

8/7/12 DRAFT VERSION (work in progress)

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1. Introduction

The Kendall Square Design Guidelines are created as part of the Kendall Square-Central Square Planning Study to inform property owners, business owners, developers, and the general public about the desired form and character of development in Kendall Square and will guide development activities in this area. The aim is to create consistently high-quality public environments, and to ensure that development contributes to the character and vitality of the surrounding community. These guidelines will be referenced in the City's Zoning Ordinance in the Project Review Special Permit section and in the PUD text 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 Overlay District. The guidelines articulate the design and site planning goals for Kendall Square, and measures to achieve them. However, the guidelines are not intended to impose a strict limitation on the architectonics of building form and style. Other creative design solutions 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.

The Kendall Square Design Guidelines provide ideas on site design and building form to support the vision and goals for Kendall Square and to create a district where the tall buildings with large floorplates that are needed by the twenty-first century knowledge economy are designed to be good neighbors to public spaces, small existing buildings, and residential uses that will create a positive, mixed use district; where the impacts of bulk and height are sensitively managed, and where all buildings interact positively with public space and create active ground floors that animate the major streets and contribute to creating a vibrant public realm.

2. Overarching Goals

a. Environmental Quality

i. Shadow

Goal: Locate and shape buildings to minimize shadows on public parks and plazas – particularly Point Park, the North and South Plazas at Cambridge Research Park, Broad Canal area, and the anticipated Volpe park area.

ii. Wind

Goal: Design new buildings and open spaces to minimize negative wind impacts on streets and public spaces.

iii. Vegetative Cover

Goal: All development should make a positive contribution to increasing vegetative cover, improving stormwater infiltration, and reducing heat island effect.

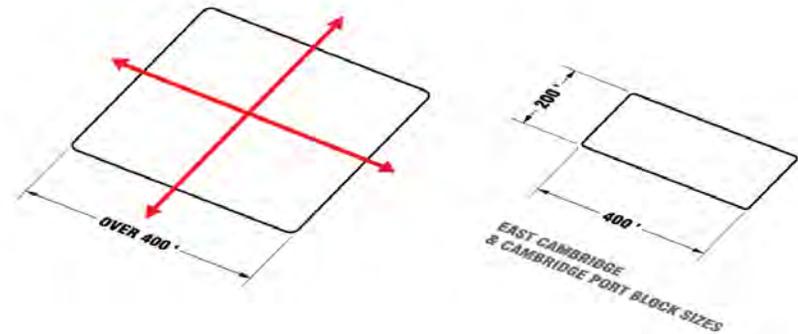
iv. Noise

Goal: All developments should attempt to minimize noise generated from rooftop mechanical equipment.

b. Walkability / Accessibility

i. 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.



ii. Universal Access

Goal: Development should enhance accessibility for all and aim to exceed state and federal accessibility laws and regulations. Practices such as universal design / human centered design that improve the environment for all people are highly encouraged to shape the built and public space environments to be welcoming and usable by everyone including children, adults, people with and without disabilities.

Measures:

- a. Design spaces for equitable use so that they are useful and marketable to people with diverse abilities.
- b. Accommodate a wide range of preferences and abilities by designing for flexibility in use.
- c. Facilitate ease of use regardless of the user's experience. Permit efficient and comfortable use with low physical effort and provide appropriate size and space for approach and use.
- d. Communicate necessary information effectively regardless of user's sensory ability
- e. Minimize hazards and unintended consequences

iii. 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 along major public streets and pedestrian corridors.

Measures:

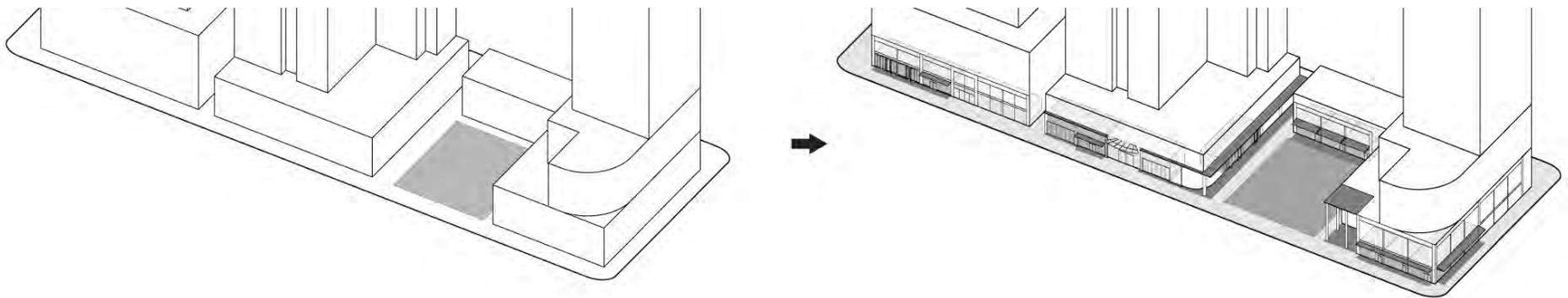
- a. Locate loading and servicing areas away from major public street and significant promenades; use secondary streets or, preferably, internal alleyways for loading and service.
- b. Avoid creating loading/servicing areas exceeding two bays or 30 feet wide. Occupied ground level spaces with windows should occur between loading/servicing areas.
- c. 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 in use.
- d. Driveway turnaround and vehicle drop-off facilities along public streets are discouraged.

iv. Street Activity

Goal: The vision for Kendall square includes an emphasis on activation of the district *throughout the day and evening* and beyond the work day.

Measures:

- a. Create courtyards and open spaces that allow people to gather by maximizing sun exposure and by connecting with indoor public spaces.
- b. Streets and other public spaces should feel safe in the evening. Appropriate design of lighting and wayfinding is encouraged.
- c. Retail and services should serve local communities as well as people who work in the area.
 - Leasing of space to small, locally owned businesses is encouraged.
 - 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.
 - Street frontage allocated to bank uses should be limited to approx. 50 feet. Larger floor areas can be devoted to bank uses when fronted with other active retail uses.



