

RESIDENCES AT BEL MONT

Sustainability Narrative

LEED BD+C: Homes v4

Olmsted Drive

Belmont, MA

April 13, 2021



Submitted to
Belmont Planning Board
455 Concord Avenue
Belmont, MA 02478



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Project Overview

The Residences at Bel Mont (the Project) is a new construction multifamily residential community located within McLean Hospital campus in Belmont, MA. Developed by Northland Residential Corporation, the project will be comprised of two subdistricts, Subdistrict A and Subdistrict B. Subdistrict A consists of fourteen (14) townhome-style buildings varying between 2 and 2.5 stories in height and comprising of a total of 38 for-sale units. The townhome units will be age-restricted with 15% (5 units) meeting affordable housing requirements. Subdistrict B consists of three multifamily buildings with two buildings being three stories and one building at four stories in height. Subdistrict B will include 112 units for rent with 54 units designated age-restricted and 25% (28 units) meeting affordable housing requirements.

Both Subdistricts will have access amenity space consisting of fitness areas, lounge spaces, outdoor courtyards and roof decks. Subdistrict A will include two individual garage parking spaces per unit and Subdistrict B will have 99 sub-surface garage parking spaces and 58 surface parking spaces. Per the guidelines established by the Town of Belmont Zoning Committee's (Committee) 'McLean District 3 Zone 3 Overlay District' requirements, the Project will be LEED BD+C: Homes v4 Silver certifiable and solar photovoltaic (PV) ready. The Project will contribute the Town's goal of reducing carbon emissions by 80% by 2050 through the reduction of carbon combustion on site. Both subdistricts have a goal of including all-electric heating, cooling, and ventilation systems and are evaluating the feasibility and cost-effectiveness of electric domestic hot water systems.

Sustainable Design

The Project Team has incorporated sustainable design principles into the design of The Residences at Bel Mont. The Project will meet the Committee's 'McLean District 3 Zone 3 Overlay District' requirements by achieving certifiability at the Silver level or above through the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design Building Design and Construction for Homes version 4 (LEED Homes) rating system. Buildings within Subdistrict A will be designed to be solar PV-ready. Buildings within Subdistrict B will be designed to be solar PV-ready, at minimum, but the Project team is currently exploring opportunities to install PV panels on the roofs at construction.

The implementation of LEED certifiability ensures the Project design includes the following sustainable design principles:

- Integrative project team with a variety of skill sets that meet and collaborate throughout the life of the project to ensure project green goals are met.
- Site location that efficiently uses available land to provide the highest number of dwelling units allowed by Zoning and provides residents access to a range of community resources.
- High-efficiency indoor water fixtures and fittings to reduce water consumption and energy demand associated with domestic hot water heating.
- Improved overall energy performance via an optimized building envelope, high-efficiency mechanical systems, and energy-efficiency lighting lamps and fixtures.

- Effective ventilation and exhaust systems designed to ensure improved indoor health and air quality

New Ecology, Inc. (NEI) has been retained as the Project’s green building consultant to facilitate the implementation and compliance process. The narrative below details the strategies by which the Project will meet prerequisite and credit requirements under LEED v4 Homes.

Sustainable Design Features

| Table 1: Subdistrict A – Building Envelope Assembly Descriptions | |
|--|--|
| Roof | Dense-pack cellulose, min. R-49 on gable roofs; R-40 on flat roofs |
| Foundation | Rigid insulation, min. R-15 |
| Exterior walls | Dense-pack cellulose, min. R-20; Zip-R, min. R-9 |
| Windows | Energy Star-rated, min. U-value of 0.25 |
| Window-to-wall ratio | 30% |

| Table 2: Subdistrict A – Building Mechanical Systems Description | |
|--|--|
| Space heating | Individual air-source heat pump (ASHP) |
| Space cooling | Individual ASHP |
| Ventilation | Individual energy recovery ventilator (ERV) |
| Domestic hot water | Heat pump water heater |
| Interior lighting | LED |
| Exterior lighting | LED with photocell controls |
| Renewable energy | PV-ready, as defined by Town of Belmont |
| Other strategies | Each garage will include one space with all required connectivity infrastructure to be considered EV-ready |

| Table 3: Subdistrict B – Building Envelope Assembly Descriptions | |
|--|--|
| Roof | Rigid continuous insulation, min. R-49 |
| Foundation | Rigid insulation, min. R-15; podium deck insulated with closed-cell spray foam, min. R-30 |
| Exterior walls | Cavity insulation using dense-pack cellulous, min. R-20; Continuous exterior insulation using Zip-R, min. R-6; |
| Windows | Energy Star-rated, min U-value of 0.25 |
| Window-to-wall ratio | 30% |

