



Cambridge Housing Authority

**MODERNIZATION OF 116 NORFOLK STREET  
VOLUME 1**

Affordable Housing Overlay Submission  
May 27, 2022

HMFH ARCHITECTS



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**Owner**

Cambridge Housing Authority

**Design Team**

**Architect**

HMFH Architects, Inc.

**Civil Engineer**

Samiotes Consultants, Inc.

**Landscape Architect**

Crosby Schlessinger Smallridge, LLC

**Structural Engineer**

Richmond So Engineers

**Mechanical | Electrical | Plumbing | Fire Protection**

Garcia, Galuska, DeSousa Consulting  
Engineers

**Geotechnical and Geo-environmental Engineer**

McPhail Associates, LLC

**Building Envelope**

3ive LLC

**Existing Conditions Survey**

Existing Conditions, Inc.

**Hazardous Materials**

Universal Environmental Consultants

**Cost Estimator**

A.M. Fogarty

**Specifications**

Kalin Associates

**Code Consultant**

Hastings Consulting

**Sustainability Consultant**

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# 1 Narrative and Forms





# 1.1 Project Narrative and Design Statement



## PROJECT NARRATIVE

The Cambridge Housing Authority (CHA) plans to renovate 116 Norfolk Street in order to make needed improvements to the building's systems, convert the existing single-room occupancy (SRO) apartments to studios to support resident well-being, and construct new deeply affordable studio apartments in an addition to the existing building. The proposed design will replace 38 affordable SRO apartments for elderly and/or disabled residents with 62 affordable studio apartments. After construction, all existing residents will have the right to return to 116 Norfolk and vacant apartments will house people experiencing homelessness in the City. The 2019 Point In Time count found 555 individuals experiencing homelessness in Cambridge, revealing an urgent need for Permanent Supportive Housing units like those to be offered at 116 Norfolk. Furthermore, coordinating public and private efforts to provide comprehensive services to persons experiencing homelessness is a principle goal of the citywide Envision Cambridge plan. The Modernization of 116 Norfolk is a significant step toward reaching this goal. (See more on the building's program and service plan in Program and Services below.)

CHA and the design team (HMFH Architects) have worked closely to determine the best approach to revitalize 116 Norfolk Street, respond to the neighborhood context and abutter concerns, incorporate green design principles, and respect the existing historically significant structure. The project has been designed in accordance with the Affordable Housing Overlay (AHO) and the Cambridge Zoning Ordinance (CZO), and with guidance and input from the City of Cambridge's Community Development Department (CDD), Cambridge Historical Commission (CHC), Department of Public Works (DPW), Traffic & Parking (T&P), current 116 Norfolk Street residents, and neighborhood residents.

Please refer to the appendices for a matrix which describes how the 116 Norfolk Street project complies with and addresses the Design Guidelines for the AHO.

The 116 Norfolk Street project is an exciting opportunity to give future life to an aging but important building while expanding service-enriched, affordable housing opportunities in the City.



Figure 1: View of the west facade of the existing 116 Norfolk Street building, from across Norfolk Street

## Existing Site

116 Norfolk Street is a 25,230 square foot through-block lot, on a corner and bordered by Norfolk Street to the west, Worcester Street to the north, and Suffolk Street to the south. The site is relatively flat. Located in the Port neighborhood of Cambridge, it is nestled in a mostly residential neighborhood of two to four-story buildings. St. Mary's Church is located to the North, along Norfolk Street. There are currently nine parking spaces at the southern portion of the lot, with access from Suffolk Street.

The existing site has thirteen existing trees, including several mature Norway Maple trees.

There is a brick wall that runs along the perimeter of the site along the North Yard at Worcester Street and the South Yard at Norfolk and Suffolk Streets. The wall varies in height, and where the wall is lower, there is a short wood stockade fence which sits atop the masonry wall.



Figure 2: An existing site plan of 116 Norfolk Street



### Existing Building

116 Norfolk Street is a 24,530 sf, 4-story masonry building which was constructed in 1907. There is a lower 3-story volume to the southeast (the East Wing), and a large porch which opens up to the south of the property.

Originally built as St. Mary's Convent, it was purchased and renovated into the current plans and program by the CHA in 1975. Today, there are 37 single-room occupancy (SRO) units, and 1 concierge apartment for a total of 38 units. The SRO units share bathing facilities and common kitchens, and the building also contains common lounges for residents and offices for the CHA staff that work out of the building. Most of the residential units are located on the second, third, and fourth floors, with a few units on the Basement Floor. These basement units are typically lacking in natural ventilation and light, due to small window openings and the fact that some windows are located under the existing South porch. The current windows at the units in the East Wing are either too high or too low for easy operability and optimal views.



Figure 3: The South facade of the existing building, accessible entrance ramp, and a partial view of the South Yard.

## Program Services

The CHA and the 116 Norfolk Street residents have been finding the SRO model difficult for several years. The issues residents were having with privacy and personal living space were further compounded in 2020, when the COVID-19 pandemic struck. While each resident has a private sink and toilet, shared bathing and cooking facilities made it difficult to safely distance from one another.

One of the primary goals of the 116 Norfolk Street project is to convert the existing SROs into studio (0-bedroom) apartments and construct a new addition to expand affordable housing opportunities in the City. All current residents will have the right to return to 116 Norfolk after construction, and new residents will be accepted from the City's Coordinated Access Network (C-CAN) for people experiencing homelessness in Cambridge.

