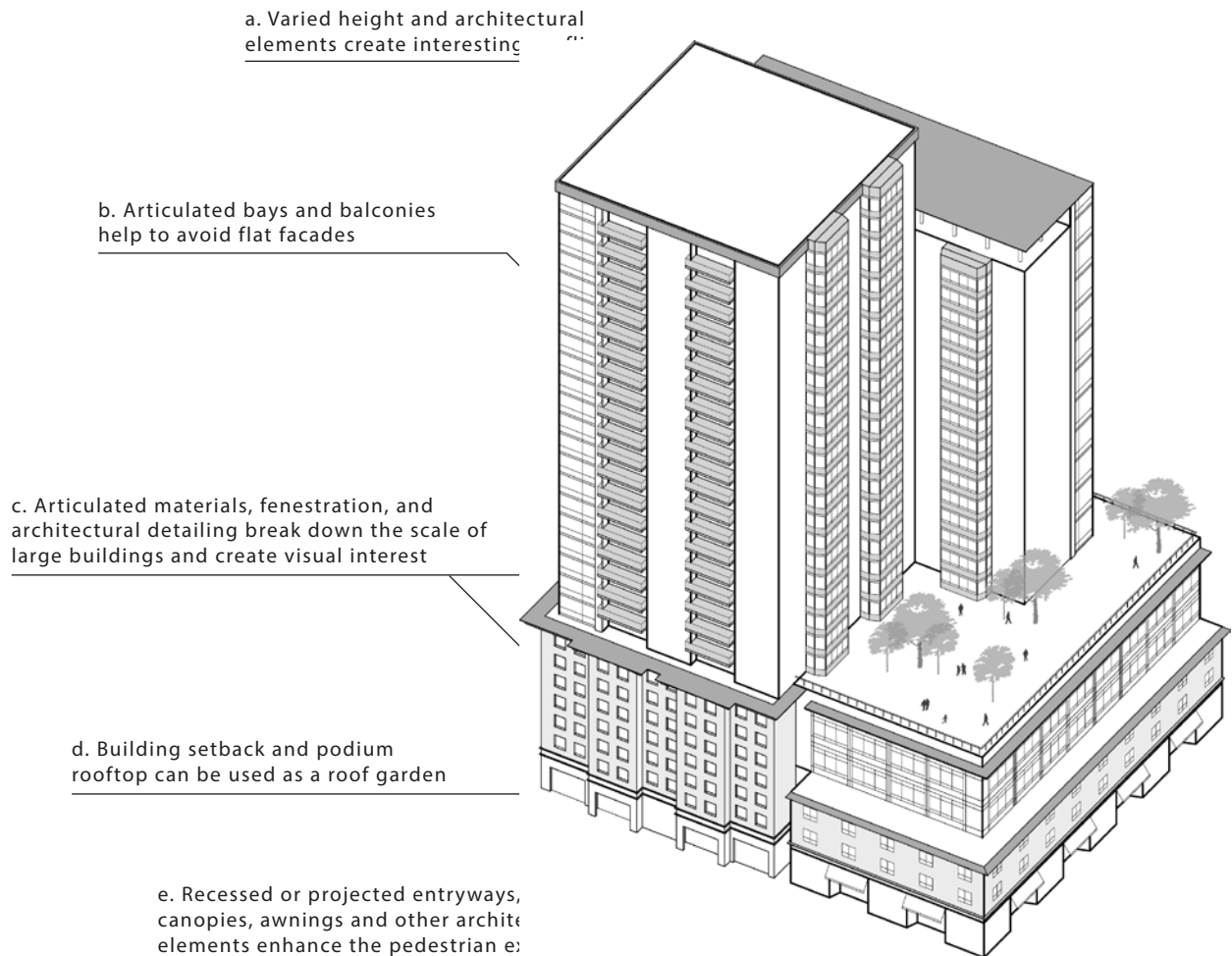


b. Example of a vertical break

Goal: Where appropriate, vary the architecture of individual buildings to create architecturally diverse districts.

