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CITY OF CAMBRIDGE  
COMMUNITY DEVELOPMENT DEPARTMENT

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To: Planning Board  
From: CDD Staff  
Date: December 15, 2016  
Re: **PB #315, MXD Infill Development Concept Plan**

### Update

On December 20, the Planning Board will begin a new hearing of case PB #315, special permit for the MXD District Infill Development Concept Plan (IDCP), which proposes the construction of four new buildings in the district (two commercial and two primarily residential) with associated site improvements and changes in use to some other buildings within the district. This case was previously heard on September 20, at a joint public hearing with the Cambridge Redevelopment Authority (CRA) Board. However, this is considered a new beginning to the public hearing process as a new set of Planning Board members will now be hearing the case.

Since September 20, the Applicant has met with staff to discuss issues that were raised, and has submitted a package of documents responding to those comments and explaining some changes that have been proposed to the IDCP. The Applicant has also submitted a revised design (dated November 22, 2016) for "Phase 1" of the IDCP, the construction of a commercial building at 145 Broadway.

### Process

As this is a "restart" of the hearing process, it will be important for Board members (particularly those who were not present on September 20) to review the proposal thoroughly. Attached is the CDD memo that accompanied the original submission, which also summarizes the criteria for approval. The following pages of this memo comment briefly on the responses submitted since September 20.

One of the issues discussed on September 20 was how the Planning Board and CRA would undertake future design review of building sites with the IDCP. The zoning states that a process for "Inter-agency Design Review" would be set forth in the conditions of the IDCP special permit, and staff were asked to outline such a process. CDD and CRA staff have met in the interim and provided an attached process overview, subject to final endorsement by the respective boards.

The December 20 hearing will not be a "joint meeting" with the CRA Board, and at least one such meeting is required prior to approval of the IDCP. The January 17, 2017 meeting has been designated as a potential "joint meeting" with the CRA Board in order to continue review of the IDCP and/or 145 Broadway design submission as needed.

## **New Materials**

These comments focus mainly on the submitted responses and proposed changes regarding the IDCP and not the specific changes made to the design of 145 Broadway.

Overall, the changes help to provide additional information and clarification on many of the points raised in comments from staff, the CRA and the Planning Board. The following comments are provided in response to some of the major issues noted in the earlier review.

### *Site Design and Circulation*

- Previous comments noted that proposed improvements to the Sixth Street connector are a strong element of the plan; however, more attention could be paid to improving east-west connections and other north-south connections through the block, which is currently not very pedestrian friendly due to the presence of the parking garage. The new materials provide additional illustrations of pedestrian circulation routes, and a commitment to improve the pedestrian passageway through the ground floor of the garage. No substantial changes to the “service drives” on either side of the parking garage are proposed, and staff remains concerned that this will perpetuate the non-pedestrian-friendly character of the block, particularly given the proposal to remove all trees along the parking garage. Also, while additional landscape plans have been submitted that include greater articulation of the walkway behind that site, staff remain concerned about the character of that space.
- Bicycle circulation routes and bicycle parking locations were noted in the revised plan as an item to be addressed in ongoing design review. While it is sensible to finalize detailed designs at a later stage, closer to construction, it is helpful to establish the broad conceptual approaches at the time of master plan approval, possibly subject to future change. This topic is being explored further by the Traffic, Parking and Transportation Department.

### *Open Space and Public Realm*

- Previous comments suggested looking at open space throughout the district rather than just the block where development is proposed. The supplemental materials identify open space areas that could be improved but note that these are owned by other entities, and therefore do not commit to future improvements.
- Many specific comments were made about the proposed design of “Broadway Park.” The supplemental materials acknowledge these comments, but note that the park is part of “Phase 2” of the development plan, and therefore will undergo more detailed design review at a later time, closer to its actual construction. It would be helpful if some overarching goals about the role and character of each open space area were articulated in the design guidelines.
- The question about open space on the roof of the parking garage has been addressed in the response, which states that two separate spaces will be dedicated to private open space for each of the two residential buildings, and the space between will be dedicated to a solar

photovoltaic array. The feasibility of a solar array at this location may need to be investigated further in the design phase, given the frequency and extent of shadow.

- The revised submission also includes some information about programming, and notes different activities that might be implemented within different open spaces in the MXD. While it does not make sense to decide exactly what programs will occur in what spaces at this time, additional information about how programming will be implemented would be helpful.

### *Conceptual Building Design*

- Detailed changes in building massing and articulation have been proposed for the 145 Broadway building. This includes reducing the extent of the north-east projection over the service road, and re-orienting the three cantilevered elements at the south-east corner. While staff note that the three elements further project into the space above the service road, the massing changes dynamically punctuate the east façade and create a better relationship to Broadway.
- Several Board members at the previous hearing had concerns about the massing and bulk of the proposed commercial site on Binney Street, and some conceptual massing changes to that site are proposed in the new materials, including an increased front setback, a reduction in total height to 12 stories, a notch in the southwest corner, and an increase in podium height from 2 to 3 stories. While these changes are improvements, the building still presents a long, unbroken façade length above the podium facing the Sixth Street connector, and therefore greater articulation and vertical breaks should be considered as approaches in the design phase of that site. Also, the additional pedestrian space created at the ground level is a positive; however, arcades, particularly those facing north, have historically been unsuccessful in Cambridge and thus the quality of the space below the overhang should be further studied in design review.
- For the residential buildings, balconies have been added to the design, and a distinct design approach has been applied to each, which are improvements based on the comments that were made previously.
- Some Board members also raised concerns about the arrangement of the residential lobby space fronting Broadway Park, which presents two separate entrances (one for the condominium component and one for the rental component, each of which will include affordable units) and a protruding space that accommodates building mailboxes. The response includes a reasonable explanation of the need for separate entrances in such a mixed-tenure project, and provides examples of comparable lobby entrances. However, those examples illustrate how the separated lobbies could yield building frontage to more prominent active uses, such as retail. The concern remains about how the prominence of these lobby/service functions on the ground floor will affect the activation of the park.
- Previous comments were also made regarding the feasibility of improving the façade of the garage and pedestrian wayfinding, and the response proposes including these as part of the design review of “Phase 2” of the development. While it is appropriate to conduct detailed review at this later time, some specific commitment to the extent and character of these

improvements is helpful so that it is clear at that time what the expectations will be. The precedent images included in the response illustrate some good approaches.

