



May 3, 2023

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16-20 Medford Street LEED BD+C: Lowrise Draft Narrative

Introduction

16-20 Medford Street will be designed and built using construction industry best-practices for sustainability described within, and measure by, the LEED BD+C: Multifamily Lowrise rating system. (<https://www.usgbc.org/resources/leed-v4-homes-and-multifamily-midrise-current-version>)

An Integrated Project Team and process have been established to leverage all professional expertise and seek every opportunity to employ Green Building techniques and practices. The Project's Preliminary Rating shows performance in excess of the target of LEED Platinum Certification with 82.5 Credits as well as several additional credit opportunities in discussion ensuring no ground is lost toward that goal.

BD+C Multifamily Lowrise Checklist Items

IP - Integrative Process

Preliminary Rating

The project team met January 12, 2022 to conduct the Preliminary Rating with the Green Rater and Integrative Project Team in attendance. The Preliminary Checklist was completed with the target of LEED Platinum level achieved. Integrative process: The Architect, Civil Engineer, MEPFP Engineers, and others on the design team have been involved in regular discussions throughout all drawing phases of the project thus far, including preliminary design, energy and envelope systems design, and design development. Meetings/calls were conducted with the team to review project status, discuss problems and formulate solutions. A second Preliminary Rating was completed on February 2nd 2023 to encompass minor changes to the project design and project team. Ongoing team meetings have been conducted throughout the design process to ensure the continued adherence of LEED requirements.

Option 1: Integrative Project Team, 1 point

The team includes all of the requisite capabilities, has expertise for low-rise systems and experience modeling Ekotrope energy simulation for LEED BD+C: Multifamily Lowrise.

- Khalsa Design, Architecture, Green Design
- LDa Architects, Interior Design, Green Design
- Zade Associates, MEP
- Verdant Landscape Architecture



Option 2: Design Charrette, 1 point

The team has met for a LEED-specific meeting to optimize efficiency and sustainability goals and qualify for the Design Charrette Credit. This meeting was conducted on January 27th, 2023 and included the project team as well as the PHIUS Consultant.

LT – Location and Transportation

LT Prerequisite Floodplain Avoidance

All LEED criteria are met, project not in a flood hazard area.

LT Credit Site Selection, 8 points

Option 1. Sensitive Land Protection, Previously Developed, 4 points

The site is 100+% previously developed.

Option 2. Infill Development, 2 points

The site is 100% bordered by previously developed land.

Option 3. Open Space, 1 point

The project will be built across the street from Gold Star Mothers Park Playground that is at least 3/4 acres.

Option 4. Street Network, 1 point

The project is located in a dense urban setting with 90+ intersections per square mile.

Option 5. Bicycle Network and Storage, 1 point

51 long-term spaces and 10 short-term spaces for bicycles are provided and has functional entry that connects to community amenities.

LT Credit Compact Development, 3 points

The project will include over 124 units per acre, demonstrating exemplary performance in this credit area. Exemplary performance for Lowrise is granted over 35 units/acre.

0.39	Total project boundary area (acre)
0.33	Buildable land area (acre)
41	Number of dwelling units
124.24	DU/acre of buildable land



LT Credit Community Resources, 2 points

The location is dense with amenities within ½ mile walking distance (Google Maps) and will receive full credit as well as 1 exemplary performance credit in this category.

▪ CVS, Pharmacy	225 Cambridge St.
▪ East Cambridge Savings Bank	292 Cambridge St.
▪ St Anthony of Padua, Catholic Church	400 Cardinal Medeiros Ave., Cambridge
▪ Simoni Skating Rink, Sport	155 Gore St., Cambridge
▪ Star Market, Grocery	14 McGrath Hwy.
▪ Marshall's, Clothing	22 McGrath Hwy.
▪ Dollar Tree, Goods	14 McGrath Hwy.
▪ Somerville-Cambridge Elder Services, Elder Care	61 Medford St.
▪ Alfredo's Italian Kitchen, Restaurant	691 Cambridge St.
▪ Two Little Owls Schoolhouse, Daycare	501 Cambridge St., Cambridge
▪ The Learning Circle, Daycare	657 Cambridge St., Cambridge
▪ Razors barber Shop, Hair	389 Cambridge St., Cambridge
▪ Atwood's Tavern, Live Music, Bar	877 Cambridge St., Cambridge
▪ King Open School, Education	850 Cambridge St., Cambridge
▪ Taza Chocolate, Chocolatier	561 Windsor St.
▪ Cambridge Public Library	48 6th Street, Cambridge
▪ Target Department Store, Goods	180 Somerville Ave.
▪ Elmendorf Baking Supplies & Café, store	594 Cambridge St., Cambridge
▪ Life Storage, Storage	51 McGrath Hwy.
▪ Lone Star Taco Bar, Food	635 Cambridge St., Cambridge
▪ Formlabs, Printer	35 Medford St., #1
▪ Hub Glass Services, Glass & Mirror	216 McGrath Hwy.