Measures:

- a. Use variations in height and architectural elements such as parapets, cornices, passive shading devices, illumination and other details to create interesting and varied rooflines.
- b. Avoid flat façades and create visual interest.
 - Articulate bays and balconies.
 - Utilize architectural articulation such as changes in material, fenestration, architectural detailing, or other elements to break down the scale.
- c. Where buildings are set back at upper stories, use lower roofs as green roofs, balconies, terraces, and gardens.

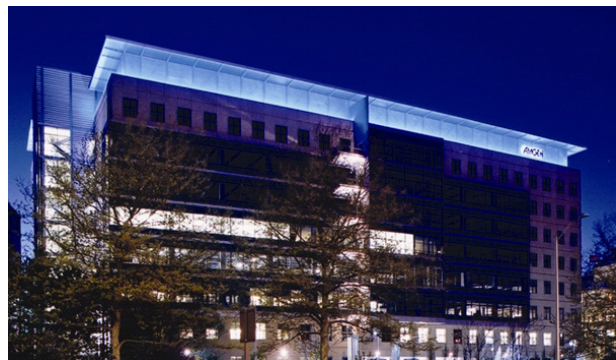


d. Tall Buildings

Goal: Buildings over 200 feet tall should be designed with particular attention to the architectural character of the top of the building, which will be visible from significant public spaces and from some distance. Tall buildings could potentially enhance the identity of Kendall Square by defining edges or serving as landmarks.

Measures:

- a. During design, consider the variety of vantage points from which tall buildings may be seen, especially from significant public spaces and nearby low-scale residential neighborhoods.
- b. Tall buildings should be articulated to avoid a monolithic appearance, and should emphasize slender, vertically-oriented proportions.
 - Emphasize corners using taller elements such as towers, turrets, and bays.
 - Consider the use of at least two distinct finish materials and colors on each building.
 - Consider variation in forms that present different profiles to different vantage points, if appropriate.
- c. Avoid broad “slab” volumes that make the building appear bulky. Point towers expressing vertical volumes are encouraged.
- d. Consider legibility of the building top both by day and night, while demonstrating responsible use of lighting and energy consistent with sustainability requirements.

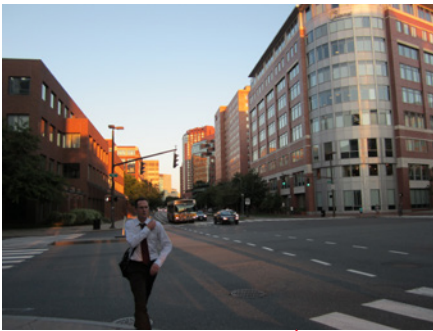


b. MIT's Eastgate graduate housing is one of the tallest buildings in Cambridge. However, due to its small floorplate and slender volume, the presence of the building is not obtrusive to the surrounding neighborhood.

c. Vertical proportions, recessed breaks between bays, varied materials, and distinct building tops lend these tall buildings unique identities and reduce their apparent scale (left: 100 Landsdowne Street, Cambridge; right: Waterplace housing, Providence, RI)

d. Use of lighting to increase the legibility of building tops at night (Amgen Building, Cambridge)

Buildings over 200 feet tall are likely to become landmarks with strong presence. Therefore, views from significant public spaces should be considered when designing such tall buildings. Images on this page are some vignettes of the Kendall Square study area from significant vantage points. These images are to help designers understand how tall buildings will be perceived in the existing context.