Table 4: Subdistrict B – Building Mechanical Systems Description

| | |
|---------------------------|---|
| Space heating | Individual ASHP |
| Space cooling | Individual ASHP |
| Ventilation | Central ERV with kitchen and bathroom exhausts and supply to living areas |
| Domestic hot water | Electric water heater heat pump technology feasibility is under consideration |
| Interior lighting | LED |
| Exterior lighting | LED with photocell controls |
| Renewable energy | Minimum PV-ready, team is exploring PV potential at construction |
| Other strategies | 10% of all common parking spaces will include EV-charging stations |

LEED Certifiability Compliance

This section outlines the LEED Homes compliance strategies for the Project. Two separate LEED workbooks and checklists have been generated for the buildings within Subdistricts A and B, based on building type. Credit categories are identified by title, per LEED v4 convention, and points projected for each are identified as ‘Yes’ or ‘Maybe’. Credits and points not attempted by the Project are not included within this report. *Tables 5 and 6* below summarize the current LEED Homes point count by credit category for buildings in Subdistrict A and B, respectively. The current LEED checklists for each subdistrict can be found in *Appendix A* and *Appendix B*.

Table 5: Subdistrict A – LEED v4 Homes Summary Scorecard

| Category | ‘Yes’ Points | ‘Maybe Points’ |
|------------------------------|---------------------|-----------------------|
| Integrative Process | 2 | 0 |
| Location and Transportation | 5 | 0 |
| Sustainable Sites | 1 | 4 |
| Water Efficiency | 6 | 3 |
| Energy and Atmosphere | 24 | 4 |
| Materials and Resources | 5.5 | 2 |
| Indoor Environmental Quality | 8 | 5 |
| Innovation | 3 | 3 |
| Regional Priority | 1 | 3 |
| Total Points | 53.5 | 27 |

Table 6: Subdistrict B — LEED v4 MFLR Summary Scorecard

| Category | 'Yes' Points | 'Maybe Points' |
|------------------------------|--------------|----------------|
| Integrative Process | 2 | 0 |
| Location and Transportation | 11 | 0 |
| Sustainable Sites | 2 | 3 |
| Water Efficiency | 6 | 3 |
| Energy and Atmosphere | 30 | 6 |
| Materials and Resources | 5.5 | 2 |
| Indoor Environmental Quality | 9.5 | 4 |
| Innovation | 4 | 2 |
| Regional Priority | 3 | 1 |
| Total Points | 71 | 21 |

INTEGRATIVE PROCESS STRATEGY

The Integrative Process (IP) category encourages project collaborative planning and design to improve the coordination and integration of green goals into a project. The Project team identified that both of the 2 available points is achievable in this credit category for both Subdistrict A and B. Bringing together the architect, mechanical engineer, civil engineer, green building consultant, and landscape architect early in the project design, the team explored multiple design iterations and the correlating sustainability and operational impacts throughout the integrative process.

All team members listed will be involved in the project in schematic design, energy and envelope systems analysis, design development, and working drawings and specifications. These Project team members will continue to be involved in the Project through construction documents and the construction phase. The Project team will earn an additional point for conducting a full-day design charrette prior to the design development phase with the design team described above.

LOCATION AND TRANSPORTATION

The Location and Transportation (LT) category address reduction of urban sprawl and rewards development on and near previously existing infrastructure, public transportation, and developed land, as well as existing community resources.

The Project team identified 5 achievable points out of the 15 available points within the LT category for Subdistrict A. Points targeted in this category will be earned primarily by locating the project on an infill site and within a maximum ½-mile walking distance to open space. The Project will earn additional points with the main entrance located within a ½-mile walk to more than 20 community resources, including banks, grocery stores, pharmacies, and schools.

The Project team identified 11 achievable points out of the 15 available points within the LT category for Subdistrict B. Points targeted in this category by not locating the project on sensitive land, including prime farmland or public park space, locating the project on an infill site, and within a maximum ½-mile walking distance to open space. Additional points will be earned via the Project's efficient use of site area, with an average of 33.5 dwelling units per acre of buildable land being located within a ½-mile walk to more than 20 community resources.

SUSTAINABLE SITES

The Sustainable Sites (SS) category addresses environmental consequences related to landscape and site design, as well as construction processes. This category rewards project teams for designing the site to minimize adverse effects, including managing rainwater on-site via practices replicating natural site hydrology and controlling pest concern with non-toxic measures.