By reducing the distinction between interior and exterior spaces, perceived public realm can be extended beyond the conventional definition of open space.

KENDALL SQUARE PLAN: SUMMARY OF ZONING & URBAN DESIGN RECOMMENDATIONS - PART 3

Goal: Design sidewalk space and ground floor of the building to allow for interaction between exterior and interior activities especially where commercial and institutional uses are prevalent.

Measures:

- a. Ensure that the sidewalk includes ample space for walking, street trees and other plantings, and significant access to direct sunlight and sky views and is designed to accommodate a high level of access for all users, including those in wheelchairs or pushing strollers.
- b. Awnings and canopies are encouraged to provide shelter and enliven the ground floor facade.
- c. Buildings should create a well-defined streetwall to help frame Kendall Square's streets and public spaces.
- d. Ground floors of buildings should be engaging and include active uses. 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, and/or associated outdoor seating.



Reduce the distinction between interior and exterior space to extend the effective public realm indoors and reveal indoor activity on the street. Effective strategies include combining highly transparent facades with prominent interior media (left: Apple store, Back Bay, Boston), installing large operable windows and/or doors connecting indoor and outdoor dining (middle: Dwelltime, Cambridge) and/or outdoor seating (right: Lafayette Square, Cambridge)

c. Architectural Character

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.

Measures:

- a. Methods of creating a distinct architectural composition include use and proportioning of materials, colors and/or shapes that differ from those of adjacent buildings.
- b. Convey the act and spirit of innovation in Kendall Square through transparency that directly reveals activity, and/or active media.



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

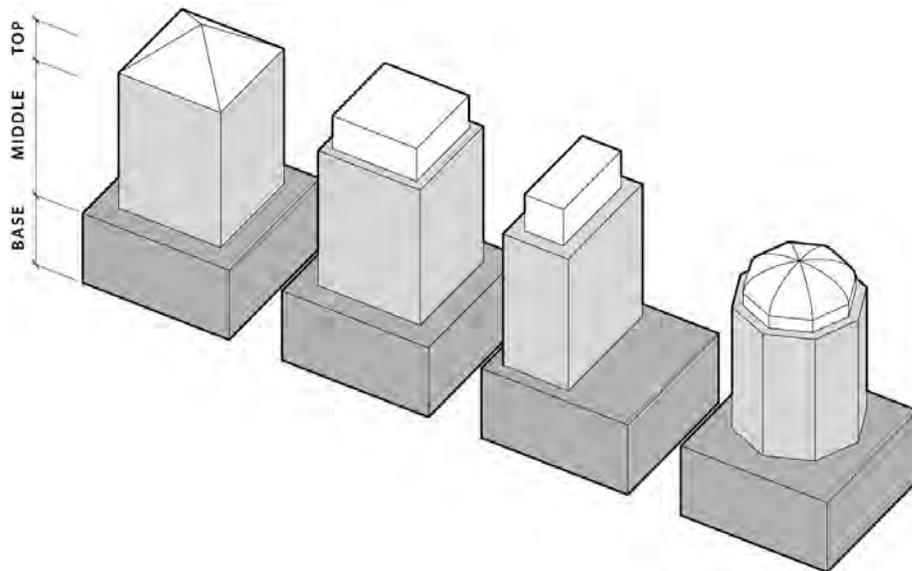
b. Example of an effort to express the spirit of innovation in Kendall Square (The Innovation Center, Cambridge)

KENDALL SQUARE PLAN: SUMMARY OF ZONING & URBAN DESIGN RECOMMENDATIONS - PART 3

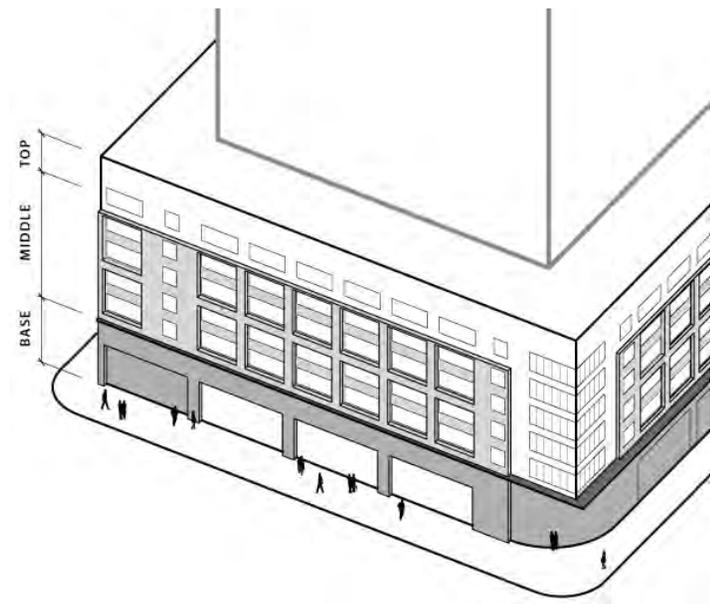
Goal: Buildings should be designed to minimize the perception of lengthy facades and massive volumns.

Measures:

- a. Buildings should have a clearly expressed base, middle, and top. This division should be expressed within the streetwall height zone as well as, for those buildings exceeding streetwall height.
- b. Pay special attention to the bottom 20 ' portion of buildings, since this is where buildings relate the most to the scale of the street and to the human body. Different design guidelines may be applicable depending on building location. Refer to section 3. *Location Specific Measures* for applicable guidelines.
- c. Utilize architectural articulation such as changes in material, fenestration, architectural detailing, or other elements to break down the scale and to create visual interest.



