

**DESIGN GUIDELINES
FOR 100% AFFORDABLE
HOUSING OVERLAY
DRAFT**

29 JULY 2019

CITY OF CAMBRIDGE

COMMUNITY DEVELOPMENT DEPARTMENT

Intentionally blank

Contents

INTRODUCTION	5
1. Purpose	6
2. Addressing Neighborhood Context	7

SITE DESIGN	9
1. Response to Context	10
2. Open Space and Landscape Design	12
3. Circulation	16
4. Parking	17
5. Utilities and Services	18
6. Outdoor Lighting	19
7. Public Art	20

BUILDING DESIGN	21
1. Massing	22
2. Facades	26
3. Architectural Details, Materials, Color, and Finishes	34
4. Building Interiors	36

SUSTAINABLE DESIGN	39
1. Sustainable Design	40

GLOSSARY	42
-----------------	-----------

ACKNOWLEDGMENTS	44
------------------------	-----------

Intentionally blank

INTRODUCTION

The affordable housing design guidelines have been prepared to complement the Affordable Housing Overlay Zoning Petition. The intent of these guidelines is to articulate the City's goals with regard to the form and character desirable for new affordable housing development built under the Affordable Housing Overlay provisions. The guidelines will help affordable housing developers prioritize design elements in the context of limited financial capacity as compared to market-rate residential development.

In several zoning districts, the Affordable Housing Overlay proposal would allow 100% affordable housing buildings to be built at a scale larger and taller than other buildings allowed by current zoning in the district. The guidelines in this document provide a shared framework to guide the discussion among the many parties that are involved with an affordable housing development, including the design team, the property owner/developer, neighbors, members of the broader community, the Planning Board, City staff, the Affordable Housing Trust, and other public agencies. They are not meant to be applied as individual requirements, but as a structured set of guiding principles to inform the design process.

These guidelines are intended to promote development of affordable housing that will both benefit residents of new housing and support site and building of larger buildings so that they serve as good neighbors to the surrounding neighborhoods and quality of life.

1. PURPOSE

The affordable housing design guidelines are meant to:

- 1.1 Provide affordable housing developers, property owners, the Planning Board, neighbors, City staff, and the Affordable Housing Trust with a framework to guide the advisory design review process for affordable housing development under the Affordable Housing Overlay.
- 1.2 Assist in creating new 100% affordable housing developments that are contextual, that incorporate urban design best practices and strive for design excellence, including integrating green infrastructure and green building design.
- 1.3 Create context-sensitive affordable housing developments that enhance their neighborhoods and the public realm.
- 1.4 Provide guidance for new construction, rehab, and addition to existing buildings.

2. ADDRESSING NEIGHBORHOOD CONTEXT

- 2.1 The design of new affordable housing developments should respond to the architectural and landscape character of their neighborhoods.
- 2.2 The Affordable Housing Overlay Zoning Petition is a city-wide effort and its zoning requirements apply to all land use districts: residential, office, business and industrial. The design guidelines complement the zoning requirements with a focus on the built-form of new affordable housing development in residential neighborhoods, and along business and commercial streets. Residential neighborhoods, and business and commercial streets vary in architectural character, form, scale, and density; and accordingly, the guidelines are intended to respond to and enhance the distinguishing characteristics of each.
- 2.3 The design of new affordable housing developments should begin with an analysis of the existing immediate contexts and the broader character of their neighborhoods. The analysis should take into consideration parameters including the characteristics of the public realm, the street and pedestrian network, the surrounding land uses and building types, landscape design, building siting, building scale and massing, architectural language, details, and the colors and textures of building materials, and other aspects that contribute to neighborhood character.

Intentionally blank

SITE DESIGN

Thoughtful building placement, orientation, setbacks, green open space, landscaping, circulation, pedestrian access, and parking layout are critical elements to creating a desirable setting for housing projects, to creating a good fit with existing nearby buildings, and to contributing to the City's public realm.

1. Response to Context
2. Open Space and Landscape Design
3. Circulation
4. Parking
5. Utilities and Services
6. Outdoor Lighting
7. Public Art

1. RESPONSE TO CONTEXT

OBJECTIVE

Site layout should be considered in response to the neighborhood context, including the surrounding urban patterns of streets and blocks, building setbacks, travel paths, and open spaces. Effort should be taken to harmonize with the neighborhood context. In existing neighborhoods with an established pattern of development, responsive and context-sensitive site design will help preserve the character of the built environment. In evolving areas of the city, new developments might present positive change, helping to bring about the district's anticipated urban character.

GUIDELINES

- 1.1** Locate and orient new building footprint so that the front yard setback relates to those of neighboring and adjacent buildings to the maximum extent possible.
- 1.2** Locate exterior open space; pedestrian and bicycle paths, vehicular routes; parking areas; and utility/service areas in response to neighboring buildings.
- 1.3** Locate open space in relation to adjacent yards, residential units, and public spaces that would benefit from natural light and views.
- 1.4** Place building and landscape to minimize impacts on nearby existing buildings, to respect the privacy of neighbors, and to maintain their access to natural light and air.
- 1.5** In siting new buildings, consider public views to adjacent landmark buildings, public open spaces, public art areas, or other features of significant visual interest.
- 1.6** In existing well-developed areas, where urban patterns are relatively uniform and stable, new buildings should match the prevailing pattern of front yard setbacks, building orientations, and the location of entrances as much as possible. Variation may be desirable at certain locations, such as the corners of blocks.
- 1.7** In areas where the patterns of development are stable but more diverse, new buildings should complement the existing diversity of front yard depths and building orientations while meeting other citywide objectives articulated in these guidelines.
- 1.8** In evolving areas of the city, new buildings should be located, and their sites designed to support the anticipated patterns of development.
- 1.9** In commercial districts, new buildings should be sited to maintain the continuity of existing retail frontage while allowing for comfortable sidewalk width and creating opportunities for activation such as outdoor seating.
- 1.10** Where site dimensions allow, consider creating entry courtyards, internal courtyards, and semi enclosed courtyards open to the block interior.
- 1.11** Parking, trash storage, and mechanical equipment should be located where they will create the least nuisance to abutting residences or to the public.

