Green Building Project Checklist

Green Building Project Location: 75 First Street, Cambridge, MA 02141

Applicant

Name: Urban Spaces, LLC

Address: 55 Bent Street, Cambridge, MA 02141

Contact Information

Email Address: hirsch@urbanspacesllc.com

Telephone #: 617-868-5558 ext 112

Project Information (select all that apply):

- ☑ New Construction – GFA: 76,645 sq ft
- ☐ Addition – GFA of Addition: _____
- ☐ Rehabilitation of Existing Building – GFA of Rehabilitated Area: _____
  - ☐ Existing Use(s) of Rehabilitated Area: _____
  - ☐ Proposed Use(s) of Rehabilitated Area: _____
- ☐ Requires Planning Board Special Permit approval
- ☐ Subject to Section 19.50 Building and Site Plan Requirements
- ☐ Site was previously subject to Green Building Requirements

Green Building Rating Program/System:

- ☑ Leadership in Energy and Environmental Design (LEED) – Version: Version 4
  - ☐ Building Design + Construction (BD+C) – Subcategory: _____
  - ☑ Residential BD+C – Subcategory: LEED BD+C: Multifamily Mid-Rise
  - ☐ Interior Design + Construction (ID+C) – Subcategory: _____
  - ☐ Other: _____
- ☐ Passive House – Version: _____
  - ☐ PHIUS+
  - ☐ Passivhaus Institut (PHI)
  - ☐ Other: _____
- ☐ Enterprise Green Communities – Version: _____

Project Phase

☑ **SPECIAL PERMIT**

Before applying for a building permit, submit this documentation to CDD for review and approval.

Required Submissions

All rating programs:

- ☑ Rating system checklist
- ☑ Rating system narrative
- ☑ Net zero narrative (see example template for guidance)
- ☑ Affidavit signed by Green Building Professional with attached credentials – use City form provided (Special Permit)

Project Phase

☐ **BUILDING PERMIT**

Before applying for a building permit, submit this documentation to CDD for review and approval.

Required Submissions

All rating programs:

- ☐ Rating system checklist – updated from any prior version
- ☐ Rating system narrative – updated from any prior version with additional supporting information from construction documents
- ☐ Net zero narrative – updated from any prior version (see example template for guidance)
- ☐ Energy Simulation Tool results demonstrating compliance with selected rating system. *[Note: For Passive House rating program, must use WUFI Passive, Passive House Planning Package (PHPP), or comparable software tool authorized by Passive House.]*
- ☐ Credentials of Green Commissioning Authority (or copy of contract between developer and Commissioning Authority if an independent consultant or subcontractor), including documentation of Green Commissioning process experience on at least two building projects with a scope of work similar to the proposed project extending from early design phase through at least ten (10) months of occupancy
- ☐ Affidavit signed by Green Building Professional with attached credentials – use City form provided (Building Permit)

Passive House rating program only:

- ☐ Letter of intent from Passive House rater/verifier hired for on-site verification, with credentials of rater/verifier
- ☐ Credentials of Certified Passive House Consultant who has provided design, planning, or consulting services (if different from the Green Building Professional for the project)
- ☐ Construction drawings and specifications

Project Phase

☐ **CERTIFICATE OF OCCUPANCY**

Before applying for a certificate of occupancy, submit this documentation to CDD for review and approval.

Required Submissions

All rating programs:

- ☐ Rating system checklist – updated from any prior version
- ☐ Rating system narrative – updated from any prior version with additional supporting information from as-built conditions
- ☐ Net zero narrative – updated from any prior version (see example template for guidance)
- ☐ Energy Simulation Tool results demonstrating compliance with selected rating system, updated to as-built conditions. *[Note: For Passive House rating program, must use WUFI Passive, Passive House Planning Package (PHPP), or comparable software tool authorized by Passive House.]*
- ☐ Affidavit with schedule of commissioning requirements signed by Green Commissioning Authority, with attached credentials – use City form provided (Certificate of Occupancy)
- ☐ Affidavit signed by Green Building Professional with attached credentials – use City form provided (Certificate of Occupancy)

Passive House rating program only:

- ☐ Pressure Test Verification
- ☐ Ventilation Commissioning
- ☐ Quality Assurance Workbook
- ☐ Final testing and verification report from rater/verifier

LEED BD+C: Multifamily Midrise v4 - LEED v4

75 First Street Scorecard

Location: **75 First Street, Cambridge, MA 02141**

Note: The information on this tab is READ-ONLY. To edit this information, see the Credit Category tabs.

Integrative Process		**Preliminary**	Y	1 of 2	M	*0*	**Verified**	0
IPc	**Integrative Process**			1 of 2		*0*		
Location and Transportation		**Preliminary**	Y	15 of 15	M	*0*	**Verified**	0
LTp	Floodplain Avoidance			Required				Not Verified
Performance Path								
LTc	LEED for Neighborhood Development			0 of 15		*0*		
Prescriptive Path								
LTc	Site Selection			8 of 8		*0*		
LTc	Compact Development			3 of 3		*0*		
LTc	Community Resources			2 of 2		*0*		
LTc	Access to Transit			2 of 2		*0*		
Sustainable Sites		**Preliminary**	Y	4 of 7	M	*0*	**Verified**	0
SSp	Construction Activity Pollution Prevention			Required				Not Verified
SSp	No Invasive Plants			Required				Not Verified
SSc	Heat Island Reduction			0 of 2		*0*		
SSc	Rainwater Management			2 of 3		*0*		
SSc	Nontoxic Pest Control			2 of 2		*0*		
Water Efficiency		**Preliminary**	Y	8 of 12	M	*0*	**Verified**	0
WEp	Water Metering			Required				Not Verified
Performance Path								
WEc	Total Water Use			0 of 12		*0*		
Prescriptive Path								
WEc	Indoor Water Use			5 of 6		*0*		
WEc	Outdoor Water Use			3 of 4		*0*		
Energy and Atmosphere		**Preliminary**	Y	22.5 of 37	M	*0*	**Verified**	20.5
EAp	Minimum Energy Performance			Required				Not Verified
EAp	Energy Metering			Required				Not Verified
EAp	Education of the Homeowner, Tenant or Building Manager			Required				Not Verified
EAc	Annual Energy Use			20.5 of 30		*0*		20.5
EAc	Efficient Hot Water Distribution System			2 of 5		*0*		
EAc	Advanced Utility Tracking			0 of 2		*0*		

Materials and Resources		Preliminary	Y	1.5 of 9	M	0	Verified	0
MRp	Certified Tropical Wood			Required				Not Verified
MRp	Durability Management			Required				Not Verified
MRc	Durability Management Verification			1 of 1		0		
MRc	Environmentally Preferable Products			0.5 of 5		0		
MRc	Construction Waste Management			0 of 3		0		

