CITY OF CAMBRIDGE
COMMUNITY DEVELOPMENT DEPARTMENT

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To: Planning Board

From: Jeff Roberts, Senior Manager for Zoning and Development
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Re: Special Permit **PB #332, 121-169 Vassar Street, MIT Dorm**

This memo contains an overview of the proposed project at 121-169 Vassar Street, the special permits being requested, and related comments.

Summary of Proposal

The Massachusetts Institute of Technology Institutional (MIT) is proposing to replace the existing parking garage and surface lot with an undergraduate student dormitory at 121-169 Vassar Street. The dormitory will have 450 undergraduate beds and 16 apartments for graduate resident tutors and faculty. The project includes 243 long-term bicycle spaces, 34 short-term bicycle spaces, and landscaped areas accessible to the building residents and the public. The project also requires 38 off-street parking spaces, which will be met within the pooled parking facilities that exist to serve the entire MIT campus.

Requested Special Permits

The project is located in the Special District 6 (SD-6) and the MIT Institutional Overlay District (IOD). The project requires a Project Review Special Permit (Section 19.20) and a special permit to exceed allowed curb cut width (Section 6.43.5(b)).

The applicable special permit findings and relevant goals of the *South Cambridgeport Development Guidelines* are summarized on the following pages. Applicable sections of the zoning are provided in an appendix.

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Requested Special Permits	**Summarized Findings** *(see appendix for zoning text excerpts)*
Project Review Special Permit (Section 19.20)	The project is consistent with the urban design objectives of the City as set forth in Section 19.30 (see appendix).
Exceedance of allowed curb cut width (Section 6.43.5)	Increased curb cut width will facilitate traffic and safety.
General Special Permit Criteria (Section 10.43)	Special permits will be normally granted if the zoning requirements are met, unless it is found not to be in the public interest due to one of the criteria enumerated in Section 10.43 (see appendix).

South Cambridgeport Development Guidelines 1992– Summary of Goals and Objectives

Overall Goals (intended to provide general guidance)
• Integrate all new projects into the pattern of streets and squares which make Cambridge a walkable, liveable city, including the traditional residential areas of Cambridgeport • Provide street connections through large blocks, such as the long ones in the area between Sidney Street and the railroad right-of-way, and between Pacific and Erie. • Break down the scale of new development to be compatible with the historic block pattern. • Allow for sight lines ultimately connecting the existing residential area to new development and beyond, towards the MIT campus and the River. • Employ architectural and site development features to mitigate the visual impact of the density of development being built to lot lines.
Vassar Street Corridor District Guidelines (intended to provide general guidance)
• Building height should follow the typical pattern of development at MIT, with a predominance of mid-rise structures, only broken by occasional and very carefully-sited higher elements. • Higher structures should not block any view corridors which may tie across the railroad right of way. Of particular importance are the views aligned with Pacific and Erie Streets. • New structures should not be perceived as a wall. A particular concern is that any higher elements not visually impact the Fort Washington district across the railroad right-of-way. • New housing development should have adequate open space, perhaps in the form of courtyards with landscaped edges along the sidewalk. Such courtyards can help make the street a friendly place for pedestrians.

Area Planning and Zoning

The base zoning for the site is Special District 6 (SD-6), in which the requirements for the Residence C-3 district are applicable except where otherwise specified. The dimensional regulations support higher-density development, allowing a floor area ratio (FAR) of 3.0 and a maximum building height of 100 feet by right. There are no minimum yard requirements for buildings in this district.

The site is also within the Massachusetts Institute of Technology Institutional Overlay District. The Institutional Overlay Districts were established in 1981 to designate areas where the expansion of institutional uses is encouraged, and to differentiate them from residential areas where institutional expansion is more restricted. The balance between institutional growth and protection of residential areas is articulated in Policy #5 of the Cambridge Growth Policy, *Toward a Sustainable Future*:

"The major institutions, principally Lesley College, Harvard University, Massachusetts Institute of Technology and the hospitals, should be limited to those areas that historically have been occupied by such uses and to abutting areas that are reasonably suited to institutional expansion, as indicated by any institutional overlay district formally adopted by the City."

Future Development Goals

Another important planning consideration in the review of this project is the "Grand Junction Greenway," a rail-with-trail multiuse pathway that has been part of Cambridge's open space and transportation planning for many years. In 2014, MIT completed a feasibility study for portions of this pathway on MIT-owned land, which shows the pathway built along the northern edge of the still-active rail line. Earlier this year, as part of its commitment related to the Volpe site rezoning, MIT committed $8.5 million to construct the pathway as depicted in the feasibility study. This site is particularly important because it could serve as part of a future connection from MIT's west campus residences and athletic facilities to the future pathway.