OPEN SPACE - CONNECTING BUILDINGS TO THE SURROUNDING CONTEXT



2. OPEN SPACE AND LANDSCAPE DESIGN

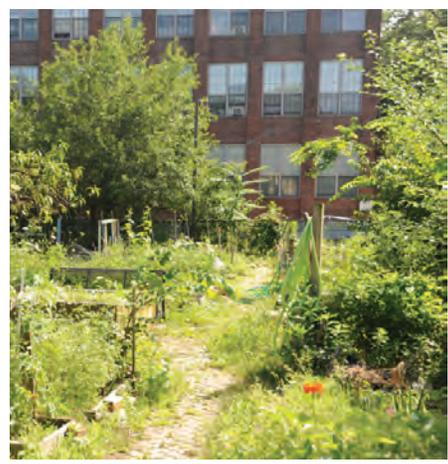
OBJECTIVE

Open space on the site should be designed to enhance the lives of residents and the broader community by offering aesthetic and environmental benefits through the inclusion of vegetation, trees, elements to provide shade. Open space may offer useful amenities to residents and provide opportunities to minimize the impact of the new development on adjacent neighbors. It should minimize negative impacts on the neighbors' privacy and quality of life. It should contribute to the beauty of the city's streets, sidewalks, and open space network.

GUIDELINES

- 2.1** Consider providing a range of types of open spaces as appropriate to the site, context, and building form: yards, entry courtyards, interior courtyards, porches, loggias, balconies, roof terraces, and upper-level decks.
- 2.2** Provide opportunities for enjoyment of nature, such as gathering places and play spaces for residents.
- 2.3** Provide seating to foster social connection. Consider locations at building entrances, courtyards, and along paths connecting different areas of the site.

OPEN SPACES - ACCOMMODATING DIVERSE USES



- 2.4 Consider summer shading and winter solar access.
- 2.5 Design open spaces to contribute positively to the public realm, maximizing vegetation—particularly canopy trees—to shade and enrich streets and other public open spaces.
- 2.6 In dense residential neighborhoods, design front yards to frame the street and sidewalk as civic spaces and to enhance the privacy of building

interiors. Consider organizing front yard landscape elements—low walls, low planting or hedges, fences, trees, ground cover, foundation planting, etc.—as a series of layers parallel to the sidewalk that frame civic space and delineate thresholds of privacy as one moves from the street or sidewalk to the building entrance.

COURTYARDS AS PART OF THE URBAN PATTERN



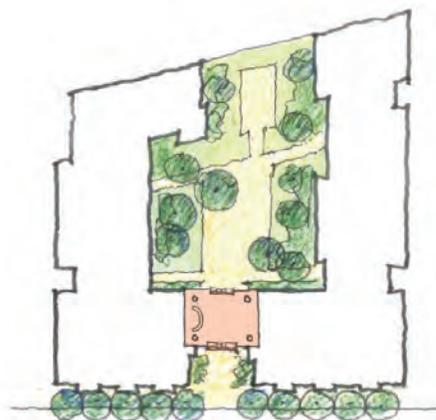
COURTYARDS - CELEBRATING BUILDING ENTRANCE



FRONT YARDS - CONTRIBUTING TO THE PUBLIC REALM



2.8 Where possible in dense residential neighborhoods and on corridors, consider landscaped forecourts and inner courtyards where possible to create transitional space between the public street and the building lobby, to provide light, air, to unit interiors, and to enrich the site with plantings.

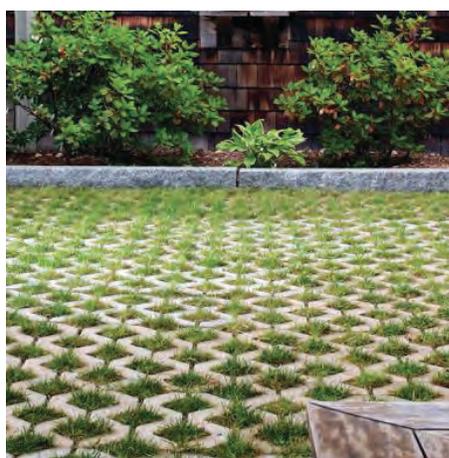


COURTYARDS - PLACES OF CONNECTION



- 2.9** Consider the location, dimension, and orientation of open spaces to best promote healthy trees and other vegetation.
- 2.10** Minimize the urban heat island effect by preserving existing mature canopy trees wherever possible and by planting new ones to shade buildings, open spaces, and paved surfaces.
- 2.11** Follow the recommendations of the Department of Public Works and the [City's Urban Forest Master Plan](#) for species, planting standards, and care.
- 2.12** Minimize paved surfaces. Use permeable surfaces wherever possible for pedestrian pathways, parking areas, and other paved outdoor spaces.
- 2.13** Use landscaping to screen surface parking and vehicular driveways from residential units and open spaces on and adjoining the site.
- 2.14** Screen loading and trash areas, meters, mechanical units, and utility equipment with plantings or other appropriate landscape elements.

SHADE, PERMEABLE SURFACES, AND SCREENING SERVICES



3. CIRCULATION

OBJECTIVE

Promote non-motorized mobility by prioritizing pedestrian-friendly and bike-accessible site design.

GUIDELINES

- 3.1** Create direct, functional, and beautiful paths for pedestrians and bicycles from the public sidewalk to building entrances. Pedestrian access to the building and site should be clearly articulated and accessible to people of all levels of ability. Pedestrian access should take precedence over other mobility modes.
- 3.2** For large buildings, incorporate multiple entrances wherever possible.
- 3.3** Locate building entrances wherever possible to address public streets.
- 3.4** Consider elevating residential first floors above sidewalk level, consistent with accessibility needs and requirements.
- 3.5** Depending on function and location on the site, consider pedestrian paths ranging from a series of pavers, to broader continuous paths, to entry courtyards.
- 3.6** Bicycle access to the site and building should be clearly legible. Routes from the street to bicycle parking on the site and in the building should be convenient and reasonably direct. Short-term bicycle parking for visitors should be located where it is visible and convenient to main building entrances. Long-term bicycle parking for residents should be in a secure, screened location.
- 3.7** Vehicular access and circulation routes should be distinct from paths of pedestrian travel.
- 3.8** Minimize the number and widths of curb cuts and driveways.
- 3.9** Locate curb cuts on secondary streets where possible.
- 3.10** On corner lots with non-residential street level activities such as retail, consider locating entrances to ground floor functions on building corners.

PRIORITIZING THE PEDESTRIAN ENVIRONMENT



CELEBRATING BUILDING ENTRANCES



4. PARKING

OBJECTIVE

Minimize the detrimental impact of parking and driveways on residents, neighbors, and the general public.

GUIDELINES

- 4.1** Where structured parking and/or bicycle storage is provided within the ground floor of a building, consider incorporating residential units, common areas, or other populated portions of the building immediately behind the front wall plane to screen most of the parking/bicycle storage.
- 4.2** Develop the layout of parking and driveways to avoid conflict with pedestrian and bike movement.
- 4.3** Minimize the site area dedicated to driveways and parking and maximize its distance from neighboring properties.
- 4.4** Use green walls, hedges, art work, metal stencils, fences, louvers, sun shading elements, or other means to visually screen parked cars.
- 4.4** Shade parking lots with canopy trees or by other means where possible.
- 4.5** Utilize permeable pavement where possible.

