Table of Contents

Vision for the Volpe Site

Principles for the Volpe Site
  Civic Life
  Connectivity
  Activation
  Inclusiveness
  Comfort
  Sustainability
  Urban Character
Vision for the Volpe Site

A lively, functionally diverse, inviting, and coherent urban district.

- A unique and memorable place
- It will be a neighborhood given life by the beauty and richness of its public open spaces and the full range of needs it satisfies.
- Destination for people from all over
- Live, work, and play in a pedestrian focused environment
- Place where people are seen and can meet
- A home for community events and gatherings
- “The Heart of Kendall Square” – you know that you’re somewhere!
- An exclamation point for Cambridge: height and density, and texture and diversity too.
A Place that Makes Connections

**A Nexus** - the site will bring diverse people, ideas, & functions together:
- A place that invites in and connects a wide variety of people and neighborhoods
- Diverse functions – residential, research, office, retail, recreation, collaboration, meeting
- Innovation, business community, people of Cambridge
- Nature and the regional landscape
- Daytime, evenings, and weekends
- The site will be a hub linking the surrounding districts and neighborhoods – through its spaces, its architecture, and its functions.
- Community, culture, and nature

**A Crossroads** – linked to the surrounding districts and neighborhoods
- Inviting to residents, workers, and visitors
- Active during daytime, evenings, and weekends
A Sense of Place

The Volpe Site will be a unique and memorable place.

- The site will be organized by memorable, legible, room-like civic scaled spaces. They will be beautiful, usable, and inhabitable. They will be framed by buildings, reinforced and enriched by landscape design, and enlivened by the public and retail programs of the site’s buildings and open spaces.

- The site will include unique features or characteristics whose texture, materials, form, or scale contrasts with the surroundings. These may include a particularly memorable open space or a dominating iconic building.

The site’s public spaces will be the heart of Kendall Square.

The site’s public space will evoke a feeling of belonging, protection, of being at home; it will be the setting for diverse possibilities and activities, a destination for people from all over, a place where people are seen and can meet, and a home for community events and gatherings.

The district will serve innumerable specific functional and pragmatic needs, and it will be constructed in the context of carefully considered financial decisions. But in the end, the thing that will matter most to the people of Cambridge is how it contributes to the life of the city.

The site’s public open spaces will be the heart of Kendall Square.

The site’s public spaces - streets, squares, courtyards, parks, and primary public interior spaces - will be unique, varied, legible, and memorable.
Principles for the Design of the Volpe Site

Civic Life
Connectivity
Activation
Inclusiveness
Comfort
Sustainability
Urban Character
The buildings and public space will create a civic center that is recognizable as the heart of “Kendall Square,” comparable to other civic centers like Central Square and Harvard Square.

The site’s public spaces will be venues for community life and civic participation, such as special events, meetings, lectures, cultural programs, and festivals.

While serving the Kendall Square community of today, the site will also attract new community members and visitors from around the area who do not currently have a reason to visit Kendall Square.
Create public places that support community and symbolize community

Room-like public open space – street, park, courtyard, passage, and square – is the vessel for community.

Ground Level Life: shopping, eating, playing, gathering, meeting, talking, exhibiting, demonstrating – is the glue.
Attract the Broader Community

The site should serve a diverse range of demographic groups and bring them together. It should serve varied interests, combine complementary uses, and provide venues for community and public functions. It should be multigenerational - inclusive of children.

The site’s public open spaces should be designed and programmed to inviting and meaningful for people of widely ranging backgrounds and interests. Open spaces should provide comfort & safety, light, shade, trees, water, and be designed with permeable edges to enhance connections to adjoining activities.

The site’s dpublic spaces should include places such as: a market hall, work space, event space, art space, indoor recreation, playspace, and a large community space – multiuse, flexible, configurable for different functions and permeable to adjoining public outdoor space.

Recreation

Quiet enjoyment of nature

Outdoor dining

Performances

Public events
Encourage Community Participation

Foster community participation with:

• Venues for civic dialog
• Places for civic engagement, events, and demonstrations
• “Owner Operated” businesses and activities.
• Flexible financial structure – not everything is “market rate”
Connectivity

Public spaces on the site will form an interconnected network that is legible to the public and integrates with the larger network of public spaces in the area.