Clearly expressed base, middle, and top for buildings exceeding streetwall height will bring unique identity for each buildings and will contribute to the overall architectural rhythm



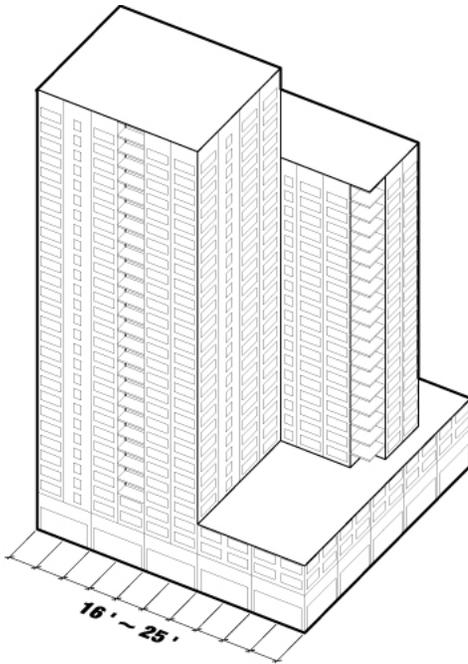
Clearly expressed base, middle, and top within the streetwall height will break down the apparent scale of buildings

KENDALL SQUARE PLAN: SUMMARY OF ZONING & URBAN DESIGN RECOMMENDATIONS - PART 3

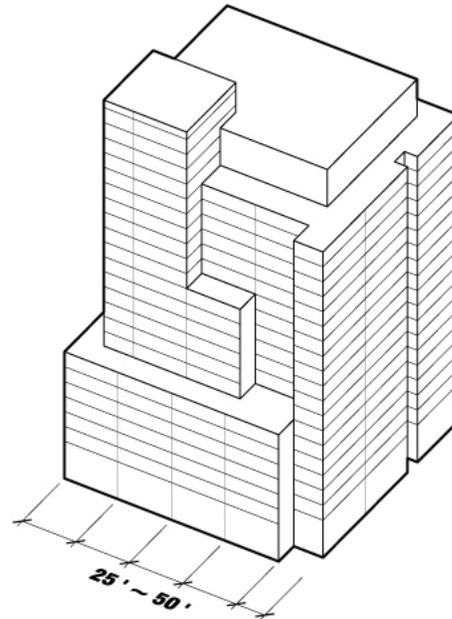
Goal: Buildings should reflect a rhythm and variation appropriate to the urban context.

Measures:

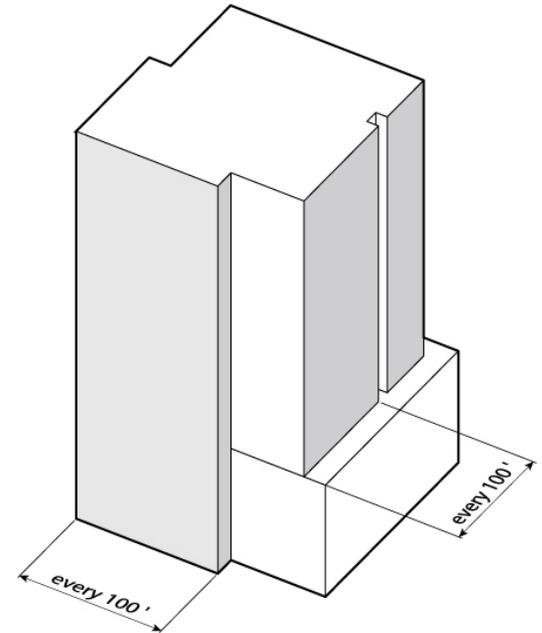
- Express bay widths of 16 to 25 feet in predominantly residential areas and 25 to 50 feet along edges where commercial and institutional uses are prevalent.
- Establish an urban rhythm by creating a major vertical break for every 100' of façade length with a displacement of approx. 8' in depth or that divides building form into major distinct massing elements.
- Use variations in height and architectural elements such as parapets, cornices, passive shading devices, illumination and other details to create interesting and varied rooflines.



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

KENDALL SQUARE PLAN: SUMMARY OF ZONING & URBAN DESIGN RECOMMENDATIONS - PART 3

Goal: Buildings over 200 feet tall should place particular emphasis on architectural character of the top of the building which will be visible from significant public spaces.

Measures:

- a. During design, consider the variety of vantage points that may see tall buildings, especially from significant public spaces. Refer to section 4. *Appendix* for a sample list of significant vantage points.
- b. Tall buildings should be articulated to avoid a monolithic appearance, and should emphasize slender, vertically-oriented proportions. Point towers expressing vertical volumes are encouraged. Avoid broad “slab” volumes that are prominent from vantage points along major public streets including Main, Broadway and Third Streets, and from points in adjacent neighborhoods.
 - Emphasize corners using taller elements such as towers, turrets, and bays,
 - Use at least two distinct finish materials and/or colors on each building,
 - and/or creating a dynamic shape(s) that presents different profiles to different vantage points.
- c. Consider legibility of the building top both by day and night, while demonstrating responsible use of lighting and energy consistent with sustainability requirements.



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



b. 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 Lansdowne Street, Cambridge; right: Providence)



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

KENDALL SQUARE PLAN: SUMMARY OF ZONING & URBAN DESIGN RECOMMENDATIONS - PART 3

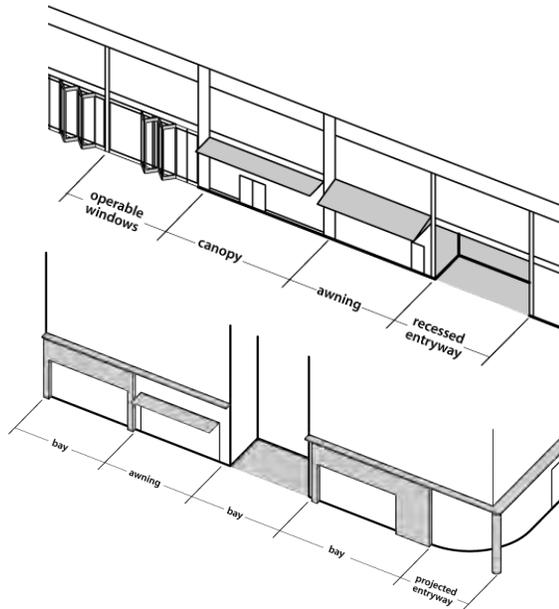
Goal: Vary the architecture of individual buildings to create architecturally diverse districts.

