Shaping Our City

Citywide Urban Design Guidelines for Cambridge

July 2025

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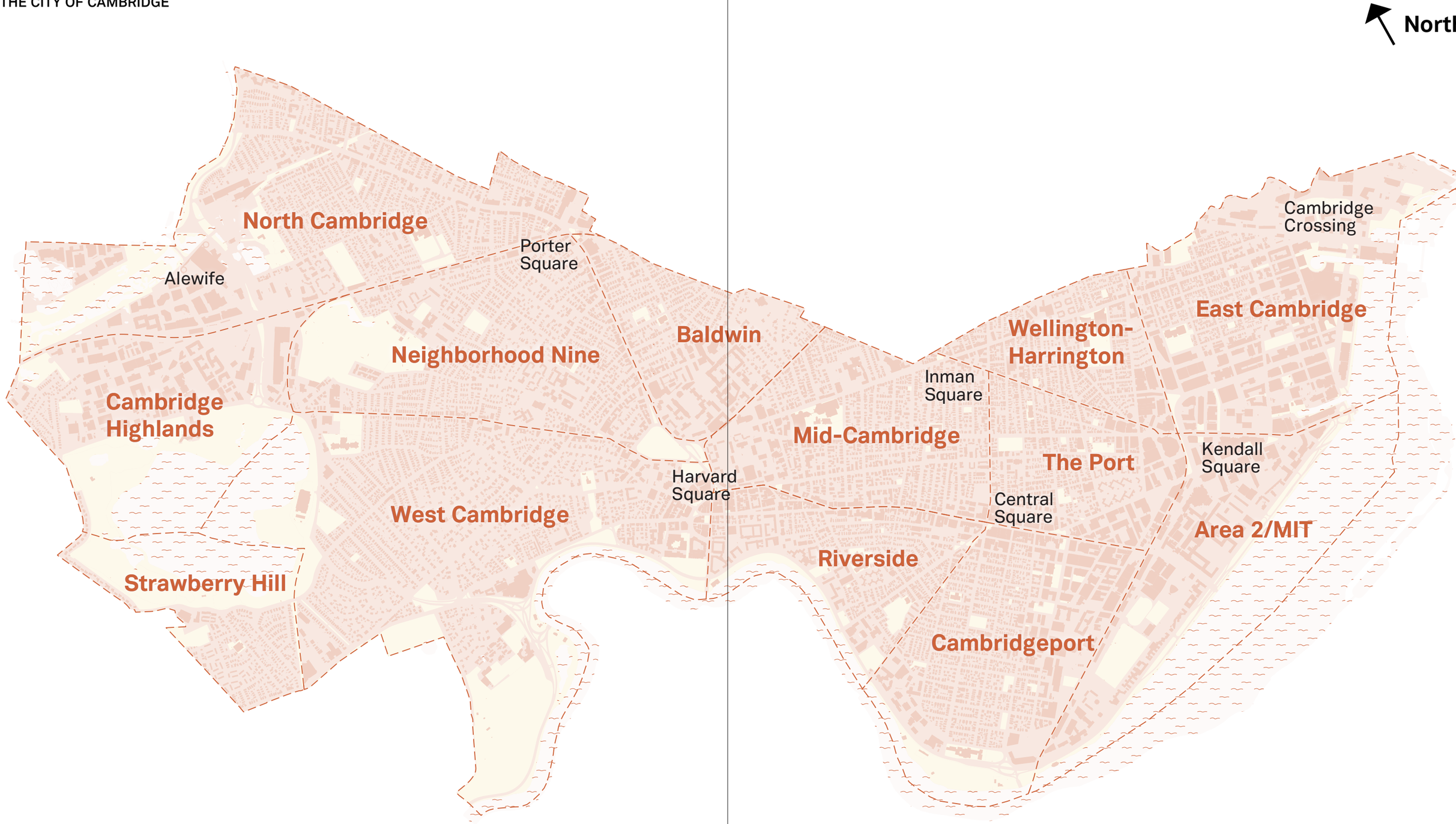
North
North Cambridge
Alewife
Porter Square
Neighborhood Nine
Baldwin
Cambridge Highlands
West Cambridge
Harvard Square
Strawberry Hill
Wellington-Harrington
Inman Square
Mid-Cambridge
The Port
Central Square
Riverside
Cambridgeport
Cambridge Crossing
East Cambridge
Kendall Square
Area 2/MIT

Guidelines

→
Click these tabs to navigate around the document more quickly and easily.

A. Introduction

This document aims to create a coordinated, citywide framework for guiding the design of new development and public projects. It focuses on promoting a public realm that is well-designed, equitable, sustainable, and resilient. Urban design plays an important role in shaping the public realm—anything and everything that is physically or visually accessible to the public. Accordingly, this document addresses key urban design considerations related to context and site planning, buildings, open spaces, and streetscapes.

A.1 The City of Cambridge

A.1.1 Background and History

Cambridge is the second-largest city in the Greater Boston area and the fourth most populous city in Massachusetts. Located directly across the Charles River from Boston, it is bordered by Somerville to the north and by Arlington, Belmont, and Watertown to the west.

Renowned for its rich history, diverse population, and world class educational institutions, Cambridge is also a prominent center for cutting-edge scientific research and innovation. These qualities contribute to the city's dynamic economic and cultural vitality. Cambridge's thriving community-based organizations, cosmopolitan character, and vibrant arts community all further enrich the quality of life for residents, workers, students, and visitors alike.

Cambridge is a highly walkable city where daily destinations are generally located close to home. Its diverse and well-designed public spaces enhance the pedestrian experience, creating a vibrant and inviting urban environment. A fine-grained network of streets and paths connect the city's quiet and long-established residential neighborhoods, historic squares, retail and commercial districts, as well as its parks, playgrounds, and urban wilds. An expanding system of bicycle lanes and multi-use paths, combined with increasingly effective efforts to calm and reduce automobile traffic, all contribute to the ease and safety of non-vehicular movement. Together, these elements reflect a strong commitment to prioritizing people-oriented design and promoting a healthy, connected public realm.

A.1.2 Current and Future Challenges

Cambridge's unique characteristics—its walkability, rich history, diverse neighborhoods, and vibrant public realm—position the city to respond effectively to both current and future challenges. The design guidelines in this document aim to support that response by addressing several key priorities:

- Balancing the pressures of new development with the need to complement existing buildings, neighborhoods, and urban fabric that give Cambridge its unique identity.
- Minimizing the impacts of climate change, especially extreme heat and flood events, through resilient and sustainable design and integration of natural systems.
- Improving Cambridge's streets, parks, and open spaces to better serve a growing, increasingly diverse population and to promote equity, accessibility, and overall well-being.

This document includes a glossary that defines key terms and concepts used throughout the guidelines. It serves as a reference to clarify the meaning of technical, design, and planning-related language, ensuring consistent interpretation and understanding for all users. See "Glossary" on page 226.

A.2 What Is Urban Design?

A.2.1 Urban Design

Urban design is a multidisciplinary field that focuses on shaping how the city looks and feels, and how we experience the city as we live, work, play, come together, and move around. It involves the planning and arrangement of the various physical features that make a city—the streets, sidewalks, parks, plazas, and buildings.

A.2.2 What are Urban Design Guidelines?

Urban design guidelines are a set of design principles and recommendations, with accompanying images, that describe the desired look, feel, and quality of cities, neighborhoods, and open spaces. They focus on creating environments where people can move safely and comfortably, while also feeling welcomed and at ease in the city. Although these guidelines are intended to improve the design of a project, they are not mandatory obligations, but rather suggestions to guide the development process.

The look and feel of city spaces has an enormous impact on our overall quality of life. Well-designed spaces can evoke feelings of happiness, belonging, and comfort. By fostering successful, thoughtfully designed places, urban design guidelines help make Cambridge a great place to live, work, visit, and learn.

A.2.3 Public Realm

The public realm consists of all city spaces that are physically and/or visually accessible, regardless of ownership. These spaces can include, but are not limited to:

- Building ground floors, facades, massing, and roofs.
- Public open spaces, such as parks, plazas, squares, streets, sidewalks, alleys, and multi-use paths.
- Private open spaces that play a role in public life, such as courtyards, forecourts, and front yards.
- Streetscapes, from curb to building facade.

A.3 Relationship to Existing Policies and Documents

The Citywide Urban Design Guidelines are based on existing City plans, policies, and guidelines. They expand upon these plans and policies with more specific, detailed guidance regarding the desired form and character of new development. In addition, recently completed guidelines have significantly informed and influenced the content presented here.

A.3.1 Envision Cambridge

This document builds on the recommendations of Envision Cambridge, adding specificity and detail to the plan's vision of urban form. It seeks to further the city's goals as the city develops and changes, setting forth expectations for high quality buildings, open spaces, and streetscapes. The guidelines address the organization, appearance, and functions of public spaces and the ways building and open space design shape and enrich them.

A.3.2 Existing Guidelines

Cambridge's Zoning Ordinance refers to a number of area and topic specific design guidelines. These guidelines provide detailed guidance on how specific neighborhoods should be developed, and how certain building types or building components, and certain aspects of public space should be designed. They address topics including site design, built form, and elements of the public realm. Other guidelines, not referenced by zoning, convey the city's intentions for additional topics, such as outdoor dining.

The Citywide Urban Design Guidelines complement these area and topic specific guidelines to provide a comprehensive view of how development should fit into the citywide context. The Citywide Urban Design Guidelines are not intended to replace or supersede recently completed area-specific plans of guidelines. Where a conflict may exist, the direction provided by the recent area or topic specific guidelines or plans should generally serve as principal guidance.

Recent Guidelines

- Central Square Design Guidelines (2012)
- Kendall Square Design Guidelines (2013)
- Bicycle Parking Guidelines (2013)
- Volpe Site Design Guidelines (2017)
- Harvard Square Design Guidelines DRAFT (2019)
- Alewife Design Guidelines (2020)
- Design Guidelines for Multifamily Housing (2025)
- Outdoor Dining Design Guidelines (2021)
- Play in the Public Realm (2014)
- Privately-Owned Public Spaces Signage Guidelines (2022)
- North Point Design Guidelines (2016)
- Additional area- and topic-specific guidelines will be created in response to developing issues.

While some specific details and recommendations in Cambridge's older guidelines are no longer current, they still offer some valuable design guidance.

Past Guidelines

- East Cambridge Development Review Process and Guidelines (1985, 1979)
- North Mass Ave Urban Design Guidelines Handbook (1986)
- University Park at MIT Urban Design Guidelines (1987)
- Central Square Development Guidelines and Action Plan (1989)
- South Cambridgeport Development Guidelines (1992)
- Eastern Cambridge Design Guidelines (2001)
- Harvard Square Development Guidelines (2002)
- Prospect Street Design Guidelines –Section 20.209 of the Zoning Ordinance (2007)
- Design guidelines for Dormers (1996)

A.3.3 Additional Plans & Policies

In addition to the city's comprehensive plan and existing guidelines, various plans and policies will inform the design process for new projects, including the following:

- Urban Forest Master Plan
- Resilient Cambridge Plan
- Net Zero Action Plan
- Cambridge Riverfront Plan
- Cambridge Climate Change Vulnerability Assessment
- Climate Change Preparedness and Resilience Planning Effort
- Alewife District Plan
- Cambridge Open Space and Recreation Plan
- Our Cambridge Street, A Community Plan
- Healthy Parks and Playgrounds Taskforce Report
- Kendall Square Central Square Planning Study

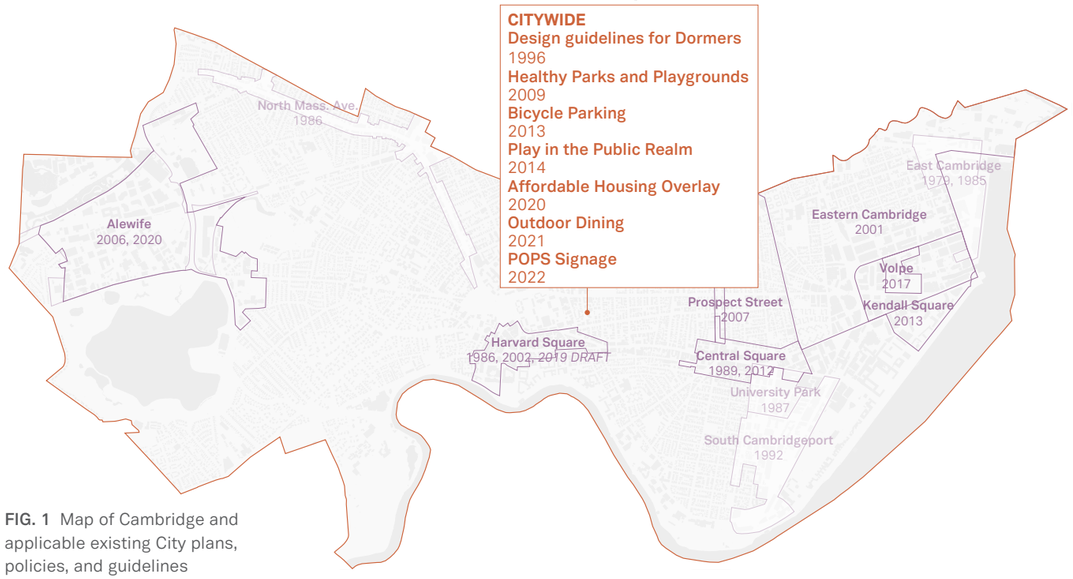

FIG. 1 Map of Cambridge and applicable existing City plans, policies, and guidelines

A.4 **Physical Analysis**

A detailed investigation into the physical attributes of Cambridge's neighborhoods was undertaken to ensure that the guidelines effectively address the city's varied urban fabric. The physical analysis encompassed historical development, land use, parcel frontage length, street facades and setbacks, street sections, street intersections, and facade materials and details. Through this comparative assessment of Cambridge's physical character, the salient aspects were synthesized into a series of implications that supported the development of the guidelines. Further details can be found in the appendix.

Implications

- Design buildings and spaces to accommodate a mix of uses.
- Design buildings and facades to address the pedestrian scale (Fig. 4).
- Design private open spaces that respond to streets and public spaces.
- Design and locate new buildings to respond to Cambridge's eclectic neighborhoods.
- Consider the transition from lower scale areas to larger scale development.
- Consider the relationship of building massing to the street.
- Design building facades that consider the rich architectural history of a neighborhood (Fig. 2).
- Consider the use of material details to create interest and variety (Fig. 3).
- Consider the use of regionally-sourced, sustainable materials.
- Consider public realm configurations that align with the functional priorities of a street.
- Design privately-owned open spaces that complement public amenities.
- Design buildings and spaces that help define the street corner (Fig. 5).

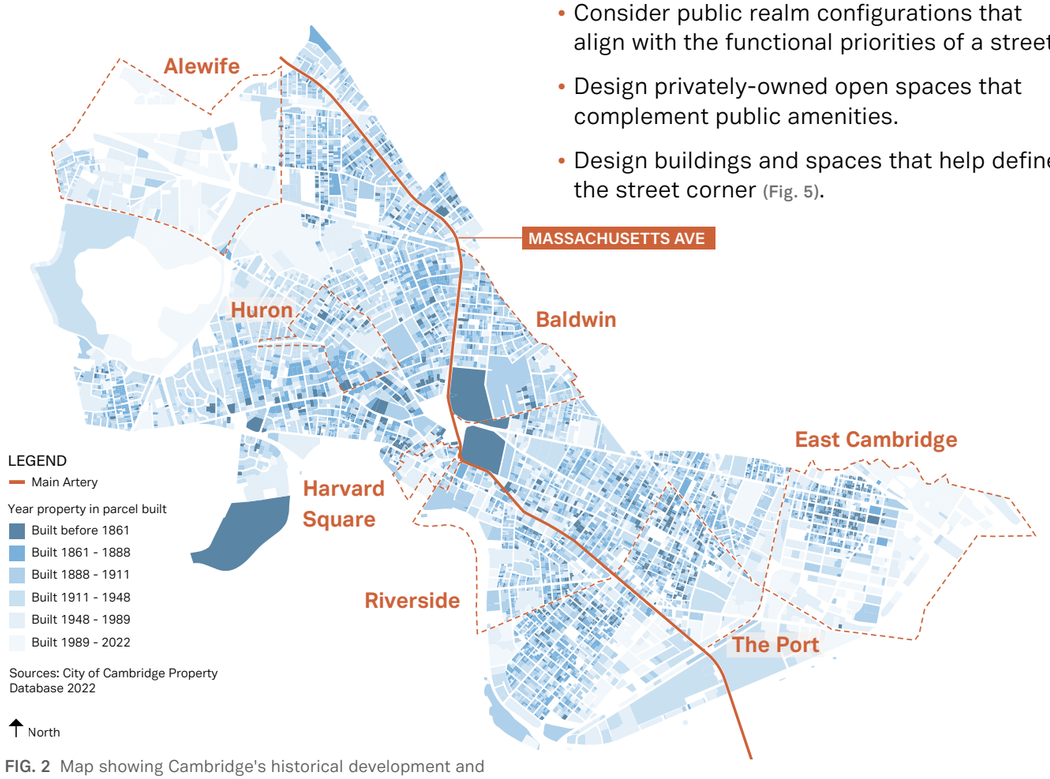

FIG. 2 Map showing Cambridge's historical development and the seven neighborhoods assessed in the physical analysis.

FIG. 3 Snapshots of facade materials and details found in three neighborhoods.

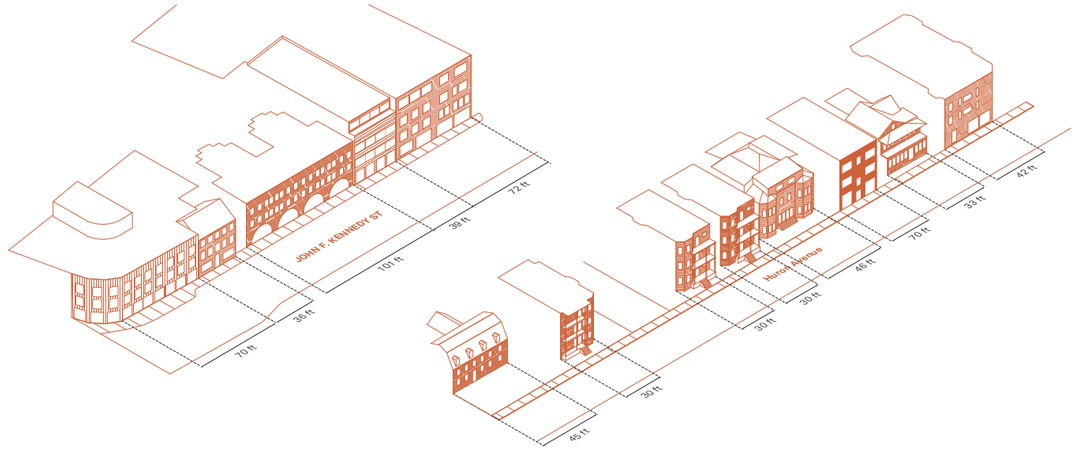

FIG. 4 Isometric drawings of street facades and setbacks shows how, even along a single block, setbacks, building & facade types vary widely.

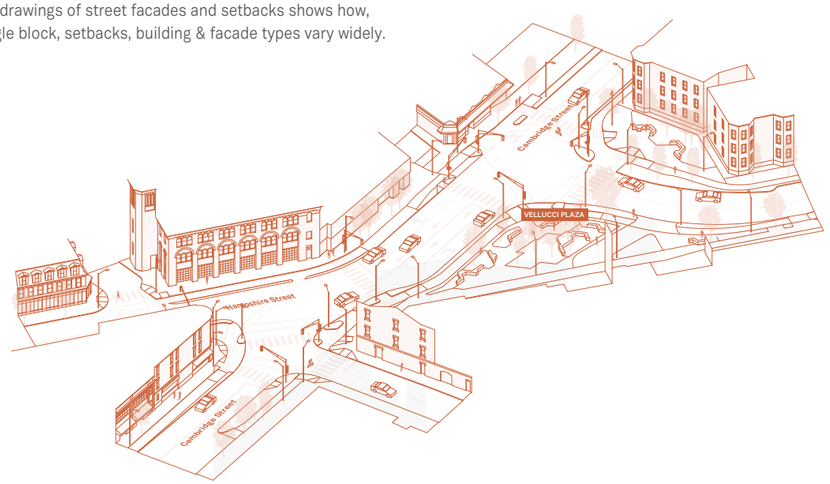

FIG. 5 Isometric drawing of intersections presents variation in public realm amenities and the relationship between commercial buildings and street corners.

A.5 **Public Space/Public Life Snapshot**

A study of public life in Cambridge's key public spaces investigated the link between human behavior and the features of these spaces. The Public Space/Public Life snapshot (PSPL) analyzed how people used public spaces in relation to urban design elements, such as seating, trees, art, and building facades.

Though many aspects of human behavior are universal, the PSPL recognized the importance of context. By comparing several public spaces with one another, the study showed that different public spaces in Cambridge encourage different kinds of activities. The aim of the PSPL was not to draw definitive rules, but to recognize the multitude of variables that affect how people use public spaces. The insights from the PSPL highlighted the role of a robust network of open spaces, comfort and design quality of open spaces, human scale facades and ground floors, and an eclectic character in Cambridge's public life. This understanding informed the core values and guidelines, ensuring they are relevant to Cambridge's distinct qualities and reflect broader design principles. The following presents highlights of findings in each of these focus areas. Further details can be found in the appendix.

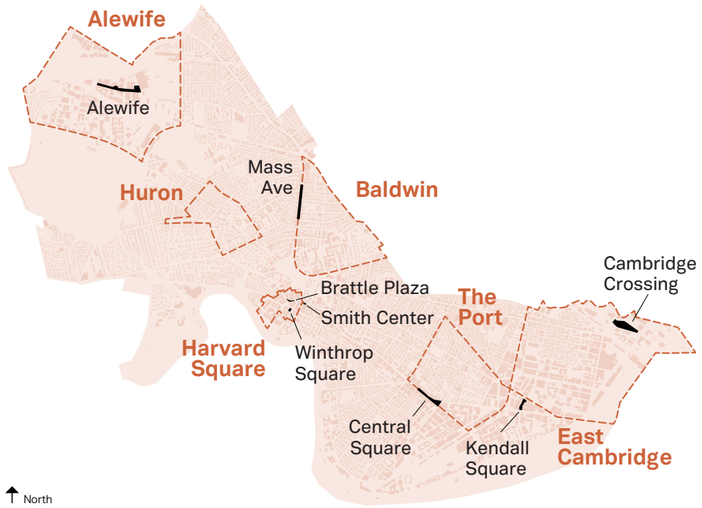

FIG. 6 Map showing the eight public spaces studied.

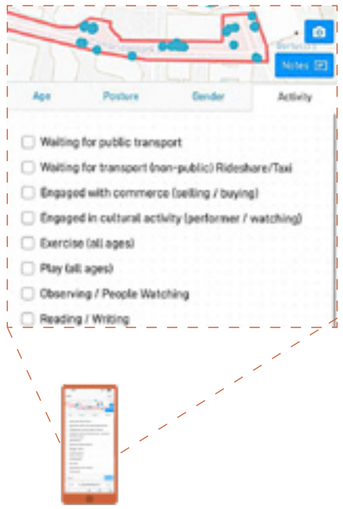

FIG. 7 Digital tools were used to observe and measure public behavior.

Study area	Space type	Peak intensity (people / 10K SF)	Peak intensity hours	Public to private seating ratio	Highest Observed activity	Activity mix
Smith Center Plaza	Plaza	46	9am **12pm** **3pm** 6pm	High	Cultural 24%	Highest overall mix
Massachusetts Ave.	Main Street	16	9am 12pm 3pm **6pm**	Low	Commercial 20%	Highest commercial
Cambridge Crossing Common	Green Space	3	**9am** 12pm 3pm 6pm	Mid	Exercise 14%	Commercial and non-commercial

FIG. 8 Table comparing three different observation areas: a Plaza, Main Street, and Green Space. The table shows how they vary in their peak intensity (highest level of activity, interaction, and engagement), time of peak intensity, seating mix, and observed activities.

KEY TAKEAWAYS

Open Space Network

- Foster a mix of open spaces that vary in their public life profile based on context and program (FIG. 8).
- Anticipate the intensity and capacity of public life for different open space types.
- Create a seamless walking, biking, and transit experience to move between open spaces (FIG. 9).

FIG. 9 Massachusetts Avenue near Lafayette Square provides comfortable, shaded sidewalks and dedicated lanes for biking and micromobility making it easy to move through or linger in.

Open Space Design

- Design for basic protection — from traffic and natural elements, and to encourage all-day use (FIG. 10).
- Create flexible invitations to linger within open spaces for a mix of activities and uses.
- Make the experience of open space unexpected, playful, and enjoyable for all.

FIG. 10 Winthrop Square provides a comfortable microclimate for lingering.

Facades & Ground Floors

- Create human-scale facades that do not feel imposing and create opportunities to engage with the interior (FIG. 11).
- Think beyond the edge to create a truly inviting ground floor experience.
- Establish a mix of invitations to spur diverse activities.

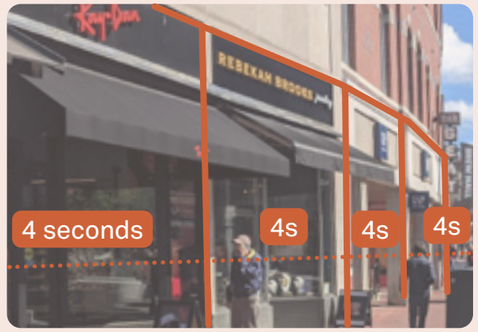

FIG. 11 Facades at Harvard Square invite passersby through their human-scale and short rhythm.

Eclectic Character

- Elevate age-old character by highlighting historic assets.
- Ensure new design maintains a human scale and strong details to create lasting character.
- Bring contemporary design in conversation with historic fabric (FIG. 12).

FIG. 12 In Central Square, new construction (left) complements and adds eclecticism to the historic fabric.

Design Excellence	Equity	Sustainability & Resilience
Design excellence is functional, beautiful, and contextual, improving the quality of life for all.	Reflecting and supporting Cambridge's diverse communities, equity creates an inclusive and welcoming built environment that is accessible, safe, and enjoyed by all.	Minimizing Cambridge's impacts on natural resources and systems and maximizing resilience to climate change.

A.6 Goals and Values

The Citywide Urban Design Guidelines set forth a vision for Cambridge's public realm. This vision was distilled into three goals and six core values that reflect and build upon the City's existing planning objectives and community values.

A.6.1 GOALS

The Citywide Urban Design Guidelines have three overarching goals: design excellence, equity, and sustainability. All projects should fulfill them.

Design Excellence
Encompassing functionality, compatibility, and beauty, the goal of design excellence combines pragmatic utility, aesthetic richness, and contextual sensitivity to support community well-being and improve quality of life for the city's residents, workers, and visitors. For the Citywide Urban Design Guidelines, design excellence means:

- Functionality addresses our need for comfort, safety, and protection as we live in our city and move through it.
- Compatibility ensures a fit with the city's existing built fabric and landscape.
- Beauty satisfies our need for delight, for experiences that transcend the utilitarian aspects of life, and serve as reminders of our full potential to enjoy and connect with the world outside ourselves.

Equity
Reflecting and supporting Cambridge's diverse communities, the goal of equity seeks to create an inclusive and welcoming built environment that is accessible, safe, and enjoyed by all. For the Citywide Urban Design Guidelines, equity means:

- Creating accessible and inclusive public spaces where all residents of Cambridge feel welcome and included.
- Involving the community in the planning, design, and stewardship of public space.
- Centering under-heard, underserved, and historically excluded populations in planning and design processes.
- Ensuring that designs authentically reflect the city's diverse population and their needs, such as space for diverse cultural activity and public art.
- Addressing historical injustices perpetuated or reinforced by the city's built environment, such as the unequal distribution of open spaces, urban tree canopy, and other public amenities.
- Creating inviting streetscapes that provide easy and accessible connections between neighborhoods, acting as social seams.
- Designing flexible public spaces and elements that support a variety of uses, rather than restricting them, such as sitting, sleeping, and socializing.

Sustainability & Resilience
Of the three goals, sustainability and resilience pose the most critical challenges and is fundamental to the success of the other two goals. The goal of sustainability and resilience encompasses minimizing Cambridge's impacts on natural resources and systems and maximizing resilience to climate change. Cambridge faces increasing risks resulting from larger storms, hotter summers, unpredictable winter weather, and volatile rainfall patterns. Resilience involves addressing these urgent challenges, preparing for unavoidable impacts, and minimizing harm to both people and natural systems. For the Citywide Urban Design Guidelines, sustainability and resilience means:

- Using land, energy, and material resources efficiently, to conserve natural areas, and reduce waste and production of greenhouse gasses.
- Strengthening Cambridge's resilience to extreme weather events by mitigating heat, managing flooding, and implementing other adaptive strategies.
- Enhancing community resilience by ensuring the health and well-being of the people of Cambridge.
- Promoting sustainable modes of transportation by creating a compact and active urban environment that encourages people to walk, bike, or take public transit.

The core values were developed through a comprehensive review of existing city plans, policies, and guidelines, and through a community engagement process that included public meetings and focus groups. Recently completed engagement activities, such as those undertaken through Envision Cambridge, Alewife District Plan, and the Open Space and Recreation Plan update, have also provided highly relevant and valuable community feedback that has been incorporated into these guidelines.

A.6.2 CORE VALUES

Based on these three goals, the guidelines encourage development that embodies six core values for Cambridge's public realm.

The core values were developed through a comprehensive review of existing city plans, policies and guidelines, and through a community engagement process that included public meetings and focus groups. Recently completed engagement activities, such as those undertaken through Envision Cambridge, Alewife District Plan, the Open Space and Recreation Plan update, etc., have also provided highly relevant and valuable community feedback that has been incorporated into these guidelines.

A well-designed, equitable, sustainable, and resilient Cambridge will be:

INVITING

Draws people in and makes them want to stay.

ECLECTIC

Diverse in character and aesthetic.

CONTEXTUAL

Reflect and enhance its social, historical, and environmental context.

CONNECTED

Link networks of people and places.

ADAPTABLE

Respond to changing conditions.

HEALTHY

Serve and improve individual and community well-being.

	DESIGN EXCELLENCE	EQUITY	SUSTAINABILITY & RESILIENCE
INVITING	✶ Ensure quality, comfort, beauty, and human-scale to invite activity and use ✶ Design for inspiration and delight	✶ Ensure that the public realm is accessible and welcoming to all	✶ Design landscapes to create comfortable microclimates
ECLECTIC	✶ Create new public spaces and enhance the definition of existing spaces ✶ Reinforce the distinct characters of Cambridge's diverse neighborhoods and districts with compatible design ✶ Provide variety in built form to add to the mosaic of styles and typologies	✶ Embrace and reflect the diversity of people and cultures that make up Cambridge	✶ Design for biodiversity ✶ Design for variety in types and scales of natural areas
CONTEXTUAL	✶ Create a sense of place by enhancing the coherence of the public realm ✶ Reinforce Cambridge's unique character by integrating urban design and local art	✶ Reinforce Cambridge's unique character by integrating urban design and local art	✶ Respond to local ecology and conditions of landscape and urban form ✶ Respond to the accelerating regional and global environmental emergencies
CONNECTED	✶ Create a network of open spaces for a connected human experience ✶ Create a network of open spaces for ecological benefits ✶ Make mobility a delightful experience, offering multiple modes and intuitive connections	✶ Make it safe and easy for people of all ages and abilities to walk, bike, and take public transportation	✶ Support sustainable modes of transportation
ADAPTABLE	✶ Ensure that materials and designs can endure and adjust to changing conditions	✶ Design open spaces that adapt to the lived experience and perceptions of the public realm among different user groups	✶ Design for resiliency to a changing climate
HEALTHY	✶ Ensure landscape and building design promote safety and foster social interactions ✶ Create open spaces that promote a range of physical activities for all ages and abilities to support physical and mental health	✶ Distribute health and safety benefits equitably across neighborhoods	✶ Ensure conservation of natural resources ✶ Design for a built environment that encourages active mobility and physical activity ✶ Provide access to nature and understand ecosystems

FIG. 13 Matrix describing the Core Values and how each aligns with one of three goals.

A.7 How to Use These Guidelines

A.7.1 PURPOSE

The purpose of these guidelines is to set expectations for the future character and form of buildings, open spaces, and streetscapes, the elements that form the city's public realm. The guidelines encourage high quality buildings, open spaces, and streetscapes so that they work together to enhance the city's character, vitality, resilience, sustainability, and quality of life.

Cambridge has an eclectic urban environment with a varied public realm, reflecting the city's history and the diversity of its residents. The guidelines aim to preserve and promote Cambridge's best aspects as the city grows: its unique identity, walkability, varied character, economic strength, energy and resource efficiency, and its cultural richness. They encourage new projects to capitalize on opportunities to create new social and physical connections, mitigate negative impacts, increase the city's environmental and economic sustainability, and bolster its resilience in the face of a changing climate and extreme weather events.

The Citywide Urban Design Guidelines is meant to be a living document that will be updated periodically as new issues arise and priorities are adjusted.

A.7.2 APPLICABILITY

This document is intended to serve as a reference for the Planning Board and City departments in their review of development projects and improvements to streetscapes and public open spaces. Property owners, business owners, developers, and designers are asked to use the guidelines when they design projects that are subject to public review under zoning.

Project applicants and design teams are encouraged to engage with City staff early in the design process to help frame the urban design issues of a project, understand expectations and context, and clarify the intent of the guidelines. While this document is intended for these groups of professionals, it is also a public document that should be accessible to the wider Cambridge community.

Public Projects
The Citywide Urban Design Guidelines are intended to provide clear urban design direction to all City Departments and staff involved in the design of streetscapes, new public open space and improvements, and new public buildings.

Private Development
The Citywide Urban Design Guidelines are applied to all development projects that are subject to some form of public review under zoning, which could be advisory or binding, and could be done by the Planning Board, City staff, or the public. Refer to Article 19.000 of the Zoning Ordinance or contact CDD staff for further information.

This document applies generally to all areas of the city, but is particularly important in those areas that do not have area-specific planning studies or design guidelines.

All development projects, including by-right ones, are encouraged to explore ways to enhance their proposals by incorporating the principles outlined in these guidelines.

Application Materials
Project applications that are subject to the guidelines will need to include a narrative description of how the project responds to the Citywide Urban Design Guidelines, addressing:

- **Context & Site: Begin the design and development process with a review of existing studies, plans, and policies pertinent to the project, and an analysis of the urban design and natural characteristics of the context and the site, with particular emphasis on the form and character of the public realm.** Refer to Chapter B for further information.
- **Building: Begin the building design process with an analysis of architectural characteristics of existing buildings in the context, with particular emphasis on building massing, facade, and material choices that positively add to the city's existing built form.** Refer to Chapter C for further information.
- **Open Space: Begin the open space design process with an analysis of community needs, locations, programmatic and natural characteristics of existing open spaces in the context, with particular emphasis on open space design and programming that invites public use.** Refer to Chapter D for further information.

A.7.3 FLEXIBILITY

The guidelines express broad principles and values that aim to ensure new development enhances the character and vitality of the city. While they provide a consistent framework for design, not all guidelines will apply to every project. For instance, guidelines may refer to specific features that are not present in a project and are therefore not applicable.

Each relevant guideline should be considered, and consistency with the intent of applicable guidelines is encouraged to the greatest extent feasible. However, the guidelines do not impose strict limitations on form or style. They are designed to be flexible, providing guidance, and allowing for variation, depending on site and context specific conditions. Creative design solutions or variations not articulated in the guidelines may be employed so long as the goals and core values are being served. Applications that propose innovative solutions that are not included in the guidelines should provide a rationale for such approaches. The intent statements for the topic, or the overall core values for these design guidelines, will be used to determine whether the approach is appropriate. Each project will be evaluated on balance.

How to Use these Guidelines

Overall intent

Guideline intent

Which core values apply to this intent

Introductory text

Individual guidelines describe desired outcomes.

Some individual guidelines include a set of recommended design strategies to help achieve the intended outcome, while others offer a menu of options for designers to consider based on the context of the project

Sidebars to provide additional information or cross-reference to other materials

B.2.8.1 PEDESTRIAN CIRCULATION, ACCESS, AND CONNECTIVITY

INTENT

Create a safe, convenient, and comfortable environment for people walking and encourage public transit use.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

New development should consider the site's relationship to the pedestrian environment, and prioritize safety, comfort and connectivity. Pedestrian entries should be located to enable safe, convenient and enjoyable pedestrian movement, engage and activate streets and open spaces, and encourage public transit use.

GUIDELINES

a. Link a wide variety of types of pedestrian-priority spaces to create a flexible and connected network: streets with sidewalks, plazas, squares, parks, paths, shared streets, pedestrian streets, through block passages, and alleys.

b. Incorporate pedestrian pathways that provide direct access and connections with adjoining sidewalks, walkways, and where appropriate any adjacent public open spaces, or other public or civic uses.

c. Create pedestrian pathways that are clear, direct, convenient, inviting, and safe.

d. Provide variety and interest for pedestrians with design and amenities appropriate to the site, including seating, lighting, landscaping, pedestrian-scaled signage, site furniture, outdoor dining, and art.

e. Integrate universal design best practices to provide comfortable and welcoming access for all.