Indoor Environmental Quality		Preliminary	Y	9.5 of 18	M	0	Verified	0
EQp	Ventilation			Required				Not Verified
EQp	Combustion Venting			Required				Not Verified
EQp	Garage Pollutant Protection			Required				Not Verified
EQp	Radon-Resistant Construction			Required				Not Verified
EQp	Air Filtering			Required				Not Verified
EQp	Environmental Tobacco Smoke			Required				Not Verified
EQp	Compartmentalization			Required				Not Verified
EQc	Enhanced Ventilation			3 of 3		0		
EQc	Contaminant Control			0.5 of 2		0		
EQc	Balancing of Heating and Cooling Distribution Systems			2 of 3		0		
EQc	Enhanced Compartmentalization			0 of 3		0		
EQc	Combustion Venting			2 of 2		0		
EQc	Enhanced Garage Pollutant Protection			1 of 1		0		
EQc	Low-Emitting Products			0 of 3		0		
EQc	No Environmental Tobacco Smoke			1 of 1		0		

Innovation		Preliminary	Y	4 of 6	M	0	Verified	0
INp	Preliminary Rating			Required				Not Verified
INc	Innovation			3 of 5		0		
INc	LEED Accredited Professional			1 of 1		0		

Regional Priority		Preliminary	Y	3 of 4	M	0	Verified	0
RPc	Regional Priority			3 of 4		0		

Point Floors	
The project earned at least 8 points total in Location and Transportation and Energy and Atmosphere	Yes
The project earned at least 3 points in Water Efficiency	No
The project earned at least 3 points in Indoor Environmental Quality	No

Total		Preliminary	Y	68.5 of 110	M	0	Verified	20.5

Certification Thresholds Certified: 40-49, Silver: 50-59, Gold: 60-79, Platinum: 80-110

75 First Street
Cambridge, MA 02141
Design LEED Green Building Narrative

June 20, 2022

PREPARED FOR

Urban Spaces, LLC

55 Bent Street

Cambridge, MA 02141

PREPARED BY

CLEAResult

50 Washington Street

Westborough, MA 01581

Table of Contents

Introduction

CLEAResult is pleased to submit the Design Green Building Narrative for 75 First Street. This report is required under Article 22 and is intended to supplement the LEED checklist.

CLEAResult is one of 38 Provider organizations of the United States Green Building Council's LEED for Homes program and has served in this capacity since the program's first pilot in late 2005. CLEAResult served as the LEED for Homes Green Rater and the LEED for Homes Provider for the 75 First Street project.

75 First Street a six-story new construction residential building. The building is approximately 60,270 square feet and will contain 90 residential units made up of a mix of studio, 1, 2, and 3-bedroom apartments.

LEED Scope

CLEAResult conducted LEED for Homes meetings with the project team of the 75 First Street development to create a LEED for Homes Midrise checklist. CLEAResult was able to assess that with the intent and decisions made thus far that all the applicable prerequisite items in the rating system are being met. Sufficient optional credits are allowing the project to achieve the LEED Gold threshold. Design details and strategies by which the project will achieve each LEED prerequisite and credit is described in further detail below.

Category	**Points**
Innovation & Design	1
Location & Transportation	15
Sustainable Sites	4
Water Efficiency	8
Energy & Atmosphere	22.5
Materials & Resources	1.5
Indoor Environmental Quality	9.5
Innovation	4
Regional Priority	3
TOTAL POINTS	**68.5**

