Cambridge Crossing

Parcel G

ZONING

DECEMBER 23, 2019

Number	Page	Section	Guideline Description		Check
1	5	Preface	Buildings exhibiting a diversity of architectural expression, establish a comfortable pedestrian scale common to all buildings types, framing streets and enlivening the sidewalks with entrances, life and activity.	The exterior of Building G on the north, east and west sides will receive a horizontal cladding system with a variety of textures and depths to give interest and composition when seen from the highway and the Gilmore Bridge. The building's volume will be articulated to reflect the contrast between the rail-beds to the north and the pedestrian streetscape to the south. From the south the building language will be primarily a curtainwall glazing system. The glazing will be shaded with the appropriate amount of horizontal exterior sun shades. The two languages will use material differences to give hierarchy to the pedestrian facing facades and break down the scale of the building. The use of a dominantly horizontal language will unify the building. The lower two floors of the building as well as the landscape design will be articulated in a way to give interest and scale at the pedestrian level.	✓
2	5	Preface	Each parcel is intended to relate to its immediate surroundings as well as the larger context.	The building corresponds with both surrounding parcels as well as larger context of Northpoint and Cambridge.	✓
3	14	1.3 Masterplan Exhibit: 07 zoning envelope	The building sits within the 220'–0" maximum zoning height limit	Top of the last occupied floor is 194'–0" measured from the mean grade.	✓
4	16	1.3 Masterplan Exhibit: 09 conceptual retail plan	Proposed Retail location per Masterplan	Per Masterplan, retail is concentrated on North First Street. Parcel G does not have any proposed retail.	✓
5	20	2.1 Scale and Massing	Buildings should avoid continuous massing longer than about 200 feet facing streets. If massing extends beyond this length, it should be visually articulated as a composition of smaller masses using different materials or colors, vertical breaks, bays, or other architectural elements.	The form of the building is inflected outward on its wider sides and inward on its narrowest sides and such that it loosely describes the shape of a bowtie when viewed from above. This bowtie form allows the building to appear more slender and elegant when viewed from all sides. This also allows the building to fit with the scale of more narrow residential and office buildings to the south and east. The bowtie inflection breaks up the length of the facade along Dawes St, as does the vertical pattern created by overlapping the sunshades.	✓
6	20	2.1 Scale and Massing	In addition to the above limits, buildings should reflect a rhythm and variation appropriate to the urban context. For example, this can be achieved by expressing bay widths of 16 to 25 feet for residential and 25 to 50 feet for mixed–use and retail.	The typical bay width for the building is 33'-0".	✓
7	20	2.1 Scale and Massing	Buildings should have a clearly expressed base, middle, and top.	The building incorporates a podium, tower and penthouse.	✓
8	20	2.1 Scale and Massing	Buildings should have a carefully articulated base of one of two floors with a high level of transparency, lightness, and detail at the ground floors allowing views inward and outward	A continuous, fully-glazed system is utilized along Dawes Street wrapping around both the Child St and Open Space.	✓
9	20	2.1 Scale and Massing	A line of expression at the second floor is encouraged to humanize the scale of the buildings and create an intimate pedestrian experience. This should be achieved by means of material articulation or architectural detailing	Different materials along with horizontal solar shades expressed the second floor level humanizing the scale of the podium.	✓
10	20	2.1 Scale and Massing	The mid–section of the building should consider light penetration, continuity and consistency of built mass while allowing for individual architectural detailing	The building has incorporated a series external sun shades to reduce solar heat gain and glare and which also articulates the façade.	✓

11	20	2.1 Scale and Massing	The base and middle should be built to the street line with courtyard openings and setbacks for cafes where appropriate	The tower mass of the building is pushed as far north on the property as possible allowing direct light and sky-dome visibility to benefit the landscape and public spaces along Dawes Street.	✓
12	12	2.1 Scale and Massing	Use variations in height and architectural elements such as parapets, cornices and other details to create interesting and varied roof lines and to clearly express the tops of buildings	The parapet rises sharply to the north reflecting the larger scale of the MBTA railroads and I-93.	✓
13	21	2.1 Scale and Massing	Demonstrate responsible use of lighting and energy consistent with sustainability requirements.	The building is design for silver certifiable LEED V4 BD+C Core and Shell.	✓
14	21	2.1.1 Build to Line	Build to line is a line that runs parallel to the property line at which construction of a building facade is to occur at NorthPoint that. It is a suggested set back from the property line and varies from street to street and parcel by parcel and is intended to provide a generous sidewalk and public realm design along all NorthPoint streets. While no structural elements can be placed beyond the build to line, certain architectural elements and projections that maintain the spirit of the set back can be considered as a part of the design review. See “EXHIBIT: 12 BUILD–TO LINE DIAGRAM”	The building conforms with the Design Guideline Built-To-Line.	✓
15	21	2.1.2 Public Streets	Use architectural expression on any portion of the building above 65 feet to prevent continuous massing. Buildings should have a clearly expressed base, middle, and top. This may be achieved through changes in material, fenestration, architectural detailing, or other elements	The building incorporates a podium, tower and penthouse with inflections on facades to prevent continuous massing. The pattern of sunshades further prevents continuous massing.	✓
16	21	2.1.2 Public Streets	Plot guidelines provide for additional sidewalk width by defining parcel and build to line to provide for wider sidewalks. For retail and office uses, build to the lot line or provide small setbacks (5 to 15 feet) from the right–of–way for café seating, benches, or small open spaces	The building conforms with all setbacks indicated in the Design Guideline, and provides a wider sidewalk zone along Dawes St.	✓
17	21	2.1.2 Public Streets	Locate loading docks on side streets or service alleys whenever possible, and away from residential areas and open spaces	The loading dock is located on the eastern service and parking garage access drive.	✓
18	21	2.1.3 Park Edges	Locate buildings to minimize shadows on NorthPoint Common, especially in the afternoon	Parcel G is located north of Northpoint Common and therefore will not cast shadows on it.	✓
19	21	2.1.3 Park Edges	Surround public parks with uses that create an active ground floor environment throughout the day and evening and increase safety for park users	Along the adjacent open space, landscape materials, planting and site furniture and outdoor exercise equipment will be chosen to extend the open space of the park to the building.	✓
20	21	2.1.3 Park Edges	Shops, cafés and other public uses that enliven the parks are encouraged adjacent to open spaces	Site furniture and outdoor exercise equipment will be utilized to activate this area.	✓
21	21	2.1.3 Park Edges	For retail and office uses, build to the lot line or provide small setbacks (5 to 15 feet) from the right–of–way for café seating, benches, or small open spaces	The building conforms with the Design Guideline Built-To-Line requirements.	✓
22	23	2.1.6 Commercial Massing and Articulation	Exhibit: 17 Commercial Massing Precedent	The building is designed in a similar manner to that shown in the Exhibit 17 massing and precedents.	✓
25	27	2.2 Mixed Use Blocks or Commercial Blocks	Office/ R&D uses are discouraged from occupying extensive ground–floor frontage. Where these uses do occur, they should occupy no more than 200 to 250 feet of continuous frontage along public streets	The tenant frontage along Dawes St is less than 250'-0". Pedestrian entries are located at the southeast and southwest corners.	✓
26	27	2.2 Mixed Use Blocks or Commercial Blocks	Ground floor frontage should generally be permeable and massing elements should be human scaled	Large amounts of glass will be used at the ground floor. The façade treatments are in keeping with the human scale.	✓
27	27	2.2 Mixed Use Blocks or Commercial Blocks	Entrances should be located on public streets, and at or near corners when appropriate. Entrances should relate well to crosswalks and pathways that lead to bus stops and transit stations	The main entry is located in the southwest corner to respond to the site pedestrian connection points. A second pedestrian entry is located at the southeast corner.	✓
29	27	2.2 Mixed Use Blocks or Commercial Blocks	Blank walls should be avoided along all public streets, courts, and pedestrian walkways	Large amounts of glass within a column and sunshade frame will be used along Dawes St.	✓

30	31	2.3.2 Architectural Character – Commercial	Create varied architecture and avoid flat facades by using recessed or projected entryways, bays, canopies, awnings, and other architectural elements. Where buildings are set back at upper stories, lower roofs may be used as balconies, balustrades, and gardens. Utilize architectural articulation such as changes in material, fenestration, architectural detailing, or other elements to break down the scale.	The exterior of Building G on the north, east and west sides will receive a horizontal cladding system with a variety of textures and depths to give interest and composition when seen from the highway and the Gilmore Bridge. From the south the building language will be primarily a curtainwall glazing system. The glazing will be shaded with the appropriate amount of horizontal exterior sun shades. The two languages will use material differences to give hierarchy to the pedestrian facing facades and break down the scale of the building. The use of a dominantly horizontal language will unify the building. The lower two floors of the building as well as the landscape design will be articulated in a way to give interest and scale at the pedestrian level	✓
31	31	2.3.3 Architectural Character – Lighting	Public Realm and exterior building lighting is an important consideration for the identity of the project and enhancing the retail, pedestrian nighttime safety and neighborhood connectivity for NorthPoint. However, lighting design shall be respectful of its impact on surrounding context including the other residential buildings in NorthPoint and surrounding neighborhoods including East Cambridge.	Pedestrian lighting provided. All lighting will have sharp cut-off to mitigate light pollution.	✓
32	32	2.4 Environmental Guidelines (LEED Principles)		The building is design for silver certifiable LEED V4 BD+C Core and Shell.	✓
33	33	2.5 Parking / Service	Underground parking is preferable. All parking garages must provide direct pedestrian access to the street	There are 3 levels of underground parking with dedicated public pedestrian elevator and stair the southeast corner of the building.	✓
34	47	3.2 Streetscape and Circulation	Refer to Cambridge Pedestrian Plan and the Cambridge Bicycle Plan for additional guidance on creating a safe and pleasant environment for pedestrians and bicyclists and for guidance on sidewalk width and street trees. The pedestrian experience in and around transit stops should be designed to be pedestrian and bicycle friendly. Expanded sidewalks in public realm in and around such stations are encouraged whenever feasible.	Pedestrian and Bicycle experiences are being provided per the Design Guidelines.	✓
35	47	3.2A Character	Use streetscape elements such as trees, benches, signage, and lighting to support active pedestrian uses and to reinforce the character and identity of each district.	Dawes St. frontage and terrace will use street trees, plantings, benches, lighting to reinforce the character of the parcel.	✓
36	47	3.2A Character	Design streets to encourage pedestrian and cycle activity, and to control vehicle speed in residential areas.	Street design is being provided per design guideline requirements.	✓
37	47	3.2A Character	In the design of new streets, provide sufficient pavement width to accommodate on–street parking and short–term loading where appropriate in order to provide short–term parking and to serve local retail and building uses.	Short-term parking is provided at the Dawes St. drop-off area.	✓
38	47	3.2A Character	In the design of new streets, pathways, and parks, provide pedestrian– scale lighting to enhance pedestrian safety.	Street design is being provided per the Design Guidelines	✓
39	47	3.2A Character	Numerous entrances along principal pedestrian routes are encouraged both for safety and to enhance the pedestrian environment.	All pedestrian entrances are located along Dawes St.	✓
40	47	3.2A Character	Major entrances should be located on public streets and at or near corners wherever possible. Entrances should relate well to crosswalks and pathways that lead to bus stops and transit sections.	All pedestrian entrances are located along Dawes St.	✓
42	48	3.2.1 First Street	The developer will provide expanded sidewalks and bicycle accommodation from the transit hub to the center of the NorthPoint.	Bicycle accommodation is being provided per the Design Guidelines.	✓

CAMBRIDGE ZONING ORDINANCE **PB #179 Amendment #6 (Major) - Northpoint PUD** Memorandum dated January 13, 2015 2. Updated parking ratios	Per this memorandum the parking ratios for Parcel G have been adjusted from the City of Cambridge's Zoning Ordinance Article 6 and are as follows: Office: Maximum of 0.9 spaces/1,000 s.f. Lab/R&D: Maximum 0.8 spaces/1,000 s.f.	This project includes the following: 450,895 GFA 60%/40% Lab-Office: Lab: 270,537 GFA - 217 Spaces Office: 180,358 GfF - 163 Spaces Total: 379 Spaces 100% Office: 450,895 GFA - 406 spaces This project will have 406 parking spaces.	✓
521 CMR - SECTION 23.2.1 **521 CMR - SECTION 23.2.2**	401 - 500 Spaces requires a minimum of 9 accessible spaces. One in every eight accessible spaces, but not less than one shall be van accessible.	This project will have 12 standard + 4 van accessible parking spaces.	✓
521 CMR - SECTION 23.4.1 **521 CMR - SECTION 23.4.2** **CAMBRIDGE ZONING ORDINANCE** **Article 6.42**	Accessible Parking: 8'–0" Wide + 5'–0" Access aisle Length equal to local zoning req's Maneuvering Aisle Width: 22'–0" Regular Spaces: 8'–6" x 18'–0" Compact Spaces: 7'–6" x 16'–0" (50% Maximum) Handicap Spaces: 12'–0" x 18'–0"		✓
CAMBRIDGE ZONING ORDINANCE **Article 6.104.1** **Article 6.104.2**	Long Term Bicycle Parking shall be provided within the building containing the use or uses that it is intended to serve, or within a structure whose pedestrian entrance is no more than two hundred feet (200') from a pedestrian entrance to such building. Short term bicycle parking on a private lot shall be located within fifty (50') feet of a pedestrian entrance to the building or buildings containing the use or uses it serves. For buildings or uses requiring more than eight (8) Short–Term Bicycle Parking Spaces, some of the required spaces may be located at a greater distance from the entrances , so long as eight (8) Short–Term Bicycle Parking Spaces are available within fifty (50') feet of any entrance.	Long term bike parking is located on the west side of the building right behind the building lobby. Short term parking is located right next to the building entry lobby and by the Garage Lobby located on the southeast corner of the building within fifty feet of both entrances.	✓

CAMBRIDGE ZONING ORDINANCE **Article 6.105.1 - e**	Where twenty (20) or more Bicycle Parking Spaces are required, at least five percent (5%) of the required spaces must provide an additional two feet (2') of space parallel to the length of the bicycle to accommodate tandem bicycles or bicycles with trailers.	Required: 0.05 X 136 = 6.8 spaces Provided: 14 spaces	✓
CAMBRIDGE ZONING ORDINANCE **Article 6.107.2** **Article 6.107.3**	LONG TERM BICYCLE PARKING REQUIREMENTS: 0.30 / 1,000 GFA (OFFICE) 0.22 / 1,000 GFA (LABS) SHORT TERM BICYCLE PARKING REQUIREMENTS: 0.06 / 1,000 GFA (OFFICE) 0.06 / 1,000 GFA (LABS)	Two potential scenarios are outlined below: <u>Long Term:</u> 60%/40% Lab-Office: Lab: 270,537 GFA - 0.22 X 271 = 60 Spaces Office: 180,358 GFA - 0.30 X 181 = 55 Spaces Total: 115 Spaces 100% Office: Office: 450,895 GFA - 0.30 X 451 = 136 Spaces <u>Short Term:</u> 60%/40% Lab-Office: Lab: 270,537 GFA - 0.06 X 217 = 17 Spaces Office: 180,358 GFA - 0.06 X 181 = 11 Spaces Total: 28 Spaces 100% Office: Office: 450,895 GFA - 0.06 X 451 = 28 Spaces This project currently provides 144 Long Term spaces and 28 Short Term spaces which satisfies both scenarios.	✓
CAMBRIDGE ZONING ORDINANCE **Article 6.83**	Minimum Number of Off Street Loading Bays to be as follows: <u>OFFICE / R&D (Category F)</u> (0) < 10,000 GFA (1) 10,000 GFA – 99,999 GFA (2) 100,000 GFA – 299,999 GFA (+1) Per additional 200,000 GFA	This project includes a total of 450,895 GFA of office/lab space. Total of 3 bays required. This project will provide a total of 3 Loading Bays.	✓
CAMBRIDGE ZONING ORDINANCE **Article 6.91**	Where a building or lot contains uses requiring compliance with loading facility categories C,D,E, and F, the first required bay shall be no less than ten (10) feet in width, thirty (30) feet in length and fourteen (14) feet in height. Each additional required loading bay for categories C,D,E, and F... shall be no less than ten (10) feet in width, fifty (50) feet in length, and fourteen (14) feet in height.	All three bays are sized for following: 52' L X 12' W X 14' H	✓

Cambridge Crossing

Parcel G

SUSTAINABILITY

DECEMBER 23, 2019

I. Project Overview

The proposed project is a new construction high-rise core and shell mixed-use lab and office building including fourteen (14) stories above grade (including two penthouse levels), and three below grade parking levels. The total gross square footage for the project, excluding parking levels) is approximately 510,980 gross square feet.

II. Project Data

Building Area: 510,980 square feet
Parking Quantity: 406 spaces
Site Area: 89,624 square feet
Occupants (FTE): 1,406 *(as per USGBC default occupancy guidance)*

III. Sustainability Narratives

Path to Net Zero

The laboratory program presents a challenge for achieving net-zero energy on a dense urban site. The proposed design reflects new construction being built to the best of currently available technology and efficiency given market and program restraints. The design team continues to evaluate opportunities to reduce energy consumption and greenhouse gas emissions.

In concert with the district energy studies, the team has brainstormed pathways for potential emissions reductions, including speculation about future technologies, future greening of the grid, and what it would take to fully electrify the buildings. In terms of future technologies, the team anticipates that chilled beams may be the new standard in tenant laboratory fit-out spaces, but the market currently does not show support for wide adoption of this system with lingering hesitation stemming from indoor air quality concerns in research spaces.

Additional energy savings are likely to be seen in advancement of building controls and active personalization of your environment in spaces. New technologies can be tested and incorporated as tenant turnover happens to bring spaces up to the most current integrated systems.

The biggest reduction-potential in energy consumption and greenhouse gas emissions for laboratory buildings will likely be in laboratory equipment performance and/or in a shift in the way research and laboratory science is structured. As research grows more computation intensive, less biology and chemistry laboratory demands will reduce the energy use intensity of laboratory spaces. In this case, the team predicts a significant reduction in building emissions is possible. Fit out program and technology is determined by the tenant that occupies the space and the design team will provide exemplary access to internet infrastructure to allow for future shift to laboratory computing dependence.

The team discussed where it sees energy supply and decarbonization in the future, particularly with improvements from the grid electricity sources. The makeup of the Massachusetts energy grid is anticipated to shift more towards renewable energy sources in the coming decades. Thus, the electricity component consumed by the project under the current design could see an improvement in emissions factor, thus reduction the overall emissions from operation of the building.

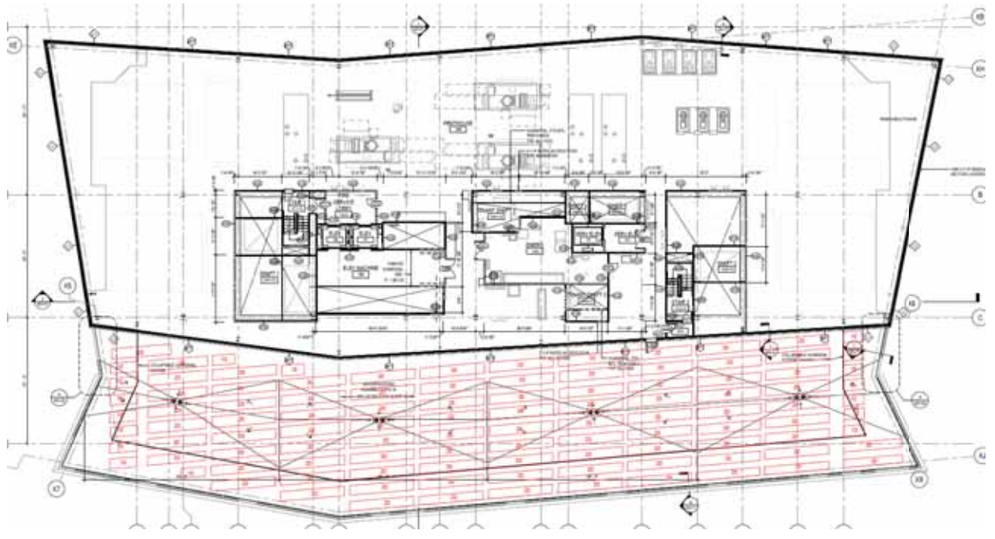
The project mechanical space and equipment can be transitioned to all-electric systems in the future as the building design does not rely on infrastructure outside the building.

Solar Study

A PV analysis was performed for the building with the intent to give the design team and the Owner a rough idea of the PV potential for the project including basic system sizing and output information, as well as net-zero site energy feasibility. Below is a summary of the analysis.

It is important to note that this analysis was done using energy targets set by the design team and “rule of thumb” calculations based on industry standard PV performance metrics.

Based on the roof plan for Parcel G, the project has enough roof space to accommodate a 78 kW PV system. The design energy model indicates the total energy consumption on an annual basis will be 17,323,922 kWh of electricity and 351,240 therms of natural gas. The 78 kW PV system would produce approximately 100,633 kWh of electricity, or 0.5% of the total electrical use.



To achieve net-zero site energy, the building would need to install a 21,407 kW PV system roughly requiring ~2,140,720 square feet or 49 acres. This area is excluding aisles between arrays, space for electrical equipment/conduits, and self-shading, so, in-reality, this number would be even larger making net-zero site energy via an on-site PV system unfeasible.

Resiliency

The site design measures included are aimed at making the Parcel G building less vulnerable to climate change. These site design measures work in combination with building design measures to increase the building's resiliency. Parcel G has been designed to mitigate and respond to the potential impacts of climate change including extreme rain and storm events, flooding and sea level rise, high winds, and the accompanying potential power outages and demands on utilities.

The resiliency measures implemented at Parcel G include the following:

To reduce the heat island effect:

- Highly reflective hardscape
- Low-albedo roof
- Shade trees and planted areas where possible

To reduce overall energy and water consumption:

- High performance envelope glazing.
- High performance lighting and controls
- High performance HVAC systems
- Low flow water fixtures
- Stormwater collection tank for irrigation and potentially cooling tower makeup water

To ensure the integrity of critical building systems during a severe storm or power outage:

- Finish floor elevation established above the local flood elevation
    - The main mechanical utility room is located on the 13th floor. Critical electrical equipment will be located on ground floor of the building.
- Waterproof materials at storefront sills
- Emergency mechanical equipment placed above flood levels.
- Emergency generator is located above flood levels. Tenant will have the ability to add a separate tenant specific generator which they can use at their discretion. Tenants will use the base-building generator only for power to emergency lighting.
- Transformer vault and fire pump are located at least 5 feet above flood levels.
- Buried utilities
- Water tight utility conduits
- Waste water back flow preventers
- Storm water back-flow preventers

Geothermal Feasibility Assessment

An alternative ground source heat pump (GSHP) heating and cooling system has been analyzed for Parcel G. The primary advantage of the GSHP is that it would eliminate the use of fossil fuels on site. The analysis showed that the while GSHP system would potentially reduce carbon emissions, the system would result in increased capital and annual energy costs. It should be noted that utility rates change, and an increase in the price of natural gas relative to electricity would make the GSHP more financially attractive. In addition, the area required for the borehole field would be significant, which is an issue on an urban site due to tight site constraints. Also, because of the presence of the MBTA adjacent to the site, it is not clear that any boreholes could be installed. Based on these results the GSHP alternative does not appear attractive.

