

CITY OF CAMBRIDGE, MASSACHUSETTS

PLANNING BOARD

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CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE, MA 02139
OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

NOTICE OF DECISION

Case Number:	315 Amendment #2 (Major)
Location of Premises:	325 Main Street, 290 Binney Street, 135 Broadway, 145 Broadway, 250 Binney Street, and 255 Main Street
Zoning:	Mixed Use Development (MXD) District: Kendall Center
Applicant:	Boston Properties Limited Partnership 800 Boylston Street, Suite 1900, Boston, MA 02199
Owner:	Various owners as listed in Application Documents.
Application Date:	September 1, 2021
Date of Public Hearing:	September 28, 2021; December 14, 2021
Date of Planning Board Decision:	December 14, 2021
Date of Filing Decision:	March 15, 2022

Summary of Proposal: Major Amendment to an Infill Development Concept Plan (IDCP) (Sections 14.32.2.5), Reduction of Bicycle Parking Requirements (6.108.1), and Reduction of Green Roofs requirement (22.35.3) to authorize increasing the commercial Gross Floor Area (GFA) by 800,000 square feet through the addition of two new commercial building sites, siting a below-grade electrical transformer substation for the public utility company on-site, consolidating required residential GFA from two building sites into one building site, modifying the locations and amounts of open space, demolishing an existing above-grade parking garage with approximately 1,170 parking spaces and constructing approximately 1,558 below-grade parking spaces.

Decision: **GRANTED, with Conditions.**

Appeals, if any, shall be made pursuant to Section 17 of Massachusetts General Laws, Chapter 40A, and shall be filed within twenty (20) days after filing of the above referenced decision with the City Clerk. Copies of the complete decision and final plans, if applicable, are on file with the Community Development Department and the City Clerk.

Authorized Representative of the Planning Board: Swaathi Joseph

For further information concerning this Decision, please contact Swaathi Joseph at 617-349-4668, or sjoseph@cambridgema.gov.

DOCUMENTS SUBMITTED

Application Documents and Supporting Material

1. Planning Board Special Permit application filed with the City Clerk's Office on September 1, 2021, including: Cover Sheet, Dimensional Forms; Addendum to Dimensional Form, Existing Open Space calculations, Proposed Open Space, Ownership Certificate, Addendum to the Cover Sheet, Fee Schedule, Ownership Certificate, and Criteria for Issuance of Special Permits. Infill Development Concept Plan Amendment 2 dated 7/1/2021 with the proposed development plan, regulatory context, open space plan, retail plan, transportation, infrastructure, environmental impacts, sustainability plan, phasing plan, design guidelines, and Appendix.
2. Presentation slides shown to Planning Board on 9/28/2021.
3. Infill Development Concept Plan Amendment 2 Response to Comments dated 11/5/2021.
4. Presentation slides shown to Planning Board on 12/14/2021.

City of Cambridge Documents

5. Memo to the Planning Board from Community Development Department (CDD) Staff, dated 9/11/2021.
6. Memo to the Planning Board from Katherine F. Watkins, City Engineer, dated 9/22/2021.
7. Memo to the Planning Board from Joseph E. Barr, Director of Traffic, Parking and Transportation (TP+T), dated 9/24/2021.
8. Memo to the Planning Board from CDD staff, dated 12/8/2021.
9. Memo to the Planning Board from Joseph E. Barr, TP+T, dated 12/10/2021.

Other Documents

10. Email communication to the Planning Board from Bjorn Poonen, dated 9/12/2021.
11. Email communication to the Planning Board from O. Robert Simha, dated 9/15/2021.
12. Email communication to the Planning Board from Stephen Kaiser, dated 9/27/2021.
13. Email communication to the Planning Board from Mark Boswell, dated 9/27/2021.
14. Letter to the Planning Board from Charles T. Hinds, East Cambridge Planning Team, dated 9/28/2021.
15. Email communication to the Planning Board from Stephen Kaiser, dated 10/8/2021.
16. Email communication to the Planning Board from Stephen Kaiser, dated 10/20/2021.
17. Notice of Extension of Time to January 31, 2022, dated 12/16/2021.
18. Notice of Extension of Time to February 22, 2022, dated 1/27/2022.
19. Notice of Extension of Time to March 22, 2022, dated 2/16/2022.

APPLICATION SUMMARY

Section 14.32.2 of the Zoning Ordinance provides that the distribution of new development within the MXD District above and beyond three million, three hundred thirty-three thousand (3,333,000) square feet of Gross Floor Area (GFA), referred to as Infill GFA, must be described through the preparation of an Infill Development Concept Plan (IDCP) that would be subject to review and special permit approval by the Planning Board. The IDCP is required to include a program for current and future development, a site plan for all proposed new development including Innovation Space and Active Ground Floor Uses, a summary of current and proposed future uses on building sites, a development phasing plan, a transportation impact study, a housing program, an open space plan, a street and public infrastructure improvement plan, a plan illustrating proposed building scale, height and massing with studies of potential environmental impacts and mitigation measures, a set of urban design guidelines, proposed modifications, if any, to the development plans then approved pursuant to the Massachusetts Environment Policy Act (MEPA) and an update on implementation of required mitigations from MEPA, a sustainability plan and a Retail Plan. Special permit approval of the IDCP satisfies the Project Review Special Permit requirements (Section 19.20) for development authorized within the IDCP, with future building phases subject to continuing design review in accordance with a process set forth in the special permit conditions.

This is the second amendment to the IDCP that was approved in early 2017 and amended once on January 31, 2019. The amendment involves the demolition of the Blue Garage and 250 Binney Street (the latter of which was contemplated in the original IDCP, but not in the most recent amendment). In their place, the proposal includes the following new elements:

- Construction of a vault to accommodate a below-grade electrical transformer substation for the public utility company Eversource.
- Residential Building South, a new 400' residential building along Broadway consisting of approximately 420,000 gross square feet and up to 465 residential dwelling units, which consolidates the required housing that the current IDCP permits as two separate buildings.
- Commercial Building "C", a new 250' commercial office/laboratory building along Binney Street consisting of approximately 400,000 gross square feet.
- Commercial Building "D", a new 250' commercial office/laboratory building at the present site of 250 Binney Street, consisting of approximately 400,000 gross square feet.
- A new public open space called "Center Plaza", consisting of approximately 18,000 gross square feet, which would be situated above the electrical transformer substation vault and replace the current open spaces situated north and south of the Blue Garage.

In addition to these elements, the site plan also includes the construction of two underground, connected parking garages below Commercial Buildings C & D to serve the users of the new building.

FINDINGS

After review of the Application Documents and other documents submitted to the Planning Board, testimony given at the public hearings, and review and consideration of the applicable requirements and criteria set forth in the City of Cambridge Zoning Ordinance (“Zoning Ordinance” or “Ordinance”) with regard to the amendment to the Concept Plan being sought, the Planning Board makes the following Findings.

Section 14.32.2.5 of the Zoning Ordinance provides the following guidance in making the Board’s findings:

Amendments. Major or Minor Amendments to the Concept Plan may be approved as set forth in Section 12.37 of the Zoning Ordinance after review and approval by the CRA, with Major Amendments requiring the granting of a special permit by the Planning Board and Minor Amendments requiring a written determination by the Planning Board. The conditions of the special permit may specify what types of modifications would constitute Major or Minor Amendments.

The applicable criteria are discussed in the following sections of these Findings.

1. Major Amendment to the IDCP Special Permit (Sections 12.37 and 12.36)

The Planning Board finds that the proposed amendment to IDCP is in general conformance with the criteria set forth in Section 12.35.3, as explained in detail below.

The Development Proposal

(1) conforms with the General Development Controls set forth in Section 12.50, and the development controls set forth in the specific PUD district in which the project is located.

The amended IDCP remains in conformance with the provisions of Article 14.000 of the Zoning Ordinance as they were most recently amended by the City Council in 2021. The IDCP conforms to the District Development Limitations in Section 14.32, and because the project is utilizing Infill GFA, including Utility Project GFA, there is no maximum Floor Area Ratio (FAR) requirement, as set forth in Section 14.33. The proposed development modifications conform to the provisions of Section 12.50 in relation to roadways, utilities and public works, landscaping and environmental performance standards.

(2) conforms with adopted policy plans or development guidelines for the portion of the city in which the PUD district is located.

The MXD District is a special zoning district with specific requirements in Article 14.000 intended to allow a diversity of land uses in close proximity, within a limited area; to promote a balance of land uses; to facilitate development proposals responsive to current and future market conditions; to facilitate integrated physical design; and to encourage

interaction among activities located within the District. The zoning amendment adopted by the City Council in 2021, based on a culmination of community-based planning efforts, increased the capacity for commercial development in the MXD district in exchange for the siting of an Eversource electrical transformer substation on the site of the Blue Garage. This amendment also allowed for the consolidation of residential uses, previously contemplated in two distinct buildings, to be built in a taller, single residential building on the site. The relocation of above-ground parking into two underground parking garages creates additional land area to be used for public open space, which helps to accomplish one of the goals of the 2013 Kendall Square Planning Study to increase the network and accessibility of open spaces in the Kendall Square neighborhood.

(3) *provides benefits to the city that outweigh its adverse effects.*

As indicated by the Applicant, the amended IDCP helps to implement the vision set forth in the recently adopted zoning changes, and helps to facilitate a City-prioritized infrastructure project that helps to serve the present and future electricity needs of the Cambridge community. On the whole, the proposed amendment to the IDCP will continue to provide a net benefit to the city regarding the considerations below. In addition to the specific considerations set forth in Section 12.35.3, the IDCP will continue to provide benefits required in the 2015 zoning amendment and related commitments. These benefits include required residential development that will be delivered before or simultaneously with the phases of commercial development that will provide housing affordable to low-, moderate- and middle-income households. Other benefits as described by the Applicant include housing fund contributions per zoning requirements, transportation and open space enhancements, the provision of new retail space along Broadway, and the significant payment of development fees to the Cambridge Redevelopment Authority (CRA) that are used for additional community development activities.

In making this determination the Planning Board shall consider the following:

(a) *[The] quality of the site design, including integration of a variety of land uses, building types, and densities; preservation of natural features; compatibility with adjacent land uses; provision and type of open space; provision of other amenities designed to benefit the general public*

The development proposed within the IDCP will continue to include a mix of residential, office, laboratory and retail uses through the redevelopment of existing building sites. New buildings will be of a high quality, in accordance with the design guidelines included within the IDCP and will be subject to continuing design review by the Planning Board and the CRA.

The amended plan also includes a new open space on the present site of the Kendall Blue Garage called Center Plaza, which will be made accessible to the public and contain additional recreational and programming opportunities for residents, tenants and visitors. New connections and recreational features will be

added to the site to better link the site, both physically and visually to the Loughrey Walkway/Kittie Knox Bike Path and adjacent planned streets, paths and open space amenities at the Volpe Redevelopment Site.

(b) traffic flow and safety

The IDCP amendment is not expected to have a substantial adverse impact on traffic flow and safety, as discussed further below in the transportation impact findings related to Section 19.20. The proposed amendment includes improvements to the existing East and West service drives on the property into multi-modal woonerfs, and includes site elements and programming that encourage the use of alternative modes of transportation.

(c) adequacy of utilities and other public works

The proposed amendment to the IDCP has been reviewed by the Department of Public Works (DPW), which provided a communication to the Planning Board dated September 22, 2021, indicating that the development will be able to meet applicable standards for utilities and public works. Formal complete engineering review will be undertaken by the DPW at each phase of the development, at the time of the Building Permit Application, to confirm that all DPW Standards have been met.

(d) impact on existing public facilities within the city

Aside from the issues mentioned above, the proposed modifications are not anticipated to result in any additional impact on other public facilities. Public utilities and infrastructure will be improved in concert with the development proposed on individual building sites.

(e) potential fiscal impacts

The proposed modifications are not expected to result in negative fiscal impacts for the project or the City.

14.32.2.2 Findings and Approval. The Planning Board shall grant a special permit approving a Concept Plan upon finding that the new development identified within the plan meets the criteria for approval of a Planned Unit Development set forth in Section 12.35.3(3) of the Zoning Ordinance and the criteria for approval of a Project Review Special Permit set forth in Section 19.25 of the Zoning Ordinance.

The Planning Board finds that the proposed amendment to IDCP is in general conformance with the Project Review Special Permit criteria set forth in Section 19.20 of the zoning ordinance, as explained in detail below.

(19.25.1) Traffic Impact Findings. Where a Traffic Study is required as set forth in Section 19.24 (2) the Planning Board shall grant the special permit only if it finds that the project will have no substantial adverse impact on city traffic within the study area as analyzed in the Traffic Study. Substantial adverse impact on city traffic shall be measured by reference to the traffic impact indicators set forth in Section 19.25.11 below.

(19.25.11) Traffic Impact Indicators. In determining whether a proposal has substantial adverse impacts on city traffic the Planning Board shall apply the following indicators. When one or more of the indicators is exceeded, it will be indicative of potentially substantial adverse impact on city traffic. In making its findings, however, the Planning Board shall consider the mitigation efforts proposed, their anticipated effectiveness, and other supplemental information that identifies circumstances or actions that will result in a reduction in adverse traffic impacts. Such efforts and actions may include, but are not limited to, transportation demand management plans; roadway, bicycle and pedestrian facilities improvements; measures to reduce traffic on residential streets; and measures undertaken to improve safety for pedestrians and vehicles, particularly at intersections identified in the Traffic Study as having a history of high crash rates.

The indicators are: (1) Project vehicle trip generation weekdays and weekends for a twenty-four hour period and A.M. and P.M. peak vehicle trips generated; (2) Change in level of service at identified signalized intersections; (3) Increased volume of trips on residential streets; (4) Increase of length of vehicle queues at identified signalized intersections; and (5) Lack of sufficient pedestrian and bicycle facilities. The precise numerical values that will be deemed to indicate potentially substantial adverse impact for each of these indicators shall be adopted from time to time by the Planning Board in consultation with the TPTD, published and made available to all applicants.

The Applicant submitted a detailed transportation analysis, which was reviewed by the Traffic, Parking and Transportation Department (TP+T) as a supplement to the project's original Transportation Impact Study (TIS) and certified by TP+T on August 6, 2021. As communicated in a memorandum from TP&T dated September 24, 2021, the amendment creates additional Planning Board Special Permit Transportation Criteria exceedances, including level of service (LOS) exceedances, lane queue exceedances, and exceedances related to additional traffic on residential streets. However, the memo noted that the proposed development would cause significantly more traffic if not for the area's transit-oriented nature and proposed TDM measures. In a follow-up memorandum dated December 10, 2021, TP+T proposed an updated transportation mitigation program to appropriately address the impacts being generated by the proposed development. Recommended mitigation measures include, among other measures, reduced off-street parking meeting the new maximum ratios per amended MXD zoning, additional electric vehicle supply equipment, a robust bicycle valet parking program, funding for the design and reconstruction of Binney Street between Fifth and Sixth Street, and an increased Kendall Square Transit Enhancement Program (KSTEP) contribution.

Therefore, upon consideration of the transportation analysis, the communications from TP&T, and the agreed-upon mitigation measures, the Planning Board finds that the

development modifications proposed in the amended IDCP will not result in substantial adverse impact on city traffic in the area.

(19.25.2) Urban Design Findings. The Planning Board shall grant the special permit only if it finds that the project is consistent with the urban design objectives of the city as set forth in Section 19.30. In making that determination the Board may be guided by or make reference to urban design guidelines or planning reports that may have been developed for specific areas of the city and shall apply the standards herein contained in a reasonable manner to nonprofit religious and educational organizations in light of the special circumstances applicable to nonprofit religious and educational activities.

The Board finds that the amended IDCP, as proposed, remains consistent with the Urban Design Objectives set forth in Section 19.30, along with the more specific plans and guidelines established by the City for the Kendall Square area. The Board acknowledges that the IDCP presents development in conceptual form, and therefore makes the below findings based on the overall concept plan presented for the development. The detailed designs of proposed new buildings and site improvements will be reviewed further by the Board in accordance with the Conditions of this Decision and with the design guidelines submitted as part of the IDCP, which also reference the K2 and Volpe Design Guidelines, and will serve as the basis for review during Continuing Design Review as further described below.

(19.31) New projects should be responsive to the existing or anticipated pattern of development.

As discussed in the findings above, the IDCP continues to follow the extensive planning undertaken during the Kendall Square Planning Study and the planning efforts informing the amendments to Article 14.000 of the Zoning Ordinance in early 2021. The proposed IDCP amendment continues the mixed-use development pattern that is prevalent in the MXD district, while providing ground-floor retail along Broadway, promoting a more pedestrian-oriented and bicycle-friendly streetscape, and improving public open space and connections.

(19.32) Development should be pedestrian and bicycle-friendly, with a positive relationship to its surroundings.

The proposed amendment to the IDCP will complement the existing development pattern along Binney Street and Broadway. The proposed site improvements will also enhance the public realm for pedestrians and bicyclists with redesigned East and West Plaza drives to function as multi-modal woonerfs. The proposed new building sites will feature pedestrian entrances at the most prominent locations and will provide short and long-term bicycle parking, a new Bluebikes station, and a complimentary bicycle parking valet for users of the new buildings. At the interior of the site, the roof of the Eversource substation vault will become the base for a new Center Plaza which will introduce greenery, light and air to the center of the site and act as a key amenity for residents, tenants and visitors. New connections will be created to planned future open spaces in the area, as well as the Loughrey Walkway and Kittie Knox Bike Path further east.

(19.33) The building and site design should mitigate adverse environmental impacts of a development upon its neighbors.

The IDCP contains studies of anticipated wind, shadow and noise impacts from proposed new development. Approaches to manage environmental impacts are also included in the design guidelines for the IDCP, which are subject to further review and refinement, and the specific environmental impacts of each proposed building will be considered in more detail through the continuing design review process for that building. As required by this Decision, the Applicant will be required to submit an Environmental Comfort Plan at the time of design review for the Center Plaza, which details anticipated heat, noise, vibration, and air impacts from the exhaust of the electrical substation.

(19.34) Projects should not overburden the City infrastructure services, including neighborhood roads, city water supply system, and sewer system.

As previously noted in these findings, the modifications to the IDCP have been reviewed by DPW and are expected to meet all applicable standards for infrastructure and utilities, subject to further engineering review of each proposed building. New development will also be subject to sustainable design requirements and will employ measures set forth in Section 14.74 of the Zoning Ordinance and in greater detail in the Sustainability section of the proposed IDCP, which are based on the enhanced sustainability recommendations of the Kendall Square Planning Study.

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

The IDCP, in concept, would involve the demolition of the Kendall Blue Garage and 250 Binney Street and the construction of an electrical transformer substation, two new commercial office/laboratory buildings, a new residential building, and the construction of an interior public open space. The buildings to be demolished as part of this proposed amendment are not considered historically significant. The general scale and massing of the proposed new buildings on the site, as presented most recently to the Planning Board, have been designed to respond to the context of surrounding buildings and spaces. It will also result in a more pedestrian-oriented site with robust bicycle and pedestrian connections to nearby open spaces.

(19.36) Expansion of the inventory of housing in the city is encouraged.

The IDCP amendment proposes to consolidate the approved residential GFA formerly located at 135 Broadway and 290 Binney Street into one residential building located at 135 Broadway. As presented, the amendment will enable the residential phase of the plan to advance on a faster timeline because this residential phase is timed to coincide with the next commercial phase.

(19.37) Enhancement and expansion of open space amenities in the city should be incorporated into new development in the city.

The IDCP amendment includes the addition of new open space to the District and creates new connections to the area's existing and planned open space network.

2. Special Permit for reduction of green roofs requirement (Section 22.35.3)

22.35.2 Requirement.

(b) In the case of non-residential or mixed-use buildings in which at least half of the Gross Floor Area is devoted to one or more of the non-residential uses listed below (with reference to the Table of Use Regulations, Section 4.30 of this Zoning Ordinance), excluding any municipal buildings, at least 80% of the roof area of the building as measured in plan view, excluding those portions of the roof listed above, shall be devoted to Green Roof Area or Biosolar Green Roof Area:

- 1. Transportation, Communication & Utility Uses (Section 4.32);*
- 2. Educational Purposes (Section 4.33-b.);*
- 3. Noncommercial Research Facilities (Section 4.33-c.);*
- 4. Other Institutional Uses (Section 4.33-h.);*
- 5. Office and Laboratory Use (Section 4.34);*
- 6. Retail Business and Consumer Service Establishments (Section 4.35);*
- 7. Open Air or Drive In Retail & Service (Section 4.36);*
- 8. Light Industry, Wholesale Business and Storage (Section 4.37); or*
- 9. Heavy Industry (Section 4.38).*

22.35.3 Exemption. The Planning Board may grant a special permit to reduce the required Green Roof Area, Biosolar Green Roof Area, or Solar Energy System below the area required by Section 22.35.2, provided that each square foot so reduced be compensated by a unit price contribution to the Cambridge Affordable Housing Trust. This unit price shall be determined based on the average costs to design, install, and maintain green roofs and rooftop solar energy systems in Cambridge using actual cost figures to the extent possible, shall be subject to annual adjustment based on standard construction cost indices, and shall be calculated, and recalculated approximately every three years, by the Cambridge Community Development Department. All such funds contributed to the Trust shall be dedicated to the design and incorporation of Green Roof Area, Biosolar Green Roof Area, or Solar Energy Systems into new or existing affordable housing developments.

The individual building sites for this proposal will be subject to future design review by the Planning Board. At the time of this special permit, building plans are illustrated schematically, with further design refinement to occur later. It is anticipated that the specific reduction in applicable green roof area will be quantified as part of continuing design review for the respective building in Phase 3.

The Permittee has indicated that it intends to provide green roofs on Commercial Building C, Commercial Building D, and Residential Building South, and make best efforts to meet the minimum 80% green roof area requirement. These green roofs are one part of a larger sustainable design approach that includes, among other techniques, district stormwater management, rainwater harvesting tanks, solar arrays, permeable pavement, and an integrated building design approach.

Due to these efforts to increase the energy performance of the building and site as a whole, and with consideration to the conditions set forth in the Zoning Ordinance and in this Special Permit to make a required contribution to the Cambridge Affordable Housing Trust, the Planning Board finds that the requested reduction in the required Green Roof Area for the Project may be granted.

3. Modification of Bicycle Parking Standards (Section 6.108)

(6.108.3) Findings and Approval. Upon granting a special permit to modify any requirements of this Section 6.100, the Planning Board shall make a general determination that the proposal is consistent with the purpose of this Section 6.100 and that the Bicycle Parking Plan proposes a quantity, design and arrangement of bicycle parking that will serve bicycle users in a way that is sufficiently comparable, given the circumstances of the specific project, to the bicycle parking that would be required under the regulations of this Section 6.100. The Planning Board shall also make specific determinations applicable to the modifications being sought as set forth below:

The Board finds that, given the unusual infrastructure needs being accommodated on the site, the proposal for bicycle parking is consistent with the purpose of the bicycle parking requirements in Section 6.100, and that a campus-style bicycle valet system will help to achieve the City's goal of serving bicycle users that is sufficiently comparable to traditional bicycle parking systems. The requested modification is necessitated by the specific circumstances of the site and the proposal.

(a) Where an alternative design or layout of Bicycle Parking Spaces is proposed, the Planning Board shall determine that such design or layout shall be durable and convenient for the users whom it is intended to serve. Where new technologies are proposed, the Board may require that the Applicant demonstrate such technologies for review by City staff.

The amended IDCP illustrates a combination of short-term, long-term, and a comprehensive bicycle parking valet system to serve the users of Commercial Building C, Commercial Building D, and Residential Building South. All three buildings will contain a minimum of twelve short-term bicycle spaces in racks near the proposed building entrances. Residential Building South will contain at least twenty (20) long-term bicycle parking spaces, and an alternatives analysis will be submitted alongside the design review submission for the building which analyzes the feasibility of adding additional long-term bicycle parking spaces and additional bike storage within the

building. A complimentary, 24/7 bike valet will be deployed in the ground floor of the commercial buildings which will provide the capacity for up to 610 additional bicycles. The valet system will be accompanied by a robust operations plan and monitoring/reporting plan, subject to review and approval by the City. With these strategies in place, the proposal makes significant effort to provide convenient and usable bicycle parking, given the constraints on the site.