#### *Ground Floor Activation and Retail*

- There has been some evolution in thinking about the ground floor of the 145 Broadway site. It now provides a more generous retail frontage along Broadway Park, and outdoor seating was added along Broadway so that the active use frontage (including the outdoor seating, which fronts portions of retail, service and office lobby spaces) totals 75% of the total street frontage. While the changes are viewed as an overall improvement, and the zoning allows outdoor seating to be included as active use frontage, it would be helpful to have more assurance that the outdoor seating will fulfill the spirit of the requirement and remain activated over time.
- Staff comments on the original plan noted the benefit of having spaces that could be arranged flexibly, particularly to accommodate multiple smaller establishments. Staff comments also discussed the overall viability of retail in the area, and suggested incorporating types of uses other than traditional retail stores and restaurants, such as personal services, arts and cultural spaces, nightlife venues and child care. The response indicates agreement with these concerns, but does not discuss a strategy for attracting or incorporating these other types of uses. Staff recommends this topic be considered further as the plan develops.
- Comments (from the CRA in particular) also suggested possibilities to retrofit existing buildings to include additional ground floor retail in key locations. The response notes that this is possible, but in many cases would involve costly retrofits, and so no specific commitment is included.

#### *Innovation Space*

- The revised materials contain additional information about how innovation space will be allocated within 255 Main Street, and options for how it would be overseen. The response also commits to future improvements to the entrance and lobby space, which occupy one of the most highly visible locations within the district. The improvements are not yet designed and the response notes that this will undergo future design review. It is not clear how such review will be phased, given that innovation space is required to be delivered as part of both Phase 1 and Phase 2 of the IDCP, and Phase 1 has already been submitted for design review. The timeline for improvements to the entrance, along with other improvements planned for 255 Main Street, should be provided, as these will have a significant – potentially very positive – impact on the public realm.

#### *Wind*

- At this stage, the IDCP relies upon the desktop wind study provided with the original submission, and suggests that at the time of design review, each building design will include a wind tunnel analysis. As the concerns raised by the applicant are that massing changes may impact the wind analysis, they have suggested that wind tunnel testing should occur once the massing has been approved. While the desktop study states that the project is expected to meet pedestrian wind

safety and comfort criteria, staff recommend that a section be included in the Design Guidelines that discusses wind impacts and requires that mitigating measures first consider changes to massing and built form.

- Staff note that the wind assessment for the 145 Broadway commercial building anticipates some uncomfortable wind conditions in the winter months at several important pedestrian locations. The materials note that the wind tunnel test did not include landscaping or additional wind mitigation structures; however, changes in massing should be explored to mitigate these anticipated wind impacts.

#### *Design Guidelines*

- In response to the design guidelines incorporated in the original IDCP proposal, prior staff comment noted that “language, images and diagrams” should be included to address architectural character and materials, ground floor design and uses, and the character of streets and pathways. While the response provides images that are helpful, there is still no written statement of the objectives that are meant to be achieved, which are important to include in order to allow for effective review that can consider alternative design solutions. In addition, some of the images should be carefully considered to ensure that the city’s goals are being met. For example, the two commercial facades curtain wall examples seem to suggest quite reflective glazing systems. An overarching goal should be to maximize transparency of glass at upper levels. Similarly, the opaque wall examples should have depth, create shadow and incorporate middle scaling elements, and the guideline language should encourage such design elements.
- To ensure consistency, each section of the design guidelines should include an introductory statement, key design objectives/ principles and numbered guidelines.

#### *Sustainability*

Comments from both the CRA and Planning Board asked the Applicant to be more ambitious with the project’s sustainability outcomes. The supplemental materials respond to this and several of the specific issues raised in staff’s previous memo. The design submission for 145 Broadway also includes materials in response to these comments.

- The revised materials commit to a minimum LEED Gold design standard using LEED Version 4, and note that buildings will adhere to the current stretch energy code requirements, which dovetail with the energy expectations in the current phase of the Net Zero Action Plan.
- The revised materials respond to comments about clarifying approaches to solar-ready design, installation of solar energy generation and provision of green roofs. Specifically, it is proposed to include a combination of solar photovoltaic panels and green roofs on the top of the existing garage, with the former located where solar access is best. It is still recommended that solar access and solar-ready design be considered in the design review of future buildings.
- The revised plan materials commit to conducting a feasibility study of utilizing the existing cogeneration plant as part of the design review of “Commercial Building B,” in Phase 2 of the

concept plan. It was noted that the existing plant is owned by Biogen and not controlled by the Applicant.