The Project will meet the Zoning Committee's goal of reducing invasive plant species introduction by only including native, non-invasive or adapted species to the site. This strategy also meets a prerequisite within the SS category: *No Invasive Plants*. The Project identified 1 achievable point of the 7 available within the SS category for Subdistrict A. The point targeted in this category will be earned by managing pests and insects on site through design features and reduced use of pesticides. This strategy also aligns with the Committee's goal to manage pests with reduced exposure to pesticides. The Project team is exploring opportunities to manage stormwater on-site via green infrastructure and low-impact development, reducing the heat island effect, creating potential for additional LEED points to be earned. The Project team is also addressing the Committee's goal of increasing open space with reduced turf grass, which reduces the site's heat island effect, as well.

The Project has identified 2 achievable points of the 7 available within the SS category for Subdistrict B, in addition to meeting prerequisite requirements. The points targeted in this category will be earned by reducing the heat island effect via Energy Star-certified roofing products and reducing pesticide usage as a pest management strategy. Both strategies address the Committee's goals to reduce the heat island effect and exposure to pesticides. The Project team is exploring opportunities to manage stormwater on-site via green infrastructure and low-impact development, reducing the heat island effect, creating potential for additional LEED points to be earned. The Project team is also addressing the Committee's goal of increasing open space with reduced turf grass, which reduces the site's heat island effect, as well.

WATER EFFICIENCY

The Water Efficiency (WE) category addresses environmental degradation related to the overconsumption of potable water within residential buildings and via irrigation systems. Points within this credit are earned by reducing overall water consumption using both indoor and outdoor strategies.

The overall Project identified 6 achievable points of the 12 available within the WE category. Following the *Performance Pathway*, the Project will reduce the consumption of water by installing low-flow water fixtures indoors and reducing outdoor water consumption by planting only adaptive species and utilizing efficient irrigation methods. Additional reductions in water consumption will be explored to potentially earn additional points.

ENERGY AND ATMOSPHERE

The Energy and Atmosphere (EA) category addresses reducing energy usage and improving the building's overall performance.

The Project identified 22 achievable points of the 38 available within the EA category for Subdistrict A. Points targeted within this credit will be achieved through a high-performance building envelope, utilizing efficient mechanical and lighting equipment, and construction testing and verification and system commissioning. Preliminary LEED energy budget modeling indicates each unit will have an annual energy usage that is 30% lower than the LEED energy budget. See *Appendix C* for preliminary modeling results of the LEED energy budget. Preliminary HERS modeling also indicates that each unit will have an estimated HERS score of 51 or lower, meeting the Massachusetts Stretch Energy Code. See *Appendix D* for preliminary HERS certificates. Each unit of the Project will be designed to be (PV)-ready, as defined by the Committee, creating opportunities for future residents to further improve the energy efficiency of the buildings.

The Project identified 30 achievable points of the 38 available within the EA category for Subdistrict B. Points targeted within this credit will be achieved through a high-performance building envelope, utilizing efficient mechanical and lighting equipment, and construction testing and verification and system commissioning. Additional points are earned by the Project by using the Home Size Adjuster Calculator, indicating that the average unit size is less than the respective reference unit size. Preliminary HERS modeling indicates each unit will have an estimated HERS score of 45 or lower, meeting the Massachusetts Stretch Energy Code. Each building of the Project will be designed to be PV-ready, as defined by the Committee. The team is currently exploring potential for installing PV-panels on the roof of each building at the time of construction, further improving the performance of each building and earning additional LEED points.

MATERIALS AND RESOURCES

The Materials and Resources (MR) category addresses all installed materials, including framing and interior finishes, as well as diversion of waste from landfills. The MR credit category rewards project teams that incorporate responsibly-sourced wood and environmentally-preferable products into the building design.

The Project identified 5.5 achievable points of the 12 available in the MR category for both Subdistricts A and B. Points will be earned by verifying the materials and strategies implemented to ensure building durability, diverting at least 75% of construction and demolition waste from landfills, specifying materials consisting of recycled content, and conserving resources by reducing unnecessary framing materials. The Project team will continue to explore other opportunities within the MR credit category to earn points through material and product selection.

INDOOR ENVIRONMENTAL QUALITY

The Indoor Environmental Quality (EQ) category addresses the exhaust and ventilation of all interior spaces within the building, balancing of heating and cooling distribution, and low-emitting materials, ensuring a consistent healthy environment for building residents.