The movement of people around and through a site can have a significant impact on the public realm and the surrounding context. The design and location of site circulation and building entries should prioritize people walking, biking, using wheelchairs and mobility devices, and using public transit. It should also avoid pedestrian, bicycle, and vehicular conflicts, and minimize the negative impacts of loading and service functions on the public realm and neighbors. A well-designed, safe, and welcoming public realm enhances walkability, contributes to the character of the city's streetscapes, and has a positive impact on quality of life.

f. Orient pedestrian entrances to front primary streets. Avoid orienting pedestrian entrances towards vehicular driveways, drop-offs, or parking lots. A pedestrian entrance typically should provide the most direct access to a building's main lobby and be kept unlocked during business hours.

g. Provide frequent entrances to buildings and storefronts along public ways.
- Ideally, on commercial streets with a fine-grain rhythm of storefronts such as traditional commercial districts like Harvard Square, space building entries no more than 30 feet apart, using strategies such as prioritization of small ground floor commercial spaces.
- On streets where a coarser grain of residential and/or commercial entries is appropriate, aim for building entries no more than 75 feet apart.

h. In mixed-use developments, provide distinct, separate entrances for residential, commercial, and industrial uses.

i. Incorporate storefront entrances at block corners (FIG. 20).

FIG. 19 Active storefront entrance on the corner of First and Cambridge Streets. Photo by Anna MacDonald

j. Generally, locate lobbies for office, laboratory, industrial, and residential buildings away from block corners.

k. Site pedestrian entrances in locations that are easily accessible from crosswalks, and transit stops.
- Provide facilities to support public transit use and enjoyment, e.g. benches, bus shelters, etc (FIG. 21).

FIG. 20 A large bench beside the sidewalk on Vassar St provides a place for people to sit and rest. Photo by Tristan Searight

l. Where sidewalks and paths are shared with vehicular use, design them with a primarily pedestrian character (FIG. 22).

m. Where pedestrian sidewalks and paths cross vehicular drives, ensure that the pedestrian pavement continues across, interrupting the vehicular pavement.

FIG. 21 A shared street in Brighton, UK is designed with a pedestrian character. Photo by Project For Public Space

Section tabs

Click these to navigate around document

Example images/ illustrations to help explain guidelines

B. Context & Site

Cambridge is a vibrant city with a mix of uses and a well-defined public realm that is characterized by a network of squares and corridors. The city's streetscapes and urban pattern have been shaped by nearly 400 years of development, beginning with its colonial roots in Harvard Square, historic village centers, and later industrial growth in areas like East Cambridge, and Alewife. Modern growth and infill development in areas such as Kendall Square and North Point have also shaped the city's form. This blend of old and new defines Cambridge's unique character and its mix of dense neighborhoods, active squares, and corridors.

New development should actively contribute to the definition and quality of the public realm by relating to adjoining buildings and neighborhoods. It should engage with streets and other open spaces to help create lively, people-oriented urban places. Emphasizing walkable urban blocks and clearly defined streetwalls, new development should create a cohesive and pedestrian-friendly environment. At the same time, development should integrate principles of sustainable and resilient site design, minimizing environmental impact, supporting climate adaptation, and contributing to a healthier, more equitable city.

The guidelines in this chapter cover the layout of new streets and blocks, as well as the relationship between new buildings and adjoining buildings and open spaces. It also recommends a thorough understanding of context as an important first step in the design process. Through thoughtful site planning and design, new development can help create vibrant, safe, and pedestrian-friendly neighborhoods throughout the city.

B.1 Context & Site Principles

Thoughtful design can create walkable, vibrant, and sustainable neighborhoods, while supporting the rich cultural and historic qualities of Cambridge.

B.1.1 WALKABLE AND COHERENT NEIGHBORHOODS

GOAL 1: DESIGN QUALITY

Cambridge should continue to be a walkable city and provide an even more rewarding pedestrian environment as it grows and develops. Each new development should help create walkable urban blocks, neighborhoods and districts, and define the city's streets, squares, parks and other open spaces.

New development should harmonize with its surroundings by collaborating with neighboring buildings and open spaces to create coherent neighborhoods. Coherence does not imply uniformity; rather, it reflects an intentional organization of urban elements—such as building setbacks, heights, and open space—that relate to one another in a logical and context-sensitive way. A coherent neighborhood balances variety and consistency, creating a sense of place while allowing for architectural diversity.

FIG. 1 Buildings should frame adjacent open spaces.

B.1.2 INCLUSIVE NEIGHBORHOODS

GOAL 2: EQUITY

New development should enhance Cambridge's neighborhoods by creating a lively and welcoming public realm for residents, workers, and visitors. It should create meaningful and inclusive places that accommodate, enrich, and celebrate public life.

New development should also create a sense of place by offering connections to historical context, celebrating cultural diversity, and reinforcing the Cambridge's unique identity.

FIG. 2 Cultural diversity and historical context within Cambridge's neighborhoods help create a sense of place.

B.1.3 SUSTAINABLE DEVELOPMENT

GOAL 3: SUSTAINABILITY & RESILIENCE

Cambridge is engaged in initiatives aimed at improving the sustainability and resiliency of buildings and sites. Good urban design plays an important role in advancing these goals. Elements such as well-defined streetwalls, articulated building facades, a mix of uses, and convenient, safe circulation contribute to vibrant, people-friendly environments that support walking, bicycling, and the use of accessible public transit. In addition, site design should protect, restore, and enhance existing natural systems wherever possible, while adopting strategies to mitigate the increasing impacts of climate change.

FIG. 3 Natural systems, existing and new, are critical in the design of a site.

B.2 Context & Site Guidelines

Central Square Theatre responds to neighborhood identity by considering the immediate buildings, streets and open spaces, and wider neighborhood character and uses.

B.2.1 CONTEXT AND IDENTITY

INTENT

Design projects to relate to neighborhood context and respond to local environmental conditions.

CORE VALUES

INVITING | ECLECTIC | **CONTEXTUAL** | CONNECTED | ADAPTABLE | HEALTHY

A particular emphasis of the Citywide Urban Design Guidelines is how new development responds to its specific context and role within the neighborhood and wider city environment. While the city will continue to evolve and change, new projects should integrate site, context, building form, and building program as elements of a whole. Thoughtfully designed buildings should consider relationships with existing development patterns, as well as those anticipated by applicable plans, policies, and studies. Thinking beyond the immediate environs of the site and individual building, the goal is to ensure that context plays a defining role in shaping new development.

GUIDELINES

a. To inform the design process, begin with an analysis of the site, program, and context, including:
- Neighborhood scale, character, block patterns, and view corridors.
- Existing or planned street hierarchy.
- The predominant plane of street facades, surrounding building setbacks, heights, and upper and ground floor uses.
- A response to adjacent sites, streets, and open spaces, reinforcing connections between existing and new ones.
- Opportunities to define and articulate public space.
- Environmental comfort issues including elements such as shadows, solar access, glare, prevailing winds, ambient noise, topography, existing vegetation, and proximity to vehicular traffic.

INTENT

Create coherent, permeable, and walkable blocks that frame Cambridge's streets, parks, squares, and other open spaces.

CORE VALUES

INVITING · ECLECTIC · **CONTEXTUAL** · **CONNECTED** · ADAPTABLE · **HEALTHY**

Site design and building placement should shape Cambridge's streets, sidewalks, squares, parks, and courtyards. These open spaces should form an interconnected network that links the city, organizes buildings, and connects to neighboring cities and the surrounding landscape. Where possible, new streets and blocks should also reflect the historic scale of Cambridge's neighborhoods.

GUIDELINES

a. Adopt the block and street pattern of adjacent neighborhoods, where possible. Blocks should generally be no more than 600 feet long and 250 feet wide. Shorter or longer blocks may be appropriate depending on the context (FIG. 4).

b. On long blocks, provide publicly accessible mid-block pedestrian and bicycle connections to increase connectivity and accessibility (FIG. 5).

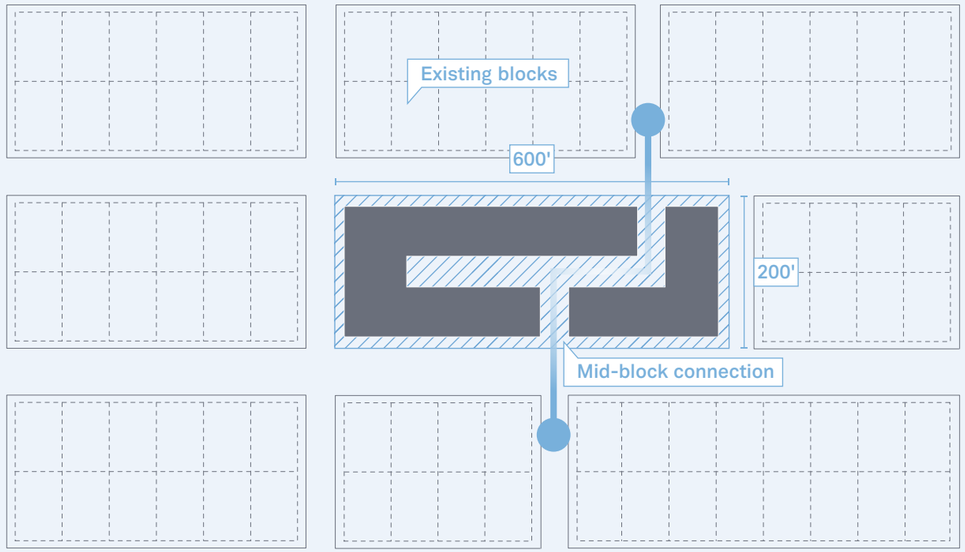

FIG. 4 The proposed building layout responds to the existing neighborhood block pattern. Placement of buildings provides an internal alley that aligns with the surrounding street grid.

FIG. 5 A publicly-accessible connection breaks up the block on Main St in Kendall Square.

c. On large sites, create detailed development plans to delineate streets and other open spaces, guide building massing and placement, and establish building setback and build-to lines.

d. On large sites, create a finer grained network of streets and paths to break up the existing large blocks and improve connectivity. Incorporate new publicly accessible streets, publicly owned rights-of-way, and pedestrian and bicycle paths that connect with the surrounding pattern of urban development.

e. Align and connect internal circulation, such as mid-block connections, driveways, alleys, and private streets, with the existing surrounding street network and block pattern.

f. Create blocks with defined perimeters—streetwalls composed of facades and massings that collaborate with adjoining buildings, along the streets and other open spaces they face.

g. Where appropriate, plan new streets and blocks to respond to views towards landmark buildings, structures, and open spaces, and improve city legibility and wayfinding (FIG. 6).

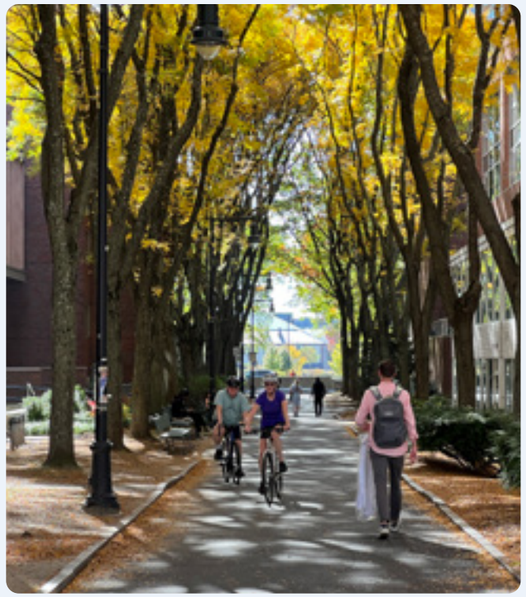

FIG. 6 The JFK Memorial Park pathway is defined by an allée of trees, offering views of and access to the park and the Charles River.

INTENT

Design buildings to spatially define streets and open spaces.

CORE VALUES

INVITING | ECLECTIC | **CONTEXTUAL** | CONNECTED | ADAPTABLE | HEALTHY

Buildings should be positioned and designed to define urban space and create a strong sense of enclosure within the public realm. The alignment and continuity of building streetwalls should frame streets, squares, and parks, reinforcing the spatial structure of the city and helping to activate the public realm. In Cambridge, open spaces should be conceived as urban-scaled outdoor rooms—defined, welcoming urban spaces that support a variety of social, recreational, and civic uses.

FIG. 7 Continuous streetwalls spatially define and frame Congress Street, Boston.

Questions to consider:

- → If the building is located at a block corner, how does it front both streets? How does it turn the corner?
- → If existing sidewalks are narrow, can a building setback widen the pedestrian space? What additional width would this provide the sidewalk?

GUIDELINES

a. Locate and orient buildings to front onto streets and other open spaces. At block corners, unless a public open space is created, locate and orient buildings to front both streets and provide a strong urban edge to the block.

b. On retail/commercial streets, locate and align building facades at the edge of the sidewalk, or the predominant plane of adjoining building facades that are unlikely to change, or on designated build-to lines to create continuous streetwalls (FIG. 7).

- Where existing sidewalks are excessively narrow for the anticipated pedestrian volume, consider setting building facades back from the property line and extending the sidewalk to the façade.
- Where existing underground conditions permit, provide continuous curbside street trees to further define the street. See E.3.1 on page 207.

c. On residential streets where buildings are often separated by side yards and set back from the sidewalk, generally align front facades with each other to create an intermittent, but legible, streetwall (FIG. 8).

- Align facades to create the sense of a vertical plane, parallel to the street, that distinguishes front yards from side yards and defines the façade-to-façade street width.
- Provide continuous curbside street trees to further define the street. See E.3.1 on page 207.

d. Where retail/commercial streets intersect with residential streets, the corner of the block should generally be occupied by a building with facades located on the edge of both street sidewalks.

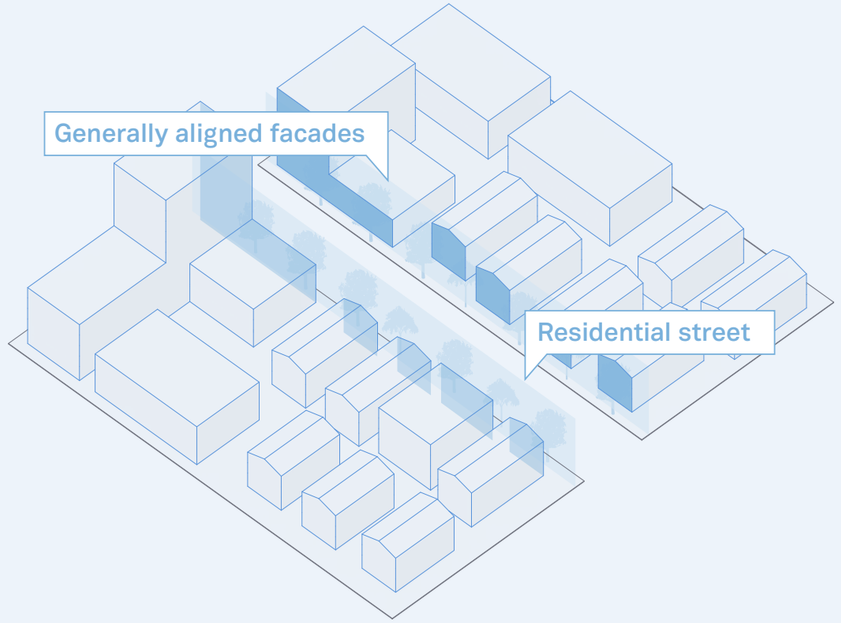

FIG. 8 Residential Streets should have an intermittent, but legible, streetwall, where building facades are aligned.

INTENT

Design buildings to reinforce site conditions and views.

CORE VALUES

INVITING | ECLECTIC | **CONTEXTUAL** | CONNECTED | ADAPTABLE | HEALTHY

Buildings should be sited and designed to respond to and reinforce the unique characteristics of each site and its context. Facades and massing should frame public space and emphasize key elements of Cambridge's urban form, such as prominent corners, significant locations, connections, junctions, and thresholds.

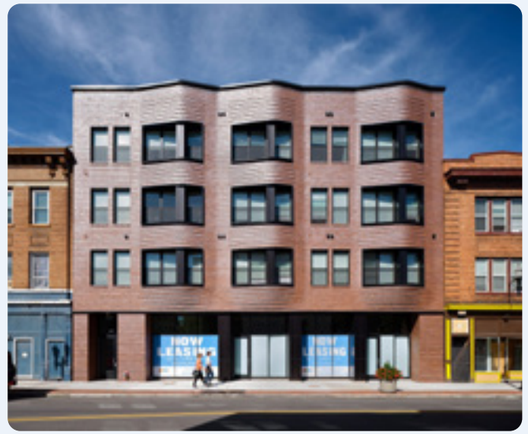

FIG. 9 The facade of a mixed-use development in Cincinnati responds to the local context.

GUIDELINES

a. Differentiate facades in response to the different characters and scales of the streets and other open spaces they face (FIG. 9) (FIG. 10).

b. Where appropriate to the adjoining spaces, incorporate exceptional elements such as towers, spires, and building massing that preserve key views in response to view axes and at important street corners (FIG. 11).

c. Where appropriate within Cambridge's wider urban context and distant views, incorporate landmarks—distinctive or prominent features within the built environment that are easily recognizable and serve as points of orientation.

FIG. 10 A residential building in Porter Square distinguishes its residential street façade from the Mass Ave frontage.

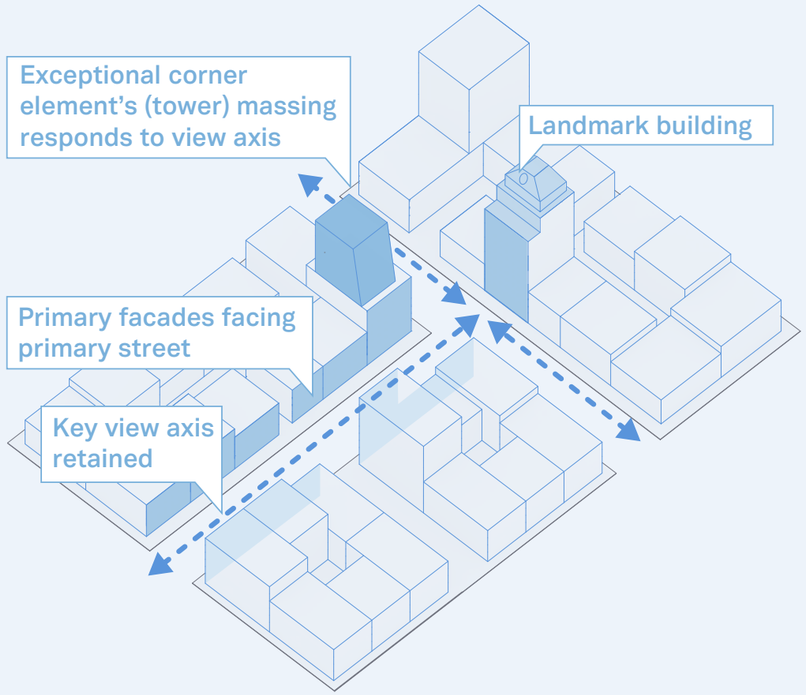

FIG. 11 Landmark buildings and other exceptional elements should be located in response to view axes.

B.2.5 ENHANCE THE PUBLIC REALM

INTENT

Enhance the public realm by providing new open spaces and improving access to and the quality of existing open spaces.

CORE VALUES

INVITING | ECLECTIC | **CONTEXTUAL** | CONNECTED | ADAPTABLE | **HEALTHY**

Ensuring that new development positively contributes to the public realm and the pedestrian experience is a key responsibility of the Citywide Urban Design Guidelines. This requires thinking beyond the boundaries of an individual building or site to see how a project can contribute to and improve the adjacent public realm, while strengthening the vitality of a neighborhood, district, or corridor. Paying careful attention to how new development interacts with streets, sidewalks, and open spaces is essential in this regard. New projects should actively seek opportunities to enhance the quality and character of adjacent open spaces, strengthen connections, and, where possible, introduce new open spaces.

GUIDELINES

a. On large-parcel developments, create new open spaces that add variety and complement the wider open space network. They should serve the needs of the surrounding neighborhood, and enhance the pedestrian environment (FIG. 12)

b. Design open spaces to enhance or expand existing facilities to better serve nearby populations, or to expand networks of pedestrian and bicycle movement within the vicinity of the development.

FIG. 12 Brian Murphy Memorial Staircase, developed as part of the Cambridge Crossing project, functions as a vital pedestrian connection, enriched by community art, lush landscaping, and inviting seating at the upper landing.

See Chapters D and E for detailed design guidance on open spaces and streetscapes.

c. Make improvements to adjoining streetscapes through the provision of street trees, plantings, seating/benches, paving, and other amenities (FIG. 13)

d. Ensure that new open spaces and pathways through development sites are framed by buildings and, where possible, lined with active and transparent ground floor frontages.

e. Consider incorporating public art as an integral component of the development's architectural and landscape design.

FIG. 13 Publicly accessible open space associated with the Ragon Building features diverse seating options, climate-resilient landscaping, and playful elements like chess tables.

INTENT

Provide a mix of uses that complement the context, meet local needs, and support a vibrant public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

A diverse mix of uses and activities adds to the vibrancy of the public realm and fosters walking, bicycling, and transit use. The right mix also ensures that Cambridge's commercial areas can continue to meet local needs and support everyday life.

New development, particularly in Cambridge's evolving districts, should serve a mix of functions (e.g., housing, employment, education, open space, and community amenities) that complement the neighborhood. In established areas, new development should fit into and improve the existing context, providing a transition between uses, particularly where sensitive residential uses abut their uses.

GUIDELINES

a. In mixed-use projects, locate uses to reflect the context and relate to adjacent building uses, streets, and public spaces. For example:
- Locate retail and other active ground floor uses along primary streets or public spaces, particularly in mixed-use and evolving areas (FIG. 14).
- Locate service functions on side streets or internal alleys.
- Place new housing close to existing residential uses.

FIG. 14 Ground floor retail brings life to the street, creating an engaging pedestrian experience around an Office/Laboratory building on Main Street.

b. In mixed-use neighborhoods, calibrate the mix of dining, retail, community, cultural, and other uses to respond to desired neighborhood uses and any relevant area-specific plan recommendations.

c. In large, multiple-building non-institutional developments provide a mix of uses, including residential, office, retail, and community facilities, where such uses are permitted and where the mix of uses extends the period of time the area remains active during the day.

d. In large mixed-use projects, provide spaces for small, neighborhood-oriented local businesses.

e. Provide retail, consumer service enterprises, and other active uses at the ground (or lower) floors of institutional buildings in commercial areas. Where such uses are not suitable due to programmatic reasons, provide institutional uses that generate pedestrian activity and support neighborhood vitality.

f. Preserve or provide facilities for start-up companies and appropriately scaled manufacturing uses that provide diverse employment opportunities for Cambridge residents. Activities heavily dependent on trucking for supply and distribution are discouraged.

Consult with Economic Opportunity and Development staff on retail/tenant plans

B.2.6.2 HOUSING

INTENT

Expand the inventory and range of housing in the city.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Provide housing as a component of any large, multiple-building commercial development. Where such development abuts residential zoning districts substantially developed to low-scale residential uses, locate housing within the development to act as a transition/ buffer between uses within and outside the development (FIG. 15).

b. Provide a diversity of housing types, tenures, and sizes, particularly targeting larger family-sized middle-income units.

c. In large residential projects, provide family-friendly and child-oriented services and amenities, such as play spaces, indoor and outdoor recreation areas, community rooms, and childcare facilities.

FIG. 15 Broad Canal Way includes housing as a component of a multiple-building development by MIT.

B.2.7 RESILIENT SITE DESIGN

INTENT

Design sites that are resilient to and mitigate the effects of climate change.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Sites should be designed to be resilient to the effects of climate change, including frequent flooding due to heavy precipitation and sea level rise/storm surge, and increasing heat. Design strategies should incorporate strategies to reduce stormwater runoff and improve water quality. Site design should also minimize the urban heat island effect by incorporating measures that help lower surface and air temperatures, improve outdoor comfort, and reduce energy consumption.

Cambridge has implemented several initiatives to help new developments prepare for the long-term impacts of increased flooding and heat from climate change, including:

- Resilient Cambridge, a plan to reduce the risks of climate change.
- Climate resilient zoning aimed at protecting spaces vulnerable to flood and heat.

For more information, refer to the Resilient Cambridge Plan and Article 22.000 of the Zoning Ordinance for required resilient design standards.

Consult with the Department of Public Works and Community Development Department staff during the design process for specific guidance on resilience planning and sustainable site design.

GUIDELINES

a. Assess the climate hazards' current and projected risks and vulnerabilities of the project site and neighborhood.

b. Based on the identified risks and vulnerabilities, integrate a range of resilient site design strategies. Examples include:
- Protect existing significant trees.
- Incorporate light-colored pavement, pavers, and pervious surface materials that absorb less solar radiation, where effective.
- Maximize permeable and vegetated areas (FIG. 16).
- Minimize impervious pavement.

FIG. 16 Vegetation and permeable surfaces located in the public space beside a mixed-use development.

FIG. 17 Permeable planted areas and light colored paving are used in combination with trees at the Union Square development in Somerville.

c. Use Stormwater Best Management Practices and other measures to minimize runoff and improve water quality. Examples include:
- Detain stormwater on site to slow the rate of stormwater runoff.
- Integrate Low Impact Development (LID) and green infrastructure practices, structural and/or non-structural, to capture and retain (i.e. infiltrate, evapotranspirate, or collect/capture and reuse) stormwater, such as bioswales, rain gardens with native or adapted plants, wet meadows, or dry ponds, into landscape plans.
- Incorporate underground storage tanks to slow the release of stormwater. On-site stormwater storage requirements should be consistent with the Department of Public Works stormwater runoff detention requirements.
- Where possible, incorporate LID and green infrastructure elements as attractive and accessible features of the site.

d. Provide vegetative shading for sidewalks and other public spaces, with particular attention given to pedestrian, bicycle, and vehicular corridors. Consider structural shading in parks and public spaces where tree planting is challenging. For example:
- Canopy trees can shade sidewalks and streets, including bus stops and other areas of congregation in the public realm (FIG. 18).
- Trellises and similar structures can support vegetation to shade walkways and plazas.

e. Place vegetation or vegetated structures in strategic locations around buildings to reduce energy consumption and costs associated with indoor climate control.

f. Select native vegetation that will be resilient to the anticipated hotter and more variable climate, and to saltwater intrusion, and support biodiversity.

g. Review the Sustainable SITES Initiative's site design strategies and consider seeking SITES certification for projects.

FIG. 18 Trees provide shade, creating a comfortable environment for people using a pedestrian and bicycle corridor.

SITES is a rating system that focuses on nature-based solutions for site design. It aims to promote biodiversity, conserve water, mitigate climate change effects, improve public health and provide economic benefit to development projects.

See D. Open Space and E. Streetscape for more details.

Additional resources include:
- → Cambridge's Climate Resiliency Zoning
- → Cambridge Urban Forest Master Plan

h. For projects in areas prone to flooding and severe weather events, integrate resilient strategies such as:
- Locate electrical equipment, emergency power equipment, fuel storage, vulnerable utilities, and other critical systems above anticipated flood levels.
- Ensure that fire detection and suppression systems and communications/data equipment will remain operational during severe weather events.
- In large projects, consider providing "shelter-in-place" facilities, equipped with emergency response supplies, backup power generators, passive cooling elements, and backup communication systems.
- Designate community spaces in larger buildings that need to remain functional during severe weather events and power outages.
- Provide clear access points and routes for first responders, and for evacuation purposes. Consider exterior stairs to second floors to facilitate emergency access during hazard events.
- Provide accessible electrical shutoffs to safeguard emergency personnel.

INTENT

Create a safe, convenient, and comfortable environment for people walking and encourage public transit use.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

The movement of people around and through a site can have a significant impact on the public realm and the surrounding context. New development should actively engage with the pedestrian environment, enhancing walkability and fostering a safe, accessible, and comfortable experience at the street level.

The design and location of site circulation should enhance connectivity and prioritize people walking, biking, using wheelchairs and mobility devices, and using public transit. Pedestrian entries should support convenient, direct, and enjoyable movement, while also helping to activate adjacent streets and open spaces. Designs should also minimize conflicts between pedestrians, cyclists, and vehicles, and reduce the visual and functional impacts of loading areas, driveways, and service zones.

GUIDELINES

a. Link a wide variety of types of pedestrian-priority spaces to create a flexible and connected network: streets with sidewalks, plazas, squares, parks, paths, shared streets, pedestrian streets, through block passages, and alleys.

b. Incorporate pedestrian pathways that provide direct access and connections with adjoining sidewalks, walkways, and, where appropriate, any adjacent public open spaces or other public or civic uses.

c. Provide variety and interest with design and amenities appropriate to the site, including seating, lighting, landscaping, pedestrian-scaled signage, site furniture, outdoor dining, and art.

d. Integrate universal design best practices to provide comfortable and welcoming access for all. Examples include gentle grade changes, clear wayfinding, non-slip surfaces and adequate lighting.

e. Where sidewalks and paths are shared with vehicular use, design them with a primarily pedestrian character (FIG. 20).

f. Where pedestrian sidewalks and paths cross vehicular drives, ensure that the pedestrian pavement continues across, interrupting the vehicular pavement.

g. Orient pedestrian entrances to front primary streets. Avoid orienting pedestrian entrances towards vehicular driveways, drop-offs, or parking lots. A pedestrian entrance typically should provide the most direct access to a building's main lobby and be kept unlocked during business hours.

h. Provide frequent entrances to buildings and storefronts along public ways.
- Ideally, on commercial streets with a fine-grain rhythm of storefronts, such as traditional commercial districts like Harvard Square, space building entries no more than 30 feet apart, using strategies such as prioritization of small ground floor commercial spaces.
- On streets where a coarser grain of residential and/or commercial entries is appropriate, aim for building entries no more than 75 feet apart.

i. In mixed-use developments, provide distinct, separate entrances for residential, commercial, and industrial uses.

j. Incorporate storefront entrances at block corners (FIG. 19).

k. Generally, locate lobbies for office, laboratory, industrial, and residential buildings away from block corners.

l. Site pedestrian entrances in locations that are easily accessible from crosswalks and transit stops.
- Provide facilities to support public transit use and enjoyment. Examples include benches, bus shelters, and shade trees.

FIG. 19 Active storefront entrance on the block corner.

FIG. 20 A shared street in Brighton, UK is designed with a pedestrian character.

B.2.8.2 BICYCLE CIRCULATION, ACCESS, AND CONNECTIVITY

INTENT

Provide safe, comfortable, and convenient bicycle access for people of all ages and abilities to sites and buildings.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · **CONNECTED** · ADAPTABLE · **HEALTHY**

In order to support and promote bicycling, the City is working to further enhance the bicycle facility network and add bicycle parking throughout Cambridge. This includes providing secure, visible, and convenient bike parking, integrating bike infrastructure into street design, and promoting seamless connections to other modes of transportation. Biking should be treated as a viable, everyday mode of travel, supported by thoughtful design that encourages comfort, confidence, and convenience at every step of the journey.

FIG. 21 Shared use path and bike share station, delivered through private development, enhance connectivity to the Minuteman Bikeway.

Additional resources include:

- → Cambridge Bicycle Plan
- → Cambridge Zoning Ordinance
  Article 6 includes detailed requirements related to bicycle parking.
  Article 19 includes a special permit process for large projects that requires a transportation impact analysis.

GUIDELINES

a. Provide safe, convenient and comfortable bicycle facilities, such as separate bicycle lanes and multi-use paths, in locations that are identified in the Cambridge Bicycle Plan and connect to the broader city network.

b. Provide people biking with short-term bicycle parking in locations that are visible and convenient to main building entrances.

c. Provide people biking with secure, long-term, weatherproof storage facilities conveniently located on-site. If bicycle parking is provided in a garage, special attention must be paid to providing safe access to the facilities from the outside.

d. When long term bicycle parking facilities are located on street frontages, design them as visible and intentional components of active ground floors. Include welcoming access, windows, and signage.

e. Identify bicycle parking and bike share locations early in the design process so that they are well integrated into the site. Provide bike share station facilities where recommended by staff.

B.2.8.3 VEHICULAR ACCESS AND DROP-OFFS

INTENT

Design and locate vehicular entrances, driveways, and drop-offs to minimize visual and operational impacts on the public realm.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · **CONNECTED** · ADAPTABLE · HEALTHY

GUIDELINES

a. Locate driveways and parking entrances on side streets or alleys wherever possible.

b. Minimize the number and width of curb cuts, driveways, and vehicle entrances, and where possible, create shared arrangements with neighbors.

c. Design privately owned driveways and streets to a similar standard as public streets, incorporating sidewalks, planting zones, and bicycle lanes depending on their function and location.

d. Where fire lanes are required between buildings, create shared arrangements between adjoining lots, and design them as streets depending on their connectivity to the street network.

e. Avoid circular driveways, vehicular turnarounds, and off-street drop-off areas.

f. Locate drop-off zones along the curb or within parking facilities to promote sidewalk/street wall continuity and reduce conflicts with pedestrians.

g. Avoid driveways and parking accessways that run parallel to the street.

INTENT

Minimize the impacts of vehicular parking on neighbors and the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

The design of sites should reduce the negative impacts of vehicular parking by locating it below grade, providing it within buildings, and reducing the visual dominance of podium/ ground floor parking. Where surface parking is unavoidable, it should be located to the rear or side of buildings and be visually screened from the public realm.

GUIDELINES

a. Where on-site parking is provided, it should be located below grade where feasible.

b. Where above-grade and/or structured parking is unavoidable:
- Ensure that it is not visible from public streets or pathways (FIG. 22).
- Line the parking facility with active and/or retail ground floor uses. See C.3.4 on page 125 for design guidance.

FIG. 22 Structured parking is accessed via an internal driveway at 450 Water St, strategically located away from the primary street to minimize disruption for people walking and biking.

See C.3.4 on page 125 for the design of parking garages

c. Avoid surface parking. Where it cannot be avoided:
- Locate surface parking in block interiors, not visible from major public streets.
- Minimize the site area dedicated to parking and driveways.
- Use permeable paving materials for surface parking areas.
- Where possible, screen and shade surface parking with canopy trees, dense foliage, or hedges and shrubs. Where trees and plantings are not feasible, consider shade structures, PV arrays, or other means.

FIG. 23 Fencing and vegetation are used to screen above-grade parking located at the rear, minimizing visual impacts.

d. Avoid covered parking on the lower floors of buildings that face public streets, public paths, and publicly accessible pathways. Buildings should not be raised up on stilts, or sit on blank walls, to accommodate parking.

e. Where ground floor parking is unavoidable, screen it from view, and shield lighting to prevent glare and light trespass. Consider use of green walls, artwork, metal stencils, fencers, louvers, sun shading elements, or other means to visually screen parked cars (FIG. 23).

f. Design parking and driveways to minimize conflicts with pedestrians and bicycle movement.

B.2.8.5 LOADING AND SERVICING AREAS

INTENT

Design and locate loading and service areas to minimize intrusion into the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Conceal service and loading areas from public streets or open spaces. Place them at the rear of buildings, along secondary ways, alleys, or in internal courtyards (FIG. 24).

b. Where possible, consolidate off-street loading areas and service roads serving multiple buildings and multiple parcels.

c. Design access routes to loading and servicing areas to avoid interrupting pedestrian connections, transit and cyclist routes.

d. Avoid security fences, gates at service yards, and similar features in areas visible to the public.

e. Avoid chain link fencing, barbed wire, concertina wire, or similar products when visible from the public realm.

f. Locate exterior tanks for laboratory gasses unobtrusively, preferably in locations not visible from the public realm.

g. Coordinate with city staff on the locations of parking for gas delivery trucks that are required to conduct operations in open air.

FIG. 24 Loading area strategically positioned along a secondary route to minimize disruption to primary pedestrian pathways.

See C.2.15.1 on page 113 for more detail on loading bay design.

B.2.8.6 SITE UTILITIES AND MECHANICAL EQUIPMENT

INTENT

Minimize the impact of utilities and mechanical equipment on the pedestrian environment.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Preferably locate mechanical and electrical equipment within buildings, rather than as site elements.

b. Where site-located mechanical or electrical equipment cannot be avoided:
- Locate equipment to the rear or sides of buildings, or on the interiors of blocks, where it can be screened from public view. Avoid locations between the building and any public way, or forward of the principal facade.
- Use architectural enclosures, fencing, or landscaping (e.g., hedges, tall plantings, etc.) to screen equipment from view (FIG. 25).
- Ensure screens are compatible with the building design and materials, or the landscape design.
- Avoid creating blank, opaque walls that negatively affect the adjacent public realm.
- Use acoustic enclosures or sound barriers where mechanical noise may impact neighbors.

FIG. 25 Transformer and switchgear are thoughtfully screened and integrated into the landscape design to minimize visual impacts

See C.2.15.2 on page 114 for further details on mechanical and electrical equipment design.

