



# **VOLPE WORKING GROUP**

**PLANNING & DESIGN PRINCIPLES**

**CITY OF CAMBRIDGE  
COMMUNITY DEVELOPMENT DEPARTMENT  
JULY 20, 2017**

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## INTRODUCTION

# THE VOLPE PARCEL

The Volpe National Transportation Systems Center, operated by the U.S. Department of Transportation (DOT), is one of Cambridge's largest employers. It sits on a 14-acre federally-owned parcel of land that has seen little change in over 45 years, and its current design has little connection to the surrounding area. Redevelopment of the Volpe site presents a rare opportunity to re-imagine this part of Kendall Square for the future.

The history of the Volpe site, in its current form, began with the City's Kendall Square Urban Renewal Plan in the 1960s. Before that time, Kendall Square was industrial in character. The urban renewal plan used Federal, local, and other private and institutional resources to assemble and clear land so that it could be redeveloped to new uses such as offices and laboratories. A substantial portion of the Kendall Square Urban Renewal Area was originally planned to be developed as an Electronics Research Center for NASA, and several buildings were built for that purpose in the 1960s. However, construction of



federal facilities ceased when NASA relocated its operations from Cambridge to Texas in 1969. The buildings vacated by NASA were occupied by DOT in 1970, and became the John A. Volpe National Transportation Systems Center, named for the former Governor of Massachusetts who was the U.S. Secretary of Transportation at that time.

Since 1970, the Volpe site has remained mostly unchanged. Meanwhile, its surroundings have undergone an extensive transformation from industrial uses or vacant sites to a mix of office, laboratory, housing, retail, and other uses, and Kendall Square as a whole has evolved into a global center for the innovation economy.

## PLANNING BACKGROUND

In 2011-2013, the City studied the potential for future growth and development in two of its major commercial squares – Kendall Square and Central Square – through the “K2C2” planning study. The “K2” component of this study established a vision for the continued growth of Kendall Square as an innovation community that plays a key role in the local, regional, and global economy, while also transforming Kendall Square into a more integrated and sustainable environment of living, working, learning, and playing through the incorporation of new housing, retail, community space, and other public improvements.



As of 2017, the City Council has adopted two major zoning changes resulting from the K2 study: the PUD-5 zoning for MIT-owned land along Main Street (2013), and the MXD district rezoning for land within the Kendall Square Urban Renewal Area (2015). In 2015, the Planning Board submitted a rezoning proposal for the PUD-KS district, which contains the Volpe site, but no zoning amendment was adopted at that time.

The Community Development Department also conducted the “Connect Kendall Square” planning and design competition to develop a framework for future public space improvements in the area, including four park parcels planned to be redesigned by the city, as well as anticipated future open spaces in areas such as the Volpe site. A team led by Richard Burck Associates was selected as the winner of the competition, and completed a final framework plan in 2015.

### **EXCHANGE OF THE VOLPE PARCEL**

In 2015, the U.S. General Services Administration (GSA) announced that a competitive process would take place to select an “exchange partner,” a developer who would construct a new facility for the Volpe Center on a portion of the current 14-acre site and then take ownership of the remainder of the land to be redeveloped in accordance with the City’s zoning. After receiving proposals from a number of potential developers, the GSA announced that MIT would be selected as the developer for the site. MIT was officially designated as the exchange partner in early 2017, and since that time has conducted outreach to the community to discuss future plans and possibilities for the site. It is expected that MIT will submit a petition to amend the zoning for the Volpe site in the near future

### **VOLPE WORKING GROUP**

In 2016, in response to a City Council policy order, the City Manager appointed a “Volpe Working Group” consisting of residents of the surrounding neighborhoods – East Cambridge, the Port, and Wellington-Harrington – along with representatives of the Kendall Square business community and other community stakeholders. This group has been supported by Community Development Department staff and consultants from Michael Dennis Associates, a planning and urban design firm.

The Volpe Working Group’s initial task was to develop a set of planning and urban design principles to provide guidance to future developers about the City’s priorities and expectations for the site. The working group’s discussions have referred to, and built upon, the work of the K2 study, the Connect Kendall Square framework plan, the zoning discussions that occurred at the Planning Board and City Council in 2015, and other relevant planning work undertaken by the City. After MIT was officially designated as the GSA’s exchange partner, representatives from MIT have also participated in discussions with the working group.

This document articulates the key principles developed by the Volpe Working Group over a series of ten meetings covering a variety of topics. The purpose of this document is to provide a set of overarching community goals that the future development of the site should aim to achieve, and against which future zoning and development proposals might be evaluated. The group will continue to provide feedback to the Planning Board, City Council, MIT, and others as the planning process for this redevelopment continues.

## VISION

# A PLACE OF OPPORTUNITY

### THE VOLPE SITE WILL BE...

- A unique place that is memorable, delightful, comfortable, inviting, and sociable.
- A center of gravity, the heart of Kendall Square, an “exclamation point” for Cambridge, and a home for community events and gatherings.
- Organized and given identity by the form and activity of its civic spaces—its streets, squares, and parks.

### LOCATED AT THE HEART OF KENDALL SQUARE, CAMBRIDGE’S CENTER OF INNOVATION AND BUSINESS, THE VOLPE SITE WILL CAPITALIZE ON OPPORTUNITIES TO ...

- Support the continued transformation of Kendall Square to a mixed-use neighborhood by introducing significant housing, open space and retail.
- Build upon Kendall Square’s place as a global leader in the knowledge economy and allow it to grow.
- Create a community-focused place to work, live, play, learn, and innovate from morning to afternoon to evening, weekdays and weekends.
- Connect Cambridge residents to jobs, jobs training and support access to economic opportunity.
- Connect the site and Kendall Square to surrounding residential neighborhoods and the rest of the city.
- Connect the federal Volpe Transportation Center to the rest of Cambridge.
- Incorporate diverse activities, ideas, and functions that appeal to residents and workers.
- Bridge Cambridge’s past, present, and future.



## A CENTER OF GRAVITY FOR KENDALL SQUARE



1 - 2. The site will be a part of a lively, functionally diverse, inviting, and coherent urban district.

## A CROSSROADS



3 - 4. The site will bring diverse people, ideas, and functions together.

## A SENSE OF BEING SOMEWHERE



5 - 6. The site will be a unique and memorable place that evokes a feeling of belonging, protection, of being at home.

## PLANNING PRINCIPLES

# CIVIC LIFE

Create beautiful, legible, varied, and welcoming public places that support and symbolize community, bring together a diverse range of demographic groups, as well as attract community members and visitors to share in the unique experience of Kendall Square.

### CREATE A CIVIC CENTER THAT IS RECOGNIZABLE AS “THE HEART OF KENDALL SQUARE”

Create a new civic space—park or public square—located at the confluence of travel routes by people on foot and bike and activated by retail and civic uses. This space shall be room-like, framed by architecture and reinforced and enriched by the design of its landscape to create a sense of place, where you know that you’re *somewhere*.