- As suggested in the staff comments, the revised plan materials commit to incorporating the following elements in the design process for each building:
  - Assessing the feasibility of geothermal energy systems. The submission for 145 Broadway includes such an analysis, which suggests that such an approach would not be cost-effective for that building at this time.
  - On-site energy storage. This should be included in the design review submissions for future phases of the project; it is not explicitly mentioned in the revised submission for 145 Broadway.
  - Pursuing enhanced commissioning.
  - Including a “Pathways to Net Zero” analysis, which is provided in the revised 145 Broadway submission.
  - Assessing resiliency strategies, as is provided in the revised 145 Broadway submission. This topic has also been incorporated into the Department of Public Works’ engineering review of projects throughout the city.
- As sustainability standards evolve for the entire city, the revised plan submission further commits to following the standards applicable in zoning at the time of design review.
- The revised plan materials commit to including a greenhouse gas emissions assessment, as recommended by staff; such an assessment is not found in the 145 Broadway materials, though an assessment of projected future energy use is included.
- The submission does not include any further commitment to studying the feasibility of connecting to the district steam energy network (operated by Veolia). Staff continue to believe this approach should be pursued further, and notes again that the state’s Department of Energy Resources commented on the project’s MEPA submission that the “reduction in source energy would be transformational” if the existing steam network were utilized.

Aside from the Sustainability Guidelines prepared for the IDCP, questions were also raised by members of the Board about the sustainability of glass buildings in general, particularly the enormous solar load on the western façade of 145 Broadway. This is not discussed in the revised plan materials but could be discussed further as an element of design review.

### *Phasing*

The revised plan materials include helpful diagrams that more clearly illustrate the expected phasing of development, including buildings and public space. As noted above, the plan does not specify the phase at which improvements to the entrance and façade of 255 Main Street would be contemplated.

If the Board decides to grant the special permit, staff recommends that the decision allow some flexibility to approve changes to the phasing as minor amendments where they would support the

public benefits of the project – for instance, if any of the residential development, public open space or innovation space is advanced on a faster timeline than proposed.

*Amendments*

The IDCP submission also contained a letter requesting conditions be incorporated into the special permit related to future amendments.

- One proposed condition would allow variations of 5% or less in Gross Floor Area for individual building sites, to be approved as part of design review. This is a typical provision in PUD special permits, allowing for minor variations that tend to occur in the design review process. However, it should be noted that such variations are only allowed provided that the total approved Gross Floor Area of the plan is not increased and the mix of uses is not changed.
- The other proposed condition would be to exempt “balconies and roof decks intended for human occupancy” from Gross Floor Area calculations. While this is allowed in the zoning for this district (Section 14.32.6), it is only for residential uses and only up to 8% of a building’s Gross Floor Area. The Planning Board cannot approve Gross Floor Area exemptions that are not otherwise provided for in zoning.

## Design Review Procedures

### PB #315 – MXD Infill Development Concept Plan

Like many PUD projects, the Infill Development Concept Plan (IDCP) approves development at a “master plan” level. In doing so, it approves the locations of building sites, the key zoning characteristics of each site (such as Gross Floor Area, height, open space, parking), and the characteristics that connect each site to the development as a whole, including points of access and egress, circulation routes and planned improvements to the public realm.

In a PUD master plan, each individual building site is presented in conceptual form, subject to later design review and approval by the Planning Board prior to issuance of a building permit. In the case of the IDCP, building sites will also be subject to design review and approval by the Cambridge Redevelopment Authority (CRA) Board. Both the MXD zoning and the Kendall Square Urban Renewal Plan provide for a process of coordinated design review by the Planning Board and CRA to be established at the time of concept plan approval.

Integrating the design review procedures of the Planning Board and the CRA is somewhat complicated because each agency has developed its own longstanding practices. However, CDD and CRA staff have collaborated to devise a process, outlined below, which would incorporate the key elements of each board’s review while streamlining them into a clear process.

#### Stage 1: Pre-Submittal Advisory Review

Historically, during the review of buildings proposed within the Kendall Square Urban Renewal Area, the CRA Board has convened one or more Design Review Committee meetings. The purpose of these meetings has been to work directly with the building design team, including architects, owners and sometimes tenants, in a hands-on iterative process of developing creative solutions to design issues. These meetings can take on the character of more informal “workshops,” often involving massing models and materials samples as well as illustrations and renderings.

The Design Review Committee typically includes designated members of the CRA Board along with staff and urban design consultants. CDD staff and urban design consultants have also been invited to participate in this process, most recently in an interim review of the proposed 145 Broadway design. Members of the Planning Board have also participated in this group in the past.

- ***Staff recommends that the Design Review Committee process be retained as a way to inform and refine each building design prior to the submission of a design proposal for formal review and approval by the CRA Board and Planning Board (see Stage 2 below). The Design Review Committee would play an advisory role, would not grant any approvals and would not be required to make any formal recommendation on the design.***
- ***For designs that are within the scope of the IDCP, staff recommend that the Planning Board designate two members to participate in the Design Review Committee, along with designated CRA Board members, CRA staff, CDD staff and urban design consultants.***



Stage 2: Design Review and Approval

As the schematic design for each building site is developed, the developer provides a set of materials to both the Planning Board and CRA Board for review and possible approval. These materials will be made available to both boards and to the public at least two weeks prior to a review meeting.

Submitted materials will include the following:

- Dimensional table, both for the particular building site and cumulative for the IDCP.
- Description of all uses in the proposed building.
- Site and landscape plans, including circulation routes, access and egress points, and describing all landscape materials and objects to be located on the site (such as mechanical or electrical equipment).
- Building plans and elevations, including rooftop plan, describing all materials and equipment visible on the building's exterior.
- Signage and lighting plans, showing proposed size, location and type.
- Plans of parking and bicycle parking areas.
- Proposed renderings and perspective views
- Wind, shadow and noise studies.
- Sustainable design package including Green Building Review materials (typically, LEED checklist, narrative and supporting materials) and other analysis as provided in the IDCP approval (including solar-ready design, analysis of renewable energy and district energy solutions, and pathways to net zero design).
- Plans for other improvements associated with that phase of the development.

A physical model will also be constructed and presented at the public meeting.