SECTION 1: LEED FOR HOMES CHECKLIST

LEED BD+C: Multifamily Midrise v4 - LEED v4

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INTEGRATIVE PROCESS

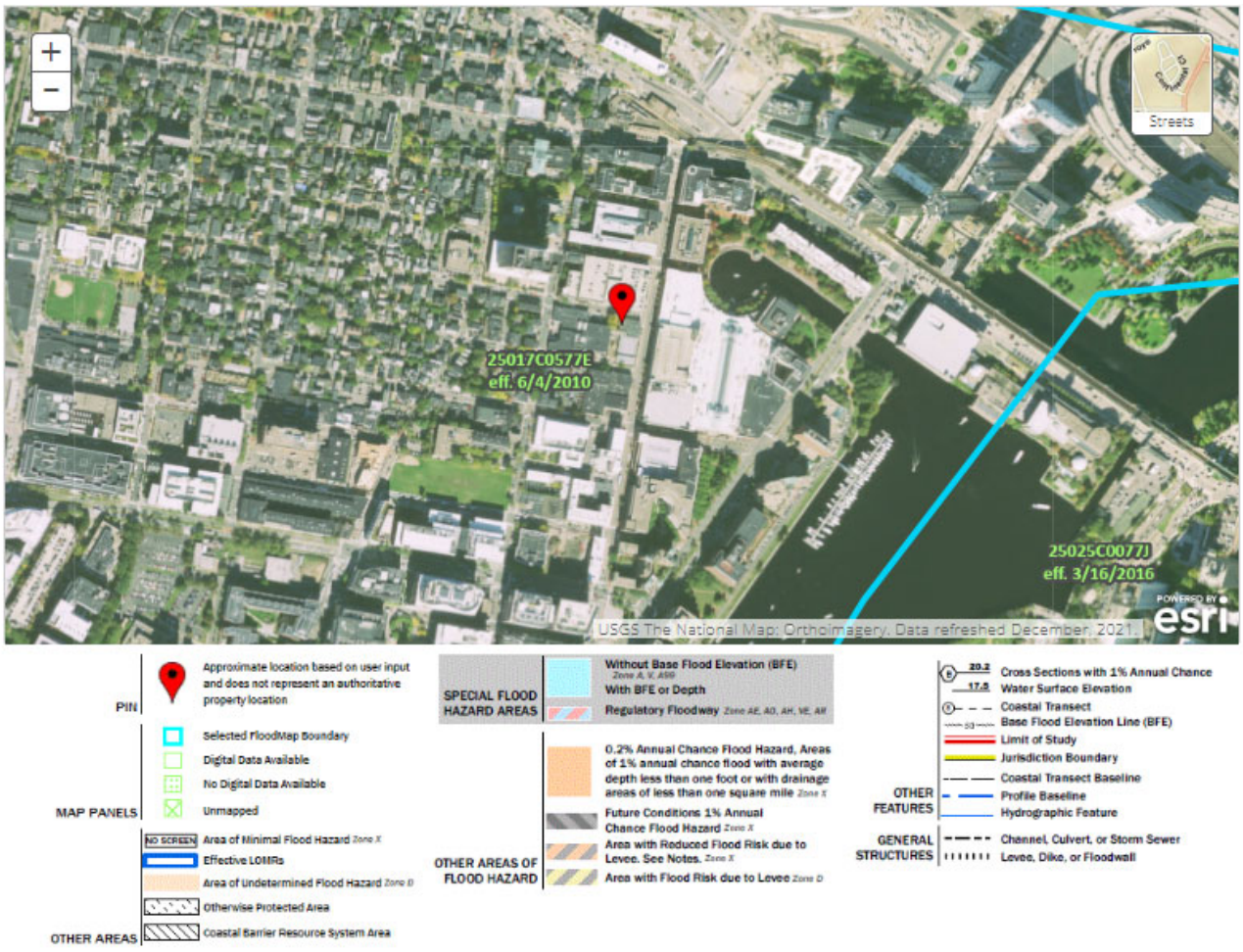
OPTION 2. TRADES TRAINING **(1 POINT)**

- The team, with CLEAResult, will provide on-site training for trades, especially focused on the requirements to achieve the compartmentalization.

LOCATION AND TRANSPORTATION

FLOODPLAIN AVOIDANCE **(PREREQUISITE)**

- The project will be constructed outside of any flood hazard areas defined by FEMA.



SITE SELECTION **(8 POINTS)**

Option 1. SENSITIVE LAND PROTECTION **(4 POINTS)**

Path 1. Previously Developed

- The project is located on a previously developed lot of 26,000 square ft. This is an urban infill project where 100% of the land is previously disturbed.

Option 2. INFILL DEVELOPMENT **(2 POINTS)**

- The project will be constructed at a location where more than 75% of the land within ½-mile from the project boundary is previously developed land.

Option 3. OPEN SPACE **(1 POINT)**

- The project is located within a ½-mile walk to Canal Park, Centanni Park, Anthony Costa Park and Silva Park.

Option 4. STREET NETWORK **(1 POINT)**

- The project is located in an area with intersection density of greater than 320 intersections per square mile according to https://htaindex.cnt.org/map/ and being a less than 2-acre project site achieves 38 qualifying intersections in the ¼ mile radius area around the project site.

Option 5. BICYLE NETWORK AND STORAGE **(1 POINT)**

- The project is located on existing bicycle network which connects to over ten community resources and transit stops. The building has a bike room which provides secure and covered bicycle storage.

COMPACT DEVELOPMENT **(3 POINTS)**

- 75 First Street has a calculated density of 150 dwelling units per acre.
  - Buildable Area = .60 acre
  - 90 Units/.60 Acre = 150 dwelling units per acre

COMMUNITY RESOURCES **(2 POINTS)**

- The project earns 2 points for being within a ½-mile of over 20 community resources. Exemplary performance is awarded for achieving over >20 community resources within a ½-mile.

ACCESS TO TRANSIT **(2 POINTS)**

- The project earns 2 points in this category for its proximity to Lechmere T station, which serves the Green Line and Bus #69, 80, 88, 80, 87, 69, and 64, providing over 432 weekday trips and 303 weekend trips.

SUSTAINABLE SITES

CONSTRUCTION ACTIVITY POLLUTION PREVENTION **(PREREQUISITE)**

- 75 First Street will follow the applicable LEED prerequisites of erosion control plan:
  - Stockpile Disturbed topsoil
  - Control Runoff
  - Protect storm sewer inlets, and on-site water bodies
  - Prevent dust, particulate pollution

These requirements will be in the project plans, specs, and details.

NO INVASIVE PLANTS **(PREREQUISITE)**

- The project plant list will not include any plants designated as invasive to Massachusetts.

RAINWATER MANAGEMENT **(2 POINTS)**

- Case 2. NPDES Project – The project will install various components to comply with a 95th percentile rainstorm.

NONTOXIC PEST CONTROL **(2 POINTS)**

- The project will earn points for this credit by achieving the following criteria (0.5 pts each):
  - Provide 6-inch minimum space between surface of landscape and non-masonry siding
  - Seal all external cracks, joints, penetrations, edges, and entry points with appropriate caulking.
  - Design discharge points for rain gutters, air-conditioning condensate lines, or any other moisture sources such that discharge is at least 24” from the foundation
  - Provide a minimum 18” space between the exterior wall and plantings

WATER EFFICIENCY

WATER METERING **(PREREQUISITE)**

- The project will install a whole building water meter.

INDOOR WATER USE **(5 POINTS)**

- 75 First Street will receive 6 points for WaterSense high-efficiency bathroom faucet, showerhead, and toilets. 1 point will be earned for the sinks (≤1.50 gpm), equipped with a restricting device, 2 points for the showerheads (≤1.5 gpm), and 1 point for the average toilets (≤1.1 gpf), and 1 point for ENERGY STAR clothes washers.

OUTDOOR WATER USE **(3 points)**

- The project's planting design includes all native species and will have less than 20% turf grass.

TABLE 1. Points for reducing turf grass and increasing native plantings, as percentage of total landscape area

TURF GRASS AREA		NATIVE OR ADAPTED PLANT AREA	POINTS
< 60%	AND	> 25%	1
< 40%	AND	> 50%	2
< 20%	AND	> 75%	3
< 05%	AND	> 75%	4

ENERGY AND ATMOSPHERE

MINIMUM ENERGY PERFORMANCE **(PREREQUISITE)**

- The projected energy savings for 75 First Street over ASHRAE 90.1-2010 are over 16%.

Option 2. COMMISSIONING USING PRESCRIPTIVE PATH

- Reduced Heating and Cooling Distribution System Losses for In-Unit HVAC
  - Duct leakage will not exceed 4 cfm25 per 100 sq ft of conditioned floor area
  - Duct leakage in units smaller than 1,200 sq ft will not exceed 6cfm25 per 100 sq ft of conditioned floor area.
  - The project will meet the performance testing and ongoing requirements of fundamental commissioning and verification for central systems.

ENERGY METERING **(PREREQUISITE)**

- The project will be installing electric meters for each unit and a whole building gas meter.

EDUCATION OF THE HOMEOWNER, TENANT, OR BUILDING MANAGER (**PREREQUISITE**)

- The project will develop an Operations & Maintenance Manual for the Building Manager. A Resident Manual will be developed.

