

3

Criteria for Issuance of Special Permits (Section 10.43)

The following section demonstrates how the Project conforms with Section 10.43: Criteria for Issuance of Special Permits.

3.1 Conformance with Section 10.43

3.1.1 Compliance with Requirements of Ordinance

As demonstrated by the Table 1 Dimensional Form and the list of requested Special Permits presented in the *Special Permit Application Form Supplemental Documentation* section of this application, the Project will meet all applicable requirements of this Ordinance.

3.1.2 Project-Related Traffic and Access

As demonstrated by the TIS provided in Attachment 2, the Project is not expected to generate traffic or patterns of access or egress that would cause congestion, hazard, or substantial change in established neighborhood character.

Vehicular access to Buildings B-1 and B-2 will be through the adjacent City-owned parking lot under an access agreement contemplated by the MOA with the City described in Section 1.1.4. Pursuant to the MOA, the Applicant agreed to modify its existing easement rights over City Parking Lot 6 to reconfigure access to the Project in a manner consistent with future development of the City Parking Lot 6, while maintaining all vehicular access to the Project at the rear, away from City streets.

Both Buildings B-1 and B-2 provide internal pedestrian walkways from their entrances on Mass Ave and Columbia Street, respectively, to the adjacent to the City lot to the rear of the buildings. Retail access is provided at various entrances along Mass Ave and Lafayette Square as well as along the new proposed pedestrian way between the buildings that connects Mass Ave to Bishop Allen Drive.

3.1.3 Impact to Adjacent Uses

Adjacent parcels include predominately commercial, residential, retail and restaurant. The addition of a dense, mixed use development with new residential supports the existing uses within Central Square and is exactly the type of development envisioned by the Mass and Main Residential Mixed Income Subdistrict. The ground-floor retail uses will provide additional services that support the adjacent residential uses along Bishop Allen Drive and Columbia Street.

3.1.4 Health, Safety, and/or Welfare of Occupants and Public

Both Buildings B-1 and B-2 will be designed to a high level of life safety, accessibility and sustainability with particular emphasis on internal air quality, sustainable and locally sourced materials, and energy efficient systems. The Project has been designed in conformance with the current state building code, including the Stretch Energy Code. Additionally, the Project will be operated in compliance with all health and safety regulations of the City of Cambridge.

3.1.5 Project-Related Impacts to the District or Adjoining Districts

The proposed residential and retail/restaurant uses are exactly the type of development envisioned by the Mass and Main Residential Mixed Income Subdistrict, per Section 20.307 of the Cambridge Zoning Ordinance (the "Subdistrict"). These uses are consistent with the intent and purpose of the Subdistrict, as well as with the uses of adjacent properties and with neighboring zoning districts.

3.1.6 Consistency with Urban Design Objectives

As proposed, the design of the new mixed use building and its integration with Mass Ave, and the existing buildings along Columbia Street and Bishop Allen Drive is consistent with the Urban Design Objectives addressed in Chapter 2, *Urban Design*. Chapter 2 also addresses Project compliance with the specific design guidelines applicable to Residential Mixed Income Projects pursuant to Section 20.307.12.

4a

Sustainable Design and Development – Building B-1

In compliance with Article 22.23, the following chapter outlines the LEED certification goals for Building B-1 and describes the strategies employed to meet the targeted LEED credits based on this stage of conceptual design. Using LEED for New Construction version 4 (LEEDv4) rating system, the draft LEED checklist, presented as Figure 4a.1 for Building B-1, is tracking to Gold Certification, or 60+ points for both buildings. There are also 26 additional points currently under investigation listed in the “maybe” column. The project team is anticipating achieving a minimum of 20% energy use reduction as compared to ASHRAE 90.1 2010 in alignment with MA Stretch Code, and 12-15% energy cost reduction as compared to ASHRAE 90.1 2010 Appendix G for LEED. Refer to Attachment 3 for an affidavit by the project LEED Accredited Professional.

4.1 Conformance with Article 22.23

4.1.1 Integrative Process

The Project is currently targeting 1 point total under the LEED NC v4 Integrative Process (IP) category.

IP Credit 1: Integrative Process

The design team will perform a preliminary simple box energy model, assessing site conditions, massing and orientation, basic envelope attributes, plug and process load needs, programmatic and operational parameters. This analysis will then inform the design and the Owner's Project Requirements and Basis of Design. In addition, water-related systems will be assessed and a preliminary water budget will be created before the completion of Schematic Design that explores how to reduce potable water loads in the building. Further, the team will evaluate and estimate the potential non-potable water supply sources and water demand volumes, including indoor and outdoor water demand; process water demand; supply sources.