SHADING DRIVEWAYS AND PARKING AREAS AND SCREENING THEM FROM VIEW



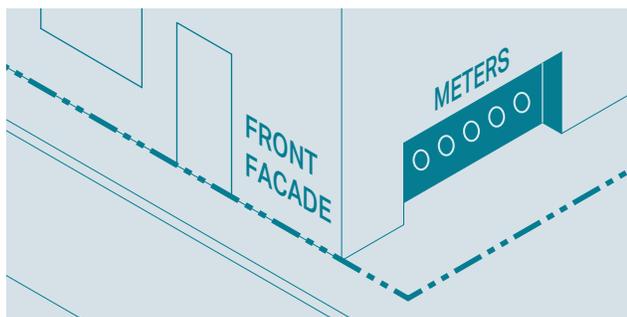
5. UTILITIES AND SERVICES

OBJECTIVE

Minimize the visual, acoustical, and environmental impacts of essential utilities and services on neighbors and on the public realm.

GUIDELINES

5.1 Locate utility functions such as gas, electric, and water meters, transformers, switchgear, and fire safety equipment where they will be least visible from the street. Where possible, conceal them within the building, in the side or rear yard setbacks. Otherwise set them back behind the principal front plane of the building. These elements should be anticipated and be planned for early in the design process to minimize their impacts.



- 5.2** Locate mechanical elements such as HVAC units, condensing units, ventilation outlets, mechanical exhausts, louvers, and similar objects to minimize their visibility from the public realm and from neighboring sites and buildings. If they are visible, these elements should be screened using landscape design, screening elements, and materials that complement the architecture of the building.
- 5.3** Air conditioning condensing units should not be located on the ground.
- 5.4** Locate roof mounted air conditioning equipment, and mechanical penthouses away from roof edges and/or provide parapets with adequate height to screen them from adjacent properties and public areas.
- 5.5** Reduce noise impact of rooftop mechanical equipment with sound damping materials and screens and proper acoustic and sound isolation methods.
- 5.6** Screen trash and recycling areas with landscaping and/or fencing and ensure that noise and odor-generating functions are fully enclosed.

6. OUTDOOR LIGHTING

OBJECTIVE

Provide lighting for safety and functionality while minimizing negative impacts on neighbors, the public realm, and the larger environment, while minimizing energy use.

GUIDELINES

6.1 Use lighting only for safety and functional purposes such as providing safety and wayfinding along access/egress routes, allowing open spaces to be usable in the evening, illuminating signage, or subtly accentuating key architectural elements of a building.

6.2 Outdoor lighting should be fully shielded, downlit, and kept at or below typical neighborhood light levels in terms of illuminance and color temperature. Lighting should provide a level of safety for residents while minimizing glare, light pollution and light trespass onto adjacent properties.

6.3 To further reduce light pollution, consider provisions of the draft Outdoor Lighting Ordinance; and consider using lighting fixtures with warm color temperature.

6.4 Select lighting fixtures to minimize energy consumption.

6.5 Employ timers, automatic dimming, motion sensors or other mechanisms to avoid excessive lighting, including in tuck-under parking.

6.6 Consider using photovoltaic panels to power lighting.

LIGHTING



7. PUBLIC ART

OBJECTIVE

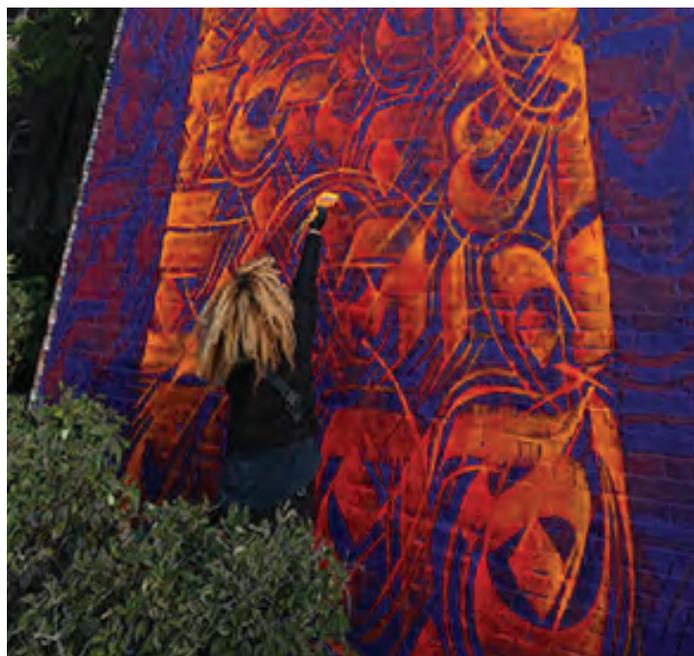
Enrich the visual environment and strengthen the sense of place by incorporating public art.

GUIDELINES

7.1 Consider opportunities to incorporate public art as an integral component of the architectural of the building, site and landscape design.

7.2 Consider integrating arts related uses including artists galleries, arts display, and artists spaces and studios on the ground level of affordable housing developments that are located on business and commercial streets to enliven their neighborhood commercial districts.

PUBLIC ART



BUILDING DESIGN

Building design should contribute to the neighborhood context. Whether in areas of the city that are in transition or in older established neighborhoods, affordable housing development should strive for design excellence and be sensitive to the character of the neighborhood. Compatible building massing, form, scale, color, materials, and architectural details are critical in creating buildings that fit within existing neighborhoods.

1. Massing
2. Facades
3. Details, Materials, Color, and Finishes
4. Building Interiors

1. MASSING

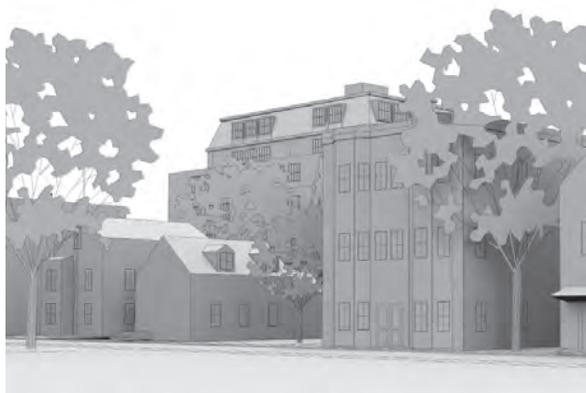
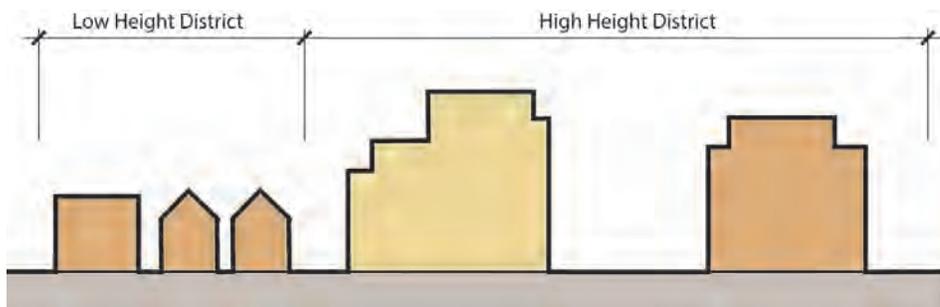
OBJECTIVE

Building form and massing should be compatible with the prevailing or desired pattern of neighboring buildings and open spaces. In established neighborhoods, new buildings should relate to the context, to existing urban form, and should prioritize compatibility with existing buildings. In evolving areas, new buildings should contribute to the City's vision for urban form.