B.2.9 ENVIRONMENTAL COMFORT

Cambridge is a dense urban area, and as new projects are introduced some increases in shadows, wind, noise, and glare are inevitable. To ensure a high quality of life, new developments should be thoughtfully designed to minimize their environmental impacts, especially on adjacent streets, open spaces, and neighboring properties. Each design decision should be evaluated with care to understand its broader effects, aiming to strike a balance between the advantages of building in a transit-rich, walkable community and the challenges associated with taller, denser development

B.2.9.1 WIND

INTENT

Design buildings to minimize negative wind impacts on adjacent streets and open spaces.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Early in the design process, analyze prevailing wind conditions to optimize pedestrian comfort and safety in surrounding open space areas.
- Demonstrate how development proposals have been conceived regarding prevailing winds and potential pedestrian-level wind impacts.
- For buildings taller than 100 feet, or those with unique forms and configurations that may accelerate wind impacts, conduct a qualitative Pedestrian Wind Study, such as Computational Fluid Dynamics modeling.
- For buildings exceeding 150 feet in height, or as otherwise recommended by City staff, undertake comprehensive Wind Tunnel Testing.

FIG. 26 Colonnades along streets can improve pedestrian wind conditions.

It is important to consider the potential wind impacts of a project early in the design process. This allows sufficient time to consider mitigation strategies, including changes to site and building layouts.

Pedestrian Wind Studies are conducted to predict, assess, and, where necessary, guide site and building design to mitigate impacts on pedestrian-level wind conditions.

Wind tunnel tests should assess annual and seasonal mean wind speeds, and effective gusts, and include supportive data and figures for each. CDD staff can provide further guidance to Applicants.

b. Where mitigation is required to achieve acceptable pedestrian wind comfort levels, evaluate all recommended measures to demonstrate the benefits of such strategies. Mitigation strategies include:

- Building massing changes or alternative designs that are more responsive to the local wind climate.
- Incorporating podiums, tower setbacks, notches and/or colonnades (FIG. 26).
- Projected overhangs, canopies, and/or setbacks.
- While wind screens, landscaping, planters, and/or other site features can be effective for mitigating problematic wind conditions, in dense urban environments like Cambridge, their utility is often limited, e.g., wind screens cannot be placed at the corner of a building on a sidewalk. It is recommended that adverse pedestrian wind impacts should be mitigated primarily through building massing and integrated structural design elements, rather than relying solely on landscaping or grade-level site treatments.

Pedestrian wind conditions are considered suitable when they are comfortable for the intended pedestrian activities around the site (i.e., walking on sidewalks, standing at building entrances, and sitting in plazas, etc.). If the conditions around the site exceed the levels required for the intended pedestrian activities, or are unsafe, mitigation measures are recommended.

B.2.9.2 SHADOWS

INTENT

Locate and shape buildings to minimize shadow impacts on adjacent and nearby open spaces, as well as solar energy systems.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Identify adjacencies to be protected, including open spaces and solar energy systems (FIG. 27).

b. For buildings that are 100 feet or taller, or that have the potential to cast significant shadows on neighboring buildings and open spaces, conduct shadow impact studies for the Winter Solstice, Summer Solstice and Autumnal Equinox (FIG. 28), that report the following:

- Number of hours of sunlight/day that adjacent open spaces receive, and/or
- Number of hours of sunlight/day that solar energy systems receive.
- Existing and net new shadows.

A shadow study may be required for a lower building if it is located near shadow-sensitive areas, including but not limited to parks and open spaces, playgrounds, pedestrian connections, shared streets, and where area-specific design guidelines or relevant special permit criteria require these. CDD staff can provide further guidance to Applicants.

While minimizing shadows is important for open spaces, strategically incorporating shaded areas will become increasingly crucial to enhancing comfort and resilience in response to climate change.

c. Propose mitigation when excessive shadows result in negative impacts on the use and enjoyment of adjacent open spaces and the operation of solar energy systems. Examples include:

- Where possible and without undermining other urban design objectives, step back the upper floors to allow more sunlight to reach ground level and neighboring open spaces, and solar energy systems.
- Prioritize sunlight access to open spaces to ensure that parks and plazas receive adequate sunlight and existing uses that rely on sunlight access remain viable, e.g., community gardens.
- Consider impacts on the viability of existing open space vegetation.
- In new open spaces, consider the ability of vegetation to grow in changing light conditions.

FIG. 27 Open spaces in Cambridge, such as Longfellow Park, benefit from a balance of sunlight and shade.

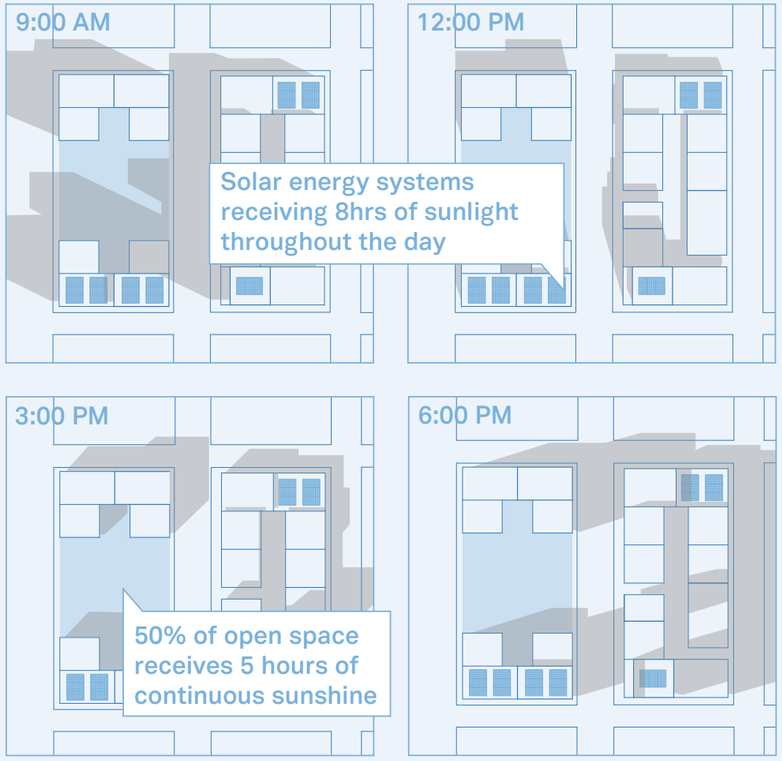

FIG. 28 Shadow impact studies help inform the design of buildings and open spaces in developments with tall buildings.

B.2.9.3 GLARE

INTENT

Design and shape buildings to minimize the impacts of solar reflection and glare on adjacent streets and open spaces.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Provide solar reflection and glare potential studies for buildings that incorporate extensive glass curtainwalls and highly reflective materials, particularly those with concave or convex forms.

b. Use strategies to mitigate glare such as:
- Shading devices, including horizontal overhangs, vertical fins, and awnings (FIG. 29).
- Landscaping, especially trees.
- Avoiding highly-reflective façade materials used in conjunction with concave and convex building forms.

FIG. 29 Vertical fins at 441 Morgan Ave help diffuse glare, enhancing visual comfort and contributing to a more refined architectural expression.

B.2.9.4 NOISE

INTENT

Minimize noise impacts of new development, particularly noise generated from mechanical equipment, on neighbors.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Adopt best available and feasible practices regarding the location, sizing, and selection of mechanical equipment, and sound attenuation measures.

b. When a project includes residential uses located in mixed-use, commercial, or industrial areas, consider how building materials, design, orientation, and site layout can help reduce the transmission of noise from the surrounding environment to residences.

For more information, refer to the City of Cambridge Noise Control Ordinance (Chapter 8.16 of the Municipal Code) for noise control requirements.

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Block organization, articulation of public space, response to historical buildings, vegetation, and mix of uses are examples of design elements present in the Orchard Gardens development, a thoughtful, contextual development in Elephant Park, London.

C. Building

Cambridge's residential, commercial, institutional, and mixed-use buildings serve the needs of the city's residents, workers, businesses, and institutions. Publicly-owned buildings serve civic functions and represent civic values. Together, they form the city's blocks, which in turn frame, shape, and define public spaces, giving them varied characters and contributing to Cambridge's sense of place.

Cambridge's built form is richly varied, a testament to its many layers of history. The design of new buildings should demonstrate an understanding of that history by reinforcing the eclectic form and character of Cambridge's neighborhoods, while creating new and memorable places. As Cambridge develops and becomes more dense, it is important to ensure that the quality of the adjacent public realm is a fundamental consideration in the design of new buildings.

The guidelines in this chapter encourage building massing, ground floor design and uses, facades, materials, and other building elements that create harmonious relationships with nearby existing buildings, contribute to a well-defined and welcoming public realm, and help realize the city's vision for its urban form. Importantly, this chapter also promotes building design that conserves resources and strengthens the future resilience and adaptability of the city's built environment.

C.1 Building Principles

The Valente Branch of the Cambridge Public Library exemplifies thoughtful, sustainable design that creates a welcoming and community-centered gathering space.

C.1.1 WELL-DESIGNED BUILDINGS
GOAL 1: DESIGN QUALITY

New buildings should contribute to the quality of the public realm. The beauty of facades, and the colors, textures, and durability of materials, should enhance the city's aesthetic richness. Ground floor uses in commercial areas should be designed to help make the streetscape feel lively and inviting. Facades should be thoughtfully designed with detail, high-quality materials, and three-dimensional relief (FIG. 30).

Depending on site and program, new buildings may blend in with their surroundings as background buildings, stand out as unique elements to highlight their significance, or combine aspects of both approaches.

FIG. 30 Buildings along Main St contribute to the visual quality of the street through texture, detail, and variation.

C.1.2 WELCOMING BUILDINGS
GOAL 2: EQUITY

Cambridge's buildings should create a welcoming and inclusive environment for all ages, races, ethnicities, genders, sexual orientations, and abilities. To achieve this, these guidelines encourage: a mix of uses that serve diverse needs, inviting ground floors that feel public, and visually interesting facades that contribute to a pleasant, engaging, and safe public realm. Buildings should reflect the city's cultural vitality, integrating arts, cultural, and community uses (FIG. 31). Building design should provide versatile spaces that accommodate diverse activities and user groups, while ensuring seamless, barrier free physical access for all.

FIG. 31 Transparent ground floors and a mix of uses invite a diversity of people.

C.1.3 SUSTAINABLE BUILDINGS
GOAL 3: SUSTAINABILITY & RESILIENCE

New buildings in Cambridge are expected to meet or exceed the highest standards of environmental sustainability, resource efficiency, and climate resiliency and adaptation. This document is intended to advance these goals. New projects should minimize energy and greenhouse gas emissions, be resilient to flooding, and minimize the impacts of extreme heat and storm events.

Preservation also plays an important role in advancing sustainability and strengthening community resilience. New projects should consider preserving existing historical features and buildings to conserve resources, maintain cultural and historical values, and reinforce a strong sense of community identity (FIG. 32).

FIG. 32 The renovation of a historical building in Harvard Square received a LEED Gold certification.

C.2 Building Guidelines

By shaping its form to reflect adjacent structures, Market Central establishes a contextual presence that complements Central Square's existing urban fabric.

C.2.1 CONTEXT & IDENTITY

INTENT

Design buildings to relate to the surrounding context, complement adjacent buildings, and respond to the local microclimate.

CORE VALUES

INVITING | ECLECTIC | **CONTEXTUAL** | CONNECTED | ADAPTABLE | HEALTHY

New buildings should enrich Cambridge's public realm through careful consideration of massing, facade design, and ground level interaction with adjacent open spaces. The guidelines contained in this section encourage new development that is both of its time and rooted in its context, strengthening the city's unique character while responding to its surroundings.

GUIDELINES

a. Undertake a comprehensive analysis of the site and the surrounding context, that:
- Demonstrates, through analytical diagrams, an understanding of the variety of existing building typologies and styles in the immediate and larger context.
- Demonstrates, through analytical diagrams, an understanding of the character of existing buildings in the surrounding context, the ways they use color, details, facade motifs and patterns, etc., to create a visually rich environment.

b. Based on the site, context, building type, and program, consider whether the building should be a landmark, background building, or a combination of background and landmark elements.

c. Consider how the building massing, facade design, and material choices positively add to the city's existing built form (FIG. 31).

d. Consider how the building massing and facades contribute to the definition and articulation of streets and open spaces.

e. Demonstrate, through analytical diagrams, an understanding of any contextual historical buildings, and articulate a response to them (FIG. 33).

f. Demonstrate an understanding of microclimatic conditions, including solar orientation and prevailing breezes, and articulate a response to them.

FIG. 33 The height and materials of the lower portion of 314 Main St complement the adjacent historical building.

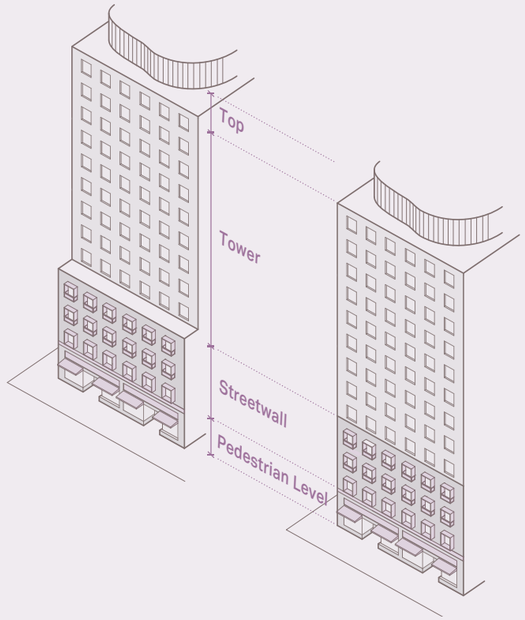
C.2.2 MASSING

Building massing should thoughtfully respond to and mediate between the multiple scales of the urban environment—from the scale of the pedestrian to adjacent buildings, streets, and squares, and even distant views from parks and major thoroughfares. As part of this response, building massing and principal facades should be arranged into distinct horizontal zones that reinforce human scale, enhance visual interest, and relate to the surrounding built environment. These zones typically include (FIG. 34):

- Pedestrian Level
- Streetwall
- Tower (or Upper Floors)
- Top

Pedestrian Level

The Pedestrian Level engages the street and pedestrian realm, and includes the ground floor, and on occasion the second floor. It offers amenities, comfort, shelter, and visual enrichment, and accommodates retail, community, and other active uses.



Streetwall

The streetwall includes the floors above the pedestrian level that frame the spatial volume of the adjoining streets, parks, or squares.

Tower (or upper floors)

The floors of tall buildings above the streetwall that define spaces at a larger scale, and add visual interest from distant views.

Top

The Top defines the skyline silhouette and contributes to the building's articulation. Depending on building type, the top may range from a cornice or simple parapet, to a stepped back top floor, to an assemblage of penthouses.

The specific characteristics of these zones, their relative sizes and importance, and the amount of differentiation between them, will vary depending on building type and context. C.2.2.2 on page 72 for further guidance on the design of each zone.

FIG. 34 Buildings should generally be organized into four zones: Pedestrian Level, Streetwall, Tower, and Top. The distinction between zones may be subtle changes in material, rhythm, or texture, or may be more significant massing changes, including stepbacks like those shown on the left.

INTENT

Arrange building massing to contribute to the definition of the public realm and relate to existing or anticipated patterns of development.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Provide suitable transitions in heights, massing, and setbacks to abutting or nearby residential zoning districts that are generally developed at a lower scale (FIG. 35) (FIG. 36).

b. Where possible, divide the bulk of large projects into separate buildings to avoid a monolithic appearance and to create visual and physical connections between the street and the more private courtyards and other open spaces within sites.

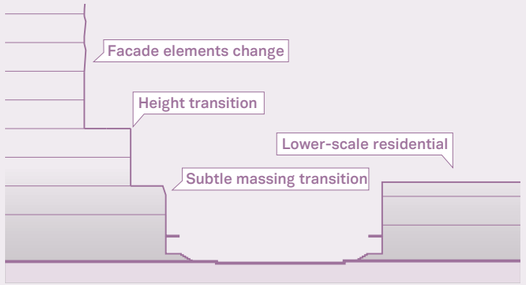


FIG. 35 Tall buildings should be designed to provide a transition to adjacent low-scale residential neighborhoods.

FIG. 36 A development near Kendall Square (right) uses massing, facade changes, and materials to create a sensitive transition to the nearby residential neighborhood (left).

c. Break building facade lengths longer than 200 feet into shorter facade segments by forecourts, vertical breaks, notches, changes in plane or other appropriate massing techniques (FIG. 37).

d. In large buildings, consider incorporating upper story step backs to help break up the mass, preserve sky views, minimize undesirable wind conditions, and create sensitive transitions to historically or architecturally significant existing buildings (FIG. 38).

FIG. 37 A vertical break and forecourt is used to break down the length of this long building on Binney St.

FIG. 38 Towers of tall buildings in Kendall Square step back from the street to mediate between the scale of people walking and the building's bulk.

INTENT

Organize building massing into horizontal zones to reflect the surrounding context and enhance the streetscape.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Provide a distinction between the zones of a building based on the context and character of the surrounding neighborhood.
- The distinction can be achieved either through massing (stepbacks), or facade choices (material changes, cornices, fins, shading), or a combination of both (FIG. 39).
- The zone's expression can be subtle or sharp; in either case it should be purposeful, appropriate, and clear.
- The distinction between pedestrian level and the streetwall should be expressed in low-rise, mid-rise, and tall buildings.
- The distinction between the streetwall and the top is less critical for low and mid-rise buildings. Even in taller buildings, an argument could be made for a design without a clear top.

b. Design the pedestrian level to be either one or two stories. In low-rise buildings, the pedestrian level should be no more than one story.

c. Design the pedestrian level to address people walking and bicycling at ground level. This zone should generally receive the most attention in terms of design, materials, and details that provide depth, texture, and character. C.2.3 on page 73 for further design guidance.

FIG. 39 Buildings along Binney St are organized into horizontal zones. Each building provides a distinction between the zones; through a subtle massing reveal at the ground floor and a top floor stepback (left), through different types of openings at the ground floor (middle and right), an extension of the roof cornice (middle), and a tower (right).

d. Where the facade expression of the pedestrian level includes the second floor, the second floor facade should either be visually integrated with the ground floor and differentiated from the streetwall above, or serve as a mediating element linking the ground floor and the streetwall zone.

e. Design streetwalls that establish the building's overall appearance and visually frame and activate the public realm.

C.2.4 on page 87 for more information on height recommendations for streetwalls.

C.2.3 PEDESTRIAN LEVEL

The Pedestrian Level is a critical element of the public realm and our experience of the city. It provides shelter, accessibility, and visual interest at the pedestrian scale, and accommodates active uses that enliven streets and squares. Careful attention to the design and use of this level is needed to enhance walkability and ensure a safe, vibrant, and welcoming public realm for all.

On commercial and retail streets, ground floor uses should actively engage and enliven the public realm, and the pedestrian level's facade should be distinct in character from the streetwall floors above. Well-designed commercial ground floors should have a high level of transparency and permeability, and include pedestrian-friendly design details that enhance the visual richness of the streetscape.

On residential streets, residential ground floors should contribute to creating an active and welcoming public realm. Ground floor uses should focus on residential units, and communal and active spaces that create visual connections with the streetscape. In buildings with ground floor residential units, less differentiation between the pedestrian level's facade and the streetwall above may be appropriate.

INTENT

Provide active, pedestrian-oriented ground floor uses to animate the public realm and enhance the vitality and walkability of Cambridge.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Where possible, provide active uses and multiple tenancies to create animated and inviting ground floors, both in commercial and residential buildings.

b. Locate pedestrian frontages on the property line, or within any designated build-to zone, with exceptions for recessed retail or other entrances and shopfronts.

MIXED-USE AREAS

c. On primary streets, aim to occupy at least 60-75 percent of the street frontage with retail uses such as cafes, restaurants, and shops that are oriented towards the street and encourage pedestrian activity (FIG. 40). A higher percentage of retail use is expected in locations with continuous retail such as Cambridge's squares.

d. On other streets, pathways, and open space frontages, aim to occupy at least 50 percent of the street or open space frontage with active uses that are oriented toward the street and encourage pedestrian activity (FIG. 41). For the purposes of these guidelines, active uses include:
- Retail (i.e. cafes, restaurants, shops),
- Educational and cultural venues,
- Services for the public or for commercial offices (fitness centers, cafeterias open to the public, daycare centers, etc.),
- Community spaces (exhibition or meeting space),
- Art/information exhibition spaces,
- Live/work spaces, and/or,
- Small residential lobbies.

FIG. 40 Retail uses animate Harvard Square, an area of high pedestrian activity.

FIG. 41 The 75-125 Binney St building ground floor includes a cafe that activates part of the street frontage.

e. Provide the actively-used area with a depth of at least 20 feet, or the depth of the building if less.

f. Line large floor area ground floor tenant spaces with smaller tenancies at the edge of sidewalks, open spaces, and pedestrian connections (FIG. 42).

g. Avoid lobbies for office, research, and residential uses that occupy extensive ground floor frontage and lack public uses/amenities.

h. Avoid banks, trust companies, or similar financial institutions with more than 25 feet of ground floor frontage facing public streets. Larger floor areas can be devoted to bank uses when lined with other active retail uses.

i. Provide modest ground floor setbacks where sidewalks are constrained. These setback zones enlarge the public realm and can accommodate outdoor seating, merchandise displays, or expanded sidewalk areas.

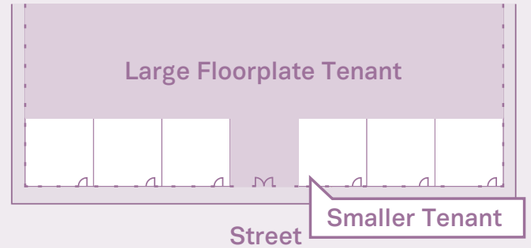


FIG. 42 Small-scale tenancies line the frontage of large floorplate uses to introduce variety and create a more engaging, diverse ground-floor environment.

j. Use placemaking gestures such as planters, merchandise displays, and landscaping that enable flexible and creative use of frontage zones and front setback areas.

k. Where retail use is not immediately feasible, design ground floors for flexibility to accommodate future retail uses.
- Ensure ground floor facades can be readily converted to retail storefronts.
- Accommodate venting and exhaust needs of future food service uses, and ensure these are directed away from streets, open spaces, and the pedestrian level.
- Zone interior power and HVAC systems to enable convenient division and sublease of interior spaces to retail tenants.

TEMPORARY USES

l. Encourage short-term use and pop-ups in underutilized/vacant ground floor spaces, or where retail use is not immediately feasible.
- Consider partnering with local arts organizations to activate and curate empty storefronts and construction sites with art installations while properties are still being developed and marketed for lease.

INTENT

Create engaging, visually interesting, and human-scaled ground floor facades.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Generally align ground floors with the plane of the streetwall above (FIG. 43).
- Slightly recessed shopfronts and entrances are an exception.
- Avoid deeply recessed ground floors along streets.
- For undercut or colonnaded ground floors, the maximum height-to-depth ratio should be 2:1.
- For ground floors with double height expression (18 feet or more), the maximum height-to-depth ratio of undercut or colonnaded ground floors should be 3:2.

b. Give the ground floor level the appearance of greater height than any floor level above. On taller buildings, especially on wide streets, double-height pedestrian zones and lobbies may be appropriate.

FIG. 43 Ground floor near Kendall Square is generally aligned with the streetwall plane.

c. For large buildings in commercial areas, emphasize the distinct character of the ground floor facade, particularly where retail or community spaces are provided.

d. Incorporate elements that create a visually rewarding and intimate pedestrian environment (FIG. 44). Depending on the character of the street and the ground floor functions, these may include:
- Angled display windows, frequent entrances, and recessed entrances.
- Special lighting displays.
- Open-ended awnings and canopies over the sidewalk.
- A high window-to-wall ratios.
- Variations in mullion patterns and incorporation of operable windows.
- Varied materials or colors.
- Higher-quality materials and detailing, with attention given to enhancing building entries and openings.
- Traditional storefront designs, or contemporary interpretations. Consider incorporating areas of solid wall, such as kneewalls, signage bands or cornices on ground floor façades, along with expressed structural piers or columns. These elements not only add detail and rhythm to the façade but also provide practical benefits, such as opportunities for tenant identity through signage and color, and interior locations for equipment, shelving, and merchandise displays.

FIG. 44 Traditional storefronts in Central Square engage the sidewalk with display windows, recessed entrances, and an elaborately-designed canopy.

FIG. 45 A vibrant mural transforms a blank side wall into a dynamic visual feature, enlivening the streetscape and pedestrian connection.

e. Avoid long, blank ground floor facades facing sidewalks and public spaces where possible. Where blank walls are necessary, they should be no longer than 20 linear feet.

f. Enliven blank ground-floor façades visible from streets and public spaces by incorporating elements such as:
- Attractive facade treatments.
- High-quality materials and textures.
- Louvers.
- Green walls.
- Wall art (FIG. 45).
- Other creative approaches that help engage and enrich the pedestrian experience.

g. Design facades to accommodate future pedestrian-oriented business identification signage such as blade signs.

h. Ensure kitchen exhaust for food service uses does not negatively impact the pedestrian experience. Exhaust systems should be located at the rear of the building, elevated above pedestrian level, or routed to the rooftop to minimize noise, odor, and visual impacts.

i. Provide generous floor-to-floor heights of at least 18 feet.

Questions to consider:
- → Does the project's ground floor visually appear taller than the floor levels above? How is this achieved?
- → For large buildings in commercial areas, how does the design emphasize the distinct character of the ground floor facade?
- → How will any necessary visible blank ground floor facades be enlivened by design choices?

INTENT

Maximize the visibility of building interiors and enhance street frontage activation.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Maximize transparency by creating facades with at least 60 to 75% transparent glass facing primary streets and public open spaces in mixed use/corridor areas. The greatest amounts of glass would be expected for retail uses with lesser amounts for office or institutional use.

b. On secondary streets, aim for at least 50% transparent glazing.

c. Concentrate transparency at the pedestrian eye level, between 2 and 10 feet above the adjoining sidewalk (FIG. 46).

d. Ensure windows serving occupied spaces are prominent features of the relevant ground floor facades.

e. For corner active use locations, extend glazing to both street or open space frontages (FIG. 47).

f. Incorporate large operable windows that can be opened to the street in sidewalk-side restaurant dining (FIG. 48).

FIG. 46 Corner store in Boston's South End features windows on both street frontages.

FIG. 47 Ames St storefront maximizes visibility into the interior by using clear, un-tinted glazing.

g. Avoid obscuring transparent storefronts, whether existing or proposed. Where opaque facades are necessary—due to programmatic or functional needs—employ creative screening strategies that provide visual interest, allow light infiltration, and create a sense of depth and texture. Examples include:
- Window display areas.
- Changing public art displays.
- Bottom-up blinds.
- Preserving areas of transparency, such as selective areas of visual porosity.

FIG. 48 Restaurant facade features large operable windows that enhance indoor-outdoor connectivity, activate the sidewalk, and support a vibrant public realm.

h. Avoid large areas of unarticulated floor-to-ceiling glass.

i. Avoid frosted glazing and application of translucent films to glass. Where such screening approaches are necessary, the facade design should provide light infiltration and maintain visual interest, with preference given to:
- Fritted glass.
- Etched or sandblasted glass.
- Any applied films should be high quality and applied to the interior glass surface.

j. Locate storage rooms, toilets, restaurant kitchens, and other back-of-house functions away from the pedestrian level on primary streets and other open spaces.

INTENT

Create well-defined building entrances that are welcoming to all.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Design building entrances as prominent features of the ground floor, making them easy to find, inviting, and accessible (FIG. 49). Examples include:
- Recessed entrances that protect pedestrians from entry doors that open outwards.
- Projecting canopies and awnings that provide shelter and protection from winter and summer conditions (FIG. 50).
- Recessed or projecting walls (FIG. 51).
- Taller door and lobby dimensions.
- Double doors.
- Architectural details.
- Integral planters, landscaping, and seating areas.
- Changes in materials.

b. Provide seamless, barrier-free access at building entrances.

FIG. 49 A canopy clearly defines the entrance to the residential building, creating a welcoming and identifiable point of arrival.

FIG. 50 A canopy provides shade in warm weather, protection from rain and snow, and visually celebrates the building's entry, enhancing both comfort and arrival experience.

FIG. 51 Restaurant entrance in Harvard Square with a unique design featuring an arched opening and a recessed storefront.

INTENT

Design commercial lobbies as semi-public extensions of the public realm that are welcoming to building occupants and visitors.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. On primary streets in mixed-use areas/squares, commercial lobbies should occupy no more than 25 feet of street frontage. In other areas, a wider lobby frontage may be acceptable.

b. Where possible, locate commercial lobbies away from street corners to preserve these highly visible locations for retail or community-serving uses that enhance street life.

c. Invite public use of large-scale commercial lobbies by providing active uses, amenities, and programming either within or adjacent to the lobbies. Examples include:
- Attractive and comfortable seating.
- Cooling centers.
- Nursing pods/family wellness facilities.
- Free wifi/charging stations.
- Public restrooms/water bottle filling stations.
- Public meeting rooms.
- Restaurants, cafes, and other retail uses.
- Fitness centers.
- Daycares.
- Community spaces.
- Art exhibition spaces.
- Creative workspaces.

FIG. 52 A pedestrian connection and office lobby incorporate highly transparent facades and clear signage, emphasizing public access and contributing to a welcoming streetscape.

d. Where feasible, provide active uses with both a street entry to strengthen connections with the public realm and a lobby-side entrance to help activate the lobby.

e. Incorporate highly transparent frontages and welcoming signage (FIG. 52).

f. Carefully balance security needs with creating a welcoming lobby atmosphere. Where possible, locate any necessary security personnel, desks, and turnstiles well within the building interior. Avoid the overt appearance of security personnel and associated features at building entrances.

g. Entrances to lobbies should be unlocked and accessible during business hours.

INTENT

Design ground floor residential frontages to directly connect with the public realm, create eyes-on-the-street, and add visual interest.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Wherever possible, design residential ground floors with individual units and frequent pedestrian entrances facing the street or open space. Include row house units on the lower levels of multi-family buildings to provide a rhythm of front doors, residential character, and a pedestrian scale (FIG. 53).

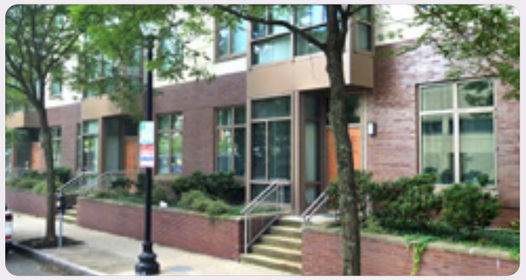


FIG. 53 The ground floor along Munroe St features frequent individual residential unit entrances.

Questions to consider:

- → Where residential uses are located on the ground floor, are individual units with frequent pedestrian entrances facing the street or open space prioritized? If not, why?
- → How does the design of front entrances ensure accessibility with the need for interior privacy?

b. Ensure ground floor residential unit entrances meet and exceed the access needs of people of all ages and abilities, and provide an inclusive and welcoming environment.

- Provide fully accessible front entrances that go beyond code requirements, while balancing the need for interior privacy. This may include elevating residential first floors above the sidewalk level to provide privacy, consistent with accessibility needs and requirements (FIG. 54). Where this occurs, provide accessible raised ramps lining the façade, with a continuous accessible passage as well as defined semi-private areas for units.
- Provide frequent entrances with stoops, landscape plantings, steps, and accessible routes as appropriate to provide access, and maintain a sense of privacy.

c. In parts of street level facades that do not contain residential units, provide uses that are active, such as amenity spaces, fitness centers, management offices, lobbies, or other actively occupied space.

d. Where residential lobbies for multi-family buildings face the street, generally space entrances no more than 75 feet apart.

e. In mixed-use buildings, establish a distinct identity for residential entrances from commercial entries. Use features such as canopies, porches, stoops, recessed entrances, and architectural facade elements to frame or emphasize residential scale and character.

f. Aim to incorporate at least 25 percent transparent glazing in residential ground floor facades that face streets and other open spaces.

g. For residential buildings with ground floor residential units, consider less differentiation between the facades of the pedestrian level and the streetwall above. Some distinction, however, in material, character of openings, and detailing of solid walls should be provided, to contribute to creating a pedestrian-friendly streetscape.

h. Where residential front yards are raised directly above the sidewalk level due to elevated ground floors, use low walls combined with steps and ramps to achieve the requisite grade change. Sloped berms are discouraged (FIG. 55).

i. Where residential buildings are set back from the sidewalk and where appropriate to the existing character of the street:

- Provide a zone of semi-public/semi-private space between the building and the street.
- Design the front setback zone as a threshold that celebrates the transition between the public space of the sidewalk and the private building interior.
- Consider design strategies such as layers of front yard plantings and garden zones, vertical gardens, porches, stoops, steps, and seating walls (FIG. 55).

FIG. 54 Coppersmith Village in East Boston balances privacy and accessibility with a continuous accessible passage to individual unit entrances.

FIG. 55 Elevated residential ground floor in Somerville incorporates a low wall with planting and steps, rather than a sloped berm.

C.2.3.7 FLOOD ADAPTATION

INTENT

In flood-prone areas, accommodate ground floor flood adaptation strategies while mitigating negative impacts on the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | **ADAPTABLE** | HEALTHY

Buildings with significantly elevated ground floors, often required for flood resilience, can present aesthetic and functional challenges that may negatively impact the public realm. To mitigate these concerns, flood resilient ground floor design should consider universal accessibility, visual connections to active uses, and the creation of lively, welcoming, and safe streetscapes. This is particularly important in commercial and mixed use areas, where the success of retail and other active ground-floor uses depends on strong visual and physical connections to the sidewalk. On residential streets, there may be greater flexibility to accommodate grade changes through well-designed forecourts, terraces, or landscaped front yards that balance flood protection with character and the pedestrian scale.

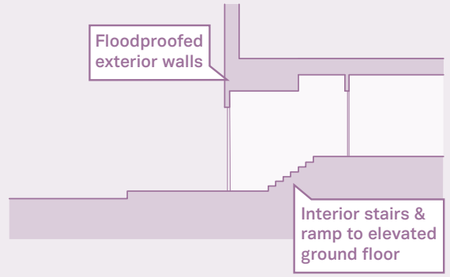
FIG. 56 This building's elevated first floor allows for the addition of plantings and an inviting streetscape.

GUIDELINES

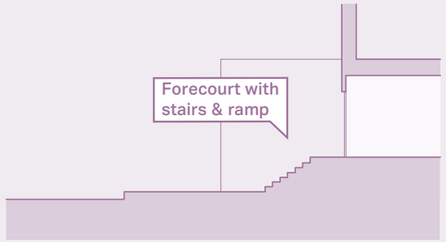
a. In buildings with elevated ground floors, consider strategies that can provide ready public access to lobbies, retail, and other active or community uses on ground floors. The most appropriate means of elevating or protecting ground floors will vary between projects and may be different from one part of a building to another. This depends on the characteristics of the site, context, building design and uses, and the designers' creativity. Possible solutions include:
- Internal circulation.
- Elevated forecourts.
- Elevated walkways, raised streets, and sidewalks (FIG. 56).

Refer to Article 22.000 of the Zoning Ordinance for required flood resilience standards.

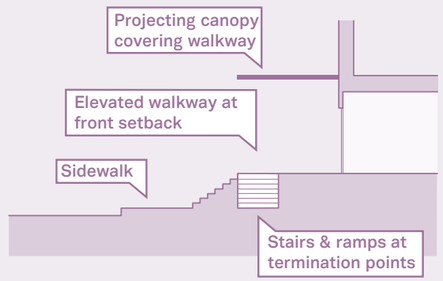
INTERNAL CIRCULATION



ELEVATED FORECOURT



ELEVATED WALKWAY



RAISED STREET & SIDEWALK

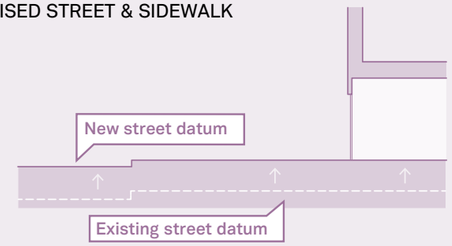


FIG. 57 Strategies for public access to elevated ground floor spaces in flood-prone areas.

b. For buildings using internal circulation as a strategy to provide public access to lobbies, retail, and other active or community uses on ground floors:
- Locate lobbies and other entrance spaces at sidewalk level. A sidewalk level entry with internal circulation provides the strongest visual connection between the public realm and the building interior (FIG. 56).
- Use steps and ramps or elevators inside lobbies to provide access up to ground floor level and to general building circulation.
- Construct street level lobbies and other spaces with flood-tolerant materials and/or flood-proof exterior walls up to the appropriate Long-Term Flood Elevation (LTFE), and design such spaces to be protected by passive flood barriers.

c. Where grade changes of 3 feet or more above the sidewalk are unavoidable due to flood mitigation needs, consider specific strategies to lessen negative impacts on the public realm. Examples, depending on location and use, include:
- For buildings built to the sidewalk, provide layered design treatment and facade articulation of the base of the building to help bring the perceived height of the ground floor down to grade.
- For buildings set back from the sidewalk, provide a pedestrian-friendly interface at sidewalk level with appropriately scaled stairs and ramps, porches for residential buildings, benches, hardscape areas, landscaped terraces consisting of low vertical walls, low and visually permeable fences, and/or horizontal and vertical landscaping. Seating areas for outdoor dining, and public art, can also help create vibrant streetscapes.
- Avoid the use of blank walls and fences more than four feet above grade.

d. In mixed-use areas with continuous retail, avoid setting back front facades to accommodate elevation transitions.

e. In mixed-use areas, accommodate elevation changes within the building as exterior stairs and ramps may create visual and physical barriers.