The completed project will have 62 studio apartments, all with their own private kitchens and bathrooms. Another goal of the project is to significantly enhance the level of services offered onsite. 116 Norfolk currently has one part-time case manager onsite. After renovations, 116 Norfolk will have four full-time case managers onsite, a near five-fold increase in social services for the building. Eliot Community Human Services was selected via an RFP process to provide social services onsite due to their extensive experience working with the City's Department of Human Service Programs and providing supportive services to some of the most vulnerable residents in Cambridge.



Figure 4: First Floor Plan

The building's proposed program includes a multi-purpose room and lounge on the first floor and smaller, centrally located lounges on the upper floors including a Fitness Room on the fourth floor. A large laundry room, with a more optimal ratio of machines to apartments, as well two large long-term bike parking rooms are also included. Office spaces for both CHA administration staff and the program provider will be located on the lower levels for building and resident support. A new elevator will be installed in the addition and a trash/recycling chute allows for ease of refuse movement and function for the building occupants. Program spaces are intentionally scattered throughout the building to provide comfortable opportunities for service providers and residents to interact.

### Resident Engagement

116 Norfolk Street resident involvement and input has been a critical part of the planning and design process. Thirty out of 38 residents have participated in the planning and design process — roughly 79% of residents or four out of every five residents. The CHA started engaging in discussions with the 116 Norfolk Street residents in January of 2021. This process included the distribution of newsletters to all residents, in-person and virtual meetings and presentations, phone-calls, and walk-in hours. Spanish and Haitian Creole interpretation was available at all events. Residents expressed the importance of providing private bathrooms and kitchens for all apartments, as they described the hardships associated with shared facilities during COVID-19 related restrictions.

In the spring of 2021, the CHA and design team presented multiple schemes for the addition's location on the site. The residents strongly gravitated towards schemes that preserved the site's existing South Yard, as well as preserved the mature trees to the north and east.

In the summer of 2021, the design team presented variants of the earlier schemes which responded to residents' preference for preserving the South Yard and mature trees on the site. Sample unit layouts for the renovated existing building and addition were shown as well. The residents were generally happy with the developed designs and provided the following feedback:

- Converting SROs to studio apartments is the first priority for design
- The existing porch is valuable as a safe common outdoor amenity
- The trees and the South Yard are important to retain
- Minimal parking is needed
- Residents have a preference for smaller interior common areas dispersed throughout the building, rather than large common rooms
- More supportive services are critical
- Smaller interior common areas dispersed throughout the building are preferred over large common rooms
- More supportive services are critical



### Abutter and Neighborhood Engagement and Meetings

Prior to the public AHO neighborhood meetings, CHA and the design team had multiple small, in-person meetings with the abutters and residents of the immediate neighborhood in 2021, to introduce the project and hear their priorities and concerns for the project. Through these meetings, it became clear that the abutters' top priority was about preserving existing trees. The property at 116 Norfolk Street has many large, mature trees that provide summer shade, greenery and wildlife in the neighborhood. An arborist was engaged who surveyed and examined the site's trees, and ultimately identified two trees recommended for removal due to their poor condition. With the exception of these two trees, the design team developed designs to locate the building addition to preserve as many trees as possible. Other neighborhood priorities include:

- Neighbors want to see a design that is responsive to the neighborhood context
- The footprint of the addition should split the addition's mass between Worcester and Suffolk Streets, instead of overwhelming any one side street's frontage.
- Many neighbors like the existing brick perimeter site wall; some would like to add openings to the wall or diminish its height in places to provide occasional views
- There should be van parking available so that waiting vehicles do not block Norfolk Street
- The design should allow for opportunities of interaction between residents and neighbors
- The façade of addition should not have an "institutional feel"
- It is important to provide a buffer and wide setback

The team held the first AHO community meeting (Existing Conditions) on February 10, 2022. Thirty-nine community members attended the first AHO meeting, which focused on the existing site and building conditions and analysis, as well as sharing initial massing ideas with the public. At the AHO meeting, much of the feedback was positive and supportive, with some Cambridge residents even stating that they wish more than 62 units were being built here. Some attendees voiced concern about the proposed 7.5-foot side yard setback on the southeastern edge of the site and limited buffer between the addition and abutter's property. A selection of comments received from this meeting is provided below:

- "[I agree with] varying the design to make it look visually interesting and match the varying aspects of the neighborhood"
- "Is there a plan for the green space to be accessible to the neighborhood?"
- "I want to really ask that there be thinking in the process of design about how the neighborhood interacts with the residents of 116. If there are ways to promote interaction, I think that's a very good thing."



- “I think the large trees on Worcester are essential to the neighborhood. In addition, I think that the wall (with some new openings) adds nice character.”
- “I wish parking was an option for a building of that size.”
- “If not having parking allows more residents to live in this building and us to preserve the trees, then I’m willing to struggle with parking... this is look forward not backwards.”
- “[The surrounding brick wall] tells us a story. It’s a story about [116 Norfolk] and how its changed over time.”