While GSHP systems are typically very efficient, the proposed building systems are also very efficient. The elimination of fossil fuels is a worthy long-term goal, but the very high initial costs and the size of the well field itself presents a challenge on this constrained site. All factors considered, the GSHP alternative does not appear attractive.

Greenhouse Gas Emissions Assessment

The baseline case is from which progress in energy use and GHG emissions reductions is measured. The GHG baseline case is a project designed to meet minimum requirements of the Massachusetts State Stretch Energy Code. The baseline is merely a reference point from which to measure the effectiveness of energy efficiency improvements proposed for the building.

The proposed case represents the design parameters of the proposed building, including measures incorporated into the building design that go above and beyond those required for compliance with the Massachusetts State Stretch Energy Code.

The emission factors used in the calculation are:

- 53.11 kg of CO2 per million Btu of natural gas used, which is from the Energy Star Portfolio Manager Greenhouse Emissions Technical Reference Guide (August 2018).

- 74.94 kg of CO2 per million Btu of electricity used, which the from the Energy Star Portfolio Manager Greenhouse Emissions Technical Reference Guide (August 2018).

Energy Source	*Baseline Consumption (Btu x 10^6)*	*Proposed Consumption (Btu x 10^6)*	*GHG Emission Factor (kG/Btu x 10^6)*	*Baseline (kg CO2 Emissions)*	*Proposed (kg CO2 Emissions)*
Electricity	56,904	59,102.4	74.94	4,264,388.2	4,429,645.1
Natural Gas	85,085.1	35,124	53.11	4,518,869.7	1,865,435.6
Total	**141,989.1**	**94,233.2**		**8,783,257.9**	**6,295,080.7**
Savings		**33.6%**			**28.33%**

The energy model results indicate the design will demonstrate a 33.6% energy savings improvement over a code-compliant baseline and the associated CO2 emissions reduction is approximately 28.33%.

V. Credit by Credit Narrative

The project was reviewed for compliance with the Article 80B sub-article 37 'Green Buildings' using the USGBC's LEED for Core and Shell Development, (LEED-CS), version 4 Rating System. The project is currently tracking 55 'YES' credit points with an additional 7 'MAYBE' credit points still under review/consideration. By targeting 50 credit points, the project anticipates achieving the City of Boston requirements to be LEED v4 'certifiable'. In addition to the City requirements, **the project will be registered under the LEED-CS v4 rating system and will be pursuing formal certification with the USGBC.**

A. Integrative Process (IP)

The project team met regularly to ensure that the team members from the various disciplines involved are all known to each other and collectively communicating. A sustainable design focused workshop was held, and the team established shared sustainable design and energy efficiency goals for the project. As the project progressed, there were regular design meetings to ensure the entire team is engaged throughout the design and construction process. Additionally, the project team met with Eversource to discuss the incentive programs and potential Energy Conservation Measures for the Proposed Project.

IP Credit 1 Integrative Process ***1 point***

The Project will meet the intent of this credit through identification of cross discipline opportunities to design a sustainable building project. Sustainable design focused meetings will be ongoing throughout the design process to assist the team in establishing shared sustainable design and energy efficiency goals for the Project. Early design phase energy modeling has been conducted to review systems synergies and assess areas where energy loads may be significantly reduced. A water use analysis has been conducted to aid in establishing water use reduction targets.

B. Location and Transportation (LT)

Cambridge Crossing is an innovative development consisting of a 45-acre transit-oriented mixed-use urban development located primarily in Cambridge, with portions extending into Somerville, and Boston. Cambridge Crossing is a transit-oriented development within walking distance of two MBTA subway and bus stations, several through site shuttle buses, dedicated bike lanes, and pedestrian footpaths.

LT Credit 2 Sensitive Land Protection ***2 points***

The Project meets the credit requirements; it is located on land that has been previously developed.

LT Credit 3 High Priority Site ***3 points***

The development area contains contaminated soils and/or groundwater; it will be appropriately remediated in accordance with MassDEP regulations.

LT Credit 4 Surrounding Density and Diverse Uses ***6 points***

The project is achieving this credit via both Option 1 and Option 2. Option 1 Surrounding Density:

> *Locate on a site whose surrounding density within a ¼ mile radius of the project boundary meets 22,000 (2 points) or 35,000 (3 points) square feet per acre of buildable land.*

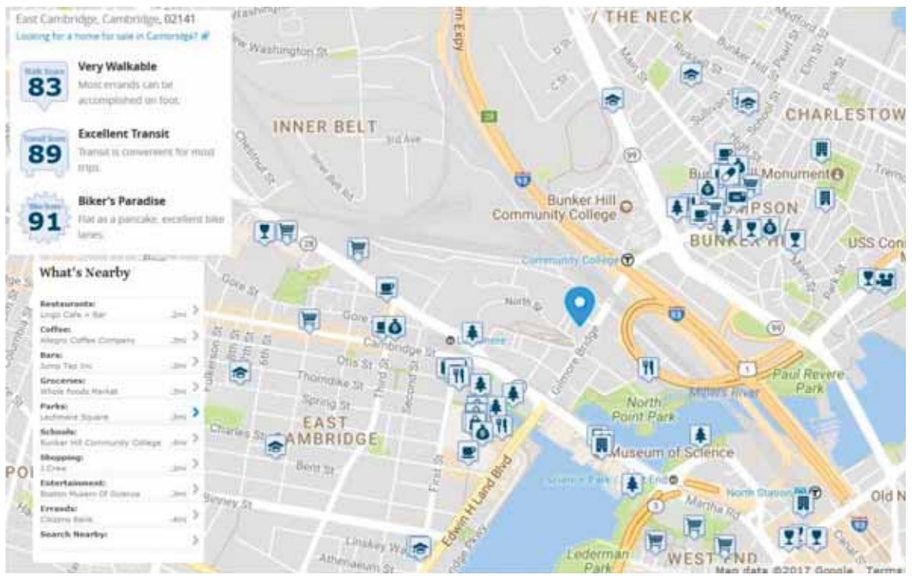
The project is in a dense area whose density within a ¼ mi radius of the project site is 54,515 square feet per acre of buildable land. See the image below showing the density of the surrounding area. The red outline shows the boundary of the entire Cambridge Crossing development.

Image Courtesy of CX Website

Option 2 Diverse Uses: *Construct or renovate a building or a space within a building such that the building's main entrance is within a ½-mile (800-meter) walking distance of the main entrance of four to seven (1 point) or eight or more (2 points) existing and publicly available diverse uses.:*

The project is located in a dense urban neighborhood and is within a ½-mile walking distance to at least eight (8) services. See below for a diagram highlighting the surrounding services.

Proximity to eight or more services for this credit is worth two (2) points.



LT Credit 5 Access to Quality Transit ***6 points***

The project is located within one half mile walking distance to Lechmere Station which provides access to various bus routes and MBTA Green Line E service and the Community College MBTA Station, with access to MBTA Orange Line service. In combination, the employees of the tenants at Parcel G will have access to more than 483 weekday rides and 348 weekend transit rides.

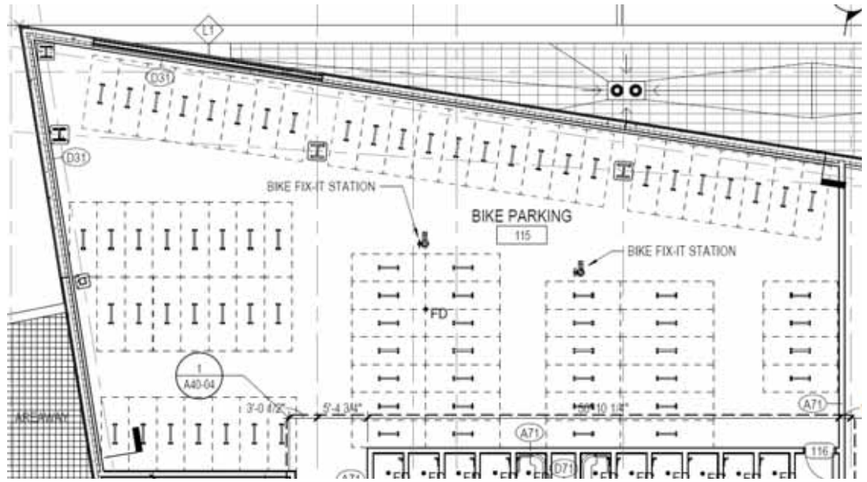
	Total Rides Per Day		Percent of Total Rides Per Line	
	Weekday	Weekend	Weekday	Weekend
Green Line E	153	109	32%	31%
Orange Line	138	105	28%	30%
Bus 69	47	37	10%	10%
Bus 80	43	29	9%	8%
Bus 87	48	33	10%	9%
Bus 88	54	37	11%	10%
Total:	483	348		

LT Credit 6 Bicycle Facilities ***1 point***

Exterior short-term and covered long-term bicycle storage is planned for visitors and regular occupants of the project. The immediate neighborhood provides a direct connection to a local bicycle network that links to a variety of services with pedestrian and cyclist access.

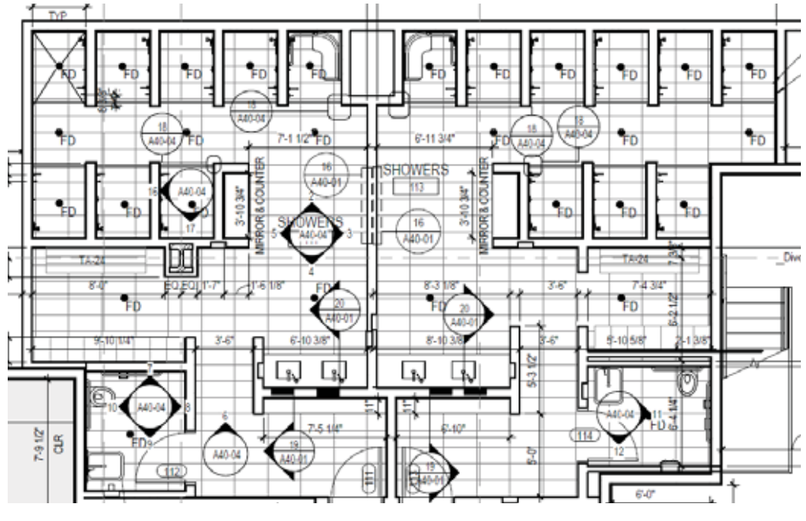
The project provides covered long-term bike spaces for >5% of regular building occupants on the first floor with a total of 77 long-term bike racks.

LTc Bicycle Facilities	
Bike Racks	**Long-Term** *(no < 4)*
5% of all regular building occupants	71
TOTAL LONG-TERM REQUIRED RACKS	**71**



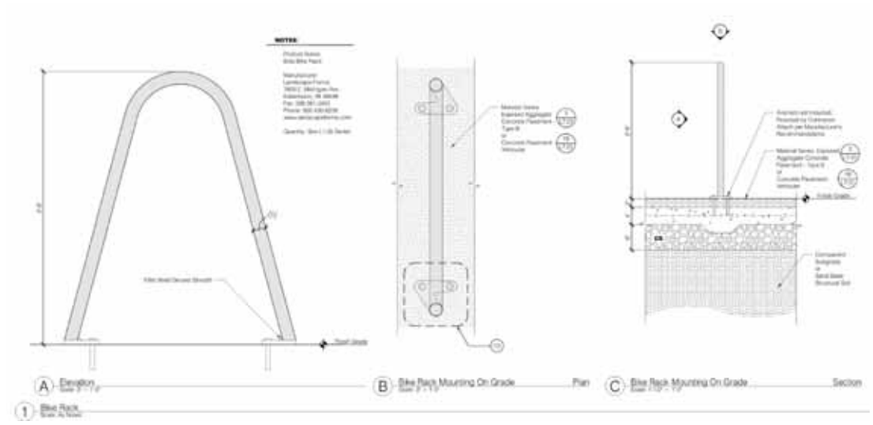
In addition to the long-term bike spaces, the project provides 17 showers with changing facilities that are adjacent to the long-term bike storage room located on the ground floor of the building.

LTc Bicycle Facilities	
Showers/Changing Rooms	
General Office	**6**
Laboratory	**5**
TOTAL	**11**



Short-term bike spaces for 2.5% of the estimated peak visitors are provided throughout the project site; they are within 100 feet of the main building entrance. A total of 14 (28 bike capacity) exterior, short term bike racks are provided on-site.

LTc Bicycle Facilities	
Bike Racks	**Short-Term** *(no < 4)*
2.5% of peak visitors	0
TOTAL SHORT-TERM REQUIRED RACKS	**4**



LT Credit 7 Reduced Parking Footprint ***1 maybe point***

406 parking spaces will be provided within the underground parking structure, resulting in more than a 60% reduction in base-ratios as recommended by the Parking Consultants Council. Additionally, carpool spaces may be provided for at least 21 vehicles (5% of the total parking capacity) in preferred locations throughout the garage.

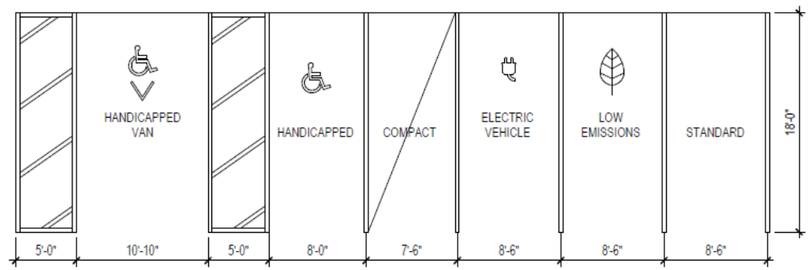
# Parking Spaces	5% Carpool
406	21

LT Credit 8 Green Vehicles ***1 point***

406 parking spaces are provided for tenants and visitors to the building within the underground parking structure. The two compliance paths will be followed in support of the credit requirements:

1. 18 LEFE spaces (21 required to meet 5% of total parking capacity) will be allocated within the parking garage and will be placed in preferred locations.
2. 20 electric vehicle charging stations (9 are required to meet 2% of total parking capacity) will be provided and be made available to project occupants.

# Parking Spaces	5% LEFE	2% EVCS
406	21	9



2 TYP. PARKING SIZES
1/8" = 1'-0"

C. Sustainable Sites (SS)

The Cambridge Crossing development consists of more than 11 acres of urban green space and a diverse retail experience that celebrates the surrounding cities to bring a greater sense of community to the larger development. To the extent possible, light colored pedestrian-oriented hardscape and open spaces will be provided to increase site walkability within the limits of the Parcel G site. Additionally, a rain water management plan has been developed to address the rate, run off and quality of the site rainwater.

SS Prerequisite 1 Construction Activity Pollution Prevention ***Required***

The construction manager will be required to submit and implement an appropriate SWPPP/Erosion and Sedimentation Control (ESC) Plan for construction activities related to the construction of the project. The ESC Plan will conform to the erosion and sedimentation requirements of the applicable NPDES regulations and specific municipal requirements for the City of Cambridge. Additionally, the ESC Plan will address management and containment of dust and particulate matter generated by on site demolition and construction activities. Civil design drawings will include measures for the implementation of the ESC plan.

SS Credit 1 Site Assessment ***1 point***

A comprehensive site assessment was completed as part of the development master plan effort and the Cambridge Crossing Concept Plan. The site assessment included topography, hydrology, climate, vegetation, soils, human use, and human health effects specific to Parcel G which was used to inform the design.

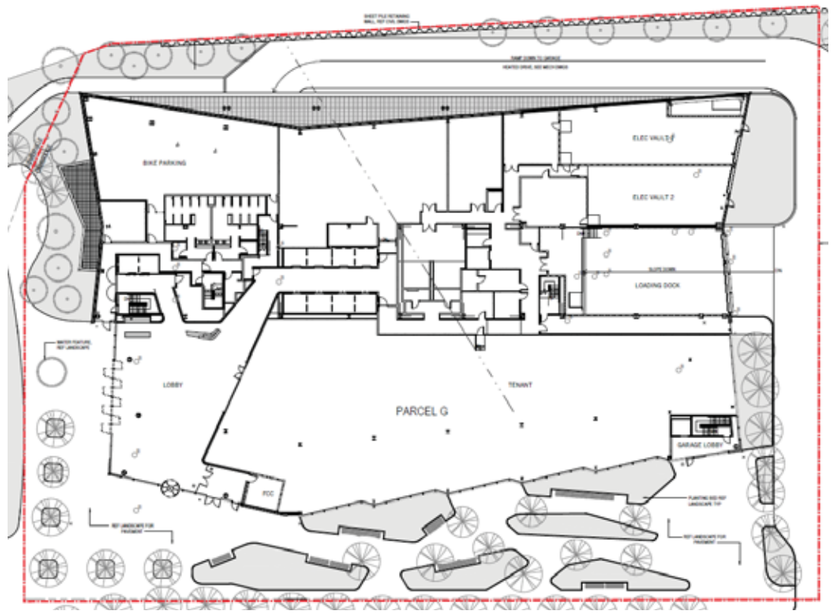
SS Credit 3 Open Space ***1 point***

The open space on all four sides of Parcel G is designed to create seamless connections between the building and the open space network at Cambridge Crossing. These connections will be particularly strong on the west side, where the adjacent open space of Park 4 in Cambridge and Somerville abuts the entrance plaza and planted base of the building. In this area landscape materials, planting and site furniture and outdoor exercise equipment will be chosen to extend the open space of the park to the building. On the south side of the building on Dawes Street the sidewalk materials will be extended towards the building and a plaza for food trucks and picnic tables is established as part of the streetscape, framed with shade planting running along the southern edge of the building to create a comfortable microclimate in this area. On the building's east side, the service road, shared with Building H will be planted with shade trees and groundcover, protecting and defining the sidewalk. On the north side of the building the service road will descend to parking at the

building's lower level, with a planted buffer running along the northern edge of the site screening the rail yards.

Large plant beds and street trees will maximize vegetation and minimize the extent of paving within both the Parcel G landscape. The plant beds will create a welcoming, comfortable, human-scaled environment at the base of the buildings to encourage social interaction and use of the public realm. The vegetation and its soil will contribute to localized carbon sequestration and enhanced air quality. Imported horticultural planting soil specifically designed to support this urban landscape condition will have continuous, shared volumes in the beds and under pavements to encourage self-sustaining root growth that will produce health, mature trees at a goal of 1,000 cf per tree.

Through the inclusion of the landscaped spaces and pedestrian friendly streetscape improvements explained above, it is anticipated the project will incorporate more than enough vegetated and pedestrian-friendly open space to meet the credit requirements.



SSc Open Space	
Total Site Area (including footprint):	**89,624**
30% Requirement:	26,887
25% Vegetation Requirement:	6,722

SS Credit 5 Heat Island Reduction ***2 points***

Light-colored concrete paving materials will have high albedo values to reduce the heat island effect. Densely planted beds with canopy and understory trees will create shade on the adjacent pavements and provide ambient cooling. Street trees lining Dawes Street and the Gilmore Bridge will reach out with their high canopies and produce shadows on the surrounding streets. The paved entry plazas be shaded by the building overhangs to reduce direct sunlight. The roof membrane will be a reflective gray PVC membrane from Sarnafil (G410 EnergySmart) with an initial SRI value of 90.

SS Credit 7 Tenant Design and Construction Guidelines ***1 point***

The project will provide Tenant Design and Construction Guidelines for distribution and review with potential building tenants. The guidelines will outline the sustainable design and energy efficiency measures implemented in the core and shell building and provide detailed guidance for the Tenants to design and build in alignment with the project sustainability goals.

D. Water Efficiency (WE)

The project has specified low flow and high efficiency plumbing fixtures within the project to reduce the amount of potable water used throughout the building. The site will utilize native, adaptive, and/or drought tolerant plant species along with rainwater capture and reuse for irrigation to eliminate the need for potable water use for irrigation.

WE Prerequisite 1 Outdoor Water Use Reduction, 30% ***Required***

The landscape design will incorporate native and adaptive plantings, and the design of the irrigation system will target a 100% reduction in potable water use when compared to a mid-summer baseline using a rainwater collection and reuse system for irrigation. The proposed systems incorporate high controller efficiency and moisture sensors.

WE Prerequisite 1 Water Use Reduction, 20% Reduction ***Required***

The project must at a minimum meet the following requirements for fixtures and fittings: *as applicable to the project scope, reduce aggregate water consumption by 20% from the EPA baseline. All newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible for labeling must be WaterSense labeled. For appliance and process water use: Install appliances, equipment, and processes within the project scope that meet the requirements listed in Tables 2 and 3 of the LEED BD +C Reference Guide*.

Flush and flow fixtures specified for the project will exceed the aggregate water consumption reduction requirement of 20% and will be WaterSense labeled, as applicable. Additionally, appliance and process water use will meet applicable requirements outlined within the Reference Guide to comply with this prerequisite. See the Indoor Water Use Reduction credit below for flush and flow fixture water use reduction calculations.

Flush Fixture Type	**Baseline GPF**	**Design GPF**	**Uses/ Day**	**Baseline Annual Use/Gallons**	**Design Annual Use/Gallons**	**% Savings**
FTE Female Water Closets	1.6gpf	1.28gpf	1.2	884,728	707,865.6	
FTE Male Water Closets	1.6gpf	1.28gpf	3.0	354,931.2	283,944.96	
FTE Male Urinals	1.0gpf	0.125gpf	1.8	332,748	41,593.5	
Flow Fixture Type	**Baseline GPM**	**Design GPM**	**Uses/ Day**	**Baseline Annual Use/kGallons**	**Design Annual Use/kGallons**	**% Savings**
FTE Lavatory	0.5gpm	0.35gpm	3.0	276,900	193,830	
FTE Shower	2.5gpm	1.5gpm	1.0	461,500	276,900	
Kitchen Sink	2.2gpm	2.2gpm	0.1	203,060	203,060	
TOTAL annual water savings						**32.09%**

WE Prerequisite 3 Building Level Water Metering ***Required***

The project will meet the requirements of this prerequisite by installing permanent water meters that measure the total potable water use for the building and associated grounds. In addition to installing the meters, the Project will commit to sharing water usage data with the USGBC for a five-year period beginning on the date the Project accepts LEED certification or typical occupancy, whichever comes first.