ELEVATED FORECOURT

f. Use exterior ramps and steps to provide access from sidewalk level up to a forecourt at the same level as the building's elevated ground floor.

FIG. 58 Elevated walkway provides access to an elevated ground floor cafe in Portland, ME.

g. Design ramps and steps as integral components of the project's architectural and landscape design, such as elements of a forecourt or other feature that is open to the street.

h. In general, locate ramps and steps behind the primary plane of the building's streetwall.

ELEVATED WALKWAYS, RAISED STREETS & SIDEWALKS

i. Where appropriate, consider elevated walkways, and streets and sidewalks that are raised, in areas such as Alewife, where flood risk is high, and large-scale and multi-site development is expected to occur. (FIG. 58). In such cases, area-specific studies and guidelines apply and should provide additional details.

INTENT

Design streetwalls to create a sense of "outdoor rooms" within the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Streetwalls should frame Cambridge's streets, squares, and parks as room-like, three-dimensional volumes. Buildings should face the streets they address to help define a strong, linear streetwall. The design of a building's streetwall should add to the architectural character and liveliness of the public realm. Important architectural features, such as main entrances, windows, and details that contribute to a rewarding pedestrian experience, should be designed and located toward the primary street frontage. More utilitarian facades may be suitable for side and rear elevations.

GUIDELINES

a. On retail and commercial streets, locate the entire streetwall façade of buildings with frontages less than 100' at the sidewalk edge, property line, designated build-to line, or in alignment with adjoining buildings.
- Well-defined entry forecourts, plazas are exceptions.
- In areas where existing sidewalks are too narrow to accommodate expected pedestrian volumes, consider setting the building façade back from the property line to extend the sidewalk zone and enhance comfort, accessibility, and circulation.

b. For buildings with frontages greater than 100 feet on retail/commercial streets, locate at least 70% of the streetwall facade at the sidewalk edge, property line, designated build-to line, or in alignment with adjoining buildings.

c. In general, orient streetwalls parallel to the street they face. Curved or angled shapes in plan may be appropriate in specific contextual conditions and should be reserved for unique moments or programmatic elements.

FIG. 59 Buildings that anchor the corner help define the block and create a strong visual presence along both streets.

d. At block corners, generally locate streetwalls on property lines, or designated build-to lines to anchor and frame intersections (FIG. 59).

e. Where retail/commercial streets intersect with residential streets, the corner of the block should generally be occupied by a building with facades located on the edge of both street sidewalks.

f. On residential streets where buildings are often separated by side yards and set back from the sidewalk, generally align front facades with each other to create an intermittent, but legible, streetwall.
- Align facades to create the sense of a vertical plane, parallel to the street, that distinguishes front yards from side yards and defines the facade-to-facade street width.
- Provide continuous curbside street trees to further define the street. See E.3.1 on page 207.

g. Relate streetwall heights and design to the scale of any adjacent historical buildings.

h. Provide streetwall heights that harmonize with the widths of the streets and other open spaces they address; typically, a minimum of 4 to 6 floors tall to help create a sense of enclosure. Taller streetwalls may be appropriate where buildings address large open spaces and wide streets.

i. Generally design streetwalls to be a single primary vertical plane. Streetwalls that tilt toward or away from the street or other public open space may be appropriate on rare occasions in response to specific contextual conditions or environmental considerations.

j. Avoid stepping the streetwall back from the ground floor facade below. Instead, provide horizontal articulation using elements such as cornice lines, reveals, or subtle changes in plane to differentiate the streetwall facade from the ground floor/pedestrian level.

Questions to consider:
- → If there are adjacent historical buildings, how does the streetwall height and design relate to their scale?
- → If the frontage is greater than 100 feet on a retail/commercial street, does at least 70% of the facade align with the adding buildings or property line?
- → What are the justifications for step backs between the ground floor and street wall? Can horizontal articulation elements be used instead?

k. Articulate and design streetwall facades to add scale and visual interest to the public realm. Design approaches and details to consider include:
- Organizing streetwalls by a pattern of expressed structural bays, window openings, and/or surface articulation (FIG. 60).
- Using changes of material, scale, or the design and amount of articulation and relief to emphasize the distinction between intersecting streets that differ in size and character.
- Using mullion profiles and patterns, depth of windows, and sun shading to add texture and visual richness to the facade.
- Incorporating focal elements to respond to significant visual axes, emphasize significant corners, express changes in interior program, or articulate primary building entrances.
- Incorporating a cornice and/or the elaboration and differentiation of the streetwall's top floor to frame the spatial volume of the street by emphasizing its upper boundary.

l. Avoid visible vents (kitchen, bathroom, laundry, etc.) on streetwalls that face primary streets or other public open spaces.

m. In residential buildings, consider using design features that reinforce the residential character of the streetwall facade, such as balconies, bays, railings, and/or operable windows (FIG. 61).

FIG. 60 The structural bays are expressed on the streetwall facade of the 60 First St building.

FIG. 61 Operable windows and balconies add residential character to streetwall facades.

INTENT

Create distinctive, well-integrated towers that contribute to the city skyline while minimizing impacts on adjacent neighbors and the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Depending on the building type and program, the upper portions of tall buildings may take the form of towers with smaller floor plates, or bulkier buildings with floor plates similar in size to those of the streetwall zone below (FIG. 63).

The massing and façades of tall buildings should be designed to draw the eye upward and, where height and location allow, serve as visual landmarks within the surrounding context. Tall building design should also thoughtfully address impacts on the public realm, including overshadowing of open spaces, reduced access to daylight and sky views, pedestrian wind comfort, and the need to maintain a human-scaled experience at street level.

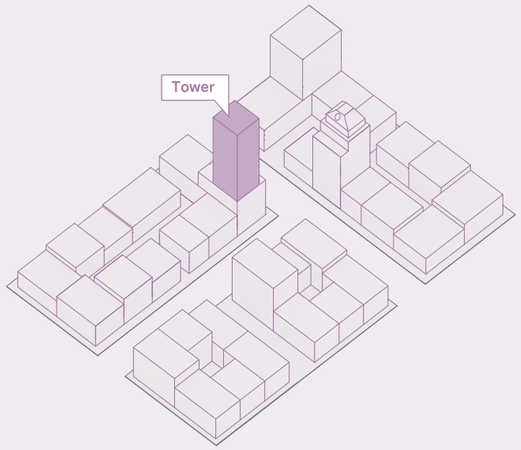


FIG. 62 Towers are the portion of a tall building above the streetwall that define spaces at a larger scale, and adds visual interest to distant views.

GUIDELINES

a. When designing towers and the upper volumes of buildings more than 85 feet tall, consider strategies to mitigate their sense of height and bulk.
- Generally provide the upper portions of high-rise buildings with smaller floor plates than the streetwall floors below.
- Generally step back the upper portions of taller buildings (those more than a third taller than their surroundings from streetwall facades below. Stepbacks may occur at a higher level, or not at all, when buildings face large open spaces or Corridor Streets such as Alewife Brook Parkway or Massachusetts Avenue.
- Especially where buildings are both tall and broad, mitigate their sense of bulk by breaking up the visual continuity of upper floors and/ or by giving them a different facade treatment than the streetwall floors.
- Articulate towers to avoid a monolithic appearance. Design strategies should emphasize slender, vertically-oriented proportions (FIG. 63).
- Avoid “slab” volumes that make the building appear bulky.

b. Tower facades should generally be vertical. Tower facades that tilt toward or away from streets or other open spaces should only be considered in response to specific contextual conditions or climate considerations.

c. In the rare circumstances where a cantilever is deemed appropriate, they should highlight specific programmatic elements such as entrances or where they provide a clear and substantial benefit to the public realm.

d. In appropriate locations, consider extending a portion of the facade plane from the upper floors to the ground to create a strong vertical emphasis, architectural clarity and contribute to a more memorable streetscape.

e. Utilize design strategies to articulate tower facades and establish harmonious relationships with the surrounding environment. Examples include:
- Differentiating towers and upper floors from streetwall floors by differences in the scale of massing elements, or change in materials, fenestration patterns, proportions, color, or other means (FIG. 64).
- Orienting high-rise buildings so that their narrower facades face the primary street or open space (FIG. 65).
- Using massing that presents different profiles to different vantage points.

FIG. 63 Long, vertical fins on taller buildings emphasize height and help break up the horizontality of wider buildings.

FIG. 64 Main St building differentiates the towers from historic streetwall floors, preserving human scale at the street level.

FIG. 65 Residential tower in Cambridge Crossing is oriented with a narrow facade that faces the street.

C.2.6 TOP

INTENT

Design building tops to complement the overall building composition and contribute positively to the Cambridge skyline.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Design building tops as an integral part of the overall architectural composition, not as an afterthought.

b. Depending on design intent, program, and context, the design of building tops may blend with the facade below or be differentiated from the floors below. Options include:
- Designing building tops to read as the logical extension of the architectural form or facade pattern below.
- Designing building tops to stand out from the tower below.
- A combination of the above.

c. Step back building tops that are unique in material and design from the facades below a minimum of 5-10 feet (FIG. 66).

d. To the extent possible, consider how future cellular installations may be placed at the top of the building without detriment to the architecture. For example, a blank wall of a setback mechanical screen may be such a location.

FIG. 66 The building top of 20 Cambridgeside Place is thoughtfully set back from the building's primary façade, creating a more distinctive and sculpted rooftop profile.

C.2.15.2 on page 114 for further details on the design of rooftop mechanical penthouses.

C.2.7 ROOFS AND TERRACES

INTENT

Design roofs and terraces to manage stormwater, minimize urban heat island effects, and where possible, provide usable open space.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Design roofs to be solar-ready. Mechanical equipment and penthouses should be compactly arranged and positioned to maximize the contiguous unshaded area available for photovoltaic arrays.

b. Consider non-intensive, short intensive and extensive green roofs, white roofs or cool roofs with a minimum initial Solar Reflectance Index (SRI) of 82 for low-sloped roofs.

Article 22 of the Zoning Ordinance establishes standards for the development of green roof systems on new and existing buildings for the purpose of stormwater management, heat mitigation, and access and enjoyment by occupants of a building.

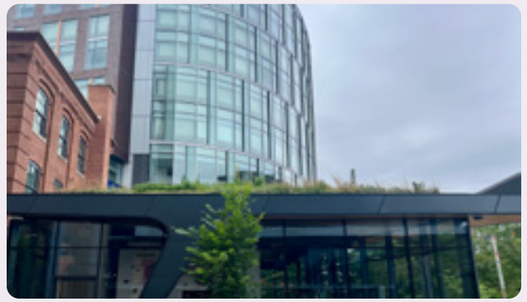


FIG. 67 Building features a green roof visible from the street.

c. For other buildings or retrofits, explore roof options to mitigate urban heat island (UHI) effects, reduce building energy demand, and for stormwater management, including applying white roofing products, installing photovoltaics (PV), and/or cool roof options (i.e., green/blue/purple roof technologies) (FIG. 67).

d. Where possible, design rooftops and terraces at building stepbacks as open space amenities for the benefit of residents, workers, and the public.

e. Where appropriate, consider the use of rooftops for food production or rainwater collection for reuse.

INTENT

Avoid pedestrian connectors between buildings that remove pedestrian activity from streets and have a negative impact on the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Pedestrian connectors are enclosed, non-publicly accessible structures that link buildings. In Cambridge, they are generally discouraged as they can detract from street-level activity and reduce vibrancy in the public realm. To preserve an active and engaging pedestrian environment, pedestrian connectors should only be considered in exceptional circumstances, where they clearly support urban design goals without compromising the vitality of the streetscape.

GUIDELINES

a. Avoid pedestrian connectors over public ways.

b. Avoid pedestrian connectors between multiple tenants/uses in different buildings.

c. Within blocks, preference should be given to providing ground level public passage at selected locations.

FIG. 68 A highly transparent connector with elegant lines and details creates a light, refined presence.

d. Where pedestrian connectors are unavoidable for programmatic and functional reasons, preference should be given to locations removed from primary streets and open spaces, such as interior drives, alleys, or pedestrian walkways to minimize their impact on the public realm.

e. When unavoidable, pedestrian connectors should be thoughtfully designed to enhance the architectural experience rather than detract from the public realm. Approaches may include:
- Treating the connector as a sculptural element or object of art.
- Using high transparency to minimize its visual presence (FIG. 68).
- Designing it as a threshold or framing device that emphasizes the spatial relationship between buildings (FIG. 69).

f. Design pedestrian connectors to minimize visual impacts and allow light and sky views:
- Set back a minimum of 35 feet from public streets and other public open spaces to maintain a clear and unobstructed streetscape.
- Provide at least two stories of vertical clearance above ground to preserve openness and avoid creating a tunnel-like effect.
- Limit bridge width to 20 feet and restrict height to a single story to ensure visual lightness and structural elegance.
- Incorporate transparency to reduce visual bulk and maintain visual connections across the public realm.
- Include an attractive soffit or underside that enhances the pedestrian experience below.

g. Where multiple connectors are provided:
- They should be spaced apart by double their greatest width.
- They should be placed so as to create architectural interest and to allow a reasonable amount of light to reach the ground.

FIG. 69 The Echelon Seaport bridge is a transparent, sculptural connector that links the development's towers while preserving light, air, and views.

C.2.9 FACADE DESIGN & ARTICULATION

New buildings in Cambridge should create an engaging, visually rich, and legible public realm by providing variety while fitting in well with their surroundings. Buildings should balance the expression of individual uniqueness with positive contributions to the street and other open spaces they address.

As is often the case, new buildings are often larger than their neighbors and constructed with different materials. Despite these differences, façade design should strive for compatibility with nearby buildings. Compatibility does not require imitation of specific styles, motifs, or details, but rather awareness of the ways that façade patterns, articulations, and details can enrich building character and create a sense of human scale.

C.2.9.1 ENGAGING FACADES

INTENT

Create human-scaled facades that are visually interesting and relate to the surrounding context.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Avoid flat, undifferentiated facades. Provide facades with depth and texture to engage the eye, enrich the pedestrian experience, and respond to contextual conditions. Consider using architectural elements such as:
- Bay windows, columns, piers, and pilasters.
- Projecting windows and window surrounds.
- Window reveals and changes in plane that create shadows and articulate massing.
- Shading devices.
- Shadow boxes.

b. Consider providing a facade rhythm and variation to help mediate between the building scale and pedestrian scale, and enhance visual interest. Examples include:
- Expressing structural bay widths of 16 to 25 feet in predominantly residential areas.
- Expressing structural bay widths of 26 to 50 feet in commercial and institutional areas.

FIG. 70 The Moderna HQ building on 325 Binney St features window openings that add depth and shadow to the facade.

c. Use details and embellishments to refine and enrich facades (FIG. 71). Examples include:
- Masonry string-courses, lintels, sills, and trim.
- Changes in plane to produce shadow lines.
- Variations in texture, color, and joint patterns.
- Balcony railings.
- Sun screening devices.

d. Avoid broad expanses of blank streetwalls facing streets and public spaces, where possible.

e. If blank street and public space-facing facades cannot be avoided, animate them through the use of design treatments, such as:
- High-quality materials and textures.
- Louvers.
- Green walls.
- Wall art.

f. Detail and articulate windows to enhance the building's appearance.
- Incorporate variations in mullion widths and pattern, solid panels within openings, and the articulation of wall surface at the periphery of openings.
- Group windows to establish facade rhythms and emphasis at important locations, such as entrances, corners, or building bays.

g. Design windows to convey depth and visual richness.
- Window openings should include a minimum reveal of 4 inches between the building façade and the glazing (FIG. 70).

h. Avoid horizontal strip windows except in industrial buildings.

i. Facades should relate to elements of the design of historically or architecturally significant building facades in the context.

FIG. 71 Brick details, recessed windows with wood infill panels, and railings add rich detail and visual depth, creating an engaging façade.

INTENT

Enhance building energy performance and thermal comfort by incorporating passive facade design strategies.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | **ADAPTABLE** | **HEALTHY**

GUIDELINES

a. Where the site and urban context allow, consider the site orientation, building form, and materials in relation to the sun to manage solar heat gain and daylighting of interior spaces.

b. Design building envelopes to be air-tight with low heat transmission, low solar heat gain, and natural ventilation. Examples include:
- Operable windows in residential and community buildings, and where possible, commercial buildings to allow for natural ventilation.
- Solar shading devices to reduce heat gain through glass—horizontal shades and louvers on south elevations, and vertical fins and shades on east and west elevations (FIG. 72).
- Daylighting, including use of light shelves to assist with daylighting interior spaces while controlling for unwanted glare and heat gain.
- High performance glazing, such as triple glazed units.
- Light colors.
- Uninterrupted insulation.

FIG. 72 20 Cambridgeside Place features shading devices around windows that help enhance building performance by reducing cooling needs for tenants.

c. Include design features that leverage vegetative systems, such as green roofs and green walls for cooling and water management. To ensure durability and longevity of green wall systems, consider:
- Selection of plant species according to macro- and micro-climate conditions.
- Use of ground or planter-based vine covering or pocketed green wall armature.
- Ongoing maintenance and replacement needs when choosing a system.

d. Use windows with low-emittance (low-e) glass and thermally-broken frames, especially in building retrofit projects.

INTENT

Add visual interest and residential character by integrating balconies and bay windows into the design of buildings.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Balconies and bay windows can add variety and human scale, as well as provide outdoor space for occupants and enhance connections with the public realm.

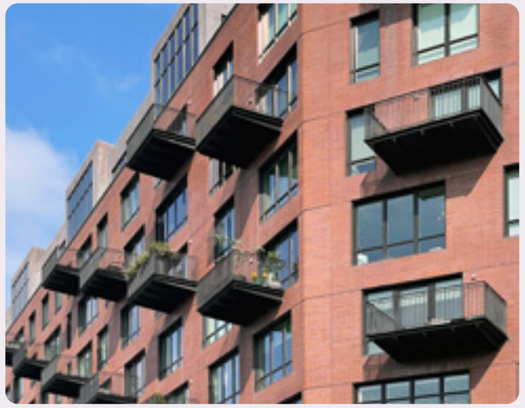


FIG. 73 Atelier 505 condominiums in Boston features balconies that create a rhythm along the building facade.

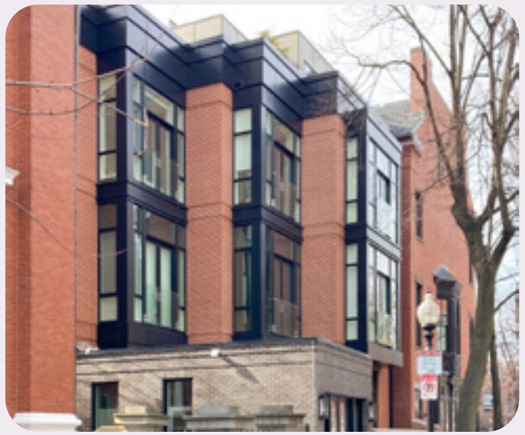


FIG. 74 Bay windows of this residential building feature windows on the sides in addition to the front face.

GUIDELINES

a. Use protruding, inset, or Juliet balconies, and bay windows at upper floors. Balconies with a depth of at least 4 feet provide greater functionality and usability for occupants.

b. Consider creating a rhythm or repetition of balconies and bays to help articulate building facades (FIG. 73).

c. Design bay windows with windows on the sides, as well as front facing (FIG. 74).

d. Use materials and details that are consistent with the overall design of the project.

e. Consider the design of the underside of projections as part of the overall building aesthetic.

INTENT

Use clear, well-designed, pedestrian-oriented signs that are compatible with building facades.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Avoid covering architectural features, such as cornice lines, windows, and architectural details with signage.

b. Consider the street elevation, and where appropriate, align signage with architectural elements of adjacent façades, such as cornices, transoms, or storefront frames to create visual continuity and reinforce the rhythm of the streetscape (FIG. 75).

FIG. 75 Projecting signs in Harvard Square line up at regular intervals along building facades and provide human scale.

c. Consider use of traditional signage bands, especially in commercial districts and historical areas.

d. Consider materials and fabrication types that complement adjacent storefronts.

e. Ensure window signs do not block views into the interior.

f. Ensure A-frame signs do not interfere with the sidewalk Pedestrian Zone.

g. When designing new buildings, consider construction materials in key locations to accommodate retail tenant blade signs. Ensure that ground floor façades include durable and adaptable surfaces that allow for secure sign installation.

h. Conceal wiring for illuminated signage.

i. Ensure all signage is compliant with ADA requirements for color contrast and text size.

Refer to Article 7 of the Cambridge Zoning ordinance for signage design standards and requirements.

INTENT

Select high-quality, durable, and sustainable materials that enrich the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

High quality, durable façade materials convey a sense of civic pride, permanence, and long-term investment in the built environment. Selecting sustainable materials further supports these values by minimizing environmental impact, reducing energy demand, and contributing to broader community goals for climate resilience and sustainability.

GUIDELINES

a. Use high-quality, durable materials with proven records of long life-cycle, low maintenance, and low environmental impacts. Examples may include:
- Brick, concrete masonry, terracotta, and stone.
- High-performance glazing.
- Clear, un-tinted glazing.
- Wood.
- Low embodied carbon concrete.
- Metal Panel.
- Pre-manufactured panels of cementitious, concrete, or composite materials, particularly in residential buildings.

b. Use building materials that are certified for sustainable and health-conscience characteristics such as (FIG. 76):
- Low embodied carbon.
- Light-colored or high SRI materials.
- Reusability.
- Recycled content.
- Renewable sources.
- Low toxicity.
- Low content of Volatile Organic Compounds (VOCs).

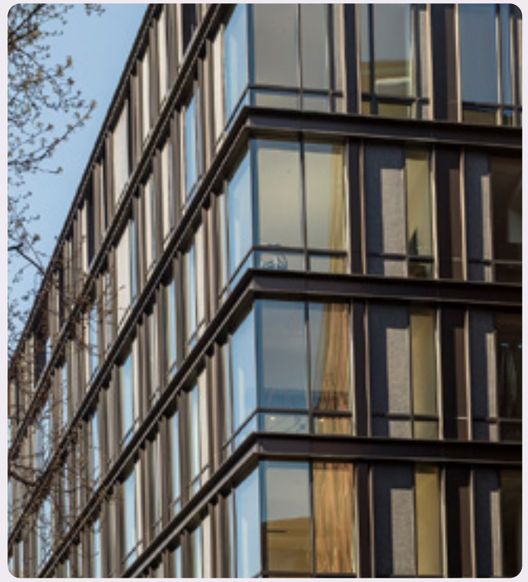


FIG. 76 The 10 Farnsworth building features high quality facade materials, including clear glazing and metal.

c. Ensure any panelized systems are constructed of durable and dimensionally stable materials, with the ability to achieve precise and consistent joint details. Avoid large, undivided panels and exposed fasteners.

d. Avoid the use of materials and finishes that are prone to wear and tear and require frequent maintenance, such as:
- Thin cementitious panels, especially used in large expanses.
- Vinyl siding that warps or fades.
- Mirrored glass and other materials that cause excessive glare.
- Exterior Insulation and Finish Systems (EIFS).
- Colored glazing.

e. Material changes should generally coincide with massing changes or changes in plane.

f. Enliven large areas of uninterrupted wall with smaller scaled cladding elements and their joint patterns to create a visually appealing texture.

g. Consider the use of light and/or warm colors. Avoid extensive use of dark colored materials that can appear dull in the New England climate.

h. Select colors that complement the surrounding context and the building's architecture. Consider creating a cohesive appearance and limiting the number of colors used to reduce visual clutter.

FIG. 77 A combination of transparent glazing, infill panels, and shadow boxes can balance visual connection with building energy performance. This material choice has both texture and pattern.

GLAZING

i. Strive to select ground floor glazing with a Visible Light Transmission (VLT) of at least 65% and a Visible Light Reflectance (VLR) of less than 15%. Clear, non-colored, low iron glass without reflective coatings is preferred.

j. For upper floors, the selection of glazing should balance energy performance with the highest possible VLT and lowest possible VLR (FIG. 77).
- Upper floor glazing should have a VLT of at least 50% and a VLR of less than 30%. Clear non-colored glass is preferred.
- Before building mechanical systems are designed, the energy performance of glass should be established in consideration with appearance and bird safety.

k. Avoid the use of spandrel glass. Instead utilize shadow boxes to create any necessary glass opacity for curtain wall facades.

l. Minimize bird collisions with glazing.
- Consider a wide range of high- and low-tech solutions as appropriate to the specific installation, including bird-safe materials, glass coatings visible to birds but not to human vision, frit patterns, limiting the size of glazing units, shading devices and screens, and recessed balconies.
- Consider meeting the requirements of LEED's Bird Collision Deterrence credit.
- Refer to the American Bird Conservancy's Bird Friendly Building Design Report for further information about bird-safe building design.

FLOOD RESISTANT MATERIALS

m. Use flood-resistant construction materials, and methods, below the Long-Term Flood Elevation (LTFE).
- Use materials that can withstand prolonged contact with flooding, survive wetting and drying, and be cleanable to remove harmful pollutants. Examples of flood resistant exterior material include concrete block, cast-in-place concrete, cast stone, or face and glazed brick.
- Dry floodproof a structure by sealing walls with waterproof coatings, waterproof membranes, or masonry/concrete.

C.2.11 HISTORICAL BUILDINGS AND ADAPTIVE USE

INTENT

Preservation and reuse of historically or architecturally significant buildings should be sensitive to their form and character.

CORE VALUES

INVITING | **ECLECTIC** | **CONTEXTUAL** | CONNECTED | ADAPTABLE | HEALTHY

The generally well-proportioned, human-scaled, and carefully-detailed facades of Cambridge's historical buildings enrich the city's urban fabric. Preservation and adaptive reuse of these buildings connects Cambridge's history to future generations.

GUIDELINES

a. Preserve and maintain historical buildings, whenever possible.

b. When appropriate, distinguish additions from historical buildings through (FIG. 78):
- Massing strategies, such as step-backs.
- Reveals.
- Facade choices, such as materials, wall systems, cladding, or window type.
- Changes in color.

c. Make material and color selections that complement historical buildings.

d. Preserve and restore significant original building details and existing building materials, where applicable (FIG. 79).

FIG. 78 Frost Terrace on Mass Ave has a complementary but distinct character to the existing historical buildings.

e. Use best practices in restoration and maintaining historical structures.

f. Where original materials or components need to be replaced, use traditional building elements with the same architectural features, material quality, and craftsmanship. If not feasible, substitute with style-neutral high-quality components and materials compatible with the architecture and historical character of the building and district.

g. Where new development is proposed on an existing lot shared with an historical structure, the new building should, if possible, be distinguished as new construction through setbacks, recesses, reveals, materials, architectural details, and form (FIG. 80).

FIG. 79 The restoration of 907 Main St preserves original details and materials.

FIG. 80 Development in Kendall Square clearly distinguishes itself from the adjacent historical structure through the use of distinct materials, such as glass and steel.

Demolition of any building 50 years or older citywide may be subject to Cambridge Historical Commission review. Demolition of or alterations to designated historic properties require approval.

Consultation with the Cambridge Historical Commission is recommended, especially for developments in Historic and Neighborhood Conservation Districts.

C.2.12 SUSTAINABLE BUILDING DESIGN

INTENT

Design, construct, maintain, and operate buildings to use energy and natural resources efficiently, and enhance occupant health and comfort.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · **ADAPTABLE** · **HEALTHY**

GUIDELINES

a. Pursue strategies consistent with (or obtain certification) from Passive House Institute's rating system, Leadership in Energy and Environmental Design (LEED), Enterprise Green Communities, Living Building Challenge, or other evolving environmental efficiency standards.

b. Strive to meet or exceed Cambridge's Net Zero Emissions targets for the project building type.

c. Incorporate building performance simulation early and throughout the design process for iterative analysis that informs design decisions

d. Where practical, adapt and reuse existing buildings and materials.

e. Select recycled and otherwise environmentally appropriate building materials and methods, and/or locally sourced materials in new construction and major redevelopment of existing buildings. C.2.10 on page 102.

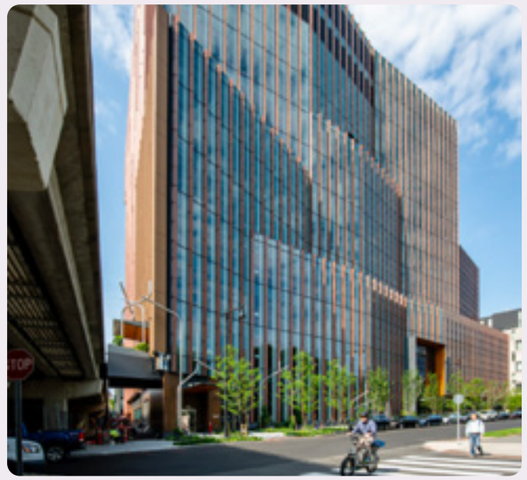


FIG. 81 The vertical fins on 411 Morgan Ave minimize glare and solar gain, while its orientation optimizes daylighting.

f. Reduce the need for mechanical equipment. Examples include:
- Use of passive design strategies (FIG. 81). C.2.9.2 on page 99.
- Use of thermal mass strategies to minimize the impact of high exterior temperatures on building occupants and to reduce cooling energy loads.

g. Use energy-efficient HVAC systems and consider using all-electric HVAC and cooling systems.

FIG. 82 King Open/Cambridge Street Upper School in Cambridge incorporates rooftop PV panels.

h. Incorporate on-site power generation (e.g., solar PV panels), and energy storage and/or utilize geothermal district energy systems where feasible (FIG. 82).

i. Consider highlighting the sustainability features of a project through architectural expression, landscape design, interpretative signage, etc. Refer to LEED's Innovation: Green Building Education Credit for further information about public education opportunities.

HEALTH AND WELLBEING

j. Incorporate opportunities to improve the wellbeing of building users. Examples include:
- Highly accessible and visible stairs located close to building lobbies that encourage daily use and physical activity. Stairs that are prominently located, well-designed with inviting materials, colors, details, and filled with natural light are most likely to support regular use.
- Indoor amenity areas and common rooms in residential buildings that support social activities and recreation.
- Outdoor recreation and garden areas for residential buildings to encourage physical activity, play for all ages and abilities, social interaction, and local food production.
- Consider seeking WELL certification.

Refer to the Green Building Requirements in Section 22.20 of the Zoning Ordinance for sustainable design standards..

Refer to the requirements of the City's Fossil Fuel Free Ordinance.

C.2.13 CLIMATE ADAPTATION AND RESILIENCY

INTENT

Design buildings to be resilient and adaptable to a changing climate.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | **ADAPTABLE** | HEALTHY

GUIDELINES

a. Incorporate the most up-to-date projections of climate change impacts over the project's anticipated lifespan, including increases in temperature and precipitation, and risk of future flooding.

b. Utilize an integrative approach to climate change resilience that accounts for the existing context and promotes the other citywide and area-specific urban design objectives.

c. Use design approaches to mitigate the anticipated impacts of heat on buildings and sites (FIG. 83). Examples include:
- Site landscaping and building design features that provide direct cooling to occupants of the site and any abutting public streets, reduce heat gain on the building, and mitigate the urban heat island effect.
- Passive design approaches that increase a building's ability to withstand heat gain and maintain interior comfort in the event of a power outage or other extreme event.
- Interior cooling centers where occupants and/or other community members can seek shelter during extreme heat events.

Refer to the Flood Resilience Standard in Section 22.80 of the Zoning Ordinance to address the long-term impacts of increased flooding.

Refer to the Green Factor Standard in Section 22.90 of the Zoning Ordinance to address the urban heat island effect (UHI).

FIG. 83 Finch Cambridge uses heat exchange systems, highly insulative materials, and an airtight envelope, and earned a Passive House certification.

d. Use resilience strategies that have environmental co-benefits. Examples include:
- Passive building envelope design, which promotes occupant comfort during extreme heat and resilience from power outages due to storms while also reducing energy use and greenhouse gas emissions (FIG. 84).
- Intensive vegetation at grade and on roofs, which provides cooling benefits while improving stormwater management.

FIG. 84 Light-colored materials and sun shading devices are passive design strategies that can help mitigate heat and maintain occupant comfort during power outages and extreme events.

Additional resources include:
- → Resilient Cambridge Plan (including Climate Resilience Toolkits)
- → The Climate Change Vulnerability Assessment
- → Preparedness plans for Alewife and The Port

C.2.14 LIGHTING

INTENT

Provide the minimum outdoor lighting necessary for safe and comfortable use of outdoor areas, while minimizing negative environmental impacts.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Carefully consider lighting at first floors, including the lighting of stoops, entrances, glazed retail spaces, and covered parking areas with open sides, and the locations and intensity of exterior lighting at first and second floors for pedestrian safety and aesthetic quality.
- On commercial/retail streets, exterior lighting (when it occurs) should be arranged to illuminate the first-floor facade.
- On residential streets, exterior lighting should be primarily located at building entrances.

b. Avoid any exterior lighting above the level of the third floor.

c. Utilize fully shielded, downlit, dark sky compliant light fixtures, where possible, to reduce glare and light trespass.

d. Avoid uplighting.

e. Avoid excessive contrast in lighting levels and glare.

f. Utilize lighting with a warm color temperature. Color temperatures that create a warm and welcoming pedestrian environment are between 2700 - 3000K (FIG. 85).

g. Select light fixtures that complement the architectural character of the building.

FIG. 85 Outdoor lighting at a residential building uses a warm color temperature.

In addition to their principal use, buildings include essential service areas and systems that support their operation and the wellbeing of occupants. Utilities, services, and functional building elements include, but are not limited to

- Parking and loading entries.
- Trash and recycling.
- Mechanical Equipment.
- Utility Equipment.
- Antennas.

The location and design of services, utilities, and functional elements should not be an afterthought. They should be well-integrated into the overall design of buildings to minimize negative impacts.

INTENT

Design parking, loading, and servicing areas, including trash and recycling, to minimize impacts on the public realm and neighbors.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Design parking entries, loading bays, trash/recycling storage areas, and servicing entrances as integral components of building facades.
- Size loading bays to fully enclose and screen vehicles.
- Avoid loading and servicing areas that exceed two bays or 30 feet.
- When three or more service bay doors occur together, incorporate occupied ground-level spaces with windows to minimize dead zones along streets and support walkability.
- Use architectural doors, screening, or louvers that complement the building's facade design (FIG. 86).
- Avoid deeply recessed parking and loading doors.
- Use closable doors that remain closed when vehicles are not actively entering or exiting.

b. Where possible, provide landscaping and continuous tree canopy along areas adjoining loading and service areas – e.g., the adjacent sidewalk, and between any breaks between loading bays (FIG. 87).

c. Provide proper pedestrian warning systems for vehicles entering and exiting

d. Minimize noise impacts of all equipment.

e. Ensure trash/recycling is handled to avoid impacts (noise, odor, and visual quality) on neighbors.
- Contain all trash/recycling storage and handling within the building.
- In constrained spaces, consider using trash compactors to reduce the volume of waste materials.

FIG. 86 Loading dock door at Harvard Kennedy School complements the architecture of the building.

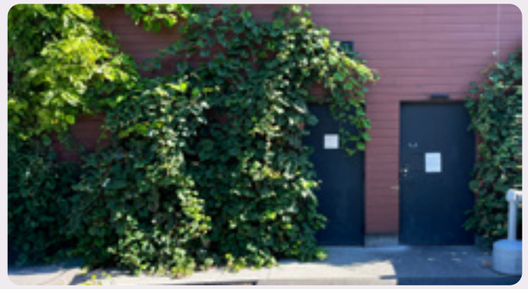


FIG. 87 Retail pavilion building in Cambridge Crossing incorporates greenery along the walls adjoining service doors.

INTENT

Minimize the negative impacts of mechanical equipment, utilities, and other functional elements on streets, other public spaces, and on residential areas.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Right-size mechanical space and equipment based on current and future tenant needs.

b. Where possible, locate mechanicals and utility equipment in enclosed locations within the building, such as interstitial floors or basements (if it does not violate the Flood Resilience Standards), rather than on the roof.

c. Avoid placing mechanical rooms along primary streets. They should be located on minor streets or in block interiors where possible.

ROOFTOP MECHANICAL SYSTEMS

d. Where rooftop mechanical equipment cannot be avoided, reduce its visual bulk:
- Site and locate rooftop mechanical equipment near the center of the roof to minimize visual impacts, where possible.
- Use roof wells to conceal and screen mechanical equipment from view.
- Consider potential views from surrounding taller buildings, particularly residential buildings, in rooftop design. Green roofs and roof gardens can enhance the rooftop appearance of buildings.

Where rooftop mechanical equipment is proposed, view studies from significant distant vantage points and affected residential neighborhoods should be provided to demonstrate how equipment will be screened.

If mechanical equipment is required to be exposed, appropriate documentation citing relevant code requirements or standards should be provided with the application.

Select mechanical equipment with low sound levels, meeting all City, State and Federal noise regulations.