GUIDELINES

- 1.1** Relate new building height, massing, scale, and form to that of existing adjacent buildings.
- 1.2** Incorporate setbacks to relate to the heights of adjoining buildings and to the scale of the street; and to provide a transition between the height of taller buildings and lower surrounding buildings.
- 1.3** Where a project adjoins districts with two distinct heights, as where a corridor site adjoins a lower height residential district, massing should reflect those heights.

RELATING TO THE SCALE OF NEIGHBORING BUILDINGS



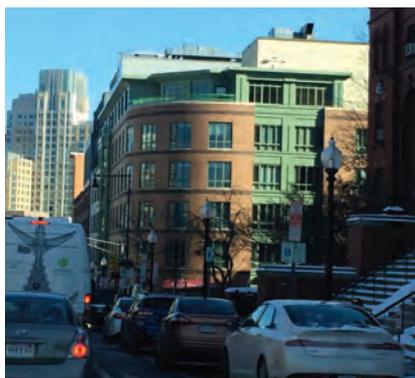
1.4 Consider dividing large buildings into smaller components by means such as vertical recesses or projections from the primary plane of the street façade, or by true separation of buildings. Consider reducing the scale of large facades by incorporating vertical recesses or projections from the primary plane of the street façade.

1.5 In corridors, frame streets and squares with

streetwall facades. In smaller scaled residential areas, articulate the mass of large buildings to create a sense of scale compatible with smaller scaled neighbors.

1.6 Consider reducing the visual impact of taller buildings by using stepbacks, or mansard, gambrel, or gable roof profiles to enclose habitable upper stories while breaking down the scale of large developments.

REDUCING THE SCALE OF BUILDINGS



REDUCING THE BULK OF UPPER FLOORS



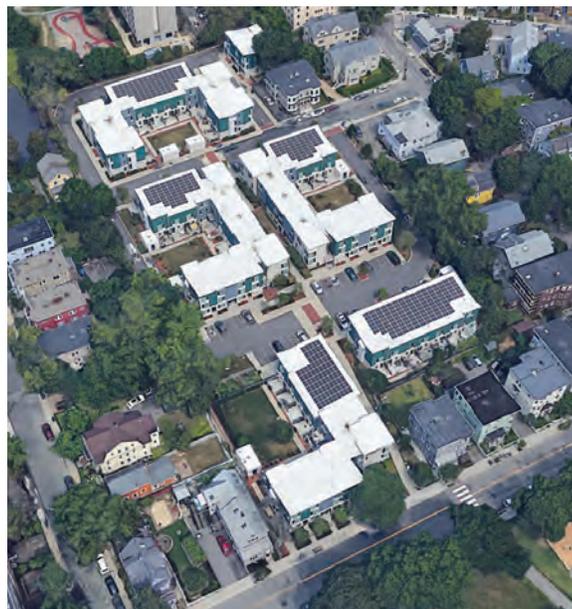
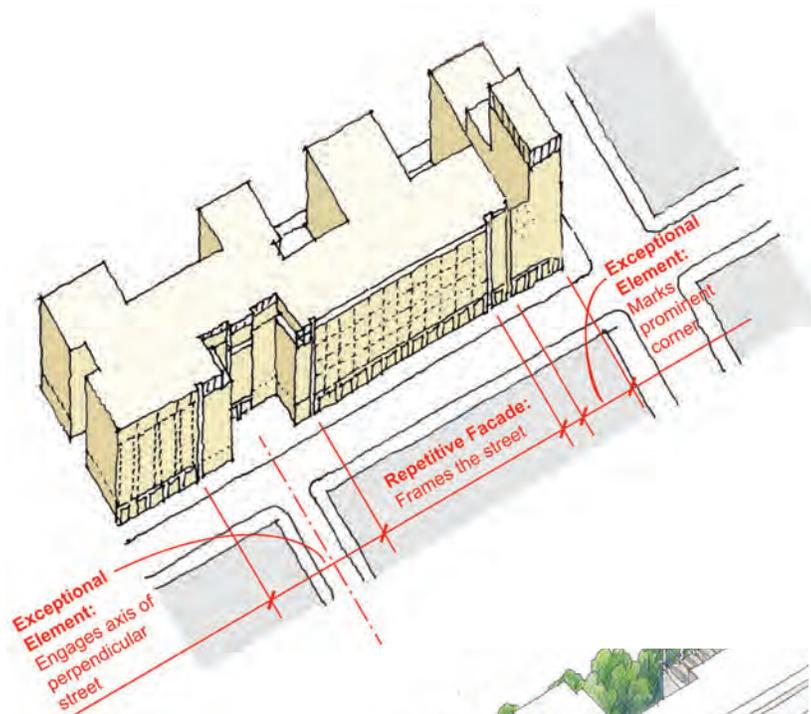
1. MASSING (CONTINUED)

- 1.7 Reinforce the existing or planned pattern of streets and blocks and minimize impacts on neighbors.
- 1.8 Adjust building configuration and massing to maximize access to sunlight, air, and sky views from neighboring buildings and sites, and to maintain privacy.
- 1.9 Where a neighboring residential building is located very close to the lot line, consider adjusting the new

building's footprint to provide a wider side yard than the minimum required.

- 1.10 Where possible, provide courtyard spaces in front or side yards to reflect the character of preexisting development and to divide long frontages into smaller scaled facades. Consider both formal and asymmetrical arrangements of building massing to best fit the new building with their existing neighbors.