left: view along Broadway looking towards the Cambridge Center area
right: view along Third Street looking towards the Volpe site



view along Main looking towards the Cambridge Center area



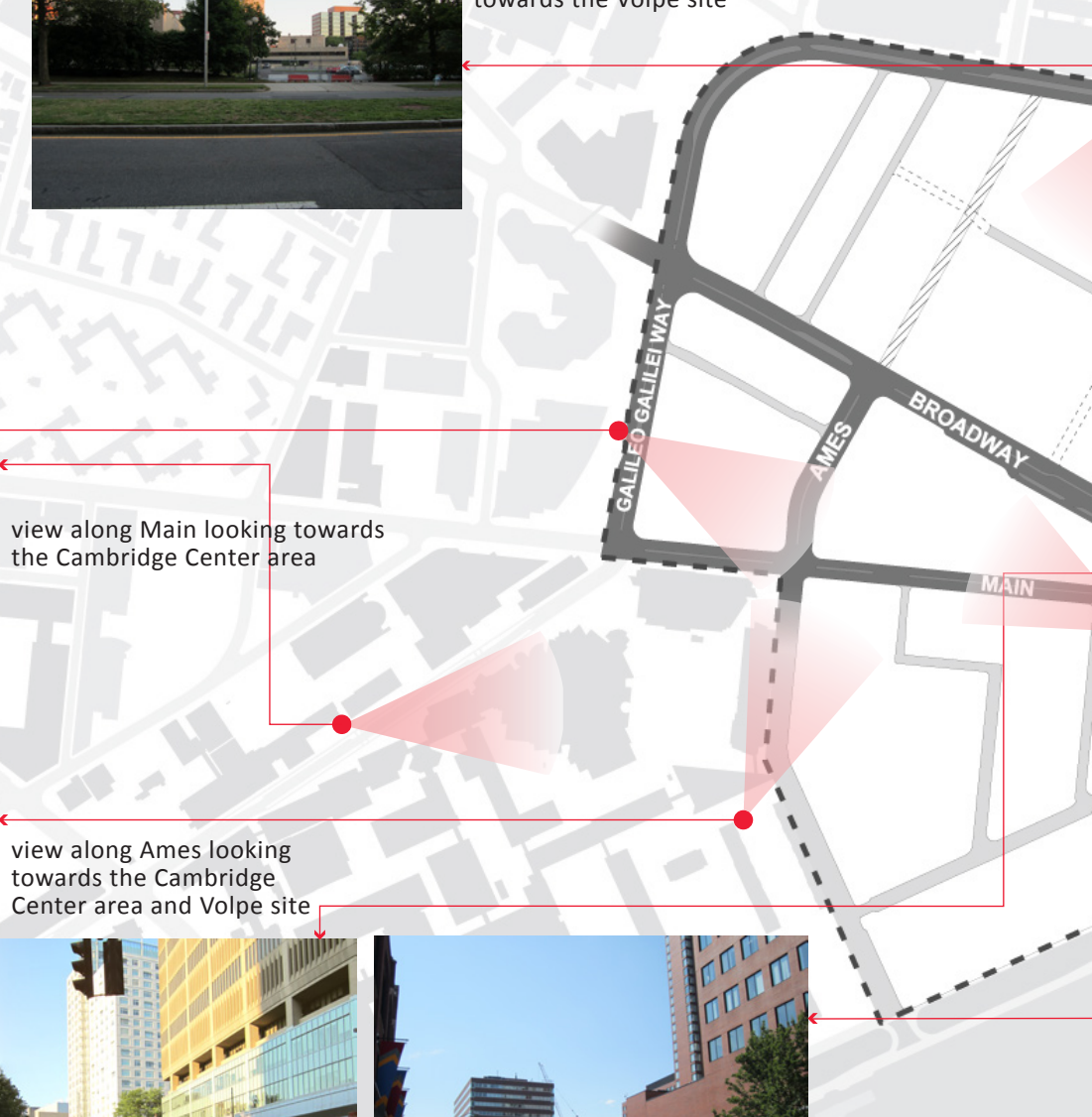
view along Ames looking towards the Cambridge Center area and Volpe site