Thoughtfully inviting transitions and entrances to the site will link it to surrounding districts and neighborhoods and mitigate the “barrier” feel along the perimeter, particularly on Binney Street and Broadway.

The new Volpe building’s site will be seamlessly connected to the adjoining public open space to the extent allowed by security requirements, with pathways connecting into the public realm, security features integrated into the landscape, and opportunities for public displays of the Volpe Center’s work.

Ground floors will be permeable to pedestrians wherever possible, incorporating transparency, entrances facing major pedestrian routes and nodes, and public pass-throughs that are designed to be welcoming.
Connectivity
Create connections between site and surrounding neighborhoods

The Volpe Site will be an integral part of Cambridge – connected to the surrounding districts and neighborhoods by paths and public spaces, and placing a priority on pedestrian use and experience.

The site’s streets, paths, and open spaces will organize the site, foster connections between people, and link the site with the surrounding neighborhoods.

The street system will create a lattice of circulation routes, designed to maximize permeability to the surrounding neighborhoods.

It will break up the existing superblock to increase permeability and create a fine-grained network of connections and open spaces that seamlessly integrates the site with the surrounding urban fabric of Kendall Square and the nearby neighborhoods.

The site plan will establish an integrated network of high-quality streets and open spaces, including significant space for public gathering and recreation that encourages and fosters a sense of community, civic engagement, social interaction, economic development and environmental sustainability.

Much of the Volpe site is currently empty and/or inaccessible. It is an obstacle between the diverse neighborhoods and districts that surround it: Wellington Harrington, residential East Cambridge, Cambridge Research Park, the MIT campus, Main Street, Cambridge Center.

The connectivity of the site’s streets, paths, and open spaces will transform it into the active center that links the surrounding districts.
The streets that border the site, particularly Broadway and Binney streets, are currently barriers to the site. They should become connectors: zippers linking the site to the adjoining districts.

The site should provide a strong street edge on Broadway and Third Street, and incorporate continuous ground floor retail, to create a memorable “Main Street” experience. Augment and wherever possible preserve existing street trees along these frontages. The improvements to the Volpe site’s sides of the bordering streets will sponsor new development and infill on the opposite sides, capitalizing on opportunities created by existing gaps in their street walls and ground floor retail. Suggest changes to street crossings and traffic control to make pedestrian crossings easy and safe.

Connect the site’s paths and open spaces to the 6th Street Walkway, and to the Cambridge Center District.

Key urban intersection points and nodes of activity: Thoughtfully inviting transitions and entrances to the site will link it to the surrounding districts and neighborhoods.
The site’s streets, squares, and parks will interconnect to form the site’s Civic Structure - the organizational framework that links the site’s disparate programmatic functions and users, and connects them with their surroundings.

Interconnected public open spaces will constitute the site’s civic structure.

The civic structure will combine the continuity of flow from one space to the next with a sense of entry to and arrival in individual spaces. Legibly framed places with distinct characters will articulate the continuity of public space.
Design the Volpe Site as an integral neighborhood of Cambridge

The site’s streets, squares, and parks will be an inextricable part of Cambridge’s public realm, a destination linking Cambridge’s diverse districts and neighborhoods.

• Architectural design will relate to, complement, and expand the varied architectural heritage of Cambridge.

Create a welcoming pedestrian environment

Prioritize the pedestrian environment: The beauty and liveliness of the site’s public realm of pedestrian space will be the primary means by which a sense of place is created, and by which the district is integrated with the surrounding districts and neighborhoods.

• The site will offer convenient walking access to a wide range of services and amenities.
• Safety
• Slow vehicular traffic
• Vehicular routes will be treated as urban streets, integral with the streets of Cambridge, not as limited function access driveways.
• Sidewalk widths shall be generous enough to accommodate outdoor seating at cafés, bars, and restaurants. At larger open spaces, such as public squares or parks, paved areas will accommodate food carts or trucks, and places for temporary retail and display booths during festivals and events.
• Parking and Building Service is to be underground. Loading dock entrances are to be closed with doors when not in use.
Seamlessly connect the new Volpe Building’s site to adjoining public open space.