At this stage of the process, City departments (such as the Department of Public Works and Traffic, Parking and Transportation Department) will also review the proposal and respond if it appears there are any potential issues regarding technical standards, such as the design of parking areas or proposals affecting public infrastructure.

The Planning Board and CRA board will review the design proposal according to applicable criteria and guidelines, including the Kendall Square Design Guidelines, the design guidelines incorporated in the IDCP, and other criteria customarily employed by either board. The boards may conclude the formal review and vote to approve the design, subject to continuing review by staff (see Stage 3), or may request further study or design changes to be presented and reviewed by the boards at a later time. The boards will vote separately on approval of the design according to their respective voting procedures.

- ***Staff recommends that the design review for each site be conducted at a joint public meeting of the Planning Board and CRA Board.***

## MXD-IDCP Design Review Procedures – FOR PLANNING BOARD REVIEW

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While this approach may present scheduling complications, staff believe that having both boards participate in the same discussion will help to avoid potential confusion where the two boards might have different, or even contradictory, reactions to the design proposals. This approach would avoid the difficulty of responding to feedback from two separate boards with two separate review processes, and would avoid potentially confusing scenarios where a design proposal is approved by one board while it is still undergoing review by the other, which may result in changes that need to be brought back to the first board for additional review.

The alternative would be to allow the design review to occur separately, but to establish a clear sequence to the review and to focus each board's review on specific criteria or specific aspects of the design. While this is not recommended, the eventual plan approval could allow for the process to be changed if the Planning Board and CRA Board mutually agree that the first process is not meeting expectations.

### Stage 3: Continuing Staff Review

As is currently the case for both the Planning Board and the CRA, designs that are approved at the schematic level would be subject to ongoing review by staff at the design development and construction drawing stages to ensure that the detailed design is completed in a way that is consistent with those boards' approvals. Before the issuance of a building permit, CDD and CRA staff working in coordination will certify that the construction drawings are in conformance with the plans approved by the boards, and that any other conditions applicable to that phase of the development are being met.

If there are substantial changes to the design between Stage 2 approval and the issuance of a building permit, the staff would present revised plans to the Planning Board and CRA Board for their review and approval in accordance with the Stage 2 procedures. Additional materials need not be provided if they are not altered by the proposed changes.



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IRAM FAROOQ  
Assistant City Manager for  
Community Development

To: Planning Board  
From: CDD Staff  
Date: September 14, 2016  
Re: **PB #315 – MXD Infill Development Concept Plan**

### **Background**

In December of last year, the City Council adopted amendments to Article 14.000 of the Zoning Ordinance, which regulates development in the “Mixed Use Development District: Kendall Center” (or MXD District). These amendments included a number of changes, among which was an increase of approximately one million square feet in allowed aggregate development in the district, allocated “60/40” between commercial and residential uses, and subject to a set of requirements based largely on the recommendations of the city’s 2013 Kendall Square (“K2”) Study.

One of the requirements in the new MXD zoning is that the Planning Board must grant a special permit to authorize development of that additional floor area in the form of an “Infill Development Concept Plan,” which would include a summary of the existing conditions within the district, identify how the additional development is planned to be allocated, and describe how the development will meet the zoning requirements and the City’s broader planning goals for Kendall Square.

### **Infill Development Concept Plan Review**

While the “Infill Development Concept Plan” is a unique special permit created specifically for the MXD District, it is based on the master plan approval process used in Planned Unit Development (PUD) zoning districts and some other zoning districts (such as Special District 4A, the site of the Cambridge Discovery Park development on Route 2). It allows the Planning Board to grant a single special permit to approve the master plan in concept form and to establish an ongoing process for review and permitting of individual buildings, spaces and other components of the plan. The criteria for approval are the same as for a PUD / Project Review Special Permit, with the 2013 K2 Study and Kendall Square Design Guidelines establishing the main goals and objectives. Unlike a PUD special permit, the Planning Board is not required to make a “Preliminary Determination” and hold an additional hearing prior to making a final decision.

One way in which this special permit is unique is that it involves coordination with the Cambridge Redevelopment Authority (CRA), which has jurisdiction over the project as it is part of the Kendall Square Urban Renewal Plan. While the special permit is solely within the Planning Board’s jurisdiction to grant or deny, the review process will happen jointly with the CRA Board to ensure compatibility between the special permit and the urban renewal plan, and the ongoing review and implementation of the special permit is also expected to occur through a coordinated process.

**Special Permit Approval Criteria for MXD Infill Development Concept Plan  
(Section 14.32.2, referencing Section 12.35.3 and Section 19.25)**

<b>Requested Action</b>	<b>Required Findings (Summarized)</b> (see appendix for zoning text excerpts)
Approval of a PUD Final Development Plan (Section 12.35.3)	<p>The Development Plan:</p> <ul style="list-style-type: none"> <li>• Conforms with general PUD development controls and district development controls (in this case, requirements of Article 14.000).</li> <li>• Conforms with adopted policy plans or development guidelines for that portion of the city (<i>see attached Kendall Square Design Guidelines</i>).</li> <li>• Provides benefits to the city which outweigh its adverse effects, considering: <ul style="list-style-type: none"> <li>○ quality of site design</li> <li>○ traffic flow and safety</li> <li>○ adequacy of utilities and other public works</li> <li>○ impact on existing public facilities</li> <li>○ potential fiscal impact</li> </ul> </li> </ul>
Project Review Special Permit (Section 19.25)	<ul style="list-style-type: none"> <li>• The project will have no substantial adverse impact on city traffic within the study area, upon review of the traffic impact indicators analyzed in the Transportation Impact Study and mitigation efforts proposed.</li> <li>• The project is consistent with the urban design objectives of the City as set forth in Section 19.30 (<i>see details in appendix</i>).</li> </ul>
General special permit criteria (Section 10.43)	Special permits will be normally granted if the zoning requirements are met, unless it is found not to be in the public interest due to one of the criteria enumerated in Section 10.43 ( <i>see details in appendix</i> ).