WE Credit 1 Outdoor Water Use Reduction 50% ***1 point***

The landscape design will incorporate native and adaptive plantings, and the design of the irrigation system will achieve at least a 50% reduction in potable water use when compared to a mid-summer baseline using a rainwater collection and reuse system for irrigation. The irrigation system will incorporate high controller efficiency and moisture sensors.

WE Credit 2 Indoor Water Use Reduction ***2 points***

Through the specification of low flow and high efficiency plumbing fixtures, the Project will implement water use reduction strategies that target 30% less potable water use annually when compared to EPA baseline fixtures for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements. Toilet fixtures planned for use include 1.28 GPF water closets, 0.125 GPF urinals, 0.35 GPM sensor faucet lavatories, and 1.5 GPM showers.

WE Credit 3 Cooling Tower Water Use ***1 point***

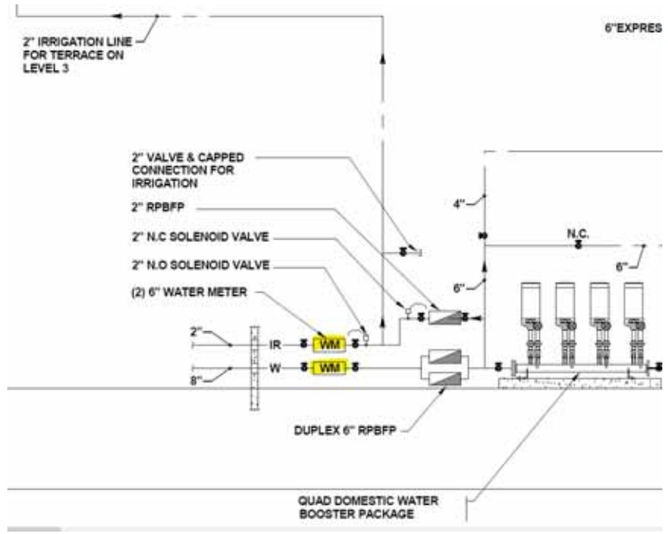
The project will conduct a one-time potable water analysis for the cooling tower water and calculate the cycles of concentration. Through increasing the level of treatment in the make-up and/or condenser water, the project will achieve the maximum cycles of concentration calculated before any of the parameters analyzed exceed their maximum allowable levels of concentration. At minimum, the following five control parameters will be assessed: Ca, Total alkalinity, SiO_2, Ci, and Conductivity.

WE Credit 4 Water Metering ***1 point***

The project will comply with the following requirements: *Install permanent water meters for two or more of the following water subsystems, as applicable to the project:*

- *Irrigation*
- *Indoor plumbing fixtures and fittings*
- *Domestic hot water*
- *Boiler with aggregate projected annual water use of 100,000 gallons or more, or boiler of more than 500,000 BtuH (150 kW). A single makeup meter may record flows for multiple boilers.*
- *Reclaimed water. Meter reclaimed water, regardless of rate. A reclaimed water system with a makeup water connection must also be metered so that the true reclaimed water component can be determined.*
- *Other process water. Meter at least 80% of expected daily water consumption for process end uses, such as humidification systems, dishwashers, clothes washers, pools, and other subsystems using process water.*

Sub-systems anticipated to have sub-meters include the following: domestic hot water and irrigation.



E. Energy and Atmosphere (EA)

The proposed project has been designed with high efficiency building systems and a high-performance building envelope. The proposed HVAC systems design for the building includes an active-chilled beam system with a high-efficiency chiller and boiler plant. The proposed lighting will target a lighting power density below code maximums using daylight dimming, carefully considered controls systems and LED fixtures. The preliminary energy use assessment has been conducted using whole building energy modeling. The proposed design must meet both the State Stretch Energy Code and LEED v4 criteria.

EA Prerequisite 1 Fundamental Commissioning and Verification ***Required***

A third-party Commissioning Agent, (CxA) has been engaged by the Owner for purposes of providing fundamental commissioning services for the building energy related systems including HVAC & R, lighting and domestic hot water systems. The CxA will verify the building systems are installed, calibrated and perform to the building owners project requirements through verification and performance reviews of the systems to be commissioned. The commissioning agent will provide a summary report.

The commissioning agent is independent of the project's design and construction management. The commissioning agent will report findings to the project owner. The owner will provide the Owner's Project Requirements documentation and the design team will provide the basis of design documents to the commissioning agent for review.

The following systems are included in the Commissioning scope of work:

- Heating, ventilating, air conditioning and refrigeration (HVAC&R) systems
- HVAC controls
- Lighting controls
- Electrical systems
- Domestic hot water systems
- Plumbing and pumps
- Building Management System
- Fire Alarm system

EA Prerequisite 2 Minimum Energy Performance ***Required***

This requirement will be met by selecting a high performing envelope, efficient mechanical equipment, and efficient lighting fixtures. The project will meet the Stretch Code requirement to be 10% better than current MA code in annual site energy use (using an ASHRAE Standard 90.1-2013 baseline, the project is demonstrating 33.6% site energy use savings). This LEED prerequisite requires that projects achieve a minimum energy cost savings of 5% over an ASHRAE Standard 90.1-2010 baseline. The project currently achieves 14.3% annual energy cost savings when compared to the ASHRAE 90.1-2010 baseline. Please refer to the Energy Model Summary provided in Appendix A. The project is following Option 1. Whole building energy simulation:

> ***Option 1. Whole-building energy simulation:*** *Demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), using a simulation model.*

This project will achieve these savings by through the following ECMs:

Following Energy Conservation Measures (ECM's) are incorporated in the design:

1. High performance building envelope
2. Reduced LPD in core areas.
3. Occupancy sensors and dimming in stairwells.
4. Condensing boilers with optimized controls.
5. Konvecta energy recovery with evaporative cooling on HR coil. For this project the evaporative portion of the unit will not be used. The recovery will be sensible only.
6. Water-cooled centrifugal chiller with optimized controls.
7. Free cooling available to future tenants with base building condenser loop.
8. Condensing DHW boilers and low flow fixtures.
9. The base building systems are being designed for fan coil terminals to be installed in future tenant spaces.
10. High-efficiency networked lighting with occupancy sensors will be designed for the three-level parking garage.

EA Prerequisite 3 Building Level Energy Metering ***Required***

To meet the requirements of this prerequisite, the project will install whole building energy meters for gas and electricity use by the core and shell project. In addition to installing the meters, the project will commit to sharing energy use data with the USGBC for a five-year period beginning on the date the project accepts LEED certification or typical occupancy, whichever comes first.

EA Prerequisite 4 Fundamental Refrigerant Management ***Required***

The specifications for refrigerants used in the building HVAC & R systems will NOT permit the use of CFC based refrigerants. The proposed design of the HVAC systems will achieve this prerequisite.

EA Credit 1 Enhanced Commissioning ***5 points***

The following commissioning process activities in addition to those required under EA Prerequisite Fundamental Commissioning and Verification will be completed by the CxA, in accordance with ASHRAE Guideline 0–2005 and ASHRAE Guideline 1.1–2007 for HVAC&R systems, as they relate to energy, water, indoor environmental quality, and durability:

- Review contractor submittals.
- Verify inclusion of systems manual requirements in construction documents.
- Verify inclusion of operator and occupant training requirements in construction documents.
- Verify systems manual updates and delivery.
- Verify operator and occupant training delivery and effectiveness.
- Verify seasonal testing.
- Review building operations 10 months after substantial completion.
- Develop an on-going commissioning plan.

In addition to the commissioning of mechanical and electrical systems, the project Owner has engaged a third-party building envelope commissioning agent (BECxA) to perform commissioning activities as they relate cto the building's thermal envelope. BECx will be performed in accordance with ASHRAE Guideline 0-2005 and the National Institute of Building Sciences (NIBS) Guideline 3-2012, Exterior Enclosure Technical Requirements for the Commissioning Process.

Requirements for enhanced and envelope commissioning will be included in the OPR and BOD.

EA Credit 2 Optimize Energy Performance ***6 points***

The project will be designed to meet IECC 2015/ASHRAE 90.1-2013 energy efficiency requirements to comply with the requirements of the Massachusetts "Stretch" Energy Code. It is expected that the project will achieve at least a 13% annual energy cost savings (6 points) when compared to the LEED-CS v4 ASHARE 90.1-2010 Appendix G baseline.

EA Credit 6 Enhanced Refrigerant Management ***1 point***

The HVAC equipment installed in the base building uses low-impact refrigerants that have low global warming and ozone depletion potential. Refer to snapshot of chiller schedule confirming that all refrigerant will be low-impact:

TRANE MODEL NUMBER	REFRIGERANT TYPE	LBS OF REFRIGERANT
CVHF 1300	R-123	2000

EA Credit 7 Green Power and Carbon Offsets ***2 maybe points***

The Owner is considering the option to purchase green power, RECs or carbon offsets through a 5-year contract to offset 100% of the building's energy use with renewable sources.

F. Materials and Resources (MR)

The proposed project has specified materials and products that are environmentally responsible and are transparent regarding the harvest and extraction of raw materials and the manufacturing processes. The design team endeavored to specify materials and products with environmental and health product declarations to help support a reduced impact of the development on the environment. Waste management will be addressed during demolition, construction and post occupancy. The Construction Manager, (CM), will provide a construction waste management plan with a goal to divert a minimum 75 percent of the construction and demolition debris and track at least four different waste streams. Post-occupancy, collected recyclables will be accommodated in the ground floor recycling room of the building. Building maintenance staff will bring their recyclables to the recycling collection area where a contracted waste management company will pick up the collected recyclables on a regular basis.

MR Prerequisite 1 Storage and Collection of Recyclables ***Required***

Storage of collected recyclables will be accommodated on the ground floor of the project in a centrally located designated recycling area, Recycling Room 141. Recyclable materials collected will include mixed paper, corrugated cardboard, glass, plastics, and metals, and the safe disposal of two of the following: batteries, mercury-containing lamps, and/or electronic waste. The building maintenance staff and/or the lease tenants will bring recyclables to the storage room. A contracted waste management company will collect the recyclables on a regular basis.

MR Prerequisite 2 Construction & Demolition Waste Management Planning ***Required***
Prior to the start of construction, the Construction Manager will develop and implement a compliant construction and demolition waste management plan that establishes waste diversion goals, specifies commingled versus site separated strategies, and enables the project to divert a minimum of four waste streams comprising at least 75% of the onsite generated construction and demolition waste from area landfills.

A final report detailing all major waste streams generated, including disposal and diversion rates will be provided with the COO submission.

MR Credit 2 Building Product Disclosure and Optimization: Environmental Product Declarations ***1 point***
The project will install at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the following disclosure criteria:

- Product-specific declaration.
- Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope.
- USGBC approved program. Other USGBC approved programs meeting the material ingredient reporting criteria.

Requirements for the CM to purchase compliant materials are included in the project manual.

MR Credit 3 Building Product Disclosure and Optimization: Sourcing of Raw Materials ***1 maybe point***
The project will pursue this credit via Option 2. The technical specification will include information for applicable products and materials to meet at least one of the following extraction criteria: Extended producer responsibility, Bio-Based materials, FSC wood, Materials reuse, Recycled Content, or regionally extracted and manufactured (within 100 miles of the project site).

MR Credit 4 Building Product Disclosure and Optimization: Material Ingredients ***1 point***
The project will use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

- Manufacturer Inventory. The manufacturer has published complete content inventory for the product following these guidelines:
  - A publicly available inventory of all ingredients identified by name and Chemical Abstract Service Registration Number (CASRN)
  - Materials defined as trade secret or intellectual property may withhold the name and/or CASRN but must disclose role, amount and GreenScreen benchmark, as defined in GreenScreen v1.2.
- Health Product Declaration. The end use product has a published, complete Health Product Declaration with full disclosure of known hazards in compliance with the Health Product Declaration open Standard.
- Cradle to Cradle. The end use product has been certified at the Cradle to Cradle v2 Basic level or Cradle to Cradle v3 Bronze level.
- USGBC approved program. Other USGBC approved programs meeting the material ingredient reporting criteria.

Requirements for the CM to purchase compliant materials are included in the project manual.

MR Credit 5 Construction and Demolition Waste Management ***1 point; 1 maybe point***
The project is pursuing Path 2 under Option 1, Diversion:

> ***Path 2: Divert 75% and four material streams (2 points):*** *Divert at least 75% of the total construction and demolition material; diverted materials must include at least four material streams.*

Prior to the start of construction, the Construction Manager will develop and implement a compliant construction and demolition waste management plan that establishes waste diversion goals, specifies commingled versus separated strategies, and enables the project to divert a minimum of three waste streams comprising 50% of the onsite generated construction and demolition waste from four material waste streams, from area landfills.
.

G. Indoor Environmental Quality (IEQ)

The building will have a healthy interior environment generated through the use of low-VOC containing interior construction and finish materials and maintained through an efficient ventilation system in compliance with ASHRAE 62.1-2010. In compliance with local regulations, the building will be non-smoking and no smoking will be allowed within 25 feet of the building.

During construction the Construction Manager will develop and implement a compliant Indoor Air Quality Management Plan for the construction and pre-occupancy phases of the project.

The building envelope design includes large areas of vision glazing with ample access to daylight and views for the anticipated regularly occupied spaces.

IEQ Prerequisite 1 Minimum IAQ Performance ***Required***
The project complies with Case 1 for mechanically ventilated spaces:

Option 1. ASHRAE Standard 62.1–2010
For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), determine the minimum outdoor air intake flow for mechanical ventilation systems using the ventilation rate procedure from ASHRAE 62.1–2010 or a local equivalent, whichever is more stringent.

> *Meet the minimum requirements of ASHRAE Standard 62.1–2010, Sections 4–7, Ventilation for Acceptable Indoor Air Quality (with errata), or a local equivalent, whichever is more stringent.*

Outdoor airflow monitors will be included in the project. The main building HVAC system will deliver heated and cooled 100% outside air to the tenant areas using a VAV system.

IEQ Prerequisite 2 Environmental Tobacco Smoke (ETS) Control ***Required***
Smoking is prohibited inside the building and within 25’ of building entrances, operable windows, and outdoor air intakes. Signage will be posted within 10’ of all building entrances to indicate exterior no-smoking policy.

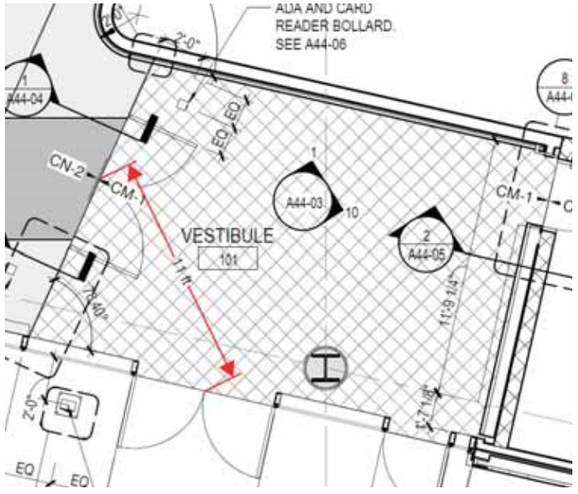
IEQ Credit 1 Enhanced Indoor Air Quality Strategies ***1 point***
The project will meet the requirements of Option 1 of this credit by including the following:

- 10’ long entryway systems to capture dirt and particulates entering the building at regularly used exterior entrances
- Sufficient exhausting of each space where hazardous gases or chemicals may be present or used (e.g., housekeeping).
- MERV 13 filtration (or better) on each ventilation system that supplies outdoor air to occupied spaces

Refer to snapshot of AHU schedule confirming that all filters will be MERV 13:

⑥ FINAL FILTERS				
EFFIC. (%)	FACE AREA (SF)	FACE VELOCITY (FPM)	APD (IN. WC)	
			INITIAL	FINAL
MERV-13	264	379	0.6	1.2

Refer to snapshot of floor plan and note below confirming that a 10' walk-off mat will be provided at the main entrance:



IEQ Credit 2 Low Emitting Materials ***1 point; 1 maybe point***

To meet the requirements of this credit, the project is pursuing Option 1, Product category calculations by meeting the threshold level of compliance with emissions and content standards for three product categories *[three compliance categories = 1 credit point].*

Through meeting VOC content and emissions compliance for paints and coatings, flooring systems and composite wood, the project intends to meet the requirements for a total of one (1) point under Option 1. The technical specifications will include requirements for products with compliant VOC content and general emissions limits where applicable.

IEQ Credit 3 Construction Indoor Air Quality Management Plan ***1 point***

To meet the requirements of this credit the project must:

- *Develop and implement an indoor air quality (IAQ) management plan for the construction and preoccupancy phases of the building. The plan must address all of the following.*
- *During construction, meet or exceed all applicable recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, ANSI/SMACNA 008–2008, Chapter 3.*
- *Protect absorptive materials stored on-site and installed from moisture damage.*
- *Do not operate permanently installed air-handling equipment during construction unless filtration media with a minimum efficiency reporting value (MERV) of 8, as determined by ASHRAE 52.2–2007, with errata (or equivalent filtration media class of F5 or higher, as defined by CEN Standard EN 779–2002, Particulate Air Filters for General Ventilation, Determination of the Filtration Performance…), are installed at each return air grille and return or transfer duct inlet opening such that there is no bypass around the filtration media. Immediately before occupancy, replace all filtration media with the final design filtration media, installed in accordance with the manufacturer's recommendations.*
- *Prohibit the use of tobacco products inside the building and within 25 feet (8 meters) of the building entrance during construction.*

The Construction Manager will develop and implement a compliant Indoor Air Quality Management Plan for the construction phase of the project to meet/exceed the recommended Control Measures of the SMACNA IAQ Guidelines for Occupied buildings Under Construction 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3). The permanently installed air handlers will not be operated during construction, and tobacco products will be prohibited within the building as well as within 25 feet of the building entrance.

IEQ Credit 6 Quality Views ***1 point***

Project will achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area. View glazing in the contributing area will provide a clear image of the exterior, not obstructed by frits, fibers, patterned glazing, or added tints that distort color balance.
Additionally, 75% of all regularly occupied floor area will have at least two of the following four kinds of views:

- multiple lines of sight to vision glazing in different directions at least 90 degrees apart;
- views that include at least two of the following: (1) flora, fauna, or sky; (2) movement; and (3) objects at least 25 feet (7.5 meters) from the exterior of the glazing;
- unobstructed views located within the distance of three times the head height of the vision glazing; and
- views with a view factor of 3 or greater, as defined in "Windows and Offices; A Study of Office Worker Performance and the Indoor Environment."

The project has large windows within the regularly occupied spaces providing ample access to views.
.

H. Innovation (IN)

The project will explore innovative approaches to design and maintenance including green housekeeping & pest management programs and purchasing lighting with low-mercury content.

INc1 Innovation: O&M Starter Kit ***1 point***

The Owner will develop and implement a green cleaning plan that focuses on the use of green cleaning products and equipment in the common areas. Additionally. The Owner will develop and implement an indoor integrated pest management (IPM) program. The plan will require routine inspection and monitoring, along with the incorporation of integrated methods, specification of emergency application measures for pesticides, and communication strategies to building occupants. All cleaning products included in the IPM plan will adhere to the requirements listed in the Green Cleaning plan for the project.

INc2 Exemplary Performance: Reduced Parking Footprint ***1 maybe point***

The project will achieve exemplary performance for LTc7 Reduced Parking Footprint by reducing the parking capacity for the site from base ratios by more than 60% and provided preferred carpool/vanpool spaces for 5% of the total project parking capacity.

INc3 Exemplary Performance: Heat Island Reduction ***1 point***

The project will achieve exemplary performance for SSc5 Heat Island Reduction by meeting Option 1 for roof and non-roof measures, and additionally locating 100% of parking under cover.

INc4 Innovation: Purchasing - Lamps ***1 point***

The project will implement a lighting purchasing plan that specifies an overall building average of 35 picograms of mercury per lumen-hour or less for all mercury-containing lamps purchased for the building and associated grounds within the project boundary. Lamps for both indoor and outdoor fixtures will be included, as well as both hard-wired and portable fixtures. Lamps containing no mercury will be counted only if their energy efficiency at least equals that of their mercury-containing counterparts.

The project plans to install 100% LED fixtures. LED fixtures do not include mercury and will therefore be excluded from credit calculations.

INc5 Innovation: Integrative Analysis of Building Materials ***1 point***

The project will use at least three different permanently installed products that have a documented qualitative analysis of the potential health, safety and environmental impacts of the product in five stages of the product's life cycle (product assembly/manufacturing, building product installation, product use product maintenance, end of product life/reuse).

INc6 LEED Accredited Professional ***1 point***

Several project team members are certified LEED AP with the BD+C specialty, including Brad Newkirk (GBCI ID# 10921991).