4.1.2 Location and Transportation

The Project is currently targeting 14 points total under the LEED NC v4 Location and Transportation (LT) category.

LT Credit 2: Sensitive Land Protection (1 point)

The Project Site is located on a previously developed urban site in Cambridge, MA and therefore complies with this credit.

LT Credit 4: Surrounding Density and Diverse Uses (5 points)

The Project Site is located on a previously developed site surrounded by mixed uses and over eight (8) services and community facilities, including proximity to the Massachusetts Institute of Technology within 1/2 mile walking distance. It is located in an area with residential density over 30 dwelling units / acre. The credit is targeting 3 points under this credit.

LT Credit 5: Access to Quality Transit (5 points)

The MIT/Kendall Square Red Line station is approximately 0.2 miles from the Project Site. The 64, 68 and 85 bus lines also run adjacent to the Project Site.

LT Credit 6: Bicycle Facilities (1 point)

The project is in comfortable biking distance to the MIT campus, Harvard University campus, and several tech companies; all are within 3 miles and the biking network is well defined in the area. One long term bicycle storage space will be available for each unit, at minimum.

LT Credit 7: Reduced Parking Footprint (1 point)

The project will provide at least 40% fewer parking spaces than recommended by the Parking Consultants Council.

LT Credit 8: Green Vehicles (1 point)

5% of new parking spaces will be designated as preferred parking for green vehicles, which are defined as having a minimum score of 45 on the ACEEE rating guide. Electric Vehicle Charging Stations will be provided in at least 2% of all parking spaces used by the project.

The following LT 2 points will continue to be under investigation:

- *Credit LT3: High –Priority Site - Brownfield Redevelopment (2 points)*

4.1.3 Sustainable Sites

The Project is currently targeting 5 points total under the LEED NC v4 Sustainable Sites (SS) category.

SS Prerequisite 1: Construction Activity Pollution Prevention

The Construction Manager (CM) shall submit and implement and Erosion and Sedimentation

Control (ESC) Plan for construction activities related to the demolition of existing site elements and construction of the new building. The ESC Plan shall conform to the erosion and sedimentation control requirements of the 2003 EPA Construction General Permit and specific municipal requirements for the City of Cambridge.

SS Credit 1: Site Assessment (1 point)

The project team will create and document a site survey that shall including information on Topography, Hydrology, Climate, Vegetation, Soils, Human use and Human health effects on the site. The team will provide a completed Site Assessment Worksheet, describing the relationships between the site features and characteristics and how these influenced the project design.

SS Credit 2: Site Development - Protect or Restore Habitat (1 point)

The project team will provide Financial Support to nationally or locally recognized land trust (accredited by the Land Trust Alliance) or conservation organization within the same EPA Level III ecoregion or the project's home state (or within 100 miles of the project for international projects of at least \$0.40 per square foot of the site area.

SS Credit 3: Open Space (1 point)

The building footprint will be at least 25% vegetated, and the overall site area, including the footprint, will be at least 30% vegetated.

SS Credit 5: Heat Island Reduction (2 points)

Both non-roof and roof surfaces will either be vegetated shaded or will have an SRI of a minimum of 29. In addition, parking will be designed below the building. This strategy also earns an exemplary performance point in the Innovation and Design category.

The following 5 SS points will continue to be under investigation as design progresses:

- *Credit 2: Site Development - Protect or Restore Habitat (additional 1 point)*
- *Credit 4: Rainwater Management (3 points)*
- *Credit 6: Light Pollution Reduction (1 point)*

4.1.4 Water Efficiency

The Project is currently targeting 8 points total under the LEED NC v4 Water Efficiency (WE) category.

WE Prerequisite 1: Outdoor Water Use Reduction (Required)

Vegetated areas both at the street level and on building roofs will be planted primarily with native and/or adapted vegetation, requiring limited permanent irrigation. Where irrigation will be required an ultra-efficient system will be integrated into the vegetation, and the entire

project will achieve a minimum of 30% outdoor water use savings as calculated by the EPA WaterSense Budget tool.

WE Prerequisite 2: Indoor Water Use Reduction (Required)

Low-flow and high-efficiency plumbing fixtures, including faucets, toilets, urinals and showerheads, will be specified to achieve the 20% water use reduction prerequisite as compared to the building baseline calculated per the EPA 1992 fixture flow rates.

WE Prerequisite 3: Building-Level Water Metering (Required)

A master water meter will be installed for the building, and connected to the Building's Portfolio Manager Account.

WE Credit 1: Outdoor Water Use Reduction (2 points)

The project team is confident in achieving a minimum of 50% landscape water use as calculated by the EPA WaterSense Budget tool.