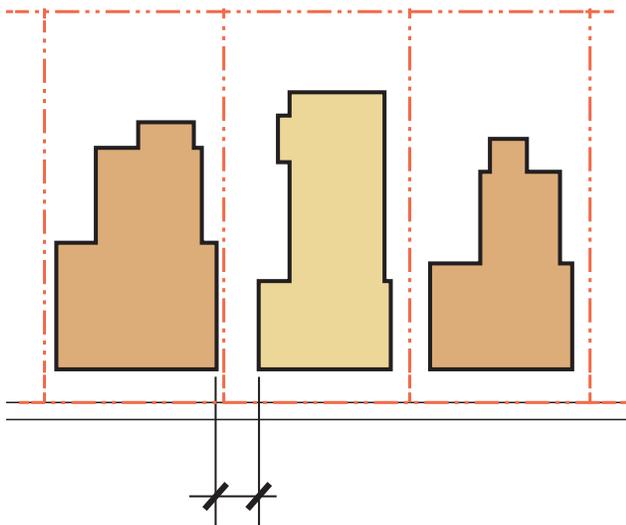
MASSING IN RESPONSE TO THE PUBLIC REALM AND TO NEIGHBORING SITES AND BUILDINGS



1. MASSING (CONTINUED)

- 1.11** Consider reinforcing important street corners or termini of view corridors with special elements.
- 1.12** Where new buildings are constructed in the rear yards of existing buildings, or on large lots with large setbacks, their massing should consider reducing impacts on neighboring buildings and yards by careful siting, articulate massing, and by reducing the visual bulk of top floors.
- 1.13** For buildings fronting onto more than one street, such as buildings on corner lots, consider responding to the relative significance of the streets with orientation and massing strategies that reinforce their distinct characters. If possible, incorporate multiple building entries.

BUILDING MASSING AND FORM - RESPONDING TO CONTEXT



2. FACADES

OBJECTIVES

Building facades should enhance and enliven the public realm. Their design should be compatible with and reinforce the sense of place in established areas. In evolving residential and commercial districts of the city, building facades should contribute to the transformation of urban form by setting precedents in design excellence and exemplifying high quality development.

Where appropriate, buildings should incorporate ground level retail spaces and common areas that enliven the urban context with human-scaled facades, recessed forecourts, and high-quality materials.

Building facades should be designed to maximize daylighting without compromising the privacy of residents of existing and new buildings.

GUIDELINES

- 2.1** Consider Cambridge's architectural history, heritage, culture and regional significance as well as the established pattern of residential neighborhoods and conservation districts.
- 2.2** Relate to architectural styles of the immediate neighborhood context, and the street's urban qualities.
- 2.3** Provide architectural elements such as balconies, bay windows, dormers, roof gardens, terraces where appropriate to add visual interest and relate to the residential scales of Cambridge's diverse and historic neighborhoods.
- 2.4** Provide changes in plane, projecting bay windows, balconies, and articulated entrances.

FACADE DESIGN - RESPONDING TO CONTEXT



2. FACADES (CONTINUED)

2.5 Use proportion and rhythm of doors and windows prevalent in the district, and where possible add sun shading devices at entrances.

2.6 Front facades should offer a sense of civic presence, providing architectural details, and visual interest appropriate to their role in defining public space. Consider incorporating brick or stone string courses, lintels, sills and trim to soften, refine and enliven building facades.

ENRICHING FACADES WITH BAY WINDOWS, CHANGES IN PLANE AND MATERIALS



BALCONIES AND PORCHES



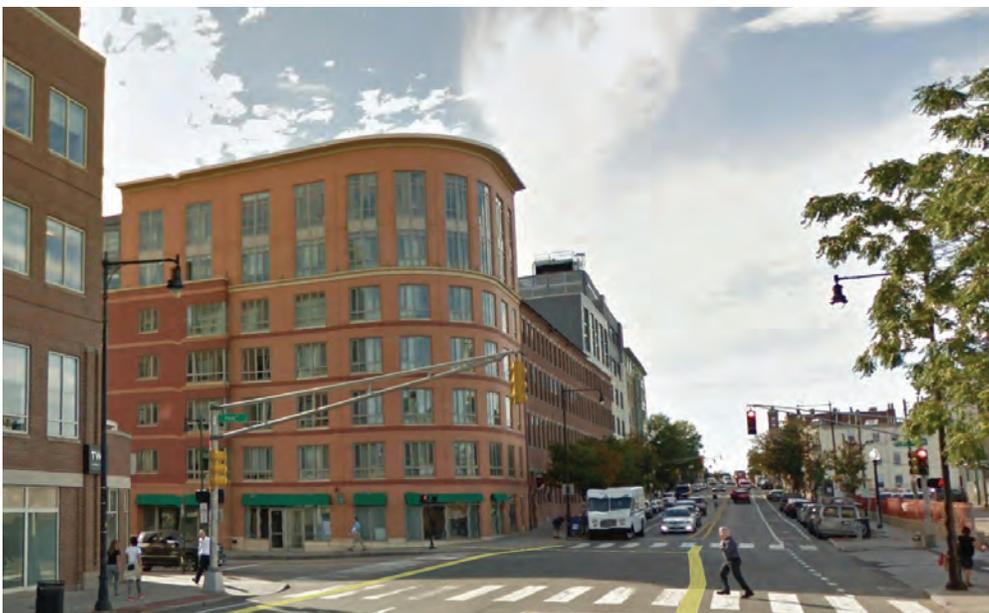
2. FACADES (CONTINUED)

- 2.7** Where buildings present long facades to the street, consider elements such as recesses, projections, balconies, bay windows, columns, pilasters, piers, porticos or structural bay expression to provide visual interest to the façade.
- 2.8** Consider providing emphasis at the corners of blocks by the treatment of facades and by providing functional entries to ground floor retail spaces.
- 2.9** Avoid incorporating extravagant or exaggerated building elements or features such as out-of-scale cornices on building parapets.

MODULATING LONG FACADES TO ENRICH THE SENSE OF SCALE



EMPHASIZING BUILDING CORNERS



2. FACADES (CONTINUED)

- 2.10** For buildings on lots with significant side and rear setbacks, consider articulating all four sides of the building.
- 2.11** Use building massing, form, color, and materials, and architectural details to differentiate the building's base, middle and upper level facades; and add special design emphasis on the ground floor facade.
- 2.12** Enrich public streets with identifiable and functional building entrances.
- 2.13** For large buildings on business and commercial streets, emphasize the distinct character of the ground floor facade, particularly where retail space or community spaces are provided.
- 2.14** Where ground floors accommodate retail space, common spaces, or community spaces, maximize views of interior spaces on public streets by using clear glass in windows and storefronts.