The new Volpe Building and its site will 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.

- Security barriers should be incorporated as part of the overall site plan concept.
- The new Volpe Building should take advantage of opportunities for public outreach, both in the design of the building and its sitework - displays of the Transportation Department’s work incorporated into gardens and open spaces, views into public interior spaces within the building.
- Surface paving should be minimized
- Service needs should be handled unobtrusively.

*Boston’s Moakley Federal Courthouse: Security barriers are subtle, and part of the overall design concept.*
Activation

Major streets, pathways, and open spaces will be activated with a variety of publicly-accessible uses at the ground floor, including retail, civic and cultural functions, other publicly accessible uses, and housing, while minimizing frontage occupied by offices, private lobbies, and service areas.

Smaller-scale spaces with a variety of uses inviting public interaction will be prioritized at the edges of buildings, while large-floorplate uses and less publicly-accessible uses will be prioritized at the interior of ground floors or above/below the ground floor.

In order to draw a “critical mass” of activity, public spaces will be designed and programmed with interactive and fun elements to promote social interaction, play, and public art.

Public spaces will allow for a variety of activities throughout, and flexibility to accommodate different activities throughout the day, week, and year.
Create public open spaces that serve a wide range of programmatic functions

20 Uses and functions of particular importance include:
- Quiet contemplation of nature
- Impromptu recreation
- Outdoor dining and picnicking
- Farmer’s markets
- Food trucks and carts
- Play areas for toddlers and children
- Public gatherings and demonstrations
- Skating
- Flexible indoor/outdoor spaces for public events
Activate the streetscape

Provide a mix of commercial and residential uses, with particular emphasis on housing and ground-floor retail, to encourage activity throughout the day and evening.

- Small shops, cafes, restaurants, etc. are the priority for the ground floors of buildings addressing primary streets and open spaces.
- Locate large scale anchor uses interior to site, and/or below grade or on upper floors

Ground floor building facades are to be designed to address the pedestrian scale, and to enrich the pedestrian environment.

- Transparency, recessed entrances, window displays, awnings, etc.
- Provide entrances at building corners facing intersections where possible.

Street furniture, street trees, bicycle racks, enclosed areas for outdoor dining, etc. will augment the pedestrian realm.
Inclusiveness

The built environment will be optimized to attract families with children and to make the place welcoming to people of all ages.

The site will provide a range of types and scales of public space, supporting a variety of activities and uses attracting different audiences.

Housing provided on the site will serve a diverse range of households, including multiple-bedroom units to serve families with children, affordable housing for low and moderate income households, and opportunities that will attract middle-income households to live in Cambridge.

The development will promote economic opportunities for individuals and small, owner-operated enterprises, such as shared workspaces and market halls.
Serve all of Cambridge’s demographic groups

The site’s public open spaces will offer a variety of uses and kinds of experiences:
- Amenities for multiple generations – children to seniors
- Complementary and integrated uses.
- Interactive and fun
- Enough activity to draw in a critical mass of users, which will draw in more people
- Year-round interest
Housing options will cater to a wide demographic range

The range of unit types will address the growing need for family housing.
- A considerable portion of the units should be two and three bedroom.
- Integrate amenities and consideration of adjacencies to support family life.
The site’s public spaces will be physically comfortable and inviting, with attractive landscaping and comfortable furniture.

Buildings and spaces will be designed to minimize adverse environmental impacts on open spaces, such as excessive shadow, wind, noise, and heat.

Public spaces will feel safe and welcoming, with appropriate levels of lighting, avoidance of blind alleys and dead ends, and building uses that provide a feeling of “eyes on the street” to passersby.

Travel routes and access/egress points will be arranged to minimize conflicts among pedestrians, bicyclists, and vehicles.