Measures:

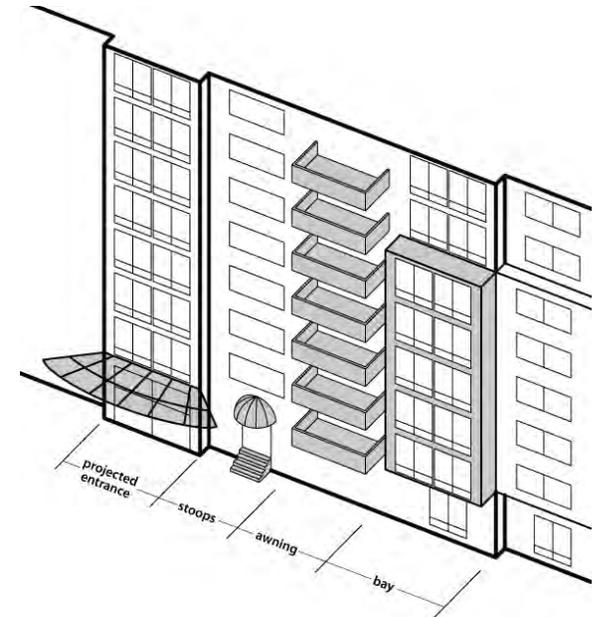
- a. Where buildings are set back at upper stories, use of lower roofs as green roofs, balconies, terraces, and gardens.
- b. Create varied architecture and avoid flat facades by using:
 - recessed or projected entryways, bays, canopies, awnings, and other architectural elements in non-residential buildings
 - bays, balconies, porches, stoops, and other projecting elements in residential buildings



a. Roof garden on a podium rooftop and a setback terrace (Belltown, Seattle)