ANNUAL ENERGY USE **(20.5 POINTS)**

- The energy model will achieve at least a 16% savings over ASHRAE 90.1-2010 earning 11 points. The project Home Size Adjustment Calculator yields 9.5 points.
  - Home Size Adjustment Calculation**:**

Building ID	0 Bedrooms		1 Bedroom		2 Bedrooms		3 Bedrooms		4 Bedrooms		5 Bedrooms		6 Bedrooms	
	Number of Units	Average Floor Area (sq ft)	Number of Units	Average Floor Area (sq ft)	Number of Units	Average Floor Area (sq ft)	Number of Units	Average Floor Area (sq ft)	Number of Units	Average Floor Area (sq ft)	Number of Units	Average Floor Area (sq ft)	Number of Units	Average Floor Area (sq ft)
	8	480.00	70	630.00	10	920.00	2	1,430.00						
Home size adjustment	52%		37%		43%		35%		0%		0%		0%	
Point adjustment	13.0		9.3		10.6		8.8		0.0		0.0		0.0	
Total number of units														90
Average home size point adjustment														**9.5**

EFFICIENT HOT WATER DISTRIBUTION **(2 POINTS)**

Option 3. PIPE INSULATION

- The hot water pipes will be insulated to R-4.

MATERIALS AND RESOURCES

CERTIFIED TROPICAL WOOD **(PREREQUISITE)**

- 75 First Street will only use wood that is non-tropical, reused, reclaimed, or certified by the Forestry Stewardship Council.

DURABILITY MANAGEMENT **(PREREQUISITE)**

- The project specifications will include all required Durability Management items.

TABLE 1. Required Interior Moisture Control Measures for Homes

LOCATION OR EQUIPMENT	REQUIRED MEASURE
Area directly above bathtub, spa, or shower (extending to ceiling), exposed wall or area behind fiberglass enclosure if wallboard is installed	Use nonpaper-faced backer board or paper-faced product or coating over wallboard that meets standard ASTM D 3273 standard
Kitchen, bathroom, laundry room, spa area	Use water-resistant flooring; do not install carpet
Tank water heater in or over living space	Install drain and drain pan, drain pan and automatic water shut-off or flow restrictor, or floor drain with floor sloped to drain
Clothes washer (or condensing clothes dryer) in or over living space	Install drain and drain pan, drain pan and automatic water shut-off or flow restrictor, or floor drain with floor sloped to drain
Conventional clothes dryer	Exhaust directly to outdoors

DURABILITY MANAGEMENT VERIFICATION **(1 POINT)**

- CLEAResult will verify that Energy Star Water Management Requirements are successfully implemented.

ENVIRONMENTALLY PREFERABLE PRODUCTS **(.5 POINT)**

Option 1. Local Production

- The project will use locally produced aggregate for concrete and foundation.

INDOOR ENVIRONMENTAL QUALITY

VENTILATION **(PREREQUISITE)**

- Continuously operating Energy Recovery Ventilation systems will be installed.
- ERV will continuously exhaust all bathrooms and living room areas and supply makeup air.
- Flow rates will comply with ASHRAE 62.2-2010 requirements.
- All air inlets will be located 2 ft above the roof and more than 3 feet from all contaminant sources.

COMBUSTION VENTING **(PREREQUISITE)**

- No gas fired appliances will be installed.

GARAGE POLLUTANT PROTECTION **(PREREQUISITE)**

- The parking garage will institute the following items:
  - All penetrations through the floor are sealed
  - All doors entering the garage are weather-stripped
  - Carbon monoxide detectors are installed in rooms that share a door with the garage
  - All penetrations and all cracks at the base of the walls are sealed.

RADON-RESISTANT CONSTRUCTION **(PREREQUISITE)**

- The project is located in EPA Radon Zone 1 and will design and build with radon-resistant construction techniques.

AIR FILTERING **(PREREQUISITE)**

- MERV 8 filters will be installed on all space conditioning systems
- MERV 6 filters will be installed on all systems mechanically supplying outdoor air

ENVIRONMENTAL TOBACCO SMOKE **(PREREQUISISTE)**

- No-Smoking will be a part of any agreement with future tenants and occupants. Smoking will be prohibited within 25 feet of the building. Appropriate signage will be provided in and around the building.

COMPARTMENTALIZATION **(PREREQUISITE)**

- Unit blower door testing results will comply with the standard of 0.30 CFM per square foot of unit enclosure area, for all units are < 1,200 Square Feet. A blower door test will be performed in a sample of units to confirm compliance. Pathways for indoor air pollutants between units must be sealed, including penetrations in walls, ceilings, and floors and by sealing demising assemblies and vertical chases. All exterior doors and unit doors will be weather-stripped.

ENHANCED VENTILATION **(3 POINTS)**

Option1. Enhanced Local Exhaust **(1 POINT)**

- A continuously operating exhaust ventilation port will be installed in every bathroom with a shower.

AND/OR

Option 2. Enhanced Whole-House Ventilation **(2 POINTS)**

- The continuously operating ventilation system will incorporate energy recovery with fresh air being supplied to each unit. The design ventilation rate will meet ASHRAE 62.2-2010; the measured flow rates will not exceed the ASHRAE Standard by more than 10% and the project will be eligible to earn these points.

CONTAMINANT CONTROL **(.5 POINT)**

- Permanent walk-off mats will be installed in exterior entryways.

BALANCING OF HEATING AND COOLING DISTRIBUTION SYSTEMS **(2 POINTS)**

CASE 1. FORCED-AIR SYSTEMS

Option 1. Multiple Zones **(1 POINT)**

- This point is granted automatically to multifamily projects with an average unit size of less than 1,200 ft^2. Average unit size is 864 ft^2.

AND/OR

Option 3. Pressure Balancing **(1 POINT)**

- The pressure differential between bedrooms and adjacent in-unit spaces will be tested to confirm a value of less than 3 Pascals is achieved. Transfer grilles will be included in the design to accommodate airflow from bedrooms back to the HVAC return.

ENHANCED COMBUSTION VENTING **(2 POINTS)**

Option 1. No Fireplace or Woodstove

- The project does not have fireplaces or woodstoves

ENHANCED GARAGE POLLUTION PREVENTION **(2 POINTS)**

- The garage will have sufficient exhaust to create a negative pressure for abutting space
- The garage will have self-closing doors and have deck to deck partitions

- The project will install an exhaust fan that is on a carbon monoxide sensor that turns on at 35 ppm of CO