- (b) *Where modifications to the location or quantity of bicycle parking is proposed, the Planning Board shall determine that the Bicycle Parking Plan will satisfactorily serve the needs of all expected users, based on quantitative and/or qualitative evidence provided by the Applicant. Such a modification may be appropriate for a campus master plan or other large development site within which bicycle parking is planned comprehensively across an area instead of on a specific site-by-site basis.*

The majority of the bicycle parking provided on the site will be encompassed in a complimentary, 24/7 bicycle parking valet to serve the users of Commercial Building C, Commercial Building D, and Residential Building South. Initially, the valet system will be located in the ground floor of Commercial Building C, facing the Center Plaza, and permanent valet operations are planned to then transition to the ground floor of Commercial Building D once construction is complete. The Permittee has committed to a valet system that is fully staffed at all times, secured, and free for all users. Additionally, a minimum of 10% of the bike valet spaces will have electric charging capabilities.

Prior to the commencement of valet parking operations, the Permittee will submit a valet bicycle parking operations plan and valet bicycle parking monitoring and reporting plan, which will be subject to review and approval by the City. The monitoring and reporting program will include a combination of user and retrieval data, as well as surveys and review from valet users; and will be required periodically for a period of up to ten (10) years once the program is fully operational.

Full details of the bicycle parking program will be analyzed as part of continuing design review for the individual building sites and the Center Plaza, including proposed final locations, dimensions and layout, access points, and circulation routes. With these safeguards in place, the Board believes the Bicycle Parking Plan will satisfactorily serve the needs of all expected users.

4. General Criteria for Issuance of a Special Permit (10.43)

The Planning Board finds that the project continues to meet the General Criteria for Issuance of a Special Permit, as set forth below.

10.43 Criteria. Special permits will normally be granted where specific provisions of this Ordinance are met, except when particulars of the location or use, not generally true of the district or of the uses permitted in it, would cause granting of such permit to be to the detriment of the public interest because:

(a) It appears that requirements of this Ordinance cannot or will not be met, or ...

The requirements of the MXD zoning district will continue to be met with the proposed amendment.

(b) traffic generated or patterns of access or egress would cause congestion, hazard, or substantial change in established neighborhood character, or ...

Transportation impacts have been carefully assessed as described above in these Findings. No changes to patterns of access or egress are anticipated that would cause substantial adverse impact.

(c) the continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would be adversely affected by the nature of the proposed use, or ...

The development continues to be consistent with the zoning requirements for the area and will not adversely impact the operation or development of adjacent uses, or the impacts will be mitigated as set forth above in these Findings.

(d) nuisance or hazard would be created to the detriment of the health, safety and/or welfare of the occupant of the proposed use or the citizens of the City, or ...

The proposed uses will not result in any nuisance or hazard. The development will be required to conform to all applicable health and safety codes as well as measures recommended by DPW to meet resiliency requirements.

(e) for other reasons, the proposed use would impair the integrity of the district or adjoining district, or otherwise derogate from the intent and purpose of this Ordinance, and ...

The proposed changes are consistent with the anticipated character of the district as established through the City's planning and zoning.

(f) the new use or building construction is inconsistent with the Urban Design Objectives set forth in Section 19.30.

The development continues to be consistent with the Citywide Urban Design Objectives, as set forth further above in these Findings.

DECISION

Based on a review of the Application Documents, testimony given, and comments made at the public hearings, and the above Findings, the Planning Board hereby GRANTS the requested Major Amendment to the Infill Development Concept Plan (IDCP) in the MXD District granted by Planning Board Decision #315, subject to the following conditions and limitations. Hereinafter, for purposes of this Decision, the Permittee shall mean the Applicant for the requested Major Amendment and any successor or successors in interest.

In making this Decision, the Board approves the Infill Development Concept Plan contained in the Application Materials dated July 1, 2021 and November 5, 2021, to the extent that it modifies the original Infill Development Concept Plan and subsequent amendments previously approved by the Planning Board.

This Decision shall be subject to the conditions and limitations set forth below, which include the conditions of the Planning Board's previous approval of Special Permit #315 and its subsequent Major and Minor Amendments, as modified by this Amendment #2.

Outline of conditions:

1. Approved Development Program.
2. Open Space.
3. Design Review.
4. Sustainability.
5. Traffic and Infrastructure Improvements.
6. Retail and Active Uses.
7. Housing.
8. Construction Management.
9. Other Municipal Ordinances.
10. Timing and Phasing.
11. Amendments.
12. Additional Requirements for Phase 1 Development.
13. Additional Requirements for Phase 2 Development.
14. Additional Requirements for Phase 3 and 4 Development.

List of appendices incorporated herein and made a part hereof:

- A. Site Plan
- B. Development Summary
- C. Open Space Summary
- D. Phasing Plan
- E. Transportation Mitigation Program & Monitoring Requirements
- F. Sustainability Plan & Guidelines
- G. CDD Urban Design Reports

1. Approved Development Program

All development authorized by this Special Permit shall be consistent, in concept, with the Infill Development concept Plan (IDCP) materials dated July 1, 2021 and all supplemental plan materials submitted to the Planning Board prior to issuance of this Special Permit as listed in the Application Documents, and the applicable requirements of the Cambridge Zoning Ordinance (“CZO”). The following characteristics of the IDCP are specifically permitted and are summarized in Appendix B, Development Summary:

a. Aggregate Development

- i. **Total Development.** The maximum Gross Floor Area (GFA) permitted within the MXD District shall not exceed 5,073,000 square feet, in the aggregate, as more specifically set forth in Appendix B. Such GFA shall not include areas that are specifically exempted from the calculation of GFA by Section 14.32.6 of the CZO.
- ii. **Mix of Uses.** Subject to the provisions of Section 14.32.1, within the MXD District as a whole, GFA devoted to non-residential uses shall not exceed 4,473,000 square feet, and the remaining GFA permitted in the District shall be limited to multifamily residential uses. Such GFA shall not include certain areas that are specifically exempted from the calculation of GFA by Section 14.32.6 of the CZO.
- iii. **Innovation Space.** Approximately 105,200 square feet of floor area within the MXD District shall be designated as Innovation Space according to the standards set forth in Section 14.32.5. Such floor area shall be exempt from the calculation of aggregate GFA by Section 14.32.6 and shall fulfill the requirements associated with new commercial development authorized by this Special Permit as set forth in Section 14.32.5.
- iv. **Middle-Income Housing.** Approximately 20,000 square feet of floor area shall be devoted to Middle-Income Units according to the standards set forth in Section 14.35. Such floor area shall be exempt from the calculation of aggregate GFA and shall fulfill the requirements associated with new residential development authorized by this Special Permit as set forth in Section 14.35.
- v. **Retail Uses.** Approximately 57,700 square feet of floor area in the MXD District, as depicted in the approved IDCP, shall be devoted to Retail and Consumer Service Uses. In accordance with Section 14.38, Retail and Consumer Service Uses or active public gathering space (whether enclosed or open) shall occupy a minimum street frontage length of seventy-five percent (75%) of the building facades fronting Main Street, Broadway and Ames Street, except where a reduction is authorized under Section 14.38 of the CZO.

- vi. New Development Authorized by IDCP. This Special Permit shall authorize new development, conversion of mechanical space to GFA, demolition of existing buildings, and exclusion of existing and new GFA that is made exempt from zoning limitations pursuant to Section 14.32.6 of the CZO, as set forth above, and shall result in the following development program (all figures shown below are in square feet unless otherwise noted):
1. Phase 1 (Commercial Building A)
 - a. Total Building GFA: 441,614
 - b. Demolished GFA: 78,636
 - c. Net GFA: 362,978
 - d. Exempt GFA: 60,496
 - e. Net New GFA: 302,482
 2. Phase 2 (Commercial Building B)
 - a. Total Building GFA: 385,423
 - b. Demolished GFA: 117,201
 - c. Net GFA: 268,222
 - d. Exempt GFA: 44,704
 - e. Net New GFA: 223,518
 3. Phase 3 (Residential Building South & Commercial Building C)
 - a. Total Building GFA: 832,700
 - b. Demolished GFA: N/A
 - c. Net GFA: 832,700
 - d. Exempt GFA: 20,700
 - e. Net New GFA: 812,000
 4. Phase 4 (Commercial Building D)
 - a. Total Building GFA: 450,576
 - b. Demolished GFA: 62,576
 - c. Net GFA: 388,000
 - d. Exempt GFA: N/A
 - e. Net New GFA: 388,000
 5. Broad Institute Conversion
 - a. The conversion of approximately 14,000 square feet of floor are currently used for building mechanical functions and thereby exempt from GFA calculations at the Broad Institute's 75 Ames Street location to commercial uses that shall cause it to be included in the aggregate GFA of the District. This development will be undertaken by the Broad Institute separately and not necessarily in sequence with other phases of the IDCP.

- vii. Other Development Not Included in IDCP. Other development in the MXD District that is outside the purview of this Special Permit includes the development authorized by Special Permit PB #294, which includes approximately 200,000 square feet of residential use and approximately 20,000 square feet of lower-floor commercial uses at 88 Ames Street, and the development of up to 60,000 square feet within the aggregate 4,473,000 square feet of GFA reserved for non-residential uses, which shall require a separate special permit from the Planning Board in accordance with Section 14.72.3
- viii. Modifications of Aggregate Development Program. Any change to the approved Aggregate Development Program that alters the GFA figures set forth in this Condition #1-a. of this Decision by no more than 10,000 square feet may be approved by the Community Development Department (CDD) as an administrative change without requiring an Amendment by the Planning Board, provided that the resulting development remains in substantial conformance with applicable sections of the CZO, the approved IDCP and the Conditions of this Special Permit. Any further change to the Aggregate Development Program, provided that the resulting program conforms to zoning limitations and that the total change amounts to no more than five percent (5%) of the GFA of new development authorized by this Special Permit, may be approved as a Minor Amendment pursuant to Condition #11 of this Decision. Additionally, any increase in Retail Uses accompanied, to the extent necessary, by a commensurate decrease in other approved uses may be approved as a Minor Amendment.
- ix. Parking. This Special Permit, as amended, authorizes a maximum total of 3,750 parking spaces in the MXD District, including managed spaces. In accordance with the approved IDCP, one existing above-grade parking garage shall be demolished and replaced with up to 1,584 below-grade parking spaces, and two existing above-grade parking garages shall be retained, with modifications to provide more efficient self-parking striping and the provision of managed/valet spaces (Section 1.a.x. of Original Decision).
- x. Bicycle Parking. A minimum of 262 long-term and 160 short-term bicycle parking spaces shall be provided in accordance with the standards of Section 6.100. Additionally, the construction and management of a 610-space complimentary bicycle parking valet facility, further described in Condition #14(b) below, shall be provided for users of the buildings constructed in Phases 3 and 4 of the IDCP, pursuant to the provisions of Section 14.52.6.2 of the CZO. Any modifications that deviate from the approved bicycle parking plan authorized by this Special Permit shall require an Amendment from the Planning Board pursuant to Condition #11 of this Decision. Monitoring and reporting requirements of the proposed Bicycle Parking Valet Program are further detailed in this Decision.
- xi. Public Bicycle Sharing Stations are authorized without limitation. At a minimum, the Permittee shall fully support the purchase, installation and ongoing annual

maintenance of public bicycle sharing stations (i.e., Bluebikes Stations) on the Development Parcels in accordance with the transportation mitigation requirements contained in Appendix B and as further detailed in this Decision.

- b. Site Development. The development authorized by this Special Permit shall occur within those Building Sites identified and depicted in the Site Plan contained within the IDCP and included in Appendix A attached to this Special Permit Decision, which are set forth below. For clarity, the figures set forth below include GFA that is exempt from zoning limitations by the provisions of Section 14.32.6.
- i. Commercial Building A, 145 Broadway. This Special Permit authorizes the demolition of an existing commercial building with approximately 78,636 square feet of GFA and the construction of a new commercial building with approximately 441,624 square feet of GFA. Such development has been completed as of the time of this Amendment #2, and any future modifications to the site shall remain subject to the conditions of this Special Permit.
 - ii. Commercial Building B, 325 Main Street. This Special Permit authorizes the demolition of an existing commercial building with approximately 118,965 square feet of GFA and the construction of a new commercial building with approximately 387,187 square feet of GFA. Such development has commenced as of the time of this Amendment #2, and any future modifications to the site shall remain subject to the conditions of this Special Permit.
 - iii. Residential Building South, 135 Broadway (fronting Broadway). This Special Permit authorizes the demolition of a portion of an existing above-grade parking structure and the construction of a new residential building with approximately 420,000 square feet of GFA and up to 465 dwelling units.
 - iv. Commercial Building C, 290 Binney Street. This Special Permit authorizes the construction of an approximately 250' commercial office/laboratory building consisting of up to 412,000 square feet of net new gross floor area.
 - v. Commercial Building D, 250 Binney Street. This Special Permit authorizes the redevelopment of an existing manufacturing/laboratory building into a new, approximately 250' commercial office/laboratory building consisting of up to 450,576 square feet of gross floor area (388,000 new GFA plus replacement of 62,576 existing GFA to be demolished).
 - vi. Broad Institute Office Conversion, 75 Ames Street. This Special Permit authorizes the conversion of approximately 14,000 square feet of exempt mechanical space to usable non-residential GFA within the existing building.
 - vii. Innovation Space, 255 Main Street. This Special Permit authorizes the conversion of approximately 105,200 square feet of existing GFA to Innovation Space, which shall be exempt from aggregate GFA calculations and other GFA limitations

within the MXD District. Any future relocation or redevelopment of the authorized Innovation Space may be approved as a Minor Amendment pursuant to Condition #11 of this Decision provided that the provisions of the Zoning Ordinance are met.

c. Other Dimensional Characteristics.

- i. Height. The Planning Board approves the building heights for the proposed buildings set forth in the IDCP and in Appendix B.
- ii. Building Setbacks and Massing. For all new and substantially renovated buildings authorized by this Special Permit, the GFA, setbacks and building massing shall be as conceptually described and illustrated in the IDCP, subject to the Design Review procedures set forth in Condition #3 of this Special Permit Decision.
- iii. Access and Egress. All primary building entrances, parking facility entrances, bicycle access, and vehicular loading areas shall be in the general locations described and illustrated in the IDCP.
- iv. Bicycle Parking. The Permittee shall install short-term bicycle racks near each primary building entrance, for use by visitors, customers and couriers. Long-term bicycle parking that is convenient and secure shall also be provided for occupants of the Buildings, except where specifically authorized by the Planning Board pursuant to Section 14.52.6.2 of the CZO. All bicycle parking shall be installed in conformance with the requirements for such facilities in Section 6.100, except where specifically authorized by the Planning Board pursuant to Section 14.52.6.2 of the CZO. For Residential Building South, Commercial Building C, and Commercial Building D, bicycle parking shall be provided in accordance with Section 5 of the revised IDCP and as further detailed in this Decision. Short-term and long-term bike parking shall be further reviewed as part of Design Review.
- v. Outdoor Spaces. The conceptual design of open spaces, streetscape types, urban space types, street walls and massing, service access design, landscaping, and exterior lighting shall be as described and illustrated in the IDCP. Notwithstanding the foregoing, the Center Plaza as part of Phase 4 shall be subject to Design Review, as further detailed below.
- vi. Design Review. The specific design of individual Building Sites and the Center Plaza shall be subject to Design Review by the Planning Board, as set forth further in this Decision.
- vii. Modifications. During the Design Review process, or in the event that there is no Design Review process pending for a Building Site, upon application of the Permittee, the Planning Board may approve modifications to the Development Summary in Appendix B that constitute no more than a five percent (5%) deviation in the GFA or building height on any individual Building Site.

- viii. Public Improvements. The Permittee shall implement all improvements to public streets, sidewalks, other spaces and infrastructure as described in the IDCP and elsewhere in this Decision on or before the time required for the completion of such improvements set forth herein. Any such improvements or other development to be undertaken by the Permittee that will impact City streets, City sidewalks, or other City-owned public spaces, or City utilities such as water, sewer, or telecommunications service shall be subject to approval by the applicable City Departments, which may include but are not limited to Traffic, Parking and Transportation Department (TP+T), Department of Public Works (DPW), CDD, Electrical Department, and Water Department.

2. Open Space

- a. As an element of the IDCP, the Planning Board specifically approves the amount, location, and functional characteristics of the Open Space as required in the CZO and such other open spaces as the same is contextually depicted and described in the Open Space Plan section of the IDCP, attached as Appendix C to this Special Permit Decision.
- b. According to the IDCP, the approved development shall result in approximately 300,435 square feet of Public Open Space in the MXD District, exceeding the minimum of 100,000 square feet required by Section 14.42. Such Public Open Space shall be reserved for public use and enjoyment as guaranteed through one or more of the following: retention by the Cambridge Redevelopment Authority (CRA); dedication to and acceptance by the City of Cambridge or other public entity; easements or deed restrictions over such land sufficient to ensure its perpetual reservation for public open space purposes; dedication, by covenant or comparable legal instrument, to the community use of the residents, lessees and visitors to the MXD district for reasonable amounts of time on a regular basis; or lease agreements of ninety-nine (99) years or longer from the private developer or owner to the City or other public entity. The Public Open Space identified as the “Center Plaza” is proposed to be constructed above the electrical transformer substation.
- c. According to the IDCP, the approved development shall result in a total of approximately 463,223 square feet of total open space in the MXD district, including approximately 73,456 square feet within the Ames Street District, which exceeds the minimum of fifteen percent (15%) of the land area (excluding road rights-of-way) within the MXD district, required by Section 14.42.2. Of the total square feet of proposed open space, approximately 302,919 square feet shall be Public Open Space, as that term is defined in Section 14.21.1 of the CZO. Such open space shall be devoted to a combination of public open spaces and private but publicly accessible spaces, which shall contribute to an interconnected network of public spaces in the broader Kendall Square neighborhood, accommodating a variety of activities for employees, residents and visitors, consistent with the place-making goals of the 2013 K2 Final Report.

- d. Creation of and improvements to open space, as described in the IDCP, shall be completed in concert with each Phase of development as set forth in the Timing and Phasing provisions in Condition #10 below. The open space elements associated with each phase shall be reviewed and approved by the Planning Board in connection with its Design Review of that phase of development.
- e. The Planning Board may approve modifications to the proposed open space identified as Binney Street Park as a Minor Amendment in accordance with the Amendment procedures set forth in Condition #11 below and the Additional Requirements for Phases 2 and 3 Development set forth in Condition #13 below.
- f. The final design of the space identified in the IDCP as “Central Plaza” shall be subject to review and approval by the Planning Board pursuant to the Design Review procedures set forth in Condition #3 of this Decision.

3. Design Review.

- a. Per Section 14.32.2.2, the approval of this IDCP shall serve to meet any applicable project review requirements of Article 19.000, and no additional Project Review Special Permit shall be required for individual buildings authorized by this Special Permit.
- b. Prior to the issuance of this Amendment #2, the Planning Board had approved the design of Commercial Building A, 145 Broadway, and Commercial Building B, 325 Main, for which no further review and approval by the Planning Board shall be required prior to issuance of a building permit or certificate of occupancy, provided that the final plans submitted to secure a building permit or certificate of occupancy are in substantial conformance with the design approved by the Planning Board. Future design modifications shall be subject to Planning Board review and approval.
- c. In granting this Special Permit, the Planning Board hereby approves in conceptual form the buildings and open spaces within the IDCP as presented in the Application Documents, subject to future design review and approval as set forth below.
- d. Design Review Procedures. Prior to issuance of a building permit for any individual building or applicable open space, a detailed schematic design of each building, along with any open space and landscape elements associated with that phase of development, shall be reviewed and approved in accordance with the procedures set forth below.
 - i. Prior to submission of a design review package for a Building Site or open space, the Permittee shall meet with the Design Review Committee of the CRA to discuss conceptual design approaches to the building and site. The Planning Board shall be notified in advance of any Design Review Committee meeting pertaining to development authorized by this Special Permit Decision and shall have the opportunity to appoint up to two (2) Planning Board members to participate in such meetings.

- ii. At least twenty-eight (28) days prior to submission of a design review package to the Planning Board, the Permittee shall provide a draft set of plans to CDD, TP+T, and DPW staff for review and comment on such matters as the clarity of the plans and potential issues regarding conformance with City standards. Such plans shall include plans for any public improvements associated with development on a Building Site or open space, including but not limited to construction of public streets or infrastructure. The Permittee shall also provide draft Green Building Review materials to CDD staff for review and comment.
- iii. Following the submission of a design review package to the Planning Board, containing materials as set forth in Paragraph (e) below, the Planning Board will schedule a design review session to take place at a Planning Board meeting at which the review and possible approval of the building design has been placed on the agenda. Submitted materials will be made available to the public at least two weeks prior to the scheduled design review. For each building and/or site subject to these design review procedures, at least one Planning Board design review session shall be held jointly with the CRA Board, unless the Chair of the Planning Board and Chair of the CRA Board mutually agree that such a jointly held meeting is not necessary in a particular instance.
- iv. The Planning Board shall entertain written and oral comments from members of the public on the proposed design prior to making a determination of approval. The Permittee may also submit interim materials for review and comment by the Planning Board prior to seeking final design approval.
- v. The Planning Board shall approve the schematic design of each building by an affirmative vote of at least five (5) Planning Board members present at the meeting, upon finding that the design is generally consistent with the design standards and guidelines listed in Paragraph (f) below. In granting approval, the Planning Board shall provide written comments describing how the project responds to the applicable standards and guidelines, and may provide a list of detailed design elements to be made subject to continuing review by CDD or other City staff. The Planning Board may also request additional information to be provided to the Board for review and comment after design approval has been granted.
- vi. Subsequent to Planning Board design review and approval of a Building Site or open space, but prior to issuance of a building permit, the Permittee shall prepare and submit seventy-five percent (75%) design drawings of any public improvements for review and comment by applicable City departments prior to submitting final construction drawings for approval. Prior to issuance of a building permit, all applicable City departments shall certify to the Planning Board and to the Superintendent of Buildings that either the design of such public improvements has been approved, or that such approval will be given at some specific future time subsequent to issuance of the building permit.

- vii. Prior to issuance of a building permit, CDD (and other departments as applicable) shall certify to the Superintendent of Buildings that the plans submitted to secure the building permit are in substantial conformance with the schematic design approved by the Planning Board and that all detailed design elements made subject to continuing review by staff have been sufficiently addressed. CDD may present any design changes made subsequent to design approval to the Board for its review and comment. If any design changes are found to be substantial, the Board may schedule an additional design review session to consider approval of such changes.
 - viii. Prior to issuance of a building permit, applicable City departments including but not limited to CDD, TP+T, DPW, and other departments that may have a purview over a particular aspect of the development as determined by CDD or by the Superintendent of Buildings shall review the plans submitted to secure the building permit for compliance with City requirements or standards pertaining to design elements including but not limited to parking facilities, bicycle parking facilities, street and private trees, loading facilities, bicycle and vehicular access and egress, public bicycle sharing stations, stormwater management systems, Green Building requirements and historic protections, if applicable.
 - ix. Prior to issuance of a building permit, CDD shall certify to the Superintendent of Buildings that all Conditions of this Special Permit are being met.
 - x. Prior to the final selection of façade materials and colors, the Permittee shall erect an on-site mock-up of an exterior wall displaying selected materials and composition. Planning Board members will be notified in order to view the mock-up and provide comments to CDD, and CDD will review and provide all comments to the Permittee prior to the commencement of exterior façade construction.
- e. Materials. The Permittee shall provide the following materials in the design review package for each building and open space subject to continuing design review:
- ix. A dimensional form describing the Gross Floor Area, building height, setbacks, size of open space, and vehicular and bicycle parking spaces, as well as cumulative dimensional information for all development authorized by this Special Permit that has been previously constructed or has received final Design Review approval from the Planning Board.
 - x. A description of all uses intended to be located within the new or renovated buildings.
 - xi. A Site Development Plan, revised as necessary, showing the proposed boundary lines for the subject building sites and/or open space and other building sites and open spaces within the IDCP.

