

Green Building Requirements

2072 Massachusetts Avenue Green Building Report – Comments on Special Permit Stage

Status: The Community Development Department (CDD) received the final update of the Green Building Report (GBR) for the special permit stage of 2072 Massachusetts Avenue, per Section 22.25.1 of the Zoning Ordinance, on 10/19/2020. The project includes construction of a eight-story building to accommodate 48 dwelling units with a total gross floor area (GFA) of 65,710 SF. CDD staff have reviewed the project’s GBR report and offer the following Determination, Summary of Compliance and Advisory Comments on its green building and net zero attributes.

CDD Determination: The documentation provided by the Applicant is sufficient to demonstrate compliance with the Green Building Requirements of Section 22.24 for this component of the project. A revised submission with additional documentation will be required at the building permit and certificate of occupancy stages.

Project Summary: This project is subject to the City’s Green Building Requirements (Section 22.20, Zoning Ordinance). The Project is currently meeting the requirements for PHIUS+ Core rating system and pursuing Passive House certification. The Green Building Report for this project is anticipated to be complete and meets Article 22 requirements.

Rating System: PHIUS+ Core Residential (2018)

Summary of Compliance and Comments:

Green Building Professional Certification

- Karno Widjaja of Bruner/Cott Architects has been identified as the Green Building Professional for the project. The affidavit states that this professional has reviewed all relevant documents for this project and confirm to the best of his/her knowledge that those documents indicate that the project is being designed to achieve the requirements of Section 22.24 under Article 22.20 of the Cambridge Zoning Ordinance.
- A copy of the professional’s credential from PHIUS Rating Program has been provided.

Rating System Checklist, Rating System Narrative and Net Zero Narrative

- The building is targeted to not exceed heating and cooling demands, heating and cooling loads and source energy consumption of the base design.
- EPA Indoor airPLUS certification and ENERGY STAR Multifamily New Construction certification will be sought.
- WaterSense certification in compliance with WaterSense® Labeled New Home Inspection Checklist and WaterSense® Program Guidelines Version 5.3. This is not a PHIUS requirement.
- Anticipated building envelope performance including roof, foundation, walls and window assemblies, and window-to-wall ratio
 - The proposed design strategies include low window-to-wall ratio of 30%, glazing performance, wall assemblies, and roof system result in lower heating and cooling demands as well as heating and cooling loads.

- Anticipated energy loads, baseline energy simulation tool assumptions, and proposed energy targets
 - The building has a targeted source energy use intensity of 48 kBtu/sf/yr and a targeted site energy use intensity of 20 kBtu/sf/yr.
- Description of building energy performance integrated into the project's planning, design, and engineering, massing, envelope systems, building mechanical systems, on-site and off-site renewable energy systems, and district-wide energy systems
 - High performance glazing and building envelope and low air infiltration rates to improve indoor air quality and thermal comfort.
 - High efficiency mechanical systems include energy recovery ventilation, efficient air source heat pump technology, MERV 13 filtration, LED lighting, and low-flow plumbing fixtures.
 - High efficiency all electric HVAC system.
- Description of technical framework for transitioning project to net zero emission in the future, including future net zero emission options for building envelope, HVAC systems, domestic hot water, interior lighting, and on-site and off-site renewable energy sources
 - Replace gas-fired equipment with electric alternatives for domestic hot water.
 - Updated technology to reduce lighting demands.
 - Purchase of off-site renewable energy.
- Description of programs offered by local utility companies that are being considered to improve building performance
 - MassSave Passive House incentive program.
 - DOER Alternative Energy Certificate (AEC) incentive program.

Advisory Comments by CDD Staff:

Staff applaud the applicant for pursuing PHIUS certification and look forward to finalizing other measure that are considered under explorations at this design stage. The City's goal is to promote environmentally sustainable and energy-efficient design and development practices in new construction and renovation of existing buildings. Recommended practices include the reuse of existing buildings and materials, the conservation of natural resources and reduction of toxins in building materials and construction methods, and the reduction in energy use in construction and daily operations. Other design strategies that would foster pedestrian, bicycle, and public transit use in the city include compact arrangement of buildings and permitted mix of land uses. CDD staff would encourage the Project Team to pursue the highest level of sustainable and energy-efficient design possible and recommend pursuing the following:

- Continue to explore use of window shading to reduce building energy consumption.
- Provide more information about the potential of installing a central electric heating system for the building including for DHW.
- Calculate how much renewable energy could be generated from the addition of PV, assuming the space is not used up for a mechanical room on the roof, as suggested, in order to support the conversion to all electric DHW.

- Analyze how the project aligns with Enterprise Green Communities Criteria, Fitwell, WELL rating systems.
- It would be helpful (though not required) to share comments provided by Passive House at future stages of design to confirm that the standards are on track to be met.

The project will be subject to review prior to receiving its Building Permit and Certificate of Occupancy. CDD Staff is available to work with the Applicant through continuing design review and looks forward to updates on design changes and/or projected building performance.