INNOVATION

PRELIMINARY RATING **(PREREQUISITE)**

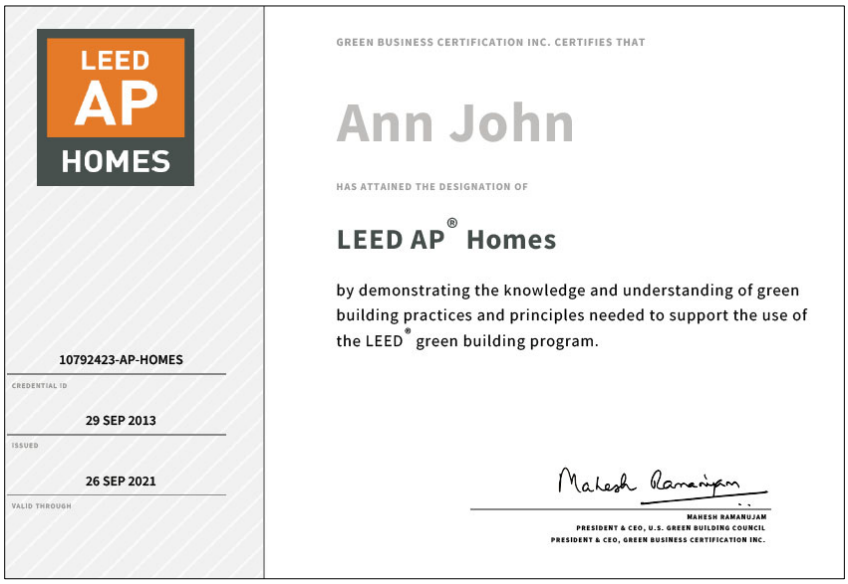
- A meeting with the project team was conducted to generate a preliminary rating.

Option 3. ADDITIONAL STRATEGIES **(3 POINTS)**

- 75 First Street will earn 3 additional points for Exemplary Performance in these categories:
    - LT –Community Resources (>20 uses within ½ mile)
    - LT – Site Selection (Earned all 9 points in this section)
    - LT – Compact Development (>35 DU/acre of buildable land)

LEED AP HOMES **(1 POINT)**

- Ann John with CLEAResult is a LEED Accredited Professional (AP) Homes.



REGIONAL PRIORITY

REGIONAL PRIORITY **(3 POINTS)**

- Regional Priority credits are determined by the USGBC based on zip code. If a certain point threshold is met in these categories, an additional point is awarded. 75 First Street is eligible for points in the following categories:
    - Annual Energy Use – Required point threshold: 20 points. The project will achieve 20 points for Annual Energy Use
    - Nontoxic Pest control - Required point threshold – 2 points. The project will achieve the 2 points required.
    - Access to Transit - Required point threshold – 1 point. The project will achieve 2 points.

Green Building Requirements
Net Zero Narrative

Last Updated – 2/23/2021

Introduction

The "Net Zero Narrative" is required for projects subject to Green Building Requirements, Section 22.20 of the Cambridge Zoning Ordinance. The requirement is based on the recommendations of the City's Net Zero Action Plan (adopted in 2015), which seeks to neutralize greenhouse gas emissions in Cambridge by 2050. This plan sets a timeframe of 2025 for most new construction to be designed to a "net zero" standard, meaning that on an annual basis, all greenhouse gas emissions resulting from building operations are offset by carbon-free energy production. In the meantime, the goal is to reduce greenhouse gas emissions to the maximum extent possible, and to design and develop buildings to adapt to net zero emissions in the future.

This Net Zero Narrative is provided for advisory review only. It is intended to inform City staff and officials on how the Net Zero Action Plan has influenced the design of the project, and to begin a dialogue so that all parties can better understand what building improvements are possible and what the major barriers are to achieving net zero emissions. As research, design, and development of the project continues to unfold, this narrative must be updated and included in the submission for the Building Permit and Certificate of Occupancy.

Example Narrative Template

This document provides an example format for the Net Zero Narrative as a guide for developers and designers. Variations are appropriate to account for the unique conditions of a case. However, any Net Zero Narrative must include the components set forth in Paragraph (c), Section 22.25.1 of the Zoning Ordinance:

(1) anticipated building envelope performance, including roof, foundation, walls and window assemblies, and window-to-wall ratio;

(2) anticipated energy loads, baseline energy simulation tool assumptions, and proposed energy targets, expressed in terms of site energy use intensity ("EUI"), source EUI, and total greenhouse gas emissions;

(3) description of ways in which building energy performance has been integrated into aspects of the Green Building Project 's planning, design, and engineering, including building use(s), orientation, massing, envelope systems, building mechanical systems, on-site and off-site renewable energy systems, and district- wide energy systems;

(4) description of the technical framework by which the Green Building Project can be transitioned to net zero emissions in the future (acknowledging that such a transition might not be economically feasible at first), including future net zero emissions options for building envelope, HVAC systems, domestic hot water, interior lighting, and on- and off-site renewable energy sources;

(5) description of programs provided by local utility companies, government agencies, and other organizations that provide technical assistance, rebates, grants, and incentives that can assist in achieving higher levels of building performance, summarizing which entities have been contacted and which programs could be utilized in the Green Building Project; and

(6) assessment of the technical and financial feasibility to meet the projected HVAC and domestic hot water demands of the building as noted above in (2) using energy systems that do not consume carbon-based fuels on-site compared to code-compliant energy systems that consume carbon-based fuels on-site, which shall include the cost of installation, maintenance and upkeep of the energy system and its components (incorporating programs and incentives as noted above in (5).

Net Zero Narrative – EXAMPLE TEMPLATE

Project Name/Address: 75 First Street

Submitted By: CLEAResult

Date of Submission: 9/15/2022

Project Profile

Development Characteristics

Lot Area (sq.ft.):	9750 + 16250 = 26,000 Total (75 1st + 85 1st. Lots)
Existing Land Use(s) and Gross Floor Area (sq.ft.), by Use:	Retail
Proposed Land Use(s) and Gross Floor Area (sq.ft.), by Use:	Retail, Commercial and Residential
Proposed Building Height(s) (ft. and stories):	65 ‘ and 6 stories
Proposed Dwelling Units:	90
Proposed Open Space (sq.ft.):	7,042
Proposed Parking Spaces:	0
Proposed Bicycle Parking Spaces (Long-Term and Short-Term):	Long Term: 97 spaces. Short Term: 9 spaces

Green Building Rating System

Choose the Rating System selected for this project:

LEED-Leadership in Energy & Environmental Design (U.S. Green Building Council)			
Rating System & Version:	LEED BD+C v4: Multifamily Mid-Rise	***Seeking Certification?****	No
Rating Level:	Gold	***# of Points:***	68.5

Enterprise Green Communities			
Rating System & Version:	N/A	***Seeking Certification?****	Yes No TBD
Rating Level:		***# of Points:***	

Passive House Institute US (PHIUS) or Passivhaus Institut (PHI)			
Rating System & Version:	N/A	***Seeking Certification?****	Yes No TBD

**NOTE: Certification is not required through the Green Building Requirements. However, you may choose to indicate if the Project Team intends to pursue formal certification through these Green Building Rating Programs (or their affiliates).*

Proposed Project Design Characteristics

Building Envelope

Assembly Descriptions:

Roof:	Flat Roof Assembly with Continuous R30 Insulation
Foundation:	R10
Exterior Walls:	Wall Assembly with Brick veneer /Lap siding R27 (R20+R7.5 Continuous Insulation)
Windows:	High Performance Vinyl / Fiberglass windows – U factor of max. 0.30
Window-to-Wall Ratio:	22%
Other Components:	N/A

Envelope Performance:

Provide estimates of the thermal transmittance (U-value) for the building envelope compared to "Baseline" standards required by the Massachusetts Stretch Energy Code, latest adopted edition.