BASE, MIDDLE, AND TOP



2. FACADES (CONTINUED)

- 2.15** Consideration should be given to enhancing building entrances and spaces around them with features such as stoops, porches, recesses, canopies, low walls, arcades, landscaping, and seating areas.
- 2.16** Blank walls of ground floor facades facing business or commercial streets should be avoided. Where fenestration is not possible, other means of creating visual interest should be provided.
- 2.17** Where ground floors facing a public street are without transparent windows or pedestrian entryways consider articulating the articulating wall surface to add visual interest.
- 2.18** On business and commercial corridors, ground floor facades should be clearly differentiated from upper

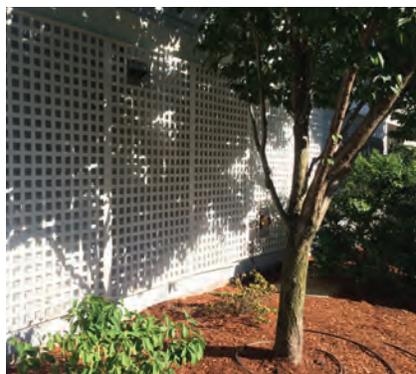
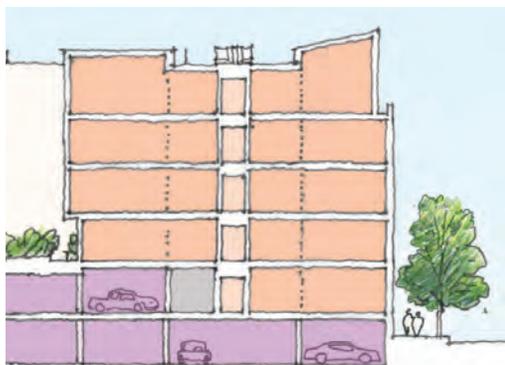
floors, their ceiling heights and facades should be designed to accommodate retail.

- 2.19** In spaces such as utility rooms, fire control centers, that require windowless walls or blank walls, use materials, detail, and changes wall surface to add visual interest.
- 2.20** Where vehicular parking spaces are located directly below the building and on the street level and facing public street or neighboring properties, screen the parking with architectural elements that provide depth and visual interest to the screening system including the use of decorative louvers, green wall or other decorative treatment including art work, and stencils, grilles or louvers. Avoid using metal wire mesh screening that does not provide depth to the wall.

GROUND FLOOR FACADES - RETAIL AND RESIDENTIAL



GROUND FLOOR FACADES - SCREENING PARKING AND SERVICE FUNCTIONS



2. FACADES (CONTINUED)

2.22 Wherever possible, screen parking with programmed spaces with functions that enliven the street facades.

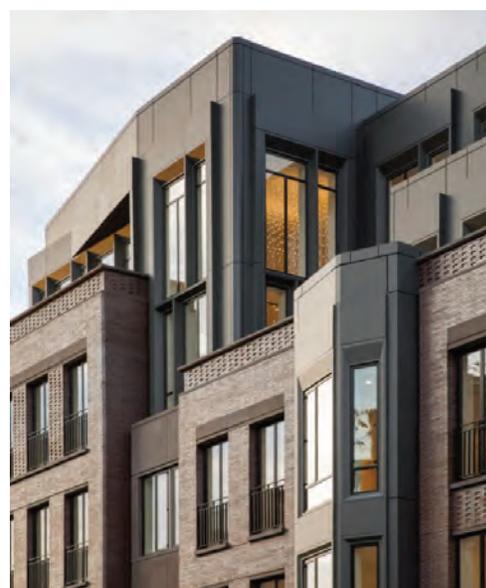
2.23 Special consideration should be given to the design of top floor facades, particularly in residential neighborhoods, where many Cambridge buildings have intricate and character defining massing, roof lines or parapet wall.

2.24 Rooftop terraces and gardens can be used to add visual interest to the tops of buildings. Roofs and

top floors should appear as natural extensions of the building massing, rather than as discordant elements.

2.24 Visually enrich ground floor facades that have large glazed areas with fenestration details that include variations in mullion spacing, muntin pattern and window trim profiles. Where front yard setback is provided consider providing projecting canopies, awnings or sunshades to relate to the street and provide shading element.