Buildings will be designed and programmed with features to support living and working within a busy urban environment, including private balconies and decks, storage spaces, and shared resources to support residents of all ages and backgrounds.
Provide a safe and comfortable environment

The site’s open spaces will place a priority on physical and psychological comfort. They will provide:

- Sunlight and warmth,
- A view of the sky
- Shade
- Protection from wind and inclement weather.
- Trees and water features will moderate their microclimates.
- Movable furniture, things to do, and year round uses will create to come to the spaces and opportunities to linger.
- “Eyes on the space” and lighting will create a sense of safety.

Public open spaces are to be unafflicted by noise (for example from mechanical equipment) light pollution, and building equipment such as transformers and emergency generators.

Public spaces will range in scale from grand to intimate, offering niches for individuals, small groups, and large gatherings. Large spaces will be framed by “occupiable edges” - not only adjoining retail space and residential buildings, but also deep landscaped borders containing smaller scaled seating areas, enlivening the space with activity and providing places from which one can overlook the larger space.

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.
Sustainability

Buildings and uses will be arranged to allow for efficient and resilient systems of delivering energy, utilizing district-wide approaches such as microgrids and shared energy production.

The design, orientation, engineering and use of buildings will be focused on minimizing the use of non-renewable energy and adapting to a future in which emissions from fossil fuel-based energy are fully eliminated or offset.

Public space will make the area more resilient by incorporating natural systems for storm-water management and heat island mitigation, as well as by providing shared resources to support the community during severe weather events.

Auto-based transportation will be minimized by limiting parking and reducing incentives to drive, and non-driving travel modes promoted by supporting and incentivizing walking, bicycling, and transit systems so that new development can be supported without additional auto traffic.
Site Resiliency Strategies
• Manage stormwater through natural systems
• Utilize trees and vegetation to mitigate urban heat island effect

Resilient Building Strategies
• Protect critical building systems (elevate above predicted flood levels, waterproof)
• Maintain back-up life safety and comfort systems
• Ensure occupant safety and comfort during a flood event (e.g., operable windows)
• Facilitate recovery after flood events

Net Zero Strategies
• Provide efficient energy delivery at a district level (e.g., shared solar, microgrids, cogeneration, utilizing existing steam network)
• Utilize energy-efficient building envelopes
• Optimize solar orientation in site layout and “solar ready” design
• Create “Pathways” to adapt to a future without use of non-renewable energy

Sustainable Transportation Strategies
• Manage parking supply to discourage driving where unnecessary and use resources efficiently
• Remove subsidies for driving and promoting incentives for alternative modes
• Support regional transit system
• Enhance connections to walking and bicycling networks
• Coordinate bus/shuttle services to maximize efficiency and benefit
Urban Character

The site will be arranged as a series of memorable, legible, room-like spaces framed by buildings in an urban rather than suburban pattern.

Buildings and spaces will be designed to combine unique, iconic characteristics with contrasting background features.

Landscape and architectural design will work together to create spaces that are beautiful, usable, and inhabitable.
Provide a variety of types of public open spaces

The site will provide a wide range of types and scales of public open spaces: streets, squares, courtyards, gardens, parks, and primary public interior spaces. They will be unique, varied, legible, and memorable. They will range from grand to intimate, and from lively to quiet. Their character and amenities will encourage a wide range of activities and uses.
The combination and connections between different types of spaces will enrich the pedestrian environment, creating a multitude of opportunities for use and interaction.

Parks – both large and small: quiet contemplation of nature, habitat for wildlife, recreation, outdoor events, open lawns with flexibility for a broad range of uses, shady groves, pavilions or pergolas, paved areas suitable for food carts and temporary retail booths or tents; pools, ponds, fountains; movable seating, tables, benches.

Streets – Shops, restaurants, bars, cafes, galleries, work spaces, community functions and institutions.

Passages/Gallerias – protected public or semi public connection through a building, suitable for retail, markets, events

Large flexible public covered or indoor space – markethall or winter-garden.

Courtyards – open space, more private than a park, but can be enjoyed by the public.