The Project team identified 8 achievable points of the 18 available in the EQ category for Subdistrict A. The Project will achieve enhanced and balanced ventilation by meeting the minimum ventilation requirements of ASHRAE Standard 62.2—2010, incorporating individual ERVs into each unit, and specifying materials that are low in both volatile organic compounds (VOCs) content and emission, creating healthier interior spaces for residents. The Project team will continue to explore other opportunities within the MR credit category to earn points through material and product selection and other available strategies.

The Project team identified 9.5 achievable points of the 18 available in the EQ category for Subdistrict AB. The Project will achieve enhanced and balanced ventilation by meeting the minimum ventilation requirements of ASHRAE Standard 62.2—2010, incorporating a central ERV system with individual bathroom and kitchen exhaust fans in each unit, and specifying materials that are low in both volatile organic compounds (VOCs) content and emission, creating healthier interior spaces for residents. Additional points will be earned automatically by excluding fireplaces from the Project. The Project team will continue to explore other opportunities within the MR credit category to earn points through material and product selection and other available strategies.

INNOVATION

The Innovation (IN) category encourages project teams to find innovative ways to promote sustainability strategies not covered by existing credits in the LEED categories. Additional IN points are available for teams who bring a LEED Accredited Professional onto the Project team and/or exceed minimum thresholds for certain credits and automatically earn Exemplary Performance points for these efforts.

The Project team identified 3 achievable points of the 6 available in the IN category for Subdistrict A. The Project expects to earn one Exemplary Performance point within the Community Resources credit by meeting the minimum required threshold. The Project intends to earn 2 additional innovation points by meeting the requirements of the *Housing Types and Affordability* IN credit and by involving a LEED AP in the design and construction processes. The Project team will continue to explore opportunities to earn additional points within the IN category.

The Project team identified 4 achievable points of the 6 available in the IN category for Subdistrict B. The Project expects to earn one Exemplary Performance point within the Community Resources credit by meeting the minimum required threshold. The Project intends to earn additional innovation points by meeting the requirements of the *Housing Types and Affordability* IN credit and by involving a LEED AP in the design and construction processes. At least 10% of all common spaces within Subdistrict B will include electric vehicle charging stations, earning an additional Innovation point, but also addressing the goals surrounding EV charging on site established by the Town of Belmont. The Project team will continue to explore opportunities to earn additional points within the IN category.

REGIONAL PRIORITY

The Regional Priority Category (RP) awards additional points to credits determined to be of unique local significance by local USGBC chapters. Credits must achieve minimum thresholds for points prior to awarding additional Regional Priority Credit.

The Project team has identified 1 achievable point in this category for Subdistrict A by meeting the minimum threshold for the *Total Water Use* credit.

The Project team has identified 3 achievable points in this category for Subdistrict B by meeting the minimum threshold for the *Compact Development*, *Annual Energy Use*, and *Total Water Use* credits.

APPENDIX A: Subdistrict A – LEED v4 Homes Checklist



LEED v4 for Building Design and Construction: Homes

Project Checklist

Project Name: The Residences at Bel Mont (Subdistrict A)

Date: April 12, 2021

| Y | ? | N | | | |
|--------------------------|----------|-----------|------------------------------------|--|-----------|
| 2 | | | Credit | Integrative Process | 2 |
| 5 | 0 | 22 | Location and Transportation | | 15 |
| Y | | | Prereq | Floodplain Avoidance | Required |
| PERFORMANCE PATH | | | | | |
| | | 15 | Credit | LEED for Neighborhood Development Location | 15 |
| PRESCRIPTIVE PATH | | | | | |
| 3 | | 2 | Credit | Site Selection | 8 |
| | | 3 | Credit | Compact Development | 3 |
| 2 | | | Credit | Community Resources | 2 |
| | | 2 | Credit | Access to Transit | 2 |
| 1 | 4 | 2 | Sustainable Sites | | 7 |
| Y | | | Prereq | Construction Activity Pollution Prevention | Required |
| Y | | | Prereq | No Invasive Plants | Required |
| | 1 | 1 | Credit | Heat Island Reduction | 2 |
| | 3 | | Credit | Rainwater Management | 3 |
| 1 | | 1 | Credit | Non-Toxic Pest Control | 2 |
| 6 | 3 | 3 | Water Efficiency | | 12 |
| Y | | | Prereq | Water Metering | Required |
| PERFORMANCE PATH | | | | | |
| 6 | 3 | 3 | Credit | Total Water Use | 12 |
| PRESCRIPTIVE PATH | | | | | |
| | | | Credit | Indoor Water Use | 6 |
| | | | Credit | Outdoor Water Use | 4 |
| 24 | 7 | 9 | Energy and Atmosphere | | 38 |
| Y | | | Prereq | Minimum Energy Performance | Required |
| Y | | | Prereq | Energy Metering | Required |
| Y | | | Prereq | Education of the Homeowner, Tenant or Building Manager | Required |
| PERFORMANCE PATH | | | | | |
| 20 | 4 | 7 | Credit | Annual Energy use | 29 |
| BOTH PATHS | | | | | |
| 2 | 2 | 1 | Credit | Efficient Hot Water Distribution System | 5 |
| | 1 | 1 | Credit | Advanced Utility Tracking | 2 |
| 1 | | | Credit | Active Solar Ready Design | 1 |
| 1 | | | Credit | HVAC Start-Up Credentialing | 1 |
| PRESCRIPTIVE PATH | | | | | |
| Y | | | Prereq | Home Size | Required |
| | | | Credit | Building Orientation for Passive Solar | 3 |
| | | | Credit | Air Infiltration | 2 |
| | | | Credit | Envelope Insulation | 2 |
| | | | Credit | Windows | 3 |
| | | | Credit | Space Heating & Cooling Equipment | 4 |

