

LEED v5 for Building Design and Construction: New Construction

Project scorecard - Emma's Court
840-6 Massachusetts Ave & 15-7 Newman Way, Arlington, MA 02474

Yes	Maybe	No	Total Possible Points	Total Anticipated Points	Total Anticipated Points	70	points
					Total Possible Points	110	points
			Responsible Party		Notes		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IPp1 Climate Resilience Assessment	Required			Pending pursuit of LEED certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IPp2 Human Impact Assessment	Required			Full report pending pursuit of LEED certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IPp3 Carbon Assessment	Required			Pending pursuit of LEED certification.
1	0	0	IPc1 Integrative Design Process	1	1		
			Location and Transportation (LT)		15	12	
1	0	0	LTC1 Sensitive Land Protection	1	1		
2	0	0	LTC2 Equitable Development	2	2		
6	0	0	LTC3 Compact and Connected Development	6	6		
0	3	0	LTC4 Transportation Demand Management	4	3		
0	0	2	LTC5 Electric Vehicles	2	0		
			Sustainable Sites (SS)		11	6	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SSC1 Minimize Site Disturbance	Required			
0	0	2	SSC2 Biodiverse Habitat	2	0		
0	1	0	SSC3 Accessible Outdoor Space	1	1		
0	3	0	SSC4 Rainwater Management	3	3		
0	0	2	SSC5 Enhanced Resilient Site Design	2	0		
0	1	0	SSC6 Heat Island Reduction	2	1		
1	0	0	SSC7 Light Pollution Reduction	1	1		
			Water Efficiency (WE)		9	4	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WEp1 Water Metering and Reporting	Required			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WEp2 Minimum Water Efficiency	Required			
1	0	0	WEc1 Water Metering and Leak Detection	1	1		
1	2	0	WEc2 Enhanced Water Efficiency	8	3		
			Energy and Atmosphere (EA)		33	30	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EAp1 Operational Carbon Projection and Decarbonization Plan	Required			Pending pursuit of LEED certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EAp2 Minimum Energy Efficiency	Required			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EAp3 Fundamental Commissioning	Required			Pending pursuit of LEED certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EAp4 Energy Metering and Reporting	Required			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EAp5 Fundamental Refrigerant Management	Required			
5	0	0	EAc1 Electrification	5	5		
5	0	0	EAc2 Reduce Peak Thermal Loads	5	5		
5	5	0	EAc3 Enhanced Energy Efficiency	10	10		
1	4	0	EAc4 Renewable Energy	5	5		
0	3	0	EAc5 Enhanced Commissioning	4	3		
0	0	2	EAc6 Grid Interactive	2	0		
1	1	0	EAc7 Enhanced Refrigerant Management	2	2		
			Materials and Resources (MR)		18	6	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MRp1 Planning for Zero Waste Operations	Required			Pending pursuit of LEED certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MRp2 Quantify and Assess Embodied Carbon	Required			Pending pursuit of LEED certification.
0	0	3	MRC1 Building and Materials Reuse	3	0		
1	1	6	MRC2 Reduce Embodied Carbon	6	2		
1	1	0	MRC3 Low-Emitting Materials	2	2		
0	0	5	MRC4 Building Product Selection and Procurement	5	0		
0	2	0	MRC5 Construction and Demolition Waste Diversion	2	2		
			Indoor Environmental Quality (EQ)		13	10	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EQp1 Construction Management	Required			Pending pursuit of LEED certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EQp2 Fundamental Air Quality	Required			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EQp3 No Smoking or Vehicle Idling	Required			Pending pursuit of LEED certification.
1	0	0	EQc1 Enhanced Air Quality	1	1		
5	1	0	EQc2 Occupant Experience	7	6		
0	1	0	EQc3 Accessibility and Inclusion	1	1		
2	0	0	EQc4 Resilient Spaces	2	2		
0	0	2	EQc5 Air Quality Testing and Monitoring	2	0		
			Project Priorities (PR)		10	1	
			PRc1 Project Priorities	9	0		
0	0	0	Project Priority 1: <u>Insert credit name</u>	0			
0	0	0	Project Priority 2: <u>Insert credit name</u>	0			
0	0	0	Project Priority 3: <u>Insert credit name</u>	0			
0	0	0	Project Priority 4: <u>Insert credit name</u>	0			
0	0	0	Project Priority 5: <u>Insert credit name</u>	0			
0	0	0	Project Priority 6: <u>Insert credit name</u>	0			
0	0	0	Project Priority 7: <u>Insert credit name</u>	0			
0	0	0	Project Priority 8: <u>Insert credit name</u>	0			
0	0	0	Project Priority 9: <u>Insert credit name</u>	0			
1	0	0	PRc2 LEED AP	1	1		