### Special Permit Conditions for a Conceptual Development Plan

When a special permit is granted for development at a conceptual or master plan level (such as a PUD special permit, or the special permit for development at Cambridge Discovery Park), the conditions of the special permit contain requirements for how the development is authorized to proceed, as well as phased or targeted requirements for mitigation and public improvements consistent with zoning requirements and other city standards. Some of the typical conditions for a master plan development approval are summarized below.

There will be future discussions between the Applicant, City departments, and the CRA to arrive at a set of recommended conditions for this particular concept plan proposal.

- **Overall Development.** Approves the development concept as a whole, including the extents of the development parcel, aggregate Gross Floor Area (GFA), mix of uses, and amount of open space.
- **Component Development.** Approves the arrangement of individual building sites (including open space and parking) within the development parcel, with the authorized uses, GFA, height, setbacks and open space on each.
- **Site Plan.** Authorizes basic site design parameters as set forth in the Final Development Plan such as circulation, access and egress for pedestrians, bicycles and vehicles, as well as loading and access for other service functions, for each site and the development as a whole.
- **Ongoing Detailed Design Review.** Because development is permitted as a multi-site phased master plan, there is expected to be a process for ongoing review of the detailed design for each site. Final designs will be subject to future Planning Board and CRA approval according to a process to be jointly determined and set forth in the special permit. Different procedures could be applied to different component sites, and additional review could be required if future design changes are proposed. The conditions might also identify particular aspects of the designs that require ongoing review, including (but not limited to) façade materials, screening of mechanical systems, sustainable design elements and landscaping.
- **Parking.** Total authorized minimum and maximum accessory parking for the development, including any off-site parking. May include more detailed conditions on how the parking may be used, such as the assignment of spaces to different uses, including off-site uses (if allowed).
- **Transportation Management/Mitigation.** Measures that are required to mitigate the transportation impacts of the project, including public improvements to improve transportation systems in the area as well as programmatic requirements incorporated into the project itself, would be specified and could be targeted to particular phases of the development. Requirements may also include monitoring and reporting of transportation impacts over the course of the project.
- **Infrastructure.** The special permit may specify necessary public infrastructure improvements and connect them to particular phases of the project.

- **Other Mitigation or Public Improvements.** There may be conditions related to other topics such as noise and wind mitigation, retail and open space programming, or other issues depending on the requirements in the zoning, the particular characteristics of the project and issues that were raised during the public hearing.
- **Phasing.** Because the development will not occur all at once, the special permit would establish requirements for the overall phasing of the development. The intent is not to specify the exact timing of each stage of development, though a total timeframe for project completion is usually set (which could be “renewed” by the Planning Board in the event that the pace of development slows due to unforeseen circumstances). The intent is to specify an overall framework by which residential and commercial development, mitigation measures and public improvements will be tied together into a predictable development sequence. Phasing could be established based on the completion of development sites or based on other “milestones” such as the amount of total development or development of particular uses. Alternative phasing options could be approved in the conditions, and future changes to the phasing could be authorized as Minor Amendments (see below).
- **Amendments.** The zoning allows for modification of the development plan over time by approval of Major or Minor Amendments, similar to the process for PUDs. This is crucial because it is typical for long-term developments to be amended many times over the course of development. Minor Amendments may be approved by a written determination of the Planning Board (without requiring a new special permit), while Major Amendments require a new special permit process. The conditions of the special permit may specify a range of modifications that could be approved as Minor Amendments.

### **Proposed Infill Development Concept Plan – Staff Comments**

At this stage of review, the primary focus is the Infill Development Concept Plan as a whole. More detailed review of the design of Building A (145 Broadway) will be provided later in the process; however, reviewing the proposed design for 145 Broadway helps to illustrate how the broader urban design plan informs the design of individual buildings and sites.

The submitted Infill Development Concept Plan is a well-organized document that describes the existing development in the MXD District (along with the historical context) and the additional infill development that is proposed. Reflecting the requirements in the recently adopted zoning, it contains sections detailing the anticipated residential and non-residential development program, the plan for open space improvements, retail strategies, transportation considerations (including traffic impacts, transit, parking, bicycle parking and loading), environmental impacts (including wind, shadow, noise and air quality) sustainability measures, project phasing, and design guidelines for buildings and spaces.

This memo from CDD staff addresses key urban design considerations including overall site design and circulation, open space and public realm, and building massing and activated edges. Comments on sustainability and retail strategies are also included. Issues related to transportation and infrastructure are addressed, respectively, in accompanying memos from the Traffic, Parking and Transportation Department (TP&T) and Department of Public Works (DPW).

## **K2 Study**

As part of the initial review of the application, it is important to revisit the vision and goals established for Kendall Square through the K2 Study and Design Guidelines. This helps to provide an understanding of the MXD District context, as well as the key urban planning and design considerations that form the basis of the initial review of the application.

### ***Vision***

A dynamic public realm connecting diverse choices for living, working, learning, and playing to inspire continued success of Cambridge's sustainable, globally-significant innovation community.

### ***Goals***

1. Nurture Kendall's Innovation Culture
  - Expand opportunities for Kendall Square knowledge economy to continue to grow.
  - Foster a strong connection between the MIT campus and the rest of Kendall Square. Enable MIT to develop in a manner consistent with its academic and research mission, so that it continues to be a magnet attracting innovative businesses to the area.
  - Support a vibrant environment for creative interaction.
2. Create Great Places
  - Support open space and recreation needs of a growing neighborhood.
  - Create lively, walkable streets.
  - Expand opportunities for Kendall's diverse community to interact.
  - Development and public place improvements must happen in tandem.
3. Promote Environmental Sustainability
  - Expand convenient, affordable transportation and access choices.
  - Enhance streets as public places.
  - Create a healthier natural environment.
  - Reduce resource consumption, waste and emissions.
  - Leverage the environmental and economic benefits of compact development.
4. Mix Living, Working, Learning, And Playing
  - Leverage community and innovation benefits of mixed-use environment.
  - Focus intensity around transit.
  - Minimize development pressures on traditional neighborhoods.
  - Continue to support city and state economic development.