b. Elements that help to avoid flat facades in non-residential buildings



b. Elements that help to avoid flat facades in residential buildings

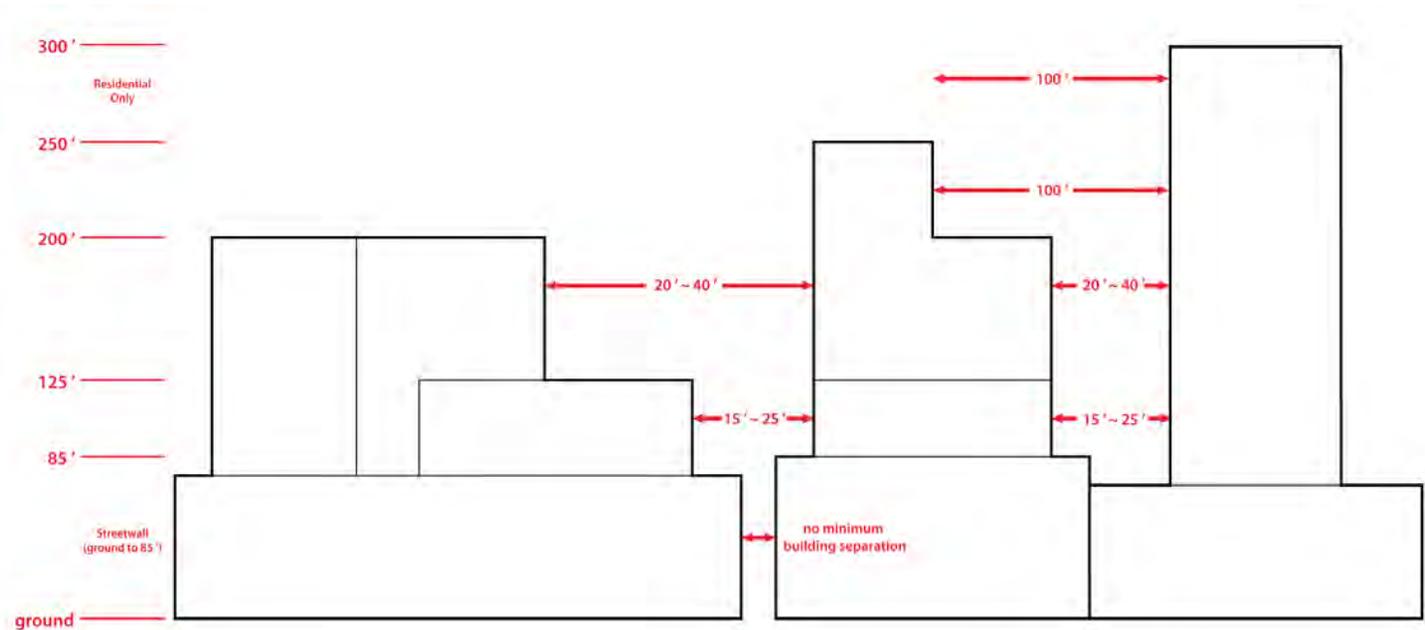
d. Scale and Massing

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

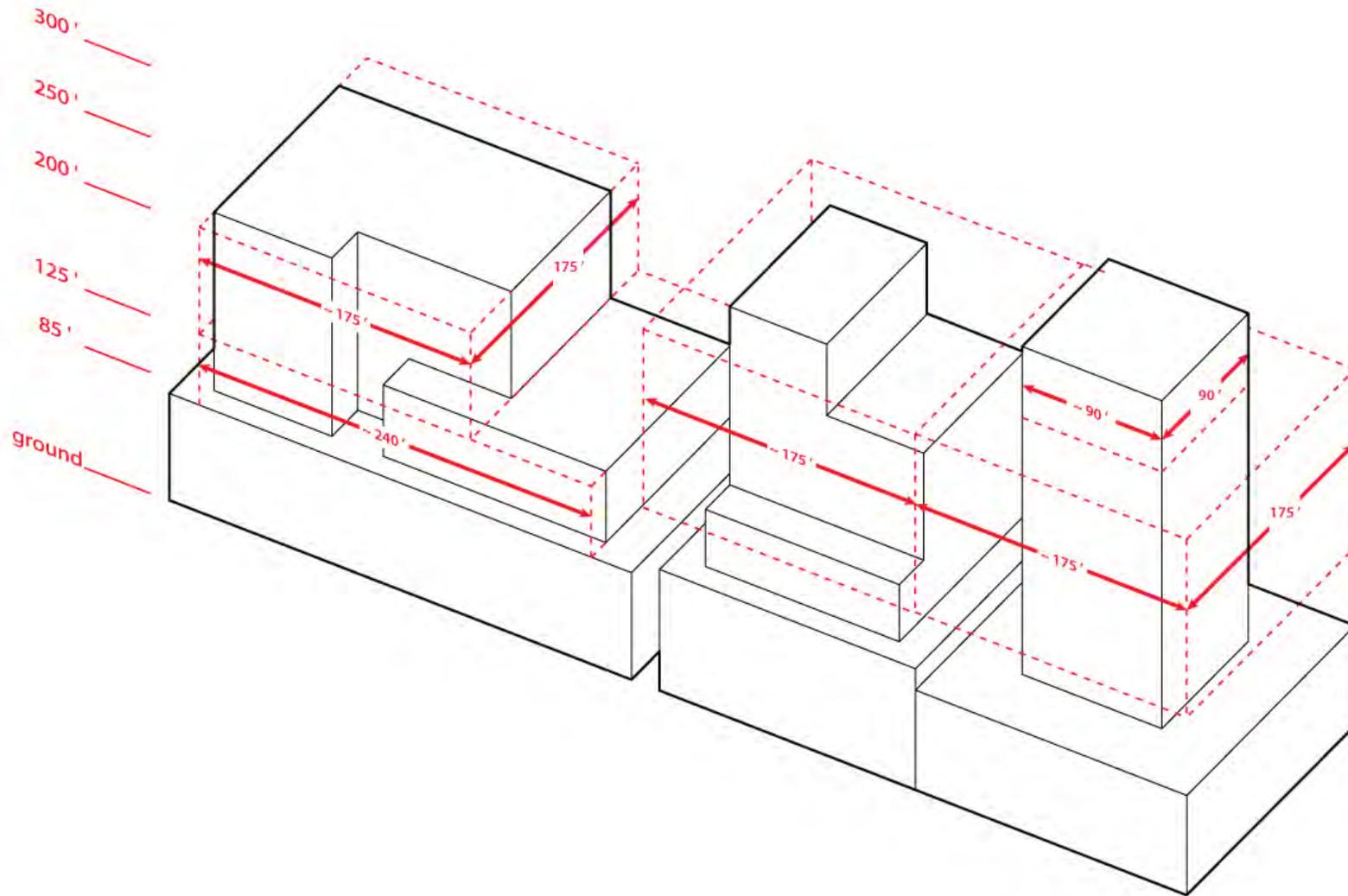
Measures:

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 long views from nearby areas.

Height Range (feet)	Minimum building separation	Maximum length of perpendicular facades*
251' to 300' (this height is available 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 building complex with appropriate building separation



Example building complex designed within the maximum perpendicular facade lengths limit

e. Connectors Between Buildings

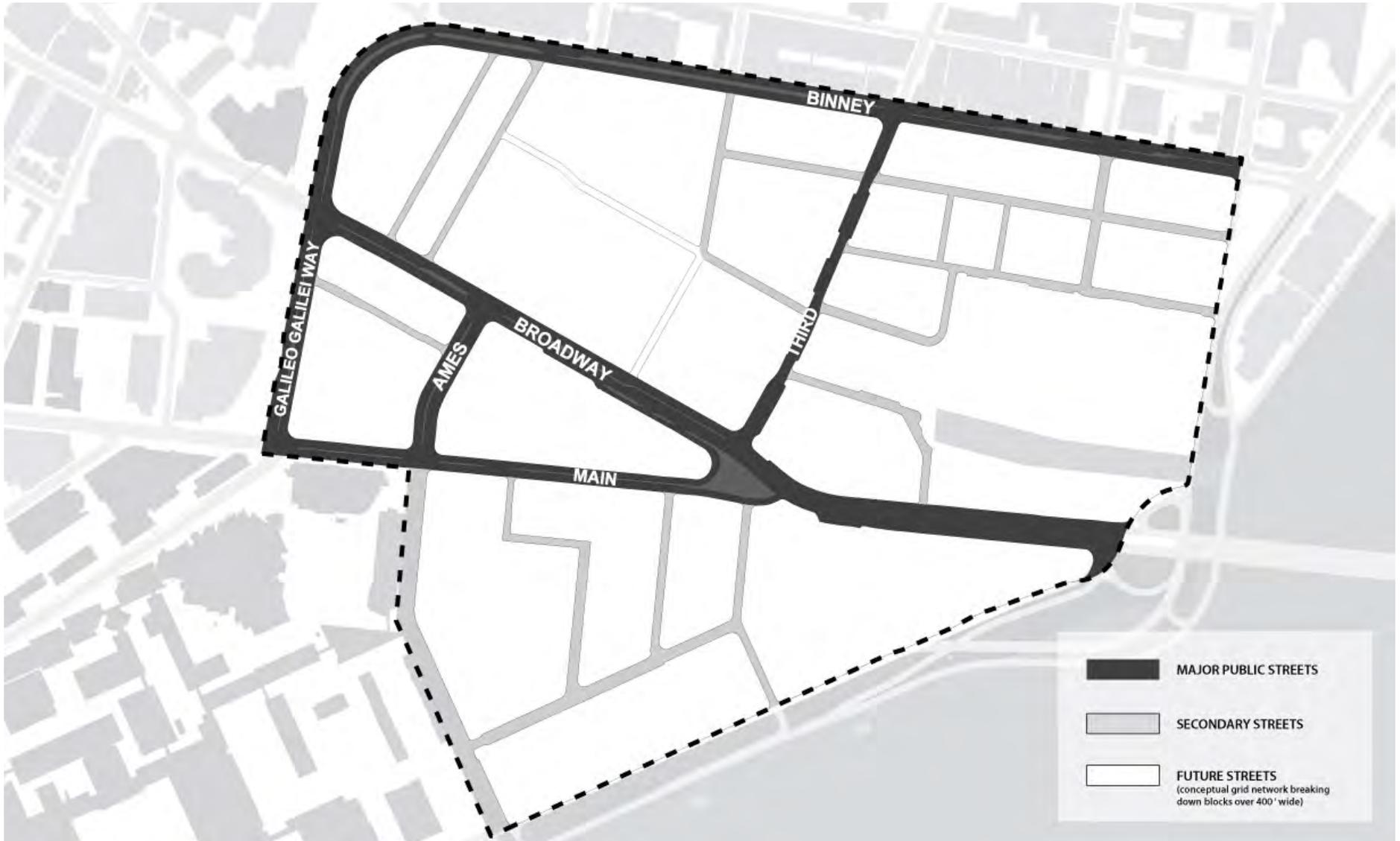
Goal: Upper-floor connections are encouraged for tenants needing larger floorplates (i.e., 35,000-70,000sf). Connections should be recessed from public spaces, made highly transparent, designed to emphasize the distinct appearance of each building *and to allow light and views of the sky*. Follow these measures according to whether a connection occurs within a block or across a public right of way (connections across Major Public Streets are not appropriate):