LT Credit Access to Transit, 1 points

Public Transportation is readily available near the site and the project will receive 1 credit.

The main entry to the project is located within a ¼ mile walking distance of multiple existing bus stops serving Buses 69, 80, 87.

- Bus 69: weekday trips = 55; weekend trips = 39
- Bus 80: weekday trips =50; weekend trips = 35



- Bus 87: weekday trips = 51; weekend trips = 41
- Total weekday = 156; Total weekend = 115

SS - Sustainable Sites

SS Prerequisite Construction Activity Pollution Protection

All measures will be met and the project team has created a conforming Erosion and Sedimentation Control Plans.

SS Prerequisite No Invasive Plants

No invasive plant species will be introduced, invasive species are being mitigated, as well.

SS Credit Heat Island Reduction, 2 point

Option 2. Nonabsorptive materials

ENERGY STAR Qualified roofing materials as well as some vegetated roof area will be used for at least 75% of the roof

SS Credit Rainwater Management, 3 points

The project will attain 3 credits with a combination of Green Roof and Low Impact Development techniques.

SS Credit Nontoxic Pest Control, 2 points

Several pest control strategies will be employed including: non-cellulosic material for structural elements, building gaps will be sealed with insect resistant screens, and a robust Integrated Pest Management Policy will be developed.

1. Below-grade walls will use solid concrete construction
2. Non-cellulosic material used for all structural elements: concrete podium parking level
3. Ports installed for plumbing elements penetrating slab for ongoing maintenance
4. Landscape features at least 18" from foundation
5. Integrated Pest Management Policy included in HOM for occupants

WE - Water Efficiency

WE Prerequisite Water Metering

A water meter for each unit will be installed.

WE Credit Indoor Water Use, 5 points

All water fixtures (showers, lavatory faucets, and toilets) will be WaterSense certified, and high-limit thresholds will be met. Clothes Washers will be ENERGY STAR labeled.

Lav faucets: 1.0 GPM



Showerheads 1.75 GPM

Toilets 1.1 GPF

WE Credit Outdoor Water Use, 4 points

Landscaping will be less than 5% turf and 75%, or greater, native and adaptive species.

EA - Energy and Atmosphere

EA Prerequisite Minimum Energy Performance

ENERGY STAR Thermal Bypass Inspection Checklist will be followed to ensure insulation and air-barrier integrity of the buildings during the construction process. ENERGY STAR v3 checklists will be followed, qualified appliances will be installed, and duct runs will be fully ducted.

EA Prerequisite Energy Metering

Electric sub-meters will be included for each unit.

EA Prerequisite Education of Tenant and Building Manager

Ownership will provide an Operations & Maintenance Binder (or electronic version) to each occupant and Building Management and a one-hour educational walk-through will be provided to building occupants.

EA Credit Home Size Adjuster, 8.5 points

The unit sizes are smaller than the national average and will collect 9 credits in this category.

EA Credit Annual Energy Use, 19 points

The project is projected to achieve HERS scores of 50 or below on each residential unit.

EA Credit Efficient Hot Water Distribution System, 2 points

Option 3. Pipe Insulation specified at R4, or greater including insulated elbows.

EA Credit Active Solar-Ready Design

The Building will be designed to meet EPA's solar photovoltaic specifications for a renewable energy-ready home.

EA Credit HVAC Start-up Credentialing, 1 point

The HVAC installer holds a qualifying credential.