41 29 24 Total

110 70

LEED Narrative

1. Project Description

Emma's Court is a proposal for two buildings of new construction on a consolidated parcel of land comprising the addresses of 840–46 Massachusetts Ave and 15–17 Newman Way in the Arlington Center neighborhood. The existing buildings at 840 and 846 Massachusetts Ave will remain and will not be modified as part of this project, although a new six-story multi-family building ("Building 1") containing 40 affordable rental dwelling units and street-level commercial space is proposed to be built on the large lawn at the street corner of 840 Massachusetts Ave. It is proposed to replace the existing two-family structure at 17 Newman Way with a 3-story multi-family building ("Building 2") with 12 affordable rental dwelling units. The new buildings will be designed to the Enterprise Green Communities standard, with Building 1 also designed to achieve Passive House certification. Building 2 will comply with the Specialized Stretch Code, and may pursue Passive House certification as its compliance pathway.

USGBC recommends the v5 Building Design and Construction: New Construction rating system be used for new multi-family construction of 4 stories or more and the v4.1 Residential: Multi-family rating system be used for multi-family buildings of 3 stories or less, but the narrative below addresses both proposed buildings for the purposes of this Site Plan Review Application. If LEED certification is pursued, the advantages of submitting the buildings together versus separately, and under v5, v4.1, or a combination of v5 and v4.1, would be explored.

2. LEED v5 for Building and Construction: New Construction Checklist

Please see the attached checklist. Based on the narrative below, the project could earn the following points for LEED certification. Additional credits may become available based on regional priority but are not yet published for v5.

a. Integrative Process, Planning and Assessments:	1 point
b. Location and Transportation:	9–12 points
c. Sustainable Sites:	1–6 points
d. Water Efficiency:	2–4 points
e. Energy and Atmosphere:	17–30 points
f. Materials and Resources:	2–6 points
g. Indoor Environmental Quality:	8–10 points
h. Project Priorities:	1 point

Total points: **41–70 points**

3. Narrative for LEED Credits

a. Integrative Process, Planning and Assessments (IP)

1. *IPp1: Climate Resilience Assessment (required)*

Pending pursuit of LEED certification this assessment will be completed. The project site is not subject to regular natural hazards or impacted by sea level rise.

2. *IPp2: Human Impact Assessment (required)*

The project will benefit from connections to local transit infrastructure (bus, bikeway), as well as proximity to an active commercial corridor. As a 100% affordable housing project it contributes to the Town's compliance with MBTA Communities zoning to encourage mixed-income neighborhoods.

3. *IPp3: Carbon Assessment (required)*

Pending pursuit of LEED certification this assessment will be completed. Data gathered from the three prerequisite categories, and the transportation demand management credit (LTc4), would be provided to USGBC for assessment.

4. *IPc1: Integrative Design Process (1 point)*

The project will utilize a multi-disciplinary team across all phases of design and construction and will hold at least one design charette no later than design development with the full project team.

b. Location and Transportation (LT)

1. *LTc1: Sensitive Land Protection (1 point)*

The project is on previously developed land.