The team held a second community meeting (Proposed Improvements) on April 26, 2022. At the second AHO meeting, the CHA presented an updated massing, detailed landscape plans, renderings of the proposed addition, and an overview of the proposed supportive services plan. In response to concerns about the limited buffer between the addition and property line, the CHA updated the design to increase the setback slightly to a 9-foot setback, add a 3-foot planting strip and row of columnar trees between the addition and the property line on the southern portion of the eastern border, and add more trees and landscaping at the south east corner of the addition along Suffolk Street. Thirty-eight community members were in attendance. A selection of comments received from this meeting is provided below:

- “What’s going to happen so that I feel safe? You picked a densely populated neighborhood for such a risky population.”
- “Thank you for all the care and attention and thought you have put into this plan. I have three small kids and I’m really excited to tell my kids that Cambridge is going all out to support the people who need it the most.”
- “I would have loved if we’d gone higher, but I understand there are constraints. These are people who are our neighbors, and the waiting list to get into housing in Cambridge is very long right now.”
- “5 [cars] is not realistic. It will put more stress on the neighborhood. Can you add more levels to the existing building and save the parking spaces?”
- “Why not factor in that in the surrounding neighborhood there will be a trend toward less car use as well as people become more environmentally aware? Plus there’s a lot of parking available in the Central Square area.”
- “I’m more interested in how programming can build community and break down divides.”

## Relocation

All residents will have to move temporarily for construction at 116 Norfolk. Residents will be offered relocation units elsewhere in CHA's portfolio. Some of the sites we expect to use for relocation are Manning and JFK in Central Square, LBJ in Cambridgeport, and Burns in North Cambridge. All current residents will have the right to return to 116 Norfolk after construction, or to remain in their relocation units if they so choose. The CHA pays for 100% of the costs of relocation and has four Relocation Coordinators on staff to assist residents with finding and selecting a relocation apartment and moving.

## Site Design and Open Area

Early on, the south yard was identified as a frequently used and much beloved active space, as it is sunny and warm with its southern exposure but well-shaded by deciduous trees. The south-facing porch along Suffolk Street was also identified as a feature that the residents highly value. Conversely, the northeast yard is not occupied or used as much, although as mentioned previously, the mature trees onsite are well-loved by the residents and community.

CHA and HMFH engaged an arborist who surveyed and examined the site's thirteen trees, and ultimately identified two trees recommended for removal due to their poor condition. In response to this concern, the design team developed designs of how best to locate the building addition so as not to disturb the critical root zones of most of the healthier trees.



Figure 5: Image of existing trees in the North Yard

The proposed design will remove four of the existing 13 trees, two of which have been identified by the arborist as in poor condition. One 6" caliper tree will be added to the site, in the south yard, as well as 19 other smaller caliper trees. CHA's landscape architect looked for ways to incorporate 6" trees but was unable to find multiple places where a 6" caliper tree could be placed without undermining the root structures of the existing trees. Twenty total trees will be added, a net increase of 16 trees.

The current 116 Norfolk site is 51% open space. The proposed design has an open space percentage of 44%, exceeding the minimum requirement of 30% open site area as outlined by the AHO. This design maintains much of the existing south yard and keeps much of the existing porch, allowing the southern open space to remain actively occupied. CHA balanced preserving the south yard, which is the most-used open space on site by residents, with respecting the side yard setback. CHA increased the side yard setback to 9 feet, more than the 7.5 foot minimum, in order to create an additional planting strip. Increasing the side yard setback further, however, would reduce the open space on site that is usable to residents.



Figure 6: Proposed Site Plan



### Transportation, Parking, and Transportation Demand Management Plan

116 Norfolk Street is in the highly walkable neighborhood of the Port. The site's proximity to many city services, various amenities, and public transportation is important to the residents of the building. The Central Square MBTA Red Line stop, the 1, 47, 64, 68, 70, 83, and 91 bus lines, and several Blue Bike stations are all within a ¼ mile radius from the site.

The AHO does not require off-street parking and the proposed design does not include any off-street parking spaces for cars. Figure 7 illustrates where parking would be allowed and not allowed according to the AHO requirements. The AHO states that parking must be located at least 10' from a building, not within a setback, and not between a front lot line and a principal front wall plane. Since the site has three front yards, this severely limits parking to areas highlighted in green, which would require the removal of trees. The CHA studied the possibility of underground parking but determined it was not a viable option due to the small site, height requirements and slope of a driveway to get underground, and the fact that very few parking spaces could be accommodated in a small footprint underground.

Currently, there are nine parking spaces onsite, however, they are underutilized. Only three of the current residents have cars and keep them parked in the lot; if this ratio were to continue, then we would expect five cars for the future 62 residents.