| EA PRESCRIPTIVE PATH (continued) | | | | | |
|----------------------------------|--|--|--------|--|---|
| | | | Credit | Heating & Cooling Distribution Systems | 3 |
| | | | Credit | Efficient Domestic Hot Water Equipment | 3 |
| | | | Credit | Lighting | 2 |
| | | | Credit | High Efficiency Appliances | 2 |
| | | | Credit | Renewable Energy | 4 |

| 5.5 | 2 | 4.5 | Materials and Resources | | 12 |
|-----|---|-----|-------------------------|-------------------------------------|----------|
| Y | | | Prereq | Certified Tropical Wood | Required |
| Y | | | Prereq | Durability Management | Required |
| 1 | | | Credit | Durability Management Verification | 1 |
| 1.5 | 1 | 3.5 | Credit | Environmentally Preferable Products | 6 |
| 2 | | 1 | Credit | Construction Waste Management | 3 |
| 1 | 1 | | Credit | Material Efficient Framing | 2 |

| 8 | 5 | 5.5 | Indoor Environmental Quality | | 18 |
|---|-----|-----|------------------------------|---|----------|
| Y | | | Prereq | Ventilation | Required |
| Y | | | Prereq | Combustion Venting | Required |
| Y | | | Prereq | Garage Pollutant Protection | Required |
| Y | | | Prereq | Radon-Resistant Construction | Required |
| Y | | | Prereq | Air Filtering | Required |
| Y | | | Prereq | Environmental Tobacco Smoke | Required |
| Y | | | Prereq | Compartmentalization | Required |
| 3 | | | Credit | Enhanced Ventilation | 3 |
| | 0.5 | 3.5 | Credit | Contaminant Control | 4 |
| 2 | 1 | | Credit | Balancing of Heating and Cooling Distribution Systems | 3 |
| | 1 | | Credit | Enhanced Compartmentalization | 1 |
| 1 | | 1 | Credit | Enhanced Combustion Venting | 2 |
| 1 | 1 | | Credit | Enhanced Garage Pollutant Protection | 2 |
| 1 | 1 | 1 | Credit | Low Emitting Products | 3 |

| 3 | 3 | 0 | Innovation | | 6 |
|---|---|---|------------|---|----------|
| Y | | | Prereq | Preliminary Rating | Required |
| 1 | | | Credit | Innovation: Housing Types and Affordability | 1 |
| | 1 | | Credit | EP: Community Resources | 1 |
| 1 | | | Credit | Pilot | 1 |
| | 1 | | Credit | Innovation | 1 |
| | 1 | | Credit | Innovation | 1 |
| 1 | | | Credit | LEED AP Homes | 1 |

| 1 | 3 | 0 | Regional Priority | | 4 |
|---|---|---|-------------------|---|---|
| | 1 | | Credit | Regional Priority: Material Efficient Framing | 1 |
| | 1 | | Credit | Regional Priority: Annual Energy Use | 1 |
| 1 | | | Credit | Regional Priority: Total Water Use | 1 |
| | 1 | | Credit | Regional Priority: Advanced Utility Tracking | 1 |

| | | | | | |
|-----------|-----------|-----------|---------------|--|-----------------------------|
| 54 | 27 | 46 | TOTALS | | Possible Points: 114 |
|-----------|-----------|-----------|---------------|--|-----------------------------|