Squares – civic rooms with clear spatial definition, accommodating retail, shops, dining, bars.
Create a concordance between beautiful and usable public open spaces and the architecture that frames them

- The site will be characterized by welcoming, gracious, and accommodating urban design, high quality sustainable architecture, and open space with an enduring sense of place.
- Architectural and landscape design will work together to define and enrich the district’s public open spaces. These interconnected open spaces – the streets, squares, and parks - together with the major public spaces within buildings, will constitute the district’s public realm.
- The design of the site’s buildings and spaces will humanize the site’s density of construction and habitation by promoting social and intellectual connections between residents, those who work in the area, and those of the surrounding districts, and by serving the site’s wide range of uses and programmatic functions.

Landscape and architectural design will work together to from public space, enrich its character, and support a multitude of uses.
Built form will frame the spaces of the public realm

In accord with their roles and location in the site’s civic structure, buildings will be designed and configured to:

- Help to define room-like civic scaled public space - streets, squares, courtyards, and parks: Buildings’ street walls and facades will be located along the build-to lines established by the urban design plan, and will constitute the vertical surface that frames the space in three dimensions.

  And/or

- Offer unique characteristics or features whose form, texture, materials, or scale differs from those of the neighboring buildings. Their memorable or iconic presence will add visual interest at the scale of the street square, park, or district.

The site specific combination of space framing consistency and iconic individuality will contribute to the district’s overall sense of place.

In all cases, the design and programming of building’s ground floors is to bring life and activity to the streets and open spaces they address.

The district’s urban plan will establish the build-to lines upon which building facades will be predominately located. These will ensure that buildings create coherent frames for open spaces, and that ground floor activities and programs directly address the public realm.

The district’s urban plan will distinguish between primary and secondary facades (or elevations). It will designate/suggest locations where building form and/or materials will be designed to create special emphasis.

Guidelines will establish parameters for recesses and projections from the build-to lines: the maximum percentages of facades, and maximum dimensions.
Built form will mediate between the scales of the pedestrian, the building, the street, the district, and the skyline.

Architecture operates at scales ranging from the individual pedestrian’s hand and body, to groups of people in conversation, to the building itself, to the street, the district, and sometimes to the entire city. Buildings should link these disparate scales together and mediate between them, enriching the urban environment, and strengthening the sense that the city is brings its inhabitants and its landscape into accord. Carefully considered massing and the detail, proportion, materials, and color of facades all play a role.
The large size and floor plates of the laboratory and research buildings likely to occupy much of the site allows flexibility in accommodating multiple disciplines, and provides opportunities for interaction, collaboration, and creativity. These buildings must be sensitively designed to create great streets, squares, and parks while also serving these internal needs.

- Locate and design tall buildings so as to maximize their benefits - their ability to preserve open space while accommodating desired program, with their potential drawbacks - shading, wind, and loss of sky view.
- Where appropriate given the building’s location and role relative to the site’s streets and open spaces, modulate the mass and/or envelope design of large buildings so as to reduce their monolithic appearance.
- 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.
- Minimize shading of open spaces and of existing buildings, maintain sky views from public open space.
- Capitalize on the potential of tall buildings to symbolize the Volpe site by contributing to the skyline of Cambridge, particularly as seen from across the Charles River and from the Longfellow Bridge.
The roles of Background Buildings and Landmark Buildings

The design of background and landmark buildings (and also background and landmark facades) in accord with their roles in the site’s civic structure will create an environment that is simultaneously coherent and visually rich.

**Background Buildings:**
- Frame space. They provide the continuity of street wall that defines urban space.
- Strengthen the site’s connection to surrounding districts and neighborhoods.
- Establish a sense of scale.
- Enliven the visual experience by their materials, texture, and detail.

**Landmark / Unique / Exceptional Buildings:**
- Provide points of emphasis, articulate opportunities created by the arrangement of the site’s streets and spaces.
- Unique / exceptional buildings will located and designed in response to views, axes, intersections, nodes.
- Symbolize innovation, the new.
- Enliven the visual experience by texture, detail, and iconic elements.
- Tall buildings create a visual focus as one approaches the site and symbolize the district on the skyline.

The architectural design of individual building facades will combine exceptionalism and consistency at a scale relevant to the facade’s public role in the district and in the city.