## ***K2 Design Guidelines***

The K2 Design Guidelines aim to:

- Create a positive mixed use district where tall buildings with large floorplates can be good neighbors to public spaces, smaller existing buildings, and adjacent residential neighborhoods.
- Sensitively manage the impacts of building bulk and height, and animate major streets and public spaces through encouraging active ground floors.
- Enhance the quality of public street and park spaces.

These design guidelines focus heavily on relationships between private buildings/open spaces and public streets/parks. Buildings and private open spaces adjacent to streets and parks have significant impacts on adjacent public spaces through their physical design and internal uses, particularly at ground level.

## **Comments – Overall Land Use Plan**

The proposed land use reflects the rezoning agreement that was recommended by the Planning Board and adopted by the City Council in December of last year. By including a mix of residential, commercial, retail and innovation space, the plan helps to support the overall goals of the K2 study.

As presented, the plan proposes to concentrate nearly all of the approximately 1 million square feet of additional allowed development within the northernmost block of the MXD District. Only a small amount of converted GFA is proposed in the Broad Institute building at 75 Ames Street. Also, the zoning requirement for Innovation Space is proposed to be met through a conversion of existing office space within One Cambridge Center.

The proposal to concentrate most new development on the northern block has merit, given that it is the least intensively developed of the blocks and has the greatest potential for improving and enlivening the public realm. It also interfaces with current or future redevelopment areas, such as Alexandria Center and the Volpe Site. Additionally, this scheme minimizes the impact that new development might have closer to Broadway, where there has been recent investment in improving the streetscape promoting retail use, and avoids further impacting the public rooftop garden adjacent to the Marriott.

However, some of the effects of concentrating development on one block warrant greater attention. One effect is that the additional development (along with the retained above-grade garage) results in significant building bulk on the block, which will need to be mitigated through sensitive urban design.

Another effect of this approach is that it leaves out other portions of the MXD district that might have potential for future improvement. Although the proposed development on other blocks is modest, the Board might consider whether some public improvements should be explored. For instance, the infill proposed at the Broad Institute might prompt a review of surrounding public spaces (including Danny Lewin Park) to assess how they might be improved. (Improvements on that block will also be considered as part of any future expansion of the Whitehead Institute, which, according to the zoning, would require a separate permitting process). Similarly, while locating Innovation Space at the corner of Broadway and Main Street could positively transform that location, the plan could go further in envisioning public improvements at the ground floor that would enhance such a transformation.



## **Comments – Urban Design**

Staff has met with the Applicant on a few occasions over the summer, and has collaborated with the City's recently appointed urban design consultants, Over, Under, to review the application materials. Based on that work, detailed comments, organized by topic, are provided on the following pages.

### *Site Design and Circulation*

As the overall urban structure is established, the creation of as much pedestrian and bicyclist connectivity as possible within the district, and enhancement of the pedestrian environment, are key urban design objectives. These should include east-west connections from the Volpe Site and points east to Galileo Galilei Way, as well as north-south connections from Broadway to Binney Street.

- The proposed improvements to the Sixth Street Connector, between Broadway and Binney Street, are a positive and important addition to the District.
- Other north-south connections have not been as well defined. The Applicant should consider upgrading the service roads flanking the Blue Garage, which should include:
  - Clearly defining the characters of these roads.
  - A widened sidewalk, especially on the eastern service road.
  - A uniform paving treatment throughout both roads, to enhance the shared road concept.
  - An upgraded façade treatment or screening for the long sides of the parking structure.
- East-west connections are also highly desirable given the dimensions of the block, which exceed the block size recommended in the K2 Design Guidelines due to the obstacle formed by the parking garage. Improvements to the Concept Plan should include the following:
  - A more direct pedestrian connection along the northern edge of the reconfigured Broadway Street Park linking the open space between 10 and 12 Cambridge Center, and the open space between 11 Cambridge (145 Broadway) and 15 Cambridge Center. It is highly desirable that the segments of this pedestrian pathway be as visually connected as possible, thereby clearly connecting the Volpe site and Galileo Galilei Way.
  - An enhanced pedestrian connection through the parking structure to align with east-west open space between buildings 12 and 14 Cambridge Center. With minimal intervention, a new, more direct, pedestrian connection could be made to the north of the existing vehicular entrances, or the existing pedestrian path could be more clearly identified.

### *Open Space and Public Realm*

Another important urban design objective for the Infill Development Concept Plan is the enhancement of the existing open space network throughout the MXD District.

- The two parks flanking Broadway Street, mid-block between Galileo Galilei Way and Ames Street (Danny Lewin Park on the south and the Broadway Park on the north) are examples of well positioned parks that could better serve the precinct with more intentional design.