### SUPPORT UNIQUE AND COMPLEMENTARY USES THAT WILL DRAW A BROAD RANGE OF COMMUNITY MEMBERS

Spaces and uses on the site should bring together different types of uses that appeal to varied interests, in order to provide the “critical mass” of civic activity needed to make the place feel welcoming to the community at large, and attract people who may not have previously had a reason to visit Kendall Square.

### REFLECT KENDALL SQUARE’S ROLE AS A CENTER OF INNOVATION IN THE LIFE OF THE COMMUNITY

Employees, academics, and others involved in the innovation ecosystem should be a key presence in the civic life of Kendall Square alongside residents and the community at large. Businesses should be encouraged to contribute to civic life by displaying their work, opening to the street, engaging with residents, and providing space for the community.

### PROVIDE VENUES FOR CIVIC DIALOGUE AND COMMUNITY PARTICIPATION

As Kendall Square is a center of thought and innovation, it should be a place where people come together for community-wide discourse in the form of lectures, arts and cultural programs, meetings, demonstrations, and other events. Community participation should include people who live and work in Kendall Square along with visitors from elsewhere in the city and around the world.



## PUBLIC SPACE IS THE VESSEL FOR THE COMMUNITY



1. Rockefeller Center in New York, NY .
2. Downtown Crossing in Boston.
3. Flexible seating invites passers-by to sit in Times Square, New York, NY, a civic-scaled public room.

## GROUND LEVEL LIFE IS THE GLUE FOR COMMUNITY



4. Revelers participate in a parade along Massachusetts Avenue.
5. Business owners engage with the public during the Cambridge Science Festival.
6. Elderly citizens participate in outdoor recreation.
7. Art can be a focal point for gathering, such as Cloud Gate in Millennium Park, Chicago, IL.
8. Demonstrators gather to march through downtown Boston.

## PLANNING PRINCIPLES

# CONNECTIVITY & PERMEABILITY

Make the Volpe site an integral part of the urban fabric of Cambridge and an interconnected piece of the existing network of public spaces, buildings, and neighborhoods.

### CREATE CONNECTIONS TO REGIONAL CIRCULATION ROUTES

There are significant pedestrian and bicycle links to existing and future corridors connecting neighborhoods, towns and cities beyond Kendall Square that should be made direct and clear in order to connect the Volpe site with its regional context. These include the Kendall Square T Station beyond the Marriott Hotel, the Grand Junction Greenway, and the Broad Canal link to the Charles River

### CREATE A LATTICE OF CIRCULATION ROUTES INTO AND THROUGH THE SITE TO MAXIMIZE PERMEABILITY TO SURROUNDING NEIGHBORHOODS

The site, and Kendall Square in general, has a “barrier” feel due to the impassibility of its interior and wide, busy streets such as Binney Street and Broadway at the perimeter. The site plan should establish an integrated network of high-quality streets and open spaces that will welcome the community in, making deliberate walking and bicycling connections to the surrounding neighborhoods of East Cambridge, Wellington-Harrington, and The Port.

### PRIORITIZE THE PEDESTRIAN USE AND EXPERIENCE OF THE SITE

The site should provide a strong street edge on major public streets, and incorporate continuous ground floor spaces that are accessible and welcoming to the public, such as retailers. Ground floors should be visually transparent and welcoming throughout, with public entrances and activities physically and visually oriented to major pedestrian routes.

### SEAMLESSLY CONNECT THE NEW VOLPE CENTER TO ADJOINING PUBLIC SPACES

The design of the new government facility should be as continuous as possible with adjoining public open space, and required security measures should be incorporated as part of the overall site plan concept. The new center should take advantage of opportunities for public outreach in the visual design and programming of the building and site. Parking and service areas should be minimized and handled unobtrusively.



## INTEGRATION WITH THE CITY



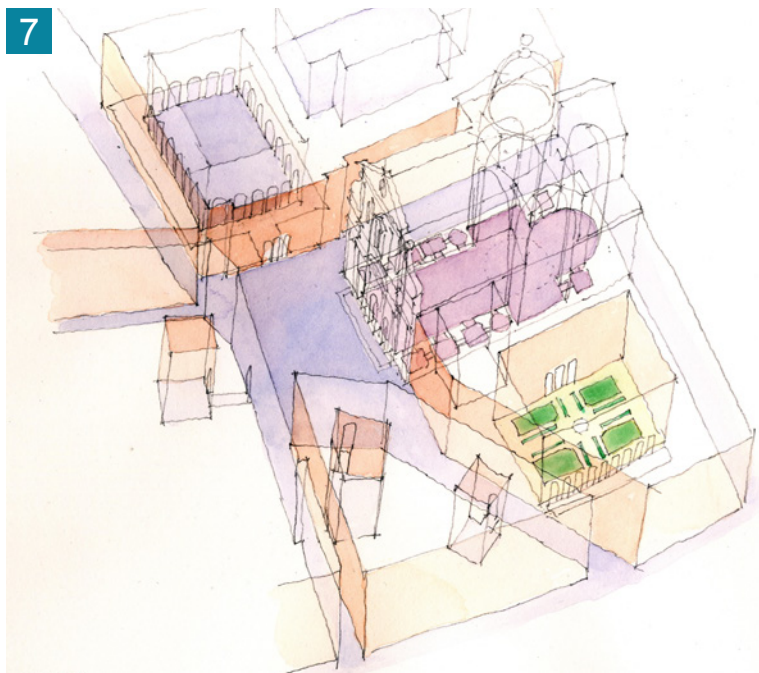
1. The site's system of streets and paths will be designed to make the site permeable to pedestrians and cyclists from the surrounding neighborhoods.
2. Key urban intersection points and nodes of activity.
3. The streets that border the site should become connectors: zippers linking the site to the adjoining districts.

## PEOPLE FIRST



4. Sidewalk widths on some streets should be generous enough to accommodate outdoor seating at cafés, bars, and restaurants.
5. A shared street slows vehicular traffic and allows for pedestrian and bicyclist access to a wide range of services and amenities.
6. Increasing accessibility routes will lower obstacles currently blocking the site from its surroundings.

## INTERCONNECTED CIVIC STRUCTURE



7. The site's civic structure is comprised of interconnected public spaces.
8. The Nolli map distinguishes between civic and private space.



## PLANNING PRINCIPLES

# ACTIVATION

Provide a mix of commercial, residential, retail, recreational and other uses that are engaging and flexible, supporting an active public realm throughout the day, week, and year.