I. Regional Priority (RP)

Regional Priority Credits (RPCs) are established by the USGBC to have priority for a particular area of the country. When a project team achieves one of the designated RPCs and additional credit is awarded to the project. LEED v4 RPCs applicable to the Cambridge area include: EAc Renewable Energy Production (3%/2 points), EAc Optimize Energy Performance (17%/8 points), LTc High Priority Site (2 points), MRc Building Life Cycle Impact Reduction (2 points), SSc Rainwater Management (2 points), and WEc Indoor Water Use Reduction (4 points). This project is tracking the following RPCs:

RPc3 LTc3 High Priority Site (2 points) ***1 credit point***

Project Name: CX Parcel G
Date: 12.3.18

Integrative Process		1
Credit 1	Integrative Process	1

Location and Transportation		20
Credit 1	LEED for Neighborhood Development Location	20
Credit 2	Sensitive Land Protection	2
Credit 3	High Priority Site	3
Credit 4	Surrounding Density and Diverse Uses	6
Credit 5	Access to Quality Transit	6
Credit 6	Bicycle Facilities	1
Credit 7	Reduced Parking Footprint	1
Credit 8	Green Vehicles	1

Sustainable Sites		11
Prereq 1	Construction Activity Pollution Prevention	Required
Credit 1	Site Assessment	1
Credit 2	Site Development - Protect or Restore Habitat	2
Credit 3	Open Space	1
Credit 4	Rainwater Management	3
Credit 5	Heat Island Reduction	2
Credit 6	Light Pollution Reduction	1
Credit 7	Tenant Design and Construction Guidelines	1

Water Efficiency		11
Prereq 1	Outdoor Water Use Reduction	Required
Prereq 2	Indoor Water Use Reduction	Required
Prereq 3	Building-Level Water Metering	Required
Credit 1	Outdoor Water Use Reduction	2
Credit 2	Indoor Water Use Reduction	6
Credit 3	Cooling Tower Water Use	2
Credit 4	Water Metering	1

Energy and Atmosphere		33
Prereq 1	Fundamental Commissioning and Verification	Required
Prereq 2	Minimum Energy Performance	Required
Prereq 3	Building-Level Energy Metering	Required
Prereq 4	Fundamental Refrigerant Management	Required
Credit 1	Enhanced Commissioning	6
Credit 2	Optimize Energy Performance	18
Credit 3	Advanced Energy Metering	1
Credit 4	Demand Response	2
Credit 5	Renewable Energy Production	3
Credit 6	Enhanced Refrigerant Management	1
Credit 7	Green Power and Carbon Offsets	2

Y	M	N	Materials and Resources		14
2	3	9			
Y			Prereq 1	Storage and Collection of Recyclables	Required
Y			Prereq 2	Construction and Demolition Waste Management Planning	Required
		6	Credit 1	Building Life-Cycle Impact Reduction	6
1		1	Credit 2	Building Product Disclosure and Optimization - EPD	2
	1	1	Credit 3	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit 4	Building Product Disclosure and Optimization - Material Ingredients	2
	2		Credit 5	Construction and Demolition Waste Management	2

5	1	4	Indoor Environmental Quality		10
Y			Prereq 1	Minimum Indoor Air Quality Performance	Required
Y			Prereq 2	Environmental Tobacco Smoke Control	Required
2			Credit 1	Enhanced Indoor Air Quality Strategies	2
1	1	1	Credit 2	Low-Emitting Materials	3
1			Credit 3	Construction Indoor Air Quality Management Plan	1
		3	Credit 4	Daylight	3
1			Credit 5	Quality Views	1

5	1	0	Innovation		6
1			Credit 1	Innovation in Design: OM Starter Kit	1
	1		Credit 2	Exemplary Performance: Reduced Parking Footprint	1
1			Credit 3	Exemplary Performance: Heat Island Reduction	1
1			Credit 4	Innovation in Design: Purchasing - Lamps	1
1			Credit 5	Innovation in Design: Integrative Analysis of Building Materials	1
1			Credit 6	LEED Accredited Professional	1

1	2	1	Regional Priority (earn up to 4 points)		4
	1		Credit 1	Regional Priority Credit: MRc1 (2 pts)	1
	1		Credit 2	Regional Priority Credit: EAc2 17% (8 points)	1
1			Credit 3	Regional Priority Credit: LTc3	1
		1	Credit 4	Regional Priority Credit: SSc4	1

55	19	36	TOTALS	Possible Points:	110

Certified: 40-49 points
Silver: 50-59 points
Gold: 60-79 Points
Platinum: 80+ points

CAMBRIDGE CROSSING
PARCEL G

PERFORMANCE PROJECTIONS

ENERGY	kBtu/ sf/ yr
Baseline	267.5
Target	176.9
Total EUI Reduction	34%

LIGHTING POWER DENSITY	W/ sf
Baseline (LPD)	1.1
Designed (LPD)	0.96
Total LPD Reduction	13%

POTABLE WATER USE	kgal / yr
Baseline Flush	526.3
Baseline Flow	638.0
Total Potable Water Use Reduction	32%
Baseline Landscape	91.8
Designed Landscape	0.00
Annual Potable Water Use Reduction	100%

- WALKABILITY
- BIKE STORAGE
- LOW VOC MATERIALS
- EFFICIENT GLAZING
- HIGH PERFORMANCE ENERGY RECOVERY
- PVC READY ROOF
- LED LIGHTING
- NATIVE LANDSCAPE

DIVCOWEST Real Estate Investments

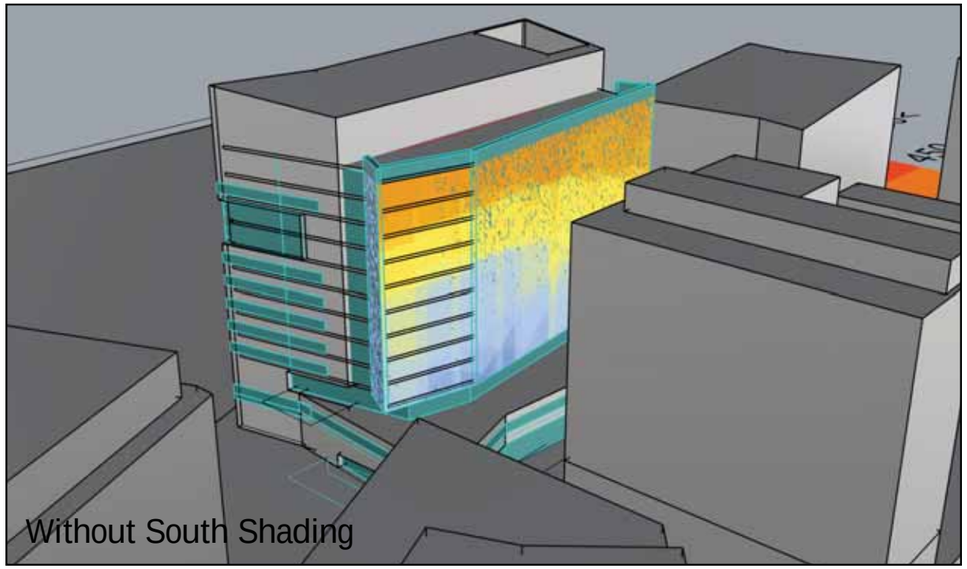
Cambridge Crossing

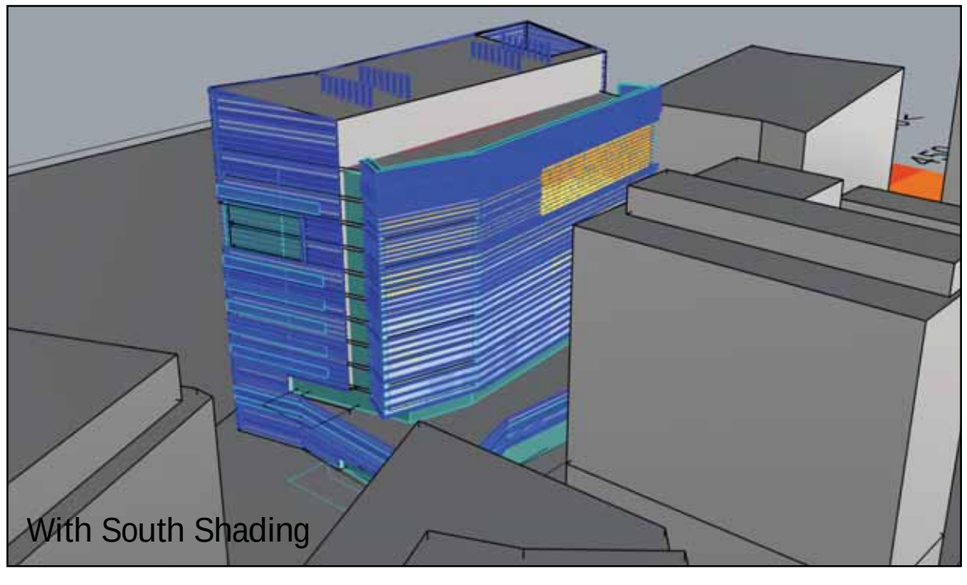
SUSTAINABILITY ACHIEVEMENTS

Perkins&Will

SOLAR INCIDENT RADIATION ANALYSIS

AVERAGE DAILY DIRECT IRRADIANCE





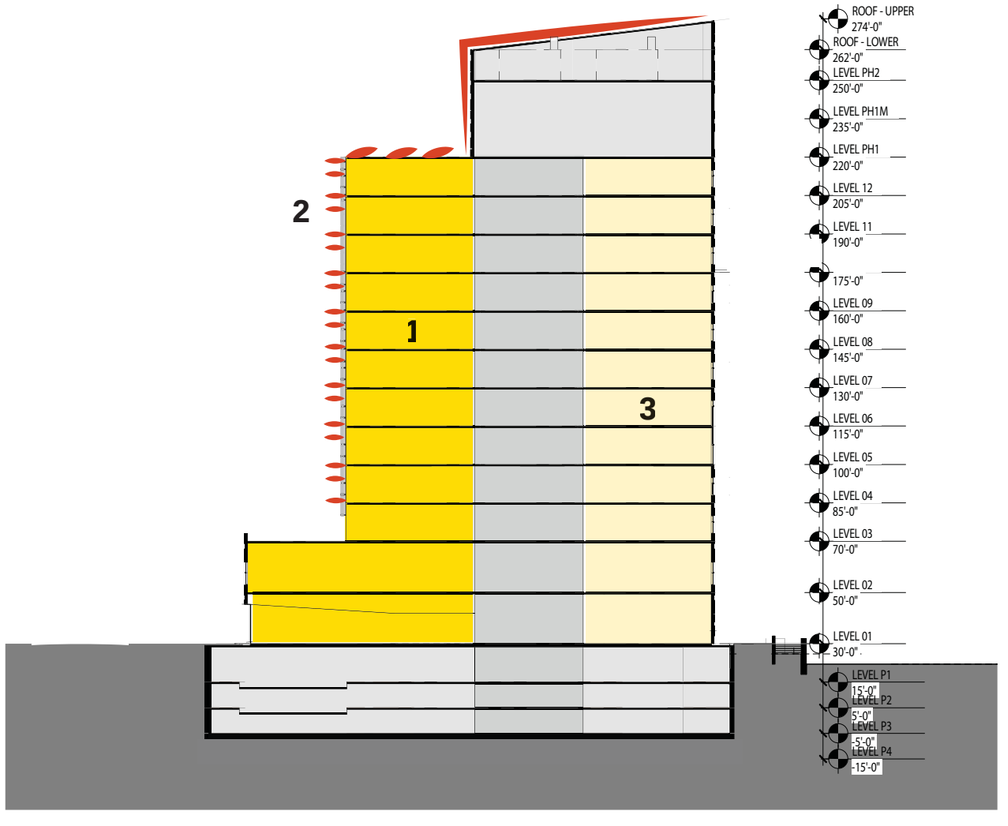
Solar Strategies

1. Highly occupied spaces are expected to be zoned to the south and will get maximized usable daylighting

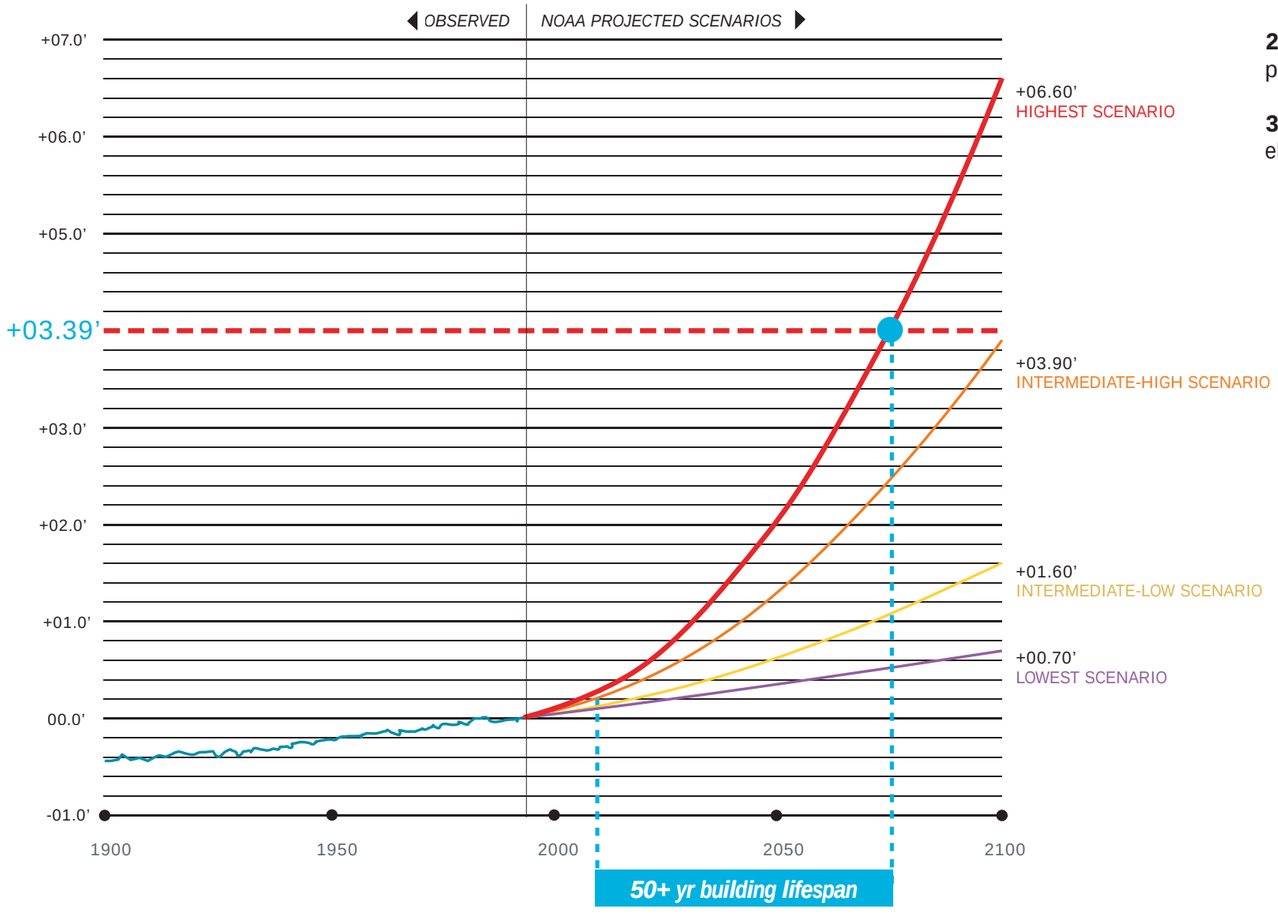
2. Solar shading will limit heat gain and minimize glare

3. The north facade glazing ration is reduced to improve the overall average R Value

4. The roofs, penthouse facades and solar shading could receive PV arrays in the future



RESILIENCY



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION GLOBAL SEA LEVEL RISE SCENARIOS

CAMBRIDGE CCVA PREDICTED FLOOD ELEVATION OF 24'

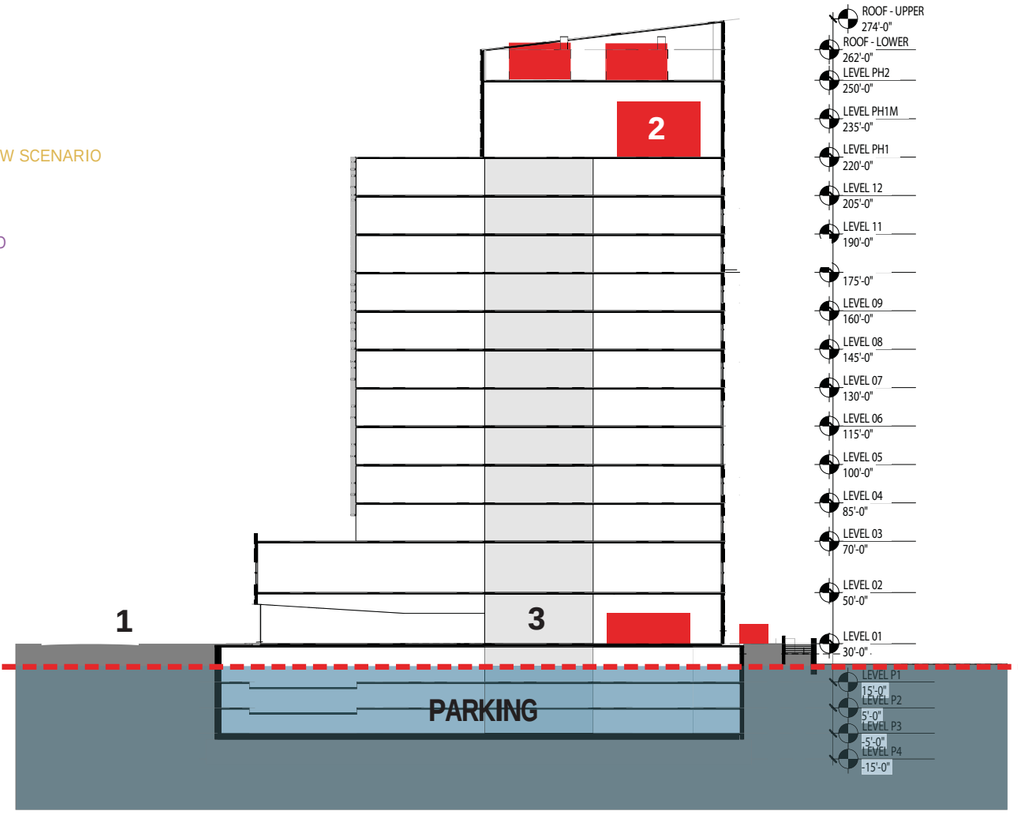
2070 SLR/SS 1% PROBABILITY

RESILIENCE STRATEGIES

1. The site' will be designed to withstand rises in sea level over the expected lifespan of the building. Overall development has been raised roughly 12' from existing grade.

2. All of the building's critical mechanical equipment is located above the 50 year projected highest SLR scenario.

3. The building's ground level is raised 6' above the 2070 SLR/SS 1% probability elevation of 24'



Cambridge Crossing

Parcel G

LANDSCAPE

DECEMBER 23, 2019

MBTA COMMUTER RAIL FACILITY

+ MEX

+ MEX

+ MEX

NORTH LANDSCAPE

SERVICE ROAD

Retaining Wall

+ 25

+ 17

+ 32

D

D'

C'

C

+31

SOMERVILLE

CAMBRIDGE

BOSTON

CAMBRIDGE

Bike Rack, Typ.

Water Feature

Exposed Aggregate Concrete Pavement, Typ.

OPEN SPACE

BUILDING G

Bench, Typ.

Community Table, Typ.

Movable Furniture, Typ.

B

B'

A

Decomposed Granite Pavement, Typ.

OPEN SPACE ENTRANCE PLAZA

+30

PLAZA

+ 30.5

Concrete Pavement, Typ.

Stone Setts, Typ.

A'

Proposed Street Tree in Tree Pit, Typ.

WATER ST

LOT L/M

Service Yard

SERVICE ROAD

PL

Signage Indicating Service/Driveway Space for Fedex/UPS/Uber

Service/Driveway Space for Fedex/UPS/Uber

BOSTON

CAMBRIDGE

BUILDING H

BRIAN MURPHY MEMORIAL STAIRCASE

DRIVEWAY

CHILD ST

TWENTY/20

0' 20' 40' 80'