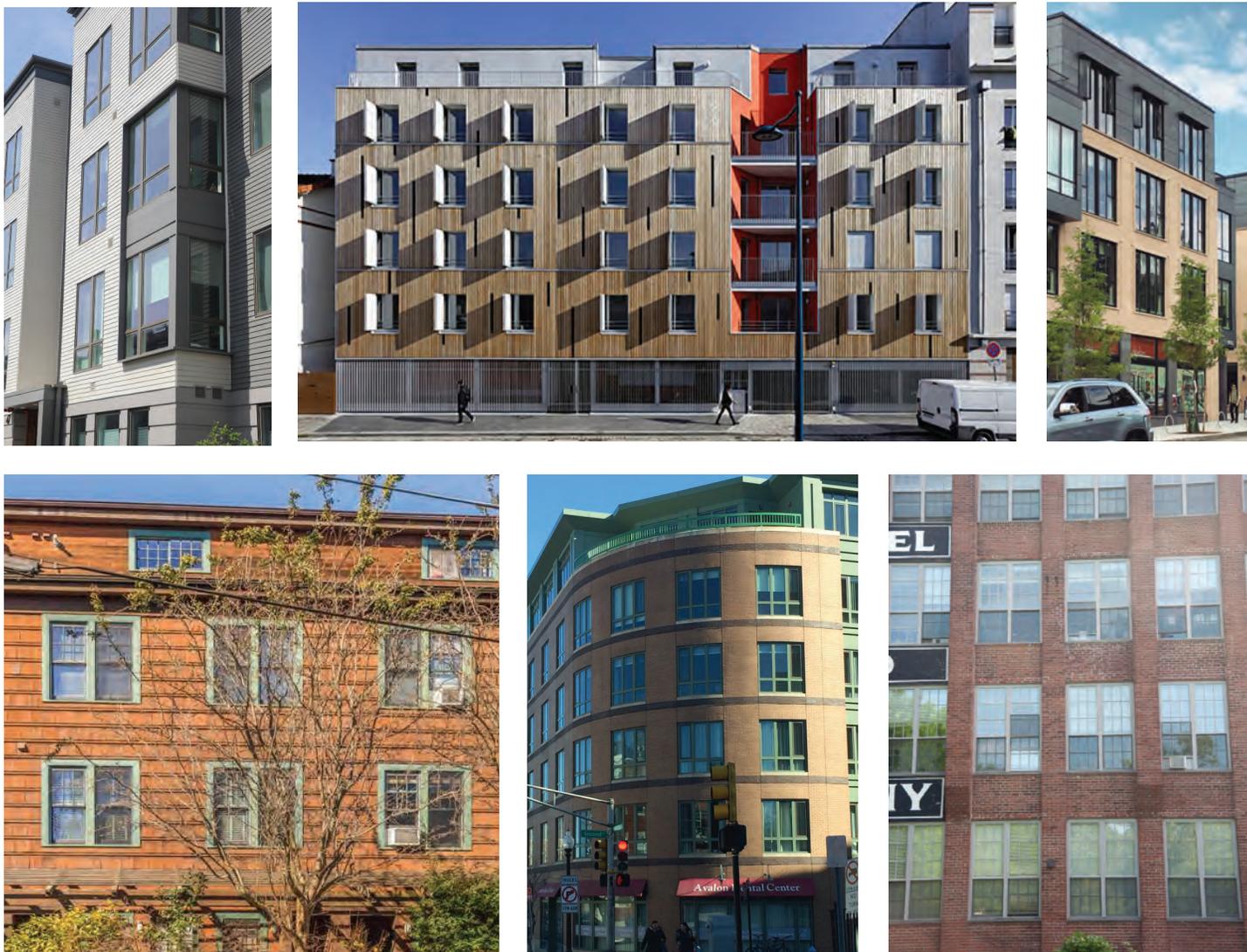
BUILDING TOP FLOORS - DORMERS, SETBACKS, TERRACES, AND BALCONIES



2. FACADES (CONTINUED)

2.25 Fenestration should balance urban design goals and architectural qualities such as transparency and a pedestrian -friendly approach with building energy performance and neighbors' privacy.

FENESTRATION - MULLION PATTERNS AND ARRANGEMENT OF OPENINGS



2. FACADES (CONTINUED)

2.26 In renovating or adding to an existing architecturally or historically significant building, or 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 historic character of the building and district. Use best practices in restoration and maintaining historic structures. Consultation with the Cambridge Historical Commission especially for developments in historic and conservation districts is recommended.

HISTORIC BUILDINGS - RENOVATION AND ADDITION



3. ARCHITECTURAL DETAILS, MATERIALS, COLOR, AND FINISHES

OBJECTIVE

Consider materials that are warm, inviting, and compatible with surrounding existing buildings and the neighborhood context. Develop building facades of high-quality, durable materials and with colors, finishes, and textures appropriate to building contexts.

GUIDELINES

- 3.1 While it is not required that materials match those of adjacent buildings, they should respond to the neighborhood character in general color and scale.
- 3.2 Use high-quality and durable construction materials with a proven record of long life-cycle and low environmental impacts. Consider using durable

MATERIALS, COLORS, AND DETAILS - RELATING TO NEIGHBORHOOD BUILDINGS



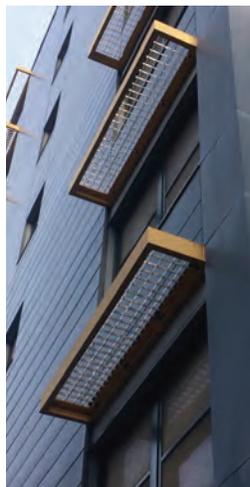
materials such as brick with colors appropriate to the immediate context and are commonly used in the area. Other optional materials include pre-manufactured panels of cementitious, concrete, or composite materials.

3.3 Natural and durable materials such as brick, concrete masonry and stone are preferred.

3.4 Avoid the use of garish colors that are not relevant to the architectural vocabulary found in the neighborhood context.

3.5 Where possible, use and integrate recycled content materials without compromising durability and material quality.

MATERIALS, COLORS, AND DETAILS - RELATING TO NEIGHBORHOOD BUILDINGS



4. BUILDING INTERIORS

OBJECTIVE

Affordable housing, like all housing, should serve the needs of its residents while contributing to the residential character and sense of neighborhood within the area at large.

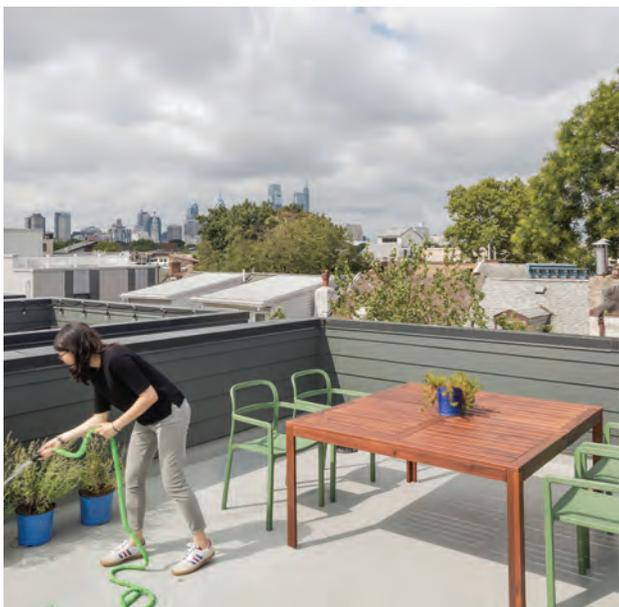
GUIDELINES

- 4.1** Provide a mix of unit types and sizes that will support and contribute to the diversity of housing in the neighborhood. The inclusion of a significant number of units that are suitable for families with children is preferred except in special cases where housing will serve populations with different housing needs, such as housing for seniors.
- 4.2** Interior living spaces should be designed to be attractive and comfortable. Units should include adequate interior living space, common storage, and access to natural light and air. Interior living spaces should be designed to be livable. Bedrooms should be sufficiently sized to accommodate standard bedroom furniture and include access to natural light. Kitchens should include ample counter space and storage. Residents should have access to laundry facilities in their home or in the development.
- 4.3** Interior finishes and fixtures should be high quality, durable, sustainable, and energy-efficient.
- 4.4** 8. In larger projects, provide interior common spaces for shared amenities, services and facilities such as storage, recreation and gathering space, or in larger buildings areas that can serve residents in the event of extreme weather or power outages. In large buildings consider providing amenities that serve the broader community.
- 4.5** Consider providing common spaces at ground level, visually connected to outdoor space, whether on building frontages or addressing the interior of the block.
- 4.6.** Use operable windows for residential units and where possible for non-residential uses or common spaces to provide passive ventilation and improve indoor air quality.
- 4.7** Improve the indoor air quality of interior spaces by using products with no volatile organic compound emissions in all walls, floorings, Ceilings, furniture, acoustic and thermal insulation and on exterior applied products.

BUILDING INTERIORS - COMFORTABLE AND PLEASANT SPACES



COMMON SPACES - CONNECTING TO OUTDOOR SPACES



Intentionally blank

SUSTAINABLE DESIGN

Affordable housing development should seek to follow the City's overall sustainable development practices. Projects should maximize their energy efficiency and performance to reduce greenhouse gas emissions and should be resilient to the anticipated effects of climate change. These guidelines are meant to supplement the City's zoning requirements and other applicable policies, including the Net Zero Action Plan and the Climate Change Preparedness and Resilience Plan.