### CREATE PUBLIC SPACES THAT SUPPORT A RANGE OF ACTIVITIES

Public spaces should support activities that will draw the critical mass of people needed to make it a great civic place. Vital activities include quiet contemplation of nature, impromptu recreation, gathering with friends, outdoor dining and picnicking, farmer's markets, food trucks and carts, play areas for toddlers and children, skating, and other unique recreational offerings. Large and small businesses should be encouraged to take responsibility for some of the programming in public spaces.

### PRIORITIZE SMALL-SCALE SPACES WITH A RANGE OF USES AT THE GROUND-FLOOR EDGES OF BUILDINGS, PARTICULARLY ALONG MAJOR PUBLIC ROUTES AND OPEN SPACES

Small shops, cafés, restaurants, and other small spaces that add variety to the streetscape are the priority for the ground floors of buildings along primary streets and open spaces. Commercial buildings should allow interior activities, like dining, to spill out. Larger-scale “anchor” uses should be located interior to buildings and the site, and/or below grade or on upper floors.

### PROVIDE ACTIVATION AND INTEREST YEAR-ROUND

Public spaces should provide opportunities to enjoy the outdoors when the weather is pleasant as well as indoor and outdoor activities that will attract people even during less favorable weather conditions. To maintain interest, the types of activities provided should be able to evolve throughout the year based on the season and the circumstances.

## WIDE RANGE OF PROGRAMS



1. Program can revolve around food: farmer's markets, food trucks, and other dining options.
2. Outdoor recreation encourages people to be active.
3. Outdoor dining and picnicking can happen both in the daytime and at night.

## ENRICH THE STREETSCAPE



4. Small shops, cafés, restaurants, and similar uses are the priority for the ground floors of buildings addressing primary streets and space.
5. Retail entrances at building corners are facing intersections when possible.
6. Transparency, recessed entrances, window displays, and awnings address the pedestrian scale.

## REASONS FOR THE SEASONS



- 7 - 8. Public spaces will allow for a variety of activities throughout the day, week, and year.

## PLANNING PRINCIPLES

# INCLUSIVENESS

Optimize the built environment to make the site attractive and welcoming to people of all ages and backgrounds, with a particular focus on families with children and nearby residents who are at risk of being excluded from the innovation economy.

### CREATE OPEN SPACES THAT ARE FRIENDLY TO PEOPLE OF ALL AGES AND ALL LEVELS OF ABILITY

Public spaces should provide opportunities for play and recreation serving all age levels, including toddlers, school-age children, teenagers, adults, and seniors. Spaces should not cater only to young adults.

### PROVIDE DIVERSE HOUSING OPTIONS FOR DIFFERENT HOUSEHOLD TYPES

The range of housing types should address the need for family housing in the area and the city, with a considerable portion of multi-bedroom units, and amenities integrated to support family life. Residential amenities might include private open spaces such as balconies or decks, playrooms, storage areas, and child care services.

### INCLUDE ECONOMIC OPPORTUNITIES FOR SMALL, “OWNER-OPERATED” ENTERPRISES

Among the commercial uses in the area, where larger businesses will predominate, there should also be opportunities for a wider range of commercial types, such as entrepreneurs

and small businesses, including small retail proprietors. Small business owners will help contribute to the civic life of the area over the long term.

### WELCOME PEOPLE FROM ALL BACKGROUNDS AND CULTURES

Kendall Square should be a place that reflects the socioeconomic diversity of the Cambridge community and embraces the worldwide community as well. Along with diverse housing options, consumer services, and recreational amenities, the Volpe site should create opportunities for multicultural programming and engagement among different demographic groups.

### BROADEN THE RANGE OF USES AND SERVICES BEING OFFERED

The area should include recreational, retail, and civic amenities that will draw a broad range of community members, not exclusively meant to serve workers and others associated with the innovation economy. In addition, the site should provide opportunities for companies and others in the innovation community to reach out and provide benefits to the broader public.



## A CITY FOR ALL AGES



1 - 2. The site's public open spaces will offer a variety of uses and kinds of experiences for multiple generations: from children to seniors.

## PROVIDE DIVERSE HOUSING OPTIONS



3 - 5. Housing options will cater to a wide demographic range, including families with children.

## SUPPORT BUSINESS OWNERS



6 - 7. The development will promote economic opportunities for individuals and small, owner-operated enterprises.

## PLANNING PRINCIPLES

# COMFORT

Make spaces that feel friendly and inviting at the pedestrian scale so that residents, employees, and visitors will feel welcome.

### CREATE PUBLIC SPACES THAT FEEL SAFE AND HUMAN-SCALED

Public pathways, recreational spaces, and gathering areas should have a scale that feels neither too confined nor too overwhelming to pedestrians, and have appropriate lighting and a sense of “eyes on the space” in order to provide safety for users at all times of day and night.

### PROVIDE OPEN SPACES THAT PROMOTE ENVIRONMENTAL BENEFITS AND MINIMIZE ADVERSE ENVIRONMENTAL IMPACTS

Outdoor spaces should provide comfortable elements such as seating, vegetation, shade, water features and wind protection. Buildings and open spaces should be designed and oriented to minimize excessive shadow, wind, noise, and heat.

### DESIGN STREETS AND SPACES TO MAXIMIZE COMFORT AND SAFETY FOR PEOPLE WALKING, BICYCLING, AND DRIVING

Motor vehicle travel access/egress points, and parking entrances and loading docks should be located to avoid conflicts with major pedestrian and bicycle routes. Pedestrian spaces and bicycle facilities should provide safety and comfort for people of all ages and abilities.



## PROVIDE A SAFE AND COMFORTABLE ENVIRONMENT



1 - 5. The site's open spaces will place a priority on physical and psychological comfort. Public spaces will range in scale from grand to intimate, offering niches for individuals, small groups, and large gatherings. In addition to outdoor open spaces, covered interior spaces will contribute to the quality and liveliness of the public realm, and will connect to adjoining open spaces.

## PLANNING PRINCIPLES

# SUSTAINABILITY

Develop the site to be an example of how the city will evolve and sustain itself into the future, particularly by mitigating and adapting to climate change.

### ADAPT TO A FUTURE IN WHICH CARBON EMISSIONS ARE FULLY ELIMINATED OR OFFSET

The site design should pursue opportunities to provide efficient energy delivery at a district level (e.g., shared solar, micro-grids, co-generation, utilizing the existing steam network). Building designs should employ energy-efficient building envelopes, optimize solar orientation, and pursue other passive design features. Building systems should be adaptable to shift from carbon-based to renewable sources of energy over time. Tenant fit-outs should also be highly sustainable.

### INCORPORATE RESILIENCY INTO SITE AND BUILDING DESIGN

Public space should incorporate natural systems for stormwater management and heat island mitigation, as well as by providing shared resources to support the community during severe weather events. Buildings should be designed to withstand and recover from the increasing incidence of flooding and heat events over time.