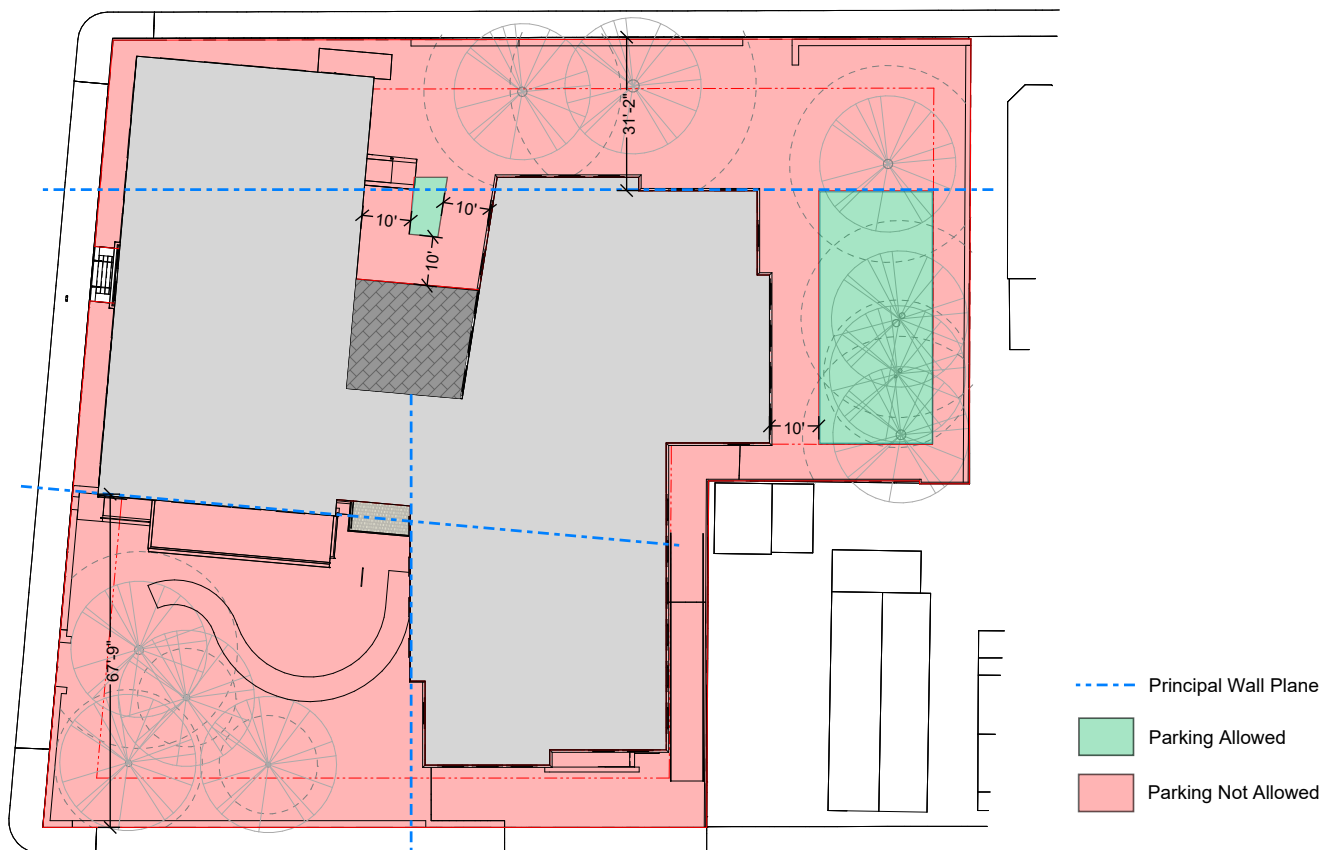


Figure 7: Allowable Parking Diagram

CHA conducted 12 parking counts (four for each time slot below) on Norfolk Street between Harvard and Washington (three small blocks) and on Suffolk and Worcester Streets between Norfolk and Columbia (one block each), and found the following number of spaces available weekdays:

Time	Average Spaces Available
12 PM	6.5
3 PM	11
7 PM	4

Though parking may be tight in the evenings, the CHA feels the decision to not provide off-street parking is best for the project and City given the zoning constraints, limited anticipated need for parking, need for more affordable housing and desire to maximize open space and tree preservation.

CHA has eight other parking lots within a quarter mile of 116 Norfolk, with 286 total parking spots, that can be used by staff and service providers without resident parking permits. Furthermore, 116 Norfolk currently has one on-street pick up/drop off space at the corner of Norfolk and Suffolk Streets. CHA is proposing to relocate this space closer to the new main entrance at the corner of Norfolk and Worcester Streets to better serve residents waiting for a ride. Lastly, CHA has also developed a Transportation Demand Management plan to offer to the 116 Norfolk Street residents, which includes the resident's choice of 50% off a six-month MBTA Link Pass (subway, local bus, Silver Line, Commuter Rail Zone 1A, and Charlestown Ferry) or an annual Blue Bikes membership. The CHA will to install a real-time transit service screen in a convenient common area of the building, as well and provide long-term bike storage in the basement.

The CHA met with Traffic and Planning (T&P) through regular meetings with the CDD, as well as a separate follow up meeting to discuss the proposed changes to the parking. T&P are comfortable with and supportive of the proposed plans.

## Sustainable Design

CHA is committed to designing and constructing housing that meets and exceeds sustainability goals that are in response to the needs of our planet and create healthier environments for its occupants. The project will be Enterprise Green Communities (EGC) certified and follow all requirements as outlined in Article 22 in the CZO.

CHA and the design team are working with New Ecology and have completed Passive House and Enterprise Green Community workshops, as well as a Green Charette. Several Life Cycle Cost Analysis and a WUFI analysis were also executed. After exploring Passive House certification, CHA decided to pursue Enterprise Green Community certification instead of Passive House, due to the difficulties of converting an existing 1907 building to Passive House standards.

CHA recognizes the importance of ending fossil fuel dependency and the building's energy system will be all-electric, except for the emergency generator, which will be natural gas. The roof will be designed to be "PV-ready" to accommodate photo-voltaic panels to be procured during construction.

A tight building envelope is key to having an energy efficient building. At the existing building, 3 ½" of insulation will be added to the interior face of the exterior masonry walls and a new slab with perimeter below-slab rigid insulation will be installed. The windows of the existing building were replaced in 2010 and are in good condition.