MR - Material and Resources

MR Prerequisite Certified Tropical Woods

Suppliers will be notified of preference for FSC products and a request for the country of manufacture for each wood product. Any tropical woods used will be FSC Certified.

MR Prerequisite Durability Management

Each measure of the ENERGY STAR Water Management Builder Checklist will be installed by the Builder.



MR Credit Durability Management Verification, 1 point

Each Builder Durability measure will be verified on-site by SEA.

MR Credit Environmentally Preferable Products (EPP)

Option 1. Local Production, 1 point

Building components will be sourced within 100 miles of the site, qualifying for one point.

Option 2. EPP, 2 points

Building materials and finishes will be selected to comply with the EPP criteria.

MR Credit Construction Waste management, 1.5 points

The project team will target 30% reduction of total construction waste with the possibility of reducing up to 60% of total construction waste.

MR Credit Material Efficient Framing, 1.5 points

The project team will utilize Optimum Value Engineering (OVE) for framing, qualifying for 1 credit. Two-stud (California) corners will be used except in a few locations prevented by structural loads. Headers will be sized for actual loads. Interior wall studs will be spaced greater than 16" o.c.

EQ - Indoor Environmental Quality

EQ Prerequisite Ventilation

- Unit mechanical ventilation systems will meet the provisions of ASHRAE 62.2-2010, sections 5 and 7,
- Bath exhaust systems exhaust directly to outdoors and be ENERGY STAR labeled

EQ Prerequisite Combustion Venting

No unvented combustion appliances are installed and CO monitors are installed per LEED and MA code.

EQ Prerequisite Garage Pollutant Protection

Doors to living spaces will be gasketed, CO detectors will be installed, all penetrations from garage will be sealed.

EQ Prerequisite Air Filtering

Minimum of MERV 8 filters will be used for space conditioning equipment, MERV 6 for outdoor supply air on ventilation systems.

EQ Prerequisite Environmental Tobacco Smoke

This will be a non-smoking building, and signage will be included.

EQ Prerequisite Compartmentalization

Careful air-sealing measures will be implemented and units tested to comply with low LEED infiltration standards.



EQ Credit Enhanced Ventilation, 3 points

- Continuous Ventilation in each unit will be provided
- Balanced whole-house ventilation will be installed which will comply with ASHRAE 62.2 (no more than 10% over)

EQ Credit Contaminant Control, 1 point

10' walk-off mats will be installed at main entrances, pre-occupancy flush will be conducted prior to building turnover.

EQ Credit Balancing of Heating & Cooling Distribution Systems, 1 point

The supply air-flow rates will be within +/- 20% (or +/- 25 fm or 11 lps) of calculated values from ACCA Manual J.

EQ Credit Combustion venting, 2 points

There are no fireplaces or woodstoves within the living spaces.

EQ Credit Enhanced Garage Pollutant Protection, 1 point

The garage is designed with exhaust fans to exchange fresh air in that space.

EQ Credit Low-Emitting Products, 2 points

The project team will select finishes with 90% of components which will meet the CA Section 01350 criteria for low emissions. This will include paints, coatings, flooring, insulation, and site applied adhesives and sealants.

IN - Innovation

Exemplary Performance – LT Compact Development, 1 point

Exemplary Performance – LT Community Resources, 1 point

RP - Regional Priority

EA Minimum Energy Performance – over 20 Credits earned, 1 point

Heat Island Reduction – 2 Credits Earned, 1 point

Rainwater Management – 3 Credits Earned, 1 point

Prepared By:

Nathan Bearse

LEED Green Rater

LEED AP: BD+C

RESNET Certified HERS Rater

The ONYX Scorecard (ID:)

Project Address 16-20 Medford St., Somerville, MA 2143, USA

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



Integrative Process		Preliminary	Y	2 of 2	M	0	Verified	0
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IPc	Integrative Process			2 of 2		0		
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Location and Transportation		Preliminary	Y	14 of 15	M	0	Verified	0
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LTp	Floodplain Avoidance			Required			Not Verified	
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Performance Path

LTc	LEED for Neighborhood Development			0 of 15		0		
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Prescriptive Path