FIG. 88 Building on Ames St uses a curved wall to screen mechanical equipment, while adding visual interest to the building top.

e. Screen any exposed mechanical equipment, elevator overruns, and service areas from view and integrate it into the design and character of the building. Design strategies may include:
- Integrating rooftop mechanical screening into the building massing using similar materials and detailing. This would involve designing the screening as an extrusion of, or compatible cap to the building below.
- Stepping back mechanical penthouses/ screens that are unique in material and design from the facades below a minimum of 5-10 feet, treating them as separate volumes with distinct architectural expression (FIG. 87).
- Including a parapet or cornice around the building top to shield low ducts and equipment on rooftops from view.
- A combination of the above.

f. To the extent feasible, limit the height of mechanical screens or penthouses to less than 40 feet.

g. When rooftop equipment is required to be exposed by Code or is typically carried above screening (e.g. chimneys, air exhaust stacks), thoughtfully arrange and design the equipment as an integral part of the building's roofscape, contributing to an interesting skyline (FIG. 89).

FIG. 89 Exposed mechanicals at the Harvard Art Museum are thoughtfully designed, creating an interesting skyline.

UTILITIES & FUNCTIONAL ELEMENTS

h. Locate utility functions such as gas, electric, and water meters, transformers, switchgear, and fire safety equipment where they will be least visible from streets and other open spaces.
- Where possible, conceal utilities within the building, underground, or in side or rear yard setbacks, recessed within building alcoves.
- Plan for utilities early in the design process to minimize their impacts.

i. Design utilities to minimize risk and disruption from flooding. Consider waterproofing, back-flow preventers, and shutoffs, and accessibility of water, gas, electric power, and sanitary sewer systems during flood events.

j. Avoid placing utilities and functional elements (such as wall vents) on facades facing primary streets or other public open spaces, or within front setbacks.

k. Where they are unavoidable, integrate utilities and functional elements into the facade and organize them as components of the fabric of the building, considering shape, size, color, proportions, and location relative to other facade elements. Ground floor utility rooms that require direct access from the street should be provided with architectural facade treatments that complement the overall facade design.

l. Design roof overflow scuppers to avoid discharging onto public sidewalks.

INTENT

Minimize the visual impacts of wireless communications facilities, and integrate antennas into the design of buildings.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Collocate and consolidate installations in an orderly way.

b. Where possible, use stealth facilities that completely conceal antennas.

c. Avoid mounting antennas to principal facades facing primary streets and open spaces.

d. House equipment on the roof, preferably completely screened by a mechanical penthouse, raised parapet, or stealth enclosure.

e. Set back roof-mounted antennas, and associated equipment, as far as possible from principal facades (FIG. 87).

f. Tidy up and conceal all cables.

FIG. 90 Facade mounted antenna in Harvard Square avoid the principal brick facades and match the penthouse color and finish.

g. Where possible, employ a symmetrical, balanced design for all wall-mounted antennas, including antennas from different providers. Position and space antennas to complement the architecture of the building, and align with the placement of existing antennas.

h. Avoid interrupting architectural lines and horizontal or vertical reveals.

i. Locate antennas below the rooftop parapet line, and below the 45 degree line of sight as viewed from grade level, so they do not appear to break the roof line from ground level perspectives.

j. Where possible, aim to design antennas with uniform length, width, and depth, including existing antennas and those owned by other providers. Consider equipment shrouds for these purposes.

k. Utilize the smallest mounting brackets available so that antennas can be mounted as close to the surface of the structure as possible.

l. Ensure painted materials, including cabling, have a consistent, matte finish that blends with the surface behind.

C.3 Building Types

While all buildings should respond to the guidelines in previous sections, this section provides additional guidance for specific building types.

A mix of building types in Kendall Square provides spaces for people to live, work, and enjoy.

C.3.1 OFFICE/LABORATORY/R&D BUILDINGS

INTENT

Design office, laboratory, and R&D buildings to complement the scale and character of the surrounding context, and enrich Cambridge's public realm.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

Despite their scale, relatively private programs, and extensive mechanical systems, commercial (laboratory and office) buildings should be designed to better relate to neighborhood context and add quality to the public realm.

FIG. 91 75 Ames Street is composed of two distinct volumes, a design strategy that breaks down the building's overall mass and creates a more dynamic and approachable streetscape presence.

GUIDELINES

a. In general, aim for floor plates no larger than 30,000 square feet.

b. Utilize changes in height, facade design, material changes, stepbacks, street-facing courtyards, and/or other facade and massing techniques to reduce the perceived scale and height of large buildings, particularly when the surrounding context is of a smaller scale (FIG. 91).

c. Design facades to mediate between the scale of the individual pedestrian and the building. Consider:
- Expressed structural bays of 20 to 30 feet.
- Window sizes and proportions.
- Mullion patterns.
- Changes in facade plane.
- Colors, materials, and joint patterns of cladding materials.
- Sun shading devices.

d. Provide publicly accessible internal passages through long buildings to maximize permeability for people walking in the neighborhood (FIG. 92).

e. Avoid occupying large expanses of ground floor frontage with office/lab uses, unless these can be programmed and designed to maximize opportunities for views into the interior of the space and animate the streetscape.

FIG. 92 Harvard's Smith Campus Center provides active ground floor uses and a pedestrian passage through the building.

f. Design and locate mechanical systems to minimize their impact on neighbors. C.2.15.2 on page 114.

g. Designate sufficient space for laboratory gas tanks and delivery access early in the design process.

h. When located adjacent to sensitive uses, such as residential buildings, control light trespass from interior spaces with blackout shades, timers, automatic dimmers, occupancy sensors, or other means.

When office, lab and R&D buildings are located on retail/commercial streets, provide active ground floor uses and design. C.2.3.1 on page 74.

INTENT

Design mid-rise and tall residential buildings that are sensitive to their neighbors, while enriching Cambridge's public realm.

CORE VALUES

The design of residential buildings is fundamental to Cambridge's rich and varied character. New residential projects, particularly mid- and high-rise residential buildings, should be sensitive to existing neighborhood character and respect the privacy and quality of life of the residents of abutting properties. They should also enrich Cambridge's public realm through the arrangement, rhythm, and scale of elements such as structural bays, windows, entrances, roof shapes, dormers, and the detailed assemblage of materials.

FIG. 93 The massing of this mid-rise residential building in Boston steps down to relate to the height of nearby smaller-scale buildings.

GUIDELINES

MASSING

a. Where possible, divide large residential developments into separate buildings to enhance compatibility with the typical scale of Cambridge's residential neighborhoods.

b. Give the massing of outer-facing and inner-facing sides of residential buildings distinct treatment.
- Outer-facing sides should define the perimeter of the block.
- Inner facing sides should open up to open space in the block's interior.

c. In smaller-scaled residential areas, articulate the massing of large residential buildings to create a sense of scale compatible with smaller-scaled neighbors (FIG. 93).

d. Reduce the visual bulk of taller residential buildings by using step backs, or mansard, gambrel, hipped, or gable roof profiles to enclose habitable upper stories.

e. Adjust the configuration and massing of residential buildings to maximize access to sunlight and sky views from neighboring residential buildings and sites, and to maintain privacy.

f. Where possible, provide courtyard spaces at building fronts or sides to:
- Reflect the character of existing development (FIG. 94).
- Divide long frontages into smaller-scaled facades.
- Provide transitional open space.
- Accommodate any necessary steps or ramps.

g. Consider both symmetrical and asymmetrical massing arrangements to best relate new buildings to existing neighbors.
- The emphasis on unifying hierarchical order created by symmetry may tend to emphasize the scale of the whole.
- Asymmetrical massing may reduce the perceived scale of large buildings by creating a looser, less hierarchical relationship of individual elements to the whole.

FIG. 94 Courtyards contribute residential scale and character while providing valuable open space.

h. Where an existing neighboring residential building is located very close to the property line, consider adjusting the new building's footprint to create a wider side yard.

i. Where new buildings are constructed in the rear yards of existing buildings, or on large lots with large setbacks, adjust building massing to reduce impacts on neighboring buildings and yards by careful siting and massing, and by reducing the visual bulk of top floors.

FACADES

j. Enrich residential building facades with elements such as:
- Celebrated entrances.
- Recesses and projections from the facade plane.
- Bay windows.
- Balconies.
- Sun shades.
- Dormers.
- Roof gardens.
- Terraces.
- Balconies (projecting, inset, or Juliet) and/or bay windows (FIG. 95).
- Front porches and stoops.
- Small groupings of vertical windows.
- Varied roof forms.

k. At a smaller scale, refine facades with residential design details such as:
- Lintels.
- Sills, and other window trim.
- Railings.
- String courses.
- Cornices.
- Rake and eave details.

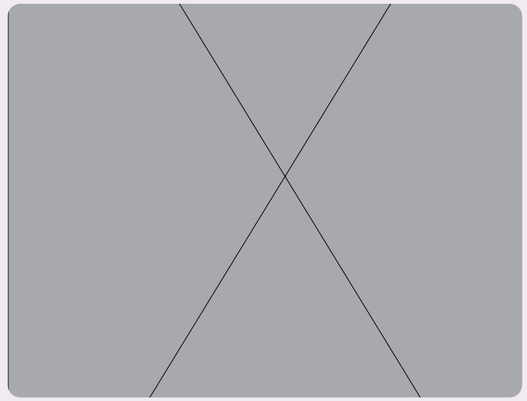


FIG. 95 Apartment building in Munich, Germany features multiple-pane bay windows in the facade.

l. Relate to the window-to-wall ratios and the proportion and rhythm of doors and windows prevalent in the neighborhood.

MATERIALS

m. In established residential areas, use materials that respond to the neighborhood character and are commonly used in the area.

n. Use warm colors.

o. For residential units, incorporate divided light or multiple pane windows, with operable features designed to enhance natural ventilation. Avoid picture and single-light windows.

INTERIORS

p. Incorporate common spaces to foster a sense of community. Depending on the size of the development, these may include sheltered entry porches, lobbies, meeting rooms, courtyards, and roof terraces.

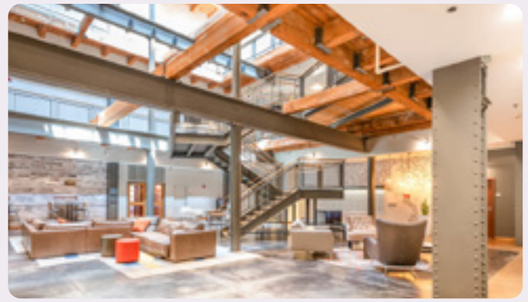


FIG. 96 The Lofts at Kendall Square incorporate a highly-visible staircase in the central lobby.

q. Locate stairs near buildings' entrances and lobbies to encourage physical activity (FIG. 96).

r. Provide clear, well-lit, and well-indicated access to elevators.

s. Incorporate recesses, courtyards, and units with corner rooms to bring light deeper into floor plates and allow cross ventilation.

OPEN SPACE

t. Provide gathering places: terraces, play areas, decks, patios, open lawns, etc.

u. Provide a variety of green spaces and other types of outdoor spaces as appropriate to the site, context, and building form, including yards, entry courtyards, interior courtyards, porches, loggias, balconies, roof terraces, and upper-level decks.

v. Provide seating to foster social connection. Consider locations at building entrances, courtyards, and along paths connecting different areas of the site.

C.3.3 CIVIC AND INSTITUTIONAL BUILDINGS

INTENT

Design civic and institutional buildings to express their unique character, while enhancing community connections and the spatial definition of the public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Due to their political, cultural, and social significance, civic buildings, and in some cases institutional buildings, have a special role in the urban fabric and community. Massing and facades that are more unique or iconic than typical residential or commercial buildings may therefore be appropriate. Given the community role that these buildings often play, consideration should also be given to providing public open spaces and other amenities as part of the site plan.

GUIDELINES

a. Consider how community spaces, indoor and outdoor, can be integrated into the project scope.

b. Create welcoming entrances that enhance public life and act as "front porches" to civic and institutional buildings (FIG. 97).
- By providing open space, such as entry forecourts and plazas, civic and institutional buildings feel more welcoming, and provide opportunities for social connection and interaction.
- Provide seating, good lighting, and plantings at these important nodes.

c. Enrich the surrounding public realm by providing good visibility and connectivity to civic and institutional buildings.
- Use windows and transparent facades to increase visibility into civic and institutional buildings. Clear sightlines make activities more visible and can attract passersby.
- Create engaging facades with highly visible entrances.

FIG. 97 City Hall lawn provides a welcoming space for the community to enjoy.

C.3.4 PARKING GARAGES

INTENT

Sensitively design parking garages to minimize negative impacts on the pedestrian experience and adjoining properties.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Hide above-grade parking garages on primary streets from view.

b. Wherever possible, line parking garages with residential, commercial, or other occupiable uses if facing a public street or public open space.

c. Include ground floor active uses where garages face public streets and open space, when feasible (FIG. 98).

d. Where garages are visible and not wrapped by occupiable uses, attractively design and architecturally screen visible facades (FIG. 99).
- Facades should be of comparable design and material quality as adjacent buildings, and may include combinations of solid walls, louvers, vegetation/green walls, and perforated metal, among others.

e. Provide transparent and visible pedestrian entry lobbies and stairs with direct access to the street or public area to enhance pedestrian safety and comfort. Clearly designate these entrances and ensure that they are easily accessible and visible from the street (FIG. 100).

f. Provide unobtrusive vehicular entrances, preferably from side streets or alleys, that are integrated into the design of ground floor facades.

FIG. 98 Active ground floor uses are included in a parking garage.

FIG. 99 Technology Square parking garage incorporates an attractive mesh screen and a green wall.

FIG. 100 A glass pavilion creates a dedicated pedestrian entrance to below grade parking, enhancing connectivity and promoting a more walkable, street-oriented environment

g. Avoid exposed floor plates and sloped floor plates.

h. Conceal all vehicular ramps from public streets and open spaces.

i. Incorporate floor to floor heights of at least 11 feet, and flat floor plates to facilitate future adaptability and alternative uses.

j. Locate and design garage mechanical ventilation systems to minimize impacts on the public realm.
- Locate mechanical ventilation systems and areaways away from streets, open spaces, building entrances, windows, or balconies of adjacent properties.
- Direct garage exhaust to the top of the garage, or if not possible, above the second floor and away from street- and public open space-facing locations.
- When such locations cannot be avoided, ventilation openings facing streets or other public open spaces should be attractively screened by louvers, plantings, or other means.

k. Minimize light trespass and glare for all garage lighting.

l. Consider green roofs, usable terraces, and/or photovoltaic arrays on top of parking garages.

m. Provide recharging facilities for electric vehicles.

n. Provide below-grade garages with passively deployable barriers at entrances and ventilation openings to protect from flooding, or wet flood-proof the garage to allow water to pass through during a flood event.

INTENT

Design industrial buildings that are functional and positively contribute to Cambridge's public realm.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

While Cambridge has been in transition from an industrial center to a center of scientific research through the 20th and 21st centuries, there is still a role for industrial production in a well-balanced economy.

FIG. 101 An industrial building exhibits a welcoming, transparent ground floor.

GUIDELINES

a. Incorporate ground floor neighborhood uses, entrances at frequent intervals, and transparent storefronts (FIG. 101).

b. Where retail is not feasible, locate front offices, reception areas, showrooms, or employee amenities such as dining facilities on street frontages.

c. For large industrial buildings with multiple tenants, provide numerous entries at sidewalk level to help activate the pedestrian environment.

d. Invest in the architecture of street-facing and publicly visible facades, while ensuring that these remain integrated with the design of the rest of the building.

e. Express structural bays to create a fine-grained facade rhythm.

The Appleby Blue senior housing project in London, England features a four story brick principal facade with a stepped back top floor, and a two-story wood and glass projecting element on the lower floors. The organization of the massing in relation to the material changes enlivens the streetscape.

D. Open Space

Open space includes all outdoor areas—whether publicly or privately owned—that are accessible to the public. This encompasses parks, squares, plazas, play spaces, pedestrian and multi-use paths, alleys, mid-block pedestrian passages, and academic campuses. Although streetscapes are also a type of open space, they are addressed in a separate chapter due to the proportion of publicly owned open space they represent and their unique role as places for movement, which merits particular emphasis and additional detail.

Throughout the Open Space chapter, special attention is given to Privately Owned Public Spaces (POPS), which are open spaces that are privately owned and maintained but open to the public through legal agreements, such as covenants, pedestrian access easements, deed restrictions, and special permit commitments. POPS are important components of Cambridge's open space network, as they provide open space in much-needed locations and complement existing and planned publicly owned open spaces and natural areas.

Cambridge takes pride in the rich history of its open spaces. The city's public realm includes a wide range of open spaces, including large parks such as Danehy Park, historically significant open spaces like Cambridge Common, neighborhood parks like Clement Morgan Park, and urban plazas like Lafayette Square. Nature preserves, such as Fresh Pond Reservation, and linear parks, like those along the Charles River, are also defining features of the city's open space network. The city's parks and plazas host a variety of community, civic, and recreational events, while smaller urban spaces support more local, neighborhood activities. Together, they help express our cultural values, history, the identity of neighborhoods, and importantly, foster the public life of the city.

Open spaces are the places where people meet, gather, play, and relax, where people from diverse backgrounds and ages come together to participate in the public life of Cambridge. The varied sizes and features of Cambridge's open spaces add to the character, richness and quality of life of the city. The placement and species of trees can help define space, and give character to the city's public realm, complementing architecture. As memorable features of the city, open spaces play a defining role in the neighborhoods around them. In effect, they are the city's public "living rooms", shaped and enriched by landscape design, the activities they host, and the buildings that frame them. The open space network functions as an interconnected system that shapes Cambridge's buildings and circulation network, and provides links to nearby cities and the regional landscape.

This chapter establishes design guidelines for creating beautiful, safe, functional, and uniquely memorable open spaces that encourage social interaction and play, contribute to the city's resilience, and welcome all members of Cambridge's diverse community. Developers of POPS should first address the citywide open space guidelines and then refer to each POPS subsection for additional detailed design guidance.

The Common at Cambridge Crossing incorporates an open, flexible area that can accommodate a range of programming, including performance events.

D.1 Open Space Principles

Joan Lorentz Park offers a mix of active and passive recreation spaces, supporting relaxation, play, and community gathering.

D.1.1 OPEN SPACES FOR INSPIRATION AND DELIGHT

GOAL 1: DESIGN QUALITY

The City's goal for open space, as stated in Envision Cambridge, is to "create a connected network of high quality open spaces that links all residents to local and regional natural assets, provides a range of activities and experiences, encourages social connections, and is inclusive of all people".

To achieve this goal, the open space network should be designed to create a sense of safety, comfort, and delight for all Cambridge residents. Design choices, such as the placement of trees and other plantings, the layout of paved areas, seating, and other amenities, should create well-defined, purposeful, and memorable places (FIG. 102).

Open spaces should also inspire creativity and play, not only through their use but also through their design. As noted in Cambridge's Play in the Public Realm document, "A playful public realm can bring engagement, serendipity, and delight to members of a community, and it is important for everybody in Cambridge to have places and opportunities for play."

Open spaces should be conceived as unique places that the community feels connected to, sometimes referred to as creative placemaking or placekeeping. Participatory processes, temporary and experimental interventions, integration of play, discovery, learning and art, and elements where these intersect (e.g. playful and interactive public art, or creative and artful play elements), should be considered in the design and programming of all Cambridge open spaces. Understanding community identity, along with historical or cultural significance, is also important for making design decisions that reinforce these values.

D.1.2 OPEN SPACES FOR ALL

GOAL 2: EQUITY

The Parks & Open Space Plan vision states that Cambridge's parks and open spaces should be "inclusive and accessible places for gathering, relaxing, being active, and playing in well-maintained facilities, landscapes, and nature."

Ensuring equitable access to safe, comfortable, and engaging open spaces for people of all abilities, ages, and identities is a priority for the city. New open spaces should be planned to distribute open space benefits across neighborhoods, and as the city grows, POPS will become increasingly important for meeting the community's open space needs. Ensuring ongoing public access to these publicly beneficial open spaces is an important equity issue.

New or renovated open spaces should address past injustices which have led to an unequal distribution of open spaces and tree canopy in Cambridge. Projects should actively seek to address these historical imbalances, developing new types of open spaces where they have been absent and improving existing open spaces, ensuring that the community's needs are met. This includes bringing in what was never there before: sports fields; flexible gathering spaces; play areas; and everyday comforts like shade, seating, and lighting.

FIG. 102 Generous paths, trees, and seating in Winthrop Square create a welcoming and vibrant public space that encourages lingering.

The design of open spaces should go above and beyond U.S. Access Board's Public Right-of-Way Accessibility Guidelines (PROWAG) under the Americans with Disabilities Act (ADA), the Architectural Barriers Act (ABA) requirements, and the Massachusetts Architectural Access Board (MAAB) regulations. Open spaces should be designed for all to enjoy, adhering to universal design best practices (FIG. 103). While no single design solution can meet everyone's needs, offering a variety of opportunities and choices around social activity and how people experience the environment helps create inviting and inclusive spaces.

Open spaces should also be designed to feel safe and welcoming for all users. Designers should avoid using hostile design elements and instead incorporate inviting features, such as signage, inclusive furnishings, public art, and other engaging activities that promote comfort and foster a sense of belonging.

FIG. 103 Louis DePasquale Universal Design Playground is an inclusive playground designed for children of all abilities.

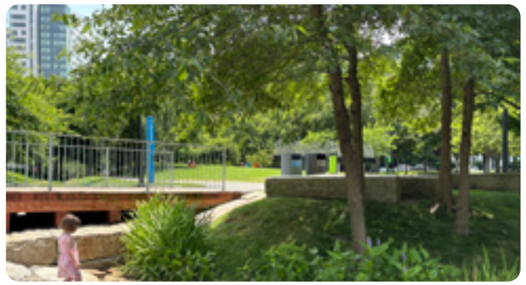


FIG. 104 The Common at Cambridge Crossing features retention ponds that help improve the water quality from stormwater runoff.

D.1.3 RESILIENT OPEN SPACES

GOAL 3: SUSTAINABILITY & RESILIENCE

The City of Cambridge has adopted two key plans that focus on climate resilience and influence the design of open spaces: the Resilient Cambridge Plan and the Urban Forest Master Plan. These plans outline a path forward for managing climate change risks, including increasing access to open spaces and clean air, enhancing the health and protection of waterways, and maintaining and expanding the city's tree canopy.

In alignment with these goals, the city's open spaces should be designed to enhance climate resilience. This involves minimizing the amount of paving and hard surfaces, contributing to the city's urban forest, and improving access to green space and clean air for all residents. Open spaces must also be resilient to the growing impacts of climate change, such as flooding due to precipitation, sea level rise, storm surge, and extreme heat (FIG. 104). Design strategies should maximize the ecological and resilience benefits of all landscape elements, including vegetation, permeable paving, lighting, and site furnishings, to enhance environmental performance.

Community resilience and well-being are also important citywide goals as outlined in plans and policies, such as Envision Cambridge, Healthy Parks and Playgrounds, and the Resilient Cambridge Plan. To support physical and mental health, open spaces should incorporate inviting features that encourage lingering and social interaction, such as shade, comfortable seating, and gathering areas, as well as opportunities for recreation, movement, play, and cultural expression.

Domino Park in Brooklyn, NY incorporates the history of the former industrial waterfront into a riverfront park that serves the diverse community of New York residents and visitors. The park is raised above the floodplain and features native plant species that reduce stormwater runoff and provide protection from damaging storm surges.

D.2 Open Space Experience

Bertulli Park in Boston creates a welcoming environment through the use of high-quality materials, native trees and vegetation, flexible seating, and community-oriented programming.

D.2.1 CONTEXT AND IDENTITY

INTENT

Design open spaces that fit the surroundings, support nearby activities, incorporate natural features, and benefit local communities.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

GUIDELINES

a. Clearly define the intention of the open space, including the anticipated public life and intended site users.

b. Integrate open spaces with adjacent streets, sidewalks, pathways, and trails, while clearly defining the edges of the space.

c. Reinforce important visual connections to, from, and within a space by aligning circulation routes, organizing site elements, and framing focal points to support user orientation and placemaking.

d. Where appropriate, respond to adjacent building entrances and activities related to adjacent land uses, such as active ground floor uses that could spill out into the open space.

e. Incorporate existing natural assets, such as topography, hydrology, trees, unique views, and access to water, into the design of open spaces (FIG. 105).

FIG. 105 The Salem Witch Trials Memorial engages with the existing landscape and local history.

f. Consider planting choices that co-mingle or differentiate existing species on-site or nearby.

g. Consider incorporating elements that define, explain, or celebrate the cultural significance of the site, neighborhood, or broader context

h. Meaningfully engage with the local community to understand their needs, preferences, and goals for the space. Include opportunities for collaboration with the local community, such as participatory design workshops with neighborhood organizations and engagement with artists, throughout the design process.

i. Consider how the open space will be managed, including opportunities for community stewardship, context-specific programming, and flexible uses that reflect the needs of the surrounding community (FIG. 106) (FIG. 107).

FIG. 106 Open space features community-oriented programming on Boston's Greenway.

FIG. 107 Park ranger-led community-oriented event at Fresh Pond.

Questions to consider:

- What kind of public life is expected in this open space?
- What kind of public life already exists in nearby open spaces, if they already exist?
- How might the project engage and incorporate community input into the design of this open space?
- How will the open space be cared for and who will be responsible for its programming and management?

D.2.2 OPEN SPACE NETWORK

INTENT

Foster a variety of open space types that form a strong, interconnected network that is equitably distributed across neighborhoods.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Analyze and complement the mix of open space types and uses (plazas, green spaces, etc.) within a 1/4 mile and a 3/4 mile walk. For details on the different types of open spaces see "D.4 Open Space Types" on page 172.

b. Anticipate varying intensities of public life across different types of open spaces. For example:

- Plazas should be designed to accommodate greater densities of people than a park. Often located near retail, dining, or civic uses, they function as gathering places and support social interaction. (FIG. 108).
- Green spaces often serve as areas of respite, recreation, and relaxation. They may have lower activity intensities and provide a sense of openness and connection to nature.
- Design considerations, including circulation, edge conditions, and seating, should be tailored to the specific open space type and program.

c. Create a 'lily pad effect' that encourages people to wander from one open space to the next, utilizing well-designed streetscapes and paths that support walking and cycling. These connections should incorporate amenities such as pedestrian-scaled lighting, dedicated bicycle lanes, and active building edges.

FIG. 108 Inman Square features movable tables and chairs that accommodate spillover activity from nearby food establishments.

d. Make clear and intuitive connections that align with natural desire lines, especially in large open spaces.

e. Consider a variety of spaces that provide opportunities for active and passive use, such as physical activity, programmed or informal events, community gatherings, play, and rest or quiet reflection. Special attention should be given to ensuring inclusive and meaningful access for all by engaging with and designing alongside communities that have been historically excluded, underheard, and underserved. (FIG. 109).

FIG. 109 Bryant Park in New York combines a large green space with paved edges that support a wide range of activities and flexible use.

PRIVATELY-OWNED PUBLIC SPACES (POPS)

f. Design and locate POPS to complement the city's broader open space network, rather than as afterthoughts or residual open space. (FIG. 110).

- Prepare studies that illustrate how the proposed POPS fits within the open space network.
- Locate POPS to connect with existing or planned streets, sidewalks, paths, parks, plazas, and other open spaces.
- Tailor the design of each POPS, whether primarily green space, hardscape, or a combination of both, based on its location in the city and surrounding uses.

g. Where possible, design and locate POPS in coordination with adjoining owners, both public and private, to create larger contiguous open spaces and to distribute smaller ones throughout neighborhoods.

FIG. 110 A POPS in Manhattan is thoughtfully located to provide connectivity and open space in a dense urban area.

Envision Cambridge calls for expanding and improving the city's open space network "through new open spaces, new programming, and improved local and regional connections", while "preserving, maintaining, and enhancing existing open spaces to serve a diverse population."

INTENT **Create open spaces that are safe, comfortable, and delightful for people of all ages and abilities.**

CORE VALUES INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

GUIDELINES

SAFETY

a. Provide good sightlines and visibility into and out of open spaces, particularly at entrances and primary walkways, to enhance both actual and perceived safety for all.

b. Lay out pathways and other areas for walking and biking to prioritize safety and minimize conflicts with traffic (FIG. 111).

c. Where possible, incorporate programming and active uses to encourage social interaction and a sense of safety. Consider how supporting infrastructure will be provided, managed, and maintained over time.

d. Provide well-designed lighting to encourage activity and create a safe environment throughout the day and evening (FIG. 112). See D.3.3 on page 157 for lighting guidelines.

FIG. 111 At Central Wharf Plaza in Boston, a clear walking path and a furnished edge work together to create a safe, comfortable separation between people walking and vehicles.

FIG. 112 Lighting creates a safe and enjoyable evening environment.

FIG. 113 Plantings and green infrastructure on the Common at Cambridge Crossing create a cool and comfortable environment.

COMFORT

e. Design and locate open spaces to ensure ample access to sunlight and sky views.

f. Incorporate shade and cooling strategies to ensure comfort, particularly during warmer months. Examples include:
- Tree plantings and enhanced vegetation.
- Additional shade opportunities, such as canopies and shade structures.
- Green infrastructure techniques, such as bioswales, rain gardens, and similar systems (FIG. 113).
- High-solar reflective index pavement.
- Pervious pavements.
- Light-colored paving materials.
- Water features, including water play areas, drinking water fountains, and cooling stations.

g. Consider how surrounding buildings will cast shadows, reflect sunlight, and impact wind flow on the open space. If negative microclimatic effects are identified, take steps to minimize their impact and improve user experience (FIG. 114).

h. Integrate design elements that provide comfort and encourage year-round use of open spaces, including during the winter months. Examples include:
- Create sheltered microclimates using canopies, pergolas, and other elements to provide protection from wind, snow, and cold (FIG. 115).
- Use of color, lighting, and materials to create a warm, inviting, and visually engaging atmosphere during colder seasons.
- Include winter-friendly programming, such as seasonal markets, outdoor art installations, or light festivals, to activate public spaces.

i. Design universally accessible open spaces that exceed minimum ADA requirements by incorporating:
- Room for moving without obstacles and with smooth, durable, and slip-resistant surfaces.
- Direct, accessible connections and inclusive signage throughout the site.
- A range of activities and facilities serving people of all ages and abilities.
- Comparable access for all people regardless of their ability to ascend steps or ramps.
- Technology that provides for inclusive experiences, including for people with varying sensory abilities.
- Comfortable seating with backs and armrests, placed at frequent intervals to support people with mobility needs.

FIG. 114 Shade from the Smith Center building in Harvard Square enhances the plaza's comfort during the Summer.

FIG. 115 A large water feature on Boston's Greenway mitigates traffic noise, provides a cooling effect on hot days, and creates a playful, multisensory experience for people of all ages.

FIG. 116 Thoughtfully-selected and detailed design elements animate Roemer Plaza in Boston.

j. Incorporate passive areas that feature defined spaces for sitting, resting, and lingering, designed to invite comfort and relaxation. (FIG. 116).

k. Provide a wide range of seating options, including movable seating, designs that cater to different abilities and body types, and layouts that support both individual comfort and social interaction.

l. Provide access to public restrooms within or near open spaces that experience high volumes of activity.

DELIGHT

m. Use high quality design elements, including paving materials, detailing, and furnishings, that reflect both design excellence and durability.

n. Combine flexible open areas suitable for a range of activities and events with more sheltered intimate places that offer opportunities to engage from a distance or moments of quiet reflection.

o. Where appropriate, seek opportunities to express the history of the site and/or provide space for cultural expression:
- Incorporate symbols of community identity.
- Preserve mementos and recognitions of history.

p. Create rich, multi-sensory environments that support mental well-being by accommodating site users sensitive to external stimuli, offering both calming and stimulating spaces to suit diverse needs. Examples include:
- Soft, open-textured elements such as trees, plantings, and art installations that absorb and soften ambient noise.
- Facades and objects with irregular or textured surfaces that diffuse sound.
- Elements such as water features and water sculptures to soften and mask traffic noise. (FIG. 115).
- Activities that create an interesting sound environment, such as conversations and activity around ground floors, outdoor dining, social seating, and live performances.

FIG. 117 Greenacre Park, a POPS in New York, creates a welcoming environment through clear sightlines and the use of comfortable, public seating.

PRIVATELY-OWNED PUBLIC SPACES (POPS)

q. Create POPS that are clearly public in character and function—welcoming to all, not just those who live, work, or patronize the associated building.
- Avoid designs that convey a corporate, privatized, or exclusive character.
- Ensure POPS are accessible during standard City park hours, typically from dawn to dusk.

FIG. 118 Pier 2 in Brooklyn feels safe and inviting during cold, dark winter evenings by providing well-lit covered spaces.

r. Design safe and comfortable POPS (FIG. 117) by incorporating:
- Publicly-accessible walking and cycling paths.
- Generous, direct, open and unimpeded entrances from public streets, located on or close to pedestrian desire lines,
- Unobstructed lines of sight to and from the space.
- Comfortable, accessible, mostly public seating.
- Public amenities, including free wi-fi, public toilets in large open spaces, and drinking fountains.
- Circulation between public and private realms.
- Clear signage and wayfinding that identifies the POPS as a public space, particularly for POPS that are not located on public streets.
- Active ground floor uses with windows and entrances facing the POPS to enhance safety through casual surveillance.
- Design elements like canopies and lighting that provide comfort and safety throughout the winter months (FIG. 118).

s. Where possible, design POPS to incorporate:
- Opportunities for play and exercise.
- Infrastructure for events and programming during all seasons.
- Infrastructure for food service/trucks.

t. Avoid placing mechanical exhaust vents, ducts, or systems within or adjacent to open spaces, especially those intended for public use. Locate mechanical equipment within the building envelope, preferably designed to exhaust through the roof to minimize visual and environmental impacts.

INTENT

Design vibrant open spaces that support play and creative expression.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Cambridge's Play in the Public Realm guidebook ↗ advocates for integrating opportunities for play in all city spaces, not just traditional parks and playgrounds. It encourages creative thinking about how streetscapes, plazas, sidewalks, and even transit areas can support play for all ages and abilities. This approach recognizes that play is essential to public life and community well-being. By embedding playful elements, such as artistic seating, water features, or climbable structures, into everyday environments, the public realm can foster joy, curiosity, and social connection in unexpected places.

Incorporating public art is another way to support creativity and playfulness throughout the city (FIG. 119). Public art refers to any kind of art that is located in the public realm. Public art can add beauty and visual richness to open spaces. It can also become an opportunity to engage with local communities, site context, and neighborhood identity.

FIG. 119 Temporary art installation adds playfulness by creating an illusion of dunes amplified by carefully placed mirror spheres.

FIG. 120 During the colder months, flexible open space in Kendall Square enables memorable winter activities such as ice skating.

GUIDELINES

PLAY IN THE PUBLIC REALM

a. Create opportunities for play and informal entertainment accessible to all ages, abilities, and interests.

b. Create opportunities for physical activity and exercise (e.g. adventure play, exercise equipment, fitness stations, etc.).

c. Provide spaces that support play among children and adults beyond the limits of the standard, typically fenced playground. (FIG. 121) (FIG. 122).

d. Create a playful, interactive, whimsical, imaginative, and intergenerational public realm, by incorporating:
- Child-friendly elements, in terms of size, color, and texture.
- Uniquely designed functional elements.
- Innovative features or uses.
- Games.
- Water features (FIG. 122).
- Interactive elements for all ages.
- Site materials and site furnishings that support or feature playful elements.
- Signage to encourage physical activity, exercise, and play.
- Site lighting that will support activity throughout the winter months (FIG. 120).

Questions to consider, when designing a play environment:

→ How does the design support play among children and adults beyond the limits of the standard park or playground, including transportation corridors, commercial areas, and housing areas?

→ Does the design provide meaningful play opportunities for all children of all abilities?

→ How will the design enable play opportunities during all seasons and varied weather conditions (sun, rainfall, snow etc.)?

→ How does the design integrate artful, creative, and imaginative solutions throughout?

FIG. 121 Boston City Hall Plaza draws a broad audience with sensory play, water elements, and adventurous structures.

FIG. 122 Water feature in Boston's Fisher Hill Reservoir Park inspires curiosity and invites children to play.

PUBLIC ART

e. Consider a wide range of art opportunities, including:
- Integral art that acknowledges the perspective of the artist, the viewer, and the cultural context in which it was created (FIG. 123),
- Open form art that engages the space around it.
- Interactive art that invites participation from its audience (FIG. 124).
- Innovative art that incorporates new techniques, materials, or technologies.
- Temporary art that is displayed for short periods of time and changes regularly, adding interest and an element of surprise and discovery.

f. Consider the City's Percent-for-Art Program as the minimum for municipal capital projects.

g. Provide art that reflects local cultural history and identity, and support local artists.

h. Use landscape design elements as opportunities to integrate art, e.g. paving patterns, lighting, seating, structures, fences, and bicycle parking.

i. Consider integrating art that serves a functional purpose, such as sculptural seating, decorative lighting fixtures, or artistic shading devices.

j. Collaborate with artists throughout the design process.

k. Consider locations for public art early in the design process.