Measures:

- a. Within blocks
 - Set back at least 35' from public street façade
 - Façade at least 80% transparent
 - Provide ground level public passage at selected locations
- b. Over side streets/promenades
 - Set back at least 35' from public street facade
 - Provide at least 35' or 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
 - Façade at least 80% transparent
- c. 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.
- d. In instances where multiple connectors are provided, they should be placed so as to create architectural interest and to allow reasonable amount of light to reach the ground.



3. Location Specific Measures for Architectural Character and Street Activity

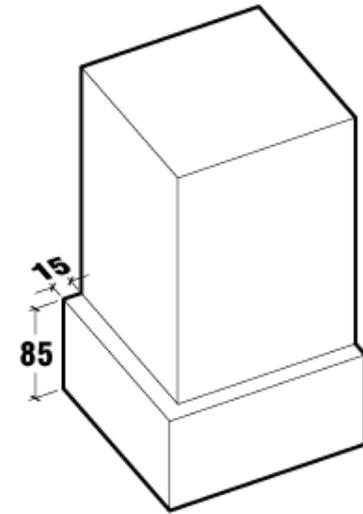


a. Major Public Streets

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:

- a. Set back approximately two-thirds of the building façade above 85 feet from the principal façade by a depth of about 15 feet.
- b. Façade areas without setback may be appropriate at corners or in specific locations to create architectural variety.
- c. 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.)



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

Measures:

- a. Locate the facade at the property line or provide a small setback (5 to 15 feet) from the right-of-way for café seating, benches, or small open spaces directly engaged with interior uses.
- b. Setbacks used exclusively for ornamental landscaping are not encouraged.



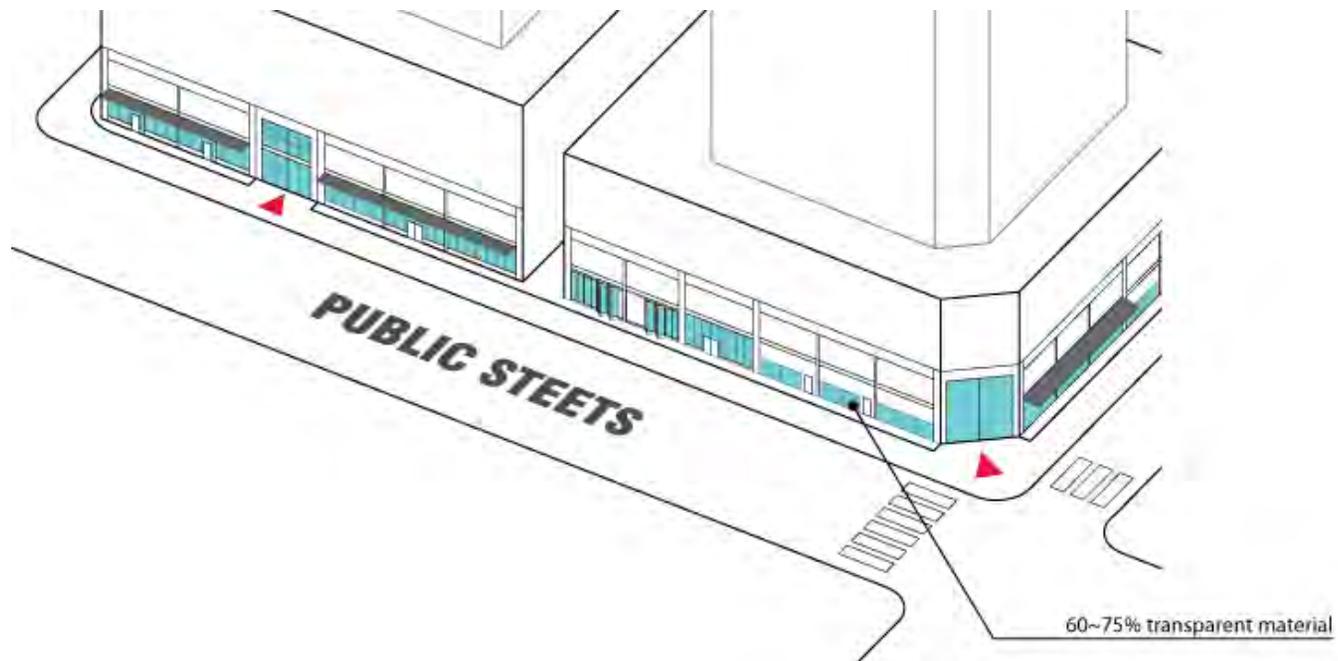
Provide a small setback from the right-of-way for cafe seating (left: Tavern at Central Square, right: Flour Bakery at Novartis building, Cambridge)

KENDALL SQUARE PLAN: SUMMARY OF ZONING & URBAN DESIGN RECOMMENDATIONS - PART 3

Goal: First floors of the buildings along major public streets should be actively used. Strong connection between the first floor of buildings and the exterior public realm is encouraged

Measures:

- a. Approx. 75 percent of the street frontage should be occupied by retail uses such as cafes, restaurants and shops
- b. Major entrances should be located on public streets, and on corners wherever possible. Entrances should relate to crosswalks and pathways that lead to bus stops, transit and bike stations.
- c. Transparent materials and interior lighting should be used to maximize visibility of street level uses. 60 to 75 percent of the ground floor façade area should consist of unobstructed transparent material that permits clear views between the sidewalk and interior building space.
- d. Blank walls exceeding 20 feet in length should be avoided.
- e. Service/loading areas are not appropriate along the major streets and should be located on secondary streets.