WE Credit 2: Indoor Water Use Reduction (3 points)

In order to meet the 35% water use reduction goal, a careful study of high water use plumbing fixtures will be carried out to determine the most water efficient strategy. The design of the plumbing systems will include the use of low flow fixtures to reduce the water use of the building. In residential units, low flow shower heads (which flow approximately 1.5 GPM) will significantly reduce residential water use. Additionally, residential water closets which operate at 1.28 GPF will be installed further improving water efficiency.

WE Credit 3: Cooling Tower Water Use (2 points)

The design team will incorporate controls and maintenance policies to limit the cooling tower cycles. The design will maximize use of recycled and/or non-potable water.

WE Credit 4: Water Metering (1 point)

In addition to a master water meter to the building, sub meters will measure domestic hot water use on the central hot water system, irrigation water use, and cooling tower water.

The following 3 WE points will continue to be under investigation as design progresses:

- WE Credit 2: Indoor Water Use Reduction (additional 3 points)

4.1.5 Energy and Atmosphere

The Project is currently targeting 12 points total under the LEED NC v4 Energy and Atmosphere (EA) category.

EA Prerequisite 1: Fundamental Commissioning and Verification (Required)

The Applicant will engage the services of a third party Commissioning Agent to provide both Fundamental and Enhanced Commissioning for energy related systems such as HVAC, lighting

and domestic hot water. The Commissioning Agent will verify that building systems are purchased as specified, installed as intended and calibrated to perform in accordance with the Basis of Design and the Owner's Project Requirements.

EA Prerequisite 2: Minimum Energy Performance (Required)

The Project will be designed with Energy Conservation Measures (ECMs) to meet and exceed the requirements of ASHRAE 90.1 – 2010 Appendix G by at least 5%.

EA Prerequisite 3: Building-Level Energy Metering (Required)

The Project will be designed with Energy Conservation Measures (ECMs) to meet and exceed the requirements of ASHRAE 90.1 – 2010 Appendix G by at least 5%.

EA Prerequisite 4: Fundamental Refrigerant Management (Required)

The specifications for refrigerants used in the building HVAC & R systems shall NOT permit the use of CFC-based refrigerants.

EA Credit 1: Enhanced Commissioning (3 points)

The Applicant will engage the services of the Commissioning Agent early in the design process in order to ensure that enhanced commissioning is carried out. This includes reviews and comments on design development and construction documents and submittal reviews. In addition, the Commissioning Authority will review performance of the systems 10 months after project completion, and ensure that facility operator training has been carried out.

EA Credit 2: Optimize Energy Performance (4 points)

The proposed building systems shall target a performance level which is a minimum of improvement over a baseline building performance rating. The project will achieve Stretch Code, which is measured in actual energy use. We anticipate the resultant LEED energy savings as measured in energy cost to be in a range of 12-15%. The project design team is developing a whole building energy model to demonstrate the expected performance rating of the designed building systems. The following energy conservation measures will continue to be evaluated through design:

- Condensing Boilers
- Condensing Domestic Water Heaters
- Energy Recovery Units
- Lighting power density reductions in common areas, residential corridors and residential units (where fixed lighting is provided)
- Envelope improvements
- Co-generation

EA Credit 3: Advanced Energy Metering (1 point)

The Project will include metering for all whole-building energy sources used by the building and any individual energy end uses representing >10% of the total annual consulting of the building.

EA Credit 6: Enhanced Refrigerant Management (1 point)

The Project team will calculate the potential refrigerant impact and design to minimize or eliminate emission of compounds that contribute to ozone depletion and climate change.

EA Credit 7: Green Power and Carbon Offsets (2 points)

The Applicant will purchase green power via Renewable Energy Certificates to account for 100% of the building's estimated electricity use for five years. The estimated electricity use will be calculated through the energy model.

The following 6 EA points will continue to be under investigation as design progresses:

- *Credit 1: Enhanced Commissioning - Envelope (2 additional points)*
- *Credit 2: Optimize Energy Performance - 16%-18% (2 additional points)*
- *Credit 4: Demand Response (2 additional points).*

4.1.6 Materials and Resources

The Project is currently targeting 4 points total under the LEED-NC v4 Materials and Resources (MR) category.

MR Prerequisite 1: Storage and Collection of Recyclables

The building will provide dedicated spaces for collection, storage and transport of recyclable materials. At a minimum, mixed paper, corrugated cardboard, glass, plastics and metals will be recycled along with any two of the following materials: batteries, mercury-containing lamps and/or e-waste.