- The proposed redesign of the Broadway Park offers a number of benefits to the community, including the removal of the fence along Broadway and the extension of a unified hardscape out towards the edges of 10 Cambridge Center and 11 Cambridge Center. Also of interest is the runnel system along the north edge of the park for rain water collection. The following are suggestions for further study:
  - Creation of a more substantial pathway along the northern edge of the park, one that affords a stronger pedestrian and visual connection between open spaces to the east and west. This would likely require a decreased depth of the new residential lobby space on the ground floor, or a redesign of the ground floor.
  - Provision of diagonal pathways through the park.
  - Potential extension of the street pavement treatment further to the north adjacent to 145 Broadway (11 Cambridge Center); in its current iteration, it appears to limit movement to the path behind loading.
  - While staff support the long sculptural “community table,” both the location and the length of the table should be reconsidered. This can occur during the detailed design review phase for this park.
- The landscaped edges around 145 Broadway (11 Cambridge Center) require further clarification:
  - It is unclear how the edges to the east, south and west sides will be landscaped.
  - The design approach and construction phasing of the east-west path to the north of the loading dock remains unclear.
- The proposed redesign of the Binney Street parklet is an improvement on the existing suburban office park landscape, offering a variety of activities including a play structure.
- Clearer articulation of the street character in the MXD district would further benefit the public realm.

#### *Building Massing and Ground Floor Activation*

From an urban design point of view, the two most crucial architectural elements are a building’s form and the way it interfaces with the ground plane. Massing should respond to the programmatic needs of the building, but also towards mitigating bulk and providing a human-scaled pedestrian environment. Similarly, the active uses and quality of a building’s street edges are crucial, and can be evaluated both by the location and quality of activated program.

- In general, the volumes of the proposed buildings are interesting and responsive to the surrounding area.
- The proposed massing of 11 Cambridge Center (145 Broadway/ Commercial Building A) is generally well-handled and is a dynamic response to the site context. Nonetheless, staff note several areas of concern:

- The sheer façade facing Galileo Galilei Way has potential to overwhelm the streetscape, and lacks any scaling elements at the pedestrian level. While the prominent corner location deserves special attention, the K2 Design Guidelines prefer a strong podium, with a setback tower, or distinct horizontal articulation at the datum height. Such design approaches should be further studied for this elevation.
- The massing also cantilevers over the service road dramatically on the Broadway Park side in two locations. While the southern cantilevers appear appropriate due to the corner location, the northernmost cantilever appears to overwhelm the public realm and also results in minimal distances between the proposed building and the residential high-rise. The resulting form appears to encroach upon the park, which is contrary to the K2 Guidelines that encourage setbacks from parks, substantial vertical articulation and monolithic massing to be minimized at sensitive interfaces.
- Overall plan dimensions and the floorplate above 125 feet exceed the K2 Guidelines, while separation distances between buildings do not meet the guidelines.
- As much as possible, the ground plane functions adjacent to the Broadway Park should be devoted to an activated edge that has affinities with the park (e.g., café). In the submitted drawings, this edge is compromised by an entrance to the parking elevator lobby, which also results in an awkward layout for the proposed active use.
- The 68% active edge along Broadway is below the 75% required by the K2 Guidelines. In addition, the landscape treatment appears to limit physical and visual access to the ground floor from the Broadway sidewalk.
- The ground plane functions adjacent to the intersection of Broadway and Galileo Galilei Way should be significant place-defining attractors that animate the street life of the area. A restaurant would be ideally suited to this location.
- The massing of the residential high-rise recessed from Broadway is promising with its slender profile facing Broadway and notched, long elevations. While tall by the standard of what exists today, both the Volpe site and the MIT Kendall Square site will include several buildings of similar height. However, the following issues should be considered:
  - The way in which the building meets the ground should be revisited, with a reduction in the space apportioned to the lobby area in favor of a clearer outdoor east-west connection, as mentioned above.
  - The double-lobby space of the residential building compromises the ground floor plane and also limits the ability to activate that edge of the open space as well as provide better east-west visual, and possibly physical connections across the site.
  - Additional improvements to the parking garage (such as screening) and the facades of the base of the residential tower where they mask the garage should be designed to address three major orientations, one toward the park, and the other two as elements that align

- with east-west pedestrian routes. The current proposal addresses the park (albeit insufficiently as noted above) and not the visual porosity through the lobbies.
- The design should incorporate balconies for both residential buildings.
  - While the massing of 250 Binney Street (14 Cambridge Center / Building B) appears to respond to its context with its different geometries, the overall configuration should be further studied, with regard to the following:
    - Breaking down the overall massing in appropriate locations, especially the large sheer faces along Binney Street and the Sixth Street Connector.
    - Reduction of floorplate sizes to allow greater access to natural light deeper into the building and to decrease bulk.
    - Review of the overhang along Binney Street, which as proposed, is unconvincing given the north elevation location.
    - At two stories, the height of the podium seems low; it could easily accommodate a four-story podium without overwhelming the Sixth Street Connector.
    - The project should include improvements to the pedestrian path to the south.
  - Loading and servicing is well-handled away from public streets, within the site. However, it is still important to mitigate the negative impacts of such facilities, in particular:
    - The Building B loading dock does not conform to the K2 guidelines; it is wider than 30-feet, and there does not appear to be any suggestion of architectural doors.

### *Phasing*

In general, the proposed phasing appears logical. However, the following suggestions should be considered:

- Phase two should also include the Broadway Park, as well as upgrades to the east-west pedestrian paths between 10 and 12 Cambridge Center and the east-west pedestrian path between 11 Cambridge (145 Broadway) and 15 Cambridge Center.
- Phase three should also include upgrades to both north-south access roads.

### *Wind*

A qualitative assessment has been prepared for the district; however, little information has been provided that describes the existing wind conditions that would enable a better understanding of wind mitigation issues. There is also a need for detailed wind studies and wind tunnel testing at the time of design review for individual buildings, which should be specified in the design guidelines for future buildings. Such material has not yet been submitted for 145 Broadway.

### *Design Guidelines*

As with other PUD projects, a draft set of design guidelines specific to the MXD District has been prepared as part of the Application. The purpose of these guidelines is to assist in the future design review of individual buildings and open spaces. While the draft guidelines primarily focus on building scale, height and massing, a finer level of design guidance is needed to assist with the design review of each building at a later date. As such, the guidelines should be expanded to include language, images and diagrams that address the following matters:

- Architectural character and materials.
- Ground floor design and uses.
- The character of streets and pathways, and how the project will enhance this character.