Comments on Proposal

Consistency with Planning and Zoning

This project is on a 765,506 square-foot lot with multiple buildings, totaling 1,011,677 square feet of Gross Floor Area (GFA). The proposal to construct this new undergraduate residence with 450 dormitory beds, 12 graduate resident tutor apartments, and 4 faculty apartments will result in a total GFA of 1,167,655 square feet. The proposed FAR of 1.53 remains below the FAR limit of 3.00 in the district. The height of the building at 64 feet will remain well below the maximum of 100 feet.

Because the proposed dormitory building is 155,978 square feet in GFA, the project triggers the requirement for a Project Review Special Permit per Section 19.23.2 of the Zoning Ordinance. However, a Traffic Study is not required because for a college or university facility, the requirement for a Traffic Study is triggered only by the creation of 150 new parking spaces or the relocation of 250 existing parking spaces (per Section 19.23).

The applicable criteria for the Planning Board's review are the Citywide Urban Design Objectives set forth in Section 19.30 and the General Special Permit Criteria in Section 10.43 of the Zoning Ordinance.

These criteria are listed in an appendix to this memo, and are addressed in the Application Narrative. Along with the design objectives that are typical for all projects, some of the objectives are especially relevant to university development:

(Section 19.35) New construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically. Indictors include:

(1) New educational institutional construction that is focused within the existing campuses.

(2) Where institutional construction occurs in commercial areas, retail, consumer service enterprises, and other uses that are accessible to the general public are provided at the ground (or lower) floors of buildings. Where such uses are not suitable for programmatic reasons, institutional uses that encourage active pedestrian traffic to and from the site.

Sewer service infrastructure and water service infrastructure narratives are also included in the application, as required, and have been reviewed by DPW. A report from DPW indicates that the project is expected to be able to meet applicable requirements, which will be verified prior to issuance of a building permit. Three street trees are also proposed to be removed, which is discussed in the DPW report.

Land Use

From a land use planning perspective, the proposal to expand the institution's residential campus within its current site is consistent with long-standing City policies and objectives for institutional growth. The replacement of the existing garage with an additional student residence is also consistent with the City's objectives of housing university students on campus and reducing reliance on automobile trips. The proposal's emphasis on pedestrian and bicycle connections and enhancing open space are also supportive of the City's planning objectives. The site is in an institutional use district where retail and consumer service uses are not permitted, thus none are proposed.

Transportation

The proposal triggers the bicycle parking requirements in Section 6.100 and will meet those requirements by providing 243 long term and 34 short term bicycle parking spaces. The project also requires 38 off-street parking spaces. As is typically the case with institutional development, parking requirements will be met within the pooled parking facilities that exist to serve the entire MIT campus.

When the existing parking garage is demolished, some of the lost spaces will be reproduced elsewhere on campus. However, due to programs being implemented by MIT to reduce parking demand, not all 410 existing surface parking spaces will need to be replaced.

The project is proposing a curb cut 30 feet wide and hence seeks a Special Permit to exceed the maximum allowed curb-cut width of 20 feet. The wider driveway will allow better access for commercial trucks and fire trucks into the site. Additional comments may be provided by the Cambridge Traffic, Parking, and Transportation Department (TP&T).

Though a Transportation Impact Study is not required, the Applicant has provided a transportation access and circulation study as a supplemental piece of the application, which may aid the Planning

Board's consideration of site planning considerations such as access, egress and safety for automobiles, pedestrians and bicyclists. TP&T may provide additional comments.

Urban Design

The architectural and urban design concept provides an excellent response to the site and context, and is also a much more inventive approach to mid-rise housing than what has commonly been seen in other parts of the city. Staff is impressed with the attention given to various interfaces and the building's role at a variety of scales. Throughout, there is a careful balance between unity and variety, elegant detailing, and deliberate and playful use of color, which makes the building memorable. The result is a plan that replaces an unsightly parking structure with a remarkably strong and lively architectural solution.

The project is consistent with citywide urban design objectives and the *South Cambridgeport Development Guidelines*. Regarding the latter, the way the project provides open space at the extension of Pacific Street and maintains a physical and visual connection is particularly strong. The provision of series of clusters and landscaped courtyards also helps to break down the massing of the building, and provides animation and amenities for residents and the public. The extensive transparent ground floor frontage and provision of active student spaces along this edge will also engage the public and will most certainly have a positive impact on the pedestrian realm.