MR Prerequisite 2: Construction and Demolition Waste Management Planning

The project will develop and implement a CWM plan that establishes waste diversion goals for five materials targeted for diversion (structural and non-structural). The plan will be specifying if materials will be commingled or separated on site, the diversion strategies planned and descriptions on where materials are to be taken and how they'll be processed. A final report detailing all major waste streams generated, including disposal and diversion rates will be produced at the end of the project.

MR Credit 2: Building Product Disclosure & Optimization- Environmental Product Declarations (1 point)

The project will use more than 20 different permanently installed products sourced from at

least five (5) different manufacturers that have either a product-specific declaration, an ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 conformance EPD, or a USGBC-approved program EPD. The project is targeting one point under this credit.

MR Credit 4: Building Product Disclosure & Optimization- Material Ingredients (1 point)

The project will use more than 20 different permanently installed products sourced from at least five (5) different manufacturers that demonstrate the chemical inventory of the product to at least 0.1% (1000ppm). The project is targeting 1 point under this credit.

MR Credit 5: Construction and Demolition Waste Management (2 points)

The construction contract for the project will require achieving a minimum of 75% construction waste diversion from landfill for 4 of the waste streams. Prior to the onset of construction, the CM will prepare a Construction Waste Management plan, and provide monthly logs to the Applicant and the sustainability consultant.

The following 4 MR points will continue to be under investigation as design progresses:

- *Credit 1: Building Life-Cycle Impact Reduction (3 points)*
- *Credit 3: Building Product Disclosure & Optimization- Sourcing of Raw Materials (1 point).*

4.1.7 Indoor Environmental Quality

The Project is currently targeting 11 points total under the LEED NC v4 Indoor Environmental Quality (IEQ) category.

IEQ Prerequisite 1: Minimum Indoor Air Quality Performance

The building mechanical systems shall be designed to meet or exceed the requirements of ASHRAE 62.1-2010 sections 4 through 7 and applicable codes.

IEQ Prerequisite 2: Environmental Tobacco Smoke (ETS) Control.

The project design team will design partitions and separations and air delivery between residential units to ensure minimum infiltration levels as required by ASTM E779-03 or ASTM E1827-11. The CM will be required to hire a testing agency to conduct blower doors tests and ensure that all tested units comply with the maximum infiltration thresholds.

IEQ Credit 1: Enhanced Indoor Air Quality Strategies (1 point)

The project will install permanent entryway systems at least 10ft in primary direction of travel, separate exhaust for point sources of air contaminants, install deck-to-deck partitioning and create negative pressure in spaces; air intakes will use MERV 13 filtration or Class F7 or higher filtration.

IEQ Credit 2: Low-Emitting Interiors (2 points)

The specifications will include requirements for paints, coatings, adhesives and sealants to meet low VOC content in products.

IEQ Credit 3: Construction IAQ Management Plan (1 point)

The CM will be required to develop an Indoor Air Quality Management Plan for the construction and pre-occupancy phases of the Project to meet/exceed the recommended Control Measures of the SMACNA IAQ Guidelines for Occupied buildings Under Construction 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3). Absorptive materials stored on site shall be protected from moisture damage. MERV 8 filters will be used if AHU are run during construction and tobacco use will be prohibited on-site during construction.

IEQ Credit 4: Indoor Air Quality Assessment (2 points)

The CM will be required to conduct a Air quality Testing on sampling of units after construction and punch-list items are complete but prior to move-in. Alternatively, a building flush-out after construction completion and prior to building occupancy could also be performed. This will require a total air volume of 14,000 cubic feet of outdoor air per square foot at an internal temperature of at least 60° F and relative humidity no higher than 60%.

IEQ Credit 5: Thermal Comfort (1 point)

The HVAC systems and the building envelope will be designed to meet the requirements of ASHRAE Standard 55–2010, Thermal Comfort Conditions for Human Occupancy.

IEQ Credit 6: Interior Lighting Control (1 point)

Lighting control will be provided for 90% occupants with at least three lighting levels and multi-zone control systems for all shared multi-occupant spaces. Lighting for any presentation or projection wall will be separately controlled.

IEQ Credit 7: Daylight (2 point)

The project will perform Simulation and demonstrate through annual computer simulations that at least 55% of regularly occupied spaces achieve Spatial Daylight Autonomy and Annual Sunlight Exposure.

IEQ Credit 8: Quality Views (1 point)

All regularly occupied rooms in the residential units will provide views to at least 75% of regularly occupied areas that meet the LEED criteria for a direct line of sight to the outdoors in different directions 90 degrees apart and achieve two of the following kinds of views: (1) flora, fauna, or sky; (2) movement; and (3) objects at least 25 feet from the exterior of the glazing.