### INCORPORATE STORMWATER MANAGEMENT AND OTHER RESILIENCY FEATURES INTO SITE AND BUILDING DESIGN

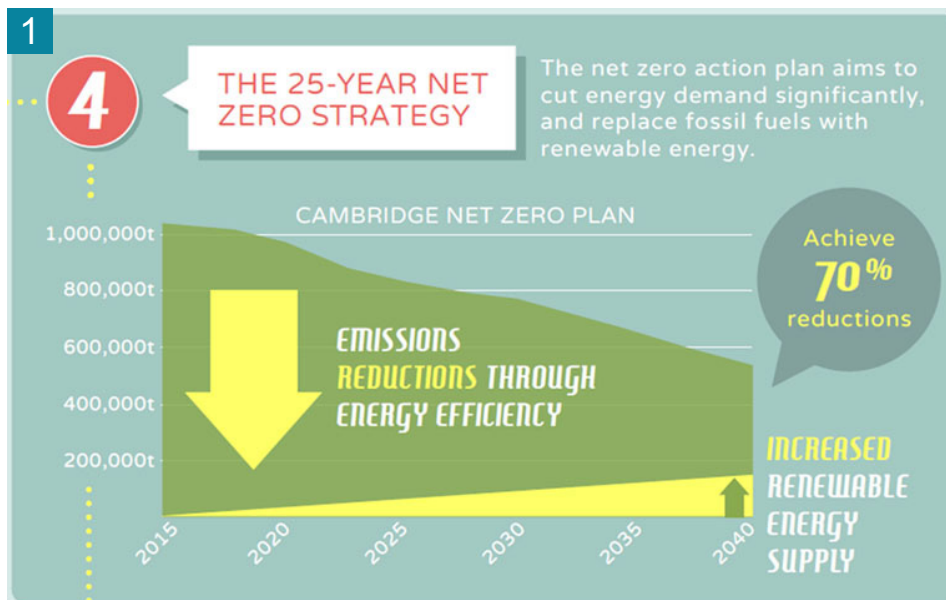
Public space should incorporate natural systems for stormwater management and heat island mitigation as an alternative to subsurface infrastructure where possible. Buildings should contribute to resiliency with features such as green roofs and cool roofs, and should be designed to withstand and recover from the increasing incidence of flooding and heat events over time. Public spaces and facilities should serve as shared resources to support community resiliency during severe weather events.

### MINIMIZE USE OF AUTOMOBILE TRAVEL AND PROMOTE SUSTAINABLE TRAVEL TO AND FROM THE SITE

Parking should be limited and hidden incentives to drive and park should be removed where possible, with incentives and other forms of support given to non-driving travel modes such as walking, bicycling, and transit systems, so that new development can be supported without additional auto traffic.

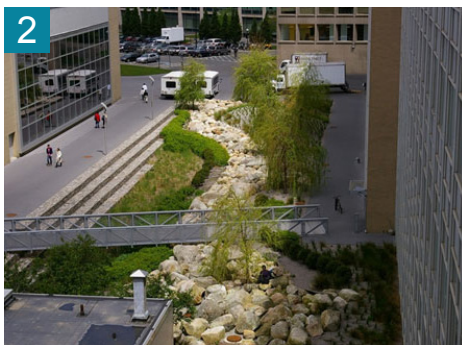


## SUSTAINABLE PLANNING AND DESIGN



1 - 3. Resilient strategies are a means to address our environmental and social challenges by promoting social connection; creating public amenity; using land, energy, and natural resources more efficiently; and minimizing our carbon footprint.

4. The Bristol Community College John J. Sbraga Health and Science Building, designed by Sasaki, is the first net zero energy academic science building in the Northeast.



## DESIGN PRINCIPLES

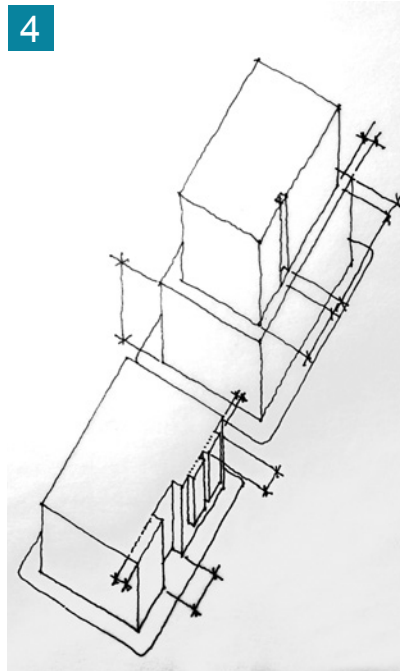
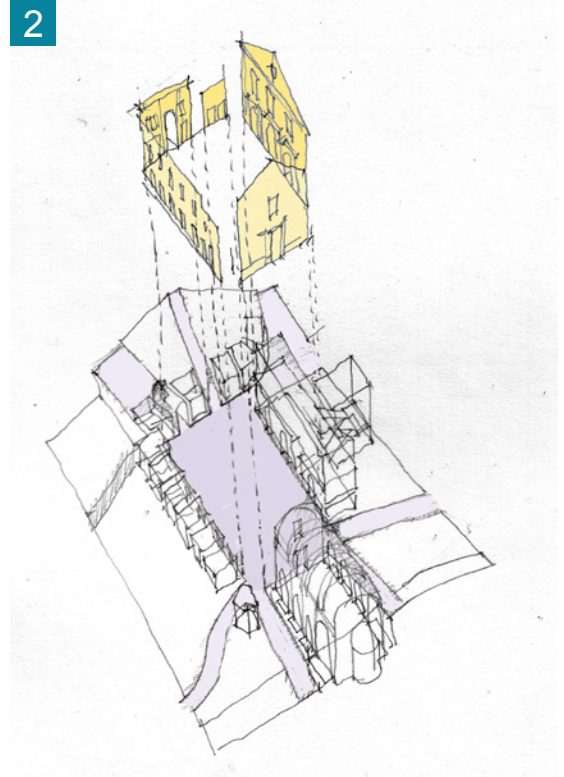
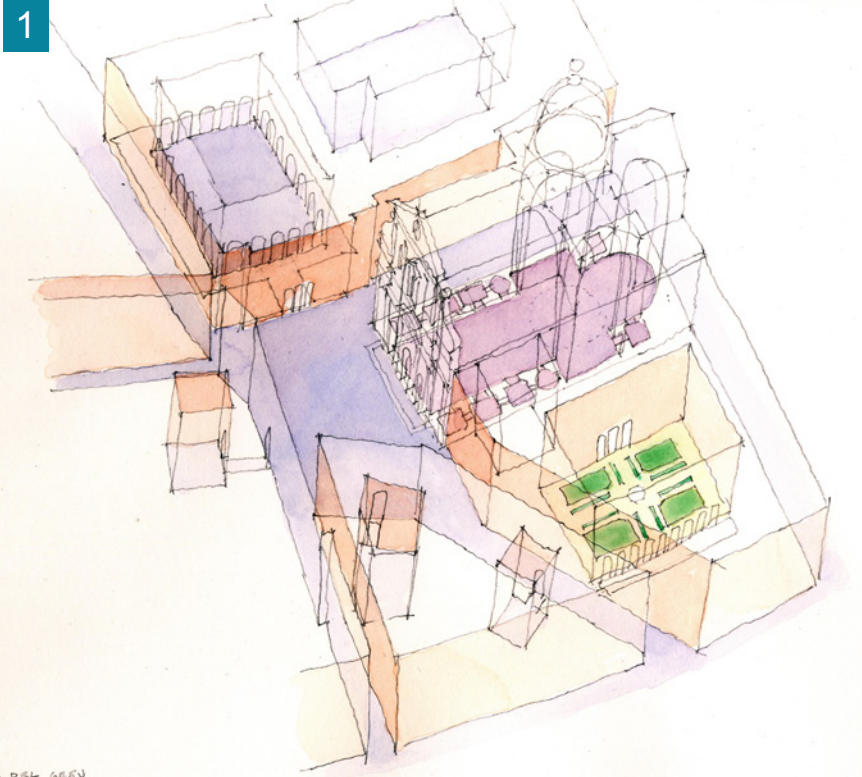
# SITE DESIGN