- xii. A site plan (or plans) of the entire building site and/or open space associated with that phase of development, illustrating, in detail:
 - A. Landscape features including hardscape and vegetated surfaces, trees and other plantings, outdoor furniture, outdoor lighting, bicycle parking, activity spaces, public art, signage and wayfinding, and any other design elements.
 - B. Conceptual plans for all roadways or sidewalks adjacent to the building site and/or open space, including any planned changes approved or to be approved in the future by City departments.
 - C. Circulation routes to, from and through the site for pedestrians, bicyclists, and passenger vehicles and service or delivery vehicles.
 - D. The locations of all access and egress points for pedestrians, bicyclists, passenger vehicles and service or delivery vehicles.
- xiii. Scaled and dimensioned floor plans of each level of the proposed building.
- xiv. A scaled and dimensioned roof plan, illustrating all features proposed to be located on the roof including the arrangement of any rooftop mechanical systems and enclosures, and any proposed lighting that will be visible from outside the building. Such roof plan shall also provide sufficient information to demonstrate conformance with the City's Green Roofs Ordinance.
- xv. Scaled and dimensioned elevations of each side of the proposed building with labels and descriptions of proposed exterior façade materials, which shall include any visible rooftop mechanical equipment, screening devices, exterior vents, lighting fixtures and other appurtenances, as well as focused elevations of each of the ground floor facades.
- xvi. Perspective views of the Building Site and/or open space from significant vantage points, including public streets from which the building will be visible at a distance, pedestrian views from all sides of the building to illustrate how the building will relate to the adjacent public realm, and nighttime views to illustrate the appearance and illumination of the building after dark.
- xvii. Preliminary Signage Plan depicting, in concept, the anticipated locations and sizes of signage on the building and site, for purposes including but not limited to wayfinding, retail signage and building identification.
- xviii. Lighting Plan describing the selection and placement of light fixtures on the building and site, identifying areas on the site and abutting sites that will be illuminated by such light fixtures, and demonstrating compliance with any lighting regulations that may be applicable to the project at the time of review.

- xix. Sustainability Narrative and supporting materials required to certify compliance with applicable sustainability standards set forth in Section 14.74, and to respond to applicable sustainability guidelines as set forth in the IDCP and in this Special Permit Decision.
- xx. Noise Mitigation Narrative and acoustical report prepared by a professional acoustical engineer, addressing the requirements in Section 13.89.1 and Condition #8 of this Special Permit Decision.
- xxi. Pedestrian Wind Comfort Study, demonstrating anticipated impacts and examining various wind mitigation strategies including modifications to building form and massing.
- xxii. An updated Tree Mitigation & Protection Study, illustrating all existing and proposed trees on the site, including any proposed tree removals and/or relocations. Such a plan shall also include proposed species selection and planting details, and highlight any changes from what is illustrated in the IDCP.
- xxiii. The Permittee shall also assemble the following materials to present to the Planning Board at the design review meeting:
 - A. A physical, contextual scale massing model of the proposed Building Site and/or open space and surrounding buildings and open spaces.
 - B. Samples of materials to be employed for major elements of the building façade for a Building Site and samples of materials to be employed for site elements of open space, including, but not limited to pavement, seating and furniture areas.
- f. Review Standards and Guidelines. In reviewing and approving the schematic design of a Building Site or open space, the Board shall consider the general consistency of the architectural and site design with the following standards and guidelines, provided that in the event of any conflict between the guidelines set forth below and the provisions of Article 14.000 of the CZO, the CZO shall control:
 - i. The IDCP Design Guidelines included within the IDCP and approved by the Planning Board.
 - ii. The Sustainability Standards and Guidelines set forth in the IDCP and included, as excerpts, as Appendix F to this Special Permit Decision. The Planning Board shall also consider additional sustainability standards or guidelines that have been established by the City through amendment to the Zoning Ordinance or other planning initiatives, provided that such standards or guidelines have been communicated to the Planning Board and the Permittee prior to the commencement of the design review procedure for a Building Site.

- iii. Other applicable urban design guidelines for the area, including the Kendall Square Design Guidelines (“K2 Guidelines”) and the Volpe Working Group Design Guidelines (“Volpe Guidelines”).
- iv. The Citywide Urban Design Objectives set forth in Section 19.30 of the CZO.

4. Sustainability.

Development authorized by this Special Permit shall be subject to the sustainability requirements set forth in Section 14.74. Compliance shall be reviewed by CDD at the design review phase as set forth in the Design Review conditions in this Special Permit Decision, and ongoing compliance shall be certified by CDD prior to issuance of a building permit and prior to issuance of a certificate of occupancy for any development authorized by this Special Permit.

5. Traffic and Infrastructure Improvements.

- a. The Permittee shall be required to implement the parking and transportation mitigation program, transportation monitoring program and transportation demand management measures all contained in Appendix E: Transportation Mitigation Program and Monitoring Requirements. Appendix E contains mitigation measures previously approved by Special Permit PB-315 and subsequent amendments, as such measures have been amended by the Planning Board in its approval of this Amendment #2, with reference to the memorandum from TP+T dated December 10, 2021.
- b. The Permittee shall continue to manage parking in accordance with the parking management plan for the Project. Any future revisions to the plan shall be subject to review and approval by TP+T.
- c. The Permittee shall be responsible for the design and installation of all necessary infrastructure and utility improvements both on and off the site needed to support the construction of a specific building within the IDCP. Any and all necessary infrastructure improvements shall be designed to meet all requirements and standards of the City of Cambridge and its relevant departments (including the City Engineer, Department of Public Works, the Water Department and the Electrical Department), and all other legal requirements with regard to the design and installation details of the improvements, as if such facilities were to be installed in City streets.
- d. Where any utility is to be conveyed to the City of Cambridge, it shall be done in a manner acceptable to the City. The Permittee shall prepare all documents necessary to transfer these facilities to the City.

6. Retail and Active Uses.

- a. The Planning Board approves the proposed amount and location of space devoted to retail uses and active public gathering spaces as described and illustrated in the Retail Plan section of the approved IDCP. Such spaces shall be designed and programmed in accordance with the requirements of Section 14.38.
- b. Any additional ground-floor frontage of the buildings authorized by this Special Permit may be devoted to retail uses or other public gathering spaces, subject to review of any design modifications in accordance with the Design Review procedures of this Decision.
- c. Any relocation of retail use or other active public gathering space from the locations depicted in the IDCP to another location within the MXD district may be permitted as a Minor Amendment pursuant to Condition #11 of this Decision, upon a determination by the Planning Board that there will be no reduction in the total amount of such uses and that the proposed relocation will better serve the objectives of the district, and provided that the requirements of Section 14.38 continue to be met.
- d. The Permittee shall consult with the Economic Development Division (EDD) of CDD prior to initiation of marketing and tenanting efforts for any space devoted to retail and consumer service uses within the IDCP, for the purpose of sharing information about outreach strategies, leasing provisions, and programs that might assist in serving local businesses. Such consultation shall include a discussion of efforts to recruit “Independent and Local Retailers” as described in Section 14.32.6, Paragraph (4), Subparagraph (e), in order to fulfill the requirements to exempt certain retail spaces from GFA calculations.

7. Housing.

- a. Residential development authorized by this Special Permit shall be subject to the requirements of Article 14.000 related to housing, including requirements for Middle Income Housing (Section 14.35), Affordable Housing (14.36), and dwelling units for families with children (Section 14.37). Compliance with such requirements shall be certified by the Housing Division of CDD prior to issuance of a building permit, and again prior to issuance of a certificate of occupancy, for residential development authorized by this Special Permit.

8. Construction Management.

- a. Before issuance of a building permit for any Phase of development within the Development Parcels, the Permittee shall prepare a new or updated Construction Management Program consistent with the requirements of Section 18.20, which Program shall be reviewed and approved by the CDD, DPW, the Water Department, TP+T, the Inspectional Services Department, and other departments as deemed appropriate by the City.
- b. The Construction Management Program shall include those elements listed in Section 18.20, with particular attention to ensuring safe and convenient pedestrian access to major public facilities.

- c. In addition to the requirements of Section 18.20, the Construction Management Program shall include a community outreach component, including, at minimum, maintenance of a web site, on-site bulletin board, and e-mail list to provide construction updates, and a designated point of contact to which community members can address questions and receive responses throughout the development process.

9. Other Municipal Ordinances.

All authorized development shall conform to all other requirements of Ordinances of the City of Cambridge, including but not limited to the Parking and Transportation Demand Management Ordinance, the Tree Protection Ordinance, the Asbestos Protection Ordinance, and the Noise Control Ordinance.

10. Timing and Phasing.

- a. Commencement. This Special Permit shall be governed by the provisions of Chapter 40A and Section 10.46, which establish the time within which construction authorized by the Special Permit must commence. Pursuant to Section 10.46, the Permittee shall start construction within two (2) years of the date of filing of this Decision with the City Clerk (not including the time required to pursue or await the final adjudication of an appeal under Section 17 of M.G.L. c. 40A). The Planning Board may approve subsequent extensions of the time for commencement, not to exceed two (2) years per extension, upon determination of good cause demonstrated by the Permittee.
- b. Completion. Construction of the development contained within the IDCP and authorized by this Special Permit shall be completed within ten (10) years of the date of issuance of this Amendment #2 to the Special Permit Decision, provided that if construction on a particular Phase has commenced prior to that date, such Phase shall be entitled to a Certificate of Occupancy so long as construction is continued through to completion continuously and expeditiously and all required improvements associated with that Phase are met. The Planning Board may approve an extension of the completion timeframe upon determination of good cause demonstrated by the Permittee.
- c. Phasing. Development shall occur in four Phases, according to the Phasing Plan set forth in the IDCP, attached as Appendix D to this Special Permit Decision. Each Phase shall consist of the buildings, open spaces, streets, utilities, and other physical improvements set forth in the IDCP (except as they may be modified by this Decision, as the same may be amended, and in the Design Review process) as being located on or immediately adjacent to and serving the Building Sites and open spaces upon which the particular Phase is being constructed. The Permittee may undertake the Phases of development in sequence or simultaneously, provided the following requirements are met:
 - i. Completion of the open space and site improvements included within each Phase, as illustrated in the approved IDCP and Appendix D, and including streets, utilities, and other public improvements, shall be completed prior to issuance of a

final Certificate of Occupancy for development within that Phase. In addition, compliance with the Conditions of this Special Permit applicable to each Phase, including all required mitigation measures, shall be completed prior to issuance of a final Certificate of Occupancy for development within that Phase. However, notwithstanding the foregoing, a Certificate of Occupancy may be issued for development within Phase 4 of the IDCP prior to the completion of the Center Plaza, because the Center Plaza will be built after the completion of the subsurface electrical transformer substation.

- ii. In accordance with Section 14.32.1, a building permit for construction of a residential project of at least four hundred thousand (400,000) square feet shall be issued prior to or concurrently with the issuance of a building permit for any project utilizing Utility Project GFA, which for the purpose of this IDCP Amendment #2 shall include Commercial Buildings C and D. The design review process for a residential project of at least four hundred thousand (400,000) square feet shall also precede, or proceed concurrently with, the design review process for any project utilizing Utility Project GFA. However, there is no limitation on residential development or open space authorized by this Special Permit preceding any non-residential development.
- iii. At no time shall the number of total parking spaces exceed the total number authorized for development within the IDCP. During construction, any parking facilities proposed to serve authorized uses on an interim basis while permanent parking facilities are being developed shall be reviewed and approved by TP+T and shall meet all applicable City parking regulations for safety and efficiency. Wherever parking spaces have been constructed in excess of the number of spaces permitted for the authorized uses occupied at that time, such excess spaces shall not be used and shall be made physically inaccessible to users in a manner approved by TP+T.
- iv. In the event that construction of a Phase has commenced but subsequently ceases, causing a Building Permit to lapse prior to the delivery of required public benefits, improvements or mitigation associated with that Phase, then the Planning Board may withhold authorization of a building permit for a future Phase until construction has recommenced, or the required public benefits, improvements or mitigation have been delivered, or this Special Permit Decision has been amended to authorize a change to the IDCP.
- v. Modifications to the Phasing Plan may be approved by the Planning Board as Minor Amendments pursuant to Condition #11 of this Decision, provided that all other Conditions of this Decision and requirements of the CZO continue to be met.

11. Amendments.

- a. Amendments to the approved IDCP may be considered by the Planning Board in accordance with the provisions of Section 14.32.2.5 after review and approval by the CRA. The Conditions of this Special Permit specify some modifications that would constitute Minor Amendments. Otherwise, the determination of whether a change constitutes a Major or Minor Amendment to this Special Permit shall be made by the Planning Board as set forth in Section 12.37 of the CZO.
- b. Minor Amendments. A Minor Amendment to this Decision shall be approved by an affirmative vote of at least five (5) members and/or associate members of the Planning Board after consideration of the proposed change, as enumerated on the Board's Agenda, at an appropriately noticed meeting of the Planning Board. In approving a Minor Amendment, the Board shall issue a written determination that:
 - i. The change does not violate applicable Sections of the CZO, or if the change requires relief pursuant to a special permit or variance, such relief has been granted.
 - ii. The change will not substantially alter the Findings upon which this Decision is based.
- c. Major Amendments. A Major Amendment shall only be granted after an affirmative vote of at least five (5) members and/or associate members of the Planning Board and only after the proposed change has been advertised as a new Special Permit subject to the procedural requirements of Section 10.40. The Planning Board shall consider the substance of the change as presented in the amendment application documents and shall not be reviewing this Decision in its entirety. Upon granting a Major Amendment, the Board shall issue written Findings that the amended portions of the IDCP remain in conformance with applicable requirements and criteria set forth in the CZO. However, if the Board finds that a requested Major Amendment constitutes a substantial alteration to the intent, purpose and substance of this Decision, such Major Amendment shall be considered under the procedures established in Article 14.000 as if it were a new IDCP after the submission of all required application materials.
- d. Conditions. Upon issuing any Amendment, the Planning Board may impose additional conditions intended to ensure conformance with the intent, purpose and substance of this Decision and the CZO.

12. Additional Requirements for Phase 1 Development

The following considerations related to the development of Phase 1 of the approved IDCP shall be addressed during the procedures for design review by City staff. Although Phase 1 development has been completed prior to the time of issuance of this Amendment #2, the following considerations shall continue to be applicable if future modifications to Phase 1 development are proposed.

- a. CDD staff shall review the design of proposed pedestrian wind mitigation measures to be installed at the corner of Broadway and Galileo Galilei Way, which may include a vertical wind screen. CDD may present the design of such measures to the Planning Board for its review and comment if they are deemed to substantially alter the building design at the ground level. The Permittee shall also prepare additional studies to assess the effectiveness of the proposed mitigation strategies, including a plan for a post-occupancy evaluation of wind conditions at that location, for review by CDD staff.
- b. The Permittee shall coordinate with CDD and CRA staff on the continuing design of ground floor active use spaces in the 145 Broadway building, and CDD will present any significant advancement of such ground floor design to the Planning Board for its review and comment.
- c. The final design of improvements to the Sixth Street walkway, including the grading plan, construction methods and tree protection measures, shall be reviewed and approved by the City Arborist and City Engineer to ensure that the proposed bicycle path is designed and constructed to protect existing trees. Alterations to the design are authorized to achieve this objective, potentially including a narrowing of the path to a minimum of eight feet (8') in sections, realigning the path to be closer to buildings and away from the drip line of the trees, and raising the elevation of the path.

13. Additional Requirements for Phase 2 Development.

The following considerations related to the development of Phase 2 of the approved IDCP shall be addressed either prior to, or as part of, the Planning Board design review procedures. Although the design of Phase 2 development has been approved prior to the time of issuance of this Amendment #2 and development is currently underway, the following considerations shall continue to be applicable if future modifications to Phase 2 development are proposed.

- a. The open space improvements included in this Phase received Design Review approval by the Planning Board in 2018. Such open space improvements shall remain in substantial conformance with the design approved by the Planning Board, and any future modifications shall be reviewed and approved by the Planning Board in accordance with the Design Review procedures in Condition #3 of this Special Permit Decision.
- b. The following additional conditions shall apply to the commercial component of Phase 2 development (325 Main Street and adjacent open space improvements). Although the design of such sites has been approved prior to the time of issuance of this Amendment #2 and development is currently underway, the following conditions shall continue to be applicable, and shall be reviewed by the Planning Board if future modifications to the design are proposed:
 - i. Public restrooms shall be provided and maintained at the ground level of 325 Main Street as generally depicted in the Application Documents dated November

- 2, 2018. Other non-commercial public amenities should be explored as part of the design and programming of public and retail spaces in the building, which may include nursing pods, heating/cooling spaces, free public wireless internet connection, and other resources.
- ii. The east-west public pedestrian easement, if it passes through a retail marketplace or atrium, shall nonetheless provide a reasonably direct and unimpeded path of travel for pedestrians who are not retail customers. The approximate path of travel shall be depicted in the ground floor plan. The easements shall be refined where necessary as set forth in the memorandum from CRA staff dated November 30, 2018.
 - iii. The ground-floor retail space(s) at 325 Main Street shall provide direct pedestrian entrances onto Main Street as generally depicted in the Application Documents dated November 2, 2018, although the exact locations may vary subject to approval through the Design Review process.
 - iv. As recommended in the memorandum from CDD staff dated November 28, 2018, in addition to consulting with CDD's Economic Development Division regarding marketing and tenanting efforts for retail spaces, as required in the Conditions of the Original Decision, the Permittee shall continue to work with the CRA, CDD, and other nearby property owners to make sure that the intended ground-floor retail uses are complementary to the other existing or planned retail in Kendall Square.
 - v. The Innovation Space Plan approved in the Original Decision shall be supplemented by the plan for an "Opportunity Space" component described in concept in the Application Documents dated November 2, 2018 to fulfill the zoning requirement for "below-market" space. The programmatic and operational aspects of this space shall be reviewed by CRA and CDD staff on an annual basis. The Board recommends that the program should include a focus on underrepresented communities within the technology sector and Cambridge youth.
 - vi. The addition of canopy trees, as depicted in the renderings (but not the plans) in the Application Documents dated November 2, 2018, shall be incorporated into the rooftop garden design to the degree possible.
 - vii. Programmatic changes to the operation of the Kendall Square Rooftop Garden shall be implemented in accordance with the Application Documents dated November 2, 2018, including the addition of lighting and the extension of evening hours until 11:00 P.M. for the months of June to September. Safety and privacy should be considered as the lighting plan is designed.

As recommended in the memorandum from CDD staff dated November 28, 2018, a comparable alternative plan shall be presented for the Board's approval in the

event that approval is not granted by the MBTA for the terrace depicted on the roof of the Red Line outbound headhouse in the Application Documents dated November 2, 2018.

As recommended in the memorandum from CDD staff dated November 28, 2018, the following additional issues related to building design shall be studied further in the Design Review process.

- viii. Although the design of all Phase 2 development has been approved prior to the time of issuance of this Amendment #2 and development is currently underway, any future design modifications subject to review and approval by the Planning Board shall continue to address, among other items, the issues highlighted below:
- (1) The current proposed line of the building footprint in relationship to the sidewalk space, to clarify whether there would be an adequate and urbane open space considering the number of building occupants and the expected increase in foot traffic within Kendall Square overall.
 - (2) The potential for the connection or “gasket” between 325 and 355 Main Street to be more clearly separated as a vertical slot between the two buildings. As currently proposed, there appears to be some overlap between the massing elements of both buildings, which reduces the ability of the gasket to act as a clearly differentiated zone and to celebrate entry into the pedestrian connection.
 - (3) The step-back distances between the stacked volumes should also be considered, to respond to the K2 Design Guidelines encouraging a more tapered built form as buildings rise in height.
 - (4) The potential for a more vertical grain, as called for in the K2 Design Guidelines, to create slender vertical proportions that help mitigate the sense of bulk and horizontality of buildings when perceived from the pedestrian realm.
 - (5) The width of the public stairway connection where it connects to Main Street, and its many turns, to ensure that the stair is generous and direct enough to feel welcoming to all, and to ensure that the ground level landing of the stair at the southeast corner of the building is given enough space to clear the path of the foot traffic at the sidewalk.
 - (6) The location of the rooftop elevator access, which should have good visual and physical access from the plaza and Main Street.
 - (7) The width of the narrow alleyway between the MBTA headhouse and building, which may pose a safety and comfort concern.
 - (8) Access to the MBTA headhouse coming from both the north and south, to ensure such access is convenient for all users.

(9) The design and character of public pedestrian connections throughout the site.

(10) As recommended in the memorandum from CRA staff dated November 30, 2018, the Applicant shall propose a plan for creative re-use of the trellis grid adjacent to Kendall Plaza.

14. Additional Requirements for Phase 3 and 4 Development.

The following considerations related to the development of Phase 3 and Phase 4 of the approved IDCP shall be addressed either prior to, or as part of, the Planning Board Design Review procedures set forth in Condition #3 of this Special Permit Decision, unless otherwise stated:

- a. The Permittee shall continue to abide by the traffic and infrastructure improvement requirements set forth in Condition 5 of this Decision, including the amended Transportation Mitigation Program and Monitoring Requirements attached hereto as Appendix E.
- b. Bicycle Valet Parking Program. Pursuant to Section 14.52.6.2 of the CZO, the Planning Board hereby approves the Bicycle Valet Parking Program as proposed in the Amended IDCP as an alternative to compliance with the standards of Section 6.100 only for development in Phases 3 and 4 of the IDCP, subject to conformance with the standards set forth in the Amended IDCP and subject to the following conditions related to planning, operations, monitoring and reporting of the Bicycle Valet Parking Program:
 - i. The bicycle valet shall be staffed twenty-four (24) hours per day, seven (7) days per week.
 - ii. The bicycle valet shall be equipped to offer electric charging for at least 10% of the total spaces.
 - iii. The bicycle valet shall be free for residents and commercial tenants of Residential Building South, Commercial Building C and Commercial Building D.
 - iv. Prior to the commencement of valet operations, the Permittee shall submit a bicycle valet operations plan, subject to review and approval by CDD & TP+T. Such a plan may be amended from time to time, subject to CDD & TP+T review and approval. The purpose of the review is to ensure the bicycle valet will be operated in accordance with the goals and objectives set forth in the Application Materials, staff memos, and Planning Board special permit approval.
 - v. Prior to design review of the first building, the Permittee shall submit a bicycle valet monitoring and reporting plan, subject to review and approval by CDD. Such a plan may include, but is not limited to a combination of user and retrieval

data, as well as surveys and reviews from valet users, and shall be required periodically for a period of up to ten (10) years once the program is fully operational. Such a plan may be amended from time to time, subject to CDD & TP+T review and approval. The purpose of the review is to ensure the bicycle valet will be operated in accordance with the goals and objectives set forth in the Application Materials, staff memos, and Planning Board special permit approval.

- vi. The spaces utilized for the Bike Valet Parking Program shall not be subject to the location, design and layout standards applicable to standard bicycle parking as set forth in Section 6.104 and 6.105 of the CZO.
- vii. Prior to or concurrent with design review for Residential Building South, the Permittee shall submit an alternatives analysis that analyzes the feasibility of adding long-term bicycle parking within the residential building or otherwise providing more convenient long-term bicycle parking services to residents.
- b. The Center Plaza in Phase 4 shall be subject to its own Design Review procedure as set forth in Condition #3 of this Decision. A Design Review submission of the Center Plaza shall also include the adjoining East & West Service Plaza drives, the yards of adjoining buildings, and related open space within the North Parcel along Binney Street and Broadway. The design shall respond to the K2 and Volpe Design Guidelines, including their objectives and guidelines regarding the functional uses, character, environmental comfort, and spatial definition of the site's open spaces.
- c. Concurrent with the Design Review submission for the Center Plaza, the Permittee shall prepare an Environmental Comfort Assessment that includes an independent, professional analysis of anticipated noise, wind, and temperature impacts on the surface of the plaza from the electrical transformer substation and associated equipment in combination with proposed buildings and other factors affecting such environmental conditions. Such an assessment shall include measures to mitigate any undesirable environmental conditions from the substation equipment.
- d. The Construction Management Plan requirements set forth in Condition #8 of this Decision shall include details of how the site, Center Plaza, and East/West Access Drives will be managed and secured during construction for Phase 3 and Phase 4 of development.
- e. The Permittee shall fund the relocation of an existing 19-dock Bluebikes station at Binney and Sixth Street (not to exceed \$187,000), and fund a new 23-dock Bluebikes station as part of Phase 3 and 4 development. The Permittee shall fund any maintenance costs for the relocated Bluebikes station, not to exceed \$5,000 annually, for battery replacement, depending on solar operations. Prior to a building permit being issued for the first building in Phase 3, the location of the Bluebikes stations (both the relocated station and the proposed station) shall be finalized, subject to review and approval by CDD staff.