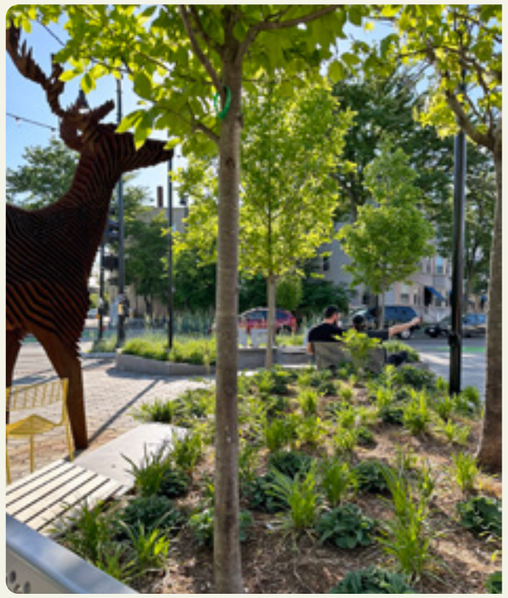


FIG. 123 Deer sculpture in Inman Square reflects the artist's interpretation of local history.

FIG. 124 Art wall in Edmonton, Canada invites people to write their own messages.

INTENT

Design open spaces that are resilient and provide ecological benefits.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | **ADAPTABLE** | **HEALTHY**

GUIDELINES

a. Preserve healthy existing trees, and consider new or transplanted trees, where feasible.

b. Provide vegetative and structural shading as needed, prioritizing pedestrian areas and circulation.

c. Select plantings that will be resilient to the expected hotter and more variable climate, and to saltwater intrusion, where applicable.

d. Minimize impermeable pavement, and maximize permeable and vegetated area.

e. Incorporate light-colored pavement and materials where effective.

f. Use Stormwater Best Management Practices and other measures to minimize runoff and improve water quality.
- Retain stormwater on site to slow the rate of stormwater runoff.
- Integrate Low Impact Development (LID) and green infrastructure practices, structural and/or non-structural, to capture and retain stormwater.
- LID techniques include rain gardens with native plants or adapted plantings, wet meadows, permanent infiltration or collection features (e.g., vegetated swales, rainwater cisterns), and retention areas for stormwater management. (FIG. 125).
- Incorporate underground storage tanks to slow the release of stormwater.

FIG. 125 Rain gardens reduce the volume of stormwater runoff in open space.

D.3 Open Space Elements

Technology Square is framed by surrounding buildings, creating an inviting and well-defined public space enhanced by diverse seating options, shade structures, trees, and pedestrian-scaled lighting.

D.3.1 TREES AND PLANTINGS

To advance Cambridge's vision for a healthy, resilient, and equitably distributed urban forest, all public and publicly accessible open spaces should contribute to growing the city's tree canopy. Trees offer critical benefits—they provide shade and shelter, improve air quality, reduce stormwater runoff, enhance biodiversity, and strengthen the city's overall resilience to climate impacts.

Trees and other plantings, including shrubs and ground cover, also contribute to the quality and character of the city's open spaces. They add visual interest, help define spatial edges, organize circulation, and provide an intimate scale to larger areas. The community has consistently expressed a strong desire for more trees and more green space throughout the city.

The creation of green open spaces:

- Adds beauty to the public realm.
- Improves health and wellbeing through connections with nature.
- Makes the public realm an inviting and comfortable place.
- Improves the City's response to climate change.
- Improves thermal comfort for people outdoors by reducing the heat island effect and providing shade cover.

D.3.1.1 CHARACTER AND DEFINITION

INTENT

Use trees and plants to define space and shape the look, feel, and natural experience of open spaces.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

GUIDELINES

a. Consider planting trees and other plantings at the edges of open spaces, particularly where they meet adjoining sidewalks, to create a sense of enclosure while preserving visibility into the space (FIG. 126).
- Select deciduous trees limbed up to at least 7 feet to maintain clear sightlines.
- Incorporate shrubs and groundcover to establish a layered planting approach that creates a soft gradient of density along edges without obstructing views or access (FIG. 127).

FIG. 126 Kennedy Plaza in Providence, RI features an allée of trees that help define the edge of the space.

b. Use a diverse palette of tree and plant species (FIG. 128).
- Vary vertical sizes of plants within planted areas.
- Design for seasonal interest/color texture, and form.
- Create landscapes that attract birds and pollinator species, provide wind breaks, provide flowering trees, etc.
- Where possible, use grass rather than artificial turf.

FIG. 127 Flowering shrubs celebrate the entrance to Sennott Park.

c. Where practical for visual access and safety, consider evergreen trees to provide a sense of enclosure and a year-round presence of foliage.

FIG. 128 Diverse plant species of varying sizes and seasonality add color and character at Fisher Hill Reservoir Park, Boston.

D.3.1.2 ECOLOGICAL BENEFITS

INTENT

Select trees and plant species to maximize ecological benefits such as shade and cooling, biodiversity, habitat, clean air and water, and stormwater management.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

GUIDELINES

a. Provide robust canopy trees in areas that allow for ample canopy growth.

b. Utilize the tree species, planting standards, and maintenance regimens recommended by the DPW and the Cambridge Urban Forest Master Plan. See Cambridge Urban Forest Master Plan for more information ↗.

c. Prioritize native and adapted species.
- Consult online native plant databases, such as The Lady Bird Johnson Wildflower Center Native Plants database ↗ or the Native Plant Trust's Garden Plant Finder database ↗, as reference guides for native plants appropriate for Cambridge.
- Avoid non-native species, where possible. If native species are not feasible, select an appropriate and diverse plant palette that is suited to the site and does not include invasive plants.
- Consider macro- and micro-climate conditions to determine suitability of plant material. Factors that influence the site's climate should be taken into account when selecting plant material including wind, sun exposure, soil moisture/drainage, pollutants, and slope.

d. Select trees and other plantings that will support biodiversity by providing food, shelter, shade, and resting places for local wildlife.

e. Where feasible, incorporate opportunities to connect wildlife habitats and include the creation of diverse ecological environments for a variety of plant types. Shade trees and multi-layered plantings are critical elements to all spaces in the network.

D.3.2 MATERIALS

INTENT

Design and build with materials that are high-quality, long-lasting, low-maintenance, and sustainably sourced.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

Materials can contribute to the design quality, accessibility, and sustainability of open spaces. The City's standard material for circulation routes within parks is asphalt. As a paving material, asphalt is an affordable, durable, easy to maintain, and accessible option. However, specific open space zones such as areas for gathering or for other activities may merit the selection of distinctive materials that can add quality and help enliven open spaces through color, texture, and/or pattern.

FIG. 129 Durable materials are used in The Steel Yard public space in Providence, RI.

FIG. 130 Cold winters make the implementation of durable design elements all the more important.

GUIDELINES

MATERIALS

a. Select materials able to withstand heavy-duty use and weathering (FIG. 129) (FIG. 130).

b. Consider selecting materials based on life cycle sustainability considerations, such as:
- Opportunities to salvage and reuse on-site or off-site materials.
- Use of recycled content paving materials, such as recycled asphalt.
- The embodied energy of paving materials, prioritizing materials that are regionally-sourced and sustainably-harvested. Avoid the use of environmentally sensitive materials, such as tropical hardwood.
- The long-term use of materials and diversion from landfills through durability, reuse or recycling.

PAVING MATERIALS

c. Use durable, low maintenance, and readily available paving materials.

FIG. 131 Natural stone paving enlivens Market Place square in Willich, Germany, by adding color and texture to the ground plane.

d. Use paving materials that follow accepted guidance and best practices for universal design, especially for pathways and other areas for people walking and rolling.

e. Consider the use of unique paving materials and treatments that vary from City standards to highlight special open space features, indicate areas of different uses (e.g. entrances, seating areas, areas for performances, etc.), or add color and texture to primarily paved open spaces, such as squares, plazas, and mid-block pedestrian passages (FIG. 131).

f. Consider paving materials and patterns as an opportunity to integrate art, learning, and playful elements in open spaces.

g. Consider light-colored paving such as concrete, asphalt, pavers, and brick with a 3-year aged solar reflectance (SR) value of at least 0.28 or an initial SR of 0.33, where possible.

h. Where appropriate, use permeable paving materials such as concrete permeable pavers, concrete or brick pavers with sand-filled joints, or stabilized decomposed granite (FIG. 132).

FIG. 132 A sidewalk in Alewife utilizes high SRI and permeable paving materials.

Refer to DPW guidelines for information about City standard materials and details ↗

INTENT

Provide human-scaled lighting for safe and enjoyable evening use of open spaces, including walking and biking.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Well-designed lighting enhances the safety, visibility, and inclusiveness of open spaces, making them welcoming and accessible to all, especially during evening hours. Lighting can also extend the hours of use of open spaces, and can help define the character of a place while integrating energy efficiency.

GUIDELINES

a. Provide pedestrian-scaled lighting, especially along circulation routes (FIG. 133) and at entrances.
- Pedestrian-scaled lighting should be directed toward the ground, and luminaries should generally be mounted 10 to 16 feet above ground.

FIG. 133 Shielded, pedestrian-scaled lighting along circulation paths in Kendall Square.

FIG. 134 Lighting placed in coordination with plantings.

FIG. 135 Furnishings are used as an opportunity to integrate lighting, adding visual interest to the Harvard Science Center plaza.

b. Coordinate planting with light source placement (FIG. 134).
- Intersperse trees with light poles to ensure space for tree canopy growth and clearance for light to reach the surrounding pavement.
- Examine effects of shadows cast by vegetation to impact public safety or obscure pavement conditions.
- Plan routing of underground electrical lighting wiring to be clear of tree pits and rooting areas.

c. Use lighting fixtures that:
- Adhere to dark sky principles.
- Have warm luminaire color temperature.
- Are shielded to prevent glare.
- Are LED.
- Create a balanced lighting environment that neither under-lights nor over-lights open spaces.

d. Consider opportunities to enhance the visual quality of open spaces with the use of unique light fixtures (FIG. 135).

e. Consider opportunities for accent lighting, such as seasonal lighting, light installations/art, and other functional and decorative landscape lighting approaches.

f. Use directed bollard lighting to provide focused, low-level illumination of pathways, enhancing visibility while minimizing light spill and glare.

g. Use step lights or illuminated handrails to illuminate stairs and ramps.

D.3.4 COMFORTABLE AND WELCOMING FURNISHINGS

INTENT

Provide furnishings that are functional, durable, easy to maintain, comfortable, convenient, and enhance the experience of open spaces.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Furnishings, such as benches, bicycle racks, trash receptacles, and other amenities, support open spaces by providing comfort and creating invitations for use and enjoyment. The selection and placement of furnishings can encourage opportunities for community connection, and add to the character and identity of open spaces.

GUIDELINES

a. Consider the function and purpose of each element in the context of specific site conditions to help guide the placement of furnishings. Furniture layouts and arrangements should consider visibility, sight lines, lighting, and accessibility.

b. When selecting furnishings, balance aesthetic considerations with functional concerns associated with durability, ease of maintenance, and comfort (FIG. 136).

c. Consider creative designs and styles as an opportunity to integrate art and playful elements in the open space.

d. Consider furnishings made of environmentally responsible materials, including materials with recycled content, locally-sourced materials, or certified wood.

e. Avoid restrictive and hostile design features, including:
- Excessive use of armrests.
- Harsh skateboard deterrents.
- Slanted or uneven surfaces or spikes designed to prevent certain activities and behaviors from taking place in the public realm.

f. Avoid using materials and finishes that can be easily damaged or vandalized.

FIG. 136 Functional, durable, and aesthetically pleasing benches furnish Fisher Hill Reservoir Park in Brookline.

D.3.4.1 SEATING

INTENT

Design seating to be flexible, social, and comfortable for all open space users.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

PLACEMENT AND LOCATION

a. Provide seating based on functional needs such as points of interest, entrances, close to public art, where a pleasing view exists, or at regular stopping points along walking paths to support users with mobility needs.

b. Prioritize locations that have good microclimates, such as areas protected from wind and shaded by trees or other structures, such as awnings, canopies, and umbrellas (FIG. 137).

c. Where possible, provide seating in both sunny and shaded locations.

d. Consider exposure to traffic noise when placing fixed seating.

e. Provide accessible spaces for mobility devices next to fixed seating.

f. Consider various seating arrangements to create social spaces and encourage interaction amongst and between groups, such as L and U-shaped layouts and flexible arrangements (FIG. 138).

FIG. 137 Benches and swings along Boston's Greenway are placed in areas protected from wind, glare, and traffic by lush vegetation and an overhead shade structure.

FIG. 138 Fixed seating in Inman Square is arranged in a U-shaped layout that encourages social interaction.

STYLE AND TYPE

g. Provide a balance of seats with and without backs and armrests in open spaces (FIG. 139).

h. Consider a range of seating types to enable a diversity of experiences. Seating should include:
- Fixed individual and social seating, such as benches, individual seats, and picnic tables, taking into consideration the ability to accommodate small and large groups, as well as space for individuals.
- Flexible seating such as loose/movable tables and chairs, facilitating the creation of more versatile and sociable public spaces and accommodating various activities and preferences.
- Informal seating, such as low walls and planter seat walls.
- Seating integrated into architectural elements.

i. While private seating such as outdoor dining is essential in vibrant commercial areas, open spaces should provide a balance of private and public seating to invite a diversity of activities, not only centered around patronizing businesses.

PRIVATELY-OWNED PUBLIC SPACES (POP)

j. Where private seating such as outdoor dining spills into a POPS, aim for a balance of public and private seating options that feel integrated.
- Private seating should take up no more than ¼ of the POPS.
- Limit seating for private outdoor dining to locations adjacent to building facades, while the rest of the seating in the space is public and open.

k. Avoid installing fences or barriers around private seating where possible. If a barrier is necessary, make sure it is permeable, low, and complements the design of the POPS.

l. Avoid branded or promotional umbrellas and other furnishings where possible.

FIG. 139 A bench with armrests and back support is provided in an open space with other flexible seating.

D.3.4.2 BICYCLE PARKING

INTENT

Provide convenient and accessible bicycle parking that is well-integrated into the design of open spaces.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Provide bicycle parking that is safe and convenient to access, but unobtrusive to the experience of people walking.

b. Provide bike share stations in or near all major public open spaces.

c. Coordinate bicycle rack style with other furnishings and site design.

d. Ensure bicycle rack styles and locations meet City Standards and regulations. For further information, see the City's Bicycle Parking Guide ↗

e. In appropriate locations, consider opportunities to use creative and artistic bicycle racks to help animate the open space and highlight community identity, while remaining functional.

f. Create nooks within the landscape to accommodate bike racks, bike share stations, and bicycle/scooter shelters (FIG. 140).

g. Where appropriate, also consider providing bike repair stations.

h. Provide bike share stations in or near all major public open spaces.

Bike share is key for accessible and affordable transportation. The City's goal is that there is a bike share station in or near all major public open spaces. See the Community Development Department's Transportation Division website for further details about the Bike Share program .

D.3.4.3 OTHER FURNISHINGS

INTENT

Provide other site furnishings in convenient locations and well-integrated with the design of open spaces.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

SHADE STRUCTURES

Shade structures, whether permanent or temporary installations, can increase user comfort through both heat and sun protection (FIG. 141), and can add visual interest to open spaces. In summer months, shaded areas foster community and mental wellbeing, providing comfortable areas for lingering and socializing.

FIG. 141 Permanent shade structure creates a comfortable, shaded seating area along Broad Canal.

FIG. 142 Temporary shade structure installed during the hot summer months on the Science Center plaza.

a. Provide shade structures where opportunities for substantial tree canopy and natural shade are limited, such as areas of exposed play equipment.

b. The following should be considered when designing shade structures:
- Temporary shade structures to improve the thermal comfort of open spaces (FIG. 142). Refer to the City's Shade is Social Justice program for design ideas and details.
- Overhead structures with members close enough to shade summer sun
- Structures should be roofed in order to provide shelter from rain and snow. Permanent shade structures should not collect snow and ice on top in winter months.
- Trellises and other site features with vegetative growth.
- Height and placement of shade structures to discourage climbing or unintended access over walls or into upper-level building openings.
- Whimsical designs that add visual delight.

TRASH AND RECYCLING RECEPTACLES

c. Use the City's standard trash and recycling receptacles (FIG. 143).

d. Locate trash receptacles near seating and building entrances where possible, with some separation so that these areas are not compromised by foul odors.

e. Prioritize placement of large bins (e.g., textile recycling bins) in parking lots or parking spaces adjacent to open spaces. If located in open spaces, large bins should be placed in well-lit, visible areas to ensure proper use.

FIG. 143 Big Belly bins are standard trash receptacles in Cambridge.

BOLLARDS

f. Avoid the excessive use of bollards. Where they are required for safety purposes:
- Combine bollards with other furnishings that can also provide that safety/buffer function, such as bicycle racks, seating, long tree pits/wells, light poles, planters, etc.
- Consider removable options.
- Use a style, scale, and design that contributes to the character of the open space.

Plans to retrofit large-scale amenities into existing sites with constraints, such as limited space, should involve the services of a design professional to assess how to best incorporate them into the open space design.

INTENT

Open space amenities should be well-designed and integrated within open spaces.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Open Space Amenities support the use and enjoyment of open spaces by ensuring they are accessible, clean, and safe. They include sharps bins, recharging stations, bottle filling stations, comfort stations, and dog waste stations.

GUIDELINES

a. Consider the placement of amenities early in the design process.

b. Consider the size and role of the open space when determining what amenities are to be provided.

c. Consolidate or group amenities in discrete locations that offer convenience and visibility but do not overwhelm the character of the open space.

d. Where possible, avoid visual clutter.
- Consider locations that are tucked away into the landscape while remaining visible.
- Organize amenities at entrances and frontages to avoid overwhelming these locations with clutter.

D.3.4.5 FENCES & GATES

INTENT

Design fences and gates that promote the character of open spaces without making people feel unwelcome.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Design and select high-quality fences and gates to visually articulate and demarcate entrances and edges (FIG. 144).
- Use fences such as simple iron, painted steel, low stone walls, and low hedges.
- Avoid use of solid, blank fences.
- Avoid use of plastic or chain link, especially in highly visible locations.
- Avoid security gates.

b. Design fences and gates that are open/porous and integral to the site, incorporated into architecture or landscape that frames the space, rather than imposed.

c. Ensure fence designs maintain visibility/ safety at street corners.

d. Consider fences as art opportunities.

PRIVATELY-OWNED PUBLIC SPACES (POPS)

e. Avoid tall or opaque fences, security gates, bollards or barriers at entrances.
- If fences and gates are proposed, they should be for the purpose of demarcating the POPS as a significant space in the city's public realm, not overtly for security.

FIG. 144 Visually permeable, artistic steel fence at Sennott Park.

D.3.4.6 SIGNAGE

INTENT

Provide pedestrian-scaled, accessible signage where needed.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Signage plays an important role in wayfinding, identifying open spaces, and making open spaces more known, equitable, and welcoming to all. Signage for POPS should communicate the role of these spaces to the public with clear and consistent branding and messaging. Providing clear, visible, and readable signage that includes information about the space (such as access hours, amenities, and accessibility to persons with disabilities) will make POPS more equitable and inclusive for all.

GUIDELINES

PLACEMENT

a. Define the goals and objectives for proposed signage, including the functions it should serve, the target audience, and the types of information to be conveyed.

b. Understand user needs when considering the location and design of signage.

c. Locate signs in highly visible areas, such as park entrances and key junctions (FIG. 145).

FIG. 145 Harvard University signage located at the Science Center open space, a key junction for the campus.

d. Place signage in locations that provide visibility from multiple vantage points (FIG. 146).
- Place to avoid large structures (e.g., bus shelters, utility boxes).
- Locate near lighting to maximize visibility at night.
- Avoid locations that are obstructed by landscaping or other design elements.

FIG. 146 Signage in Somerville's Union Square development is placed in a visible location, but does not interfere with circulation paths.

e. Avoid locations that interfere with movement for people walking and bicycling.

f. Consider integrating signage with other open space design elements such as walls, posts, and lighting to avoid clutter.

g. Eliminate redundant and out-of-date signage as much as possible.

DESIGN

h. Depending on the scale and character of the open space, either maintain continuity with City standard open space signage approaches or celebrate the specific identity or unique elements of the open space.

i. Ensure all signage is compliant with ADA requirements for color contrast and text size (FIG. 147).

FIG. 147 Signage uses high contrast text against background to ensure legibility for users with color-blindness.

j. Incorporate Braille or auditory information for those who are visually impaired.

k. Where possible, translate messaging into multiple languages.

l. User testing and signage mock-ups are encouraged.

m. Avoid using campus-style signage unless appropriate to an academic setting; in other contexts, use signage that reflects the unique character and function of the place.

TYPES

n. Identify City-owned parks and other open spaces by name using City standard signage templates. These can be augmented by signs unique to that space.

o. Where appropriate, locate directional signage at key decision points along journeys. Include maps and directional arrows as appropriate to indicate the location and distance to nearby destinations.

p. Where appropriate, incorporate interpretive signage to celebrate important historical people and events, natural history, ecosystems, and city history.

q. Consider using information kiosks as a way to consolidate existing single-purpose signs such as regulatory rules and information.

r. Use properly-scaled information kiosks that do not interfere with the movement or sight lines of people walking and bicycling (FIG. 148).

FIG. 148 Physically and visually unobtrusive information kiosk at the Cambridge Common entrance includes information and a map of the park.

PRIVATELY-OWNED PUBLIC SPACES (POPS)

s. Provide clear signage indicating that the POPS is open to the public (FIG. 149) (FIG. 150).

FIG. 149 Signage directs to a publicly-accessible rooftop garden.

open to all

FIG. 150 The City's Open to All logo.

t. Incorporate information on public access and use at all entrances, including:
- The name of the space and language about public access.
- Information about hours of access, adhering to the City's public space standards for opening hours, amenities, and the names of those responsible for upkeep and maintenance.
- The City's "Open to All" POPS logo.

u. Ensure that signage is constructed of durable materials and consolidated with other site signage, where appropriate.

v. Consider incorporating signage into landscape elements such as paving or planter walls (FIG. 151).

FIG. 151 Directional signage integrated into the landscaping.

w. Consider providing directional signage to adjoining businesses and destinations.

x. Design any corporate signage as discreet elements.

For further details on incorporating information at entrances, refer to the City's POPS Signage Guidelines ↗

D.3.5 WAYFINDING

INTENT

Create a legible sequence of spaces that enable intuitive wayfinding.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

The most important contributions to wayfinding are the legibility of the elements of the public realm – the memorable forms of public spaces and the ways they interconnect to organize the city's districts. For those exploring a new city or district, intuitive wayfinding and visual cues that help people navigate space are often the most effective. When that is not available, or when visitors are seeking an unfamiliar destination, signage is an invaluable aid.

GUIDELINES

a. Design main circulation paths to be wide and easy to navigate (FIG. 152).

b. Use physical and visual cues as waypoints that help people find their way and navigate through the space to a destination.
- Physical cues may include plantings, public art, and furnishings.
- Visual cues may include framing of landmark buildings and structures, views of significant landscapes (e.g. the Charles River), and lighting during evening hours.

FIG. 152 The main paths in Central Square, East Boston are well-defined and offer strong sightlines through the space.

Intuitive wayfinding relies on visual and physical cues—such as paths, edges, landmarks, and sightlines—to naturally guide people through a space, reducing the need for excessive signage.

D.4 Open Space Types

Distinct types of open space can be found throughout the city and span a range of purposes, uses, sizes, and features. This section expands on the open space types outlined in the Cambridge Open Space and Recreation Plan and provides further design guidance for each type.

The Alewife Brook Reservation is an important green space that provides opportunities for physical activity and connection with nature.

D.4.1 PARKS

INTENT **Design parks as green spaces for active and passive recreation, relaxation, socializing, and play.**

CORE VALUES INVITING · ECLECTIC · **CONTEXTUAL** · CONNECTED · ADAPTABLE · HEALTHY

Parks add beauty and green space as contrast to, and relief from, the density of the built environment. Parks can be places for inspiration, play, meditation, and intergenerational use and enjoyment. Cambridge's park system includes a variety of types and sizes, including pocket parks, neighborhood parks, linear parks, large citywide parks, recreational areas, and play areas. Together, they support a wide range of activities through a thoughtful mix of flexible open areas and more intimate, sheltered spaces that invite people to linger, reflect, recharge, and engage in community life.

GUIDELINES

a. Consider park designs that add an element of surprise, including incorporating topographic elements such as hills, landforms, and hidden views, as well as textural changes and seasonal interest (FIG. 153).

b. Define park edges with elements that reinforce a sense of place such as tree allées, planting beds, paths, fences, loggias, trellises, pavilions, and other landscape elements (FIG. 154).

c. Celebrate park entrances with inviting and clearly defined gateways (FIG. 155).

FIG. 153 The Hatch Memorial Shell on Boston Esplanade creates interest through changing seasonal programming.

FIG. 154 An open space in University Park is clearly defined by a layered edge treatment that includes tree allées, low painted steel fences, and neatly maintained hedges.

FIG. 155 A prominent gateway marks the entrance to the historic Cambridge Common

FIG. 156 The linear path leading to the JFK Memorial Park invites lingering and exploration through thoughtfully integrated furnishings and layered plantings.

LARGE CITYWIDE PARKS

d. Consider providing purpose-built public restrooms in large parks.

e. Consider the role large parks play in advancing urban biodiversity, mitigating heat, and managing stormwater and flood risk. Incorporate strategies such as:
- Pre-planting street trees within parks to support health and ensure their long-term viability.
- Planting to enhance biodiversity, such as the Miyawaki Forests implemented at Danehy Park and Triangle Park, to create rich, layered ecosystems.
- Low Impact Development and green infrastructure practices to manage runoff, recharge groundwater, and enhance climate resilience.

Large Citywide Parks are expansive open spaces that serve citywide or regional needs, typically characterized by a 0.5-mile walkshed as defined by the Open Space and Recreation Needs Assessment (OSNA).

LINEAR PARKS

f. Recognize linear parks as important public open spaces, not merely transportation corridors.

g. Enrich the user experience by thoughtfully integrating public art, play opportunities, comfortable furnishings, layered plantings, interpretive elements, and clear wayfinding (FIG. 156).

PRIVATELY-OWNED PARKS

h. Provide a minimum of 75% green space and a minimum of 85% permeable space.

i. Provide at least one large canopy tree for every 1,200 square feet of park area.

j. Where possible, surround parks with streets and buildings with active ground floors to overlook and animate the space.

D.4.2 SQUARES AND PLAZAS

INTENT

Squares and plazas should be spaces for people to meet, sit, relax, people watch, connect, and gather.

CORE VALUES: INVITING · ECLECTIC · **CONTEXTUAL** · CONNECTED · ADAPTABLE · HEALTHY

Cambridge boasts many historic squares and plazas, located at important intersections. These squares and plazas are unique and memorable spaces that form the city's identity. They are also important social spaces that play a key role in fostering community and mental wellbeing. Significant plazas in Cambridge include the Carl Barron Plaza in Central Square, Brattle Square (FIG. 157), and Vellucci Community Plaza at Inman Square.

Squares and plazas are generally defined and framed by the surrounding buildings and streets. They are most successful when the adjacent buildings are occupied by active uses that engage with and animate the space.

FIG. 157 Live music performances animate Brattle Square.

GUIDELINES

a. Prioritize pedestrian access and enjoyment in the design of squares and plazas, ensuring they are integrated into surrounding pedestrian and bicycle circulation networks.

b. Consider incorporating memorable design elements such as performance areas, water features, iconic artworks, or distinctive architectural details to create a strong sense of place and identity.

c. Maximize flexibility with paved surfaces that facilitate movement, seating, and diverse programming opportunities (FIG. 157).

d. Locate new squares and plazas in areas of existing or anticipated high pedestrian volume.

e. Design squares and plazas to meet the street at grade, ensuring that people of all ages and abilities can access and enjoy the space.

f. When a grade change is necessary, use a series of integrated ramps and stairs to create a unified experience regardless of ability.

FIG. 158 At the Prudential Center Plaza, thoughtfully integrated paving, seating walls, and ramps create flexible spaces that are welcoming to all and easily furnished with tables and chairs.

g. Ensure large areas of paving are shaded.
- Consider shadows cast by adjacent buildings.
- Where large paving areas are not shaded by adjacent buildings, use canopy trees or shade structures.

h. Where possible, use trees and plantings to help frame squares and plazas and define spaces within.

i. Use light-colored and permeable paving materials in appropriate locations.

j. Consider how squares and plazas will be animated by various uses such as outdoor dining, temporary markets, playful features, public art, outdoor events, and the ground floor activity of buildings that frame them (FIG. 158).

k. Where appropriate, such as plazas in commercial areas, provide spaces equipped with accessible electrical outlets for performances, events, and other programming activities.

PRIVATELY-OWNED PLAZAS

l. Provide a minimum of 10% green space, a minimum of 40% shaded open space, and a minimum of 70% permeable space.

m. Provide at least one large canopy tree for every 1,000 square feet of plaza area.

n. Provide a minimum of one linear foot of seating for every 30 square feet of plaza area.

o. Ensure access from sidewalks is generous, unobstructed, and not concealed by plantings, walls or other visual barriers.

D.4.3 PLAY SPACES

INTENT

Design play spaces of different types, varieties, and styles that support activity and learning for children and adults of all abilities.

CORE VALUES

INVITING · ECLECTIC · **CONTEXTUAL** · CONNECTED · ADAPTABLE · **HEALTHY**

Cambridge's Healthy Parks and Playgrounds report highlights the important role of parks and playgrounds in improving the health and development of children, and in supporting strong communities. The report sets forth goals and objectives for the design of all future play spaces in the city to serve the needs of different groups, regardless of age or ability. The Citywide Design Guidelines seek to promote the goals of Healthy Parks and Playgrounds by encouraging a variety of play experiences across the city. This includes the creation of play spaces with unique appearances, activities, themes, and audiences, rather than only relying on traditional equipment-oriented playgrounds.

GUIDELINES

a. Create integrated play environments, rather than a collection of disconnected elements.

b. Provide a diverse range of environments to serve a full range of age groups and interests (FIG. 159).

c. Provide meaningful play opportunities to children of all levels of ability.

d. Balance the need for a reasonable level of safety with the need for challenge, adventure, and risk-taking.

FIG. 159 Alexander W. Kemp Playground includes play spaces for children of diverse age groups.

FIG. 160 Louis A. DePasquale Universal Playground features a blend of natural and artificial materials, incorporating both flat and varied landforms to create an inclusive and engaging play environment.

e. Support curiosity, creativity, and imagination. Examples include:
- Viewing platforms.
- Interactive sculptures or structures.
- Variety of ground forms, textures, and colors (FIG. 160)

f. Stimulate physical activity with many different types and combinations of movements.

g. Make play environments community places by including features that encourage social connection and gathering. Examples include:
- Tables and sitting areas for children and adults.
- Gazebos and pavilions.
- Picnic tables.
- Play features that encourage simultaneous use by multiple people (FIG. 162).
- Community news boards.
- Programming activities.
- Community events.

h. Provide play opportunities during all seasons and all weather conditions.

i. Balance standard play equipment, artificial materials, and flat terrain with more unique play components, natural materials, and varied landforms and plantings (FIG. 161).

j. Consider incorporating a reasonable amount of loose parts or props, less prescribed space and equipment, and convenient storage.

k. Provide plantings for shade, sensory interest, and to create play opportunities for children to move through and around.

l. Balance segregating differing age groups, with opportunities for integration of younger and older children in the same spaces.

Questions to consider, when designing a play environment:
- → Is the design furthering the goals and objectives of the City's Healthy Parks and Play policy?
- → Does the design adhere to the principles of universal design to achieve play spaces that are welcoming and inclusive for all; including persons of all ages and abilities, and all disabilities (not just wheelchair focus)?
- → What initiatives have been undertaken to partner with other educational institutions, businesses, or organizations to provide for the possibility of supportive programming or supervision of the space?

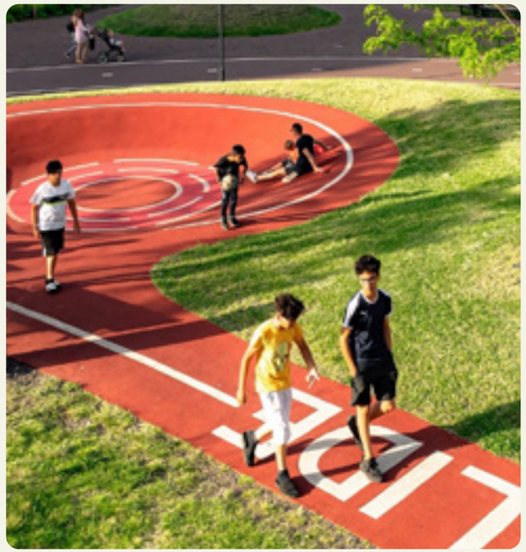


FIG. 161 A Netherlands parks uses an undulating landform and bold graphics to invite creative activities.

m. Provide sensory experiences.

n. Provide zones for group play as well as individual experiences.

o. Support recreation and exercise activities. Examples include:
- Outdoor exercise equipment.
- Nets for sporting activities.
- Courts for sporting activities.

FIG. 162 Play space in Copenhagen's Nordhavn District features uniquely-designed components.

D.4.4 MID-BLOCK PEDESTRIAN PASSAGES

INTENT

Create inviting mid-block pedestrian passages and alleys to enhance neighborhood connections.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Provide visual interest and a human scale through design features such as active and transparent building ground floors (FIG. 163), public art, seating, and placemaking opportunities.

b. Provide views to the sky and ensure passages are wide enough to comfortably accommodate both people walking and biking.

c. Where possible, design mid-block pedestrian passages that connect to publicly-accessible courtyards and other spaces within the interior of blocks, creating usable open space and a sense of discovery and surprise.

d. Plant canopy trees and other plantings along mid-block pedestrian passages, where possible.

e. Ensure passages are well lit, including potential for architectural and accent lighting to further enhance visual interest - e.g. string and catenary lighting.

ALLEYS

f. Design alleys to include visual interest and an intimate scale. Consider opportunities to incorporate public art along alleys (FIG. 164).

g. Where possible, provide landscaping and greenery, particularly vertical elements along the edges of alleys and passages. Examples include:
- Canopy trees, shrubs, and flowers.
- Vertical plantings in planter boxes, trellises, and green walls.

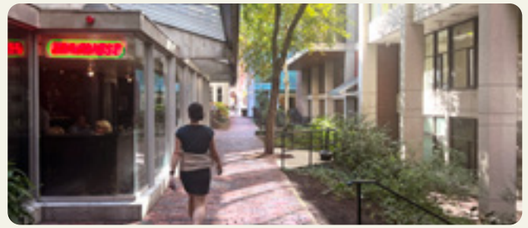


FIG. 163 A pedestrian passage in Harvard Square is flanked by active ground floors.

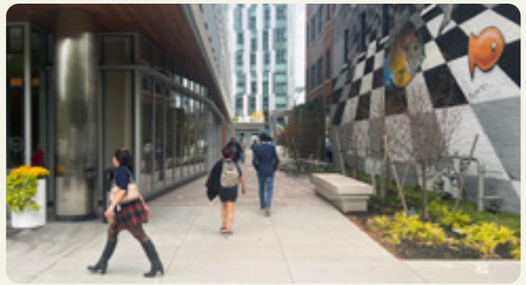


FIG. 164 A Kendall Square walkway features a mural that adds color and visual interest.

D.4.5 ACADEMIC CAMPUSES

INTENT

Create academic open spaces that are inviting and well-integrated into the urban fabric.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

FIG. 165 Harvard University's Quincy courtyard takes on a distinct campus identity, with a central open space framed by university housing buildings.

a. In their roles as quasi-civic institutions, distinct identities may be appropriate for portions of academic campuses, including edges, setbacks, fences, or framing park-like open space spatial strategies, such as quadrangles (FIG. 165).

b. In areas where campuses are part of the urban fabric, such as within commercial areas and along Corridor Streets, blending with the city's identity and direct integration with the street and block pattern is encouraged (FIG. 166).

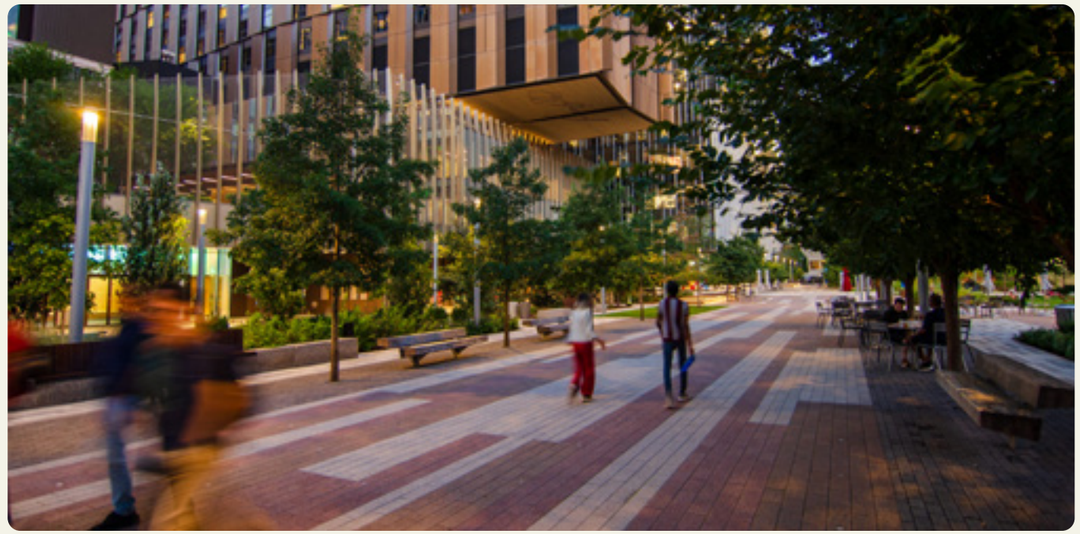


FIG. 166 MIT's SoMa open space is well connected to the broader network of streets and public spaces in Kendall Square, enhancing accessibility and continuity within the district.