view from Point Park looking towards the Volpe site



view from MIT/Kendall station looking towards the Cambridge Center Area



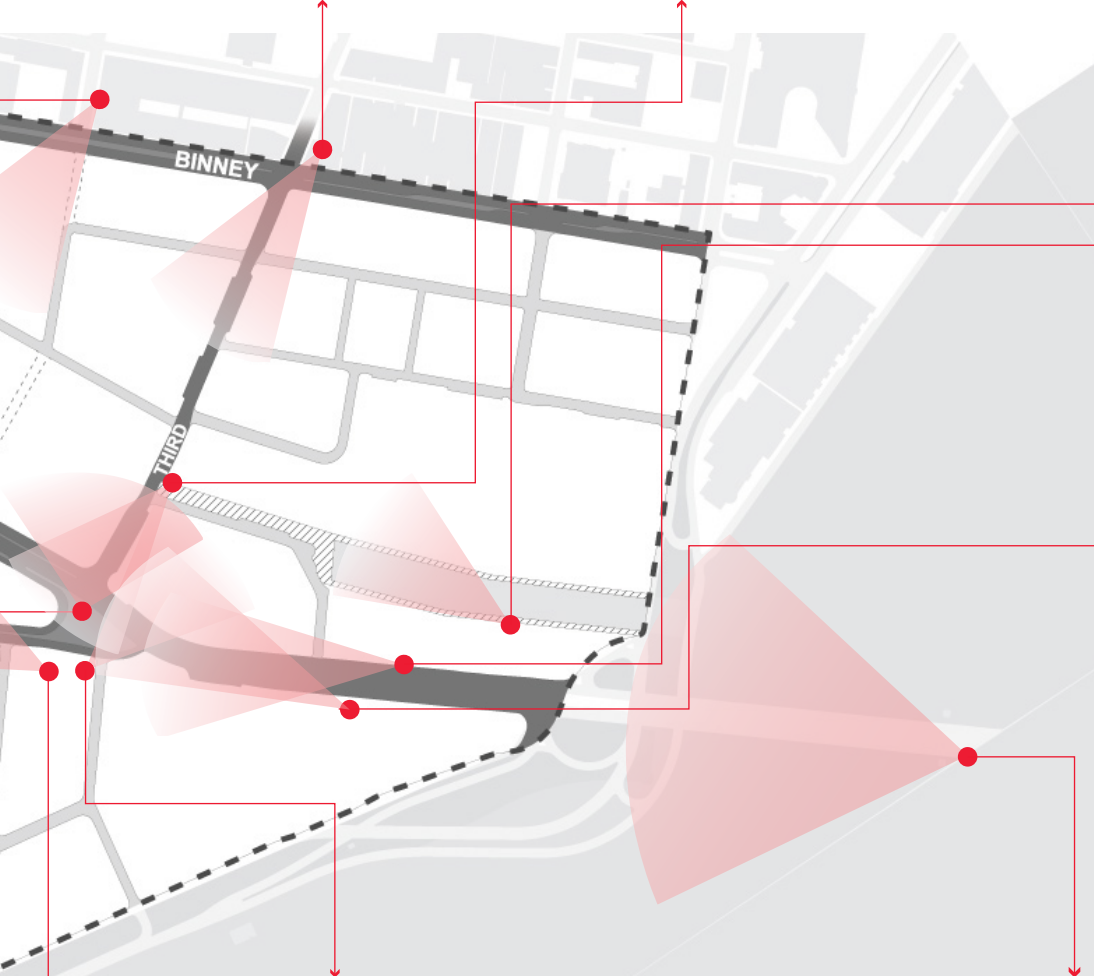
view along Third Street looking towards the Volpe site



view along Third Street looking towards south of Main Street



view along Broad Canal looking towards Cambridge Research Park



view along Broadway East looking towards south of Main Street and Cambridge Center



view along Broadway East looking towards the One Broadway site, Volpe site and Cambridge Center



view from Point Park looking towards the One Broadway site



view from the Longfellow bridge looking towards south of Main Street and Cambridge Research Park

e. Connectors

Goal: In general, connectors over public ways are not encouraged in the heart of Kendall Square to avoid internalizing activity that is needed to achieve the essential goal of a more animated square. In Kendall Square, upper-floor connections should be considered only in circumstances where tenants need large floorplates that might otherwise result in excessive apparent building mass. Such connectors should be designed to provide architectural interest, maintain permeability, and continue to allow light and views of the sky. Connectors may be more acceptable over minor streets internal to the quieter parts of the MIT campus, such as Carlton or Hayward.