- f. In addition to the Review Standards and Guidelines set forth in Paragraph f. of Conditions #3 of this Decision, the topics discussed in the CDD Urban Design Reports dated September 21, 2021, and December 8, 2021, attached to this Decision as Appendix G, shall be considered during the Design Review process for buildings and open spaces in Phases 3 and 4.
- g. Concurrent with Design Review submissions for each of Commercial Building C, Commercial Building D, and Residential Building South, pursuant to Condition #3 of this Special Permit Decision, the Permittee shall submit detailed, dimensioned roof plans illustrating and calculating the degree of conformance with the Green Roofs Requirement as set forth in Section 22.35 of the CZO. The Planning Board shall determine the amount of roof area exempted from the requirement at time of design review approval. Each square foot so reduced shall be compensated by a unit price contribution to the Cambridge Affordable Housing Trust in accordance with Section 22.35.3 of the CZO. Such a payment, if required, shall be calculated and paid prior to the issuance of a building permit for that building.

15. Subdivision of the IDCP Parcels

The Planning Board approves the subdivision of the IDCP parcels into the building sites and open spaces as illustrated in the revised IDCP, or as their dimensions may be established after final design approval. In the event that the Permittee intends to subdivide any portion of the IDCP parcels into smaller lots, including but not limited to vertical air-rights subdivisions of building sites, the Permittee shall file a copy of the subdivision plan with CDD for inclusion in the record of this Special Permit. No further approval by the Planning Board or CDD shall be required to authorize a subdivision of the parcels or lots within the IDCP provided that there is no other change to the approved special permit as a whole.

Voting in the affirmative to GRANT the Special Permit were Planning Board Members Louis Bacci, H Theodore Cohen, Steven Cohen, Catherine Preston Connolly, Mary Flynn, Hugh Russell, and Associate Member Ashley Tan, appointed by the Chair to act on the case, constituting at least two thirds of the members of the Board, necessary to grant a special permit.

For the Planning Board,



Catherine Preston Connolly, Chair.

A copy of this decision PB #315 shall be filed with the Office of the City Clerk. Appeals, if any, shall be made pursuant to Section 17, Chapter 40A, Massachusetts General Laws, and shall be filed within twenty (20) days after the date of such filing in the Office of the City Clerk.

ATTEST: A true and correct copy of the above decision has been filed on March 15, 2022 with the Office of the City Clerk, by Swaathi Joseph, duly authorized representative of the Planning Board. All plans referred to in the decision have been filed with the City Clerk on said date.

Twenty days have elapsed since the above decision was filed in the office of the City Clerk and:

_____ no appeal has been filed; or

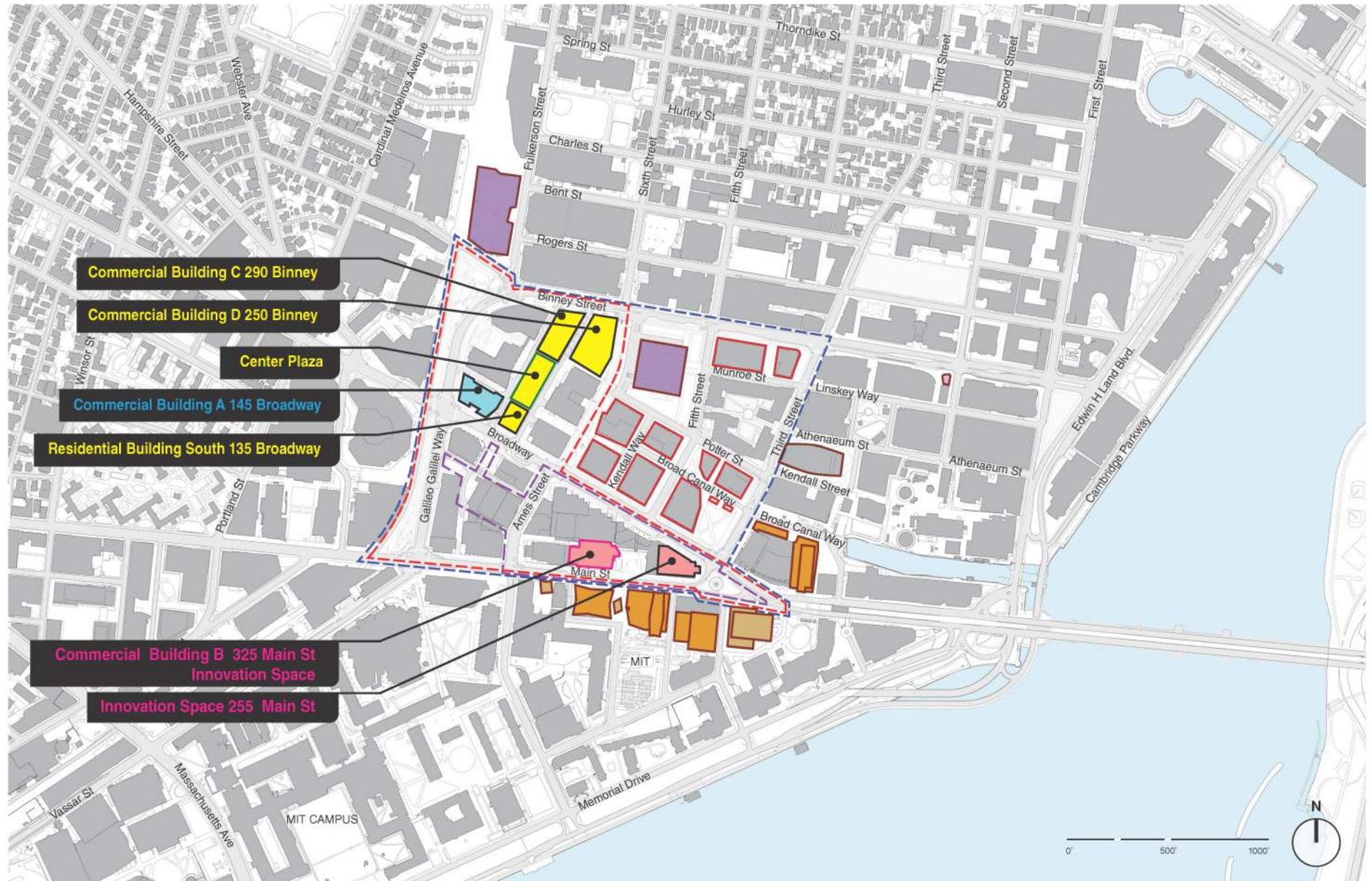
_____ an appeal has been filed within such twenty days.

The person exercising rights under a duly appealed special permit does so at risk that a court will reverse the permit and that any construction performed under the permit may be ordered undone. This certification shall in no event terminate or shorten the tolling, during the pendency of any appeals, of the periods provided under the second paragraph of G.L. c. 40A, §6.

Date: _____, City Clerk

Appeal has been dismissed or denied.

Date: _____, City Clerk



- | | | | |
|---|---|--|---|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others | MXD Boundary |
| Proposed Projects Under Const. | Projects Permitted (MIT Noma/Soma) | Permitted Projects by others Under Const. | KSURP Boundary |
| Proposed Projects Complete | Projects Under Const. (MIT Noma/Soma) | | Ames Street District ASD |

1.3.2 PROPOSED AMENDMENT 2 PROGRAM

The proposed Concept Plan Amendment #2 program complies with the most recent amendment to the MXD Zoning. The Concept Plan Amendment #2 process is being carried out concurrently with the most recent MEPA review process detailed in Section 1.1.1.

The Project continues to address the City and the CRA's desire for affordable and middle-income housing as well as the creation of innovation space consistent with the K2 Plan. Further, the Project will result in a myriad of public benefits and improvements including delivery of critical energy infrastructure essential to supporting electrical service, new public open space, upgraded storm water management facilities, increased property tax revenue, job creation, streetscape improvements and bicycle accommodations, all of which are documented in detail herein.

As shown in Figures 1.11 - 1.14, the Project as a whole aims to encourage new development in the form of the following individual components (the "Project Components"):

- Commercial Building A located at 145 Broadway (Complete);
- Commercial Building B located at 325 Main Street (Under Construction);
- Residential Building South located 135 Broadway (Proposed);
- Commercial Building C located at 290 Binney Street (Proposed);
- Commercial Building D located at 250 Binney Street (Proposed);
- Innovation Space Conversion (Phase 1 Innovation Space at 255 Main Street is complete. The remaining Phase 2 Innovation Space is currently in development and will be delivered at 325 Main Street and 80 Broadway concurrently with Commercial Building B.

Table 1-1 A-C presents the proposed development program.

TABLE 1-1A PROPOSED DEVELOPMENT PROGRAM

DEVELOPMENT PROGRAM SUMMARY BY USE (GFA ¹)							
	PHASE 1	PHASE 2	PHASE 3		PHASE 4		
	<u>COMMERCIAL BUILDING A</u>	<u>COMMERCIAL BUILDING B</u>	<u>RESIDENTIAL BUILDING SOUTH</u>	<u>COMMERCIAL BUILDING C</u>	<u>COMMERCIAL BUILDING D</u>	<u>BROAD INSTITUTE OFFICE CONVERSION²</u>	<u>TOTAL</u>
COMMERCIAL GFA ³	354,278	268,222	0	409,500	382,200	14,000	1,428,200
RETAIL/ACTIVE USE ⁴ GFA	8,700	0 ⁵	700	2,500	5,800	0	17,700
RESIDENTIAL ⁵ GFA	0	0	420,000	0	0	0	420,000
TOTAL NET NEW	362,978	268,222	420,700	412,000	388,000	14,000	1,865,900

TABLE 1-1B PROPOSED DEVELOPMENT PROGRAM

DEVELOPMENT PROGRAM SUMMARY BY BUILDING HEIGHT						
	PHASE 1	PHASE 2	PHASE 3		PHASE 4	
	<u>COMMERCIAL BUILDING A</u>	<u>COMMERCIAL BUILDING B</u>	<u>RESIDENTIAL BUILDING SOUTH</u>	<u>COMMERCIAL BUILDING C</u>	<u>COMMERCIAL BUILDING D</u>	<u>BROAD INSTITUTE OFFICE CONVERSION²</u>
HEIGHT (FEET)	250'	250'	400'	250'	250'	N/A
FLOORS	19 FLOORS	UP TO 16 FLOORS	UP TO 38 FLOORS	UP TO 17 FLOORS	UP TO 17 FLOORS	N/A

1. GFA as defined in Article 2.0 of the Cambridge Zoning Ordinance.

2. Represents the conversion of existing mechanical space to be re-purposed/fit-out into leasable commercial/laboratory office space at the Broad Institute's 75 Ames Street location. The Applicant is not responsible for the execution of this component of the Project.

3. Incorporated within the Commercial GFA Figures is the Innovation Space tied to Commercial Building A and Commercial Building B.

4. Active Ground Floor Uses, can include retail uses and active public gathering space (whether open or enclosed) where that ground floor fronts Main Street, Broadway or Ames Street, per Article 14.38 of the Zoning Ordinance.

5. Refer to Section 2.1.1, Housing Program for a more detailed breakdown of the Residential GFA.

6. The Applicant plans the distribution of up to approximately 8,300 SF of ground floor active use or retail GFA between Commercial Building C and Commercial Building D so as to activate the northeast edge of the proposed Center Plaza open space. The majority of this space may be required for a bike valet to meet City of Cambridge requirements and may include some complementary bike oriented service retail.

7. Innovation space delivered with Phase 1 of the Project.

8. Per Article 14.32.2 of the Zoning Ordinance, the CRA shall require an Infill Development Concept Plan to be prepared providing for the distribution of additional GFA for new Utility Project GFA within the District above and beyond 4,273,000 SF of infill GFA approved under Concept Plan Amendment #1.

* Area represents zero net new GFA (As a part of the Concept Plan Amendment #1, Commercial Building B is replacing and reconstructing approximately 40,000 SF of existing retail GFA, the majority of which will be located on the ground level, and one level above ground. A portion may remain at one level below ground. The Project will therefore not only result in a net increase of enhanced retail GFA as compared to the Original Concept Plan, but the majority of the reconstructed retail space at 325 Main Street will be located above grade, making the retail space more attractive to potential tenants, and better activating the public realm and the existing retail corridor along Main Street and the Kendall Plaza.

TABLE 1-1C PROPOSED DEVELOPMENT PROGRAM

DEVELOPMENT PROGRAM SUMMARY (GFA ¹)							
	PHASE 1	PHASE 2	PHASE 3		PHASE 4		
	COMMERCIAL BUILDING A	COMMERCIAL BUILDING B	RESIDENTIAL BUILDING SOUTH	COMMERCIAL BUILDING C	COMMERCIAL BUILDING D	BROAD INSTITUTE OFFICE CONVERSION ²	TOTAL
TOTAL BUILDING GFA	441,614	385,423	420,700	412,000	450,576	14,000	1,124,313
EXISTING GFA	(78,636)	(117,201)	0	0	(62,576)	0	(-258,413)
NET NEW GFA	362,978	268,222	420,700	412,000	388,000	14,000	1,865,900
<i>EXEMPT GFA</i>							
INNOVATION SPACE ⁵	(60,496)	(44,704)					(105,200)
MIDDLE-INCOME HOUSING			(20,000)				(20,000)
RETAIL/ACTIVE USE ⁴			(700)				(700)
NET NEW INFILL GFA	302,482	223,518	400,000	412,000	388,000	14,000	1,740,000
EXISTING DISTRICT AGGREGATE INFILL GFA ⁸							4,273,000
PROPOSED ADDITIONAL UTILITY PROJECT GFA							800,000
NEW DISTRICT AGGREGATE GFA							5,073,000

TABLE 1-1D PROPOSED DEVELOPMENT PROGRAM

TOTAL GFA (NET NEW)	1,865,900
Office/Laboratory (GFA)	1,428,200
Retail/Active Use (GFA)	17,700
Residential (GFA)	420,000
Residential Units	Up to 465
Parking Spaces (total)	3,750
Bike Parking Long-Term Spaces	872
Bike Parking Short-Term Spaces	160

The Zoning Ordinance and the KSURP regulate the amount of development through a cap on aggregate GFA of all land uses in the MXD District and a minimum requirement for residential development. The aggregate GFA regulation is designed to provide flexibility in the distribution of development throughout the MXD District while maintaining a balance of land use in the area.

Consistent with the recently enacted zoning amendments to the MXD District, this Concept Plan Amendment #2 proposes a total Infill GFA of 5,073,000 SF of GFA on five development sites. The distribution of planned GFA is comprised of 1,428,200 SF of GFA of net new commercial development, 420,000 SF of GFA of net new residential development, 17,700 SF of GFA of net new active use/retail development and the conversion of up to 14,000 SF of GFA of mechanical space to commercial office space at the Broad Institute. The analysis of impacts provided throughout the Concept Plan Amendment #2 is based on these revised Program figures.

The 1,865,900 SF of GFA continues to incorporate approximately 126,500 SF of exempt gross floor area (“Exempt GFA”), as specified in Section 14.32.6 of the Zoning Ordinance. These exemptions comprise 105,200 GFA of Innovation Space satisfied in Phases and Phase 2, 20,000 GFA of middle-income housing which will be satisfied in Phase 3, and 700 GFA of ground floor retail space satisfied in Phase 3. (Refer to Table 2-1 of Section 2, Regulatory Compliance, for a detailed summary of zoning compliance.) Excluding the exemptions provides for the addition of 1,740,000 SF of Infill GFA which meets the total aggregate GFA cap of 5,073,000 SF. This is summarized in below, and in more detail in Table 1-1D

PROJECT GFA	2,124,313
LESS EXISTING GFA	(-258,413)
NET NEW GFA	1,865,900
LESS EXEMPT GFA	(125,900)
NET NEW INFILL GFA	1,740,000



- | | | | |
|--|---------------------------------|-------------------------------|--------------------------|
| Proposed open space | Existing open space on grade | Project Boundary Amendment #1 | MXD Boundary |
| Proposed open space enhancements | Existing open space above grade | Project Boundary Amendment #2 | KSURP Boundary |
| Proposed open space under construction | Proposed open space by others | | Ames Street District ASD |

3.2 PROPOSED OPEN SPACE

PROPOSED PARCEL AREA AND OPEN SPACES

EXISTING MXD DEVELOPABLE PARCEL AREA (P)			
	P2		445,825
	P3		229,558
	P4		257,824
	LOUGHREY WALKWAY (WITHIN MXD)		19,569
	GRAND JUNCTION + BINNEY ST PARK		77,361
TOTAL EXISTING MXD AREA (±SF)			1,010,596

PROPOSED OPEN SPACE (OS) TOTALS			
	P2		151,590
	P3		73,456
	P4		141,247
	LOUGHREY WALKWAY (WITHIN MXD)		19,569
	GRAND JUNCTION + BINNEY ST PARK		77,361
TOTAL EXISTING MXD OS (±SF)			463,223

PROPOSED OPEN SPACE (OS) TOTALS			
	(BROADWAY PARK)@BLUE GARAGE		13,970
	(BINNEY PARK)@BLUE GARAGE		7,015
	P2 ENHANCED OPEN SPACE		82,011*
	KENDALL SQUARE ROOFTOP GARDEN	ASD	25,340
	ROOFTOP CONNECTOR TERRACES	ASD	2,916
	KENDALL PLAZA	ASD	14,372
	GALAXY PARK	ASD	18,664
	75 AMES ST OPEN SPACE	ASD	6,867
	DANIEL LEWIN PARK (CENTER ONLY) (IVA)	ASD	5,297*
	DANIEL LEWIN PARK (WEST) (IVB)		4,955*
	DANIEL LEWIN PARK (EAST)		7,341
	ORIGINAL BROAD OPEN SPACE (7CC)		5022
	WHITEHEAD PLAZA		10,930
	GRAND JUNCTION		27,300
	BINNEY STREET PARK		50,061
	LOUGHREY WALKWAY (WITHIN MXD)		19,569
	LOUGHREY WALKWAY (OUTSIDE OF MXD)		19,790

TOTAL PROPOSED PUBLIC OS (±SF)			300,435
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* Total Enhanced open space also includes enhancements to Daniel Lewin Park Tract IVA and IVB

REQUIRED

100K
100,000
15% OF TOTAL MXD AREA
151,589
AMES STREET DISTRICT*
53,000

PROVIDED

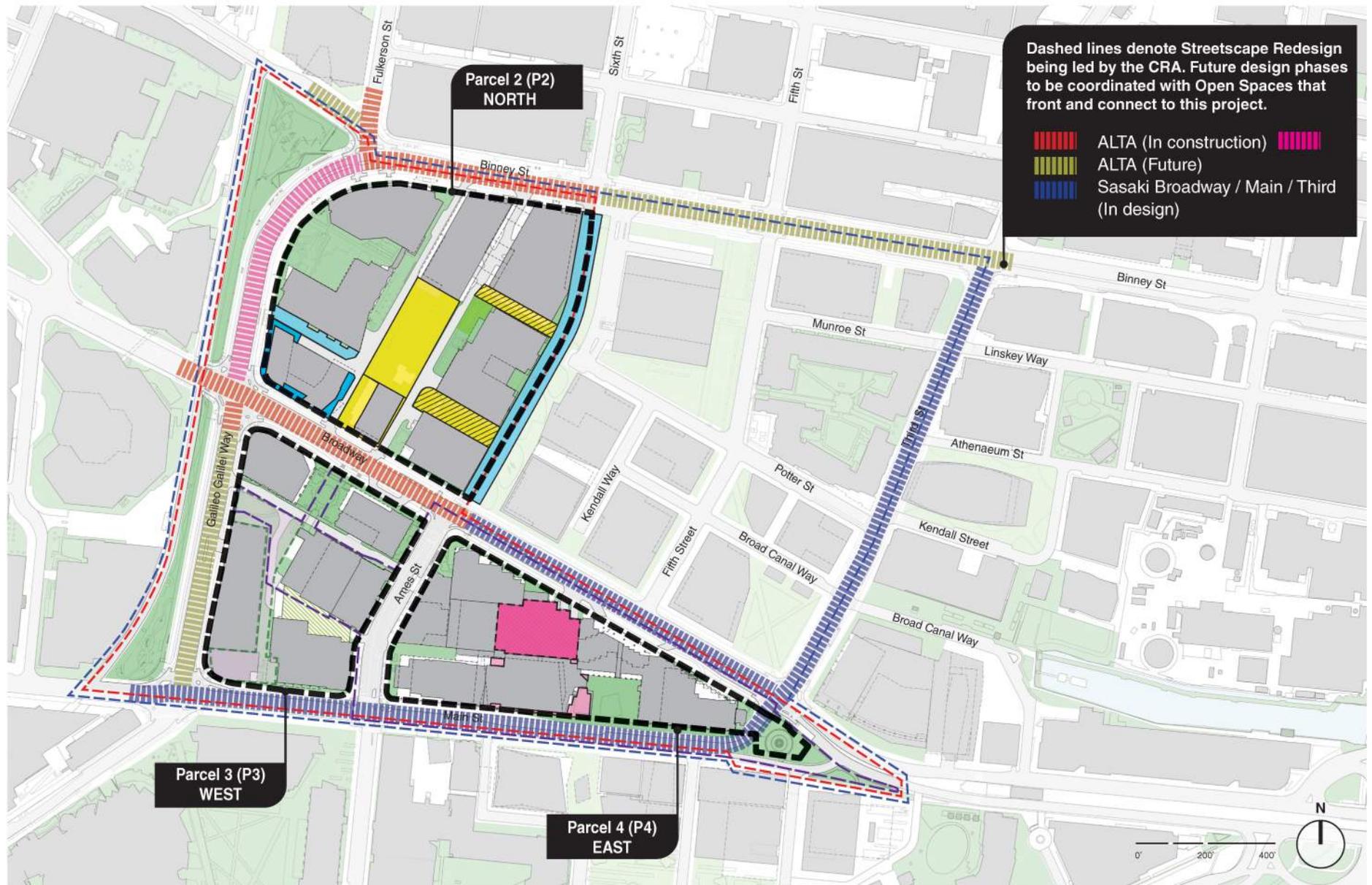
TOTAL PROPOSED PUBLIC OPEN SPACE
300,435±SF
TOTAL PROPOSED OPEN SPACE
463,223±SF
OPEN SPACE
73,456±SF

REQUIRED OPEN SPACE VS. PROVIDED OPEN SPACE

SOURCES

1. CAD/Alta survey
2. Exhibit A Development Area Map. CRA Document. March 18, 1982.
3. Exhibit A Development Area Map. CRA Document. May 25, 1979.
4. CRA's KSURP Open Space Accounting. June, 2015
5. Kendall Center Open Space Parcels 2, 3, and 4. July 31, 2015.
6. North Parcel Consolidation Plan. April 11, 2017.
7. Ames Street District Open Space. July 25 2018.
8. CRA Privately Owned Public Spaces in the Kendall Square MXD District
<https://www.cambridgeredevelopment.org/pops/>

Pursuant to City Council Ordinance No. 2020-17, Section 14.33 of the Zoning Ordinance was amended to provide that "...there shall be no maximum floor area ratio for any project utilizing Infill GFA (including Utility Project GFA)." All of the GFA reflected in this application is Infill GFA, and therefore there are no maximum floor area ratio requirements for the buildings described herein.