The site's buildings should frame the spaces of the public realm. The spaces and connections established by the site's civic structure are reinforced by the façades, massing, and design of the buildings that frame them.

Considered as an interconnected whole, the site's public streets, parks, squares, courtyards, passages, and primary spaces within public buildings should constitute the site's civic structure - the spatial framework that organizes the development of the site, interrelates its buildings with each other, and links the site's public realm with that of the surrounding areas.

- Give the site's public spaces a strong visual identity and sense of place by creating continuity in the alignment of the building façades that frame them. The site's public open spaces should be like urban rooms at the scale of the city, rooms whose legible form is the foundation of a coherent and inviting public realm.
- Locate building street walls and façades along the build-to lines established by the master plan, constituting the vertical surface that frames the space in three dimensions.
- Create a welcoming pedestrian environment, connected to and permeable from the adjoining districts, that is varied and human scaled.
- Include an integrated pedestrian circulation system, a matrix of streets, paths, and passages that integrates the site's larger open spaces with the adjoining public ways and the nearby neighborhoods.
- Design parks and the surrounding buildings to maximize solar access and sky view while balancing the need for logical pedestrian circulation and the spatial organization of buildings.
- Divide the existing super block into small, walkable blocks.

## CIVIC STRUCTURE



- 1 - 2. Buildings frame the space in three dimensions.
3. Distinguish between primary and secondary façades or elevations. Designate or suggest locations where building form and/or materials will be designed to create special emphasis.
4. Establish build-to lines to precisely delineate the boundaries of public space throughout the site by defining the location and alignment of building façades.

## DESIGN PRINCIPLES

# OPEN SPACE TYPES

The open spaces that constitute the site's public realm should invite a variety of people and activities to the site by offering a wide variety of possibilities for use and enjoyment.

### PARKS

- The largest open space or spaces on the site, whose form and character, and the ways they connect to streets and other open spaces, establishes the fundamentally public nature of the site.

### SQUARES/PLAZAS

- The most formal and imageable component of the site's civic structure. They are foci of social and retail life, the clearest expression of the role of public open spaces as urban scaled civic rooms.

### PASSAGE/GALLERIAS/MARKET HALLS

- Enclosed or semi-enclosed public pedestrian spaces extending through buildings, suitable for retail, markets, and events.

### COURTYARDS

- More contained and private than a park or a square, but can be enjoyed by the public.

### STREETS

- The linear connective elements of the site's circulation system, serving pedestrian, bicycle, and vehicular traffic, and giving access to ground floor functions of buildings. These may include streets for vehicles as well as pedestrian and bicycle passages.



## PARKS



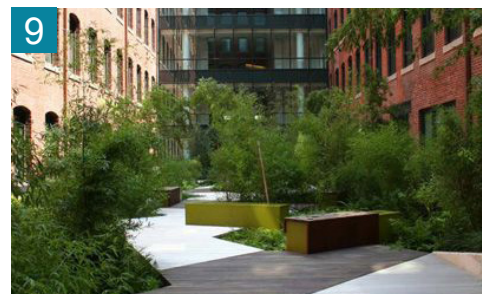
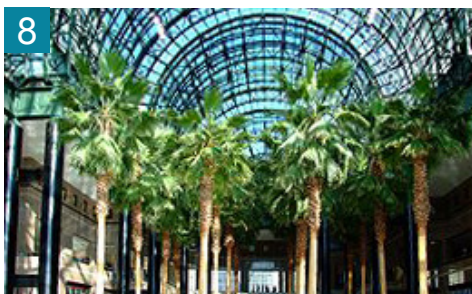
1 - 3. A large flexible open space, such as an open grass lawn, can be suitable for a wide range of activities. This should be framed by a permeable and occupiable zone, typically consisting of elements such as shade trees, fences, low walls, planters, trellises, pavilions, planting, areas of seating - that gives a sense of containment and definition and offers shade, protection, and a sense of intimacy.

## SQUARES AND PLAZAS



4 - 6. A centrally-located plaza can be home to a wide range of uses, including: events, gatherings, performances, markets, demonstrations, outdoor dining, strolling, and people watching. Plazas and squares should be activated by the ground level program of adjoining buildings, and by adjacent streets.

## PASSAGES AND STREETS



7 - 9. Passages should be located on primary pedestrian desire lines, so as to make connections between streets, parks, and squares of the site and adjoining areas. 10 - 12. Street designs should create a pedestrian-centered environment.

## DESIGN PRINCIPLES

# LANDSCAPE DESIGN

The landscape design of the site's open spaces should create an inviting, active, comfortable, safe, and useful public realm.

- Place a priority on the quality of the pedestrian experience, rather than vehicular convenience.
- Design and locate public and private open spaces to be responsive to adjacent uses and complement compatible building uses. Examples: playgrounds near housing, paved areas adjoining a market hall or community building. Locate public spaces in conjunction with complementary uses to create varied options for use and enjoyment.
- Design spaces to serve an intended purpose or character. Some spaces may be intended for passive enjoyment, while others may be suited for more active recreation or programmed uses.
- Create a positive relationship between architecture and the design of the site's landscape with architecture framing open space and visually enriching it. Landscape design should complement and reinforce the form of civic open spaces and connect them to each other and surrounding areas.
- Activate open spaces with retail and community uses.
- Use vegetation and other natural features to provide environmental benefits, such as managing rainwater and supporting the ecosystem.