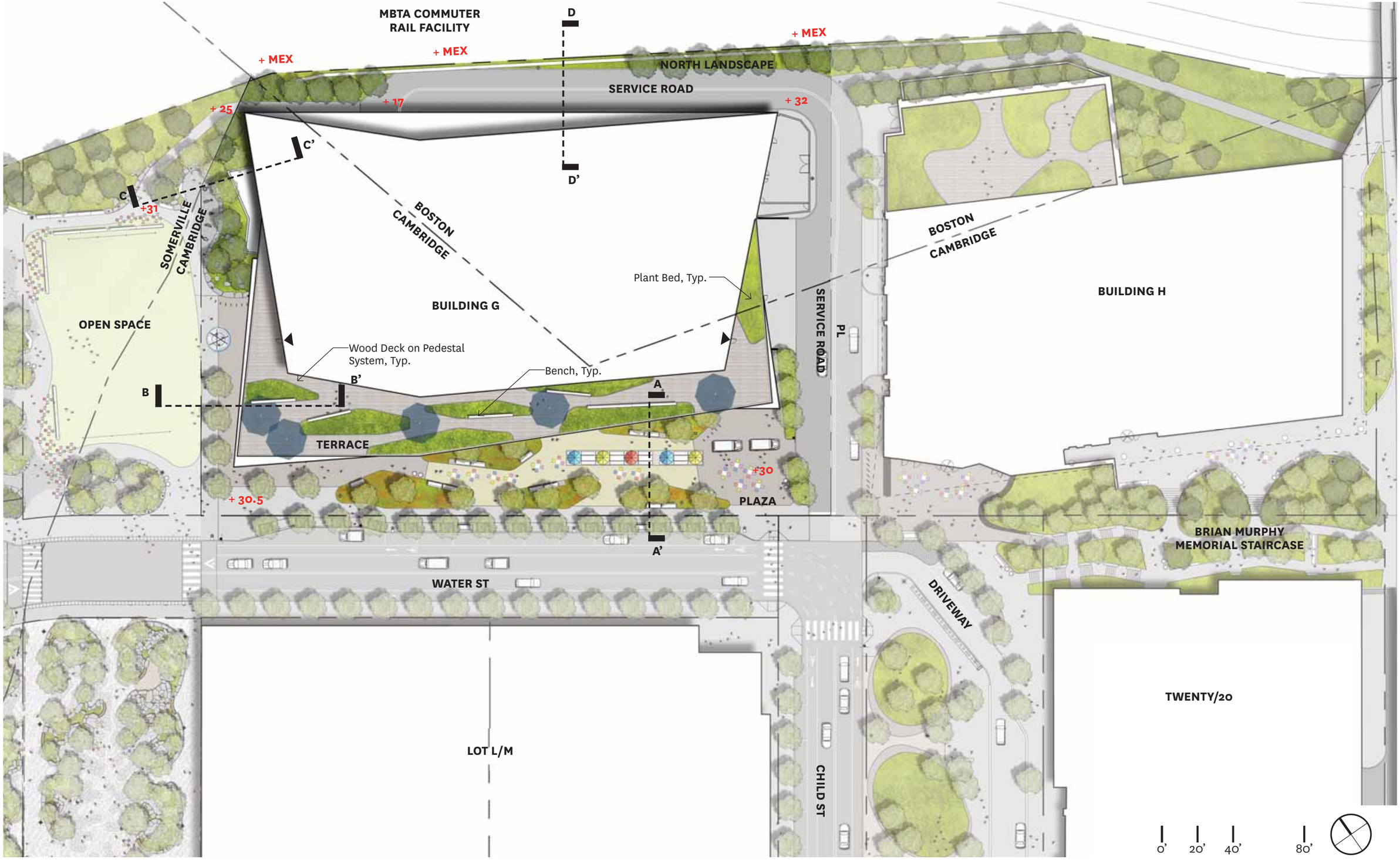
2

SITE PLAN - GROUND FLOOR

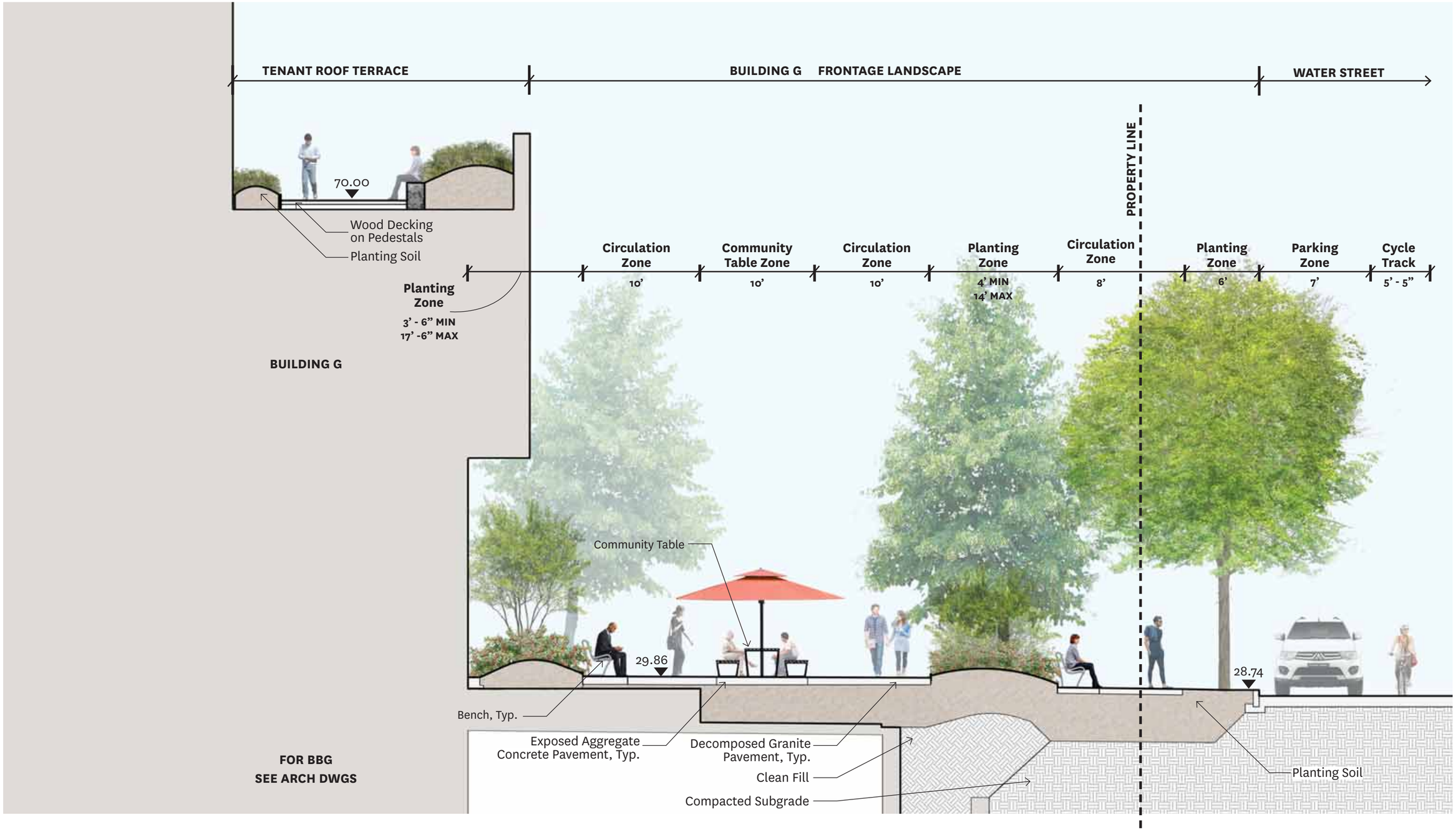
DIVCOWEST. Real Estate Investments

Cambridge Crossing

Perkins&Will

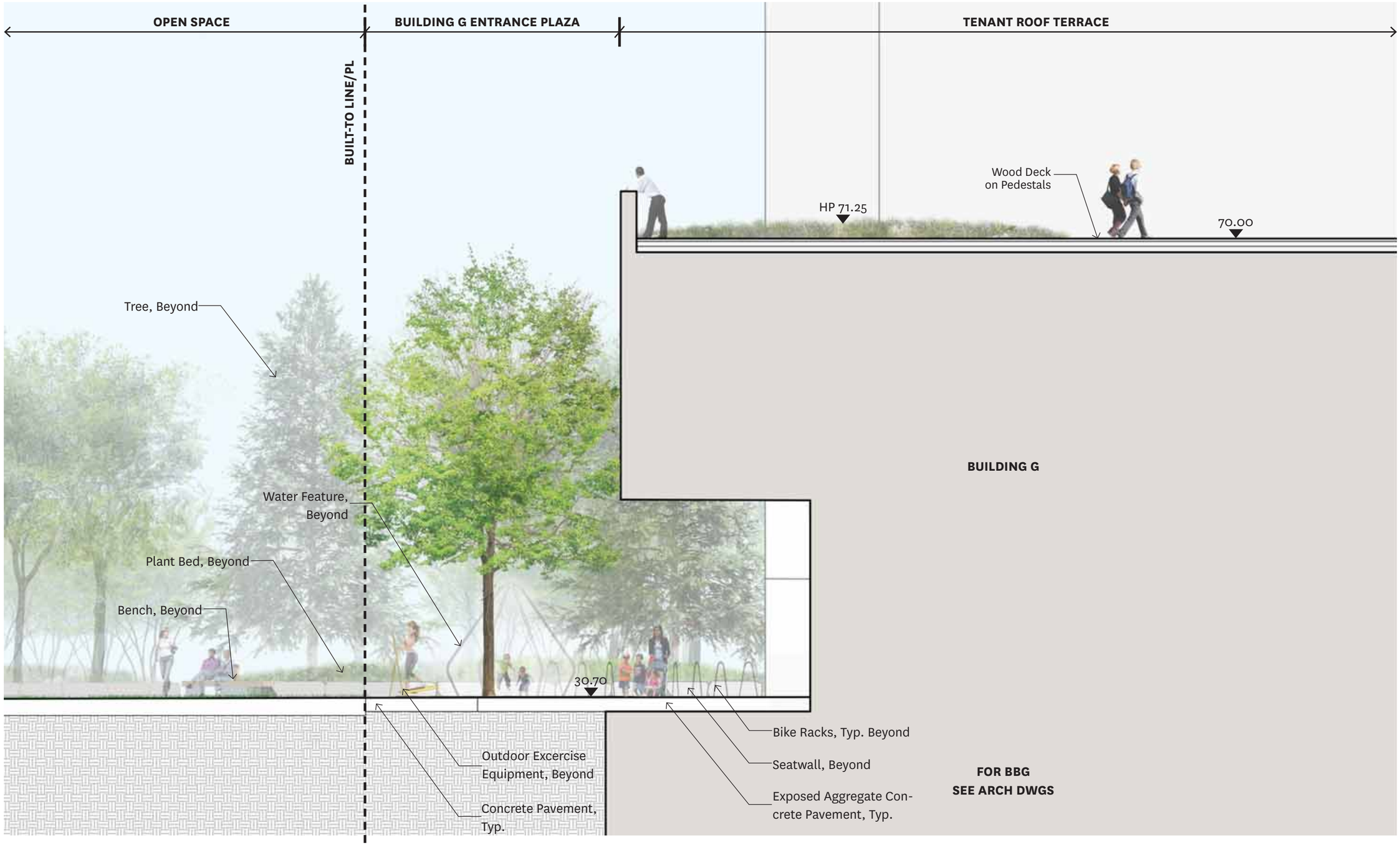


SITE PLAN - TERRACE LEVEL



SECTION A - A’

0’ 4’ 8’ 16’



SECTION B - B’

5

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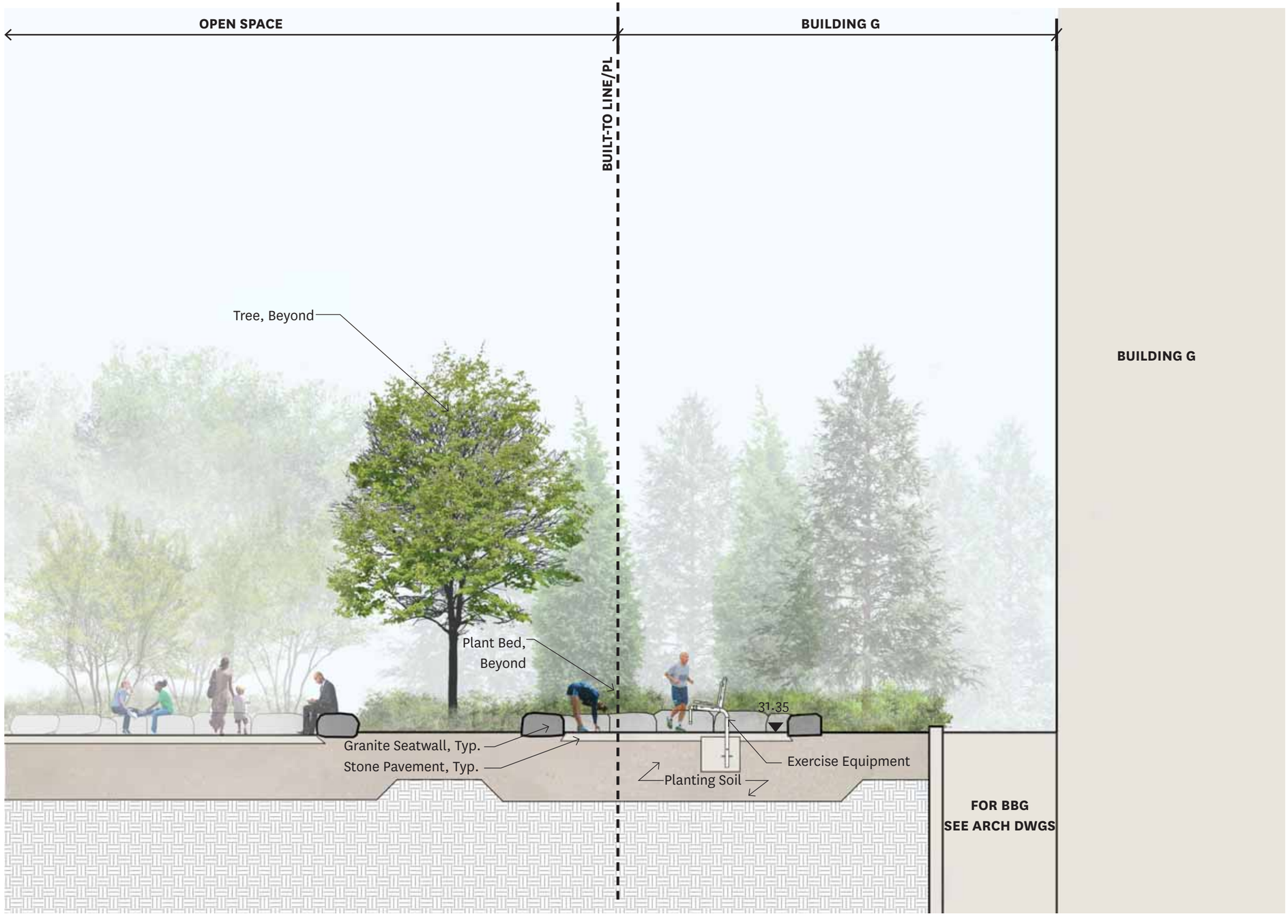
Cambridge Crossing

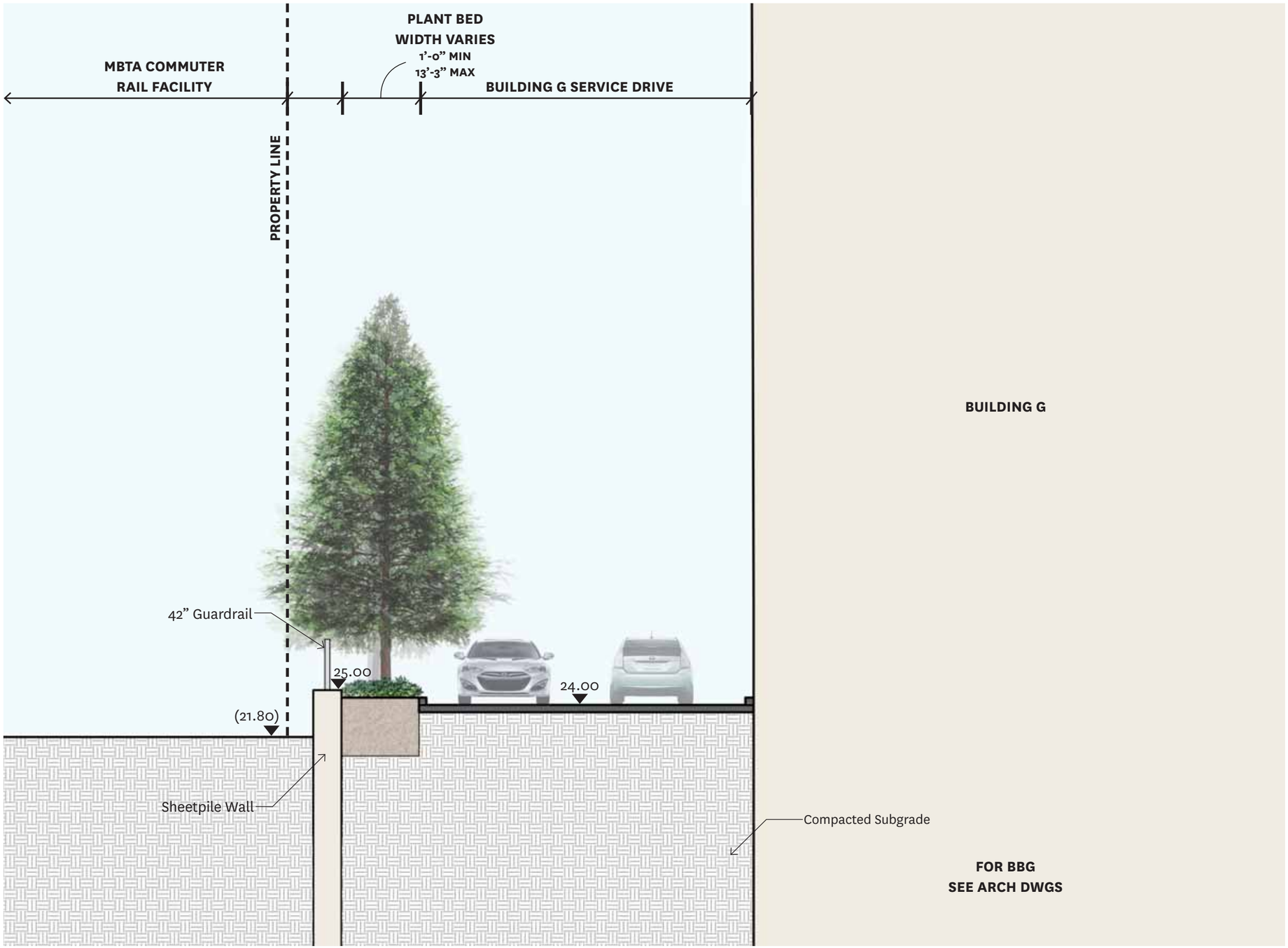
SITE SECTION

Perkins&Will



SECTION C - C'

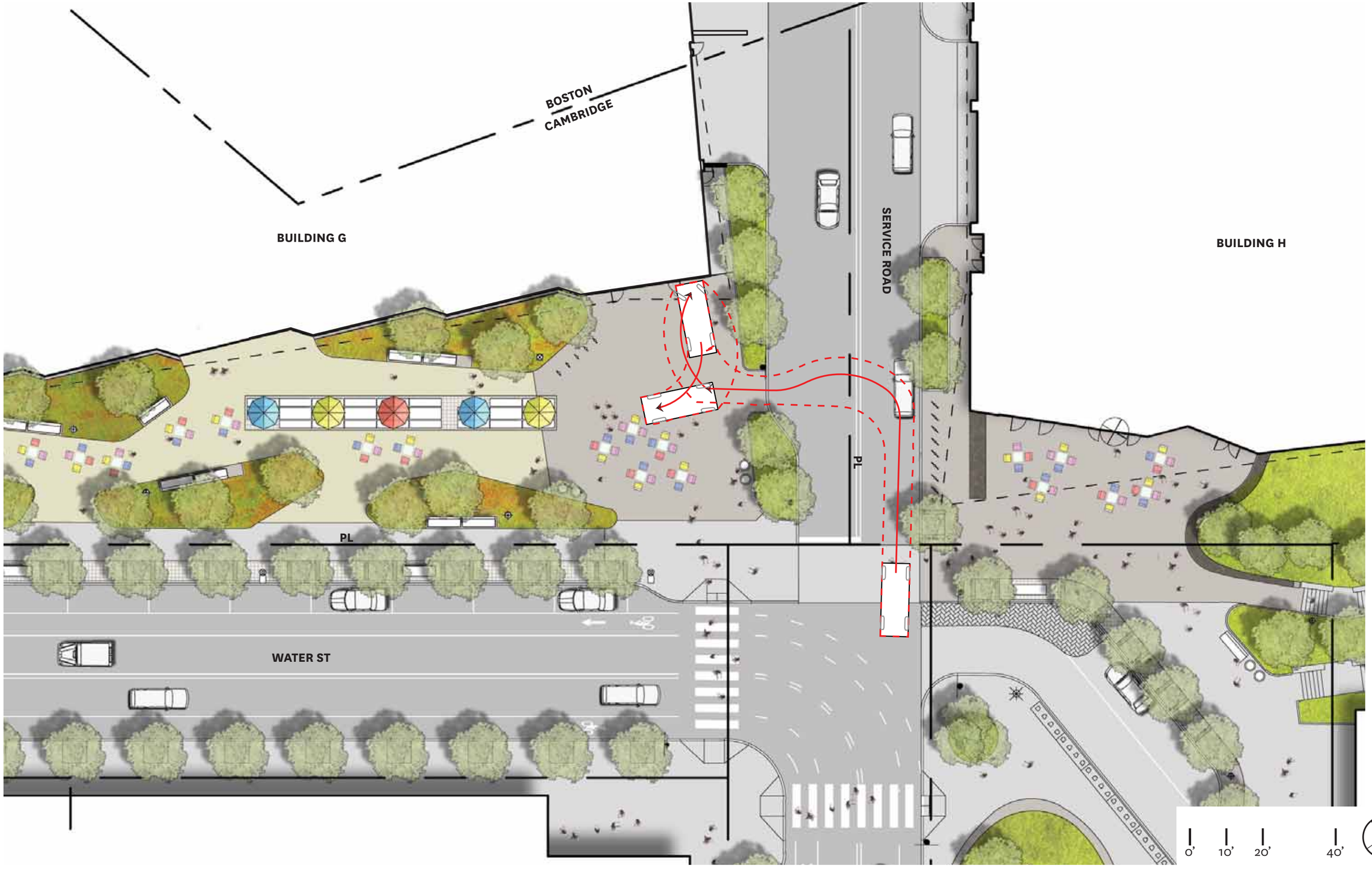
0' 4' 8' 16'



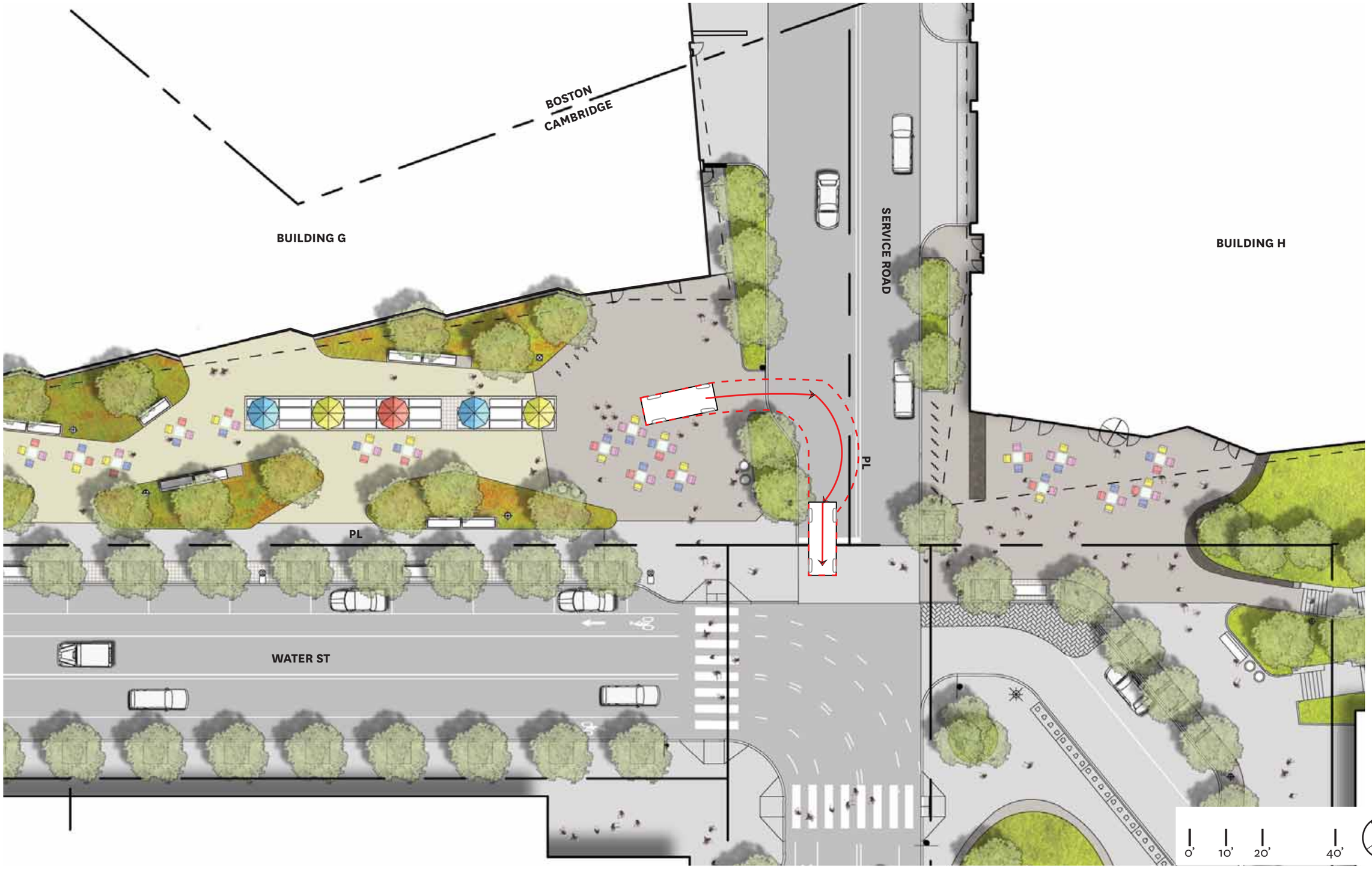
SECTION D - D’