Some areas where the project may be improved or where further study is warranted include:

- The extent of building overhang into the crossroads plaza above the dining hall, to assess and mitigate how dark the space below might feel, as well as further details regarding the treatment of the soffit.
- Provision of strong visual connections through the entrance lobby to the back of the building to help make the bicycle parking area a more attractive destination.
- Opportunities to make the entry forecourt and main entrance more visually prominent and welcoming. While the threshold character of the space is understood, the entry is quite recessed and the hanging screen wall may feel low and heavy, which may result in the dining hall at the west end of the building being thought of as the entrance. The addition of moveable tables and chairs in appropriate locations might also make this space more inviting.
- Potential for additional street trees in the curb extension in front of the loading/service area. The absence of the trees is particularly noticeable in the rendering on page 64.
- Possible perceptions of the northwest elevation as a wall and whether the vertical articulation and taller elements provide enough visual interest to mitigate the building length.
- Review of the need for more visual support to the hanging brick wall along the Vassar Street façade in locations where it appears to float.
- Potential to occupy the green roof terraces to add another layer of animation to the building and provide outdoor open space overlooking the MIT playing fields.
- The main exterior material is thin brick in three matte glazed colors, which are applied to various planes to accentuate massing. While staff understand the architect's intent, and the application of broad, swathes of color adds life to the building, some further study of the brick and whether it should be more variegated in color could be considered.

- Given the building length and urban design objectives that encourage an active pedestrian realm, staff believes that the project would be improved by more entrances, particularly at each end of the building. Activation of the crossroads plaza through the addition of operable windows and doors might also enable the dining and student activities to more successfully spill out into the plaza. However, staff understands that the proposed single point of entry is one of MIT's security standards for dormitory housing.
- Some additional drawings are suggested in the continuing review section below to help understand the various nuances of the project.

Sustainability

The project is subject to the City's Green Building Requirements (Section 22.20, Zoning Ordinance), which requires projects over 50,000 square feet to be designed to a minimum LEED (v4) Silver rating. The Project Team is currently exceeding the minimum requirement with 76.5 "Yes" credit points and is targeting LEED Gold. With an additional 12 "Maybe" credit points, a possibility exists for the project to further exceed the minimum requirement and achieve LEED Platinum.

The project has employed several measures that are expected to result in a high performing building, including energy recovery ventilation, and passive strategies (solar shading, daylighting, green roofs, optimized massing and orientation).

Transitioning to Net Zero

In 2015, the City adopted the Net Zero Action Plan, a commitment to achieve citywide net-zero emissions by 2050. The Applicant has provided a narrative that details possible pathways that the project could transition to non-fossil fuel sources in the future. The project will be connected to MIT's Central Utility Plant, which will be upgraded to reduce emissions across the campus. The building systems are designed to use chilled and hot water distribution which, as described in the Application Materials, creates no "technical barriers to the building accepting utilities from a de-carbonized or net-zero carbon source."

The Applicant has also considered the Passive House building standard, known for producing extremely low energy buildings by focusing on building envelopes. Passive House concepts, such as reducing thermal bridging and internal loads, and the integration of low-energy, high-performing equipment, have been incorporated into the design and will continue to be studied.

The Net Zero Action Plan also recommends that new buildings be "solar ready" by providing rooftop spaces with maximum solar access. While there are no plans to install Photovoltaics (PVs) at this time, the project has been designed to be solar ready. A PV Study that was conducted for the project demonstrated that the project could accommodate an 81.2 KW system, which is approximately 3% of the building's annual energy use.

Continuing Review

The following is a summary of issues that staff recommends should be further studied by the Applicant, either in preparing revised materials if the Planning Board continues the hearing to a future date, or as conditions for ongoing design review by staff if the Board decides to grant the special permit:

- Updated plans and elevations clearly showing key dimensions, scale and north arrow.
- Provision of a mechanical penthouse plan, sections through the social courtyard, cross-roads plaza and building overhang, and a typical elevation/section of a dorm room wall.
- Clarification of discrepancies between the plans and renderings (e.g. sunshade colors, entry forecourt tree species, stair to second floor).
- Review of all external lighting, including conformance with technical guidelines recommended in the proposed Cambridge Outdoor Lighting Ordinance, careful use of facade lighting and tree up-lighting, and use of timers to minimize light trespass.
- Ongoing review of all proposed public realm, open space, streetscape improvements and landscape details, including seating, screening and fence details as the design advances.
- Ongoing review of all exterior materials, colors, and details as the design advances, including a materials mock-up of all wall assemblies on the site.
- Ongoing review of potential opportunities to improve projected building energy performance through envelope design or other measures, as the design advances.
- Ongoing review of parking, bicycle parking, access and egress by the Traffic, Parking and Transportation Department as the design advances.