	Proposed		***Baseline***	
	Area (sf)	*U-value*	*Area (sf)*	*U-Value*
Window	9,935	.30		
Wall	37,851	.25		
Roof	21,355	.25		

Envelope Commissioning Process:

Enhanced commissioning (CX} will be provided for the enclosure and the HVAC systems. The CX agent will include commissioning for the building's thermal envelope. Additionally, Clearesult, as the LEED Green Rater will complete the LEED for Homes Midrise Thermal Enclosure Inspection checklist to inspect for insulation, air barriers, reduced thermal bridging and air sealing.

Building Mechanical Systems

Systems Descriptions:

Space Heating:	**Dwelling Units Heating and Cooling - Centralized** Heating and cooling would be provided by a low ambient variable refrigerant volume heat pump located on the roof. Dwelling unit heat pump shall be installed on roof or ground level with vibration isolators and interconnecting refrigerant piping to the fan coil unit refrigerant coil. A condensate drain piping system will also be required to transport condensate from each fan coil unit to storm drain or to the outdoors. Supply and return air shall be ducted from the unit to air outlets in each conditioned space. The main supply and return ducts shall be provided with acoustical lining for the first 6 lineal feet from the unit. Return air transfer ducts will be provided for each enclosed room to the main living area. The unit shall be controlled by a wall mounted programmable thermostat. Each kitchen hood shall be recirculating type. Dryers are condensing type and do not require venting.
Space Cooling:	**(See Above)**
Heat Rejection:	Heat is absorbed and rejected through the roof mounted heat pumps.
Pumps & Auxiliary:	Not Required for the HVAC System
Ventilation:	**Ventilation - Centralized** Ventilation and exhaust will be provided by energy recovery units located on roof. New insulated low-pressure air duct systems will provide conditioned ventilation and exhaust air down through a vertical shaft to each floor with fire/smoke dampers, and balancing dampers at duct penetration into the shaft. The ventilation air shall be ducted to each dwelling unit terminating into a ceiling supply register with radiation damper to provide ventilation to the apartment; bathroom and kitchen exhaust air shall be through a ceiling exhaust register with radiation damper shall exhaust air. The ventilation air shall be heated and cooled with packaged heat pump system.
Domestic Hot Water:	The domestic hot water heater will consist of a high efficient electric tank type heat pump water heater, sized to meet the demand of each dwelling unit and located in a mechanical closet dedicated for each dwelling unit. Plumbing contractor to provide an expansion tank, safe waste pans and indirect waste for each water heater. This shall terminate to a floor drain on the lowest level. Water sensing alarms shall be provided in each pan to notify occupants of a potential tank failure.

Interior Lighting:	Lighting shall consist of LED fixtures throughout. Electrical, mechanical rooms and utility rooms shall be provided with linear strip fixtures. Corridors shall be provided with recessed linear direct/indirect fixtures and wall-mounted sconces at the resident unit entries. Lobby areas shall be provided with decorative pendant fixtures, surface, ceiling and wall decorative fixtures. Residential units shall be provided with a combination of residential-grade fixtures including recessed downlights, surface mounted and vanity fixtures and shall be listed on the Designlight Consortium's DLC qualified product list or be energy star rated. Offices, laundry, bathrooms and community room shall be provided with recessed linear direct/indirect fixtures. The lighting design shall meet MSBC Article 780 CMR 13.00 Energy Conservation and IECC 2015. LED garage lights shall be provided in the parking garage. Lighting control shall be by means of occupancy/vacancy sensors in common areas including bathrooms, laundry rooms, office, corridors/lobbies. Local manual switching shall be provided in residential units and utility rooms where motion sensors would present a hazard.
Exterior Lighting:	Exterior site lighting and building perimeter lighting shall be controlled by a timeclock with photocell.
Other Equipment:	N/A

Systems Commissioning Process:

Enhanced commissioning (CX} will be provided for the enclosure and the HVAC systems. The CX agent will provide guidance on system selection, energy modeling, design review, and on-site system installation review and final CX will be provided on all systems.

Building Energy Performance Measures

Overview

Broadly describe the ways in which building energy performance has been integrated into the following aspects of the project's planning, design, engineering, and commissioning. More detail on specific measures can be provided in appendices.

Land Uses:	Planned Unit Development PUD
Building Orientation and Massing:	The building shape maximize the capturing of the Daylight. The Proposed L-Shaped building is wrapping around the existing retail building, it creates a recessed building massing with less visual impact on 1st Street.
Envelope Systems:	Brick Veneer wall /Siding wall assembly with Continuous insulation, High Performance windows and Recessed-in storefront at the street level.
Mechanical Systems:	Refer to the above MEP Part
Renewable Energy Systems:	Solar PV ready project
District-Wide Energy Systems:	The Project is not large enough to be part of a district-wide energy system.
Other Systems:	

Integrative Design Process

Describe how different parties in the development process (owners, developers, architects, engineers, contractors, commissioning agents) have collaborated in the design. Include the Basis of Design and Owner's Project Requirements and describe how they have been informed by planning activities such as meetings or design charettes. Describe how continuing collaborative processes will inform Schematic/Design and Construction Documents.

An integrative process will facilitate the design and development team's achievement of green objectives throughout the project life cycle. The team includes skill sets in architecture, civil engineering, mechanical/electrical/plumbing, energy engineering, and sustainable design. The project will include LEED Accredited Professional and LEED Green Raters to ensure a complete, integrated approach to design, construction, operations, and maintenance. Regular design meetings will be held to confirm the entire team is engaged throughout the design and construction process. As the project moves into construction, on-site trainings, inspections, and testing will ensure the project is built according to these requirements.

Green Building Incentive Program Assistance

Describe any programs applicable to this project that would support improved energy performance or reduced greenhouse gas emissions, and which of those programs have been contacted and may be pursued. Programs may be offered by utility companies, government agencies, and other organizations, and might include rebates, grants, financing, technical assistance, and other incentives.

The proponent will pursue MASS SAVE rebates.