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

APPENDIX B: Subdistrict B – LEED v4 Homes Checklist



LEED v4 for Building Design and Construction: Homes

Project Checklist

| Y | ? | N | | | |
|--------------------------|----------|-----------|------------------------------------|--|-----------|
| 2 | | | Credit | Integrative Process | 2 |
| 11 | 0 | 19 | Location and Transportation | | 15 |
| Y | | | Prereq | Floodplain Avoidance | Required |
| PERFORMANCE PATH | | | | | |
| | | 15 | Credit | LEED for Neighborhood Development Location | 15 |
| PRESCRIPTIVE PATH | | | | | |
| 6 | | 2 | Credit | Site Selection | 8 |
| 3 | | | Credit | Compact Development | 3 |
| 2 | | | Credit | Community Resources | 2 |
| | | 2 | Credit | Access to Transit | 2 |
| 2 | 3 | 2 | Sustainable Sites | | 7 |
| Y | | | Prereq | Construction Activity Pollution Prevention | Required |
| Y | | | Prereq | No Invasive Plants | Required |
| 1 | | 1 | Credit | Heat Island Reduction | 2 |
| | 3 | | Credit | Rainwater Management | 3 |
| 1 | | 1 | Credit | Non-Toxic Pest Control | 2 |
| 6 | 3 | 3 | Water Efficiency | | 12 |
| Y | | | Prereq | Water Metering | Required |
| PERFORMANCE PATH | | | | | |
| 6 | 3 | 3 | Credit | Total Water Use | 12 |
| PRESCRIPTIVE PATH | | | | | |
| | | | Credit | Indoor Water Use | 6 |
| | | | Credit | Outdoor Water Use | 4 |
| 30 | 6 | 2 | Energy and Atmosphere | | 38 |
| Y | | | Prereq | Minimum Energy Performance | Required |
| Y | | | Prereq | Energy Metering | Required |
| Y | | | Prereq | Education of the Homeowner, Tenant or Building Manager | Required |
| PERFORMANCE PATH | | | | | |
| 26 | 3 | | Credit | Annual Energy use | 29 |
| BOTH PATHS | | | | | |
| 2 | 2 | 1 | Credit | Efficient Hot Water Distribution System | 5 |
| | 1 | 1 | Credit | Advanced Utility Tracking | 2 |
| 1 | | | Credit | Active Solar Ready Design | 1 |
| 1 | | | Credit | HVAC Start-Up Credentialing | 1 |
| PRESCRIPTIVE PATH | | | | | |
| Y | | | Prereq | Home Size | Required |
| | | | Credit | Building Orientation for Passive Solar | 3 |
| | | | Credit | Air Infiltration | 2 |
| | | | Credit | Envelope Insulation | 2 |
| | | | Credit | Windows | 3 |
| | | | Credit | Space Heating & Cooling Equipment | 4 |

Project Name: The Residences at Bel Mont (Subdistrict B)
Date: April 12, 2021

| EA PRESCRIPTIVE PATH (continued) | | | | | |
|---|--|--|--------|--|---|
| | | | Credit | Heating & Cooling Distribution Systems | 3 |
| | | | Credit | Efficient Domestic Hot Water Equipment | 3 |
| | | | Credit | Lighting | 2 |
| | | | Credit | High Efficiency Appliances | 2 |
| | | | Credit | Renewable Energy | 4 |

| 5.5 | 2 | 4.5 | Materials and Resources | | 12 |
|-----|---|-----|--------------------------------|-------------------------------------|-----------|
| Y | | | Prereq | Certified Tropical Wood | Required |
| Y | | | Prereq | Durability Management | Required |
| 1 | | | Credit | Durability Management Verification | 1 |
| 1.5 | 1 | 3.5 | Credit | Environmentally Preferable Products | 6 |
| 2 | | 1 | Credit | Construction Waste Management | 3 |
| 1 | 1 | | Credit | Material Efficient Framing | 2 |

| 9.5 | 4 | 4.5 | Indoor Environmental Quality | | 18 |
|-----|---|-----|-------------------------------------|---|-----------|
| Y | | | Prereq | Ventilation | Required |
| Y | | | Prereq | Combustion Venting | Required |
| Y | | | Prereq | Garage Pollutant Protection | Required |
| Y | | | Prereq | Radon-Resistant Construction | Required |
| Y | | | Prereq | Air Filtering | Required |
| Y | | | Prereq | Environmental Tobacco Smoke | Required |
| Y | | | Prereq | Compartmentalization | Required |
| 3 | | | Credit | Enhanced Ventilation | 3 |
| 0.5 | | 3.5 | Credit | Contaminant Control | 4 |
| 2 | 1 | | Credit | Balancing of Heating and Cooling Distribution Systems | 3 |
| | 1 | | Credit | Enhanced Compartmentalization | 1 |
| 2 | | | Credit | Enhanced Combustion Venting | 2 |
| 1 | 1 | | Credit | Enhanced Garage Pollutant Protection | 2 |
| 1 | 1 | 1 | Credit | Low Emitting Products | 3 |