The import of exceptional/iconic buildings derives from their contrast with regular/background buildings.
Built Form will address four zones to humanize the urban environment

In an urban area of the density of construction projected for the site, buildings can be conceived in four horizontal different zones. Each has different characteristics, and different responsibilities in defining and articulating public space:

• Pedestrian Zone - creates an active and permeable ground level. A wide range of strategies in relation to the public realm of the sidewalk is expected and encouraged, differing shop fronts, differing widths and designs – changeability. The pedestrian frontage is to be primarily transparent and permeable.

• Street Wall - frames the space of the street or square, enlivens the pedestrian experience, and mediates between the scale of the pedestrian and the entire building. It is to maintain sufficient unity to coherently define the street or open space the façade addresses, while potentially capitalizing on significant visual axes by differentiating the façade, emphasizing significant corners or “targets” on facades that receive visual axes.

• Tower - defines space at a large scale. Verticality and expressive design creates landmarks and punctuates the skyline. Towers are to generally to be slender, repetitive vertically, and to maintain vertical emphasis and continuity. They will conform to system of stepbacks.

• Top – accommodates building mechanical systems and potentially symbolizes the building or district.
The Pedestrian Zone:

Consists of the building’s ground floor (and sometimes also the second floor).

- It is part of a deep zone extending from the curb to within the building, including sidewalk, street furniture, trees, outdoor seating areas, canopies, recessed building entrances, window displays, and loggias.
- The ground floor facade itself is permeable, both in the sense of visual transparency, and of pedestrian flow to shops, cafes, bars, community spaces, etc.
- Nuances of design and use of materials will create rich and enjoyable pedestrian experience: visual interest, beauty, comfort, permeability
The Pedestrian Zone:

The building’s ground floor (and sometimes also the second floor). A deep zone – curb, trees, sidewalk, outdoor seating, canopies, recessed building entrances, window displays, loggias.

Permeable buildings: Lobbies, courtyards, passageways, and gallerias enrich the pedestrian environment.

Transparency and connection. Shops, restaurants, community spaces, and lobbies connect with the street and sidewalk, adding fine-grained porosity.
The Street Wall

The Street Wall frames the space of the street, square, and park. It addresses the pedestrian’s cone of vision and contributes both beauty and visual continuity to the pedestrian experience.

- It conforms to build-to lines and guidelines governing projections and recesses from them.
- Visual engagement and beauty: detail, texture, color, proportion, relief, projections and recesses.
- Mediates between the scale of the pedestrian and the entire building.
- Where a building’s street wall addresses primary open spaces it is designed as a facade - the building’s face to the public realm.
The varied continuity of the street wall defines public space.

Iconic/unique facades add visual excitement and project a memorable image.
The Street Wall: The Civic roles of Facades - spatial definition and visual engagement

The vertical surface created by building facades defines coherent, room-like streets, squares, parks, and courtyards.

The detail, proportion, color, and materials of facades enriches the visual environment.
The repetitive nature of laboratory buildings is conducive to creating visually rich facades that both define open space and provide visual interest: facades whose continuity of surface is articulated by subtle relief and carefully considered detail, and organized with attention to proportion and the mediation of scales.
The Street Wall: Engage the Cambridge Context

The street walls of the Volpe site’s buildings can beneficially engage in dialog with the existing buildings of Cambridge – buildings that contribute to the city’s architectural character, offer visual richness, and graciously define streets and spaces.
Towers:

46  Towers and the upper portions of tall buildings will be landmarks within the district and on the Cambridge skyline.
- Balance the benefits of building height in maximizing open space while maintaining density of program and habitation, with the drawbacks - shading of open spaces and neighboring buildings, loss of sky view.
- Tall buildings should be judiciously located on the site, with sensitivity to open spaces and existing buildings.
- Slender towers will minimize shading.
- Stepbacks will add visual interest and minimize the sense of bulk
- Where appropriate given the building’s location and role relative to the site’s streets and open spaces, modulate the mass and/or envelope design of large buildings so as to reduce their monolithic appearance.
Tops:

Building tops have the potential to be expressive elements - landmarks for individual buildings on the skyline, the district, and potentially symbols of the entire city that engage in dialog with the buildings on the Boston Skyline. Mechanical penthouses are to be integral parts of the building’s massing and facade design.