0’ 4’ 8’ 16’

SITE SECTION



FOOD TRUCK ACCESS DIAGRAM - ENTRY



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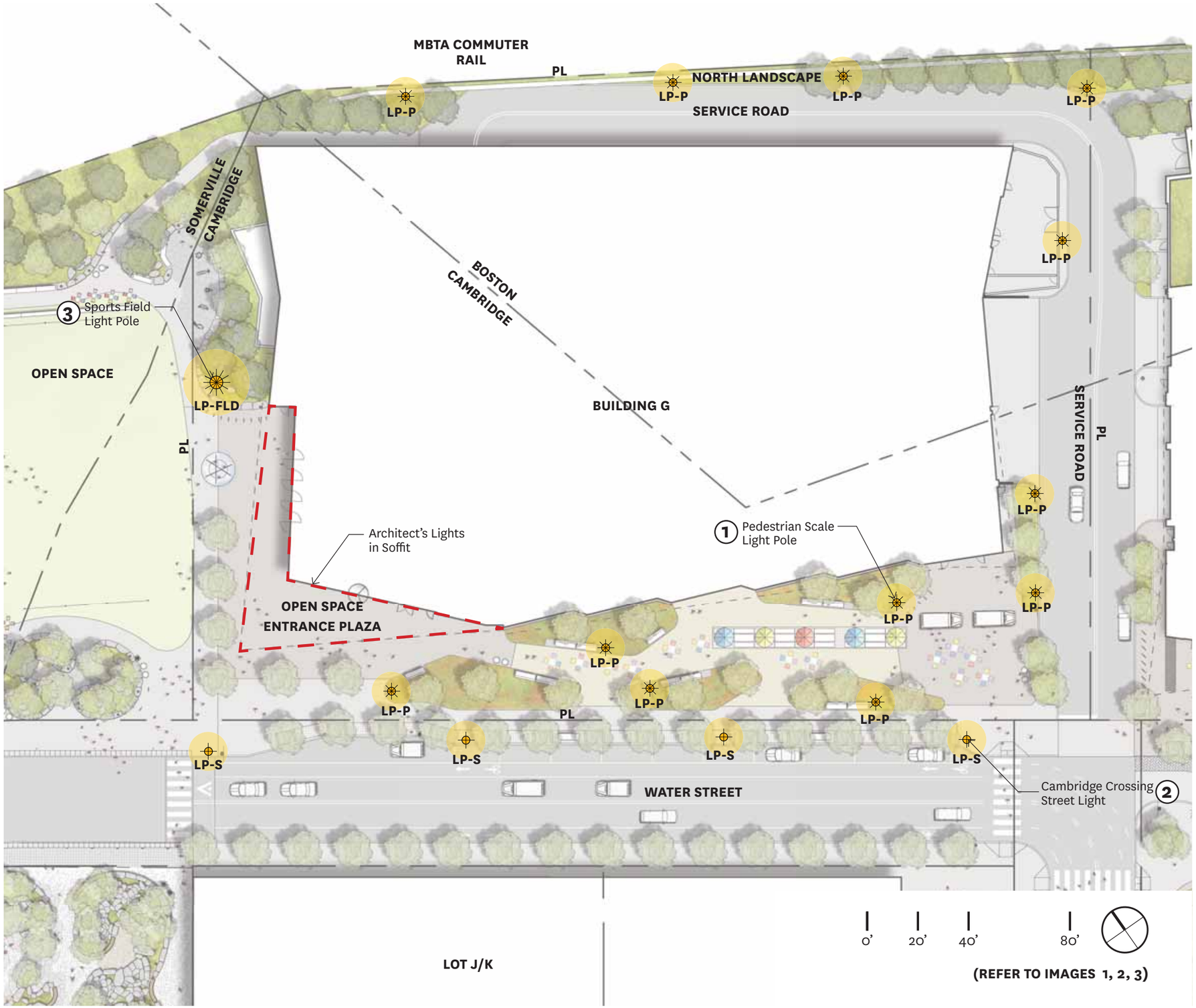
Cambridge Crossing

FOOD TRUCK ACCESS DIAGRAM - EXIT

Perkins&Will



1 LP-P: Pedestrian Scale Light Pole

2 LP-S: Cambridge Crossing Street Light

3 LP-FLD: Sports Field Light Pole

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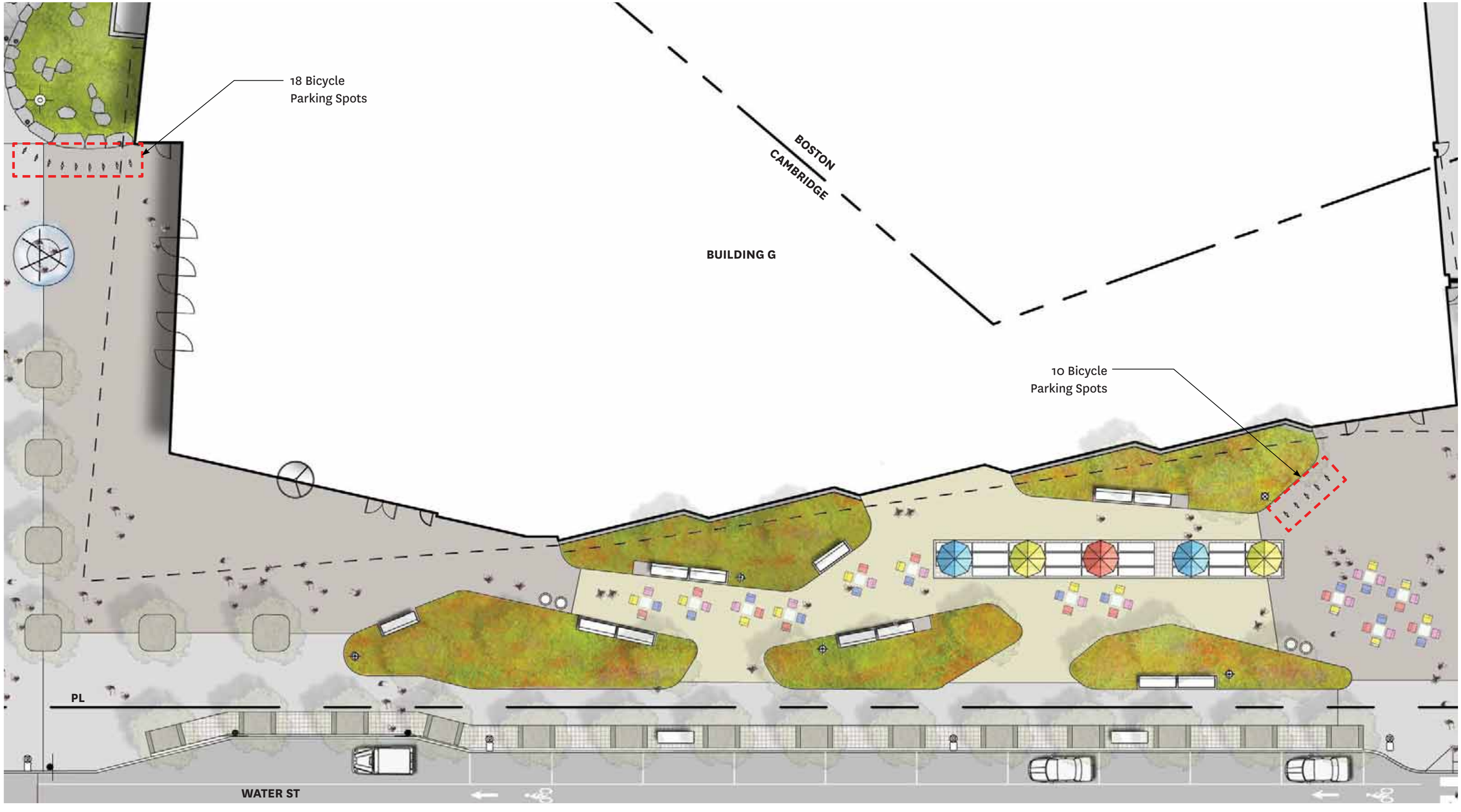
Cambridge Crossing

LIGHTING PLAN



BICYCLE PARKING

Stone Setts Pavement

Exposed Aggregate Concrete Pavement

Decomposed Granite Pavement

Concrete Pavement

Bike Rack

Trash Receptacle

Planter, Clustered

Planter, Linear

Bench

Backless Bench

Movable Tables and Chairs

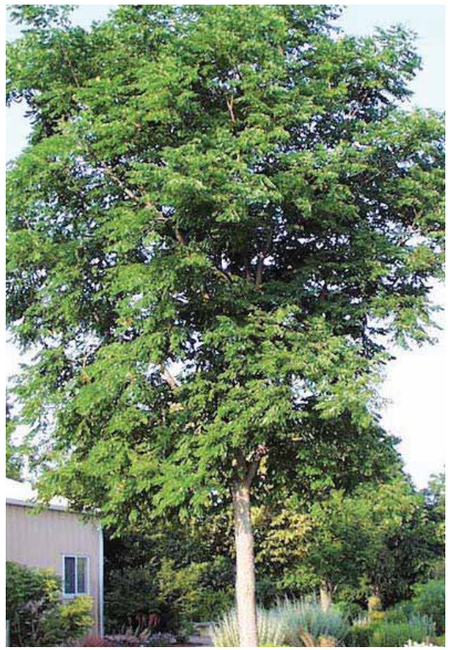
Picnic Table

DIVCOWEST. Real Estate Investments Cambridge Crossing

SITE MATERIALS & FURNITURE

Platanus x acerifolia ‘Bloodgood’
Bloodgood London Plane Tree

Styphnolobium japonicum
Japanese Pagoda Tree



Gymnocladus dioicus ‘Espresso’
Kentucky Coffee Tree

Gleditsia triacanthos var. *inermis*
Skyline Honeylocust

All trees are included in the City of Cambridge recommended species list.

Metasequoia glyptostroboides
Dawn Redwood

Celtis occidentalis
Common Hackberry

Abies concolor
White Fir

Picea glauca
White Spruce

Thuja plicata
Western Red Cedar

Ceanothus americanus
New Jersey Tea

Comptonia peregrina
Sweet Fern

Hydrangea arborescens
Smooth Hydrangea

Neviusia alabamensis
Alabama Snow Wreath

Pieris floribunda
Mountain Fetterbush

Spirea latifolia
Broadleaf Meadowsweet

Rosa rugosa
Rugosa Rose (Pink)

Rosa rugosa
Rugosa Rose (White)

Fothergilla gardenii
Dwarf Fothergilla

Page	Section	Guideline Description	Compliance	Check
47	3.2A Character	Use streetscape elements such as trees, benches, signage, and lighting to support active pedestrian uses and to reinforce the character and identity of each area.	The streetscapes of Parcel G are planted with high canopy trees with furniture consistent with the rest of Cambridge Crossing, including fixed benches, moveable tables and chairs, bike racks, trash receptacles, and pedestrian scale lighting to support a lively and comfortable pedestrian environment.	✓
50	3.2.2 Dawes Street	Dawes Street is an important east-west connector running between Water Street and the Brian Murphy Staircase. Street trees will be planted on both sides of the street, and an additional landscape area will be provided on the north side of Dawes, between First Street and the Murphy Staircase, to improve the pedestrian experience on this sunnier side of the street. The widened sidewalk area provides opportunities for seating, play, art. LID swales etc. to be incorporated into the public realm.	A row of street trees is planted along the north side of Dawes Street in front of Parcel G. Additional street trees are planted as an informal grove in the widened landscape area between the sidewalk and the building. This area will be planted with linear beds of flowering shrubs with decomposed granite paving, creating areas for fixed benches and moveable tables and chairs to encourage gathering, a place to eat lunch and relax.	✓

Cambridge Crossing

Parcel G

ACOUSTICAL

DECEMBER 23, 2019

ACENTECH

33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

October 6, 2017

Mr. Jeff Kim
Perkins + Will
225 Franklin Street
Suite 1100
Boston, MA 02110

Subject: Northpoint Site G, Cambridge, MA
Site Noise Assessment
Acentech Proposal No. 628924

Dear Jeff:

As you requested, we have assessed exterior noise emissions and control for the design of the Northpoint Parcel G project as this impacts the nearby community. In particular we have assessed conditions for the building that is planned to be just (nominally) south of the subject building which is the most critical neighboring condition. If acceptable noise conditions are achieved for this receiver, acceptable noise conditions will be achieved for all nearby community receiver locations. There four primary source groups of concern relative to noise emission to the community – 1. the outside air intakes for the penthouse air handling units that serve the building, 2. the exhaust air fans for the building systems, especial serving the laboratories, 3. emergency generators at the roof, and 4. the cooling towers.

The cooling towers

The cooling towers are located in a well at the roof level and a solid roof screen extending up to the top of the tower is planned. The roof screen system will help block sound propagation to the neighbors. The towers are provided with low noise fans to minimize noise emissions. The cooling towers will be specified to achieve a noise level no greater than 85 dBA for the entire 5 - cell tower configuration. This noise emission level is expected to be consistent with achieving a sound level lower than 50 dBA at the adjacent building together with the noise emissions from other building sources. Note that the above noise assessment is for the tower at peak capacity. With the towers operating on their VFD controls, noise emissions to the adjacent community will be substantially lower at off-peak times since the tower noise emissions are a very strong function of fan speed.

Outside air intakes

The outside air intakes for the AHUs are at the penthouse level, oriented away from the critical receivers and in the direction of the MBTA maintenance yard which is a relatively noisy receiver. The building mass will very substantially shield more sensitive neighbor receivers to the south from the noise emission from the AHU intakes. Never-the-less, it is anticipated that the units will be provided with intake silencing to take the curse off the noise emissions from the inlets and this is expected to reduce the noise they produce to no greater than 65 dBA at a distance of 100 from the building facade toward the MBTA site. This is essentially meeting the commercial building noise standard at a distance of 100 ft from the building. This noise emission is comfortably below any applicable requirement.

Exhaust fans and systems

The numerous main exhaust fans associated with the energy recovery systems at the penthouse/roof level will be provided with integral discharge silencers. There are 4 exhaust units, but the number of fans that will be used is not yet fixed. For however many fans there are for each unit, the sound level produced by the total fans associated with a unit at a distance of 50 ft from the unit in any horizontal direction at an elevation equal to the top of the fan discharges will be no more than 50 dBA. The unit supplier is to provide data to verify that this noise emission limit is achieved. This noise emission level is consistent with achieving the desired 50

dBA noise goal at the adjacent critical receiver to the south of the subject building together with the noise emissions from other building equipment.

The development of the exhaust system for the building is not yet advanced enough to know if there will be fresh air bypasses in conjunction with the system, but to the extent there are such bypasses, they will be provided with silencers to control the outdoor noise emissions to a level that is lower than the community noise produced by the exhaust fan discharges.

Generators

The generators are located in a roof well that is shielded from the surrounding community with the roof screen system. The generators will be provided with weatherproof / noise reduction housings to control their noise emissions to the community. The generators, together with their housings will each be specified to have a noise emission level no greater than 75 dBA at a distance of 50 ft, as measured in a free field condition in any horizontal direction from the unit at an elevation approximately equal to the top of the unit. Based on testing one unit at a time, as is planned, this noise emission level from the unit as applied in the project context is expected to produce a noise level no greater than 60 dBA at the critical receiver location which is the daytime noise limit. The generators will not be tested during nighttime hours and will only run during nighttime hours in the event of a true emergency, which condition is expected to be very rare.

* * * * * * *

I trust this summary of the noise emissions and noise control features planned in connection with the building mechanical equipment/systems is consistent with your needs. If you have any questions, please let me know.

Sincerely Yours,

ACENTECH INCORPORATED

Douglas H. Sturz

Site Noise Control Assessment

ACENTECH

33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

COMMUNITY NOISE STUDY

Sanofi CX – Lab and Office Buildings

Acentech Project # 631885 – December 3, 2019

Acentech performed community noise calculations to determine the effect that Sanofi buildings Parcel G and Parcel H would have on the adjacent properties, and their compliance with the City of Cambridge Noise Ordinance. The effect of sound escaping from air handling units (AHU) 5A and 5B from Parcel G, and AHUs 3 and 4 from Parcel H was analyzed.

Following is a summary of these conditions and conclusions.

PROJECT CONDITIONS

AHUs located on Parcel G's fifth and sixth floor and Parcel H's ninth floor exhaust noise through louvers facing the area between the two buildings. Noise from these louvers can reach the nearby Common at Cambridge Crossing, which is approximately 150 ft from the exhaust louvers. Additionally, noise can reach the ground level between Parcels G and H, an average distance of approximately 80 ft. These existing outdoor conditions and AHU outside air intake paths were modeled in an acoustical calculation software to predict noise levels at the nearby lot lines. For our analysis, we used sound data for the scheduled mechanical equipment, as provided by the manufacturers (Haakon Custom model 27TCEPFN for AHU 5A and 5B, model 16 TCEPFN for AHU 3 inlet, and 20 TCEPFN for AHU 3 discharge and AHU 4)

CAMBRIDGE NOISE ORDINANCE

The maximum allowable noise levels at a residential lot line, according to the City of Cambridge Noise Ordinance, is 60 dBA during daytime[1], and 50 dBA at night[2].

The maximum allowable noise levels at a commercial lot line, according to the City of Cambridge Noise Ordinance, is 65 dBA at any time.

PROJECT IMPACT

The main mechanical equipment will be located inside the building, on levels five and six of Parcel G and level nine of Parcel H. Ventilation to the equipment will be provided through large louvers at the exterior of the building. Sound attenuation measures including duct sound attenuators will be employed, to comply with the local regulation and not exceed maximum noise levels at nearby lot lines.

Based on our predictions, the maximum noise levels from the main mechanical equipment to the Common at Cambridge Crossing will not exceed 50 dBA at the property line, which is in agreement with the Cambridge Noise Ordinance for residential lot lines.

The maximum noise levels from the main mechanical equipment to the ground level between Parcels G and H will be approximately 55 dBA, which is below the Cambridge Noise Ordinance for commercial areas.

---

[1] Defined as 7:00 AM to 6:00 PM, daily, except Sunday
[2] All other times.

PARCEL G AND H COMBINED LOUVER NOISE STUDY

ACENTECH

33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

COMMUNITY NOISE STUDY

Sanofi CX – Lab and Office Buildings

Acentech Project # 628924 – December 13, 2019

Acentech performed community noise calculations to determine the effect that Sanofi's 12th floor Parcel G generator may be expected to have on the critical nearby Common at Cambridge Crossing receiver location.

Following is a summary of these conditions and conclusions.

PROJECT CONDITIONS

Parcel G's 12th floor generator installation has a ventilation intake louver at the 12th floor, which allow sound from the generator room to be emitted to outdoors. Air is drawn into the generator room through this louver and this air is exhaust at the roof using two of the main building exhaust fans. Engine exhaust passes through an exhaust muffler in the generator room and is discharge upward at the roof. The Common at Cambridge Crossing is approximately 225 ft from the location of the generator installation. For our analysis, we used sound data for the planned generator, as provided by the project engineer, which data is published in the literature published by the equipment supplier.

CAMBRIDGE NOISE ORDINANCE

The maximum allowable noise levels at a residential lot line, according to the City of Cambridge Noise Ordinance, is 60 dBA during daytime[1], and 50 dBA at night[2]. The generator will only be tested during daytime hours, so the nose at the critical receiver location needs to be maintained below 60 dBA.

PROJECT IMPACT

The generator will be located inside the building, on level 12. A silencer similar to Vibro-Acoustics model 60 RD-MV-F5 is planned to back the intake louver. This silencer is expected to reduce the generator noise emitted from the outside air inlet louver to a level of about 58 dBA at the critical receiver location, which meets the city's 60 dBA requirement.

Ventilation air is drawn through the generator room by the use of two of the base-building exhaust fans at the roof. Operation of the entire group of base-building exhaust fans were previously designed to have their discharge noise emissions be consistent with the city noise requirement, along with all the rest of the normally operating mechanical equipment, and the noise of only two of these fans will be even lower, so that these will not contribute significantly to the generator system noise reaching the critical receiver.

Noise from the intake of the exhaust fans that reaches the generator room to ventilate that room will be very much lower than the noise produced in the generator room by the generator and this is not at all a concern relative to the noise that escapes from the room via the inlet air path.

Engine exhaust noise is emitted to outdoors through the roof and is expected to produce no more than 38 dBA of noise at the critical receiver location, including consideration for the planned muffler and the building roof edge barrier effect. This is not at all a contributer to the niose condition reaching the critical receiver location.

Based on our assessment, the noise due to all the componets of the generator system that reaches the critical Common at Cambridge Crossing location is not expected not exceed 60 dBA at the property line, in agreement with the limits established in the Cambridge Noise Ordinance.

---

[1] Defined as 7:00 AM to 6:00 PM, daily, except Sunday
[2] All other times.