## ART



1 - 3. Incorporate art as an integral part of the design: paving, furniture, fountains, site walls, etc. Free standing works are to support the spatial structure of the open space and its connection to adjoining streets by articulating significant places. Individual works of art and their respective settings must work together in a harmonious, subtle way to help humanize public space and buildings at the pedestrian levels.

## VEGETATIVE COVER



4 - 6. Provide vegetative cover to improve stormwater infiltration, reduce the heat island effect, and create a more temperate micro-climate at the pedestrian level. Include both at-grade and rooftop vegetation. Special consideration should be given to existing large trees, both those located at the borders of the site and internally, particularly trees bordering the inside of sidewalks along Third Street and Broadway.



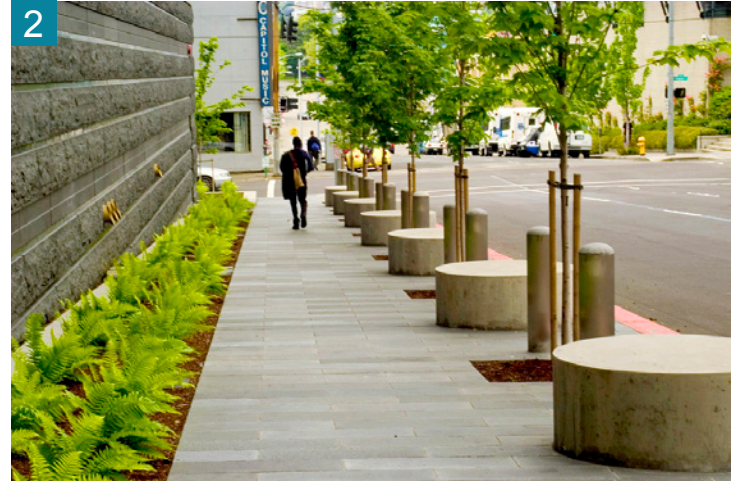
## DESIGN PRINCIPLES

# VOLPE CENTER

The new Volpe Building and its site should be designed as integral parts of the district. The building's site design is to be as continuous as possible with adjoining public open space while maintaining required security for the Volpe Building.

- Incorporate security barriers as part of the overall site plan concept to minimize their visual intrusiveness.
- Take advantage of opportunities for public outreach, both in the design of the building and its site. Examples: displays of the Volpe Center's work incorporated into gardens and open spaces, views into public interior spaces within the building.
- Minimize surface paving.
- Handle service needs unobtrusively.
- Maximize the public benefit provided by the new Volpe Building's open space to activate the site and to engage the broader community.
- Design the open spaces of the entire Volpe district to appear as one unified network.

## FEDERAL OPEN SPACE



1. Moakley Courthouse, Boston, MA 2. United States Federal Courthouse, Seattle, WA 3. McCoy Federal Building, Jackson, MI 4. Chicago, IL

## DESIGN PRINCIPLES

# BUILT FORM

Human-scaled, well-defined streets and public spaces should contribute to the district's overall sense of place.

Buildings should be conceived in four horizontal zones, each with its own responsibilities and characteristics that help define and articulate public space, and humanize the built environment.

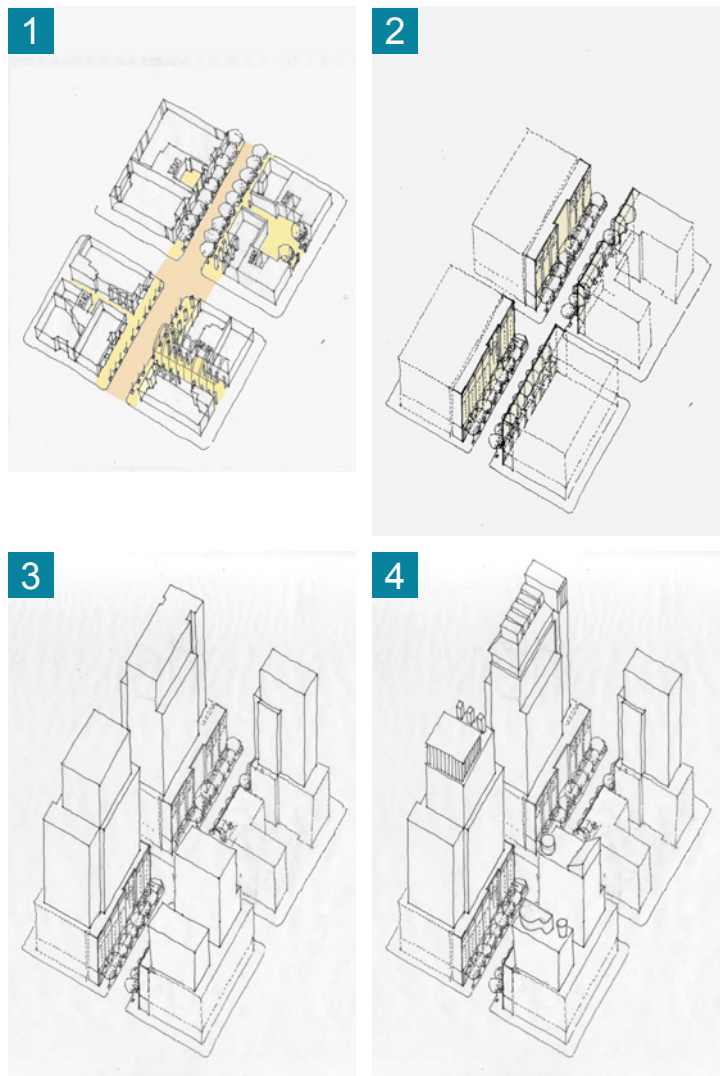
The **pedestrian zone** should create an active, transparent and permeable ground level.

**Street walls** should frame the spaces of the street, or square, enliven the pedestrian experience, and mediate between the pedestrian scale and the entire building. Street walls should be located along build-to lines established for the district.

**Towers** should define space at a larger scale and should be slender, with a vertical emphasis and expressive design to punctuate the skyline.

The **tops** of buildings should be designed in recognition of their potential to symbolize the building or district.