2. *LTc2: Equitable Development (2 points)*

The project's dwelling units will be 100% affordable rental, and all are intended for residents earning at or below 60% AMI. They are intended to remain affordable indefinitely.

3. *LTc3: Compact and Connected Development (6 points)*

A bus stop is located directly in front of Building 1, with scheduled stops at least every 15 minutes weekdays and weekends. The project site has a WalkScore over 80 and is a densely populated area along a commercial corridor with numerous businesses.

4. *LTc4: Transportation Demand (up to 3 points)*
The project seeks a lower-than-typical parking ratio and will submit a Transportation Demand Management Plan. The project is 4 blocks from an entry to the Minuteman Commuter Bikeway, but this exceeds the LEED credit threshold. Bike storage will be provided on-site.
5. *LTc5: Electric Vehicles (0 points)*
The project will have EVSE installed day 1 for at least 2 spaces, with at least 1 additional space at least EV capable. The project will not meet LEED credit thresholds.

c. Sustainable Sites (SS)

1. *SSp1: Minimized Site Disturbance (required)*
The project will follow standard practices to control erosion and construction dust and debris. Existing native vegetation will be left undisturbed where possible. Non-adapted invasive species will be controlled or removed.
2. *SSc2: Accessible Outdoor Space (up to 1 point)*
The project will provide accessible outdoor space, currently planned with biophilic, passive recreational, and social area aspects. Accessibility for the community beyond building residents during daylight hours could be explored during design development.
3. *SSc3: Rainwater Management (up to 3 points)*
The project will explore strategies to reduce site impermeability, disconnect flow paths, treat and infiltrate stormwater on-site, and plant native vegetation to model natural hydrologic processes. Further design development is required to quantify permeable areas and determine what percentile of rainfall events can be retained on site.
4. *SSc5: Heat Island Reduction (up to 1 point)*
Roofing materials will be selected for high solar reflectance and landscape plantings will shade site paths. Further analysis is needed to determine if the credit can be achieved.
5. *SSc6: Light Pollution Reduction (1 point)*
Exterior building lighting and site lighting will be designed to minimize uplight, light trespass, and glare.

d. Water Efficiency (WE)

1. *WEp1: Water Metering and Reporting (required)*
The project will install water meter(s) as required.
2. *WEp2: Minimum Water Efficiency (required)*
Water fixtures will be WaterSense labeled where applicable. Water fixtures will not exceed the listed maximum flush or flow rate. Appliances will be Energy Star labeled or a performance equivalent. Further study is required to determine to what extent outdoor landscape irrigation can be reduced or eliminated.
3. *WEc1: Water Metering and Leak Detection (1 point)*
The project will explore the inclusion of submeters for different subsystems and the inclusion of leak detection sensors.
4. *WEc2: Enhanced Water Efficiency (1-3 points)*
The project will explore the use of commercial washing machines meeting the listed requirement (1 point). Reducing outdoor landscape irrigation as much as possible will be explored (up to 2 points).

e. Energy and Atmosphere (EA)

1. *EAp1: Operational Carbon Projection and Decarbonization Plan (required)*
Pending pursuit of LEED certification, the studies required will be completed to examine carbon footprint and decarbonization measures. Energy modeling will be done for Specialized Stretch Code compliance and Passive House certification.
2. *EAp2: Minimum Energy Efficiency (required)*
The project will comply with the requirements of this prerequisite.
3. *EAp3: Fundamental Commissioning (required)*
Pending pursuit of LEED certification, the project will incorporate commissioning.
4. *EAp4: Energy Metering and Reporting (required)*
The project will provide electrical metering as required.
5. *EAp5: Fundamental Refrigerant Management (required)*
Any refrigerants used will have low GWP and will be checked for leaks prior to project completion.