D.4.6 ROOFTOP GARDENS

INTENT

Design rooftop gardens to provide usable outdoor space and enhance climate resilience.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Design rooftop gardens to provide meaningful green space and opportunities for shade (FIG. 167):
- Provide canopy trees whenever possible.
- If planting trees is not feasible, consider the use of planters and shade structures.

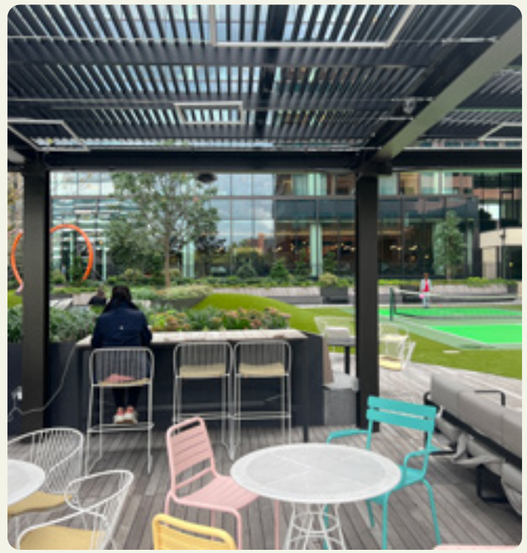


FIG. 167 Publicly-accessible roof garden in Kendall Square incorporates shade, vegetation, seating, public art, and a pickleball court.

b. Select plants that can withstand the climatic conditions of a rooftop and offer environmental co-benefits.

c. Consider light-colored paving materials and green roof installation to reduce the urban heat island effect.

d. Consider wi-fi access and charging outlets.

PUBLICLY-ACCESSIBLE ROOF GARDENS

e. Provide clear signage and wayfinding at street level for publicly-accessible rooftop garden access.

f. Where possible, exceed ADA-compliant vertical access requirements.

g. Provide a minimum of 30% green space.

D.4.7 PRIVATE OPEN SPACES

INTENT

Design private residential open spaces to add residential character, provide outdoor space, and contribute to the city's resilience.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

The outdoor areas of residential developments play an important role in shaping the overall character and livability of the community. Providing outdoor gathering spaces for play and recreation, such as barbecue pits for grilling or garden plots to grow food, increases the potential for community building. Creating connections to nature, such as landscaped forecourts and gardens, also enhances general well-being.

FIG. 168 A variety of private courtyard spaces add variety and character to this development.

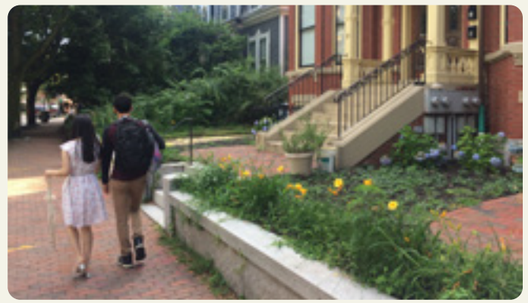


FIG. 169 Front yard in Mid-Cambridge with a low wall and vegetation that define the sidewalk edge.

GUIDELINES

a. Incorporate private or semi-private courtyards and forecourts in large residential developments to reinforce a sense of residential character and improve overall livability (FIG. 168).

b. Design front yards as private open spaces that are visible to the public, fostering a sense of connection with the street.
- Provide visible greenery and uses that animate the sidewalk.
- Create a distinct edge between sidewalks and front yards, using curbs, low/permeable fences, hedges, or walls (FIG. 169).
- Driveways, vehicular and bicycle parking areas, and mechanical and electrical equipment should be located and designed to minimize impacts on the public realm.

Refer to the City's Urban Forest Master Plan, Design Strategy 2C for further details on front yard trees ↗

Lebuinus Square in Deventer, the Netherlands, creates a vibrant public space at the heart of the city. The square incorporates a variety of spaces that can accommodate diverse activities; a water fountain, a tree grove that provides shade for outdoor dining, and a flexible open area. The design also incorporates resilience strategies, including permeable and light-colored paving materials, increased shade from trees, and stormwater management.

E. Streetscape

The term “streetscape” refers to the area or public space located between the street curb and buildings. In some cases, raised bike lanes may be located in this zone. In other instances such as shared streets, the streetscape may also include a part of or the entire roadway. As a concept, streetscapes encompasses all elements of the pedestrian experience: the sidewalk, street trees, bus stops, street furniture, and the portion of building facades within the pedestrian’s cone of vision*.

Over half of Cambridge’s public open space is made up of streets and paths. Streetscapes play a crucial role in the mobility network and are essential to public life and walkability. Streets are more than just arteries for movement and infrastructure; they are meaningful and memorable places in their own right. They provide space for lingering and gathering, dining at restaurants and cafes, social interaction, and play. They also provide opportunities to expand the city’s tree canopy, manage stormwater, and reduce urban heat island effects.

This chapter establishes design guidelines intended to support and enhance the walkability, safety, comfort, convenience, enjoyment, accessibility, aesthetic quality, and environmental performance of the city’s streetscapes. The guidelines in this chapter should be used to design both public and privately-owned streetscapes.

*The role of the building design in enhancing the streetscape experience (e.g., human scale, transparency, and entries) is addressed in Chapter C of this document.

E.1 Streetscape Principles

Massachusetts Avenue in Harvard Square has wide sidewalks, active ground floor uses, and amenities for people walking and bicycling, creating a lively streetscape for people of all ages, abilities, and identities.

E.1.1 STREETSCAPES AS PLACES FOR PEOPLE AND PUBLIC LIFE
GOAL 1: DESIGN QUALITY

Streetscapes should prioritize public life in all its forms, including movement through and enjoyment of the city. The design of streetscapes should invite people to linger, foster community connections, encourage physical activity and play, and provide connections to nature. Cambridge's street trees and plantings, public art, street furniture, lighting, adjoining retail frontages, and other amenities should work together to enhance the city's beauty, walkability, connectivity, accessibility, safety, and sense of place (FIG. 170).

E.1.2 STREETSCAPES FOR ALL
GOAL 2: EQUITY

To welcome people of all abilities, ages, and identities, streetscapes should be accessible, comfortable, safe, and enjoyed by all. The design of the city's streetscapes begins with federal and state accessibility requirements; however, to make Cambridge truly welcoming, inclusive, and easy to navigate, streetscape design should go beyond these minimum standards.

Unobstructed and wide sidewalks should accommodate both easy and safe movement for all ages and abilities, as well as social spaces for people to stop and talk, stand and watch, or pass each other comfortably (FIG. 171). Paving materials should be stable, durable, and easy to maintain. Comfortable and inclusive seating should be provided at frequent intervals, and the placement of streetscape furnishings should be convenient but unobtrusive to paths of travel. Streetscape design, uses, and activities should offer rich sensory experiences for all to enjoy.

FIG. 170 Brattle Square offers expanded sidewalk space and informal seating that invite people to linger and participate in the city's public life.

FIG. 171 Sidewalk featuring a wide surface for easy and safe movement and social interaction, regardless of age or ability.

E.1.3 RESILIENT STREETSCAPES
GOAL 3: SUSTAINABILITY & RESILIENCE

Cambridge's streetscapes should be designed to enhance ecological connectivity and support the city's environmental performance and climate goals. As global temperatures rise, urban areas will increasingly rely on resilient streetscape design to help mitigate heat. This can be achieved through a combination of strategies, including extensive street tree plantings, light-colored paving materials, canopies, awnings, shade structures, and water features. Continuous tree cover and diverse plantings not only provide cooling benefits but also create corridors for wildlife, supporting biodiversity throughout the city. In addition, incorporating green infrastructure, such as rain gardens, bioswales, and permeable paving, can improve water quality, reduce stormwater runoff, and enhance resilience (FIG. 172).

Streetscape design should also contribute to community resilience by fostering environments that encourage active lifestyles and support health and well-being. A streetscape network shaded by street trees or other structures that is safe, well lit, and lined with active uses can encourage people to walk, bike, or take public transportation, promoting active ways of moving around (FIG. 173). Integrating play and physical activity into streetscapes can enhance physical health and create family-friendly spaces. Creative and vibrant uses can transform streetscapes into places where people feel a sense of belonging, thus improving community and individual well-being.

FIG. 172 Western Avenue features trees and green infrastructure that provide shade and stormwater infiltration.

FIG. 173 The streetscape design on Third Street encourages walking and biking, supporting active living.

Alfred Place Gardens, London UK reclaims road space, transforming it into a welcoming green space with a variety of characters and experiences. A meandering pedestrian path is lined with play spaces, playful social seating, climate-resilient plantings and shade trees, whilst maintaining access for essential services and emergency vehicles.

Alfred Place
Gardens Site Plan

E.2 Streetscape Experience

Vellucci Community Plaza in Inman Square includes comfortable seating, active retail ground floors, and clear paths for movement, creating a vibrant and welcoming streetscape experience.

E.2.1 STREETSCAPE CHARACTER TYPES

INTENT

Design streetscapes based on typology, context, neighborhood identity, and the street's role within the community.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

A variety of pedestrian experiences help create vibrant streetscapes. The types of activities that might be appropriate for a particular streetscape will depend on several factors, including location, context, the different speeds that people move through the street, and the ability of the sidewalk to accommodate a variety of activities. In order to define the role and function of Cambridge's streetscapes, this chapter establishes three broad typologies that begin to categorize the city's various streetscapes:

- **Corridor Streets**.
- **Neighborhood Main Streets**.
- **Residential Streets**.

These streetscape character types are defined by how people experience the street environment, rather than by functional road classifications. They are intentionally broad to accommodate a diversity of urban conditions, and not all streets will fit within a specific type. Some streets may be a combination of types, some may change with different land uses and contexts, and some may change over time. Rather than rigid categories, these character types should serve as a guide for creating thoughtful and context-sensitive streetscapes.

Corridor Streets
Corridor Streets are arteries that connect Cambridge's neighborhoods. They are mixed-use destinations of citywide importance and are designed to prioritize pedestrian use and enjoyment. Corridor Streets are where people work, play, shop, eat, and gather to enjoy city life. Examples of Corridor Streets include: Massachusetts Avenue, Main Street, and Cambridge Street.

Neighborhood Main Streets
Neighborhood Main Streets are located in the heart of Cambridge's neighborhoods and are characterized by an eclectic mix of residences, small businesses, and services at the neighborhood level. Examples include Huron Avenue, Concord Avenue, and sections of Broadway.

Residential Streets
Residential Streets form the backbone of Cambridge's neighborhoods, providing a safe and pleasant environment for residents. These streets are ideal for temporary community programming such as play streets and block parties, and often feature enhanced landscaping and shaded areas. Compared to Neighborhood Main and Corridor Streets, Residential Streets typically have narrower sidewalks, reinforcing their more intimate, neighborhood-scale character.

FIG. 174 Massachusetts Ave, Central Square has a typical Corridor Street character, with a mix of spaces and amenities.

When designing streetscapes, consider the context and local identity to help determine the street's role within the community and the desired level of design and creativity. Streets not identified above, such as parkways, streets that connect the open space network, or routes linking schools to key destinations like playgrounds, have the potential to adopt a more distinct character than typical city streetscapes.

A fourth streetscape type has emerged in Cambridge over the past few decades: the **Shared Street.** Generally, these streets have little to no through traffic, and existing sidewalks are narrow and inaccessible. Shared Streets feature a roadway and sidewalks at the same level, creating a shared space for all modes of transportation. In residential areas, traditional streetscape zones are repurposed into landscaping and stormwater management features. In commercial areas, shared streets prioritize people walking and bicycling while maintaining access for loading and deliveries.

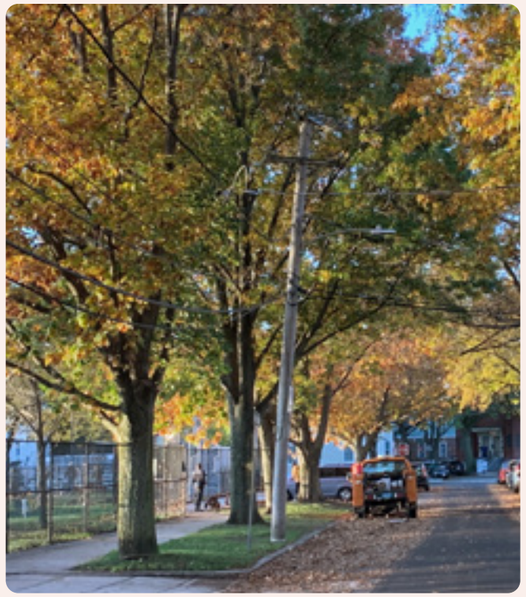


FIG. 175 King St, Cambridge features a line of mature trees planted in a wide, continuous planting bed.

FIG. 176 Longfellow Rd was reconstructed as a shared street that maintains existing trees and maximizes green space.

FIG. 177 Winthrop St, a commercial shared street, uses flush gray concrete and red brick pavers to reinforce its pedestrian-priority.

GUIDELINES

a. Design Corridor Streets to accommodate high pedestrian volumes (FIG. 174) and incorporate a vibrant a mix of social spaces and amenities, such as outdoor dining, parklets, and temporary programming.
- Include visually engaging design elements, such as street furnishings, play features, and public art, to promote active street life.
- Given the additional sidewalk width available, consider incorporating unique and creative design solutions, especially in commercial districts.

b. Provide Corridor Streets with adequate space for larger scale street trees and planted areas.
- Consider how planting trees in lines, allées, or groves can create strong landscape features and aid in orientation and wayfinding.

FIG. 178 Portions of Broadway serve as a main street for the Port neighborhood.

c. Design Neighborhood Main Streets for small gatherings, and flexible use by local businesses (FIG. 178). Consider incorporating elements that reflect local neighborhood identity, and accommodating street trees and other plantings, where possible.

d. Design Residential Streets to enhance residents' quality of life by incorporating street trees and other plantings, and safe, accessible routes to nearby destinations (FIG. 179).

e. Where feasible, design all streets to incorporate a robust presence of vegetation. Street trees should be properly sized for growing conditions, with careful consideration of available root volumes, proximity to overhead utilities and streetlights, and adequate clearance from building walls and windows. (FIG. 175).

f. Create unique streetscape designs in appropriate locations and contexts. For example, streets connecting the open space network can be designed as "Green Streets" emphasizing vegetation, recreational and play opportunities, and integration with the natural environment. (FIG. 180).

FIG. 179 A typical Cambridge residential street in the Port neighborhood.

FIG. 180 Passeig de Sant Joan, Barcelona, prioritizes public use and enjoyment by integrating play areas, seating, and spaces for relaxation and social interaction.

E.2.2 PEOPLE FIRST SIDEWALKS

INTENT

Design sidewalks to make mobility an easy, safe, comfortable, and delightful experience for people of all ages and abilities.

CORE VALUES

INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

Sidewalks are the primary areas within the streetscape that are reserved specifically for people walking and using mobility devices. They serve as the interface between buildings and the roadway, providing both connection and buffer. Sidewalk widths vary throughout Cambridge, with wider sidewalks found in Kendall and Central Squares, and much narrower ones found in other commercial areas, such as Inman Square, and within residential neighborhoods.

Sidewalks serve social, mobility, recreational, and ecological needs, and must include numerous features to support these. Their design is critical to creating pedestrian-friendly environments, safe and comfortable neighborhoods, and lively commercial areas.

Sidewalk Zones

Conceptually, sidewalks can be subdivided into three zones, or areas of use: the **Pedestrian Zone**, the **Planting/Furnishing Zone**, and the **Frontage Zone** (FIG. 181). Each zone plays a slightly different role in the pedestrian experience and has different design parameters. However, these zones are flexible and may serve multiple functions depending on sidewalk width. The width of each zone depends in part on the overall width of the sidewalk. In some cases, all three zones may not be present due to varying sidewalk conditions.

The **Pedestrian Zone** is the middle zone of a sidewalk. Because it primarily accommodates pedestrian circulation, it must be entirely free of obstructions. On some narrow streets, the Pedestrian Zone may comprise the entire sidewalk, leaving little or no space for furnishings or frontage zones.

The **Planting/Furnishing Zone** is located immediately adjacent to the street curb, or sidewalk-level separated bicycle facility, when one exists. Depending on location, the separated bicycle lane (SBL) may be positioned either on the "street side" or the "building side" of the Planting/Furnishing Zone. While the detailed design of bicycle facilities is outside the scope of this document, the interaction and interface between bicycle facilities and adjacent sidewalks should be carefully considered. The Planting/Furnishing Zone buffers pedestrians from street traffic and typically accommodates street trees and plantings, street furnishings, bus stops, and other amenities.

The **Frontage Zone**, located next to the property line, serves as a transitional space that provides pedestrians with a comfortable buffer from building fronts. In commercial districts, window shoppers often use this zone, as do people waiting for friends or seeking cover from the rain. This zone may also be used for merchandise displays and temporary retail signage, provided they do not encroach upon the Pedestrian Zone.

The three zones described above are typical for most Corridor and Neighborhood Main Streets. A Frontage Zone is generally not present on Residential Streets. Additionally, the linear configuration of these zones may differ in large private developments, particularly where buildings and streets deviate from the traditional urban grid or where natural features and topography influence the site layout.

FIG. 181 Ames St in Kendall Square features all three sidewalk zones.

GUIDELINES

a. Ensure sidewalks are continuous and well-connected.

b. Design sidewalks with widths that relate to the anticipated level of pedestrian activity for that specific street section:
- On Corridor and Neighborhood Main Streets, sidewalks should be wider.
- Optimal sidewalk widths should accommodate both safe movement for people walking and rolling, and space for lingering and social interaction. Sidewalks should allow people to comfortably pass one another, including individuals with strollers, those using mobility devices, or a combination of both, ensuring ease of movement for all users.
- Avoid overly wide sidewalks that feel empty because people are distributed over a large a area. However, if ample sidewalk space exists, consider incorporating amenities such as seating, bike share stations, or play features to activate the space.
- On Residential Streets, narrower sidewalks may be appropriate.

c. Consider the three sidewalk zones and their minimum and preferred widths by streetscape character type. Widths will vary depending on existing sidewalk conditions and context (FIG. 182).

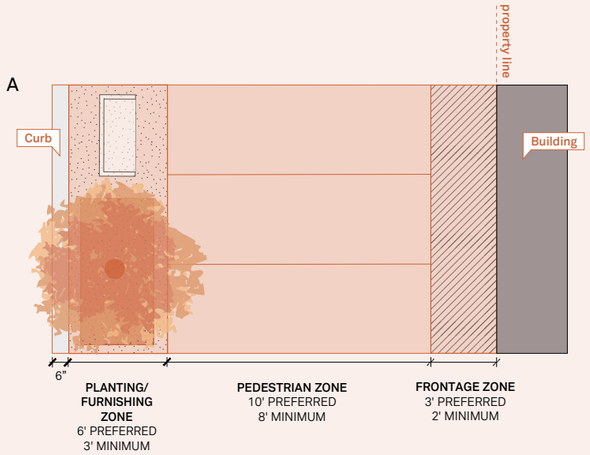
d. Provide a clear, unobstructed Pedestrian Zone. Where possible, align curb ramps and crosswalks with Pedestrian Zones.

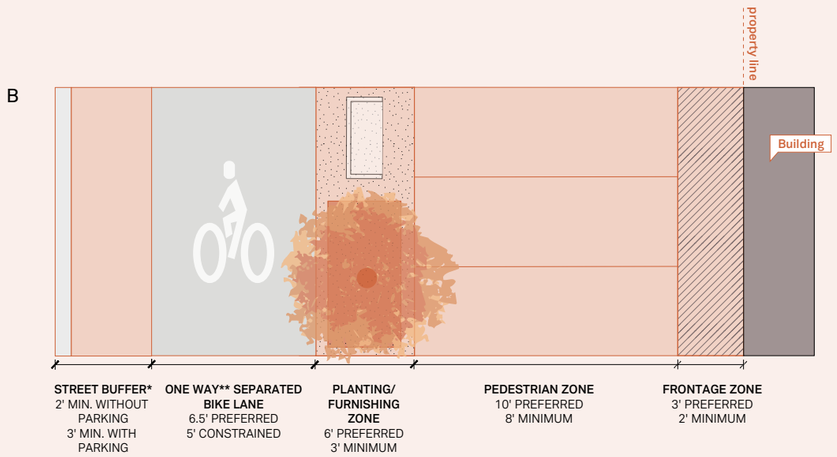
e. Where space permits, provide for a Planting/Furnishing Zone.

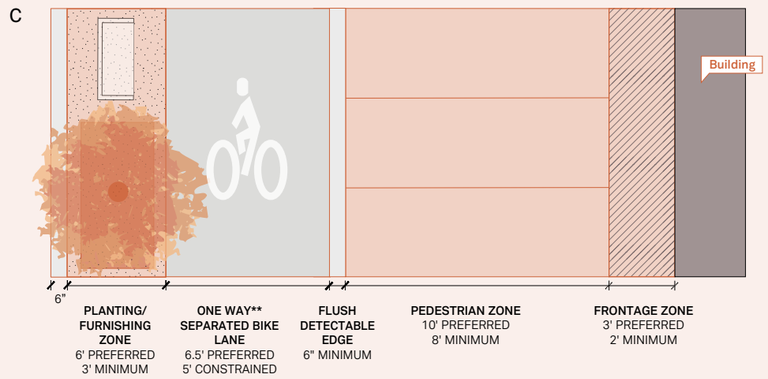
f. On Corridor and Neighborhood Main Streets, provide for a Frontage Zone where space permits.

The absolute minimum width for the Pedestrian Zone is 4 feet, typically where the overall right-of-way is too narrow, or where Planting/Furnishing Zone elements intrude into the Pedestrian Zone. The 4' width can be a maximum of 200' long before a 5'x5' passing space must be provided.
The minimum width for tree pits is 2 feet. However, the preferred width is at least 3 feet, as longer tree wells do not have the same benefits as slightly wider tree wells, which better accommodate tree roots and stem growth.

CORRIDOR STREET





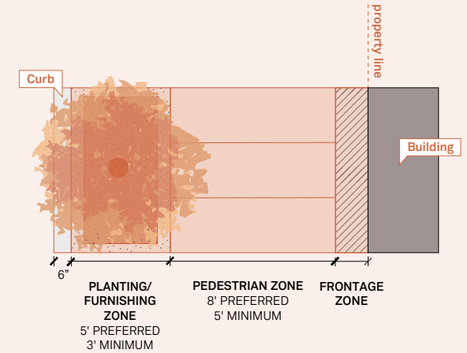


*Dimensions include 6" curb

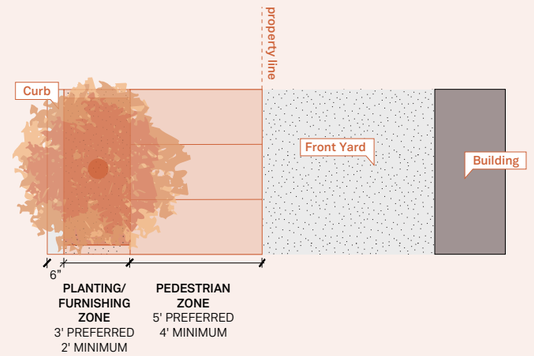
**7' clear width at same level for plowing and sweeping.
Clear width = bike lane + (if needed) portion of street buffer and/or planting/furnishing zone

FIG. 182 Sidewalk zones by street character type. Illustrations depict minimum widths.

NEIGHBORHOOD MAIN STREET



RESIDENTIAL STREET



The SBL shown on the previous page may also be considered for Neighborhood Main Streets.

While each zone has unique considerations, design choices in one often affect the others. The location of Separated Bikes Lanes (SBLs) also affects the layout and design of the zones. For example, when an SBL is located outboard **(FIG. 182) (B)** the Planting/Furniture Zone acts as a buffer that separates people walking and bicycling. In other situations, typically where a narrow street cross-section exists, the SBL is located inboard **(FIG. 182) (C)**, adjacent to the Pedestrian Zone, and the Planting/Furnishing Zone is placed between the vehicular travel lane and the SBL. Decisions about the sidewalk zones, the best locations for SBLs, and associated details will be determined by city staff on a case-by-case basis.

FIG. 183 Sidewalk in Boston featuring a wide Planting/Furnishing zone that accommodates street trees, low plantings, and seating.

FIG. 184 Central Square's sidewalks come alive with vibrant outdoor dining. The brick Planting/Furnishing Zone accommodates seating and activity, while the Pedestrian Zone remains clear and accessible.

g. Where existing sidewalks are too narrow to adequately accommodate pedestrians and street trees, consider:
- Removing parallel parking spaces and expanding the sidewalk space to accommodate a large street tree and increased permeable landscape space.
- Widening the sidewalk at certain locations (e.g. curb bump-outs into the parking lane) to accommodate street trees (FIG. 185).
- Moving the curb, where possible.
- Setting new buildings back from the property line.

h. Locate site furnishings, such as seating, bicycle racks, light poles, fire hydrants, utility cabinets, and other site features within the Planting/Furnishing Zone (FIG. 183). D.3 on page 151

i. Avoid locating outdoor dining within the Pedestrian Zone (FIG. 184). See the City's Outdoor Dining in Public Areas guidelines for further design guidance.

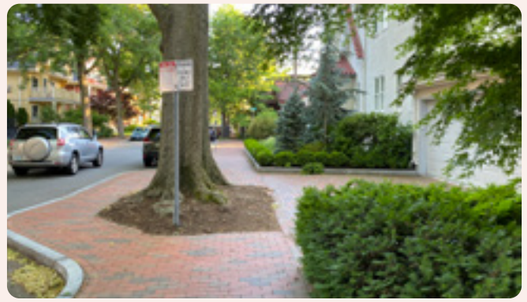


FIG. 185 Narrow residential sidewalk features a curb bump-out which allows for preservation of a large street tree, while providing adequate space for people walking and rolling.

j. Where possible, locate underground utilities within the roadway, outside the curbside area, to avoid conflicts with the sidewalk and potential plantings in curb extensions and islands between parked cars. Lines perpendicular to the curb should not interfere with street trees.

Question to consider:

→ Is the sidewalk wide enough to support a range of activities including strollers, mobility devices, playing, sitting, and socializing?

INTENT

Design vibrant, creative, and playful streetscapes that support diverse uses and programming.

CORE VALUES: INVITING · ECLECTIC · CONTEXTUAL · CONNECTED · ADAPTABLE · HEALTHY

Creative design and programming play a key role in delivering vibrant, people-centric streetscapes. These guidelines illustrate how streetscapes can be thoughtfully designed to help create a public realm that is memorable, inspiring, playful, and welcoming. All design strategies should be context-specific and demonstrate a balanced approach that addresses key factors, including engineering performance, accessibility, aesthetics, environmental standards, and maintainability. Alternative or innovative design approaches that align with the intent of the guidelines are encouraged.

FIG. 186 Chess tables in front of the Smith Center in Harvard Square invites spontaneous play and social interaction.

Include opportunities for collaboration with the local community throughout the design process.

GUIDELINES

a. Take advantage of large expanses of sidewalks, curb extensions, pedestrian-only streets, and shared streets to create more usable public space particularly in areas with limited access to open space. These spaces can accommodate a range of community-enhancing features, such as play, seating, art installations, and plantings (FIG. 187).

b. In appropriate locations, explore opportunities to use curbside areas as parklets. These spaces can support outdoor dining, community seating, play, and other temporary and seasonal activities (FIG. 188).

c. Consider front setback areas on Corridors and Neighborhood Main Streets as opportunities to create space for public use and enjoyment. Where setbacks are deep, the space between the sidewalk and building fronts can accommodate outdoor dining and display, seating opportunities, public art, play, and plantings (FIG. 188).

FIG. 187 A wide sidewalk in Philadelphia features “porch swings”.

FIG. 188 Parklet in Toronto incorporates colorful seating.

d. Consider the programming and use of entire streets as spaces for temporary activities, such as cultural events, play streets, and festivals. This could include the integration of movable plantings and other street furniture and/or the removal of curb cuts and paving (FIG. 189).

e. Use pilot projects, or temporary installations, to test various streetscape design ideas and concepts in the short-term, before making substantial changes to streetscape designs (FIG. 190).

f. Where appropriate, seek opportunities to express local history and/or provide space for cultural expression. Examples include:

- Symbols of community identity.
- Historical markers, artifacts, or commemorative elements that acknowledge the area’s past.
- Place names and signage in multiple languages or with cultural references.

g. Incorporate streetscape activities and elements that offer rich, - experiences, especially for individuals with visual impairments, while minimizing undesirable noise. See D.2.3 on page 143 for examples.

FIG. 189 Street performance in New York City.

FIG. 190 Painted asphalt art testing a possible curb extension.

PLAY

h. Enhance the Pedestrian Zone with painted murals, games on the pavement, color, and embedded artwork (FIG. 192).

i. Incorporate spaces to “pause and play” along streetscapes, particularly in Planting/ Furnishing Zones, where space permits (FIG. 191). These spaces can integrate a variety of seating opportunities and elements of learning and play through color, texture, exercise equipment, games, etc (FIG. 193). Refer to the NACTO Designing Streets for Kids Guide for further guidance ↗

j. Install creative informational signs, designed for children in terms of color and content, that promote play and learning, and/or guide families to play destinations.

k. Incorporate playful street furniture that adds whimsy and serendipity to the streetscape, while retaining functionality and maintenance. For example, install benches and bicycle racks with playful designs.

l. Create a “trail” of creative elements along a streetscape that make walking fun, educational, and playful – perhaps linking neighborhood parks with each other, or with schools (FIG. 194).

m. Explore opportunities to establish permanent play streets in locations where streets can be transformed into pedestrian-only streets, such as residential neighborhoods. These spaces can support various forms of play and recreation, including traditional play, natural elements, imaginative play, and social seating (FIG. 195).

FIG. 191 Temporary "pause and play" installation in Hudson Square, NYC.

FIG. 192 A playful streetscape installation in Copenhagen, Denmark, located adjacent to a school, encourages active use by children.

FIG. 193 A trail of colorful street furniture, such as benches and planters, animates this pedestrian street in London, UK.

FIG. 194 Play street in London, UK invites intergenerational play.

Questions to consider when evaluating the potential role of play in streetscape design:

- → Does this streetscape provide access to child and family-oriented destinations, such as schools, parks, playgrounds, medical centers, and commercial districts?
- → Are there any adjacencies to build synergies with, e.g., locations where families, children, and adolescents gather, such as schools, libraries, and community centers?
- → Where do people of different ages go to play? Where do people meet? Where do people linger?
- → Are there elements that are child-friendly in terms of size, color, texture, and design?

FIG. 195 A sculpture is thoughtfully integrated into the Vellucci Community Plaza in Inman Square.

PUBLIC ART

n. Integrate diverse forms of public art into the streetscape experience to create a more engaging and memorable public realm. Potential interventions include: murals, puzzles, and games on blank facades and sidewalks. uniquely-designed furnishings.

o. In appropriate locations, such as squares, plazas, and key corridors, consider creating spaces equipped with electrical power and designed to accommodate street performers, particularly in building setback areas and Frontage Zones.

D.2.4 on page 147 for further guidance on the integration of art in all open spaces, including streetscapes.

FIG. 196 Cambridge's Sidewalk Poetry program features poems submitted by residents that are stamped into concrete as part of City sidewalk repairs.

E.3 Streetscape Elements

As a busy commercial area, Massachusetts Avenue in Central Square features streetscape elements and amenities that enhance comfort and convenience for people passing through or patronizing businesses. Street trees also help define the space, creating a welcoming, room-like quality within the public realm.

E.3.1 GREEN STREETSCAPES

INTENT

Incorporate street trees and other plantings to provide visual interest, comfort, and human scale, while providing ecological benefits.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Street trees, shrubs, ground cover, and other plantings are critical to the City's quality of life. They enrich streetscapes with beauty, texture, color, and visual interest while contributing to neighborhood identity. Street trees, in particular, serve as important organizing elements within streetscapes, establishing a consistent rhythm and contributing to a sense of scale and enclosure. In addition to their aesthetic value, street plantings enhance pedestrian comfort by providing shade, cooling, and buffers from traffic, while also mitigating wind and noise.

From a sustainability and resilience perspective, street trees play a vital role in enhancing urban environmental performance. They help reduce air pollution, store carbon, reduce stormwater runoff, mitigate urban heat island impacts, and foster biodiversity by providing habitat for birds, insects, and other animals. Establishing and maintaining a healthy, continuous tree canopy along streetscapes is a central goal of the City's Urban Forest Master Plan↗ and is fundamental to building a more livable and climate-resilient city.

FIG. 197 Street trees and shrubs add vibrant color to this neighborhood in the fall.

FIG. 198 Street trees provide a sense of scale and enclosure on this residential street.

GUIDELINES

a. Protect and preserve healthy existing street trees, where possible.

b. Design sidewalks to accommodate and support the long-term health and growth of street trees. Refer to the City's Urban Forest Master Plan ↗ for specific design strategies and details.

c. Plant street trees and other plantings within the Planting/Furnishing Zone and/or along the curbside edge of the sidewalk (FIG. 200). The Planting/Furnishing Zone should be a minimum of 2 feet, preferably 3 feet wide, to accommodate tree roots and stem growth.

d. Plant new street trees, at 20- to 30-foot spacing, as continuously as possible along streets that have adequate sidewalk widths to maintain a minimum 5-foot path of travel (FIG. 199). A 4-foot path of travel is permitted only as a pinch point and in compliance with ADA Guidelines.

e. Where accessibility or visibility is not impacted, plant street trees closer together, creating layers of canopy that increase the benefits of trees and improve their vitality.

f. Where appropriate, strategically create shaded respite areas using cluster tree plantings/groves of trees along streets.

g. Ensure trees and plants do not impede sightlines at intersections and driveways, or existing and future streetscape elements, such as bus stops and crosswalks.

h. Refer to the Department of Public Works list of street trees ↗ for species selection or select alternative tree species that are suitable for the conditions of the streetscape environment.

i. Ensure the long-term health of street trees and their roots.
- Utilize the planting standards and maintenance regimens recommended by the Department of Public Works ↗ and the City's Urban Forest Master Plan ↗.
- Incorporate adequate rooting conditions and access to water for healthy trees by providing permeable paved surfaces and irrigation.
- Incorporate permeable pavement with aeration tubes to allow oxygen to reach tree roots.
- Implement innovative design alternatives, such as Silva Cells, that accommodate space for trees with adequate soil volume.

FIG. 199 Street trees lining Main Street provide human scale, shade, cooling, and seasonal interest.

j. For street tree plantings, consider tree wells, pits, or continuous planting beds (FIG. 201). Per the Department of Public Works Tree Planting Guidelines, avoid a raised edge around tree wells or pits. Recommended enclosure strategies include:
- Perimeter metal plant bed edging, stone or concrete perimeter plant bed curbs (6-inch minimum height).
- Perimeter kick-rail or metal fence (18-inch maximum height).
- Low plantings that protect trees and buffer vulnerable street users. Plantings should be hearty perennials, grasses, or dwarf evergreen shrubs that can withstand salting, snow plowing, pedestrian traffic, pets, and urban runoff.

k. When street trees and other plantings cannot be installed due to site constraints, consider using shade structures, raised planters, and other greening elements, such as green walls and hanging baskets.

l. Where possible, provide green infrastructure in the Planting/ Furnishing Zone, such as rain gardens and bioswales.

FIG. 200 Central Square streetscape features curbside street trees located in the Planting/Furnishing Zone.

FIG. 201 Western Ave features a continuous planting bed with a raised curb, and green infrastructure and low plantings that protect street trees and vulnerable street users.

E.3.2 SIDEWALK PAVING MATERIALS

INTENT

Use high-quality, durable, easy to maintain, and sustainable sidewalk paving materials that are accessible for people of all ages and abilities.

CORE VALUES

INVITING | ECLECTIC | **CONTEXTUAL** | **CONNECTED** | **ADAPTABLE** | HEALTHY

Cambridge has a history of brick sidewalks that reflect its 19th-century industrial roots. In the 1830s and 40s, brickyards in Alewife produced materials for streets using clay from the area. Brick sidewalks became common in the late 19th and early 20th centuries, valued for their durability and aesthetic appeal. Local brick production declined by the mid-20th century, and more utilitarian concrete materials were introduced.

Today, Cambridge's sidewalks are constructed of various materials, with concrete and wire-cut brick (without beveled edges, set on a smooth asphalt base) being the preferred standards. Of the two, brick is often favored for its warmth, visual appeal, and compatibility with historic districts. Concrete is the most frequently used, providing a relatively inexpensive and durable surface that is easier to walk on and maintain. Many city sidewalks are now a patchwork of brick and concrete. Recent sidewalk projects have also introduced alternative materials, such as porous concrete pavers. Sidewalk material standards are established by the DPW and referenced in this section.