- | | | | | | | | | | | | |
|-----------------------|-----------------------|---------------------------|----------------------------|-----------------------|---------------------------|----------------------|-----------------------|--|--------------|----------------|--------------------------|
| Commercial Building A | Commercial Building B | Commercial Building C / D | Residential Building South | Phase I. Open Space | Phase II. Enhanced OS. | Phase IV. Open Space | Phase IV Enhanced OS. | Other Potential OS Enhancement Opportunities | MXD Boundary | KSURP Boundary | Ames Street District ASD |
| | | | | Phase I. Enhanced OS. | Phase II. Enh. Garden OS. | | | | | | |

3.2 PROPOSED OPEN SPACE

OPEN SPACE (OS) COMPARISONS AMENDMENT #1 AND AMENDMENT #2

IDCP AMENDMENT #1 OPEN SPACE	
(OS) COMMERCIAL BUILDING A (PHASE I)	
REQUIRED	35,504 ±SF
PROVIDED	54,801 ±SF
145 BROADWAY (OS)	8,114 ±SF
(SW) EW CONNECTOR (EASEMENT C)	7,328 ±SF
6TH ST CONNECTOR (WITHIN MXD)	19,569 ±SF
(OS) COMMERCIAL BUILDING B (PHASE 2)	
REQUIRED	0 (ASD)
PROVIDED	27,501 ±SF
KENDALL SQUARE ROOFTOP GARDEN*	18,789 ±SF
ENHANCED OS PLAZA AREA	2,562 ±SF
ENHANCED OS TERRACE	4,750 ±SF
ENHANCED OS TERRACE (PENDING MBTA)	1,400 ±SF
RESIDENTIAL BUILDING SOUTH (PHASE 2)	
REQUIRED	28,000 ±SF
PROVIDED*	32,070 ±SF
RESIDENTIAL BUILDING NORTH (PHASE 3)	
REQUIRED	5,600 ±SF
PROVIDED*	16,895 ±SF
PARCEL 2 AMD#1 ENHANCED (OS) 64,593 ±SF	

IDCP AMENDMENT #2 OPEN SPACE	
(OS) COMMERCIAL BUILDING A (PHASE I)	
PROVIDED	54,801 ±SF
PHASE 1 OPEN SPACE EXCESS	19,790 ±SF
(OS) COMMERCIAL BUILDING B (PHASE 2)	
**PROVIDED (UPDATE)	30,818 ±SF
KENDALL SQUARE ROOFTOP GARDEN	25,340 ±SF
ROOFTOP CONNECTOR TERRACES***	2,916 ±SF
ENHANCED OS PLAZA AREA	2,562 ±SF
PHASE 2 OPEN SPACE EXCESS	30,818 ±SF
DANIEL LEWIN PARK (IVA) WEST 4,955 ±SF	
DANIEL LEWIN PARK (IVB) CENTER 5,297 ±SF	
PHASE 3 OPEN SPACE EXCESS 10,252 ±SF	
(OS) COMMERCIAL BUILDING C (PHASE 4)	
(OS) RESIDENTIAL BUILDING SOUTH (PHASE 4)	
PROVIDED	30,000 ±SF
CENTER PLAZA	30,000 ±SF
(OS) COMMERCIAL BUILDING D (PHASE 4)	
PROVIDED	17,000 ±SF
(NE) EW CONNECTOR	7,000 ±SF
(SE) EW CONNECTOR	10,000 ±SF
REQUIRED	96,180 ±SF
PROVIDED	107,860 ±SF
TOTAL OPEN SPACE EXCESS	11,680 ±SF
PARCEL 2 AMD #2 ENHANCED (OS) 82,011 ±SF > AMD#1 17,418 ±SF	

* Denotes OS calculations made for IDCP AMENDMENT #1 via Lot calculations

** Denotes OS calculation updates made after IDCP Amendment 2 for 325 Main St Design Review

*** Includes the removal of 700 SF for retail uses on the terrace

Pursuant to City Council Ordinance No. 2020-17, Section 14.33 of the Zoning Ordinance was amended to provide that "...there shall be no maximum floor area ratio for any project utilizing Infill GFA (including Utility Project GFA)." All of the GFA reflected in this application is Infill GFA, and therefore there are no maximum floor area ratio requirements for the buildings described herein.

TABLE 9-1 GROSS FLOOR AREA

ANTICIPATED PHASING PLAN WITH PUBLIC BENEFITS					
	PHASE 1	PHASE 2	PHASE 3		PHASE 4
	COMMERCIAL BLDG. A (145 BROADWAY)	COMMERCIAL BLDG. B (325 MAIN STREET)	RESIDENTIAL SOUTH BLDG. (135 BROADWAY)	COMMERCIAL BLDG. C (290 BINNEY STREET)	COMMERCIAL BLDG. D (250 BINNEY STREET)
COMMERCIAL GFA	441,614	385,423	0	409,500	444,776
RESIDENTIAL GFA	0	0	420,000	0	0
ACTIVE USE/RETAIL GFA	8,700	0	700	2,500	5,800
EXISTING GFA	(78,636)	(117,201)	0	0	(62,576)
NET NEW GFA	362,978	268,222	420,700	412,000	450,576
(OS) OPEN SPACE IMPROVEMENTS	6TH STREET CONNECTOR E/W CONNECTOR (W)	KENDALL PLAZA / KENDALL ROOF GARDEN AND PUBLIC TERRACE CONNECTOR	EVERSOURCE VAULT BUILD OUT / DANIEL LEWIN PARK IMPROVEMENTS	CENTER PLAZA & SOUTHERN E/W CONNECTOR	CENTER PLAZA / NORTHERN AND SOUTHERN E/W CONNECTORS / PLAZA DRIVES / VAULT EQUIPMENT BUILD-OUT
INNOVATION SPACE AT 255 MAIN	60,496	44,704	0	0	0
VEHICLE PARKING	457	0	0 ¹	1,584 ¹	0
LONG-TERM BIKE PARKING	134 ²	108 ²	20 (STANDARD SELF PARK)	0	0
SHORT-TERM BIKE PARKING	34 ²	47 ²	20 (STANDARD SELF PARK)	18 (STANDARD SELF PARK)	18 (STANDARD SELF PARK)
CAMPUS VALET				610 ⁴ (LONGTERM)	EXCESS (SHORT TERM)
BLUE BIKE STATION					23 ⁽⁵⁾
MARKET RATE HOUSING	0	0	316,000 GFA	0	0
AFFORDABLE HOUSING	0	0	84,000 GFA	0	0
MIDDLE INCOME HOUSING	0	0	21,000 GFA	0	0
STATUS	COMPLETED	UNDER CONST.	PLANNED	PLANNED	PLANNED

1. The Project Change proposes to relocate the approximately 1,170 existing above-grade parking spaces associated with the Blue Garage below-grade into in two, connected parking garages situated beneath Commercial Building C and Commercial Building D. The Project Change also proposes an additional 413 net new vehicle parking spaces to be accommodated within the new below-grade garage for a total of 1,584 vehicle spaces that will service Commercial Buildings C and D, and Residential Building South. Two existing above-grade parking garages shall be retained, with modifications as to provide more efficient self-parking striping and the provision of managed/valet spaces as approved by Concept Plan Amendment #1.
2. Reflects as-built bicycle parking for Commercial Building A, and approved bicycle parking for Commercial Building B, which is currently under construction.
3. The Applicant intends to satisfy bicycle parking demand from the Residential Building South, Commercial Building C and Commercial Building D via a commercial bicycle valet. In accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. To complement the services of the envisioned bicycle valet, the Applicant also seeks to deliver approximately 20 traditional long-term bicycle parking spaces within the Residential Building South and 20 short-term bicycle parking spaces for Residential Building South, Commercial Building C, and Commercial Building D. The range of valet spaces illustrated (400-610) conveys the changing maximum capacities of the valet from its temporary premises within Commercial Building C to its permanent location within Commercial Building D. The Applicant also anticipates that the proposed bicycle valet will be able to offer short-term bicycle parking, subject to capacity utilization trends. The implications of applying the minimum bicycle parking requirements established by the City of Cambridge Bicycle Parking Guide to the Project are shown in Table 10 of the TIS Update Memo #2, Appendix B."
4. 14.52.6.2 (b) of the zoning ordinance allows the proposed valet to provide all of the Amendment's proposed long-term bicycle parking via countercyclical bicycle parking.
5. 14.52.6.2 (a) of the zoning ordinance allows each dock of a new provided public bicycle sharing station within 500' of the lot to count for two required bicycle parking spaces.

PHASE 1

FIGURE 9.2

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2																
PHASE 3									Residential Building South							
									Commercial Building C							
PHASE 4									Commercial Building D						P2 Open Space	
											Sub Station Fit Out					

Since the Concept Plan Amendment #1 was approved in 2018, the Applicant has completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase I) at 145 Broadway. Commercial Building has become Akamai's new global headquarters, and provides 8,700 GFA of ground floor retail space. In conjunction with Commercial Building A, the Applicant delivered enhancements to the 6th Street Connector, enhancements to the East/ West connector connecting Galileo Galilei Way to the West Service Drive, and the creation of 60,496 GFA of Innovation Space located at 255 Main Street.



1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects

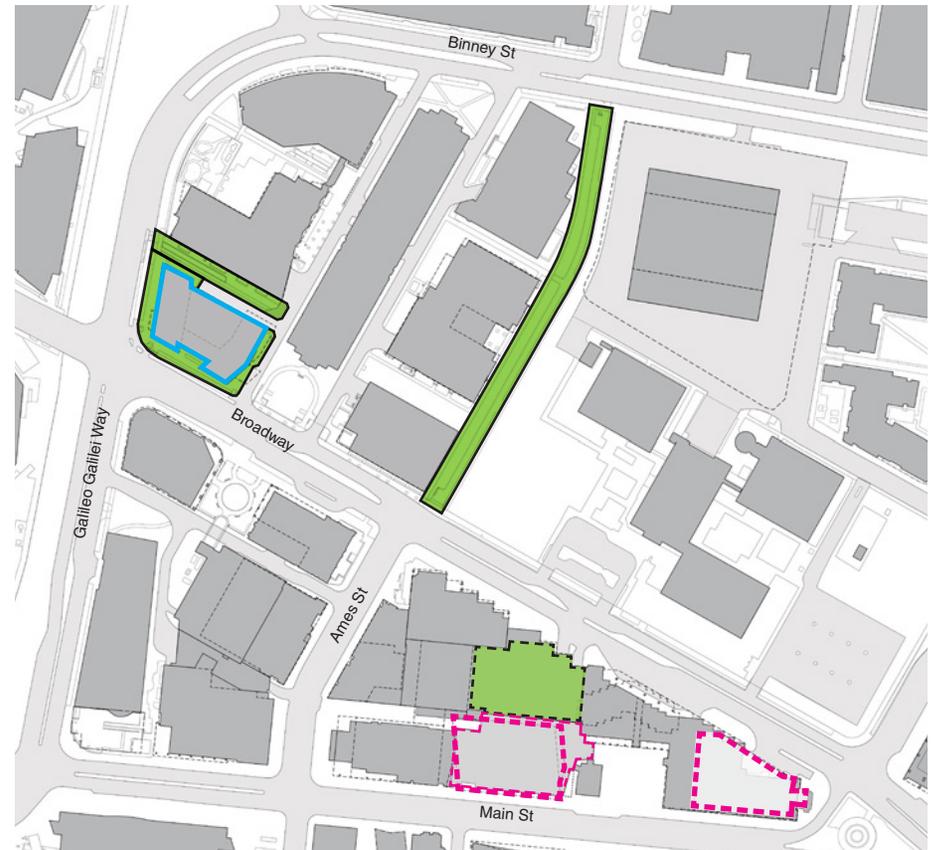
PHASE 2

FIGURE 9.3

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2				Commercial Building B												
PHASE 3									Residential Building South							
									Commercial Building C							
PHASE 4									Commercial Building D						P2 Open Space	
											Sub Station Fit Out					

Since the Concept Plan Amendment #1 was approved in 2018, the Applicant has commenced construction of the commercial space and ground floor retail associated with Commercial Building B, with an estimated completion and Certificate of Occupancy in Q2 2022. The office space will operate as Google’s local headquarters on completion, and will be accompanied by approximately 40,000 GFA of reconstructed retail delivered in the basement, ground floor, and second floor. The 325 Main Street site is bordered by Main Street to the south, 355 Main Street to the west, the Green Garage to the north, and the Kendall Plaza to the east. As part of delivery of the Phase 2 building—the Applicant is enhancing the Kendall Roof Garden and working closely with the Massachusetts Bay Transportation Authority (MBTA) to renovate the existing Kendall Northbound Headhouse. The remaining 44,704 GFA of Innovation Space will be provided in conjunction with the completion of Commercial Building B.

1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects



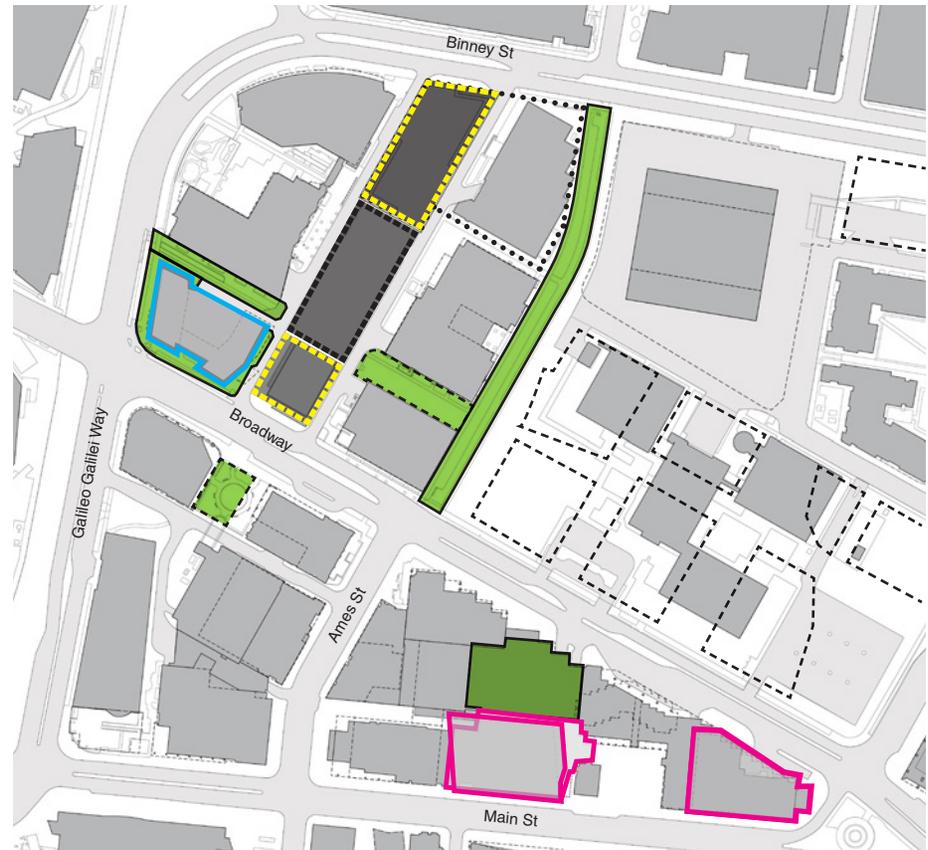
PHASE 3

FIGURE 9.4

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2				Commercial Building B												
PHASE 3								Residential Building South								
								Commercial Building C								
PHASE 4								Commercial Building D							P2 Open Space	
											Sub Station Fit Out					

Will consist of both Commercial Building C and Residential Building South. The construction of these two components will require demolition of the existing above-grade Blue Garage to accommodate the relocation of the Eversource electrical substation. It is anticipated that construction of these two project components will start at different times due to on site logistics, relative complexity of each building, and market conditions, however the construction of the Residential South Building will precede or be concurrent with the construction of Commercial Building C.

Phase 3 will also include the construction of a vault beneath the Center Plaza that will be used to house the electrical substation that will be completed as part of the subsequent Phase 4. While proposed project scheduling and sequencing is complex and remains subject to change, it is estimated that this phase carries an approximate duration of 4.5 years.



1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects

APPENDIX E: Transportation Mitigation and Monitoring Program

Mitigation	Phasing
<p>Bluebikes Stations. Finance the purchase and installation of either A.) Two (2) 19 dock Bluebikes stations or B.) One (1) 27 dock Hubway station and expand the existing Binney Street station to a 27 dock station. The City and BP shall identify mutually acceptable location(s) for the Hubway station(s).</p>	<p>Initial payment for equipment to be made to the City before the first Building Permit, excluding Demolition permits. Completed prior to Amendment #2.</p>
<p>Sixth Street Connector Pathway Improvement. Improve the Sixth Street Connector Pathway by providing separated pedestrian and bicycle facilities while maintaining the mature trees along the existing pathway. The design of the pathway shall be approved by the Community Development Department, Department of Public Works and Cambridge Redevelopment Authority, and shall align with the future cycle track on Ames Street. As currently maintained today, the Applicant shall be responsible for maintaining the Sixth Street Connector pathway for bicycles and pedestrians.</p>	<p>Construction to be completed prior to the issuance of the Occupancy Permit for the first Commercial building constructed. Completed prior to Amendment #2.</p> <p>Maintenance of pathway to be ongoing.</p>
<p>Wayfinding and Real-time Transit and Bluebikes screens. Provide real-time transit screens in the public plaza framed by the Marriott Hotel and 50 Broadway, and 255 and 325 Broadway on Parcel 4. Transit screens shall also be provided in lobbies of new commercial buildings.</p>	<p>Prior to the issuance of the Occupancy Permit for the first Commercial building constructed. Completed prior to Amendment #2.</p>
<p>Grand Junction. The Applicant shall continue to cooperate and coordinate with the City and CRA on the Grand Junction pathway connections at intersections.</p>	<p>Ongoing.</p>
<p>Bluebikes Maintenance and Operations. Pay ongoing annual operations and maintenance fees to the City for the Bluebikes Station(s).</p>	<p>Annual operations and maintenance fees shall be paid to the City before June 1st in the year the Bluebikes Station is expected to be installed, and ongoing before June 1st annually.</p>

APPENDIX E: Transportation Mitigation and Monitoring Program

Mitigation	Phasing
<p>Kendall Square Transit Enhancement Program (KSTEP). As described in the Transportation Impact Study (TIS) and Planning Board Special Permit application, the Applicant will provide funding for the KSTEP Fund through an initial payment in the sum of six million dollars (\$6,000,000). The City and KSTEP Working Group shall meet to decide on funding allocations, as defined in the KSTEP MOU. Potential transit mitigation may include: MBTA Red Line Kendall Square improvements, Kendall Station/Kendall Square Connection Enhancements, MBTA Red Line Service Modernization Improvements, Long-Range Feasibility Investigations, proposed MBTA Bus and EZRide Shuttle Improvements, such as 2-3 years net operational cost of a bus route linking Sullivan Square with Kenmore Square via Lechmere and Kendall stations.</p> <p>For Phase 3 and Phase 4, through the MEPA agreement with the Massachusetts Secretary of Energy and Environmental Affairs, Boston Properties and the Cambridge Redevelopment Authority will be jointly contributing \$1,100,000 toward the Kendall Square Transit Enhancement Program (KSTEP) as mitigation for the additional 800,000 sf of development and associated 2,240 new daily transit trips.</p>	<p>Phasing for the \$6,000,000 contribution shall be as described in the MOU. Completed prior to Amendment #2.</p> <p>The remaining \$1,100,000 contribution shall be provided upon the issuance of a Building Permit for Commercial Building D in Phase 4.</p>
<p>Maintain sidewalks and protected bicycle facilities (i.e. cycle tracks) on Binney Street and Galileo Galilei Way between/including 6th Street and Main Street, and Broadway between/including Ames Street to Galileo Galilei Way. The Applicant shall be responsible for maintenance such as, debris, snow and ice removal, crack repair, etc.</p>	<p>Ongoing following construction of the cycle tracks.</p>

Mitigation	Phasing
<p>100% Design and Reconstruction of Binney Street and Galileo Galilei Way between Sixth Street and Broadway, including improvements at the intersection of Galileo Galilei Way/Broadway and respective approaches.</p> <p>Based on the 25% streetscape redesign plans currently underway by the CRA for Binney Street and Galileo Galilei Way, the Project should advance the 25% plans to 100% and build the street layout as designed in the ALTA plans along Binney Street/Galileo Galilei Way between 6th Street and Broadway. The plans will include items such as, traffic signal equipment and timing, real-time vehicle/bike count stations, continuous separated bike lanes (cycle tracks), safety improvements to approaches to the major cross streets and potential bus priority treatments. The Binney/Galilei Way/Broadway signal improvements may include new mast arms, signal controllers, audible pedestrian signals (APS), vehicle detection (loops or other technology) and real time vehicle and bike count station to include vehicles and bikes traveling north, south, east and west. The street layout is more specifically defined as including the following elements:</p> <p>Surface Elements:</p> <ul style="list-style-type: none"> • Sidewalks – fully ADA compliant (both sides of the street) • Cycle Tracks – asphalt – evaluate porous asphalt (both sides of the street) • Resetting and replacing Granite curbing as necessary (both sides of the street) • Roadway reconstruction – potentially full depth (City Standard base course + Asphalt) curb to curb, depending on condition of the streets and the grading changes. • Potential removal of median. • Planting areas and street trees, depending on available space. • Evaluate and install irrigation, depending on extent of plantings. • Bus shelter, benches and trash cans <p>Utility Elements:</p> <ul style="list-style-type: none"> • New catch basins, manholes and laterals. Infiltrating catch basins will need to be evaluated. • Existing private utilities may have to be lowered, relocated or upgraded. These would not be at the expense of the permittee, but the permittee would need to coordinate their work. • Street lighting – if the area has older-style Kendall Square lights, they will need to be replaced with the type of lights used on Main Street – 1907 (roadway scale lighting) and Se’Lux (pedestrian scale lighting) light fixtures. Reuse or provide new conduit, control box and hand holes as necessary. • Traffic signals – Gallileo / Broadway, Binney / Galileo / Fulkerson, and Binney / Sixth intersections will need to be replaced and/or reconfigured. <p>The permittee will cooperate with the City if the design requires changes to the streetscape/sidewalk edge, including over the property line if necessary.</p> <p>The applicant will provide restriping, bicycle lane markings, and reflective pylons on both sides of the street along Galileo from Broadway to Main Street to facilitate the roadway-level connection for bicycles between the intersections of Broadway and Galileo and Main and Galileo.</p>	<p>100% design shall be completed prior to issuance of a Certificate of Occupancy for the first Commercial Building constructed. Completed prior to Amendment #2.</p> <p>Construction shall be completed prior to the issuance of a Certificate of Occupancy for Commercial Building D in Phase 4. A Certificate of Occupancy may nonetheless be issued prior to completion of the reconstruction work if, in TP+T’s view, the work has either been substantially completed or has been delayed due to circumstances outside the control of the developer.</p>

APPENDIX E: Transportation Mitigation and Monitoring Program

Mitigation	Phasing
<p>MBTA Red Line Station on North Side of Main Street. The Applicant should construct no more than \$400,000 in improvements to the MBTA Red Line Outbound Station on the north side of Main Street. These improvements shall be based on the MBTA’s state of good repair needs assessment and shall include items such as safety and accessibility improvements, head house and platform flooring, walls and ceiling conditions, drainage, real-time transit screens on the outside (sidewalk side), climate resiliency, wayfinding, aesthetics improvements, etc. Any feasible platform improvements should also not be precluded, including measures that may improve boarding/alighting from trains which may benefit train dwell times/headways/frequency/reliability.</p>	<p>The improvements shall be completed prior to an issuance of a Certificate of Occupancy for the first commercial building in Phase 3. An Occupancy Permit may be issued prior to completion of this work, as approved by the city, such as if the work is substantially completed or work is delayed due to circumstances which are out of the control of the developer.</p>
<p>Loading Dock/Residential Move-In/Move-Out Traffic Management Plan. The Permittee shall provide a loading dock/resident move-in/move-out, and traffic management plan for City approval. The Property Owner shall monitor operations and if the operations cause issues on public users and infrastructure (e.g., vehicles blocking other users or parking illegally) then BP will work with the City to resolve it.</p>	<p>Prior to the issuance of a Certificate of Occupancy of each residential building and ongoing. Plan may be later amended with TP+T approval.</p>
<p>Transportation Monitoring. The Permittee shall commit to a transportation monitoring program and mitigation measures whose effectiveness is commensurate with the triggers established in the Recommended Transportation Monitoring Program.</p>	<p>Annual and Biennial monitoring reports as described in the Recommended Transportation Monitoring Program.</p>
<p>Automobile Parking. TP+T supports the proposed Parking plan for the demolition of the Blue Garage and construction of up to 1,584 parking spaces below 250 and 290 Binney Street. The parking will meet the zoning parking requirements which include 0 minimum and a maximum 0.9/space per 1,000 sf for Office/R&D uses, minimum 0.4 and maximum 0.75 spaces per unit for residential, and 0 minimum and maximum 0.5 spaces/1,000 sf for retail uses.</p> <p>The total maximum parking supply for KSURP, including managed parking spaces, will be 3,750 spaces.</p>	<p>The Parking garages shall be constructed with the 250 and 290 Binney Street buildings and should be completed prior to the issuance of the building’s occupancy permits.</p> <p>Boston Properties shall monitor real-time parking utilization of the garages, monitor long-term trends and provide annual parking and monitoring data to the City.</p>
<p>Electric Vehicle Supply Equipment. To align with recent requests from the City Council for electrical vehicle charging in development projects, BP will install EVSE in 25% of spaces, or one dual-head Level 2 charger for every two vehicles served, or approximately 198 dual-head Level 2 chargers serving approximately 396 vehicles at 250 & 290 Binney Street. The remaining 75% of spaces will be EV-ready (wiring installed to, in the future, support installation of an additional one dual-head Level 2 chargers for every 2 vehicles served, approximately 594 chargers at 250 & 290 Binney Street. In addition, the project will ensure sufficient capacity in electrical panel and transformer to support future installation of chargers serving all 1,584 spaces.</p>	<p>25% of spaces to have EVSE upon occupancy of the 250 & 290 garages as they come on-line, plus remaining 75% of the spaces will be EV-ready.</p>