Measures:

- a. All connectors should be recessed from public spaces and made highly transparent.
- b. Within blocks
 - Set back approximately 35' from public street façade
 - Provide ground level public passage at selected locations
- c. Over promenades or pedestrian walkways
 - Set back approximately 35' from public street façade
 - Provide approximately two stories clearance above ground
 - No more than 35' wide and 2/3 of building height (aggregate)
 - Space multiple connections apart by double their greatest width
- d. Corridors that allow connections between multiple tenants/uses in different buildings are not encouraged in order to ensure that the streets and ground plane remain active.
- e. In instances where multiple connectors are provided, they should be placed so as to create architectural interest and to allow a reasonable amount of light to reach the ground.



Connections should be recessed from public spaces, made highly transparent, architecturally interesting and allow light and views of the sky. (Binney Street development by Alexandria, Cambridge)

f. Rooftops

Goal: The design of rooftops, including mechanical equipment and cellular installations, should be conceived as integral to the rest of the architecture of the building.

Measures:

- a. Rooftop mechanicals may be designed to stand out as machinery, in which case it needs to be carefully arranged to give a pleasing visual image.
- b. Screening may be used to conceal rooftop mechanicals, and in this case, the screening should be in the same idiom as the rest of the architecture.
- c. It may be possible to use both techniques listed above.
- d. To the extent possible, provisions should be made so that future cellular installations may be placed upon the building without detriment to the architecture, e.g. a blank wall of a mechanical screen may be conceived as such a location.



The Biogen building in Kendall Square partially expresses the mechanical equipment and partially screens it (Biogen, Cambridge)

5. Ground Floor Design Guidelines

a. Retail or Mixed-use Ground Floors

– Uses

Goal: First floors of the buildings should be actively used.

Measures:

- a. **Along Major Public Streets** - Approximately 75 percent of the street frontage should be occupied by retail uses such as cafes, restaurants and shops.
- b. **Along Secondary Streets** - Approximately 75 percent of the street frontage should be occupied by active uses. Active uses include:
 - retail (i.e. cafes, restaurants, shops)
 - educational and cultural venues
 - services for the public or for commercial offices (fitness centers, cafeterias open to the public, daycare centers, etc.)
 - community spaces (exhibition or meeting space)
 - art/information exhibition windows; live/work spaces
- c. Lobbies for office, research and residential uses are discouraged from occupying extensive ground floor frontage.
- d. Carefully designed residential stoops and entries that meet ADA requirements are encouraged.

Goal: Retail and services should serve local communities as well as people who work in the area.

Measures:

- a. Leasing of space to small, locally-owned businesses is encouraged.
- b. Diverse retail and service offerings that serve current and future Kendall Square residents and surrounding neighborhoods (e.g. pharmacy, greengrocer, bakery, drycleaner, and convenience store) are encouraged.
- c. Building frontage devoted to bank, trust company or similar financial institution should be limited to approximately 25 feet. Larger floor areas can be devoted to bank uses when fronted with other active retail uses.

Goal: Where retail is not provided, ground floor spaces should be designed to accommodate retail in the future.

Measures:

Standards for spaces convertible to retail include:

- a. Adequate floor-to-floor height (e.g. 15-20 feet) to allow food-oriented uses, with ventilation etc.
- b. Leasable ground floor depth from façade should average about 40 feet
- c. Ground floor level flush with or easily accessible from sidewalk
- d. Ground floor façade readily convertible to retail-style storefront
- e. Designed to accommodate venting and exhaust needs of food service uses
- f. Services such as interior power and HVAC zoned or easily convertible to enable convenient division and sublease of interior spaces to retail tenants.