The following 3 IEQ points will continue to be under investigation as design progresses:

- IEQ Credit 6: Interior Lighting Control (additional 1 point)
- IEQ Credit 9: Acoustic Performance (1 point).

4.1.8 Innovation and Design Process

The Project is currently targeting 6 points total under the LEED NC v4 Innovation and Design Process (ID) category.

Exemplary Performance – Heat Island reduction or Other (1 point)

The Project will target to achieve heat island reduction by specifying high SRI roofing and site paving. It will achieve the exemplary performance by meeting the Roof & non roof SRI requirement and providing all the parking for the project underground.

Exemplary Performance – Low emitting materials or Other (1 point)

The project will specify 100 % of the products (flooring, composite wood, furniture and exterior applied products) to meet the low emitting requirement and target to achieve 1 additional point for exemplary performance. If this is not achieved, the Applicant will prepare an alternative Innovation Credit.

Pilot Credit - Walkable Project Site (1 point)

Owing to the location of buildings in heart of the city, the design team is investigating the implementation of this pilot credit to incorporate design elements that promote walking, biking, and other non-motorized transportation on the project site and in the surrounding community to reduce vehicle distance traveled, increase public health, and enhance community participation.

Innovation Credit - Green Education Program (1 point)

In collaboration with the project design team, the Applicant will develop a sustainable education program to highlight the Project's sustainable features. This may include a system dashboard at the building entry, website, and signage and/or guided tours of the project.

Innovation Credit - Green cleaning policy/program (1 point)

The project will have in place a green cleaning policy for the building and site by purchasing sustainable cleaning products and materials, use of alcohol based waterless hand sanitizers, training maintenance staff to hazards of use, disposal and recycling of cleaning chemicals, dispensing equipment and packaging etc.

Innovation Credit - Purchasing lamps - Low Mercury Lighting (1 point)

The project design team will specify lighting fixtures with no or low mercury content in order to meet the requirements of the Low Mercury Lighting credit in LEED for Existing Buildings Operations and Maintenance (EBOM.) This will enable the Project to benefit for an Innovation credit. Use of LED lighting fixtures in the majority of spaces will help reduce overall mercury in lighting fixtures.

LEED Accredited Professional (1 point)

Several project team members are LEED Accredited Professionals

4.1.9 Regional Priority Credits

Based on its location, the Project is investigating to achieve 4 points under the LEED-NC Regional Priority Credits (RPC) category. The following RPC credits are applicable to the Project:

- *Renewable Energy Production (1 point)*
- *Optimize Energy Performance (1 point)*
- *High Priority Site (1 point)*
- *Rainwater Management (1 point)*
- *Indoor water use reduction (1 point)*

Since these credits are still being evaluated, the Project does not automatically achieve additional points at this stage in preliminary design.



LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: MASS & MAIN - BUILDING 1

Date: 9/29/2016

Y	M	N			
1			Credit	Integrative Process	1
14 2 0 Location and Transportation 16					
1			Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
	2		Credit	High Priority Site	2
5			Credit	Surrounding Density and Diverse Uses	5
5			Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1
5 5 0 Sustainable Sites 10					
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
1	1		Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
	3		Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1
8 3 0 Water Efficiency 11					
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
3	3		Credit	Indoor Water Use Reduction	6
2			Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1
11 6 15 Energy and Atmosphere 33					
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	2	1	Credit	Enhanced Commissioning	6
4	2	11	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
	2		Credit	Demand Response	2
	3		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
2			Credit	Green Power and Carbon Offsets	2
4 4 5 Materials and Resources 13					
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
	3	2	Credit	Building Life-Cycle Impact Reduction	5
1		1	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
	1	1	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2
11 2 3 Indoor Environmental Quality 16					
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1		1	Credit	Enhanced Indoor Air Quality Strategies	2
2		1	Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
2			Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
2		1	Credit	Daylight	3
1			Credit	Quality Views	1
1	1		Credit	Acoustic Performance	1
6 0 0 Innovation 6					
5			Credit	Innovation	5
1			Credit	LEED Accredited Professional	1
0 4 0 Regional Priority 4					
	1		Credit	Regional Priority: Specific Credit	1
	1		Credit	Regional Priority: Specific Credit	1
	1		Credit	Regional Priority: Specific Credit	1
	1		Credit	Regional Priority: Specific Credit	1
60 26 23 TOTALS Possible Points: 110					
Y	M	N			



Figure 4a.1

Preliminary LEED Scorecard - Building B-1

Mass+Main
Cambridge, Massachusetts

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110