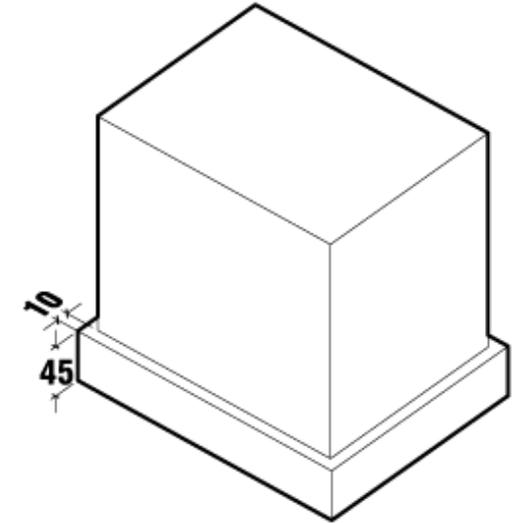


b. Secondary Streets

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:

- a. Set back any portion of the building above 45 feet by at least 10 feet from the principal facade. Where appropriate, design these setbacks to include balconies and rooftop terraces.
- b. 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.).



i. Commercial and Institutional Buildings

Goal: Contribute to a pedestrian-oriented street character, distinctly more intimate than a major public street that includes ample space for walking, street trees and other plantings, and significant access to direct sunlight and sky views.

Goal: First floors of the commercial and institutional buildings along secondary streets should be designed to accommodate anticipated future demand of uses that welcomes public activity throughout the day and evening

Measures:

- a. Approx. 75 percent of the street frontage should be occupied by active uses. Where retail is not provided ground floor spaces should be designed to accommodate retail in the future. Active uses include retail (i.e. cafes, restaurants, shops); educational and/or 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; commercial lobbies and front doors

- b. Standards for spaces convertible to retail:
- 18-20 foot floor-to-floor height
 - Leasable ground floor depth from façade should average at least 40 feet
 - Ground floor level flush with and/or easily accessible from sidewalk
 - Ground floor façade readily convertible to retail-style storefront
 - Designed to accommodate venting and exhaust needs of food service uses
 - Services such as interior power and HVAC zoned or easily convertible to enable convenient division and sublease of interior spaces to retail tenants
- c. Incorporate 40 to 60 percent transparent glazing in the ground level facade, with direct views between sidewalk and interior building spaces, to expand the apparent width of public space at ground level. Include ground-level uses acceptable along Mixed Use Active Edges with commercial/institutional emphasis.
- d. Office and research uses are discouraged from occupying extensive ground-floor frontage. Where these uses do occur, they should occupy no more than 200 to 240 feet of continuous frontage along public streets.
- e. Major entrances should be located on public streets, and at or near corners wherever possible. Entrances should relate well to crosswalks and pathways that lead to bus stops, transit and bike stations.
- f. Blank walls exceeding 20 feet in length should be avoided.
- g. Loading/service areas are acceptable per the standards outlined in section 1. *Overarching Goals.*



The Koch Center on 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 with more active ground floor uses such as cafe.

ii. Residential Buildings

Goal: Create pedestrian-friendly environment with residential character at the sidewalk level as well as the ground floor of buildings

Measures:

- a. Create a consistent residential edge, with a setback from the sidewalk for compact front stoops, porches, and gardens. Providing fully accessible front entrances, beyond code requirements, is strongly encouraged, while balancing need for interior privacy. Consider strategies including;
 - 1) accessible raised docks lining the façade (with a continuous accessible passage as well as defined semi-private areas); and
 - 2) ground-level entrances with added privacy elements such as 3- to 4- foot high walls, screens or vegetation, projecting trellises, and/or similar elements marking a transition to private space .
- b. Contribute to a pedestrian-oriented street character that includes ample space for walking, street trees and other plantings, and significant access to direct sunlight and sky views.
- c. In parts of the street level façade that do not include residential unit entrances, incorporate 40 to 60 percent transparent glazing in the ground level facade, with direct views between sidewalk and interior building spaces, to expand the apparent width of public space at ground level. Include ground-level uses acceptable along Mixed Use Active Edges.
- d. 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.
- e. Blank walls exceeding 20 feet in length should be avoided along all streets and pedestrian walkways.
- f. Loading/service areas are acceptable in section 1. *Overarching Goals*.

iii. Buildings Interior to the MIT Campus

Goal: 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 Carleton, Hayward, and Amherst Streets.



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/or cultural facilities open to the public enlightens public experience with institutional buildings while also helping to anchor destination retail and public places. 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.



Highly transparent ground floor spaces can bring life to institutional building edges. Some of the methods utilized include: interior graphics exhibited to be seen from outside (right: Hamilton Public Library and Farmer's Market, Hamilton, Ontario), displaying lab spaces to show innovators at work (middle: Massachusetts College of Pharmacy and Health Science, Longwood Avenue, Boston), and retail-style student dining, which can become welcoming lanterns along campus areas at night (left: Drexel University's Northside Dining Terrace, West Philadelphia).

c. Along Park Edges

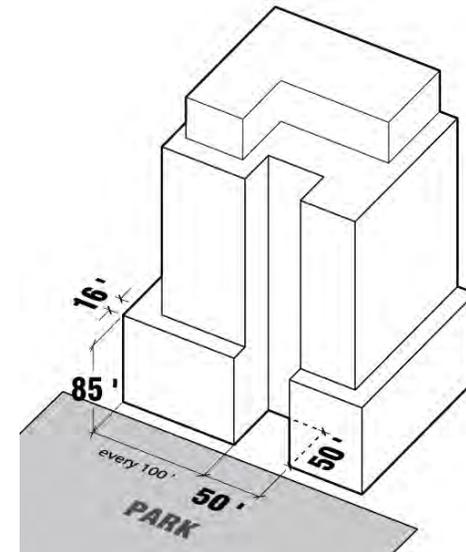
Goal: Development at the edge of parks and plazas should, in addition to satisfying the active edge criteria identified above, support welcoming and active park spaces.