The existing windows will remain where possible and will be repaired as needed. The existing roof is to remain in place, with insulation being installed at the underside of the roof to bring the R-value of the roof up.

The new addition will be a wood framed building over concrete foundation, and the exterior walls will have an R-value of 30.9. The building will be clad in fiber cement siding, and recycled fly ash trim. Triple-glazed, polymer, tilt-turn windows will be installed at the addition; this type of window is high performing and achieves excellent air sealing.

All exterior lighting will be dark-sky compliant and all lighting in the project will be LED. Products will comply with EGC requirements for green, zero to low emitting materials, Green Guard, and other industry standards for green materials.

## DESIGN STATEMENT

The existing 116 Norfolk Street building is a 4 1/2-story building, with a smaller 3 1/2-story volume that originally housed a two-story chapel for the former convent. During the 1970's renovation, an interstitial floor was put into the chapel to create a floor that aligned with the existing second floor of the main building to create more SROs. However, this resulted in having units with poorly located windows and sightlines, as the original space had large windows which spanned from the second floor to the roof. This resulted in the units at the second floor having windows that were too high and units at the third floor having windows that were too low. Significant alterations would be needed at this original façade to provide more daylight and better views into the units here, as well as to create a new and welcoming main entrance into the building. These alterations carried many structural and financial concerns. As a result of studying and weighing the pros and cons of keeping the existing building intact, the decision was made to proceed with a design which demolishes the smaller volume of the East Wing. CHA and the design team consulted with Cambridge Historic Commission (CHC) staff regarding the proposed design, and CHC stated that the removal of the East Wing would not negatively impact the integrity of the original building, and that the building is not on any historical registers.

As most of the original 116 Norfolk Street building will be kept intact, the design team was careful to ensure that the design of the addition is responsive to and respectful of the existing masonry building, as well as to the surrounding neighborhood context. In conversations with CDD and CHC, it was quickly determined that the addition should not attempt to look like it was built at the same time as the existing building. There needed to be a clear indication that this was a new addition, and that its design was respectful in its massing and detailing to the existing building.

The building massing is expressed in three parts: the existing, the new addition, and the link between the two. The link's architecture is distinct from the other two portions to mitigate between the existing and the new. Upon review with CHA, CDD, CHC, residents and neighbors the decision to create an expanse of curtainwall, at both the north and south of this link, was an appropriate and clean choice for this section of the building. The distinct curtainwall is transparent and creates a clear point of entry, while also providing a perfect location for common-use residential lounges at the upper floors, where residents can enjoy the southern light coming in through the glass. This glazing also provides a visual connection from the south yard and entry, through the link, to the north courtyard.

The property is surrounded by single and multi-family housing of wood construction and cladding on three sides and on the fourth side, Norfolk Street, are larger, masonry structures and two contiguous parking lots.

While the AHO allows the new addition to be higher than typical zoning, the maximum allowable height for the new addition is 45'. Since the existing building's height is 54', at 4 stories tall, the addition will be 45' tall and one floor lower than the existing building creating a 'stepback' in section to better relate to the scale of its neighbors.

The organization of the building's massing further reduces the perceived scale of the project within the neighborhood, as it does not appear to be one large building. The volumes facing Worcester and Suffolk Street are narrow to relate to the rhythm of the individual residential volumes along the streets. The recessed, transparent link portion of the new addition allows for open space and trees to be seen from one side of the site to the other to further breakdown the building volumes.

The new addition does not overshadow the existing building, but instead complements it in form and detail. The existing building's main form is a simple rectangular volume. The existing building's detailing includes a strong roofline cornice at all four sides, windows that reduce in size and shape from the first floor to the top floor with unique window surround detailing at each floor level. The addition uses similar concepts to breakdown the new volume and relate to the existing building. The proposed design includes a roofline cornice, simple massing, and windows that progressively change in size and detail from first to top floor.



Figure 8: Proposed Axon View of 116 Norfolk Street



### Building Materials and Facades

The AHO Guidelines recommend “articulation of the facades of large buildings into smaller components” by using recesses or projections along the primary plane of the street façade and are required at every 40’ of elevation length. The new addition incorporates this at the primary street facades, as well as at the side yard facades, since it is preferred to design with a continuous language around the whole exterior.

The volume is further broken down with façade recesses and projections along each elevation. Massing and materials work together to create an elegant playful rhythm as the material changes from fiber-cement clapboards to fiber-cement shingles as one approaches a change in plane or turns the corner, and back to clapboards again when arriving at a different plane or orientation.

The base of the building will be brick for both durability and aesthetics. This material was also chosen because of the neighborhood context - typical wood framed buildings in the area have clapboard or single siding, with a masonry base. CHA and HMFH propose a cool blue color for the addition, picking up on the many blue and green clapboard houses in the area, and propose window surrounds in a color similar to the brick of the existing building to both provide contrast within the addition and complement the existing building.



Figure 9: View of north facade from Worcester Street. Fiber cement shingles and fiber cement clapboards alternate at the recesses and projections. Ground-face CMU will be installed at the base of the building. Colors have not been chosen yet, but neutral warm tones will be used.