Net Zero Scenario Transition

Describe the technical framework by which the project can be transitioned to net zero greenhouse gas emissions in the future, acknowledging that such a transition might not be economically feasible at first. This description should explain the future condition and the process of transitioning from the proposed design to the future condition.

	Net Zero Condition:	***Transition Process:***
Building Envelope:	High efficiency building envelope with continuous insulation	
HVAC Systems:	Current system is planned to be all electric	
Domestic Hot Water:	Current system is planned to be all electric	
Lighting:	All lighting will be lowest energy use available	
Renewable Energy Systems:	Project will include solar	
Other Strategies:		

Energy Systems Comparison

Overview

This section should describe the results of an analysis comparing the technical and financial feasibility to meet the projected HVAC and domestic hot water demands of the building using energy systems that do not consume carbon-based fuels on-site compared to code-compliant energy systems that consume carbon-based fuels on-site.

The project will be all electric

Assumptions

Describe what building energy systems were included and excluded in your analysis and why.

	Included in analysis?		***Describe the systems for which this was analyzed or explain why it was not included in the analysis:***
	Yes	***No***	
Solar Photovoltaics:	X		Project will be solar ready
Solar Hot Water:			
Ground-Source Heat Pumps (Geothermal):			

Water-Source Heat Pumps:			
Air-Source Heat Pumps:			
Non-Carbon-Fuel District Energy:			
Other Non-Carbon-Fuel Systems:			

Non-Carbon-Fuel Scenario

All electric building

Solar-Ready Roof Assessment

The purpose of this assessment is to determine the technical feasibility of solar energy system installation, either as part of the proposed project or in the future. It is helpful to supplement this narrative with a plan depicting the information provided.

Total Roof Area (sq. ft.):	21,355
Unshaded Roof Area (sq. ft.):	14,313
Structural Support:	It is anticipated that the PV array can be a ballasted attachment.
Electrical Infrastructure:	TBD
Other Roof Appurtenances:	N/A
Solar-Ready Roof Area (sq. ft.):	5,700
Capacity of Solar Array:	TBD
Financial Incentives:	TBD
Cost Feasibility:	21,355

Results - **TBD**

Briefly summarize the results of the analysis and how it has informed the design of the project. Also include figures for the "Non-Carbon-Fuel Scenario" in the concluding Summary Table at the end of the Net Zero Narrative. Attachments can be provided with more specific figures and metrics regarding installation, maintenance, and upkeep costs (exclusive *of operating fuel expenses), but a full report is not necessary.*

TBD	***Proposed Design***		***Non-Carbon-Fuel Scenario***	
	Installation Cost	*Maintenance Cost*	*Installation Cost*	*Maintenance Cost*
Space Heating				
Space Cooling				
Heat Rejection				
Pumps & Aux.				
Ventilation				
Domestic Hot Water				
(Financial Incentives)				
Total Building Energy System Cost				

Describe results and conclusions from the analysis.

Net Zero Narrative – EXAMPLE TEMPLATE

Project Name/Address: 75 First Street

Submitted By: CLEAResult

Date of Submission: 9/15/2022

Anticipated Energy Loads and Greenhouse Gas Emissions -**TBD**

Assumptions

Describe the assumptions and methodology used to conduct preliminary energy modeling and set energy targets for the project. Specifically describe what components of the building were included and excluded.

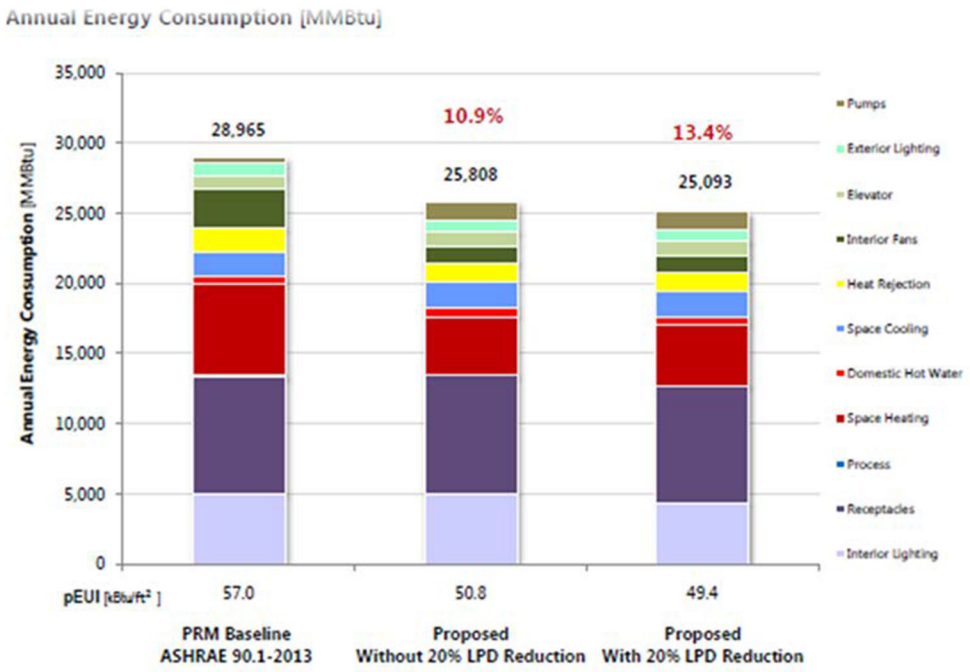
Annual Projected Energy Consumption and Greenhouse Gas (GHG) Emissions

The preliminary energy modeling results should be shown in a concluding table format similar to what is shown at the end of this document. It should compare the "baseline building" (Massachusetts Stretch Energy Code) to the proposed design, as well as the future "net zero" scenario described later in this narrative.