APPENDIX E: Transportation Mitigation and Monitoring Program

Mitigation	Phasing
<p>100% Design and Reconstruction of Binney Street between Fifth and Sixth Street. Boston Properties shall contribute \$3,500,000 to fund the design and reconstruction of Binney Street between Fifth and Sixth Street.</p>	<p>The funds will be made available by Boston Properties to a party jointly designated by the City and the Cambridge Redevelopment Authority following the issuance of any commercial building permit utilizing 800,000 sf of the Utility Project GFA within 90 days of its request.</p>
<p>Loading Dock and Traffic Management Plan. The Permittee shall provide a loading dock and traffic management plan for City approval. The Property Owner shall monitor operations and if the operations cause issues on public users and infrastructure (e.g., vehicles blocking other users or parking illegally) then BP will work with the City to resolve it.</p>	<p>Prior to the issuance of a Certificate of Occupancy of each commercial building and ongoing. Plan may be later amended with TP&T approval.</p>

APPENDIX E PART II

KSURP MXP Infill Concept Plan

Residential Transportation Demand Management Measures (TDM).	Ongoing after issuance of Occupancy Permit of the residential building.
<p>1. Make available a minimum of 10 carsharing parking spaces in the Blue (North) Garage for a vehicle-sharing company. As demand dictates additional carsharing vehicles will be added over time. Provide additional designated car-sharing parking spaces within and/or nearby by KSURP parking garages, if deemed feasible. (These are designated and priority spaces for carsharing users arriving for short-periods of time which is different than carsharing spaces that “live” in the parking garages.</p>	Ongoing after issuance of Occupancy Permit for the residential building.
<p>Provide electric vehicle (EV) charging stations (1 EV space per 100 auto parking spaces, i.e. 10 EV spaces in the Blue Garage) and preferential parking to alternative fuel vehicles, as dictated by the market.</p>	Ongoing after issuance of Occupancy Permit of the residential building.
<p>2. Offer each adult member of each household (up to 2) upon move-in a Charlie Card valued at the cost of a 50% bus/subway pass (subject to fare increases) for 3 consecutive months. This benefit will end after 3 months for the household and begins anew upon unit turnover.</p>	Ongoing after issuance of Occupancy Permit of the residential building.
<p>3. Offer each adult member of each household (up to 2) upon move-in a 1-year Gold-Level Hubway membership. This benefit will end after one year for the household and begins anew upon unit turnover.</p>	Ongoing after issuance of Occupancy Permit of the residential building.
<p>4. Provide air pumps and other bike tools in the bicycle storage room.</p>	Prior to the issuance of Occupancy Permit of the residential building.
<p>5. Join the Charles River Transportation Management Association (TMA)</p>	Ongoing after issuance of Occupancy Permit of the residential building.
<p>6. Provide free EZRide Shuttle sticker for each adult member of each household each year.</p>	Ongoing after issuance of Occupancy Permit of the residential building.
<p>7. Charge parking (market rate) separately from the residential rent, in order to remind tenants how much they pay for parking. The Permittee shall provide the summary of on-site parking fees to the TP&T.</p>	Ongoing after issuance of Occupancy Permit of the residential building.
<p>8. Either install a real-time multimodal transportation display screen to help people decide which mode to choose for each trip (transit, carsharing vehicle, Hubway bike share, etc.), or establish a transportation information center located in an area that is central, visible, convenient, and equally accessible to all residents and visitors. The center will feature information on:</p> <ul style="list-style-type: none"> a. Available pedestrian and bicycle facilities in the vicinity of the site b. MBTA maps, schedules, and fares c. Area shuttle map and schedule, if one exists d. “Getting Around in Cambridge” map and other CitySmart materials (available at the Cambridge Community Development office) e. Location of bicycle parking f. Hubway regional bikeshare system g. Carsharing h. Ride-matching i. Other pertinent transportation information 	Prior to the issuance of Occupancy Permit of the residential building.

<p>9. Designate a Transportation Coordinator (TC) for each residential building or the site to manage the TDM program. The TC will also oversee the marketing and promotion of transportation options to all residents at the site in a variety of ways:</p> <ul style="list-style-type: none"> a. Posting information in a prominent location in the building and on the Project’s website, social media, and property newsletters. b. Responding to individual requests for information in person and via phone and email c. Performing annual transportation surveys. 	<p>Ongoing after issuance of Occupancy Permit of the residential building.</p>
<p>10. Require the TC to compile and distribute up-to-date information explaining all transportation options to all new residents as part of their New Resident Packet. The packets will contain information on both the range of options available to any building manager programs to support the use of these options and will include:</p> <ul style="list-style-type: none"> a. Available pedestrian and bicycle facilities in the vicinity of the site b. MBTA maps, schedules, and fares c. Area shuttle map and schedule, if one exists d. “Getting Around in Cambridge” map and other CitySmart materials e. Location of bicycle parking f. Hubway regional bikeshare system g. Carsharing h. Ride-matching i. Other pertinent transportation information 	<p>Ongoing after issuance of Occupancy Permit of the residential building.</p>
<p>11. Require that the TC will be on-site during a minimum of 2 hours per week and will be available during other times to residents via email and telephone. Email and phone information for the TC will be posted in the transportation information center.</p>	<p>Ongoing after issuance of Occupancy Permit of the residential building.</p>
<p>Loading Dock/Residential Move-In/Move-Out Traffic Management Plan. The Permittee shall provide a loading dock/resident move-in/move-out, and traffic management plan for City approval. The Property Owner shall monitor operations and if the operations cause issues on public users and infrastructure (e.g. vehicles blocking other users or parking illegally) then BP will work with the City to resolve it.</p>	<p>Prior to the issuance of a Certificate of Occupancy of the residential building and ongoing. Plan may be later amended with TP&T approval.</p>
<p>Transportation Monitoring. The Permittee shall commit to a transportation monitoring program and mitigation measures whose effectiveness is commensurate with the triggers established in the Recommended Transportation Monitoring Program.</p>	<p>Annual and Biennial monitoring reports as described in the Recommended Transportation Monitoring Program.</p>

Recommended Transportation Monitoring Programs for KSURP Infill Concept Plan

In order to be assured that the Kendall Square Urban Renewal Plan MXD Infill Concept Plan is meeting the traffic generation targets that are the basis for approval of the Concept Plan on an ongoing basis, the Project shall be required to monitor the project's traffic generation and mode splits as buildings are built and occupied.

Residential Transportation Monitoring Program

The residential buildings will have residential Transportation Demand Management measures.

To monitor the traffic generation, parking demand and utilization, the Permittee shall implement a monitoring program to include: annual monitoring of mode split for all trips; biennial garage driveway counts; biennial counts of parking space utilization (vehicles and bikes); and a detailed survey of the residents with regard to their pattern of trips, auto and bicycle ownership or leased, and where the residents customarily store such vehicles overnight. All surveys and counts shall be designed and conducted in a manner approved by the CDD and TP&T. Approval of the form of any survey instrument or monitoring method is required before issuance of the first Certificate of Occupancy for the Residential Building.

Monitoring and surveying shall begin when Occupancy of the residential building has reached fifty (50%) or within one year of the date of the issuance of the first Certificate of Occupancy, whichever is sooner. If the Certificate of Occupancy is issued between September 1st and February 29th, the monitoring should take place during the months of September or October and be reported to the City no later than November 30. If the Certificate of Occupancy is issued between March 1st and August 31st, monitoring should take place during the months of April or May and be reported to the City no later than June 30.

Non-Residential Transportation Monitoring Program

Using data collected as part of the PTDM Plan, KSURP traffic data collection as required under Section 61 Findings, and supplemented when necessary, the Permittee will provide to TP&T and CDD transportation monitoring reports. All surveys and counts shall be designed and conducted in a manner approved by the CDD and TP&T, and shall include the following information:

- Annual mode split surveys reported to CDD and TP&T (may use the annual PTDM monitoring reports).
- Biennial driveway counts, auto and bicycle parking utilization surveys (may use biennial PTDM driveway counts).
- Biennially when driveway counts and vehicle/bicycle parking counts are collected, a Project Vehicle and Transit Trip Generation report shall be provided to TP&T and CDD in a format approved by TP&T and CDD. The primary focus of the report will be to compare the TIS PM peak hour vehicle and transit trip generation estimates with actual trip generation. The trip generation monitoring and thresholds will be based on the Project's Office, Laboratory and Retail trips.

If any monitoring report submitted during the build-out of the project determines that trip generation for existing occupied office, lab and retail_GFA exceeds **300 PM vehicle trips** or **exceeds 390 PM transit trips**, then new driveway counts and trip generation report must be provided the following year (instead of biennially), and if trip generation continue to exceed the vehicle trip or transit trip thresholds then additional TDM and infrastructure improvements commensurate with the level of exceedance, as described below must be implemented to keep trips at or below the levels projected in the January 4, 2017 trip generation update memo by VHB.

During the course of the project build-out, the PM vehicle and transit trips will be compared to the TIS estimates on a proportional basis related to project build-out or reflective of the building specific TIS trip generation estimates, to determine if the project trip generation is on target with the TIS assumptions. This will allow the permittee to make voluntary adjustments to its demand management programs to reduce the likelihood that the overall trip generation targets will be exceeded.

A final number of PM peak hour vehicle trips will be provided and certified by TP&T and CDD. The PM peak hour thresholds are as follows:

Trip Generation Thresholds (2015 Kendall Square Redevelopment TIS Estimates*)

	<u>PM peak hour trips</u>
Vehicle	300
Transit	390

*Vehicle and Transit trips calculations are based on VHB's January 4, 2017 updated TIS trip generation estimates for PM peak hour Office and Retail uses: 51 PM Peak hour retail vehicle trips + 250 PM Peak hour Office vehicle trips = 301, rounded to 300 PM Peak hour vehicle trips. 66 PM Peak hour retail transit trips + 326 PM Peak hour Office transit trips = 392, rounded to 390 PM Peak hour transit trips. Source is January 4, 2017 KSURP Infill Development Estimated Trip Generation. Residential trips are not included in the Trip Generation thresholds.

If monitoring indicates trip generation in excess of the thresholds above, and if MBTA and private (open to the public) transit capacity has not improved (a 5% or greater increase in calculated number of passengers accommodated in the PM peak hour), the proponent will work with the City staff to identify and implement additional mitigation measures intended to reduce auto mode share or peak hour vehicle trip generation or assist in improving transit options or shifting transit trips to walking and bicycle trips. The measures the proponent will consider include the following items or others that may have similar or better results and will be determined in consultation with the City of Cambridge. The proponent will commit to implement measures whose effectiveness is commensurate with the exceedance. Possible measures may include but are not limited to the following:

If exceeding vehicle trips threshold:

Shift vehicle trips to other modes and make sure that any measures that shift trips do not trigger other trip thresholds.

- Increase parking rate to market rate.
- Increased MBTA pass subsidies.
- Larger financial incentives for formation of vanpools/additional carpools.
- Acceleration of implementation of planned transit, bike infrastructure or TDM programs.
- Free bikes as rewards for not driving.
- Additional, reasonable measures as mutually agreed upon by the Permittee and the City.

If exceeding Transit trips threshold only if MBTA and private transit (open to the public) capacity has not been improved (a 5% or greater increase in calculated number of passengers accommodated in the peak hour):

- Contribute an additional \$500,000 to the City of Cambridge of KSTEP fund as approved by the City, to be established by the City, which shall be used to fund the cost of improving transit access to Kendall Square. The \$500,000 funds will be in addition to the initial \$6,000,000 for the KSTEP program and addition to other ongoing funding mechanism established by the KSTEP program for long-term sustainability of the KSTEP program.
- Shift transit trips to walking, bicycling and/or improve transit services.
- Provide additional bicycle parking facilities.
- Financial incentives for walking and biking.
- Additional, reasonable measures as mutually agreed upon by the Permittee and the City.

Methodology for determining Vehicle and Transit trip generation:

A combination of methods will be used to measure vehicle trips generated by the project including, but not limited to the following:

- Vehicle trips into and out of the project garages through actual car counts obtained from garage gates. Data should indicate the type/user of the vehicles entering/exiting (i.e. commercial office or laboratory employees or visitors, retail employees or patrons, academic uses, other). Data should be provided and summarized for daily, hourly, and peak hours. PM peak hour is the threshold.
- The counts will be supplemented with surveys of office and laboratory employees, visitors, and retail employees and patrons, to obtain information on number of vehicle trips during PM peak hour, location of parking (on-site or off-site), and whether dropped-off or picked up by vehicle.
- PM peak hour transit trips will be calculated based on number of employees, transit mode share, arrive/departure times, MBTA Charlie cards issued or subsidized will also be reported for office, laboratory and retail uses to help verify the PM transit trip information.

For the purposes of this agreement, the transit capacity of approximately 23,600 (23,679) passengers in the peak hour as presented in the KSURP TIS (Table 10a.1 System Peak Hour Capacity (Per MBTA Data) from page 87 of the TIS, shown below, will be utilized as the base number of passenger accommodated on the MBTA and private transit (open to the public).

TABLE 10.A.1 SYSTEM PEAK HOUR CAPACITY (PER MBTA DATA)

Mode	Frequency ^(a)	OTP Factor ^(b)	# Passengers / Vehicle ^(c)	# Cars / Train	Resulting Capacity ^(d) (# Passengers / Peak Hour)
Red Line					
Inbound	13	0.848	167	6	11,046
Outbound	13	0.848	167	6	11,046
MBTA Bus					
64 Inbound	2.5	n/a	54	n/a	135
64 Outbound	3	n/a	54	n/a	162
68 Inbound	2	n/a	54	n/a	108
68 Outbound	2	n/a	54	n/a	108
85 Inbound	2	n/a	54	n/a	108
85 Outbound	2	n/a	54	n/a	108
CT2 Inbound	3	n/a	54	n/a	162
CT2 Outbound	3	n/a	54	n/a	162
EZRide Shuttle					
Inbound	7	n/a	40	n/a	267
Outbound	7	n/a	40	n/a	267

Notes:

- (a) Number of vehicles per hour, per MBTA published schedules (Red Line) and MBTA Ridecheck Fall 2014 (Buses)
- (b) On Time Performance Factor from 2015 MBTA Annual Report
- (c) Number of policy level capacity per MBTA Blue Book 14th Edition (Red Line and Buses) and EZ Ride Feasibility Study (March 2015)
- (d) Calculated Capacity = #of Trains x OTP factor x # pax per vehicles x # cars – shown as number of passengers per peak hour

8.0 INTRODUCTION

This section presents the Project's overall approach to sustainability and addresses the specific areas of the topic, per Article 14.74.

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Concept Plan Amendment #1. There have been no significant changes to the Project's sustainability approach since the Concept Plan Amendment #1.

- **Commercial Building A:** Since the Concept Plan Amendment #1 was approved Commercial Building A was certified as New England's first LEED v4 Platinum building.
- **LEED V4 Gold:** In accordance with Article 22.20, all the remaining Project Components (Commercial Building B, Residential Building South, Commercial Building C and Commercial Building D), are being designed to achieve a Version 4 Leadership in Energy and Environmental Design (LEED®) Gold level or better.
- **Preliminary Energy and Greenhouse Gas Study:** The preliminary energy analysis and GHG study have been updated to reflect the as-built conditions associated with Commercial Building A at 145 Broadway, and the proposed conditions associated with Commercial Building B at 325 Main Street. Additionally, the results have been updated to reflect the most recent energy analysis for the proposed Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.

8.1 APPROACH TO SUSTAINABILITY

Sustainable principles are integral to the Project's design. Viewed through a land use planning lens, the sustainability approach includes repurposing previously developed land rather than building on untouched land, as well as locating new development within a high-density urban area with excellent access to public transportation, pedestrian circulation systems and a robust bicycle network. New commercial and residential space will be located on previously developed sites which will allow the Project to achieve energy savings associated with lower embodied energy and reduced Greenhouse Gas (GHG) emissions through the construction process.

A key component of the Project Change includes the demolition of the existing Blue Garage to accommodate the relocation and construction of a below-grade Eversource electrical substation that will serve the Cambridge community and improve the resilience of the area electrical grid for decades to come. The demolition of the Blue Garage will also enable the opportunity to construct the approximately 56,000 square foot Center Plaza at the heart of the North Parcel, resulting in an increase of more than 30,000 square feet of open space compared to the Concept Plan Amendment #1.

As a Transit Oriented Development (TOD), the Project will integrate into the existing public transportation and mode share infrastructure to further reduce traffic and indirect air emissions, including mobile source GHG emissions. TOD is environmentally, economically, and socially sustainable; it promotes greater accessibility, walking and biking, healthy lifestyles; and increased value for property owners, businesses, local governments, transit authorities and residents.

The Project will promote the design and construction of high-performance, green buildings through an integrated design approach where all project disciplines are engaged early and throughout the design process to meet sustainability goals. The Project's design will prioritize sustainability as a core strategic imperative and will implement state-of-the-art high performance green building technologies, construction, and operating procedures. Sustainability planning with an integrated design team during conceptual design will establish a pathway to Gold-level certification under the LEED v4 rating system. The project design teams will use iterative energy modeling and life cycle analysis to consider the long-term value of sustainable property investment decisions.

The integrated design approach will address best practices in energy and emissions, water management, reduced urban heat island effect (cool roofs), energy use monitoring and rooftop mechanical equipment noise mitigation, as set forth in Article 14.74. The Applicant is looking beyond these zoning requirements by addressing climate change preparedness, implementing sustainable tenant guidelines, and considering the health and wellness of its future occupants and users through the potential use of the WELL Building Standard® (WELL) design and operation principles.

Furthermore, the Applicant will work with its design teams to evaluate and incorporate, where feasible and reasonable, strategies that support the Cambridge Net Zero Action Plan. Refer to Appendix B for Net Zero Narratives for Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.

8.2 ENERGY CONSERVATION APPROACH

Buildings are significant consumers of energy and building mechanical and electrical systems are the chief consumers within any building. The Project Components will be designed to be energy-efficient, green buildings, and renewable energy strategies will continue to be evaluated as the design evolves and will be included in each Project Component's design review submission. The Applicant proposes that for each square foot of solar-ready rooftop provided, a square foot of occupiable green roof be permitted as exempt GFA (a 1:1 ratio). Renewable energy credits can also be purchased on a building-by-building basis to support off-site renewable energy production and offset non-renewable electricity use on site.

8.2.1 REGULATORY CONTEXT

Commercial Building A and Commercial Building B were permitted under and exceeded the previous Massachusetts Stretch Energy Code requirement to show at least 10 percent overall reduction in energy used as compared to the ASHRAE 90.1-2013 Appendix G code compliant baseline model with the inclusion of two additional efficiency measures per IECC 2015 section C406.1. Commercial Building C, Commercial Building D, and Residential (South) will be permitted under the new Massachusetts Stretch Energy Code requirement to show at least a 10% EUI reduction, either in site or source energy, compared to the baseline building as per ASHRAE 90.1-2013 Appendix G with the inclusion of at least three additional efficiency measures per IECC 2018 section C406.1 in both the baseline and proposed cases.

In accordance with Article 22.20, all new project buildings will also meet the LEEDv4 minimum building performance requirement of a two percent improvement in energy cost for core and shell projects and a five percent improvement in energy cost for residential new construction projects when compared to a baseline building performance as calculated using the rating method in Appendix G of ANSI/ASHREA/IESNA Standard 90.1-2010 improvement in energy cost for core and shell projects and a five percent improvement in energy cost for residential new construction projects when compared to a baseline building performance as calculated using the rating method in Appendix G of ANSI/ASHREA/IESNA Standard 90.1-2010

8.2.2 DESIGN STAGE - REDUCE ENERGY DEMAND

Success in reducing energy demand from these systems follows a four-step approach. This basic approach will be followed for each Project Component.

- Step 1 - Reduce Demand: Challenge assumptions to right size equipment, reduce plug and lighting loads, and improve the building shell.
- Step 2 - Harvest Site Energy: Orient the building to maximize passive solar and daylighting opportunities. Harvest waste energy on site through heat recovery and other means.
- Step 3 - Maximize Efficiency: Beyond simply reducing loads, use efficient equipment to maximize benefit.

- Step 4 - Efficient Operations and Maintenance: Building commissioning, training of staff, and ongoing preventative maintenance, combined with monitoring of on-going performance will be implemented to ensure energy efficiency gains are realized.

8.2.3 DESIGN STAGE – SET ENERGY TARGETS AND MODEL

These energy conservation targets are met by the selection of efficient building systems, equipment, and a lighting power density that is below code. Additionally, an improved building envelope design is required. The design teams will develop whole building energy models to demonstrate the expected energy performance of each designed building.

A variety of Energy Conservation Measures (ECM) will continue to be evaluated as design progresses. ECM's to be considered include, but are not limited to, the following:

- High-performance mechanical systems, including chilled beams in office and laboratory spaces.
- High-performance building envelope
- Reduced window-to-wall ratio
- Reduced lighting power density
- Building orientation and window locations shall be suited for improved energy efficiency
- Cogeneration
- Rooftop Solar PV
- Energy Star appliances and equipment
- Occupancy and daylight sensors and controls
- Demand Response / Peak Load Reduction / Smart Grid Compatibility

A preliminary energy analysis and GHG study was completed for each Project Component. The summary of findings is represented in the Preliminary Energy Analysis and Greenhouse Gas Study shown on the opposite page.

COMMERCIAL BUILDING A - 145 BROADWAY

Based on as-built design strategies, the estimated energy use reduction for the commercial building is approximately 12.1 percent, which equates to a 11.6 percent reduction (177 metric tons per year) in stationary source CO2 emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, variable volume condensing water pump, a high efficiency domestic water heater, and a high efficiency gas boiler, chiller beam system. Commercial Building A was New England's first LEED V4 Platinum Certified building.

COMMERCIAL BUILDING B - 325 MAIN STREET

Based on building currently under construction, the estimated energy use reduction for the new commercial building is approximately 15.40 percent, which equates to a 13.1 percent (245 metric tons per year) reduction in stationary source CO2 emissions when compared to the Base Case. Key energy savings features include improved glazing properties, interior lighting power density reduction, high-efficiency active chilled beam system, high-efficiency gas-fired condensing boilers, variable volume hot water and chilled water pumping systems, and high-efficiency centrifugal chillers.

RESIDENTIAL BUILDINGS SOUTH – 135 BROADWAY

Based on preliminary design strategies being considered, the estimated energy use reduction for residential building is 21.4 percent, which equates to a 17.2 percent reduction (193 metric tons per year) in stationary source CO2 emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, high efficiency heat pumps, high efficiency ventilation systems, and a high efficiency gas boiler.

COMMERCIAL BUILDING C (290 BINNEY)

Based on preliminary design strategies being considered, the estimated energy use reduction for the new commercial building is 43.2 percent, which equates to a 35.8 percent reduction (3,499 metric tons per year) in stationary source CO2 emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, variable speed hot water and chilled water pumping systems, high-efficiency centrifugal chillers, energy recovery for ventilation systems, and high-efficiency gas-fired condensing boilers.