### Apartment Interiors

Each of the 62 studio apartments are designed for a single individual and will have a full kitchen, with a 24" wide range or stovetop/ wall oven combination, a sink, a full-size refrigerator, base cabinets, drawers, and upper cabinets. Studios are designed to be roughly 350 square feet, in line with or slightly larger than other Permanent Supportive Housing units being built in the metro Boston area. Each unit's bathroom will have a toilet, a sink, a mirrored medicine cabinet, a shower, towel bars, robe hooks, and a toilet paper roll holder. The units will all have at least one small entry closet and one larger wardrobe closet. The units will all have heating and central cooling. Windows in the addition will be energy efficient, triple-pane tilt-turn windows, which provide generous sunlight and natural ventilation. The units have been designed to accommodate a full-size bed, nightstands, a 72" long sofa, coffee table, and a small dining table with two chairs.

In accordance with CMR 521, MAAB, all units in the addition are Group 1 compliant (31 units), except for the four units that are Group 2A compliant. The Group 2A units are adaptable into fully accessible units, as they accommodate a 60" wheelchair turning radius and have adaptable kitchens. These kitchens have a cooktop and wall oven, rather than a standard range, to allow for leg space while cooking and cleaning. The bathrooms also are large enough for a wheelchair turning radius and have larger, roll-in showers. Although not required by MAAB or ADA, all 62 units in the building will have grab bars installed in the showers and at the toilets.

There is a large central laundry room in the building. There are also trash/recycling rooms with a trash chute at each of the upper levels to make taking out the trash and recycling easier for residents.

### Utility Requirements and Permitting

CHA and the design team have been working with the City of Cambridge Department of Public Works and utility companies to review the proposed plans for services entering the site and building. The project team will be designing and connecting all utilities in accordance with all regulatory and permitting requirements, including Stormwater Control, Water, Wastewater, gas, electrical, demolition and building permits.

# 1.2 Checklists and Forms



## City of Cambridge, MA • Affordable Housing Overlay Design Review Submission Forms

*These forms are intended to demonstrate compliance with the provisions of the Affordable Housing Overlay (AHO), Section 11.207 of the Cambridge Zoning Ordinance (CZO). Refer to the CZO for detailed provisions.*

**Project Address:** 116 Norfolk Street

**Applicant:** Cambridge Housing Authority and 116 Norfolk Apartments LLC

**Contact Name:** Clara Fraden

**Contact Phone:** 617-520-6346

**Contact Email:** cfraden@cambridge-housing.org

### FOR STAFF USE

Complete Submission Received on Date:

## Design Review Submission

*Note: Review Section 11.207 of the CZO carefully before submitting a design review package for an AHO project. This checklist and accompanying forms are intended only to assist in assembling and organizing application materials.*

### Narrative Volume (8.5"x11" portrait orientation)

Provided Forms:

- ☒ Design Review Submission Checklist (this form)
- ☒ Parcel Dimensional Form [Section 11.207.8(d)(xiii.)]
- ☒ Building Dimensional Form for each existing or proposed building on the site [Section 11.207.8(d)(xiii.)]
- ☒ Tenure and Affordability Summary [Section 11.207.3]
- ☒ Initial Development Budget [Section 11.207.8(d)(v.)]

Written Sections:

- ☒ Project Narrative [Section 11.207.8(d)(xiv.)]
- ☒ Design Statement [Section 11.207.8(d)(v.)]
- ☒ Description of Transportation Demand Management programs offered, if applicable [Section 11.207.6.5]
- ☒ Summary of Community Engagement Process [Section 11.207.8]

### Graphics Volume (11"x17" landscape orientation)

- ☒ Context map [Section 11.207.8(d)(i.)]
- ☒ Context analysis [Section 11.207.8(d)(ii.)]
- ☒ Existing conditions site plan [Section 11.207.8(d)(iii.)]
- ☒ Proposed conditions site plan [Section 11.207.8(d)(iv.)]
- ☒ Floor plans of all new buildings and existing buildings to remain [Section 11.207.8(d)(vi.)]
- ☒ Elevations and cross-section drawings of all new buildings and existing buildings to remain [Section 11.207.8(d)(vii.)]
- ☒ Landscape plan [Section 11.207.8(d)(viii.)]
- ☒ Plans of parking and bicycle parking facilities [Section 11.207.8(d)(ix.)]
- ☒ Materials palette of proposed façade and landscape materials [Section 11.207.8(d)(x.)]
- ☒ Photographs of existing conditions [Section 11.207.8(d)(xi.)]
- ☒ Perspective views and renderings of proposed conditions [Section 11.207.8(d)(xii.)]
- ☒ Viewshed analysis and shadow studies [Section 11.207.8(d)(xv.)]

*Note: Use attached "Graphics Checklist" to ensure that all necessary information is provided.*

### Other Submissions (as applicable)

- ☒ Green Building Requirements submission (if Section 22.20 of the CZO is applicable)
- ☐ Flood Plain submission (if Section 20.70 of the CZO is applicable)

## City of Cambridge, MA • Affordable Housing Overlay Design Review Submission Forms

These forms are intended to demonstrate compliance with the provisions of the Affordable Housing Overlay (AHO), Section 11.207 of the Cambridge Zoning Ordinance (CZO). Refer to the CZO for detailed provisions.