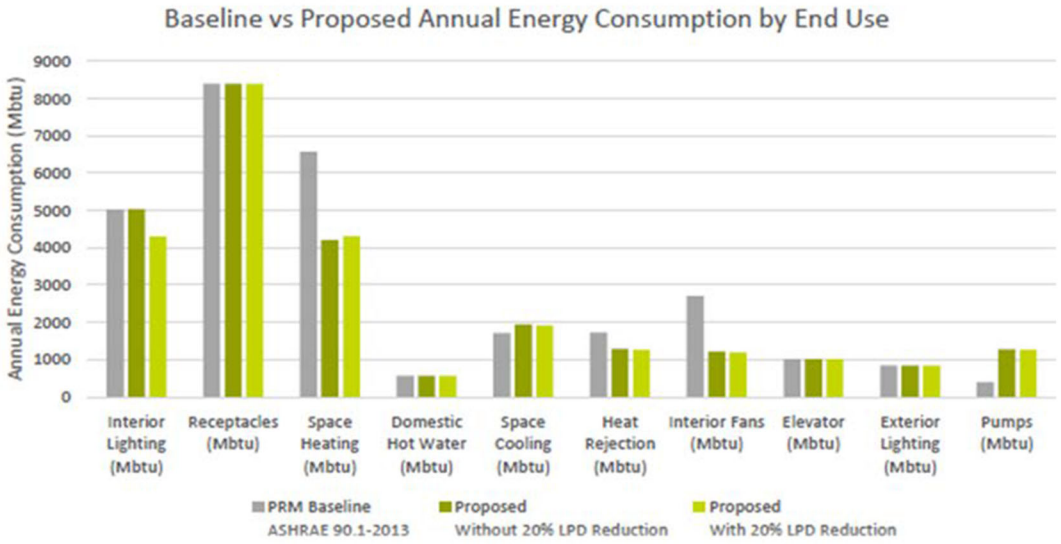
	Baseline Building		***Proposed Design***		***Future Net Zero Scenario***		***Non-Carbon-Fuel Scenario***	
	kWh or Therms	*% of Total*	*kWh or Therms*	*% of Total*	*kWh or Therms*	*% of Total*	*kWh or Therms*	*% of Total*
Space Heating								
Space Cooling								
Heat Rejection								
Pumps & Aux.								
Ventilation								
Domestic Hot Water								
Interior Lighting								
Exterior Lighting								
Misc. Equipment								
	$US, kBTU, kBTU/SF		*$US, kBTU, kBTU/SF*	*% Reduction from Baseline*	*$US, kBTU, kBTU/SF*	*% Reduction from Baseline*	*$US, kBTU, kBTU/SF*	*% Reduction from Baseline*
Site EUI								
Source EUI								
Total Energy Use								
Total Energy Cost								
	kWh or Therms	*% Total Energy*	*kWh or Therms*	*% Total Energy*	*kWh or Therms*	*% Total Energy*	*kWh or Therms*	*% Total Energy*
On-Site Renewable Energy Generation								
Off-Site Renewable Energy Generation								
	Tons CO_2 [/SF]		*Tons CO_2 [/SF]*	*% Reduction from Baseline*				
GHG Emissions								
GHG Emissions per SF								

It may be helpful to present this information in a chart or graph. The following page provides examples.

Example Chart 1:



Example Chart 2:



Affidavit Form for Green Building Professional
Special Permit

Green Building Project Location: 75 First Street, Cambridge, MA

Green Building Professional

Name: Daniel M. Skolski, AIA/NCARB, Managing Principal

☒ Architect

☐ Engineer

License Number: 20038

Company: DMS design, llc

Address: 5 Essex Green Drive, Suite 11A, Peabody, MA 01960

Contact Information

Email Address: dskolski@dmsdesign.com

Telephone Number: 978-965-3470

I, Daniel M. Skolski, AIA/NCARB, as the Green Building Professional for this Green Building Project, have reviewed all relevant documents for this project and confirm to the best of my knowledge that those documents indicate that the project is being designed to achieve the requirements of Section 22.24 under Article 22.20 of the Cambridge Zoning Ordinance.

REGISTERED ARCHITECT DANIEL M. SKOLSKI NO. 20038 COMMONWEALTH OF MASSACHUSETTS MA

September 14, 2022

(Signature) *(Date)*

Attach either:

☐ Credential from the applicable Green Building Rating Program indicating advanced knowledge and experience in environmentally sustainable development in general as well as the applicable Green Building Rating System for this Green Building Project.

☒ If the Green Building Rating Program does not offer such a credential, evidence of experience as a project architect or engineer, or as a consultant providing third-party review, on at least three (3) projects that have been certified using the applicable Green Building Rating Program.

CALDWELL **Lynn, Massachusetts**

MULTIPLE AWARD WINNER	**Engineering News-Record Regional Best Project Merit Award in the mixed-use category.** **Prism Award for Best Community Clubhouse and Best Use of Technology in a Community** **NAHB 2021 Silver Level Best in American Living Green Community Award**
PROJECT BUDGET	$ 65,000,000 (Completed 2021)
OWNER / DEVELOPER	The Procopio Companies
CONTRACTOR	Dellbrook/JKS
PROJECT SYNOPSIS	New construction of a 259-unit market rate high-rise apartment building consisting of studio, one and two-bedroom units with first floor retail space, a restaurant, a multi-use roof deck including grill area, exercise area, community garden, and a roof

top pool. Amenity spaces include a fitness area, club room, sports lounge, and co-work area. The building has an array of sustainability features including individual ventilation systems in each unit, an energy-efficient automated parking system, electric-car charging stations, solar-power production, smart thermostats, and a rooftop garden. Caldwell is the first LEED Platinum certified building in Lynn and is the largest LEED Platinum Certified multifamily building in New England.

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Peabody, Massachusetts 01960

RESIDENCES AT FAIRMONT STATION **Hyde Park, Massachusetts**

PROJECT BUDGET	$ 8,000,000 (LIHTC-DHCD) (Completed in 2018)
OWNER / DEVELOPER	Residences at Fairmount Station, LLC Joint Venture of Traggorth Companies, LLC and Southwest Boston CDC
CONTRACTOR	Delphi Construction
PROJECT SYNOPSIS	New construction of a 27-unit affordable apartment building with 3 studio units, 3 one-bedroom units, 16 two-bedroom units, and 5 three-bedroom units over one level of parking. DMS was the Architect of Record. The project is projected to be LEED Silver certifiable.

150 RIVER STREET **Mattapan, Massachusetts**

PROJECT BUDGET	$ 11,000,000 (LIHTC-DHCD)
OWNER / DEVELOPER	Planning Office of Urban Affairs and The Caribbean Integration Community Development Corporation, Inc.
CONTRACTOR	Not Selected (Construction Start: Spring 2023)
PROJECT SYNOPSIS	New construction of 30-units of mixed income, age-restricted housing on a 43,120 square foot empty parcel; studio and one-bedroom housing with community amenity spaces, and passive open space. The project is projected to be LEED Silver certifiable.

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TRAVERS CROSSING **Lynn, Massachusetts**

PROJECT BUDGET	$ 95,000,000 (ON HOLD)
OWNER / DEVELOPER	The Procopio Companies
CONTRACTOR	Callahan Construction
PROJECT SYNOPSIS	New construction of a 314-unit mixed-use, high-rise LEED Gold apartment building consisting of one and two-bedroom units, three vanilla shell retail spaces and one vanilla shell restaurant space. Amenity spaces include a sports lounge, plus two roof decks and a rooftop pool. This building has a 134-car automated parking system.

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