– Setbacks

Goal: Create space at the sidewalk level to allow for interaction between activities on the ground floor of the buildings and the public sidewalk.

Measures:

- a. Ensure that the sidewalk includes ample space for walking, street furniture, street trees, bicycle parking and other plantings, and is designed to accommodate a high level of access for all users, including those in wheelchairs or pushing strollers.
- b. Provide a small setback (5 to 15 feet) from the right-of-way for café seating, benches or small open spaces.

Goal: Buildings should be directly engaging to the public and create a well-defined streetwall to help frame Kendall Square’s streets and public spaces.

Measures:

- a. Setbacks exceeding 10 feet should be provided with caution.
- b. Setbacks used exclusively for ornamental landscaping are not encouraged.



Good examples of adequate sidewalk width directly associated with ground floor uses. (left: Tavern in the Square, right: Flour Bakery, Cambridge, MA)

– Façades

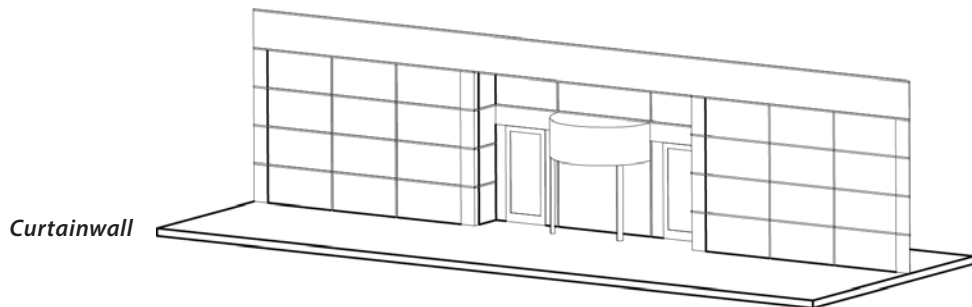
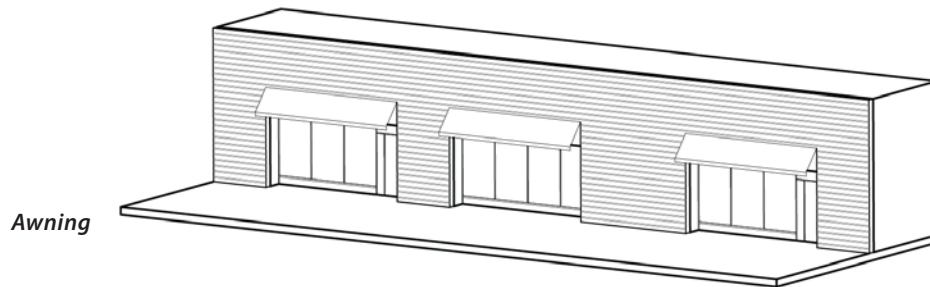
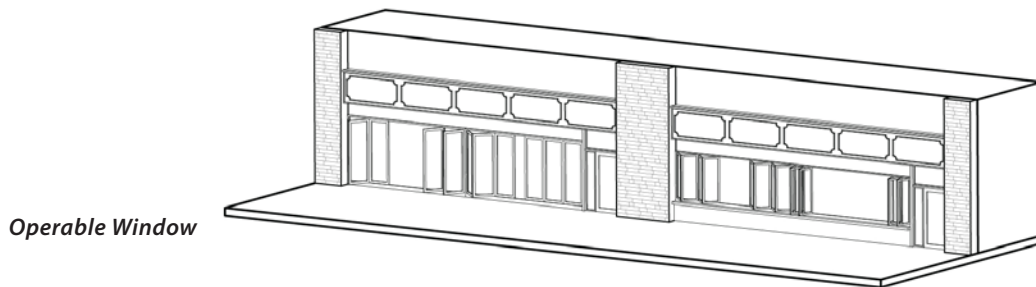
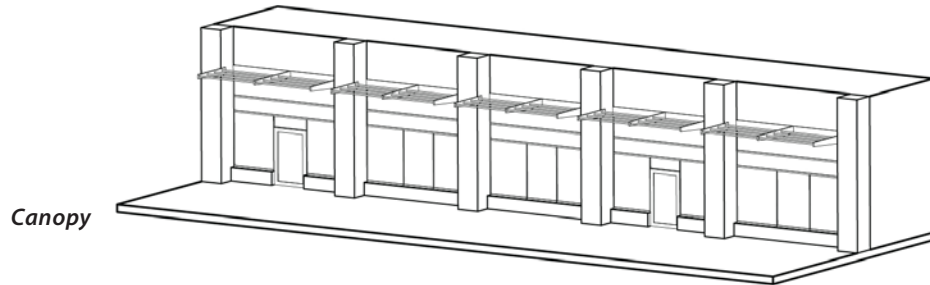
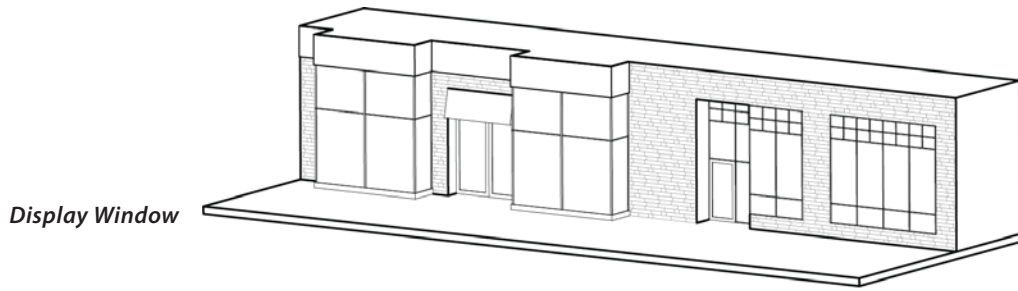
Goal: Design ground floor façades of building to reduce the distinction between exterior and interior space to extend the effective public realm indoors and reveal indoor activity on the street.