## HUMANIZE THE BUILT ENVIRONMENT



1. Pedestrian Zone 2. Street Walls 3. Towers 4. Tops



## THE PEDESTRIAN ZONE



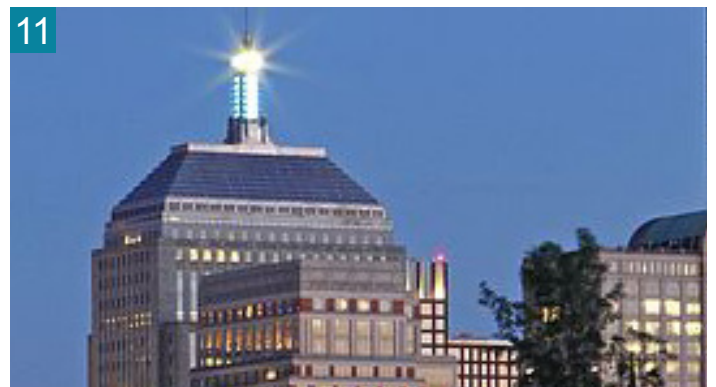
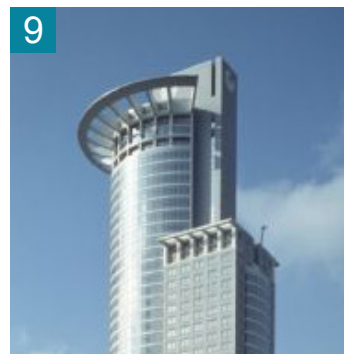
## STREET WALLS



## TOWERS



## TOPS



1-3. The building's ground floor is a deep zone—curb, trees, sidewalk, outdoor seating, canopies, recessed building entrances, window displays, loggias. Transparency and connection in permeable buildings enrich the pedestrian environment.

4 - 6. The street wall frames the public spaces of the site.

7 - 8. Towers will be landmarks within the district.

9 - 11. Building tops have the potential to be expressive elements and potentially symbols of the entire city that engage in dialogue with the buildings on the Boston skyline.

## DESIGN PRINCIPLES

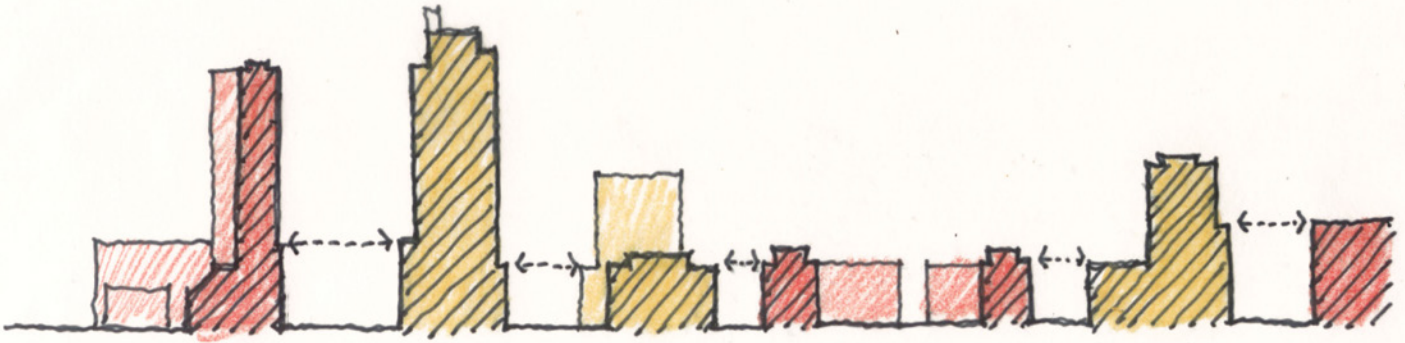
# BUILDING HEIGHTS AND SCALE

Building scale, massing, and heights should respond to the open spaces of the site and its context.

- Use building volumes to give definition to streets and other open spaces and at the same time create a comfortable pedestrian scale.
- Create variation in heights, setbacks, and stepbacks on different parts of the site to maximize compatibility with existing buildings and to create a sense of affinity between new and existing buildings.
- Create compatibility in heights, and stepback buildings adjoining the site and on opposite sides of the street.
- Ensure that towers are increasingly slender and broken down in scale toward the top. Buildings should provide animated silhouettes that enliven views to the site.
- Use variations in height to create varied rooflines that contribute to the Cambridge skyline.
- Break up the monolithic mass and bulk of large buildings by dividing façades into separate vertically oriented components, differentiated by changes in material, color, fenestration, setback, vertical reveals, etc.
- Where buildings are stepped back, provide green roofs, balconies, terraces, or gardens. Roof terraces for residential and commercial tenants are encouraged as important private amenities and for on-site rainwater retention.
- Adhere to minimum and maximum street wall heights. The upper boundary of the street wall may be demarcated by stepbacks above that level or by cornice lines. Stepbacks and cornice lines should relate to each other, but can vary where appropriate to allow for emphasis and increase the richness of the overall urban design.
- Design buildings and open spaces to minimize negative wind impacts on streets and public spaces. Designers should document expected ground level wind conditions and explain strategies to minimize them to the extent practicable.

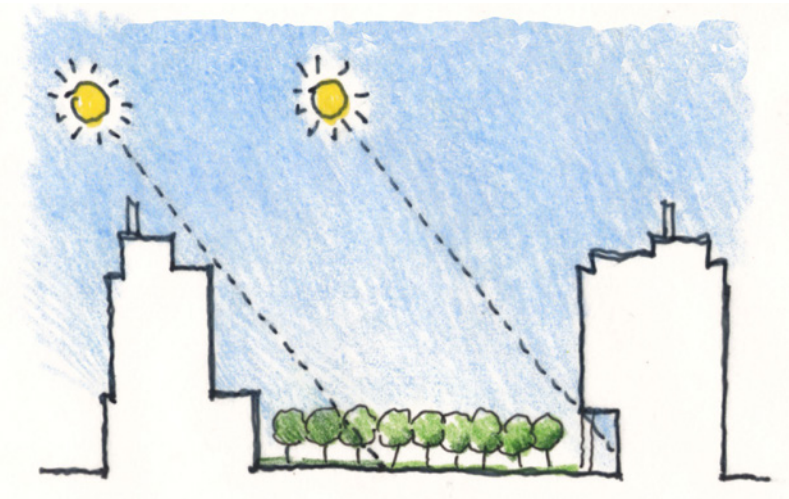


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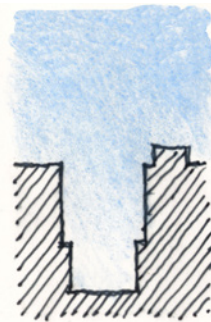


1. Buildings located adjacent to existing relatively low buildings are to be designed with setbacks, stepbacks, and other mitigating measures to create a compatibility of scale.

2



3



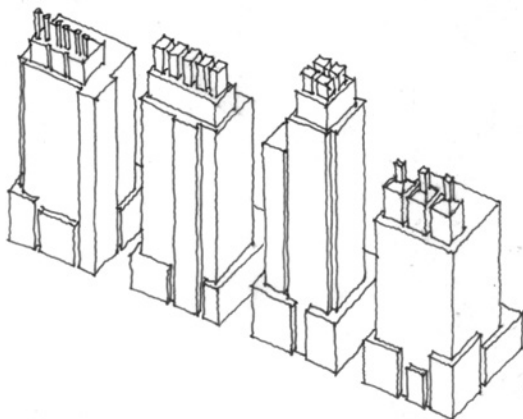
4



2. Arrange building heights and stepbacks to minimize shading of open spaces and of existing buildings, and to maintain sky views.