**Project Address:** 116 Norfolk Street

**Applicant:** Cambridge Housing Authority

**Parcel Information – Provide one form for the entire parcel**

	Existing	District Zoning Standards	AHO Zoning Standards	Proposed
<b>Base Zoning District(s)</b>	C-1			
<b>Overlay Zoning District(s)</b>	Affordable Housing Overlay			
<b>Uses on Adjacent Lots</b>	Residential			
<b>Lot Area, in sq. ft.</b>	25,230 SF	1,500 SF	n/a	25,230 SF
<b>Lot Width, in feet</b>		50'-0"	n/a	
East-West	174'-2"	-	-	174'-2"
North-South	160'-6"	-	-	160'-6"
<b>Number of Buildings</b>	1	n/a	n/a	1
Existing to be demolished	-	-	-	0
Existing retained/moved/enlarged	-	-	-	1
New construction	-	-	-	0
<b>Gross Floor Area (GFA), in sq. ft.</b>	24,530 SF	18,922 SF	50,460 SF	43,100 SF
<b>Floor Area Ratio (FAR)</b>	0.97	0.75	2.00	1.71
<b>Dwelling Units</b>	38	-	-	62
Affordable Dwelling Units	38	-	-	62
<b>Total Open Space, in sq. ft.<sup>1</sup></b>	12,876%	-	-	11,130 SF
Private Open Space	51%	30%	30%	44%
Permeable Open Space	48%	30%	30%	40%
Open Space above Ground Story	3%	n/a	25% of Total Open Space max	4%
<b>Total Off-Street Parking Spaces</b>	9	62	0	0
Provided on-site	9	62	0	0
Provided off-site <sup>2</sup>	0	-	0	0
<b>Long-Term Bicycle Parking Spaces</b>	0	65	36	36
<b>Short-Term Bicycle Parking Spaces</b>	4	7	4	4
Provided on-site	4	7	4	4
Fund contribution <sup>3</sup>	0	-	-	0
<b>Public Bicycle Sharing Stations<sup>4</sup></b>	0	-	-	0
Provided on-site	0	-	-	0
Provided off-site	0	-	-	0
<b>Loading Bays</b>	1	0	1	1

<sup>1</sup> Refer to Open Space provisions in Section 11.207.5.2.4 of the CZO.

<sup>2</sup> Refer to off-site parking provisions in 11.207.6.2 of the CZO.

<sup>3</sup> Refer to Public Bicycle Parking Fund provisions in Section 6.104.2(b.) of the CZO.

<sup>4</sup> Refer to Public Bicycle Sharing Station provisions in Section 11.207.6.4(d) of the CZO.

**Attach additional calculations as necessary to explain any figures above.**



## City of Cambridge, MA • Affordable Housing Overlay Design Review Submission Forms

*These forms are intended to demonstrate compliance with the provisions of the Affordable Housing Overlay (AHO), Section 11.207 of the Cambridge Zoning Ordinance (CZO). Refer to the CZO for detailed provisions.*

**Project Address:** 116 Norfolk Street

**Applicant:** Cambridge Housing Authority

**Back up calculations for Bicycle Parking**

	Cambridge Zoning Ordinance	Affordable Housing Overlay	Proposed Design
Short-Term Bicycle Parking	0.10 spaces per unit on a lot	0.10 spaces per unit on a lot  In existing buildings, bike parking spaces are not required to meet AHO standards	35 units in new addition  $35 \times 0.10 = 3.5$  <b>4 short-term bike spaces</b>
Long-Term Bicycle Parking	1.00 spaces per unit for first 20 units in a building.  1.05 spaces per unit for additional units beyond 20.	1.00 spaces per unit for first 20 units in a building.  1.05 spaces per unit for additional units beyond 20.  Up to 20 long-term bike parking spots may be designed to meet short-term bike requirements, as long as they are still covered  In existing buildings, bike parking spaces are not required to meet AHO standards	35 units in new addition  $20 + (1.05 \times 15) = 35.75$  <b>36 long-term bike spaces</b>

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**Building Information – Provide one form for each existing or proposed building**

	Existing	District Zoning Standards	AHO Zoning Standards	Proposed
<b>Building Designation (per plans)</b>	Building			
<b>Type of Alteration Proposed</b>	Enlargement			
<b>Building Use(s)</b>	Multifamily	1-2 family, multi, limited institutional	1-2 family, multi, limited institutional	Multifamily
<b>Ground Story Use(s)</b>	Multifamily	Multifamily, limited institutional	Multifamily, limited institutional	Multifamily
<b>Gross Floor Area (GFA), in sq. ft.</b>	24,530 SF	(calculated for lot)	(calculated for lot)	43,100 SF
<b>Dwelling Units</b>	38	(calculated for lot)	(calculated for lot)	62
<b>Affordable Dwelling Units</b>	38	(calculated for lot)	(calculated for lot)	62
<b>Stories Above Grade<sup>1</sup></b>	4	3	4	4
<b>Building Height, in ft.</b>	54 ft	35FT	45 FT	54 FT*
<b>Ground Story – floor-to-floor, in ft.</b>	13'-1"	n/a	n/a	13'-1 (at existing) /15'-5" (at addition)
<b>Building Setbacks, in ft.<sup>2</sup></b>	-	-	-	-
Front Yard, Norfolk St.	5 ft	10 ft	10 ft (corner lot)	5 ft*
Front Yard, Worcester St.	3 ft	10 ft	10 ft (corner lot)	3 ft*
Front Yard, Suffolk St.	57 ft	10 ft	10 ft (corner lot)	12 ft
Side Yard	40 ft	7.5 ft	7.5 ft	9 ft
Rear Yard	n/a	20 ft	n/a	n/a
<b>Distance to nearest building, in ft.</b>	n/a	-	No min	34'-6"
<b>Building length along street, in ft.</b>	-	-	-	-
Norfolk St.	88'-9"	n/a	n/a	88'-9"
Worcester St.	47'-8"	n/a	n/a	125'-6"
Suffolk St.	77'-9"	n/a	n/a	113'-7"
<b>Fenestration, as % of façade area facing public street or open space</b>	16%	n/a	n/a	22%
Ground Story only	n/a	n/a	n/a	n/a
<b>Where Ground-Story non-residential uses are proposed in a Business district:<sup>3</sup></b>				
Frontage, as % of total façade length	n/a	n/a	n/a	n/a
Depth from facade, in feet	n/a	n/a	n/a	n/a

<sup>1</sup> Refer to Definitions in Article 2.000 of the CZO.