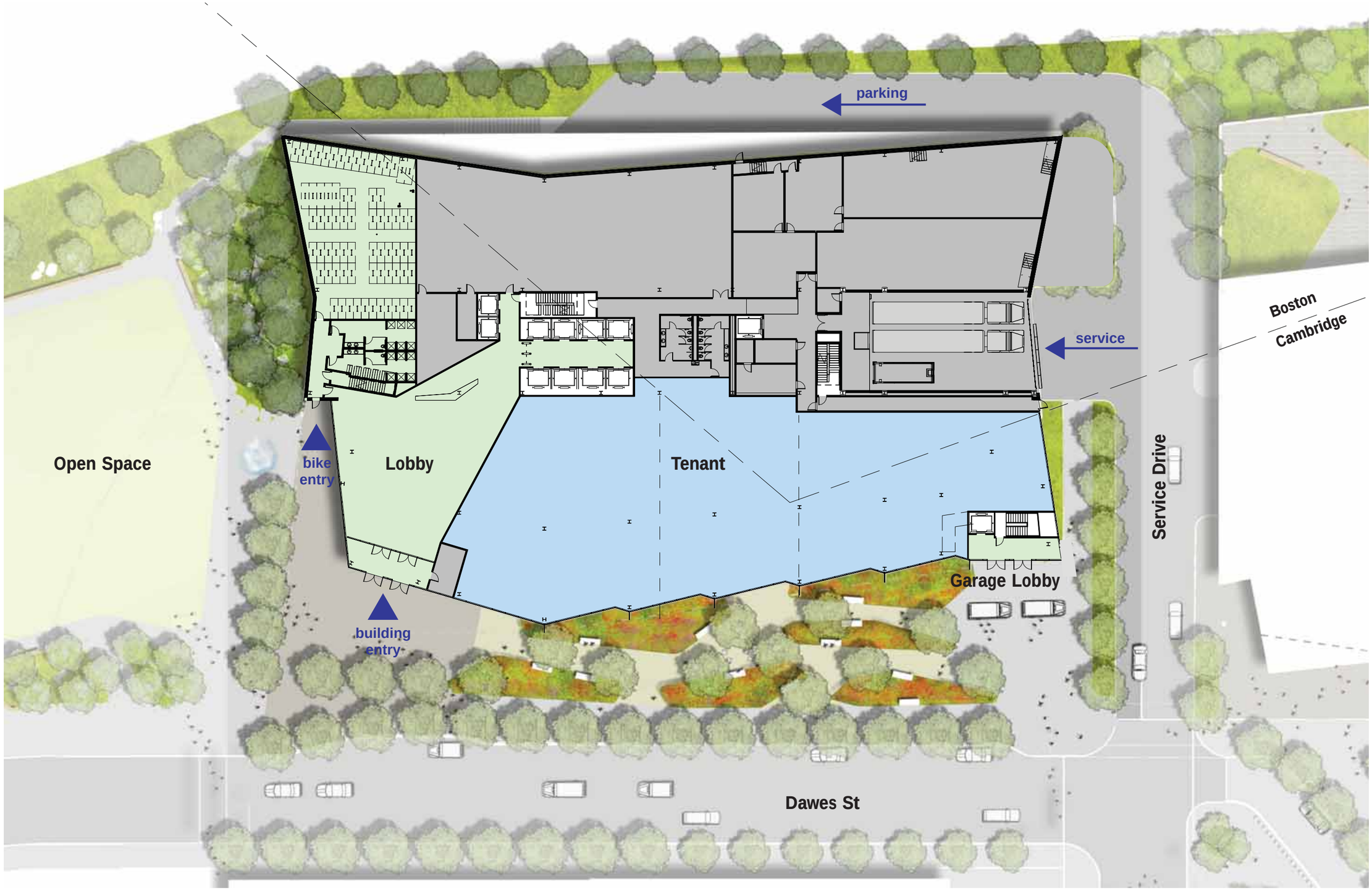
PARCEL G 12TH FLOOR LOUVER NOISE STUDY

Cambridge Crossing

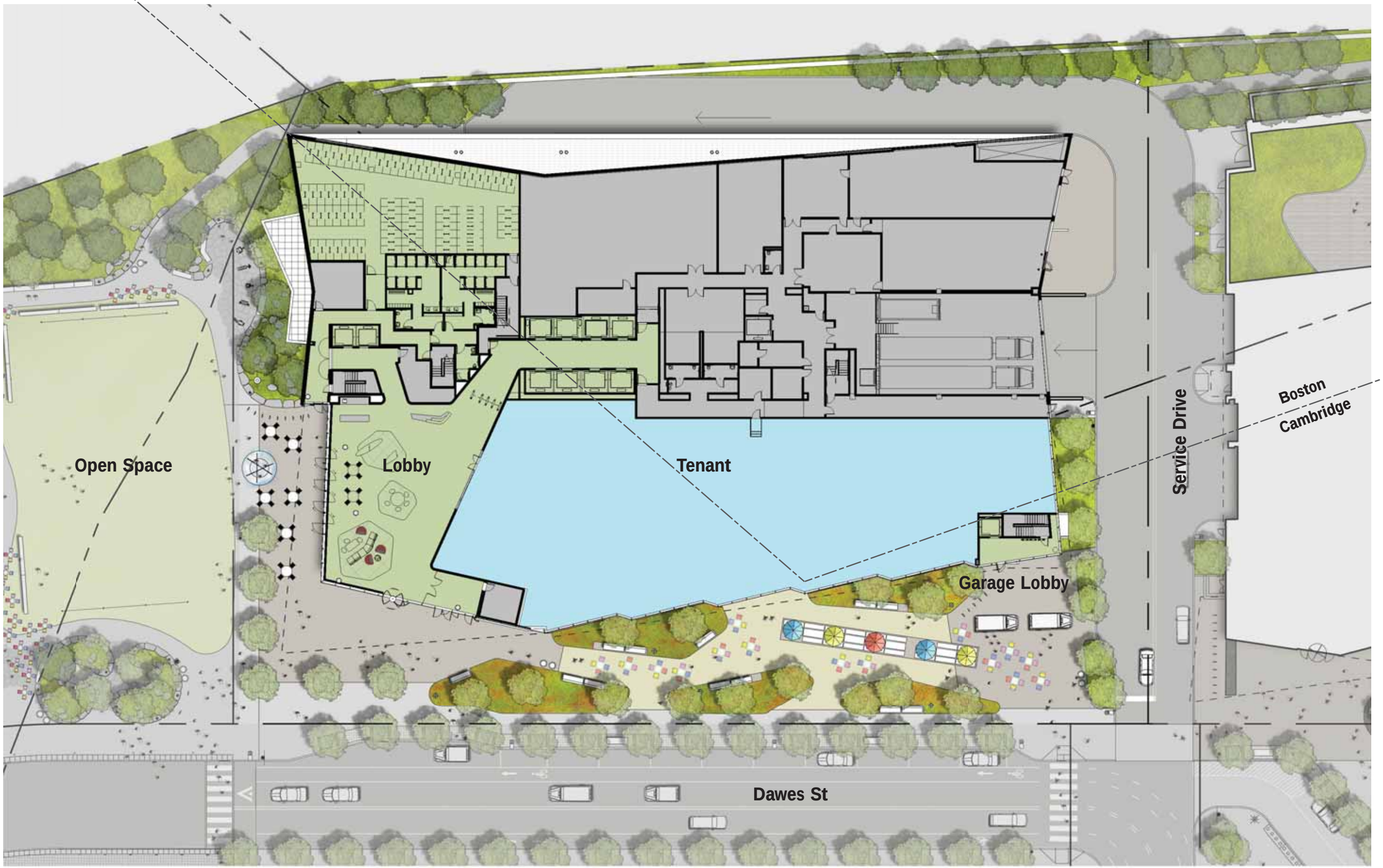
Parcel G

APPENDIX B
DESIGN EVOLUTION

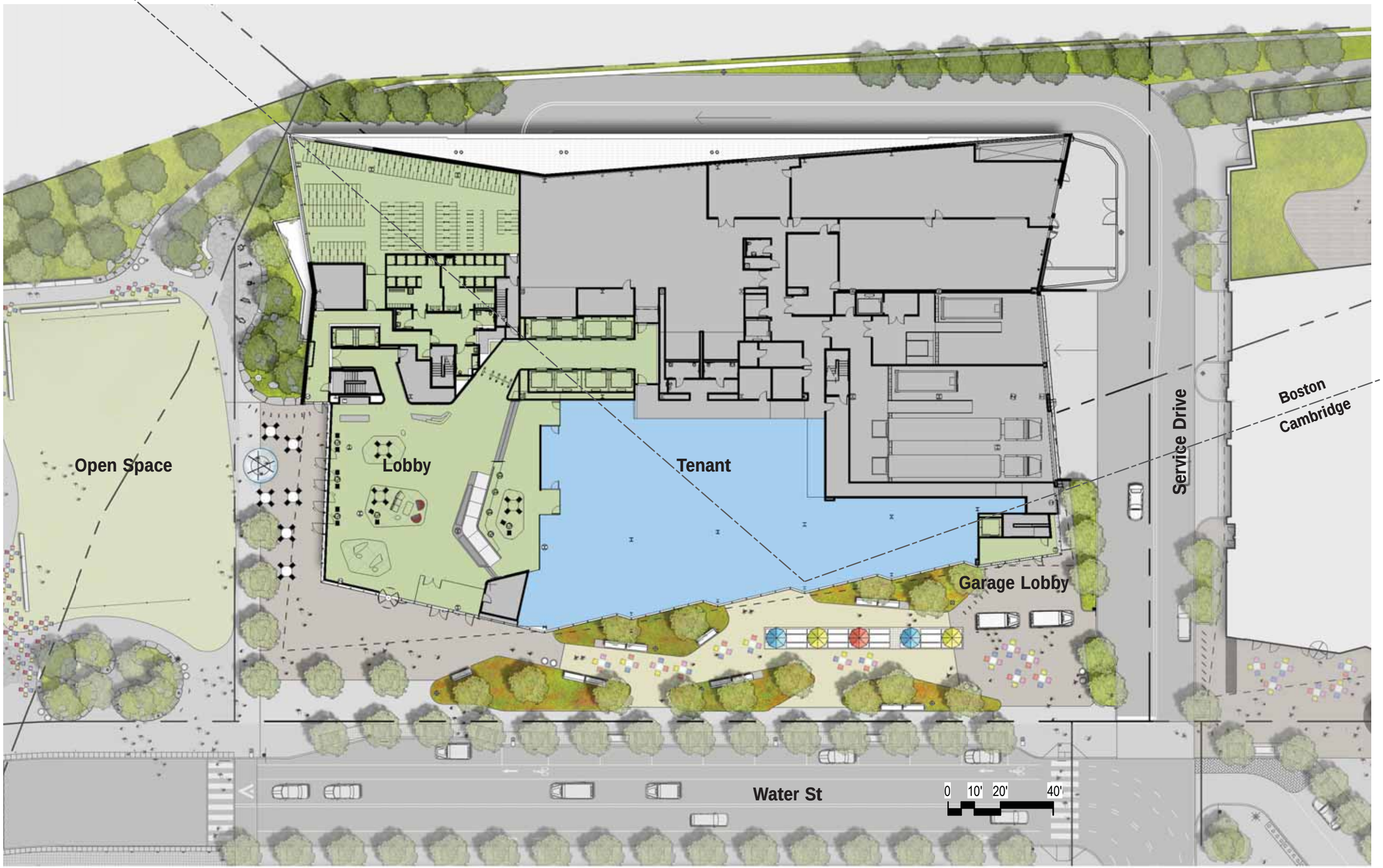
DECEMBER 23, 2019



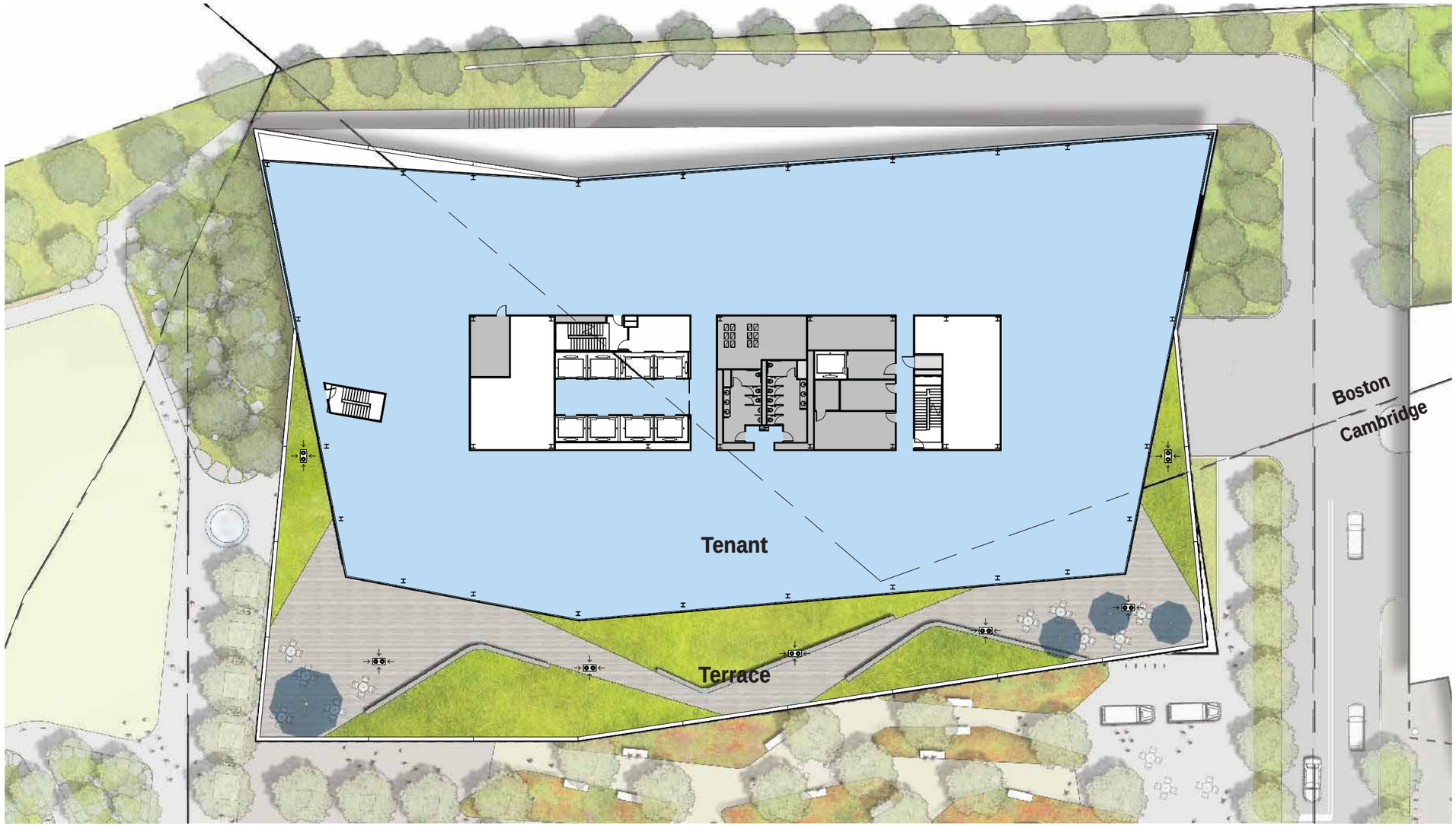
2017 APPROVED - GROUND FLOOR PLAN



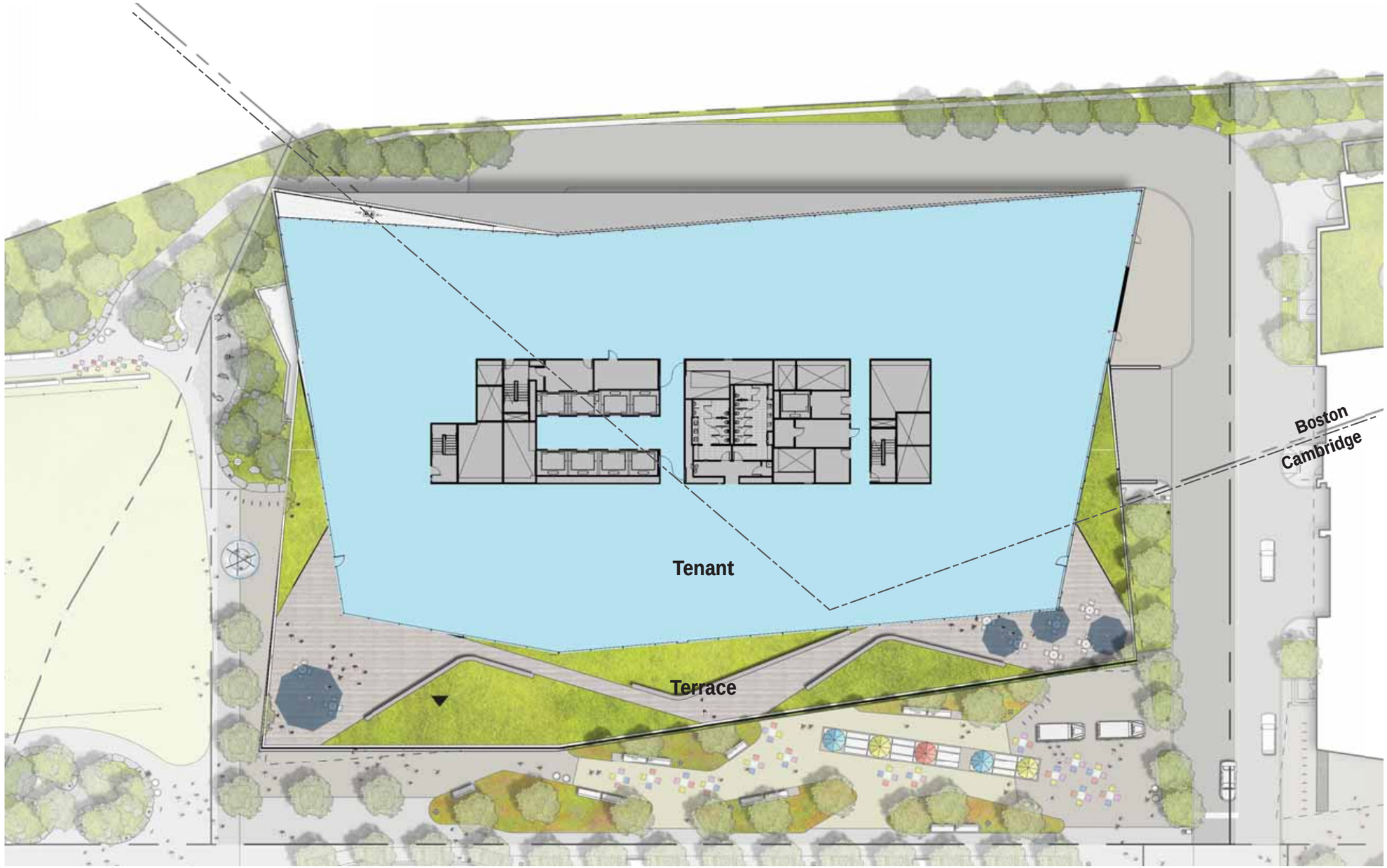
2019 APPROVED - GROUND FLOOR PLAN



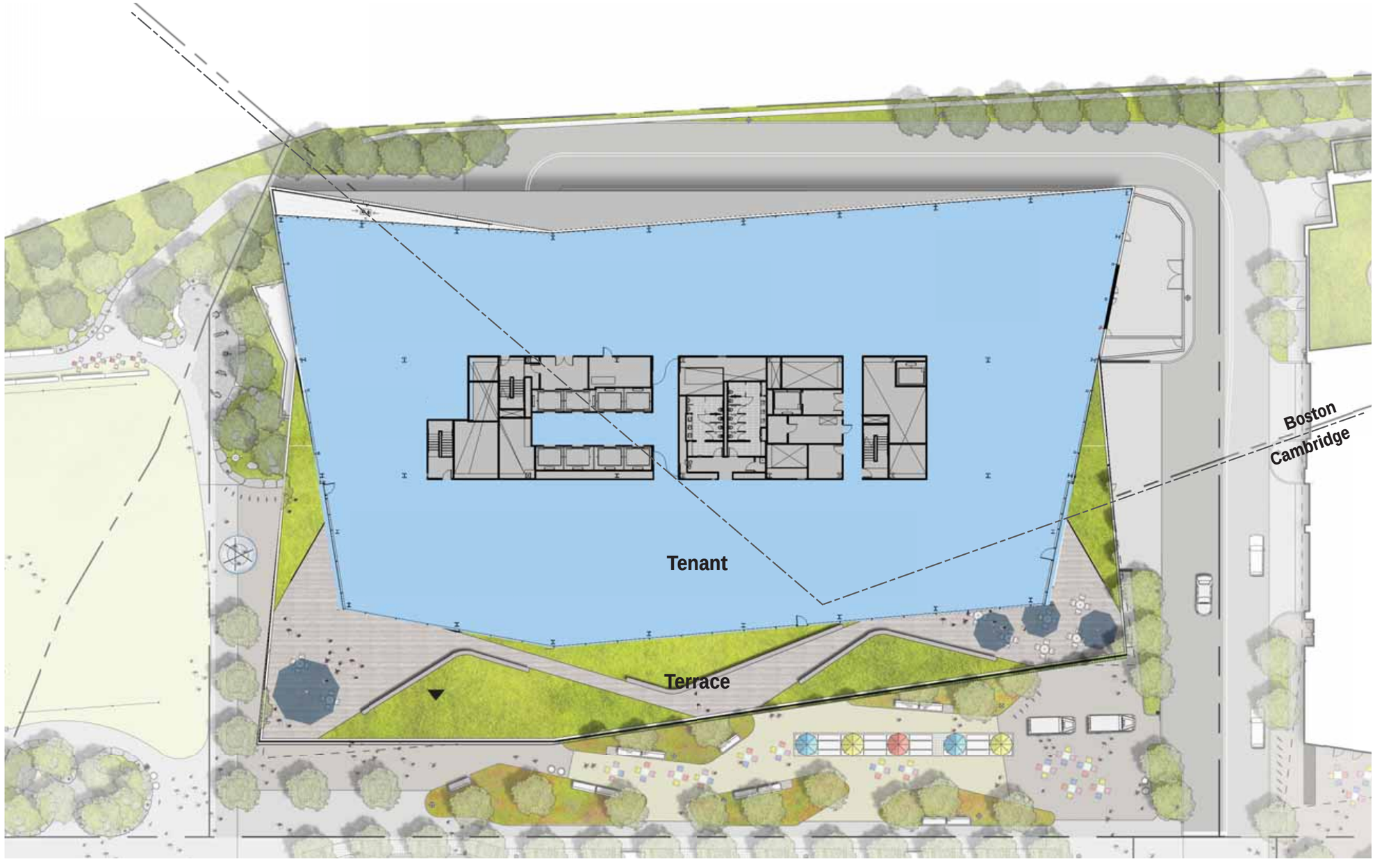
2020 PROPOSED - GROUND FLOOR PLAN



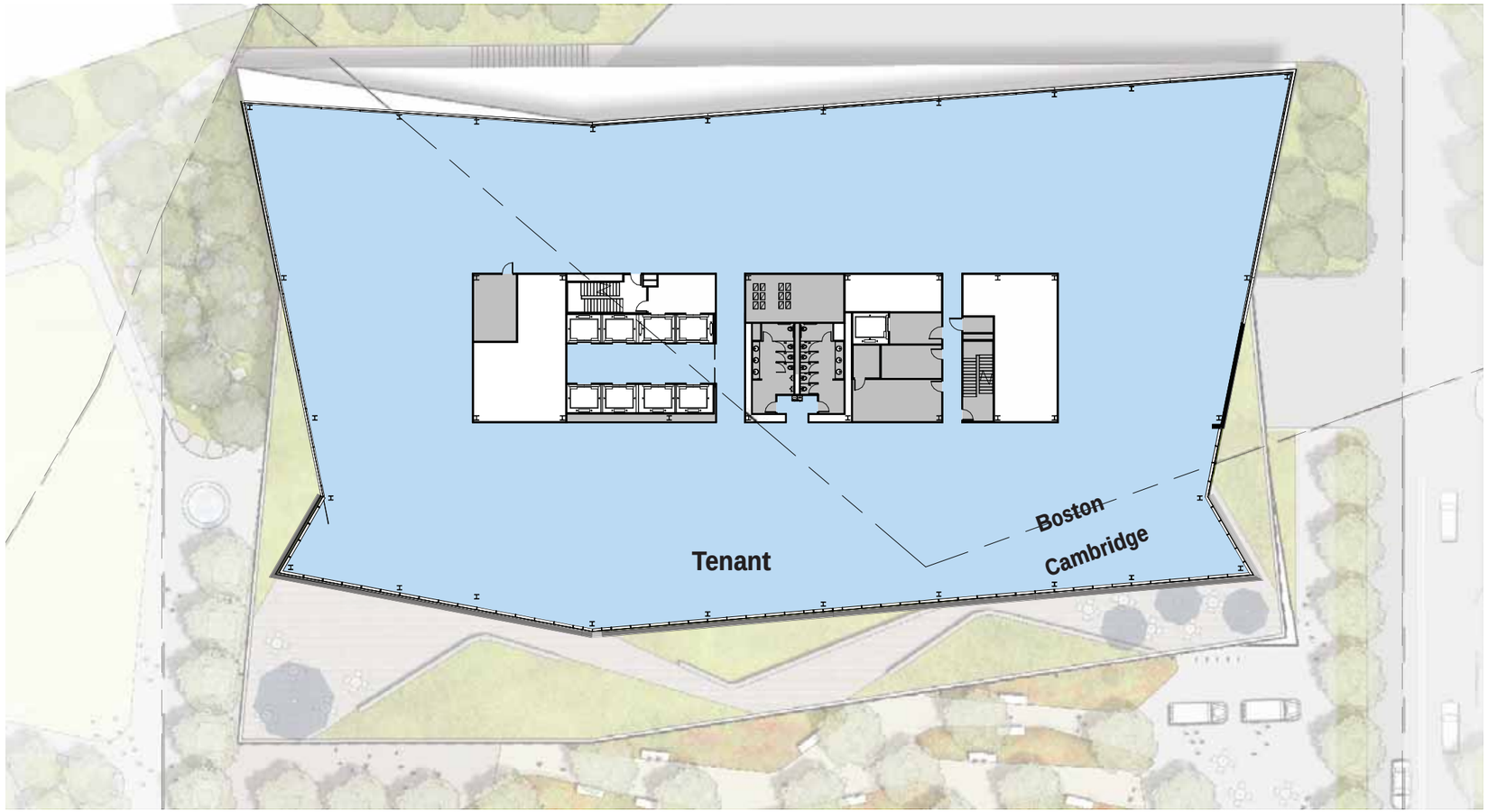
2017 APPROVED - THIRD FLOOR PLAN



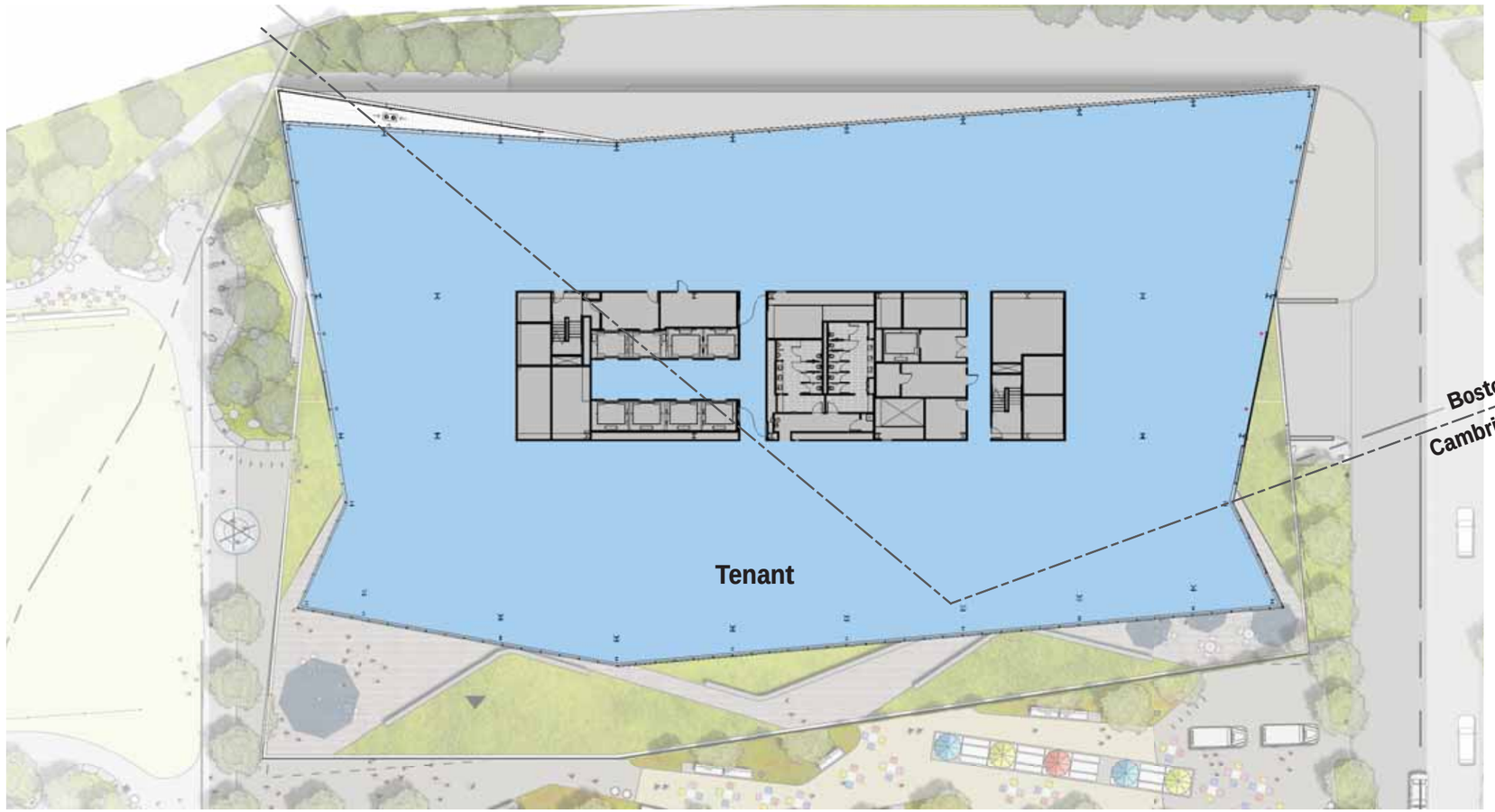
2019 APPROVED - THIRD FLOOR PLAN



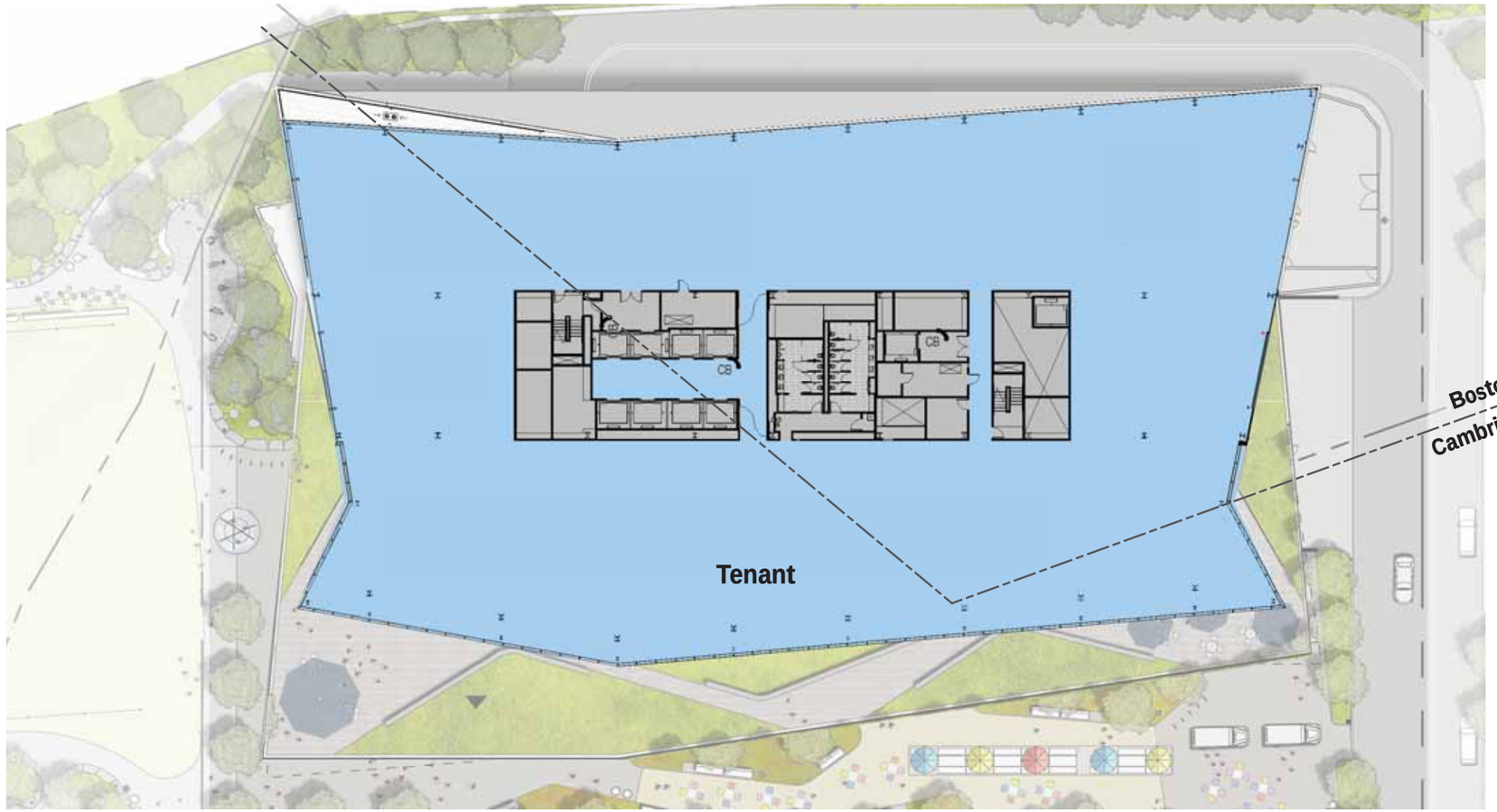