3 - 4. While there may be successful exceptions, in general, it is appropriate to have a taller street wall with a smaller stepback on a wider street and a lower street wall with a larger stepback on a narrower street.

5



5. Depending on the characteristics of adjoining streets and open spaces, different relationships between a building's street wall and tower zones may be appropriate. Façade design and massing may create strict separation, or may create various kinds of interactive interplay between them. Massing strategies that treat buildings as composites of smaller components may be useful in response to varied site conditions, and to create an intermediate sense of scale.

## DESIGN PRINCIPLES

# BUILDING TYPES

Residential, community, laboratory, and other building types should reflect their individual uses while contributing to the urban character of the site as a whole.

### RESIDENTIAL BUILDINGS

Residential buildings play a crucial role in making the site an integral part of Cambridge. The presence of families on the site will contribute to the life of the area, and also help provide much needed family housing in Cambridge as a whole.

- Units appropriate for families should be included in the mix of unit types: 2 and 3 bedroom units with appropriate layouts and adequate storage space.
- Family units should have ready access to outdoor and indoor play areas and recreational facilities.

### COMMUNITY BUILDINGS

- Provide community space suitable for a wide variety of activities such as recreation, meetings, social gatherings and events, creative performances, and classes.
- Use siting to invite and encourage use by the community. Consider locations that provide high visibility and access, and sites that allow the building to work in conjunction with adjoining public open space.

### LABORATORY BUILDINGS

Internal considerations of efficiency and flexibility tend to produce large floor plates, boxy forms, and repetitive façades. However, in response to the differing characteristics of streets, squares, and parks, urban buildings tend to be differentiated.

Techniques include distinctions between primary front façades and more subdued secondary façades, and between street walls and towers. In addition, adjustments of façades and massing can reduce the apparent size of the building, reinforce the spatial coherence of public space, and enhance the fit of buildings with their neighbors. Each building should respond to the particular context and the building's role as a landmark building or a background building.

Variables to consider:

- The degree of differentiation between primary façades and secondary façades.
- The degree of differentiation between street wall and tower. (By such means as changes in plane, material, color, size and format of fenestration, etc.)



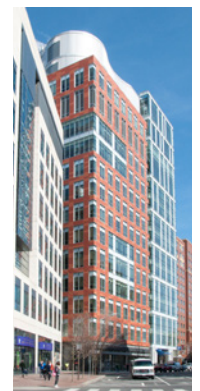
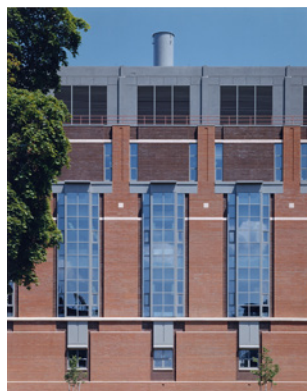
## RESIDENTIAL BUILDINGS



## COMMUNITY BUILDINGS



## LABORATORY BUILDINGS



## DESIGN PRINCIPLES

# ARCHITECTURAL CHARACTER

Projects should relate to human dimensions and provide a sense of intimacy in all aspects of design from building concept development to construction details. Buildings should be warm and inviting, particularly at the lower levels experienced closely by pedestrians.

## LANDMARK AND BACKGROUND BUILDINGS AND FAÇADES

The site's contribution to the urban form of Cambridge should be reinforced by arranging landmark and background buildings and façades to emphasize critical junctures in the site's civic structure.

Diversity and variety within a community of buildings can create an interesting and engaging pedestrian experience. It is expected that structures will be both harmonious with and enhance Eastern Cambridge's character, and where appropriate create iconic and innovative new architecture.

Within the public realm, building façades should:

- Clearly frame the space and visually enrich it .
- Contribute to the beauty and legibility of the public realm.
- Define public space. The vertical surface of the façade will, together with its neighbors, delineate and frame streets, squares, and parks.
- Humanize urban space by its beauty; the richness of its color, materials, three-dimensional relief, and craftsmanship; and by its mediation between the scale of the pedestrian, the building, and the district.
- Respond to the specific qualities and geometries of the building's site as created by the district's civic structure. Engage visual axes, emphasize significant streets and spaces, and capitalize on views from important vantage points on the site.



## HUMANIZING THE BUILT ENVIRONMENT



- 1 - 2. Tall buildings can contribute to the skyline of Cambridge, particularly as seen from across the Charles River and from the Longfellow Bridge.
3. The vertical surface created by building façades defines coherent, room-like streets, squares, parks, and courtyards.
4. The detail, proportion, color, and materials of façades enrich the visual environment.
- 5 - 8. Façades, particularly those of the pedestrian and street wall zones, should engage the Cambridge context with its colors and materials.



# REFERENCE STUDIES



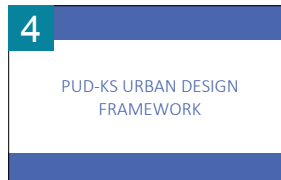
**(1) KENDALL SQUARE (K2) FINAL REPORT**  
Cambridge CDD and Goody Clancy, 2013



**(2) KENDALL SQUARE DESIGN GUIDELINES**  
Cambridge CDD, 2013



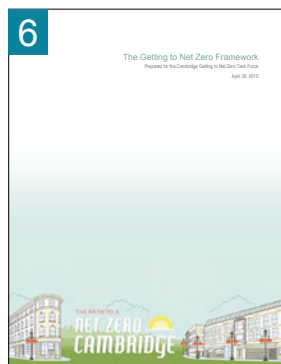
**(3) PUD-KS REZONING PETITION**  
Cambridge Planning Board, 2015



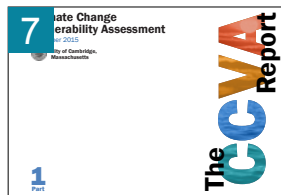
**(4) PUD-KS URBAN DESIGN FRAMEWORK**  
Cambridge CDD, 2015



**(5) CONNECT KENDALL SQUARE FRAMEWORK PLAN**  
Richard Burck Associates, 2015



**(6) NET ZERO ACTION PLAN**  
City of Cambridge, 2015



**(7) CLIMATE CHANGE VULNERABILITY ASSESSMENT**  
City of Cambridge, 2015 and ongoing



**(8) KENDALL SQUARE MOBILITY TASK FORCE RECOMMENDATIONS**  
City of Cambridge/MassDOT, 2017

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**CITY OF CAMBRIDGE  
COMMUNITY DEVELOPMENT DEPARTMENT  
JULY 20, 2017**