Measures:

- a. Transparent materials and interior lighting should be used to maximize visibility of street level uses. Transparency is most important in the portion of the facade between about 2 feet to about 10 feet above the sidewalk level, i.e. where people are likely to look in. Incorporate 60 to 75 percent transparent glazing in the ground level façade **along major public streets** and 40 to 60 percent transparent glazing in the ground level façade **along secondary streets**.
- b. Active ground level spaces should have strong, interactive connections with adjacent public sidewalk/plaza space using strategies such as extensive transparent glazing, interactive media or public art, large operable doors and windows, or associated outdoor seating.
- c. Blank walls exceeding 20 feet in length should be avoided.
- d. Awnings and canopies are encouraged to provide shelter and enliven ground floor facade.
- e. Mechanical/utility rooms and service/loading areas are not appropriate along the major streets and should be located on secondary streets.



b. Effective strategies include combining highly transparent facades with prominent interior media (left: Apple store, Back Bay, Boston), installing large operable windows connecting indoor and outdoor (middle: Dwelltime, Cambridge) and outdoor seating (right: Lafayette Square, Cambridge).



Examples of well-designed building facades for the ground floor (bottom 20 feet) of buildings

– Entrances

Goal: Major entrances should be located on public streets, and on corners wherever possible. If appropriate, entrances should relate to crosswalks and pathways that lead to bus stops, transit and bike stations.



b. Residential Use Ground Floors

– Setbacks

Goal: Contribute to a pedestrian-friendly environment with residential character that includes ample space for walking, street trees and other plantings, and significant access to direct sunlight and sky views.