City policy typically replaces sidewalks with the same material at no cost to property owners. During construction, individual owners have the option to select a different material. In larger projects, a unified approach to sidewalk design and material selection is often developed through community engagement. For sidewalks in historic districts, the DPW works with the Historical Commission to ensure materials and design are compatible with the district's character.

GUIDELINES

a. Use durable, low maintenance, and readily available paving materials that are able to receive heavy-duty use and withstand weathering.

b. Use high contrast materials and tactile paving to highlight hazard areas and help differentiate between different sidewalk zones and thresholds, which are crucial for people with a range of mobility needs.

FIG. 202 Massachusetts Avenue sidewalks feature a defined Pedestrian Zone with poured concrete, complemented by a red brick edge in the Planting/Furnishing Zone.

c. Select paving materials based on the context and character of the streetscape:
- Sidewalk paving materials should meet relevant City standards (poured concrete or wire-cut brick without beveled edges, placed on a smooth asphalt base).
- For Corridor and Neighborhood Main Streets, utilize poured concrete for the Pedestrian and Frontage Zones, with a decorative, red brick edge treatment adjacent to the curb. Where space permits, the brick edge treatment may be applied to the entire Planting/Furnishing Zone, creating a cohesive streetscape element (FIG. 202).
- The ability to vary from City standards will be considered where there is a desire to create a unique identity for a specific street or district (e.g., historical areas like Harvard Square, and commercial/cultural districts like Central Square). In these locations, alternative paving materials may be used if they align with the intent of these guidelines and are applied consistently across at least one full block to maintain visual continuity.

d. Implement a consistent sidewalk paving material, color, surface finish, and paving or scoring pattern in new streetscape projects. Each sidewalk zone should have a continuous and uniform treatment.

e. Consider using brick paving patterns, such as running bond and string courses, and concrete scoring and joint patterns, to help define individual streetscape areas, and give the sidewalk texture and a pedestrian scale. Coordinate locations of control joints and changes of material with features such as tree wells.

f. Consider paving materials and patterns as opportunities to integrate art, learning, and playful elements into streetscapes.

g. Where possible, preserve or replicate historic sidewalk paving as long as it does not impact access needs. Replace historic brick pavers with wire-cut brick.

The City must construct public sidewalks that meet MAAB regulations, which require surfaces to be stable, firm, and slip-resistant, and generally continuous with minimal surface warping. To reduce unevenness and heaving, brick sidewalks utilize wire-cut brick laid with tight joints on a substrate of concrete or asphalt. While concrete sidewalks provide better ADA compliance and are easier for pedestrians, the use of brick in certain locations aligns with Cambridge's historical preservation concerns. Both materials are often used in combination: concrete for the Pedestrian Zone and brick in the Planting/Furnishing Zone, to achieve a balanced approach that supports accessibility and enhances streetscape character. Varying colors and textures can help define the character of an area, create visual coherence, and improve pedestrian safety and comfort.

h. Consider highlighting special features within the streetscape (FIG. 203).
- Unique paving treatments can be used to delineate the various sidewalk zones and their associated functions.
- Shifts in patterns can be used to indicate different uses, important pedestrian intersections or gateways, and to frame seating areas.

i. On wider streetscapes in commercial districts, coordinate paving in private Frontage Zones with the adjacent sidewalk to create a cohesive pedestrian environment. Opportunities to demarcate the property line, or to vary from the existing sidewalk paving, may be considered as long as the design complements the streetscape (FIG. 204).

j. Continue sidewalk materials across driveway aprons, curb cuts, and entrances to shared streets.

k. Consider selecting paving materials based on life cycle sustainability considerations. Refer to D.3.2 on page 155 for details.

FIG. 204 Pavers demarcate the privately owned Frontage Zone, while complementing other sidewalk paving materials.

l. Consider light-colored paving options, such as concrete, asphalt, pavers, and brick, that have a solar reflectance (SR) value of at least 0.28 after three years or an initial SR of 0.33, where possible.

m. Where hydrology and underlying conditions permit, consider permeable paving materials (e.g., unit pavers, and porous pavement) in the Planting/Furnishing Zone (FIG. 205). The use of porous pavers should be accompanied with routine maintenance to prevent clogging and maintain water infiltration.

FIG. 203 Different paving highlights nodes of seating in the Planting/Furnishing Zone.

FIG. 205 Broad St, Boston features porous brick pavers around tree pits.

INTENT

Design street lighting to ensure safety and comfort for everyone while enhancing the overall streetscape experience.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Good lighting plays an important role in making people feel safe and comfortable at night, illuminating seating areas, highlighting features, and defining the look and feel of an area. Street lighting can also help make streetscapes distinctive and memorable by aiding navigation and wayfinding, defining the rhythm of other streetscape elements, and contributing to the overall experience and beauty of Cambridge.

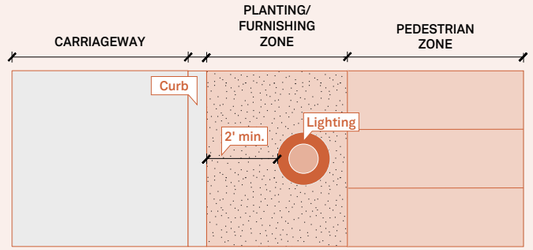


FIG. 206 A minimum of 2 feet between the fixture and curb protects the fixture from vehicles passing close to the curb

FIG. 207 Street lighting along Main Street create a sense of rhythm and continuity, while enhancing safety and the pedestrian experience.

GUIDELINES

a. Use pedestrian-scaled lighting to illuminate streetscapes, particularly on Corridor Streets and in commercial districts. Refer to D.3.3 on page 157 for details.

b. Locate lighting behind the curb and ideally within the Planting/Furnishing Zone, where it exists. Fixtures should be placed at least 2 feet from the curb to avoid damage from vehicles that pass close to the curb (FIG. 206).

c. Locate light fixtures at regular intervals along the sidewalk (FIG. 207). Spacing may vary depending on the type of fixture selected but should generally achieve a uniform level of illumination (FIG. 208).
- Use Photometric analysis to determine the appropriate spacing of light fixtures to ensure that light is spread evenly where it is needed.
- The level and quality of streetscape lighting should consider lighting from all sources, and the function and scale of the street.
- Use lighting to highlight locations where conflicts may exist, such as mid-block crossings and intersections, for improved safety.

d. Coordinate planting with light source placement. Refer to D.3.3b on page 157 for details.

e. Use dark sky-compliant, warm, shielded, and LED lighting fixtures that create a balanced lighting environment that neither under-lights nor over-lights the sidewalk.

f. Select light fixtures based on the context and character of the streetscape.
- Generally, use City standard light fixtures to provide a relatively simple and timeless backdrop to the city's streetscapes.
- In certain areas, such as squares and commercial districts, unique and decorative light fixtures can enhance the visual quality and streetscape ambiance. In these instances, such changes should be considered within the context of the surrounding streetscape and at least on a block-length basis.

g. Coordinate pole and fixture design with other street furniture to establish a unified, streetscape design palette.

h. In commercial districts, consider integrating other streetscape elements such as signs, planters, artwork, and banners into the lighting system to minimize visual clutter (FIG. 209).

i. Where appropriate, consider opportunities for accent lighting, such as seasonal lighting, light installations/ art, and other functional and decorative landscape lighting approaches (FIG. 210).

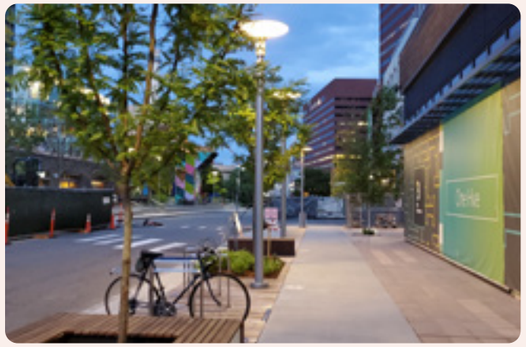


FIG. 208 Light fixtures deployed at regular intervals provide a uniform level of light along Broad Canal Way.

FIG. 209 Union Square, Somerville incorporates a mix of unique light fixtures, both poles and lighting integrated into furnishings and planting areas.

FIG. 210 Decorative lighting enhances the ambiance of Central Square, adding character, and visual interest to the streetscape.

INTENT

Provide streetscape furnishings that are functional, durable, and easy to maintain, while enhancing pedestrian comfort.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

As major public spaces, streetscapes should be designed to prioritize people. To achieve this, street furnishings such as benches, bicycle racks, trash receptacles, and other amenities should be provided to enhance the public realm. In addition to inviting pedestrian activity, these elements also contribute to the social and cultural life of the street, encourage community interaction, provide comfort, and help shade the unique identity of a place.

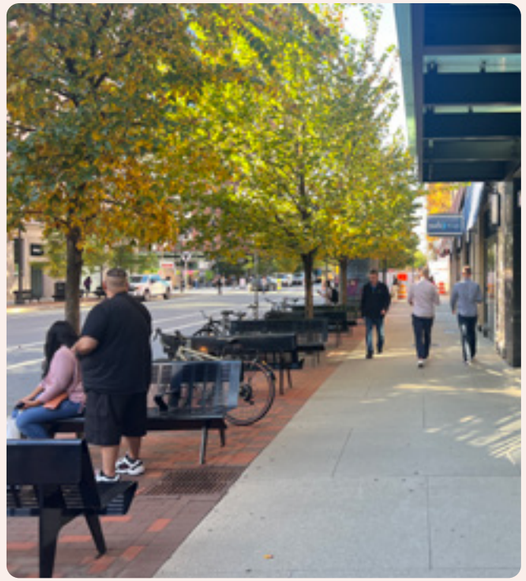


FIG. 211 Benches, bicycle racks, street trees, and brick paving define the Planting/Furnishings Zone in Kendall Square.

GUIDELINES

PLACEMENT AND LOCATION

a. Prioritize street furnishings in areas with high levels of pedestrian activity, such as commercial districts, transit stations, intersections, and near community destinations, especially those frequently visited by families, older adults, and other vulnerable populations.

b. Locate street furnishings along the curbside edge of the sidewalk, within the Planting/Furnishing Zone, at least 2 feet from the curb.

c. Consider locations in the Frontage Zone as long as furnishings do not obstruct the Pedestrian Zone.

d. Arrange street furnishings in coordination with street trees and street lighting.

e. Keep the location of street furniture predictable to support access for people with visual impairments.

f. Avoid locations that might interfere with pedestrian access to building entrances.

g. Study specific site conditions to help guide the placement of furnishings. Furniture layouts and arrangements should consider visibility, sightlines, lighting, and accessibility.

MATERIALS AND STYLE

h. Reflect the site-specific context when selecting furnishing styles.
- When planning streetscape improvement projects, generally prioritize the use of City-standard streetscape furniture.
- Context-sensitive variations from the standard palette may be appropriate—and are often encouraged—when developed as part of a comprehensive design process that considers the character of an entire street, neighborhood, or district (FIG. 212).

i. Maintain a consistent design palette along the length of a block or at the district level by coordinating design, type, color, and materials used for streetscape furnishings. These considerations can help celebrate and enhance the identity of a neighborhood, district, or street (FIG. 213).

j. Furnishings within the Frontage Zone (if privately-owned) may vary, but should still be designed to complement the streetscape furnishings in the area.

FIG. 212 Broad Canal Way takes a holistic design approach that incorporates unique furnishings.

FIG. 213 East Boston streetscape with a consistent and coordinated design palette.

Refer to D.3.4 on page 159 for further guidance on materials and styles of furnishings in all open spaces, including streetscapes.

INTENT

Provide attractive, comfortable, welcoming, convenient, and inclusive seating options.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

Seating deserves particular attention because it helps create welcoming, comfortable, and lively streetscapes. It supports a range of everyday activities, such as resting, socializing, reading, or people-watching, and transforms public spaces into places where people want to linger. As a simple yet impactful intervention, well-designed seating plays a significant role in fostering a sense of place and reinforcing the character of the city's streetscapes. Providing opportunities to stop, rest, and enjoy the public realm enhances the experience for all users and promotes a more inclusive and inviting people-centered environment.

GUIDELINES

PLACEMENT AND LOCATION

a. Prioritize seating on busy walking streets, such as in commercial districts, or locations where there may be high levels of pedestrian activity, such as near transit stations, intersections, and community destinations, especially where families and seniors regularly frequent.
- Prioritize locations near concentrations of high activity storefront uses and uses likely to animate seating (e.g., cafes, grab and go food establishments, cultural venues, and other points of interest), and/or concentrations of building entrances.
- Prioritize wider sidewalks in these areas to accommodate more vibrant and diverse social interaction.

b. Locate seating in areas that are outside the pedestrian path of travel, such as the Planting/Furnishing Zone, a minimum of 2 feet from the curb, or in the Frontage Zone.

c. Consider how seating may interact with adjacent bicycle facilities, including the clearances required for parked bicycles.

d. Avoid locations that interfere with curb ramps, fire hydrants, parking meters, or emergency access ways.

e. Install seating at frequent intervals to provide resting points along streetscapes for people of all ages and abilities (FIG. 215). Clustering or alternate locations should be considered where people would typically want to wait, meet, or socialize.

f. Consider various seating arrangements, depending on available sidewalk widths and site-specific conditions (FIG. 216).
- On wider sidewalks, place benches perpendicular to the curb, and facing each other to encourage social interaction.
- Where seating is oriented parallel to the curb, it should face toward buildings when located in the Planting/ Furnishing zone, or away from buildings when located in the Frontage Zone (FIG. 215).
- Consider alternative seating configurations in certain circumstances, such as bus stops, where seats should face the street, or where there are desirable views or adjacent uses/activities that suggest a different layout.

FIG. 214 Seating on North Mass Ave provides a resting point along the street while staying clear of the pedestrian zone.

FIG. 215 City-standard bench arranged facing away from the building in the Frontage Zone.

FIG. 216 Vassal Lane Plaza, Cambridge integrates a variety of seating options, plantings, pedestrian pathways, a bus stop, and Bike Share Station to foster community gathering and enhance connectivity.

g. Where additional sidewalk space is available, such as on curb extensions, provide a diversity of seating options, including flexible arrangements that create social spaces and promote engagement within the city's streetscapes (FIG. 217).

h. Encourage property owners to include publicly accessible seating on private frontages adjacent to sidewalks, particularly in areas with active storefronts or community uses.

i. Generally, prioritize the use of free-standing, fixed benches with backs and armrests to support comfort and accessibility for a wide range of users.

j. In appropriate locations, such as commercial areas and squares, supplement standard benches with a mix of seating options, such as backless benches, seat walls, or movable chairs, to encourage diverse uses and group interaction.

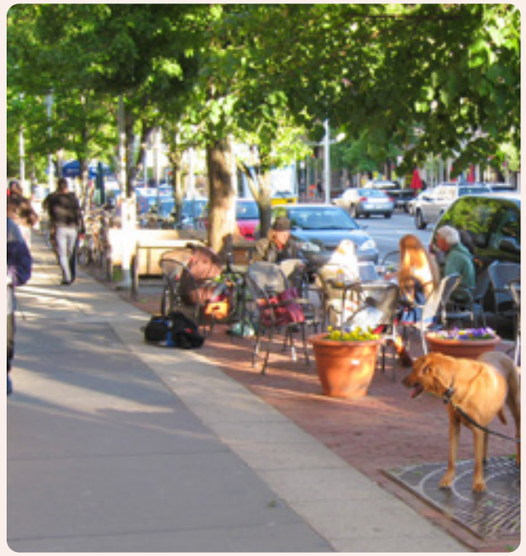


FIG. 217 Fixed benches and flexible seating is provided in the additional space on this sidewalk.

FIG. 218 Benches with back supports and armrests are part of age-friendly furnishings and should be prioritized.

D.3.4.1 on page 160 for further guidance on the locations and design of seating in all open spaces, including streetscapes.

For details about the placement and layout of outdoor dining areas, see the City's Outdoor Dining in Public Areas guidelines

E.3.4.2 BICYCLE PARKING

INTENT

Provide bicycle parking and bicycle share stations in convenient locations for daily use.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Ensure bicycle rack styles and locations meet City Standards and regulations. For further information, see City's Bicycle Plan ↗.

b. Ensure that there is adequate bicycle parking along corridors, particularly in commercial areas.

c. Install bicycle racks within the Planting/Furnishing Zone, following City standards for dimensions and layout.

d. Ensure that parked bicycles do not obstruct the path of travel for people walking (FIG. 220), interfere with seating areas, or obstruct access to buildings.

FIG. 219 A well-integrated Bike Share Station on Binney Street.

Bike share is an essential component of an accessible, affordable, and sustainable transportation network. The City aims to ensure that bike share stations are located within a 5-minute walk of all key destinations. See the CDD's Transportation Division website for further bike share details.

e. Coordinate bicycle rack styles with other furnishings.

f. Encourage private property owners to install public bicycle parking on their land adjacent to sidewalks, ensuring bicycles do not encroach into the Pedestrian Zone.

g. In appropriate locations, consider opportunities to use creative/artistic bicycle racks to help animate the street and highlight local identity. Bicycle racks must meet City standards.

BIKE SHARE STATIONS

h. Locate bike share stations in the Planting/Furniture Zone, on curb extensions, or in Frontage Zones at the back of sidewalks, provided they do not obstruct pedestrian flow or accessibility.

i. Carefully consider the rhythm/spacing of street trees and continuity of streetscape vegetation when installing shared bike stations (FIG. 219).

E.3.4.3 OTHER FURNISHINGS

INTENT

Provide other streetscape furnishings in suitable locations to enhance pedestrian comfort, safety, and enjoyment.

CORE VALUES

INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

BUS SHELTERS

a. Provide bus shelters at busy transit stops and near community service destinations like senior housing facilities, hospitals, and city facilities. Coordinate with city staff on bus shelter needs, future plans, and preferred locations.

b. Prioritize safety, visibility, and accessibility when siting bus shelters.

c. Where possible, co-locate other street furniture elements, such as bicycle racks, bicycle sharing, drinking fountains, and trash cans, at stops.

d. Ensure that shelter styles and designs complement the character of the area (FIG. 220).
- Generally, select bus shelters with high levels of transparency, and unobtrusive base plate/footing details.

See the CDD's Transportation Division website for further bus shelter location, siting, and design details.

For further stop location, boarding, and alignment considerations, see the MBTA Bus Stop Design Guide.

e. Consider using similar materials and finishes for all City bus shelters to enhance community identity.

f. In appropriate locations, consider opportunities for creative and unique shelter designs.

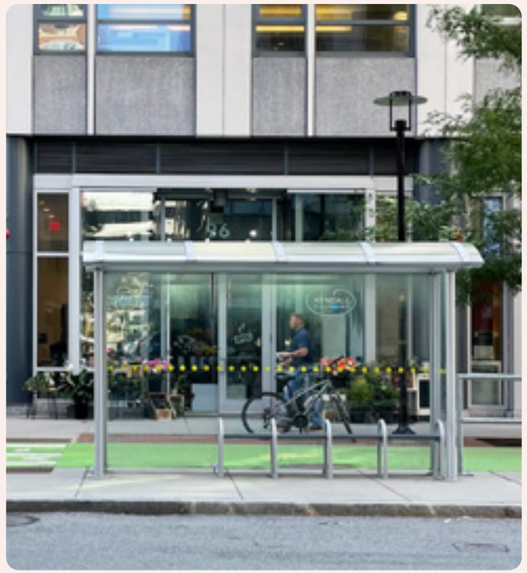


FIG. 220 Visually transparent bus shelter in Kendall Square enhances safety and visibility for all users. The stop also features a floating design that separates bus passengers from the bicycle lane, improving both comfort and circulation.

SHADE STRUCTURES

g. Complement street trees with shade structures to provide consistent year-round thermal comfort along streetscapes, offering protection from the sun, rain, and snow where natural canopy coverage is insufficient.

h. Locate shade structures within the Planting/Furnishing zone, the building setback, or the Frontage Zone, ensuring they do not obstruct pedestrian or bicycle circulation. Prioritize structural shading in areas with high foot traffic or limited tree canopy to enhance comfort and accessibility.

FIG. 221 A dynamic, sculptural shade structure offers shelter, defines circulation routes, and enhances the public realm.

D.3.4.3 on page 163 for further guidance on the placement and design of trash receptacles.

D.3.4.3 on page 163 for further guidance on the design of shade structures.

DRINKING WATER FOUNTAINS

i. Provide well-maintained drinking water fountains in convenient and accessible locations, particularly close to squares, parks, and transit stops.

j. Consider drinking fountains, water bottle fillers, and dog bowls.

TRASH RECEPTACLES

k. Locate trash receptacles in the planting/furnishing zone at a minimum of 2 feet from the curb, on private property, or in the frontage zone near a building entrance. Avoid locations that interfere with the path of travel for people walking, especially on narrow sidewalks.

l. Place trash cans near food vendors, transit stops, and seating areas, while ensuring adequate separation to minimize odors.

m. Use City-standard trash and recycling receptacles.

INTENT

Design streetscape wayfinding signage that is pedestrian-scaled, site-responsive, and accessible.

CORE VALUES: INVITING | ECLECTIC | CONTEXTUAL | CONNECTED | ADAPTABLE | HEALTHY

GUIDELINES

a. Understand user needs when considering the need for signage within streetscapes.

b. Locate signage within the Planting/Furnishing Zone.

c. Avoid locations that interfere with the movement of people walking or biking.

d. Leave adequate space between signage and other streetscape elements in the Planting/Furnishing Zone, such as street trees, seating, trash receptacles, bicycle racks, bus shelters, traffic signs, traffic signal poles, and street lighting.

e. Locate signage in locations that provide visibility from multiple vantage points.
- Place to avoid large structures (e.g. bus shelters, utility boxes).
- Locate near street lights to maximize visibility at night.

f. Maintain 6 feet minimum clearance from intersections, crossings, and driveways.

D.3.4.6 on page 167 for further guidance on accessibility, signage design, and interpretive signage.

g. Consider integrating wayfinding and/or branding signage into the design of streetscape elements, such as light or traffic poles, to minimize clutter (FIG. 223).

h. Eliminate existing redundant and out-of-date signage as much as possible.

i. Provide universally-accessible signage within streetscapes.

j. Avoid using campus-style signage unless appropriate to an academic setting.

k. Where appropriate, locate directional signage at key decision points along journeys.

l. Where appropriate, incorporate interpretive signage to enrich the public realm.

FIG. 222 Banners on light poles help people navigate the city.

Once an underutilized portion of Holland Street in The Barton, Australia, this segment was transformed into a safe and active streetscape, with an emphasis on pedestrian movement and play. Unique design elements such as custom seating, wayfinding elements, public art, and the use of vibrant colors result in a vibrant and multifunctional public space.

Glossary

Abutting/Adjoining Two or more lots physically sharing a common boundary line or two buildings/structures in contact with each other, but not overlapping.

Adjacent Near, close, or contiguous.

Active Use Building program that animates streets and open spaces by encouraging actual or visual engagement between building tenants and the public. Active uses include residential entrances, restaurants, cafes, retail, services for the public (e.g. fitness centers, cafeterias, daycares, etc.), community spaces, art exhibition spaces/ display windows, creative workspaces, cultural venues, and city services.

Alleys Narrow streets that add to the diversity of the overall open space network, supporting the walkability and human scaled character of a city. Often retrofitted from old service lanes, alleys can provide opportunities to prioritize pedestrians, and add vibrant spaces to a neighborhood (Global Street Design Guide).

Articulation The way portions of a building form are expressed (materials, color, texture, pattern, modulation, etc.) and come together to define the structure.

Appropriate Fitting or suitable to a particular situation, location, or setting.

Awning A projecting element made of canvas or other material stretched on a frame and used to keep the sun or rain off a storefront, window, doorway, or deck. It is a type of sunshade.

Blank Facade or Wall Any portion of a building face that does not have windows or doors that allow interaction with the public realm.

Block A group of adjacent buildings, bounded by public streets or other open spaces.

Blue roof Roof that can retain water during peak rain events. They are designed to hold up to eight inches of precipitation on its surface or in engineered trays. It is comparable to a green roof without soil or vegetation.

Build-to line A line, typically parallel to the lot line, where the facade of a building is required to be located.

Building Envelope The exterior elements of a building which form a barrier between the internal and exterior spaces. For an air conditioned building, the building envelope is defined as the elements of a building that separate conditioned spaces from the exterior.

Canopy A roofed shelter projecting over a sidewalk, driveway, entry, window, or similar area that may be supported by a building or by columns, poles, or braces extending from the ground.

Canopy (Tree) The diameter of the tree crown at maturity.

Character Prevailing existing architectural elements, including building mass, scale, and era they were built.

Colonnade Covered publicly accessible pedestrian passageways that are integrated into volumes of buildings at specified levels.

Comfort Physical ease—temperature, wind pressure, glare, safety, air quality—of the human body in an outdoor place.

Compatible Able to exist or occur together without conflict.

Complement Be adjacent and agreeable in scale, proportion, composition, and type but not identical in style or manner.

Context The interrelated conditions in which something exists or occurs. The physical and cultural environment around a specific site or how a proposed building may be described within its surroundings.

Cool Roof A cool roof is designed to reflect more sunlight than a conventional roof, absorbing less solar energy and thereby reducing heat transfer to the building (U.S. DOE).

Cornice A molded and projecting horizontal feature that crowns a façade.

Corridor A mixed-use main artery of citywide importance. In Cambridge, corridors include the following streets: Massachusetts Ave, Cambridge St, and Main St.

Dark Sky Compliant Lighting fixtures and practices that minimizes light pollution by directing light downward and away from the night sky.

Facade The face of a building towards a street or other open space. The primary or "front" face of a building, it is particularly important as it frames the public realm and contributes to its character.

Fenestration The arrangement of windows and doors on the facade of a building.

Flood Barriers Structures that prevent or reduce flooding by controlling or redirecting water flow.

Frontage (Building) The building façade facing a street or public open space.

Frontage (Street) The property line or part of the site facing a street or public open space.

Frontage Zone (Sidewalk) The portion of the sidewalk adjacent to the property line that serves as a transitional space that allows pedestrians a comfortable distance from building fronts.

Functional Element (Building) Feature that is essential to the function of buildings, often overlooked during early design phases. Functional elements include through-wall vents for commercial and residential buildings, roof overflow scuppers, fire control panels and rooms, fire department connections, security devices, emergency egress doors, gas and electrical meters, transformer access doors and louvers, mail boxes, annunciator panels.

Glazing All areas in the building envelope that let in light, including windows, plastic panels, clerestories, skylights, doors that are more than one half glass, and glass block walls.

Green Infrastructure In 2019, Congress enacted the Water Infrastructure Improvement Act, which defines green infrastructure as "the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters.

Green Roof A roof that is partially or completely covered with vegetation and a growing medium, planted over a waterproof membrane. It may also include components such as a root barrier, drainage, and irrigation systems.

Green Wall A vertical system designed to support the growth of living plants, often incorporating a growth medium and a built-in irrigation system.

Grade The mean finished ground elevation of a lot measured either around the entire perimeter of the building or along any existing wall facing a public street, which ground elevation is maintained naturally without any structural support.

High-Rise Building A building with more than eight stories.

Historically/Architecturally Significant Buildings Buildings listed on the National Register of Historic Places, located in designated historic or neighborhood conservation districts, individually designated as landmarks, protected by preservation easements, more than fifty years old and determined by the Cambridge Historical Commission to be significant under local ordinances.

Human Scale The presence of building elements that relates to human size and encourage human presence and interaction.

Landmark Readily identifiable object which serves as an external reference point.

Landscape Open space designed to enhance the functional, social, and ecological qualities of a site. Landscape includes soft landscape (organic elements such as soil, groundcover, shrubs, trees), hard landscape (pathways, decking), and features (furnishings, lighting, recreation and play equipment).

Large Citywide Parks Large-scale open spaces of citywide or regional importance with OSNA walkshed of 0.5 miles.

Large site A development site that has a total area of 75,000 square feet or more.

Large tree A tree which is 51 feet or more at height or canopy spread at maturity.

Legibility The ease with which parts of the built environment can be recognized and can be perceived as elements of a coherent pattern.

Low Impact Development (LID) A land planning and engineering design approach which aims to reduce stormwater runoff and mimic a site's pre-development hydrology by minimizing disturbed areas and impervious cover, infiltrating, storing, evapotranspiring, retaining, and/or biotreating stormwater runoff close to its source, or on site.

Lot A parcel of land in identical ownership throughout, bounded by other lots or by streets, which is designated by its owner to be used, developed or built upon as a unit.

Low-Rise Building A building with one to three stories.

Massing The three-dimensional form of a building's volume including its height and major articulations.

Maturity (Trees) When a tree reaches 12.1 inches diameter at four and a half feet above grade.

Mechanical Equipment Includes, but is not limited to, ventilation equipment including exhaust fans and ducts, air conditioning equipment, elevator bulkheads, heat exchangers, and transformers.

Microclimate The local climate of a relatively small area. Microclimatic conditions depend on such factors as temperature, humidity, wind and turbulence, dew, frost, heat balance, and evaporation. Microclimates are influenced by site features such as soil types and compositions, reflection characteristics and color of surfaces, the presence of vegetation, and topography, among others.

Micromobility A range of small and light-weight devices that typically operate at speeds below 25 km/h (15mph). These may include bicycles (personal or shared), e-bikes, electric scooters, and electric skateboards.

Mid-Rise Building A building between four and nine stories.

Mixed-Use Projects that include more than one major class of uses— such as residential, commercial, industrial, or public and semi-public uses— within the same building, development, or area.

Neighborhood Main Street A mixed-use street of neighborhood-wide importance.

Open Space Amenities Blue Bike stations, bike racks, textile recycling bins, trash & recycling bins, sharps bins, recharging stations, bottle filling stations, comfort stations, and dog waste stations.

Passive Design Energy-efficient building design that regulates comfortable interior temperature by optimizing façade materials, high-performance windows, and building orientation to substantially reduce the need for auxiliary heating and cooling systems.

Path of Travel A continuous, unobstructed way of pedestrian passage.

Pedestrian Zone *(Building)* The ground floor, and on occasion the second floor of a building fronting a street or open space. The Pedestrian Zone should offer pedestrian amenities, comfort, shelter, and visual enrichment, and accommodate retail, community and other active uses.

Pedestrian Zone (Sidewalk) The middle portion of the sidewalk that primarily accommodates pedestrian circulation. The Pedestrian Zone should be entirely free of obstructions.

Placekeeping The process of preserving the culture, history, ecological landscape, and stories of a place while embracing the community's social fabric into the built environment.

Placemaking The creation and shaping of public spaces in a participatory process with users of the space, creating a connection between people and the environment through interaction with the space.

Planting/Furnishing Zone (Sidewalk) The portion of the sidewalk immediately adjacent to the street curb or sidewalk-level bicycle facility when one exists. The Planting/Furnishing zone buffers pedestrians from street traffic, and generally accommodates street trees and plantings, street furnishings, and other amenities.

Penthouse An enclosed, unoccupied rooftop structure that houses mechanical, electrical, plumbing equipment, elevator machinery, roof access, and building systems.

Percent Transparency The ratio of transparent window and door glazing to the total facade area. Also called the "Window-to-Wall Ratio".

Primary Building Entrance A single entrance to a building that provides access to the use with the maximum area in the building program. A building can have several uses and more than one separate entrance for each of those uses, but a building can have only one primary entrance; all others are secondary building entrances.

Primary Street A main thoroughfare, including through routes and mixed-use, multi-functional streets (at least in part along their length).

Private Open Space Open areas for outdoor living and recreation that are adjacent and directly accessible to a single dwelling unit or to all dwelling units they are designed to serve, reserved for the exclusive use of residents and their guests.

Privately-Owned Public Space (POPS) Open space that is owned, provided, and managed by a private entity through an agreement between the public and private sector that was developed during the City's project review process.

Program An architectural program is a statement of a client's requirements. A program typically includes a list of uses, adjacencies, and circulation issues of the project.

Proportion The relationships of the various objects and spaces that make up a structure to one another and to the whole. These relationships are often governed by multiples of a standard unit of length known as a "module".

Public Art Any work of art, temporary or permanent, created for and accessible to the general public. Public art embraces a wide range of forms, sizes, and scales, and includes, but is not limited to, murals, sculptures, memorials, monuments, integrated architectural or landscape features, functional elements (such as street furniture, lighting, etc.), community art, digital media, performances and festivals.

Public Life People create public life when they connect with each other in public space—streets, plazas, parks, and city space between buildings. Public life is about the everyday activities that people take part in when they spend time outside of their homes, workplaces, and cars.

Public Open Space Publicly-owned space and publicly-accessible, privately-owned space for active and passive recreation, human experiences of urban nature, as well as for conservation.

Public Realm The public realm consists of all spaces that are physically and/or visually accessible to the public, regardless of ownership. These spaces can include, but are not limited to, privately and publicly-owned open spaces, parks, plazas, squares, streets, sidewalks, paths, building ground floors, and facades.

Public Way Any passageway or part thereof open as of right to the public and designed for travel.

Publicly Accessible Areas that must be fully open to public access and meet all applicable universal accessibility requirements.

Purple Roof A purple roof is a green roof concept that optimizes stormwater retention and is pioneering detention in vegetated and non-vegetated roof coverings.

Reflect To give back or exhibit as an image, likeness, or outline. This document uses "reflect" to describe how new elements may seem of the same family or extend a series of similar older elements. It is not intended to imply a mirror-like copy.

Regionally-Sourced Materials Building materials that have been extracted, harvested or recovered, as well as manufactured within a 500 mile radius of the project site.

Relate Indicate connections with something else. Express aspects of the geometry, form, circulation, detailing, materiality, or use of an existing element.

Resilience The ability to endure or recover quickly from adversity.

Rhythm A regular and repeating pattern of building elements.

Right-of-Way Transportation corridors that comprise the majority of the public realm and are typically owned by a government entity. They facilitate movement and connections, and include streets, sidewalks, and paths.

Scale A proportionate size in relation to a point of reference.

Secondary Street The local roadways that connect to primary streets and neighborhoods.

Setback Line A line delineating the minimum distance which a building, portion of a building, or other structure must be set back from the property line, street, or a designated natural feature.

Setback Zone The area between the lot line and the setback line.

Side Street Smaller local neighborhood streets, typically connecting to secondary streets.

Sign Any writing, words, pictures or symbols, that is on or attached to a building or other structure.

Sign (Directional / Wayfinding / Interpretive) A sign which provides directional/wayfinding information as well as access and circulation routes for emergency entry and exit and provides interpretive materials/information that enhances people's understanding and enjoyment of the places.

Solar Reflectance Index (SRI) The measure of a constructed surface's ability to stay cool in the sun by reflecting solar radiation and emitting thermal radiation, as defined by ASTM International. It is expressed as a unit-less value ranging from 0 to 100, with 0 representing the lowest possible solar reflectance and 100 representing the highest possible solar reflectance.

Stepback A setback occurring at an upper level of a building that results in the façade above being located further back from the plane of the façade below.

Streetwall Zone The portion of a building facade fronting a street or open space that extends from the Pedestrian Zone to a height typically equal to the width of the adjacent right of way.

Structural Soil A pavement substrate that can meet the load bearing requirements for structurally sound pavement surfaces, yet still allow roots to grow under and away from pavements. The mixture consists of a stone matrix for strength and soil to meet horticultural needs.

Sunshade A building element used to provide shade and protection from the sun.

Sustainable Design Improvements to project performance to reduce environmental impacts, conserve resources, and create a healthy environment for occupants.

Top Zone (Building) The uppermost portion of a building. Depending on building height, this may include cornices, roofs, mechanical penthouses or enclosures, and potentially one or more residential floors and/or common spaces.

Tower Zone The portion of a tall building that extends from the Streetwall Zone to the Top Zone. Not all buildings will have a tower zone.

Traditional Storefront Design Typical storefront's in Cambridge's squares with large display windows, transom windows, signage bands, and recessed entrances.

Universal Design The practice of planning spaces and buildings so they can be used by the widest range of people possible, regardless of age, size, or ability. The goal is to create a built environment that is usable by all people without the need for specialized adaptation.

Urban Fabric The physical aspect of urban design, including buildings, open spaces, and streetscapes but excluding environmental, functional, economic, and sociocultural aspects.

Urban Heat Island (UHI) The increased temperature in urban settings caused by the replacement of natural land cover with surfaces that absorb and retain heat.

Volume A three-dimensional portion of a building or building element.

Visible Light Transmittance (VLT) The measurable amount of solar visible light (daylight) that passes through a glazing system. A glazing system with a high VLT allows most of the daylight to pass through while a lower VLT window restricts the majority of light from entering a building.

Visible Light Reflectance (VLR) The measurable amount of visible light that is reflected out by a glazing system. A glazing system with a high VLR means that most of the daylight is not passing through the window.

Wayfinding The ability to orient oneself in a physical space and navigate from one place to another by looking at visual cues.

Wet Floodproofing A flood protection measure that mitigates damage from flooding by allowing floodwaters to enter the structure or area.

White Roof A type of cool roof that is painted or coated with a white, highly reflective material to reflect sunlight and reduce heat absorption thus lowering building cooling needs and mitigating the UHI effect.

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