Measures :

- a. Pay special attention to surrounding the parks, plazas, and public spaces with uses that create an active environment throughout the day and evening and increase safety for park users through.
- b. Set back about two-thirds of the building façade above 85 feet from the principal façade depth of at least 16 feet. In addition, create vertical breaks for building volumes above 120' in height facing the park -- facades facing the park exceeding 100' in width should be separated from adjacent facades by a gap of at least 50 feet, extending back 50 feet from the ground level facade . 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.



At 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. (University Park, Cambridge)

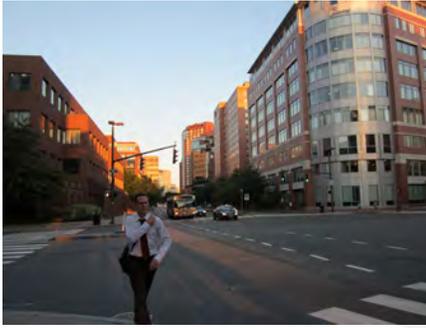


b. Example of a building massing located at park edges

4. Appendix

Buildings over 200 feet tall are likely to become a landmark 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.

view along Broadway looking towards the Cambridge Center area



view from the Volpe park area looking towards the Volpe site

view along Main looking towards the Cambridge Center area

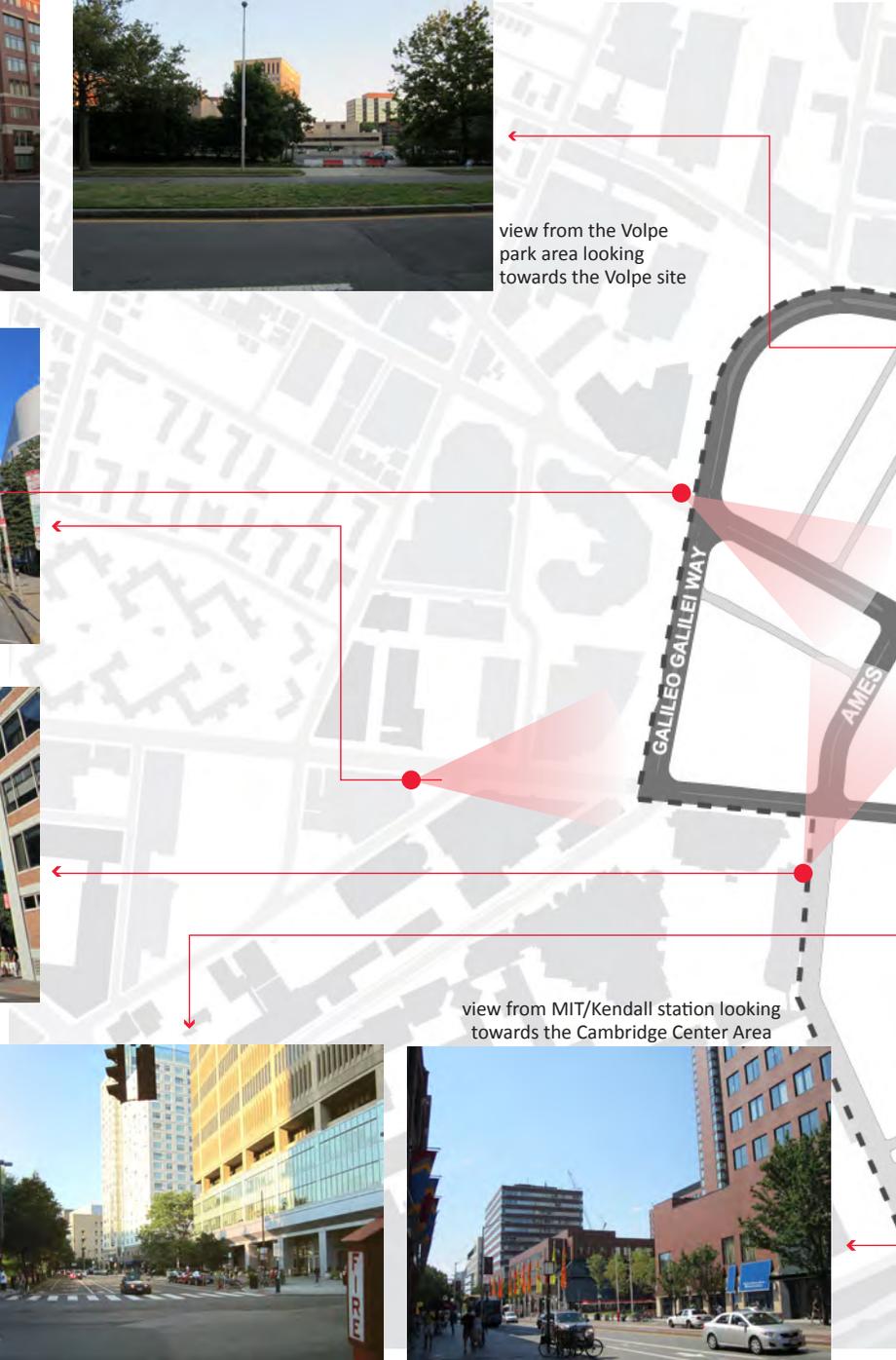


view along Ames looking towards the Cambridge Center area and Volpe site



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

view from point park looking towards the Volpe site





view along third street looking towards the Volpe site



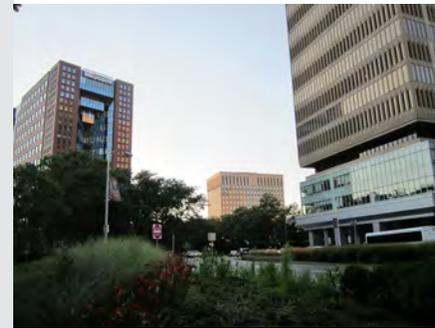
view along third street looking towards the South of Main Street



view along Broad Canal looking towards the Cambridge Research Park



view along Broadway East looking towards the 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 the South of Main Street and Cambridge Research Park