SUSTAINABLE DESIGN

OBJECTIVE

To design projects with energy efficiency, health and wellness in mind.

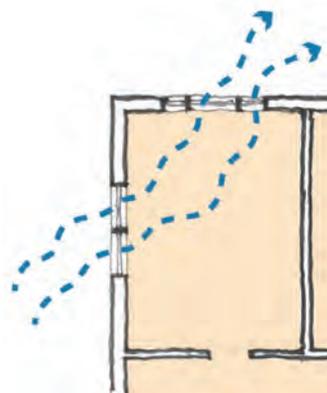
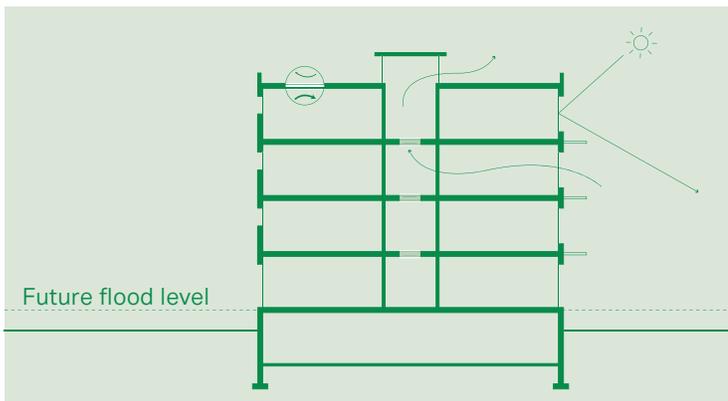
GUIDELINES

- 1.1** Affordable housing developments should strive for achieving resilience measures to the maximum extent possible. Use the City's Floodviewer information and dashboard. Seek guidance from the City of Cambridge Department of Public Works (DPW) regarding peak stormwater runoff and on measures to build and protect to 2070 for the 10% flood and be able to recover from the 1% flood.
- 1.2** In site design, orientation, and facade arrangement, minimize the demand for heating and cooling by considering the effects of solar gain on different sides of the building. Design interior spaces for passive heating, cooling, and ventilation. This approach is intended to conserve energy while also improving resilience in the event of power outages or other mechanical failures.
- 1.3** On roofs, exterior walls, and paved surfaces, use materials with high solar reflectivity to minimize heat absorption and localized heat island effect. As an alternative, employ vegetated coverings such as green roofs or green walls.
- 1.4** While trees are preferred, where they are not feasible consider the use of shading devices such as canopies, awnings, or pergolas to provide shade on exterior paved areas and/or to reduce solar heat gain on building facades.
- 1.5** Rely on the most up-to-date projections from the City on anticipated future flood elevations, avoid locating sensitive uses such as critical building functions, emergency equipment or residential bedrooms in areas that are at risk of future flooding. On large projects, consider providing common spaces protected from flooding and extreme heat, suitable as shelter during emergencies.
- 1.6** Employ renewable and low-carbon energy features where feasible, such as solar photovoltaic systems, solar heating systems, or geothermal heating and cooling systems.
- 1.7** Select and design building systems to facilitate their conversion to all renewable energy systems in the future.
- 1.8** Improve air quality by using products with no volatile organic compound emissions in all walls, floorings, ceilings, furniture, acoustic and thermal insulation and on exterior applied products.
- 1.9** Integrate green roof systems on building roofs where possible to contribute to strategies for stormwater management and green infrastructure.

ROOFTOPS AS OPPORTUNITIES TO ADDRESS STORMWATER AND ENERGY



PASSIVE SYSTEMS



GLOSSARY

Affordable housing: Affordable housing is a reference to dwelling units that are affordable to households earning an income that does not exceed the amounts set forth in the Zoning Ordinance

Affordable housing overlay:

A modified zoning map and zoning requirements intended to regulate the development of 100% affordable housing referenced in Zoning Ordinance

Architectural details: Architectural elements or components of a building cladding, fenestration or building enclosure that express building style and character

Architecturally significant: A structure or building that is valued by the community in which the structure or building is located due to physical and symbolic qualities including design, style, character, construction method, architectural details, its architect or its time period. Architecturally significant buildings or structures may or may not be designated in a historic district

Bay expression: The typical module and spacing of structural elements or components that are repetitive on the building façade horizontally and vertically. For example, the vertical plane surface of the façade between two columns or pilasters with repetitive components such as storefront windows or opaque wall expressed on the building façade is a typical bay expression

Bay window: Projection of a window or a window wall beyond the typical building façade

Blank wall: A wall with opaque cladding materials enclosing an interior space with no wall openings or glazing materials

Canopy: A Horizontal element that is structurally supported and providing a roof-like protective surface

Circulation: The layout of permeable or impermeable surfaces around the site and building including street space, sidewalks for building entrance, exits, access to parking, driveways and aisles

Context: A place or locale such as a neighborhood or a community setting with physical qualities and character-defining features manifested in its built form and natural environment including its buildings, landmarks, parks, street space, and other natural features such as rivers and scenic settings; and is perceived to represent or characterize that place or a locale as distinguished or unique. A building that is contextual or context sensitive is a building that fits well within and respectful of its context

Corner lot: A lot with two frontages on two streets

Cladding: The exterior material layer of a building envelope which forms a veneer such as brick, stone, metal, glass, concrete, wood, terracotta, or other composite systems made of such materials

Fenestration: The area of the building envelope with openings within the opaque wall for windows and doors dedicated for vision glass. For the guideline purpose, spandrel glass that is opaque and does not allow light is not considered part of fenestration proportions or calculation

Guidelines: A set of urban design guiding principles, recommendations, best practices or strategies intended to inform the design phase

Opaque wall: A wall that does not allow visible light to go through including spandrel glass, spandrel metal panel, reflective glass that does not allow for visibility from the outside

Massing: The perceived three-dimensional aspect of the physical qualities of building including its bulk, height and scale

Mechanical equipment screen wall: Is a rooftop element or structure without a roof used to block from public view building system elements such as mechanical, electrical, plumbing or elevator equipment and machinery

Reflective glass: A glass used as part of window system or as a spandrel panel that does not allow for visibility from the outside

Penthouse: An enclosed and unoccupied rooftop structure used to enclose rooftop equipment including mechanical, electrical, plumbing or elevator equipment and machinery

Vision glass: Glass that is transparent; it may be clear glass or tinted but provide transparency from the exterior and interior.

ACKNOWLEDGMENTS

IMAGE SOURCES:

- Cambridge Community Development Department
- Cambridge Day website
- Semper Greenwall
- Turfstone website
- Glen-Gary Brick website
- Cambridge Arts Council website
- Google images