Goal: Create a consistent residential edge, with a setback from the sidewalk for compact front stoops, porches, and gardens, while ensuring compliance with state and federal access regulations.

– Entrances

Goal: Ensure that ground floor residences meet and exceed access needs of all users and incorporate ‘visitability’ measures. Providing fully accessible front entrances, beyond code requirements, is strongly encouraged, while balancing need for interior privacy. Consider strategies including:

Measures:

- a. Accessible raised ramps lining the façade (with a continuous accessible passage as well as defined semi-private areas)
- b. Ground-level entrances with added privacy elements such as 3- to 4- foot high walls, screens or vegetation, projecting trellises, or similar elements marking a transition to private space

– Façades

Goal: Wherever appropriate, design buildings with individual units and front doors facing the street, including row house units on the lower levels of multi-family buildings to create a rhythm of entrances and create a residential feel. Where residential lobbies face the street, doors should generally be spaced no more than 75 feet apart.

Goal: Residential buildings should also attempt to accommodate active uses that will enliven pedestrian activities.

Measures:

- a. In parts of the street level façade that do not include residential units (e.g. common places and lobbies), incorporate 40 to 60 percent transparent glazing in the ground level façade with direct views between sidewalk and interior building spaces to expand the apparent width of public space at ground level.
- b. Blank walls exceeding 20 feet in length should be avoided along all streets and pedestrian walkways.

6. Academic Buildings

Predominantly academic buildings should provide ground-level retail and services in the areas along public streets to foster positive connections among the academic, research, commercial, and residential communities.

However, academic buildings often have particular requirements that may make it difficult to meet these design guidelines. While academic buildings along major public streets should be held to the same standards as other commercial buildings, it is appropriate that there be greater latitude in ways to address the intent of the guidelines in the interior of the campus along Ames Street south of Main, Carleton, Hayward, and Amherst Streets.



The Koch Center on the MIT campus attempted to engage the public and convey the spirit of innovation through transparent ground floor facade that reveals public art gallery. However, the building is not actively used by the public. This attempt could have been improved by welcoming the public more directly with ground floor uses such as cafe or hosting events that are open to the public.

Academic Buildings Along Major Public Streets



Academic buildings along major public streets should be held to the same standards as other commercial buildings

Left: Academic buildings along major public streets should, like commercial buildings, devote 75% of their ground floor frontage to retail. 3401 Walnut St. inside the University of Pennsylvania's campus is a successful precedent of introducing ground floor retail in an academic building.

Right: Educational and cultural facilities open to the public encourage the public to experience institutional buildings while also helping to anchor destination retail and public places. The University of Pennsylvania's Institute of Contemporary Art, which is located adjacent to the retail and plaza space at Sansom Common welcomes the public by hosting programs open to the public (Copyright: Institute of Contemporary Art/ University of Pennsylvania. Photo by J. Katz).

Academic Buildings Interior to the Campus



Highly transparent ground floor spaces can bring life to institutional building edges.

Left: Hamilton Public Library and Farmer's Market in Hamilton, Ontario features interior graphics that are designed to be seen from outside (Copyright: Tom Arban).

Right: Massachusetts College of Pharmacy and Health Science on Longwood Avenue, Boston, displays lab spaces to show innovators at work at the pedestrian level. This street frontage creates an interesting walking experience for the passerby and helps to break down the perceived barrier between academic institutions and the general public.



Academic building lobbies could be welcoming to the public while maintaining private and quiet environments for academic uses.

Left: The Carl Ichan Lab building at Princeton University has ample seating with artworks in a wide open lobby. Visitors and people from outside of the university find this place comfortable and agreeable to sit and rest.

Right: The temporary exhibition space at the Harvard Graduate School of Design is also a good example of an academic building lobby. The space is reconfigured occasionally to feature works of the GSD community. This gallery space is well-known by the visitors of the campus and became a platform to introduce what is being done inside the institution (Copyright: Yan Da).