### **Comments - Sustainability**

Sustainability is a key objective of the K2 Study. Part of the justification for the allowed increase in development in Kendall Square is that new development would be expected to meet enhanced standards for sustainable design. Moreover, the city's adopted Net Zero Action Plan and ongoing climate change resiliency work have demonstrated that sustainability practices will need to evolve over time.

The Infill Development Concept Plan addresses many sustainability topics in a positive way. For example, the section on energy sustainability includes discussion of on-site renewable energy generation by employing solar-ready design and construction, considers utilizing an existing co-generation facility on site, and includes mention of pursuing other district-wide energy strategies.

However, some topics lack detail; for instance, the plan does not discuss how solar-ready design will be balanced with the utilization of green roofs (because it is not feasible to employ both within the same area), or a commitment to complete a feasibility study of using the existing co-generation facility within a particular timeframe. Staff also strongly supports considering the feasibility of on-site solar generation, which is the ultimate goal of "solar ready" design. In addition, the plan refers to Stretch Code energy performance standards but does not clarify whether the newly adopted Stretch Code is being considered, which will take effect in January.

In permitting this concept plan, the most important step is to reach agreement on a set of sustainability standards that will be reviewed and applied as development moves forward over time. The recently approved MIT PUD plan includes such a package, which integrates the enhanced sustainability objectives of the K2 Study, the Net Zero Action Plan, and ongoing climate change resiliency work, and includes the following measures:

- Design of all buildings to a minimum Gold standard using LEED Version 4, including energy performance that is equivalent to a 10% improvement over ASHRAE-2010 baseline standards. (Note that prior versions of LEED will be unavailable after October, 2016, and therefore all projects in the permitting process are now being required to apply Version 4.)
- Assessing feasibility of a steam energy connection for each new building, as required in zoning. (For this project, a steam analysis has been provided as a supplement to the Application

Documents but has not been fully reviewed. This approach should be pursued further, as the project’s MEPA comments observed that connecting to the Veolia district steam system would be “transformational” in terms of the project’s carbon footprint.)

- Assessing feasibility of geothermal energy systems for each new building, including the feasibility of shared geothermal among different building sites.
- Considering energy storage as part of each new building design.
- Including a commissioning program for each building (following the LEED Enhanced Commissioning credit or comparable standard.)
- Analysis of “pathways to net zero,” i.e., ways in which each new building could be adapted to be carbon-neutral as technologies advance over time.
- Incorporation of resiliency strategies that are protective of building occupants, activities and systems.
- Incorporating evolving sustainability standards, as such may be established at the time that an individual building is going through the design review process.
- Tracking of greenhouse gas emissions over time.

While this development plan could pursue its own set of sustainability standards that are more appropriate to the project, staff believes that the measures outlined in the MIT special permits provide a comprehensive set of measures that best responds to the city’s sustainability goals at this point in time and for Kendall Square in particular. Continuing discussion with the Applicant is anticipated.

Transportation strategies are also integral to the project’s sustainability, including prioritization of walking, bicycling and public transportation as the primary modes of access, designing projects that emphasize and support active transportation, and creating streets and spaces are safe, accessible and appealing to people of all ages and abilities. These issues are addressed in the plan and more detailed comments are provided in the accompanying memo from TP&T. Also, additional comments on climate change resiliency are included in the accompanying memo from DPW.

### **Comments – Retail and Innovation Space**

#### *Retail*

The retail section of the plan provides a helpful assessment of retail in the area and lays out a strategy to add to the retail base. Staff appreciates that the context for the retail plan takes into account the retail proposed or already in the neighborhood. Staff also appreciates that the Applicant is proposing incentives for local retail, which would be pursued in collaboration with the CRA, as these are good ways to encourage more local businesses to come in.

Aside from the ground-floor design issues raised in the Urban Design comments section, the following issues are worthy of further consideration by the Board:

- The focus on smaller retail spaces is appreciated, such as the 1,756 square-foot space at 145 Broadway. However, to ensure local retailers are viable, spaces on other sites (such as 250 Binney Street) will have to be made smaller than 3,000 square feet, possibly by splitting into 1,500 square-foot spaces.
- There may be limited future capacity for sit-down restaurants in Kendall Square. Not only are there many cafés and restaurants existing and planned to be established in the near future, there is also more competition from corporate cafeterias as larger companies have moved into the area. A greater diversity of retail uses might be explored as possibilities for retail locations such as 145 Broadway and 250 Binney Street.
- The following types of retail, which were identified by users of the area through the city's Kendall Square intercept survey, may provide possibilities for diversifying the retail mix:
  - Dry goods: office supply, Hardware, Sporting Goods Store, Specialty Retail (e.g., gift shop)
  - Pharmacy
  - Personal services: spa, salon, barber shop
  - Nightlife venues: art gallery, music venues
  - Dry cleaning
  - Mini market
  - Quick service and ethnically diverse foods

#### *Innovation Space*

The program for Innovation Space describes where that space will be located and summarizes the standards that must be met pursuant to the zoning requirements. The idea of having that space located in the heart of Kendall Square, next to the Cambridge Innovation Center, does have the potential to contribute to the diversity and liveliness of that location.

However, the concept plan does not describe how that space will actually be programmed and operated. It is helpful to have an operational plan that summarizes how the proposed space is planned to function and a reporting process to allow for monitoring on an ongoing basis by CDD. This type of plan should be included either prior to granting the special permit or as a condition of the ongoing review process, to be submitted prior to the development of commercial space for which such Innovation Space is required.