6. *EAc1: Electrification (5 points)*
The project will be designed to avoid on-site combustion with the potential exception of emergency backup.
7. *EAc2: Reduce Peak Thermal Loads (5 points)*
The project will be designed for Phius certification and should meet the various options of this credit to maximize points.
8. *EAc3: Enhanced Energy Efficiency (5-10 points)*
The project will be designed for Phius certification which is more stringent than the efficiency standards this credit tracks. Where applicable, appliances in the project will be Energy Star labeled or a performance equivalent.
9. *EAc4: Renewable Energy (1-5 points)*
The procurement of renewable energy will be explored. Further study is required during design development.
10. *EAc5: Enhanced Commissioning (2-3 points)*
Pending pursuit of LEED certification, fundamental commissioning will be included; additional commissioning scope would also be considered as outlined by this credit.
11. *EAc7: Enhanced Refrigerant Management (1-2 points)*
Any refrigerants used will seek to minimize GWP.

f. Materials and Resources (MR)

1. *MRp1: Planning for Zero Waste Operations (required)*
Recycling will be provided on site. Pending pursuit of LEED certification, a more detailed maintenance & operations plan will be developed as required.
2. *MRp2: Quantify and Assess Embodied Carbon (required)*
Pending pursuit of LEED certification the embodied carbon impacts will be quantified and the top three sources of embodied carbon identified to consider strategies for their reduction.
3. *MRc2: Reduced Embodied Carbon (1-2 points)*
Per Option 2, Path 2 (materials-type approach) the team will track the carbon emissions of at least three materials categories using the BEAM tool.
4. *MRc3: Low-emitting Materials (1-2 points)*
The project will seek to use low-emitting materials where

possible. Further design development will be required to ascertain the specifics and extent of individual products.

5. *MRc5: Construction and Demolition Waste Diversion (up to 2 points)*
Pending pursuit of LEED certification, the project will explore diverting waste quantities as required.

g. Indoor Environmental Quality (EQ)

1. *EQp1: Construction Management (required)*
Pending pursuit of LEED certification, construction management procedures as outlined will be enacted.
2. *EQp2: Fundamental Air Quality (required)*
The required ventilation standards will be met. The project will be designed for Phius certification, which will require design to a more stringent ventilation standard than is tracked by this credit.
3. *EQp3: No Smoking or Vehicle Idling (required)*
Signage will be installed to note that the project prohibits smoking throughout the building and within 25 feet of openings and air intakes, as well as vehicle idling.
4. *EQc1: Enhanced Air Quality (1 point)*
The project's design for the Specialized Stretch Code / Passive House may achieve the increased ventilation rates needed for this credit, but further study is required during design development to confirm this.
5. *EQc2: Occupant Experience (5 to 6 points)*
All regularly occupied living and working spaces have views to the exterior, almost all of which are more than 25' from the nearest object. Building 1's design for Passive House certification will require a more stringent thermal comfort standard than this credit seeks. Building 2's envelope will use similar details where applicable, but further study is required to determine if its thermal performance exceeds the requirements of this credit. Windows will have operable blinds to control glare. More than 30% of regularly occupied interiors are within 20' of exterior glazing.
6. *EQc3: Accessibility and Inclusion (up to 1 point)*
The requirements of relevant accessibility codes will be met and the measures listed in this credit will be considered during design development.

7. *EQc4: Resilient Spaces (2 points)*

The project's high performance envelope should meet the requirements considering a power outage during extreme heat or cold events. More than 75% of regularly occupied spaces will have operable windows.

h. Project Priorities (PR)

1. *PRc1: Project Priorities*

Regional Priority credits are currently being developed for LEED v5, but the project meets the criteria for credits (worth an additional 3 points) under the following LEED v4.1 Regional Priorities:

- LT High Priority Site and Equitable Development – Affordable Housing (similar to LTc2 above)
- LT Access to Transit (similar to LTc3 above)
- EA Annual Energy Use (similar to EAc3 above)

2. *PRc2: LEED AP (1 point)*

Two of the architect's principal design team hold active LEED BD+C credentials.