<sup>2</sup> Where the proposal is applying front yard setback standards per Section 11.207.5.2.3(b) of the CZO, attach an area plan identifying the four nearest pre-existing principal buildings that contain at least two Stories Above Grade and directly front the same side of the street as the AHO Project, and a table providing the front yard setbacks for each building and calculating the average of the four.

<sup>3</sup> See Section 11.207.7.4(e) of the CZO.

\*Existing, non-conforming condition.

**Attach additional calculations as necessary to explain any figures above.**



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**Project Address:** 116 Norfolk Street

**Applicant:** Cambridge Housing Authority

**Tenure:**

- ☒ Rental housing  
☐ Homeownership housing

**Unit Affordability Summary <sup>1</sup>**

	Units at or Below 80% AMI	Units 80% to 100 %AMI	Total
<b># of Units:</b>	62		62
<b>% of Units:</b>	100%		100%

<sup>1</sup> Refer to Section 11.207.3 in Article 2.000 of the CZO

**Unit Size Summary:**

	0-bedrooms	1-bedrooms	2-bedrooms	3-bedrooms	4+bedrooms	Total
<b># of Units:</b>	62					62
<b>Average size range (sf):</b>	350 sf					

*Please describe other anticipated affordability limitations, if applicable (voluntary):*

All units are for residents under 60% AMI, and 9 are reserved for residents under 30% AMI.

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**Project Address:** 116 Norfolk Street

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**Initial Development Budget (see Section 11.207.8 of CZO):**

<b>Anticipated Uses/Costs:</b>	
Acquisition:	\$1,142,508
Construction/Hard Costs:	\$31,126,250
Other Costs/Soft Costs:	\$9,097,167
Developer Fee:	\$3,059,136
<b>Total Uses/Costs:</b>	<b>\$44,425,061</b>

<b>Anticipated Sources:</b>	
LIHTC Equity	\$17,440,563
Permanent Loan	\$5,351,000
Cambridge Affordable Housing Trust	\$10,161,150
CHA Sponsor Equity	\$10,972,348
Deferred Developer fee	\$500,000
<b>Total Sources:</b>	<b>\$44,425,061</b>

City of Cambridge, MA • Affordable Housing Overlay Design Review Submission Forms

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## Graphics Checklist

*Review Section 11.207 of the CZO for all submission requirements.*

*Make sure that submitted graphic materials include the following information, at a minimum, to verify compliance with applicable sections of the AHO:*

**All maps, plans and elevation drawings should include:**

- ☒ Graphic scale
- ☒ North arrow / orientation

**Context maps should include:**

- ☒ Streets and pedestrian/bicycle routes leading to and from the site
- ☒ Distance to public facilities in vicinity, including transit
- ☒ Buildings and uses on adjacent sites
- ☐ Distance to off-site parking, where proposed

**Site plans or landscape plans should include:**

- ☒ Lot boundaries
- ☒ Adjacent streets (labeled) and dimensions of adjacent public sidewalks
- ☒ Building footprints with locations of entrances/exits, labeled areas of ground story uses, dimensioned façade lengths, setbacks, and distances to nearest buildings
- ☒ Natural and other landscape features including trees and plantings
- ☒ Open space, dimensioned and labeled by type (private, green area, permeable, publicly beneficial)
- ☒ Proposed locations of light fixtures, specifying type
- ☒ Locations, dimensions, and screening of all mechanical equipment located on-site, including all screening (*Section 11.207.7.5 of the CZO*)
- ☒ Pedestrian and bicycle travel routes, dimensioned
- ☒ Curb cuts, vehicular drives, off-street parking, loading and service facilities, dimensioned (*Section 6.50 of the CZO*)
- ☒ Pick-up/drop-off area(s), if project contains 20 units or more and no off-street parking spaces (*Section 11.207.6.1(b) of the CZO*)
- ☒ Features of adjacent lots and buildings that abut the project site

**Building floor plans, elevations, and cross-sections should include:**

- ☒ Dimensioned floor plans labeling the uses in each portion of the building
- ☒ Dimensions (length and depth) of articulation and breaks in the façade plane (*Sections 11.207.7.2(c) and 11.207.7.3(b) of the CZO*)
- ☒ Dimensions of fenestration on façades facing public streets and open spaces (*Section 11.207.7.3(a) of the CZO*)
- ☒ Length of separation between windows and entrances on the ground story (*Section 11.207.7.4(c) of the CZO*)
- ☒ Dimensions (length, height, and depth from façade) of non-residential uses and parking proposed on the ground story (*Section 11.207.7.4 of the CZO*)
- ☒ Rooftop plans, elevations, and perspective views showing the locations, dimensions, and screening of all mechanical equipment (*Section 11.207.7.5 of the CZO*)

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