LTc	Site Selection			8 of 8		0		
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LTc	Compact Development			3 of 3		0		
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LTc	Community Resources			2 of 2		0		
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LTc	Access to Transit			1 of 2		0		
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Sustainable Sites		Preliminary	Y	7 of 7	M	0.5	Verified	0
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SSp	Construction Activity Pollution Prevention			Required			Verified	
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SSp	No Invasive Plants			Required			Verified	
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SSc	Heat Island Reduction			2 of 2		0		
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SSc	Rainwater Management			3 of 3		0		
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SSc	Nontoxic Pest Control			2 of 2		0.5		
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Water Efficiency		Preliminary	Y	8 of 12	M	2	Verified	0
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WEp	Water Metering			Required			Not Verified	
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Performance Path

WEc	Total Water Use			0 of 12		0		
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Prescriptive Path

WEc	Indoor Water Use			5 of 6		1		
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WEc	Outdoor Water Use			3 of 4		1		
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Energy and Atmosphere		Preliminary	Y	31.5 of 38	M	2.5	Verified	27.5
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EAp	Minimum Energy Performance	Required	Verified	
EAp	Energy Metering	Required	Verified	
EAp	Education of the Homeowner, Tenant or Building Manager	Required	Verified	
Performance Path				
EAc	Annual Energy Use	27.5 of 29	1.5	27.5
Performance and Prescriptive Paths				
EAc	Efficient Hot Water Distribution System	2 of 5	0	
EAc	Advanced Utility Tracking	0 of 2	1	
EAc	Active Solar-Ready Design	1 of 1	0	
EAc	HVAC Start-Up Credentialing	1 of 1	0	
Prescriptive Path				
EAp	Home Size	Required		Not Verified
EAc	Building Orientation for Passive Solar	0 of 3	0	
EAc	Air Infiltration	2 of 2	0	
EAc	Envelope Insulation	0 of 2	0	
EAc	Windows	0 of 3	0	
EAc	Space Heating & Cooling Equipment	0 of 4	0	
EAc	Heating & Cooling Distribution Systems	0 of 3	0	
EAc	Efficient Domestic Hot Water Equipment	0 of 3	0	
EAc	Lighting	0 of 2	0	
EAc	High-Efficiency Appliances	0 of 2	0	
EAc	Renewable Energy	0 of 4	0	



Materials and Resources		Preliminary	Y	6 of 10	M	4	Verified	0
MRp	Certified Tropical Wood			Required			Verified	
MRp	Durability Management			Required			Verified	
MRc	Durability Management Verification			1 of 1		0		
MRc	Environmentally Preferable Products			2 of 4		2		
MRc	Construction Waste Management			1.5 of 3		1.5		
MRc	Material-Efficient Framing			1.5 of 2		0.5		



Indoor Environmental Quality		Preliminary	Y	10 of 16	M	3	Verified	0
EQp	Ventilation			Required			Verified	
EQp	Combustion Venting			Required			Verified	
EQp	Garage Pollutant Protection			Required			Verified	
EQp	Radon-Resistant Construction			Required			Verified	
EQp	Air Filtering			Required			Verified	
EQp	Environmental Tobacco Smoke			Required			Verified	
EQp	Compartmentalization			Required			Not Verified	
EQc	Enhanced Ventilation			3 of 3		0		
EQc	Contaminant Control			1 of 2		1		
EQc	Balancing of Heating and Cooling Distribution Systems			1 of 3		1		
EQc	Enhanced Compartmentalization			0 of 1		1		
EQc	Combustion Venting			2 of 2		0		
EQc	Enhanced Garage Pollutant Protection			1 of 2		0		
EQc	Low-Emitting Products			2 of 3		0		



Innovation		Preliminary	Y	1 of 6	M	0	Verified	0
INp	Preliminary Rating			Required			Verified	
INc	Innovation			1 of 5		0		
INc	LEED Accredited Professional			0 of 1		0		



Regional Priority		Preliminary	Y	3 of 4	M	1	Verified	0
RPc	Regional Priority			3 of 4		1		

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	82.5 of 110	M	13	Verified	27.5
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Certification Thresholds Certified: 40-49, Silver: 50-59, Gold: 60-79, Platinum: 80-110