COMMERCIAL BUILDING C (290 BINNEY)

Based on preliminary design strategies being considered, the estimated energy use reduction for the new commercial building is 43.2 percent, which equates to a 35.8 percent reduction (3,499 metric tons per year) in stationary source CO2 emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, variable speed hot water and chilled water pumping systems, high-efficiency centrifugal chillers, energy recovery for ventilation systems, and high-efficiency gas-fired condensing boilers.

8.2.4 OPERATIONS STAGE BUILDING COMMISSIONING

In addition, building commissioning will be conducted prior to and during occupancy to ensure the building systems are operating efficiently and as designed. Tenant green building guidelines will engage and educate building users and influence occupant behavior toward more energy (water and material) efficient practices.

8.2.5 OPERATIONS STAGE ENERGY TRACKING AND MONITORING

The Applicant has a robust internal program for tracking building energy use over time, using Energy Star Portfolio Manager and other tools. In addition, the Applicant has committed to reducing average building EUI by 15 percent, and is currently a strong supporter of the City's Building Energy Use Disclosure Ordinance.

The Applicant will implement a Measurement and Verification (M&V) plan that will utilize the base building energy management system to monitor operation of equipment or systems that are not already directly metered for electric or gas use. Core and shell projects will include a centrally monitored electronic metering network in the base building design that is capable of being expanded to accommodate and document the future tenant sub-metering.

In compliance with the Cambridge Building Energy Use Disclosure Ordinance, Chapter 8.67 of the Municipal Code, the Applicant will report energy use.

8.2.6 ON-SITE CLEAN/RENEWABLE ENERGY GENERATION

Commercial Building A includes a roof-mounted solar array that is anticipated to be capable of producing enough energy to equal at least one percent of the building's annual energy consumption. Commercial Building B is currently planning to install a roof-mounted solar array.

The remaining Project Components will be constructed to be solar-ready, including designing the roof structure to support the weight and wind loads associated with solar energy collectors as well as providing space to accommodate associated infrastructure, including conduit to the roof and space in the electrical room for an inverter. Each building will be individually analyzed for solar opportunities as the design develops. In addition, innovative strategies such as solar roadways will be considered. A solar-ready roof assessment has been provided as part of the Net Zero Narratives in Appendix B for Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.

TABLE 8-1 PRELIMINARY ENERGY ANALYSIS AND GREENHOUSE GAS STUDY

PROJECT COMPONENT	ENERGY CONSUMPTION (MMBTU/YR)			CO ₂ EMISSIONS (TONS/YR)		
	BASE CASE	DESIGN CASE	PERCENT SAVINGS	BASE CASE	DESIGN CASE	PERCENT REDUCTION
Commercial Building A – 145 Broadway	23,067 ¹	20,281	12.1%	1,533	1,356	11.6%
Commercial Building B – 325 Main Street	21,501 ¹	18,196	15.4%	1,864	1,619	13.1%
Residential Building (South) – 135 Broadway	18,444 ²	14,506	21.4%	1,122	929	17.2%
Commercial Building C – 290 Binney Street	134,660 ²	76,504	43.2%	9,762	6,263	35.8%
Commercial Building D – 250 Binney Street	176,671 ²	104,930	40.6%	12,869	8,641	32.9%

Tons/yr = tons per year

1. Commercial Building A and Commercial Building B reflect the final energy code energy model results that were approved during the building permit application for each building. Both Commercial Building A and Commercial Building B were permitted under the previous iteration of the Massachusetts energy code.
2. The base case has also been updated to reflect the most recent building code to ASHRAE 90.1 2013 with Massachusetts amendments.

8.3 WATER CONSERVATION

The Project will reduce overall potable water use and reduce wastewater generation compared to a conventional development through installation of low-flow plumbing fixtures and high-efficiency irrigation systems. All Project Components are currently targeting a minimum 30% water use reduction compared to conventional plumbing fixtures (per Energy Policy Act of 1992 fixture performance requirements).

The landscape design will incorporate native and adaptive vegetation and the design of the irrigation system will target, at minimum, a 50% reduction in potable water use when compared to a mid-summer baseline through the use of high-efficiency irrigation systems with controllers and moisture sensors. Non-potable water use strategies, such as rainwater reuse will be considered for irrigation. In addition, the landscape design will consist mostly of local, drought resistant species to minimize or eliminate the need for irrigation over the lifetime of the Project. Landscape areas will be designed to hold as much rainwater as practicable. The Applicant is also considering the use of rainwater capture for irrigation and the incorporation of green roofs and rainwater harvesting tanks for each individual building design.

Each Project Component will largely maintain the existing site drainage, replacing existing impervious rooftop and hardscape in kind on-site. The Project will be required to mitigate stormwater runoff to comply with City and MassDEP standards. Stormwater infrastructure will be designed and installed for each Project Component to reduce the runoff discharge rate and improve the quality of the runoff to the City's stormwater system and the Charles River basin.

8.4 RECYCLING AND SOLID WASTE MANAGEMENT

Recycling and reuse programs will be developed and implemented by all construction contractors to reduce the amount of waste that is sent to landfill throughout construction. Prior to the start of construction, the construction management team will prepare and submit a Construction Waste Management plan which will be implemented on site. A minimum of 75% of C&D waste will be diverted, as required by Massachusetts' law.

Storage of collected recyclables will be accommodated on the ground floor of the new buildings in a designated recycling area. A contracted waste management company will collect the recyclables on a regular basis. It is anticipated that approximately 100% of paper, corrugated cardboard, glass, plastic and metal would be recycled during operations. The Tenant Design and Construction Guidelines (discussed further below in Section 8.8) will include strategies to reduce waste through recycling and reuse programs.

In partnership with our vendors and tenants, BXP has implemented best practices for waste management, including single-stream recycling, composting, and e-waste programs for tenant solid waste in all of our regions. As a result, 54.9% of office waste by weight is recycled or composted across our portfolio, which is a 53% increase since 2008.

The Applicant will work closely with future tenants to promote responsible waste management practices, including haul trip optimization and composting at cafés and restaurants. Additionally, the Applicant will work with future tenants to ensure that they have signage and receptacles, and the building has designated central compost bins with frequently scheduled pickup.

8.5 REDUCE HEAT ISLAND EFFECT

Over the design life of the Project, climate change is expected to significantly increase the duration and frequency of heat waves. The anticipated change in average temperatures is exacerbated by the development density of Cambridge, which results in urban heat island effect. In an effort to mitigate urban heat island effect, the Applicant is considering a number of site and building design strategies, including light colored roof materials, light colored hardscape materials, landscaped areas, and green roofs.

8.5.1 SITE DESIGN

Site landscaping will be designed with tree canopy cover, low-level plantings, discontinuous impervious covers, reflective materials and permeable pavements in an effort to reduce the capture of energy from sunlight while promoting evaporation and plant transpiration. The construction of the new Central Plaza will also result in an increase in vegetated area that will not only reduce the increased heat associated with heat island effect, but will provide for a more comfortable pedestrian environment.

8.5.2 BUILDING DESIGN

To further reduce the heat island effect and mitigate storm water runoff, the Applicant is exploring the use of green roof cover, where feasible. Vegetation and shading structures will also be employed to shade buildings and outdoor spaces, where possible. The roof membrane on all Project Components will be a high albedo roof product, excluding any green roof areas. All vehicle parking supporting the Project will be below-grade, greatly reducing the uncovered and impervious surface area needed for the Project's required parking.

The Applicant understands the City Council approved a zoning petition on May 3, 2021 that would require installation of green roofs, or BioSolar roofs on future construction and significant rehab of buildings that are 20,000 square feet and larger. The Proponent will take this requirement into account as the design advances for the remaining phases of the Project.

8.6 RESILIENCY IN BUILDING DESIGN

The Applicant has studied the vulnerability of the infill development sites for the potential of precipitation-based inland flooding events. Potential building design resiliency measures being considered include limiting basement areas, and other improvements that may mitigate potential flooding. Additionally, ground floor finish elevations for all Project Components will be raised to the greatest extent possible to reduce the risk of internal flooding. Flood-resilient materials will be specified for first floor uses, where practicable.

Flood prevention techniques could include: sealed wall penetrations for cable and electrical lines; watertight door barriers; septic line backflow prevention valves, sump pumps, and discharge pumps—all of which could be connected to auxiliary external generator connections or resilient backup power. In addition, the Project is anticipated to include green roofs/roof gardens and roofing membranes with high SRI to reduce the volume of storm water runoff and reduce solar heat gain/minimize air conditioning loads, respectively. Additionally, high-performance curtain wall is being considered to maximize views and daylighting of interior spaces, thus reducing overall lighting loads and associated internal heat gains, which has a direct impact on the space cooling load. As the climate change analysis shows, the rising temperature increases the space cooling demand in the Cambridge climate; therefore, any strategy that can reduce the space cooling demand is considered an adaptive strategy for climate change.

The Project's climate change mitigation includes the incorporation of several ECMs to reduce GHG emissions associated with energy use beyond what is required by Code. (Refer to Appendix B for further details on such measures.) Some of these measures can also be considered adaptive design approaches to mitigate the potential impacts of climate change on the Project. These GHG emissions mitigation and climate change adaptation measures are considered mutually re-enforcing and, therefore, cannot be considered in isolation. As an example, the window area in the Residential Building South will be designed at an appropriate ratio to reduce energy use while still providing enough daylight and opening area for natural ventilation. This is an adaptive strategy in response to potential future increases in mean temperature. Other climate change adaptive strategies considered will include improved envelope insulation and high-performance glazing in response to increasing temperatures. The design team will continue to investigate the feasibility of renewable energy sources and highly energy-efficient technologies, such as solar PV, air-source heat pumps and water-source heat pumps. As climate change is not limited only to temperature increase, but may also include flooding, intensified downpours, and/or hail events, the design team will continue to consider ways in which the architectural elements selected for the Project can reduce the vulnerability to these extreme events.

While the Applicant is not responsible for the execution of the electrical substation, resiliency to future climate change will be an important focus of the design and the review and approval by the Massachusetts Energy Facilities Siting Board.

OTHER POTENTIAL RESILIENCY MEASURES

On-site renewable energy, and a district energy network also provide opportunities for added resiliency during periods of power loss during storms. While the KSURP area is served by underground utility power lines and gas mains, and as such, is not normally effected by storms that disrupt power or gas transmissions, according to Massachusetts Department of Energy Resources (DOER), the Kendall Square Cogeneration Station (the “Cogeneration Station”) has been registered by the ISO-NE as a black start generation asset that can operate in island mode to provide both electricity to the Cambridge grid and thermal energy to the KSURP area in the event of a grid outage.

On-site combined heat and power (CHP), or solar PV, generally will operate in phase with the incoming utility power, and needs incoming power to synchronize phase delivery. In “island mode”, generators and CHP systems can be made to operate independently of the grid and self-synchronize power phasing with on-site solar. However, this approach is normally used in large-scale shelter locations only, when long-term operation may be needed to protect a group of people.

In most cases, the proposed commercial buildings will shut down and send occupants home in storm-related power failure scenarios. Any generators provided will most likely be optional standby generators that are sized to maintain server room or process operations only. In the case of the residential components, the generators provided will be for life-safety uses only (stairway pressurization, egress elevators, fire pump, etc.) and cannot by Code be used for ordinary ongoing operations in a building. The capacity provided by solar PV, even if the available space is maximized, will not be more than 10 percent of the power needed by the building, and cannot provide all power needed for normal operations. A CHP system could be used to provide limited ongoing operation, but the economics of such a system when compared to the likelihood of repeated power outages in the Kendall Square area would not be favorable. Storm response actions and resiliency measures will be incorporated into leasing agreements or tenant guidelines, including guidance related to tenant fit-out of commercial space, particularly those located on the lower floors.

8.7 HEALTH AND WELLNESS

Human health and wellness are addressed in the Project through design, operations, and occupant behavior. Within each Project Component, special attention will be given to address human health and comfort during construction and once the building is occupied. This will be accomplished by implementing pollutant reduction strategies, using non-toxic materials, providing fresh air to occupants, installing individual lighting and heating controls, and by providing natural daylight and views to outdoor green spaces. Tenant Design and Construction Guidelines will include comfort related requirements such as installing CO2 sensors in all regularly occupied spaces.

The Applicant is also exploring the use of principles of the WELL Building Standard, which place human health and wellness at the center of design and can encourage and educate future tenants on healthy living practices. Active design principles, encouraging physical and social activity, will be employed where possible. The Project Site will include vibrant spaces where people can safely walk, bike, use transit, and access open spaces. Individual buildings will be designed wherever possible to include visible, attractive and well-lit stairs, communal services such as break areas and copy services, and a variety of public gathering spaces and individual relaxation spaces. Ground level outdoor spaces will be easily accessible to both building occupants and visitors alike.

8.8 SUSTAINABLE TENANT GUIDELINES

Tenant Design and Construction Guidelines will be provided to office and retail tenants as a guide to use when fitting out their spaces. The intent of these guidelines is to educate tenants about implementing sustainable design and construction features in their tenant improvement build-out as well as adopting green building practices that support the overall sustainability goals of the Project. The guidelines will also communicate the sustainable and resource-efficient features incorporated into the base building(s) and provide specific suggested sustainable strategies enabling tenants to coordinate their leased space design and construction with the rest of the building systems.

In summary, the guidelines may include the following information:

- Descriptions of sustainable design, construction and operations features of the proposed building(s), including resource conservation goals and features for tenant fit-out spaces (e.g., low-flow plumbing fixtures, sub-metered systems, lighting controls) as well as building certifications (i.e., LEED certification).
- Encourage tenant commitments for meeting various energy and water conservation goals.
- Descriptions of current regulatory requirements that pertain to leasable spaces.
- Strategies for energy efficiency, such as those for HVAC equipment recommendations, lighting and lighting controls, and low-flow, high-efficiency plumbing fixture recommendations.
- Information on the various high-performance building rating systems, such as EPA's ENERGY STAR and LEED for Commercial Interiors (CI) as well as information on how the design of the base building(s) can contribute towards these certifications.
- Waste reduction goals and recycling facilities/programs.
- Information on green cleaning guidelines and policies.
- Information regarding project-wide features that aim to encourage alternative transportation and TDM measures.
- Information on how to train and inform maintenance staff and employees on operations related to sustainable design features and systems.

8.9 LEED CREDIT NARRATIVE

Refer to the Sustainability Supporting Documentation in Appendix B for individual Project component reports.



CITY OF CAMBRIDGE

Community Development Department

Date: September 21, 2021

Urban Design Report: **PB-315 Amendment 2, MXD Infill Development Concept Plan (IDCP)**

Introduction

The proposed multiphase project for the northwestern portion of the MXD District – between Binney Street, Broadway, Galileo Galilei, and the Sixth Street Walkway – will transform the site from a congested superblock penetrated only by narrow alleys and driveways to a permeable urban district, related to and complementing the anticipated development of the adjoining Volpe site. Major Amendment 2 proposes demolition of the existing garage with parking relocated underground, and a major new, central public open space at its replacement that will create a sense of arrival and give the district a memorable identity. Three buildings will be grouped around this space: Commercial Buildings C and D fronting onto Binney Street at the north edge of the site, and Residential Building South fronting onto Broadway at its south edge. . It will provide a major improvement to Cambridge’s infrastructure: the construction of a new underground substation to serve the city’s growing need for electrical power.

The detailed design of landscape and individual buildings will follow the amendment; therefore these comments focus primarily on the overall organization and character of the site’s open spaces, and on the role of the site’s buildings in defining and activating those spaces.

Overall Urban Design Concept

The new commercial and residential buildings on Binney Street and Broadway will replace the existing low scaled parking garage and a small commercial building with buildings of a scale more consistent with the developing character of Kendall Square, and present the opportunity to increase the spatial definition and programmatic activation to the surrounding streets. The project maintains the vehicular drives within the site in their current locations while enhancing their pedestrian character, and maintains the existing pedestrian paths connecting the site to the Sixth Street Walkway, the Volpe Site, and to Galileo Galilei Way. The new open space in the middle of the block will transform the ways the site is used and perceived: ventilating it at its center and providing space for gathering, events, and passive uses.

Urban Form of the Central Plaza

The Central Plaza will be a welcome contrast to the density of the existing and new building around it, a memorable space in the center of the block, giving light and air to the site’s residents and workers, enriching the site’s spatial structure, and complementing and connecting to the adjoining Volpe Site’s open spaces. The character and quality of the entire open space at the heart of the site - not only the proposed plaza directly above the substation vault, but also the East and West Plaza Drives with their pedestrian emphasis, and the landscaped yards of the adjoining buildings - will be fundamental to the site’s contribution to the life of the area.

In addition to serving as an amenity for the occupants of the surrounding buildings, the Plaza will incorporate large ventilation structures for the electrical equipment in the underground vault - the intake structure will be at the south end of the plaza by the residential building, and the exhaust structure by Commercial Building C at the north end of the plaza. These will be treated as sculptural elements, designed to visually enhance the space.

Staff supports the application’s intention to create an “open central space with defined edges”, a flexible space that will accommodate a wide range of uses including play, performance, gatherings, and passive relaxation. Consideration could be given to more fully realizing this vision by:

- Addressing the entire length and width of the open space at the center of the scheme, from façade to façade: more clearly and richly defining the edges of the Central Plaza and the areas framing it, including East and West Plaza Drives and the setback yards of the existing buildings along them. Means could include:
 - Providing considerably more planting, trees, low plantings, and ground cover in the plaza, in other words, treating the space more as a park and less as a plaza. Benefits would include moderation of the plaza’s microclimate, the aesthetic value of vegetation, and the spatial definition that canopy trees could give to the plaza and the East and West Plaza Drives.
 - If the depth of soil above the underground vault is a limiting factor for trees or ground cover, consideration should be given to raising the proposed ground level over the vault, with appropriate ramps, steps, site walls, etc., well incorporated in the design, or to excavating the vault more deeply into the ground.
 - If the area over the vault needs to be primarily paved to minimize concerns about the long term integrity of the vault’s waterproofing system, consideration could be given to more clearly defining the edges of the Plaza by increasing the amount of tree coverage and other vegetation along the sides of the Plaza and along the East and West Plaza Drives. Additional street trees, furniture, low plantings, specialized paving, and amenities such as trellises could all contribute to the creation of edges that both frame the central open space and provide smaller, more sheltered and intimate places.
 - Providing denser and more consistent landscaping in the setback yards of the existing buildings along East and West Plaza Drives.
- Considering reducing the prominence of the exhaust ventilation structure at the north end of the plaza by integrating it more fully into the design of the adjoining Commercial Building C or by extending the building’s ground floor active use space to the south to align with the ventilation structure’s south side.
- Providing more detail on the proposed recreation and performance programs, their technical requirements, and how they will be accommodated while retaining the flexibility that the application rightly stresses.
- Developing principles for the design, character, and use of the plaza to ensure that as potentially unforeseen changes are made due to engineering considerations, it provides appropriate spatial, aesthetic, social, recreational, and circulation benefits to the district.

The plaza’s design needs to accommodate large hatchways needed for the infrequent but critical insertion and removal of electrical equipment, with unobstructed routes for the heavy equipment needed for these operations. The application shows that hatchways and other entrance points to the

vault will be elevated above anticipated 2070 flood levels; details and elevations should be revised as data on flooding is updated.

The drawings of the substation vault show these hatchways in the central north/south zone of the Plaza. They indicate that while the hatchways and other access points to the vault need to be at a minimum of 25.0' CBE, the corners of the plaza on the East and West Plaza Drives range from 20.1' CBE to 23.3' CBE. The sections through the plaza, however, show it as level and only slightly above the level of the Drives. As the design is developed, various means should be explored to resolve the differences in grade and ensure accessibility, including raising the level of the plaza's eastern and western sides closer to that of the hatch openings (with appropriate ramps, steps, low walls, designed as integral parts of the design with careful attention to accessible routes and pedestrian desire lines, as well as to access routes to the hatches for heavy equipment).

In summary, consideration could be given to instead giving the plaza a more unified and memorable form. Despite the application's intention to create an "open central space with defined edges", the Central Plaza is depicted as a large paved field supporting a loosely arranged and disparate variety of objects: ventilation structures, planters, and an irregularly shaped seating area. The space could instead be conceived as a room-like place at the heart of the site – a unique place of arrival around which the existing and proposed buildings are organized. As its design is developed, an investigation of similarly sized urban open spaces may be informative. Potential examples include the plaza at Rockefeller Center in New York, whose accommodations for ground level life complement the height of the buildings; the lawn at Bryant Park in New York with its surrounding frame of tree shaded seating areas; the lawn at Technology Square in Cambridge with its simplicity of form, canopy trees, and logical path structure; and Copley Square in Boston and Place Saint Suplice in Paris with their combinations of canopy trees, ground cover, and broad paved areas.

East and West Plaza Drives

Consideration should be given to enhancing the of spatial definition of the Drives, and the shading of pavement areas, by providing continuous and aligned canopy trees on both their sides for their full lengths from Broadway to Binney Street, except where precluded by service or garage entrances. While the proposed pedestrian-friendly woonerf continues for the full length of West Plaza Drive, the northern portion of East Plaza Drive serves the loading docks of both commercial buildings and their parking garages. It appears to be more of a service yard than a pedestrian friendly space, yet this northern portion of the drive is proposed as a secondary pedestrian route. Consideration should be given to giving this portion more continuity with its central and southern portions by providing plantings and continuous sidewalks, by limiting the lengths of curb cuts, and by continuing the pedestrian pavement of the Drive through the loading zone to Binney Street.

Perimeter Streets – Binney and Broadway

The landscape design of the project's Binney Street and Broadway frontages should prioritize the quality and continuity of the pedestrian and bicycle experience. Curb locations, bicycle lanes, sidewalks, street furniture, and street trees should be coordinated with the City's plans. Additional planting, including canopy trees, should be considered in the Broadway setback of the residential building, unless precluded by the electrical duct banks feeding the substation.

Comfort - urban heat island effect & shade, noise, and wind,

- The proposed landscape is almost entirely paved., and the application’s Tree Mitigation and Protection Plan appears to show a net reduction in the number of trees. As the design proceeds, additional vegetation should be considered for its moderating effects on microclimate, the shade it provides, its aesthetic value, and for the spatial definition and intimate scale it can provide.
- Care should be taken to minimize the potential noise (both from air flow and equipment) of the Eversource vault’s intake and exhaust vents. The application includes a study of the anticipated noise from equipment in the proposed buildings, but not from the vault’s ventilation structures. Given the adjacency of the intake and exhaust vents to the commercial and residential buildings and the intended uses of the plaza for gathering, performance, sport, and play, as well as more passive activities, a full study of the noise they may create and its impact on uses of the plaza and on workers and residents should be provided, along with proposed mitigation measures if needed.
- The application’s wind study indicates that the Central Plaza will be comfortable for standing and strolling, but not for sitting. Consideration should be given to providing more protection from wind, such as additional canopy trees, pedestrian scaled structures, and setbacks in tall building facades to impede downdrafts.

Built Form:

The proposed building heights seem appropriate for the developing character of Kendall Square. Their siting along Binney Street and Broadway creates space for the Central Plaza as well as the Eversource substation vault. The general alignment of their street facades with those of the adjoining buildings will reinforce the coherence of the streets.

Massing:

Building massings are conceptual at this point; multiple variations are shown; the designs will evolve as the buildings more fully programmed and designed.

A clearer explanation of how building massings and facades are meant to respond to the unique contexts of each building would inform the review process, Aspects of built form, such as the definition of the edges of streets and other open spaces, the locations of setbacks and setbacks relative to open spaces or buildings, the character of facades relative to views and adjoining spaces, the location of ground floor activating uses, impacts on microclimate, exterior amenities such as balconies or terraces, response to solar conditions, etc. could be addressed.

In addition to the K2 Design Guidelines (2013), consideration could be given to the Design Guidelines created for the adjoining Volpe Site (2017), Both sets of guidelines stress the importance of architecture’s role in defining, shaping, and activating the site’s streets and other open spaces. They are based on the premise that despite the heights and large floorplates needed to satisfy programmatic requirements and project feasibility, new buildings can create a positive and welcoming urban district by responding to the varied scales of the urban environment: their ground floors uses and design activating and visually enriching the adjoining streets and open spaces; their streetwall zones (their lower approximately 80 to 100 feet) framing those spaces with facades; and their towers responding to adjoining spaces and buildings and also distant views. To mitigate the visual bulk of large buildings, they recommend the use of slender vertical proportions in massing and façade design, the differentiation of

the facades of large floor plate buildings by changes in plane, materials, or façade pattern, and the provision of stepbacks in deference to adjoining streets and other open spaces.