| 4 | 2 | 0 | Innovation | | 6 |
|---|---|---|-------------------|--|----------|
| Y | | | Prereq | Preliminary Rating | Required |
| 1 | | | Credit | Innovation: Green Vehicles (or v4.1 EV Vehicles) | 1 |
| 1 | | | Credit | Innovation : Housing Types and Affordability | 1 |
| 1 | | | Credit | EP: Community Resources | 1 |
| | 1 | | Credit | Pilot | 1 |
| | 1 | | Credit | Innovation | 1 |
| 1 | | | Credit | LEED AP Homes | 1 |

| 3 | 1 | 0 | Regional Priority | | 4 |
|---|---|---|--------------------------|--|----------|
| 1 | | | Credit | Regional Priority: Compact Development | 1 |
| 1 | | | Credit | Regional Priority: Annual Energy Use | 1 |
| 1 | | | Credit | Regional Priority: Total Water Use | 1 |
| | 1 | | Credit | Regional Priority: Advanced Utility Tracking | 1 |

| | | | | | |
|-----------|-----------|-----------|---------------|--|-----------------------------|
| 71 | 21 | 35 | TOTALS | | Possible Points: 114 |
|-----------|-----------|-----------|---------------|--|-----------------------------|

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

APPENDIX C: Preliminary LEED Energy Budget Results

LEED for Homes Source Energy Budget

Property

TH-3BR-C
Belmont, MA 02478
Model: WC

Organization

New Ecology
Zach McDonald

Inspection Status

Results are projected

Builder

Residences at Belmont TH-3BR-C
TH-3BR-C

UNCONFIRMED

This home will consume 30% less source energy than the LEED Source Energy Budget limit.

Source Energy Consumption (MBtu / year)*

| | LEED Reference | As Designed |
|-----------------------|----------------|--------------|
| Heating | 92.1 | 56.8 |
| Cooling | 5.7 | 3.2 |
| Hot Water | 35.7 | 9.6 |
| Lights and Appliances | 68.6 | 71.3 |
| Onsite Generation | 0.0 | 0.0 |
| Total | 202.2 | 140.8 |

*Source Energy is determined by multiplying site energy electric use by 3.2 and fossil fuel use by 1.05. Note that if there are major energy consumers not included in this energy rating (e.g. pool pumps), they must be included separately.

Home Feature Summary:

| | |
|--------------------------|--|
| Home Type: | Townhouse, end unit |
| Model: | WC |
| Community: | N/A |
| Conditioned Floor Area: | 3,180 ft ² |
| Number of Bedrooms: | 3 |
| Primary Heating System: | Air Source Heat Pump • Electric • 11 HSPF |
| Primary Cooling System: | Air Source Heat Pump • Electric • 19 SEER |
| Primary Water Heating: | Water Heater • Electric • 3.25 Energy Factor |
| House Tightness: | 3 ACH50 |
| Ventilation: | 130 CFM • 91 Watts |
| Duct Leakage to Outside: | Untested Forced Air |
| Above Grade Walls: | R-27 |
| Ceiling: | Attic, R-58 |
| Window Type: | U-Value: 0.27, SHGC: 0.4 |
| Foundation Walls: | R-21 |

APPENDIX D: Preliminary HERS Certificates

Home Energy Rating Certificate

Projected Report

Rating Date:
Registry ID:
Ekotrope ID: 7d1Eo8L

HERS® Index Score:

51

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit www.hersindex.com

Annual Savings

\$5,163

*Relative to an average U.S. home

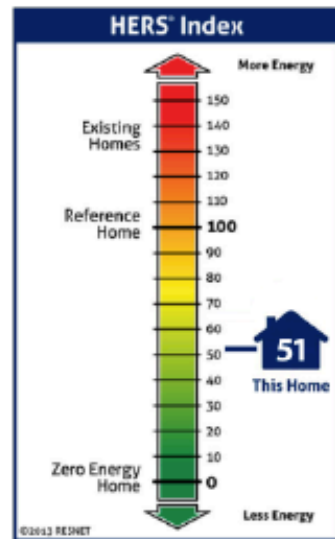
Home:
TH-3BR-C
Belmont, MA 02478

Builder:

Your Home's Estimated Energy Use:

| | Use [MBtu] | Annual Cost |
|-------------------------|-------------|----------------|
| Heating | 19.4 | \$1,367 |
| Cooling | 0.8 | \$53 |
| Hot Water | 3.0 | \$219 |
| Lights/Appliances | 22.3 | \$1,567 |
| Service Charges | | \$120 |
| Generation (e.g. Solar) | 0.0 | \$0 |
| Total: | 45.5 | \$3,327 |

This home meets or exceeds the criteria of the following:



Home Feature Summary:

| | |
|--------------------------|--|
| Home Type: | Townhouse, end unit |
| Model: | WC |
| Community: | N/A |
| Conditioned Floor Area: | 3,180 ft ² |
| Number of Bedrooms: | 3 |
| Primary Heating System: | Air Source Heat Pump • Electric • 11 HSPF |
| Primary Cooling System: | Air Source Heat Pump • Electric • 19 SEER |
| Primary Water Heating: | Water Heater • Electric • 3.25 Energy Factor |
| House Tightness: | 3 ACH50 |
| Ventilation: | 130 CFM - 91 Watts |
| Duct Leakage to Outside: | Untested Forced Air |
| Above Grade Walls: | R-27 |
| Ceiling: | Attic, R-58 |
| Window Type: | U-Value: 0.28, SHGC: 0.25 |
| Foundation Walls: | R-21 |

Rating Completed by:

Energy Rater: Zach McDonald
RESNET ID: 7945150

Rating Company: New Ecology
15 Court Sq. Boston, MA 02108
617 557 1700

Rating Provider: Building Efficiency Resources
PO Box 1769 Brevard, NC 28712
800-399-9620

Zach McDonald

Zach McDonald, Certified Energy Rater
Digitally signed: 4/9/21 at 5:15 PM



Home Energy Rating Certificate

Projected Report

Rating Date:
Registry ID:
Ekotrope ID: 1236wVMv

HERS® Index Score:

45

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit www.hersindex.com

Annual Savings

\$2,413

*Relative to an average U.S. home

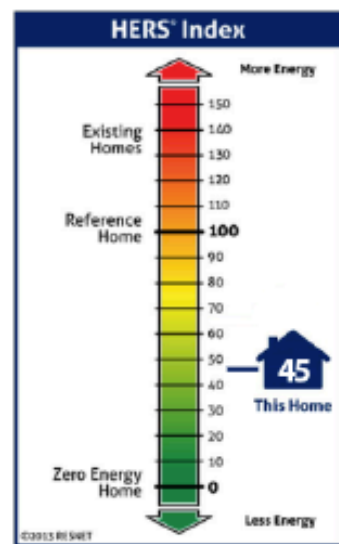
Home:
MR-2BR-M
Belmont, MA 02478

Builder:

Your Home's Estimated Energy Use:

| | Use [MBtu] | Annual Cost |
|-------------------------|-------------|----------------|
| Heating | 4.1 | \$288 |
| Cooling | 0.4 | \$30 |
| Hot Water | 2.1 | \$146 |
| Lights/Appliances | 13.3 | \$933 |
| Service Charges | | \$120 |
| Generation (e.g. Solar) | 0.0 | \$0 |
| Total: | 19.9 | \$1,516 |

This home meets or exceeds the criteria of the following:



Home Feature Summary:

| | |
|--------------------------|--|
| Home Type: | Apartment, inside unit |
| Model: | WC |
| Community: | N/A |
| Conditioned Floor Area: | 1,366 ft ² |
| Number of Bedrooms: | 2 |
| Primary Heating System: | Air Source Heat Pump • Electric • 10.4 HSPF |
| Primary Cooling System: | Air Source Heat Pump • Electric • 18.4 SEER |
| Primary Water Heating: | Water Heater • Electric • 3.25 Energy Factor |
| House Tightness: | 3 ACH50 |
| Ventilation: | 65 CFM • 46 Watts |
| Duct Leakage to Outside: | Untested Forced Air |
| Above Grade Walls: | R-27 |
| Ceiling: | Adiabatic, R-1 |
| Window Type: | U-Value: 0.27, SHGC: 0.35 |
| Foundation Walls: | N/A |

Rating Completed by:

Energy Rater: Zach McDonald
RESNET ID: 7945150

Rating Company: New Ecology
15 Court Sq. Boston, MA 02108
617 557 1700

Rating Provider: Building Efficiency Resources
PO Box 1769 Brevard, NC 28712
800-399-9620

Zach McDonald

Zach McDonald, Certified Energy Rater
Digitally signed: 4/9/21 at 5:15 PM