Architectural Character

The application's examples of materials and façade systems are generally appealing. Note, however, that they emphasize precedents with relatively high window to wall ratios, perhaps most applicable to building towers. Consideration could also be given to the materials and details of pedestrian level facades, to broader areas of solid wall, and to details such as entrances, balconies, mechanical areas, etc.

Residential Building:

The relatively simple massing and vertical emphasis of the proposed Residential Building seems an effective counterpoint to the horizontal emphasis of the projecting bay windows of the existing Akamai building to the west. In accord with the K2 guidelines' recommendation that buildings create streetwalls aligned with those of adjoining buildings, the distinct streetwall zone shown in the application will give spatial definition to the Central Plaza and to Broadway, and help mediate between the scale of the Akamai Building on the west and the lower existing building on the east.

- Consideration could be given to stepping the building's north façade away from the Central Plaza to relate to the heights of the existing buildings on the east and west sides of the plaza, and to reduce wind impacts on the plaza.
- Greater consideration should be given to the activation and visual enrichment of Broadway and the Central Plaza by the design and programming of the building's ground floor.
- Additional detail regarding unit types, sizes, and quantities, and the amenities provided for residents will be needed as the project's inclusionary housing component is reviewed.

Commercial Buildings C and D:

The two commercial buildings on Binney Street have a bulky appearance, and the space between them appears to be narrow in comparison to its height.

- Consideration could be given to creating more variety along Binney Street by making the two buildings different heights or by differentiating their facades by as the use of different materials or façade strategies.
- Consideration could be given to a more expansive treatment of the northern portion of East Plaza Drive between the two buildings.
- Upper-level connectors are proposed between the two buildings. Their form, location, and size should minimize the perception of buildings C and D as a single large building.
- Consideration could be given to stepping building C back from the Central Plaza to relate to the existing buildings on the east and west sides of the plaza, and to reduce wind impacts on the plaza.

Ground Floors and Retail Space:

Most of the ground floor spaces fronting onto Broadway, Binney street, East and West Plaza Drives, and the Central Plaza are occupied by non-active uses: large residential and commercial lobbies, mechanical space, back-of-house spaces, the Eversource exhaust tower, loading docks, etc., leaving little space for retail or other active uses. A small retail space is provided on Broadway next to the residential lobby. The ground floor of Commercial Building C adjoining the the north end of the Central Plaza is designated as "active use" space, and is proposed as the initial location of the Valet Bicycle parking

system. With the construction of Building D, the second commercial building, the valet system is proposed to be relocated there, and the ground level space of Building C will then be available to other active uses, including retail.

- To enhance the adjoining city streets and the open spaces internal to the site, consideration should be given to increasing the amount of space available for retail and amenity space facing Broadway and Binney, West Plaza Drive, and the Central Plaza.
- Consideration could be given to reducing the width of the undercut loggia-like passage under the upper floors of the residential building and instead incorporating retail in that location.
- A fuller explanation of whether and how the Valet Bicycle Parking systems will activate the adjoining plaza would be helpful.
- If building lobbies remain as large as currently shown, perhaps they could be designed as shared work spaces for residents and workers.

Bicycle Parking:

The application proposes a valet bicycle parking system, initially located in the southern portion of Commercial Building C's ground floor and moving to the ground floor of Building D once the latter has been constructed. This system is intended to not only accommodate long term bicycle parking, but also to reduce the number of short-term spaces needed.

- Numerous questions remain regarding the feasibility of the valet system, its features, hours of operation, convenience for users, the monitoring of level of service, etc.
- Consideration could be given to locating the valet system's storage area either in below grade space or at the second level so as to free up the ground level space for uses such as retail.
- In addition, as the project develops, careful consideration should be given to the increasing the amount of short-term bicycle parking areas, locating them in convenient locations and to providing a sufficient number of Bluebike stations for the district's population.

Sustainability

Urban Heat Island

- A fuller explanation of the project's strategies to reduce the urban heat island effect would inform the review process.
- Consideration should be given to increasing tree canopy and other vegetative cover on the site, and to the selection of architectural and paving materials to minimize heat retention.
- Note that a comparison of existing trees, tree removals, and proposed trees in the application's Tree Study seems to indicate a net reduction in canopy.
- As the design proceeds, additional vegetation should be considered for its benefits to the site's microclimate.
- Will the heat produced by the Eversource electrical equipment be a significant component of the site's overall heat signature?
- Could ways to utilize this waste heat be explored? Possibilities may include using it to heat buildings, moderating the microclimate in winter, melting snow, heating greenhouses, and powering kinetic sculpture.



CITY OF CAMBRIDGECommunity Development Department

Date: December 8, 2021

Urban Design Report: **PB-315 Amendment 2, MXD Infill Development Concept Plan (IDCP)**

Executive Summary:

- The supplemental "IDCP Amendment 2 Response to Comments" (November 5, 2021) document includes design alternatives and new information intended to address concerns raised regarding the "IDCP Amendment 2" (July 1, 2021) document. The essential benefits of the project remain unchanged: the provision of the new underground substation, the provision of new residential and commercial space, and the opportunity to create a major new public space in the center of the hitherto congested superblock. The supplemental document includes alternatives for the site plan, building locations, and building massing. More information is provided on bicycle parking, resiliency, and the substation vault and its impacts on environmental comfort. If the Planning Board approves the amendment to the IDCP, then design review of the project's open spaces and architecture will continue as individual projects are submitted; the urban design comments included below can be incorporated into the future design review process. The scheme and information provided in the supplemental document addresses some of the Planning Board's concerns in the first hearing, including that it: Reduces the bulkiness of the commercial buildings.
- Adds vegetation to the Central Plaza.
- Adds a children's play area.
- Provides more information on bicycle parking.
- Provides sectional information on the substation vault, putting it in context of the Plaza above and its grading.
- Provides more information on the temperature and noise impacts of the substation's vents.

Priority comments on the new materials include:

- Greater reference could be made to the K2 and Volpe Design Guidelines, including to their underlying intentions regarding the definition of public space by architectural and landscape design.
- An overall landscape plan should be developed to enhance the coherence and amenity of the site's public spaces. Priority issues include the spatial definition of the Central Plaza and its public amenities as the site's primary public open space, the provision of consistent trees and sidewalks along the Drives, improvements to the setback yards of the existing buildings on the east and west sides of the Plaza, and the development of the project's frontages on Binney Street and Broadway. This plan could be reviewed and revised as individual building sites undergo design review.
- In particular, the design and character of the Central Plaza should be more fully developed, including its accommodation of uses including recreation, play, and public gatherings; its activation by the uses of adjoining buildings; pedestrian desire lines within and through it; the

design of the substation’s ventilation and other structures; and the access routes required for heavy equipment.

- Information was provided on the potential impacts of the substation on environmental comfort and potential means for their mitigation, but these issues should be investigated further in the design review process.
- Additional information was provided regarding building massing and siting, which should be explored further in the design review process, especially relative to public spaces within and adjoining the site.
- Recommendations for more active uses in the first floors along adjoining city streets and the Plaza.
- Recommendations to minimize the impacts of building loading and service on the public realm.

In addition, many of the comments in the September 21, 2021 Urban Design memo are still pertinent.

Introduction:

The conceptual design depicted in the supplementary document is generally similar to that of the original (July 1, 2021) document for Amendment 2. The Central Plaza covers the underground Eversource vault at the center of the site and is bordered on its east and west by East and West Plaza Drives. These drives connect Broadway and Binney Street and organize the site. Two 250-foot-tall commercial buildings are at the north end of the site, separated from each other by East Plaza Drive (which serves their loading docks); a 400-foot-tall residential building is at the south end of the site. Aside from a few drop-off or parallel parking spaces, vehicular parking is located in underground garages. Bicycle parking is primarily provided by a valet system.

The supplementary package includes alternatives for the design of the plaza, the service drives, the ground floor footprints of the three buildings, and the massings of their towers. New information is provided regarding the Eversource substation vault and the constraints it imposes on the design.

The design guidelines included in the July 5, 2021 document focus on details, features, and materials of the site’s landscape and buildings, but also reference the Kendall Square Design Guidelines (the “K2 guidelines”, 2013) and Volpe Site Design Guidelines (2017). Both of these documents stress the importance of the site’s contribution to the city’s public realm: the creation of active, legible, and memorable urban spaces – streets, parks, and squares – by the harmonious collaboration of architectural form and landscape design, with the goal to not only serve the needs of residents and workers for use and comfort, but also for a sense of place.

The proposed buildings and the plaza will be subject to future design review by the Planning Board, as detailed in the Z&D report. The following recommendations regarding design guidelines, the designs of buildings and spaces, and requests for more detailed technical information regarding issues that will affect environmental comfort should be fully addressed during that process, but may help inform the discussion at present.

Site Plan:

The K2 and Volpe design guidelines emphasize the design of streets, parks, squares, and plazas as fundamental components of the public realm. As the design of the site’s buildings and open spaces are

further developed, greater reference could be made to the guidelines' objectives and recommendations regarding the provision of open flexible areas with legible yet permeable edges, the provision of more intimate sheltered areas and areas dedicated to specialized uses, provision of vegetation, and the potential of canopy trees to provide shade and spatial definition.

The Central Plaza

The necessity to leave the area over the vault free of structures presents the opportunity to create a significant open space at the center of the district.

The underground substation requires two ventilation structures, a large hatchway elevated roughly four feet above grade, and an elevator headhouse. In the July 5 document, the remaining area above the vault is primarily paved. The supplementary document adds an alternative with larger, irregularly shaped grass & programming areas, raised platforms, furniture, light posts, ventilation structures, etc. – distributed on a field of pavement, and surrounded by clumps of trees and buildings of disparate massing. Particularly in the perspectives, these varied objects seem insufficiently related to each other by their forms, by accommodation of pedestrian desire lines within and through the plaza, or by an overall concept for layout of the space.

During design review, consideration should be given to developing the plaza's ground plane and plantings and to adjusting the structures serving the substation vault to create a more coherent public space - a calm unifying center for the site's disparate buildings and a place of respite from the densely constructed urban context. More specifically:

1. Consideration should be given to further increasing the amount of vegetation in the space as feasible – to treating less as a plaza and more as a park.
2. Consideration should be given to revising the plaza's ground plane to create a simpler arrangement of grass areas and other features. A grass lawn, large enough to dominate the plaza's form and character despite any interruptions by paths and other features, would provide more flexible area for gathering and recreation, provide welcome greenery, and give the space priority it deserves as the site's most prominent organizational element.
3. Consideration should be given to providing canopy trees along the east and west edges of the Plaza to the extent feasible, providing shade, enhancing its pedestrian scale, and giving the Plaza additional spatial definition. To make space for them between the area precluded by the vault and the East and West Drives, consideration should be given to relocating the central portions of the Drives slightly farther away from the Plaza.
4. To activate the space, consideration could be given to incorporating recreation and play areas.

East and West Plaza Drives

The drives are proposed to remain in approximately their current locations, but are reconceived as pedestrian and bicycle friendly woonerfs. The north end of East Plaza Drive serves the loading docks and garage entrances for the two commercial buildings, interrupting the continuity of curbs and sidewalks. Most of the numerous trees that currently border the Drives must be removed for the construction of the vault and the new buildings; few new trees are added.

The two commercial buildings are sited directly along Binney Street, potentially activating the street with first floor uses. In the more recent alternative, Building D, (the eastern commercial building) is rotated away from building C, creating a triangular space at the north end of the East Plaza Drive. This

change seems to address concerns about the narrowness of the space between the two commercial buildings in the earlier scheme. The creation of a park-like space, adjunct to the Central Plaza but more intimate, and linked to it by the continuity of East Plaza Drive, connected to the lobbies of the commercial buildings, and less compromised by loading docks, would enrich the pattern of public spaces in the district.

The east and west drives and the setback yards between the drives and the existing buildings on their east and west sides should be seen as integral parts of the overall scheme for the site, complementing and reinforcing the design of the area directly over the vault. As the Project moves towards design review, the following principles could be used to better guide the design refinement of these Drives:

1. To create a more pleasant pedestrian environment with shade on hot summer days, a sheltering sense of scale relative to the large buildings, and to enhance the Central Plaza's legibility as the project's central public space, consideration should be given to providing more consistent street trees and curbs and sidewalks along the drives – to treating the drives as allées similar to the Loughrey Walkway. Merely relocating the East Drive's central portion to align with its location between buildings C and D may provide enough width for additional tree plantings and could be studied further in the design review process.
2. To reduce the impacts of the existing and proposed loading docks and garage entries on the pedestrian realm, consideration should be given to reducing their widths if possible, introducing medians between multiple adjoining drives, and giving sidewalks continuity across them.
3. The plans show drop-off or parking areas along the drives. The quantity of such spaces should be carefully evaluated in light of increasing use of rideshare vehicles and package delivery vehicles.

Broadway

In the previous alternative, Residential Building South is rectilinear, oriented parallel to the Drives. In the newer alternative, the south and west sides of its ground floor and streetwall levels are angled and set back from Broadway and West Plaza Drive to maximize the view of the Akamai Building's southeast corner from Broadway. Together with the adjoining building at 145 Broadway, this creates a tapered space leading from Broadway to the Central Plaza. The setback, occupied by a water feature and a grove of trees, intervenes the building's ground floor uses from Broadway. Staff would offer the following comments on the proposed design changes as the Project moves towards design review:

1. To give Broadway greater continuity and to strengthen the relationship of the residential building to its context, consideration could be given to bringing at least the southeast corner of the building's first floor and streetwall façade out to the plane established by the adjoining building to the east.
2. The landscaping in the Broadway setback should continue the curbside street trees elsewhere on Broadway unless precluded by utilities.
3. Staff is concerned that the water feature in its exact location, and perhaps the trees too, will constitute a buffer between the pedestrian sidewalk and the ground floor uses in the building, reducing their potential to activate Broadway. Alternatives to the design should be considered, including relocating it interior to the block.
4. The photographic examples suggest that the water feature is conceived as a play element. Consideration could be given to instead locating such a feature in the yards of one of the existing buildings on the east or west sides of the Central Plaza, particularly where it could be used in relation to the proposed play area in the East/West Connector to the Sixth Street Walkway.

Lighting & Signage

The supplemental documents indicate that site lighting will be on the grass areas. No information is provided regarding proposed signage, which is not regulated by zoning in this district but is subject to CRA review and approval. Staff would offer the following additional thoughts as the proposal moves towards design review:

1. Consideration should be given to instead locating lighting primarily at the paved areas, along the Drives, and near the proposed buildings at the north and south ends of the plaza. Further exploration of lighting will be an important component of design review for the Center Plaza and proposed buildings.
2. The Planning Board may wish to collaborate with the CRA in its review of a future signage plan for the proposed buildings.

Play and Recreation

The supplemental document indicates a play area in the southern east/west connector to the Loughrey walkway, and suggests that a water feature in the Broadway frontage may also offer opportunities for play.

1. Consideration could be given to relocating the play area in the southern east/west connector to the Central Plaza, where it would have a more direct relationship to the residential building and could help activate the space.
2. Consideration could be given to locating the water feature in closer proximity to the play area, where its use would be less compromised by nearby traffic, perhaps in the west setback of the existing building on the east side of the Central Plaza.

Built Form:

As the designs of the proposed buildings are further developed, greater reference should be made to the objectives and recommendations of the K2 and Volpe Guidelines regarding the role of architecture in shaping and giving scale to the site's streets and other public spaces, the proportions of massing and details of facades, and the provision of active first floor uses with direct relationships to open spaces within and adjoining the site.

Building Massing

While not stressed in design guidelines included in the July 1, 2021 document, the Volpe and K2 Guidelines make recommendations regarding active first floor uses and their direct relationship to adjoining outdoor spaces, the role of streetwalls in framing streets and enriching the pedestrian experience by façade design, the collaboration between different buildings to shape and define public spaces, the emphasis on slender vertical proportions, and the provision of stepbacks in deference to adjoining public spaces. These are intended to refocus design emphasis from individual buildings to the public spaces between them and to suggest ways to minimize the sense of bulk that large buildings might otherwise present.

As recommended in the guidelines, the buildings are conceived in horizontal zones: the pedestrian zone, streetwall, tower, and top. The Volpe Design Guidelines, and to a lesser extent the K2 Guidelines, emphasize that these zones have different roles in creating legible public spaces, and in mediating between the scale of the pedestrian, the street or square, the district, and the city.

1. Given that the design of the buildings is still in flux, it is perhaps premature to make detailed recommendations beyond mentioning that their precise massing should be developed to enhance the qualities of the open spaces on and adjoining the site.
2. To reduce the sense of bulk that the large buildings may create, consideration could be given to avoiding massing that leans over the Central Plaza, and to adjusting façade elements to emphasize vertical proportions.
3. To address flood resilience, the supplemental materials describe providing deployable flood barriers for grade level first floors, raising the grade at entrances to underground garages, and deployable barriers. As the design develops, more information should be provided on floor levels, accessible routes, connections between first floor interior spaces and outdoor spaces, etc.

Commercial Buildings C & D

The supplemental documents show greater separation between the two commercial buildings, and more developed massing; both are positive responses to concerns about the bulkiness of the buildings presented in the July 1 documents. As part of design review, staff would recommend the Applicant focus on the following comments to better guide design development and refinement:

1. Both buildings incorporate “active use” space on the south sides of their first floors. Note, however that the valet-operated long term bicycle parking facility will occupy that space in Commercial Building C in the initial phase of construction, and will move to Building D in the final phase. Consideration should be given to the appearance of that facility as seen from the Plaza.
2. While the first floors on Binney Street are aligned along the sidewalk, the interior spaces on the frontage consist of large lobbies and back-of-house space. Consideration should be given to providing street activating uses in these frontages.
3. Consideration should be given to recessing the loading docks accessed from the East Plaza Drive more deeply into the buildings, so that the trucks would fit entirely inside the buildings.
4. Consideration could be given to the potential benefits of introducing a streetwall zone on the building’s Binney Street facades, similar in height to the building on the opposite side of Binney Street.
5. The south façade of Commercial Building C is depicted in the new alternative as leaning over the Central Plaza. In the interest of the experiential quality of that space, and of the sky views it offers, consideration should be given to making that façade vertical, if not stepped back from the Plaza.
6. The revised application suggests that one or more upper-level connectors may be considered between the two commercial buildings. Staff recommends that if they are provided, they would preferably be positioned where the buildings are closest together, be minimal in size, and be well above ground level. The recommendations in the Volpe and K2 Guidelines should be reviewed.

Residential Building South

The alternative massing introduced in the supplementary documents pulls the streetwall zone of the façade away from the street, weakening its association with the corresponding zone of the existing building to the east and reducing its contribution to the definition of Broadway as public space. In addition, it separates potential retail uses from pedestrians on the street. The following comments could

assist the Applicant in further developing the design of Residential Building South as it moves towards design review by the Planning Board:

1. Consideration could be given to reducing the setback.
2. Consideration should be given to reducing the size of the residential lobby, or accommodating an active use within it, and to increasing the size of the retail space facing Broadway.
3. The south and west sides of the building's tower is angled to maximize views of the Akamai Building's southeast corner, creating a tapered space leading to the Central Plaza and reinforcing a reading of the Akamai building as an independent object, and eroding the continuity of Broadway at the tower level. While some deference to the Akamai building's signature features may be appropriate, the more rectilinear arrangement of the July 1 alternative offers potential benefits in terms of creating a more dramatic entry to the Plaza, and provides clearer definition of Broadway as one of the city's primary public spaces. The east façade of the tower is also angled in plan; the reasons for doing so are not clear. Further documentation of the space on the east side of the building should be provided.
4. Consideration could be given to stepping the building's north façade away from the Central Plaza to relate to the heights of the existing buildings on the east and west sides of the Plaza, and to reduce wind impacts.

Environmental Comfort:

General

1. The July 1, 2021 document includes wind and shadow studies. These should be updated in accord with selected alternatives for building massing, and the potential impacts of the exhaust air from the substation should be evaluated.
2. Means should be taken to minimize light trespass from site, architectural, and interior lighting.

The Impacts of the Eversource Substation

A fuller explanation of the substation's impacts on the Central Plaza should be provided and of potential measures that could be taken to mitigate them. Staff supports the Z&D report's recommendation to include an environmental comfort plan as part of future design review. Some suggestions for more detailed analyses include:

Noise

1. A full acoustical study of noise impacts and potential means of mitigation should be provided, addressing the distribution of anticipated noise levels in different parts of the site's open spaces and at its buildings, and evaluating the combined effect of existing ambient noise, noise from building systems, and from the intake and exhaust ventilation structures.
2. Are the air noise levels above ambient given in the application average or peak levels? If average, how much louder will the peaks be?
3. Will the noise have a discernable frequency component – from the hum of machinery or electric equipment – or will it be just white noise?

Heat

The vault will be air cooled with 1,400,000 CFM, exhaust air that will be 15 to 20 degrees warmer than the ambient air temperature on a "design day".

1. Consideration should be given to providing a full thermal study of the anticipated heat impacts on the public realm and potential means to mitigate them in order to inform the open space design, addressing questions such as:
 - a. What will be the estimated temperature distribution in different parts of the plaza on calm days and with a breeze?
 - b. How will it affect human comfort?
 - c. How will it affect species of trees and other plantings?
 - d. Are the air volume and temperature above ambient given in the application average or peak? And if average, how much higher will the peaks be?
 - e. How rapidly will the hot air dissipate in different wind conditions?
 - f. Will the difference between exhaust air temperature and ambient be consistent throughout the year?
 - g. Will ground level horizontal air flow induced by forced air flow from the exhaust vent and from convection significantly affect the site's wind analysis?
 - h. Will the intake vent pull in exhaust air and recycle it through the vault, resulting in even higher temps?
 - i. How warm will the top of the vault be? Will it affect the proposed grass or trees planted nearby?
 - j. Heat mitigation and use strategies could include:
 - i. Extending the exhaust vent higher (perhaps much higher), so that the exhaust air is exhausted well above pedestrian level.
 - ii. Heat to warm outdoor play and recreation areas in the winter.

Olfactory impacts

1. If the exhaust air will have a smell, can anything be done to mitigate it?

Sustainability:

The substation vault is protected from flooding by waterproofing and by raising all openings 2 feet above anticipated 2070 100-year flood level. See the DPW memo dated September 22, 2021 for further information and comments regarding resilience to anticipated flood levels.

1. Cambridge's Urban Forest Master Plan recommends that the decline in the city's tree canopy be reversed by protecting existing trees and encouraging planting of new ones. Due to the construction of the new buildings, numerous trees will be lost from the site. Consideration should be given to prioritizing planting additional trees throughout the site to help mitigate those that must be removed for the development of the substation.
2. Further analysis should be conducted of the substation's heat impacts, and consideration of potential means to mitigate it and/or to use it.

Continuing Design Review

The following are additional recommendations for ongoing design review by staff if the Board decides to grant the Amendment to the special permit:

- The topics listed in the September 21, 2021 memo remain worthy of consideration:
 - Landscape design
 - Traffic and transportation
 - Bicycle parking
 - Built form and its impact on the public spaces within and adjoining the site.

- Building materials and mockup.
- In addition, continuing review is recommended for the following topics:
 - Architectural massing and facades.
 - Provision for first floor active uses.
 - Design of the Central Plaza, including a clearer understanding of intended pedestrian desire lines, play and recreational facilities, provisions for public gatherings, short-term bicycle parking and Bluebikes station, lighting, improvements to the yards of the existing adjoining buildings, opportunities for additional vegetation, etc.
 - Programs and facilities for play and recreation, and public gathering.
 - Measures to mitigate the substation's heat, noise, vibration, and olfactory impacts on the project's open spaces and on the workers and residents in the adjoining buildings.
 - Further development of the architectural/sculptural forms of the intake and exhaust ventilation structures, the elevator headhouse, and the vault's hatchway.
 - The design of East and West Plaza Drives.
 - Site design of the frontages on Binney Street and Broadway.
 - Short term vehicular parking, and dropoff and pick up areas.
 - The valet bicycle system's design and operations.
 - The possibility of transplanting existing trees.
 - Continued coordination with city staff on the design of Binney Street and Broadway.
 - Analysis of embodied energy.