2020 PROPOSED - THIRD FLOOR PLAN



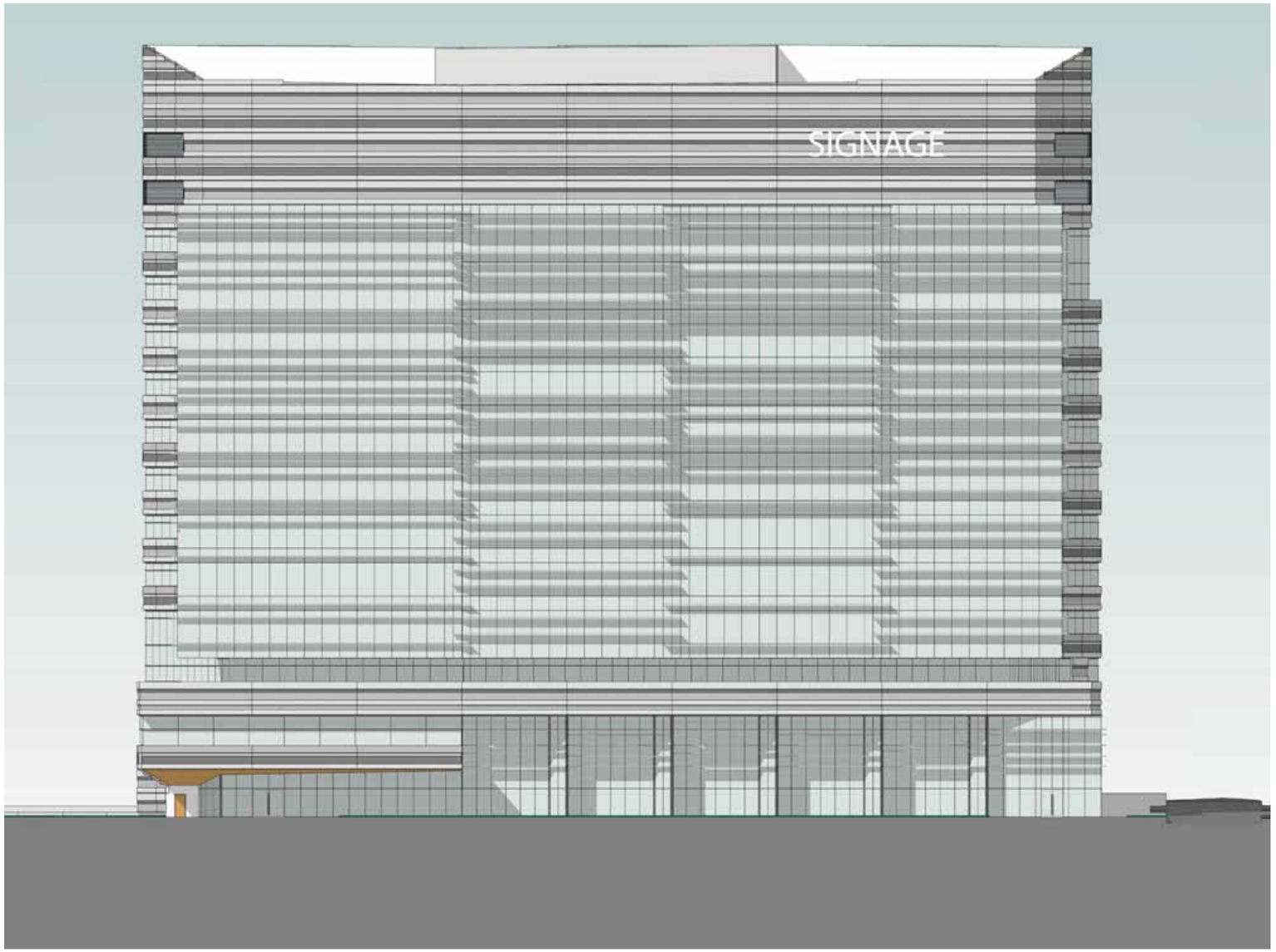
2017 APPROVED - TYPICAL FLOOR PLAN



2019 APPROVED - TYPICAL FLOOR PLAN

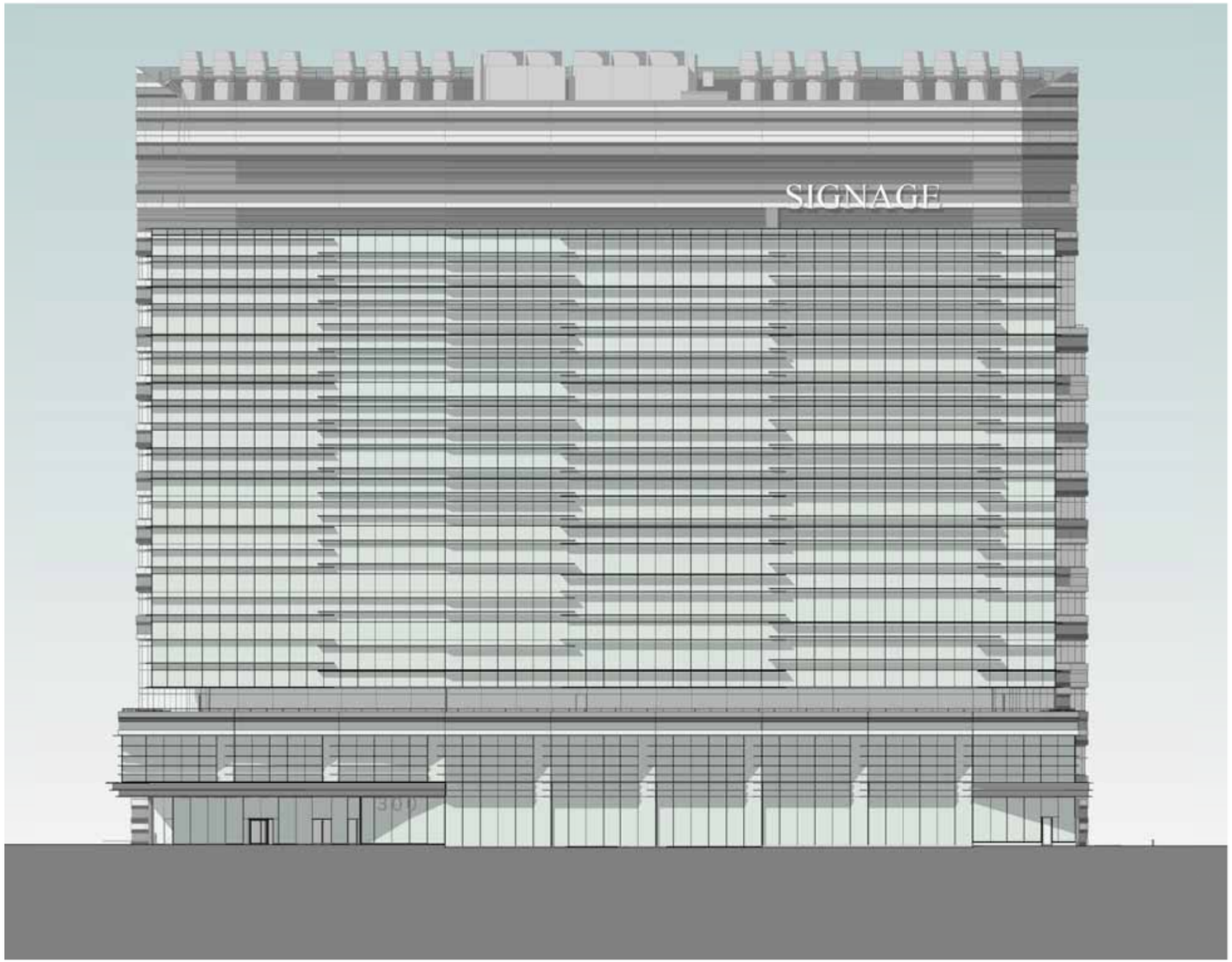


2020 PROPOSED - TYPICAL FLOOR PLAN

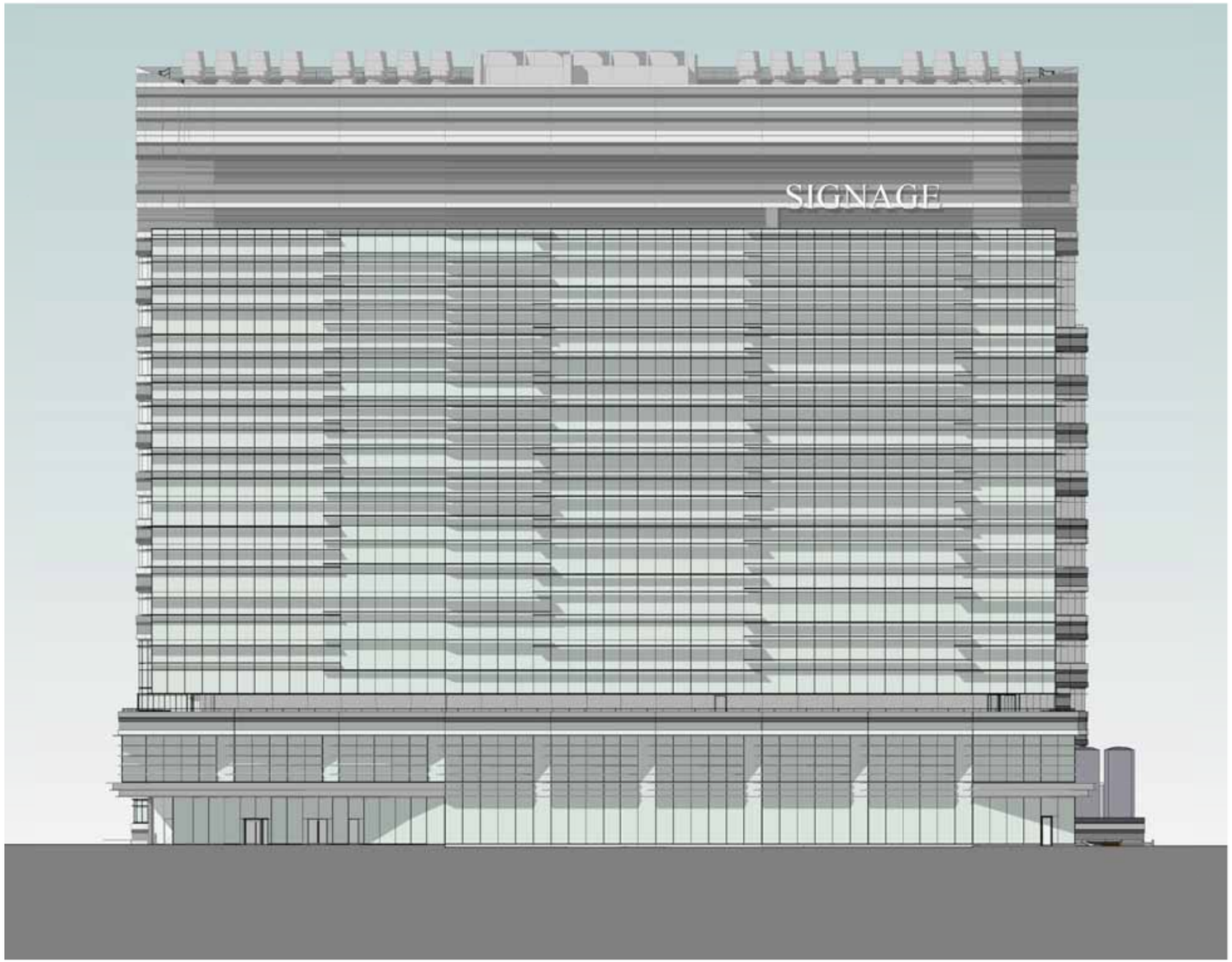


DIVCOWEST. Real Estate Investments
Cambridge Crossing

2017 APPROVED - BUILDING ELEVATION - SOUTH



2019 APPROVED - BUILDING ELEVATION - SOUTH



2020 PROPOSED - BUILDING ELEVATION - SOUTH

DIVCOWEST. Real Estate Investments Cambridge Crossing

2017 APPROVED - BUILDING ELEVATIONS - WEST, EAST

Perkins&Will

DIVCOWEST. Real Estate Investments

Cambridge Crossing

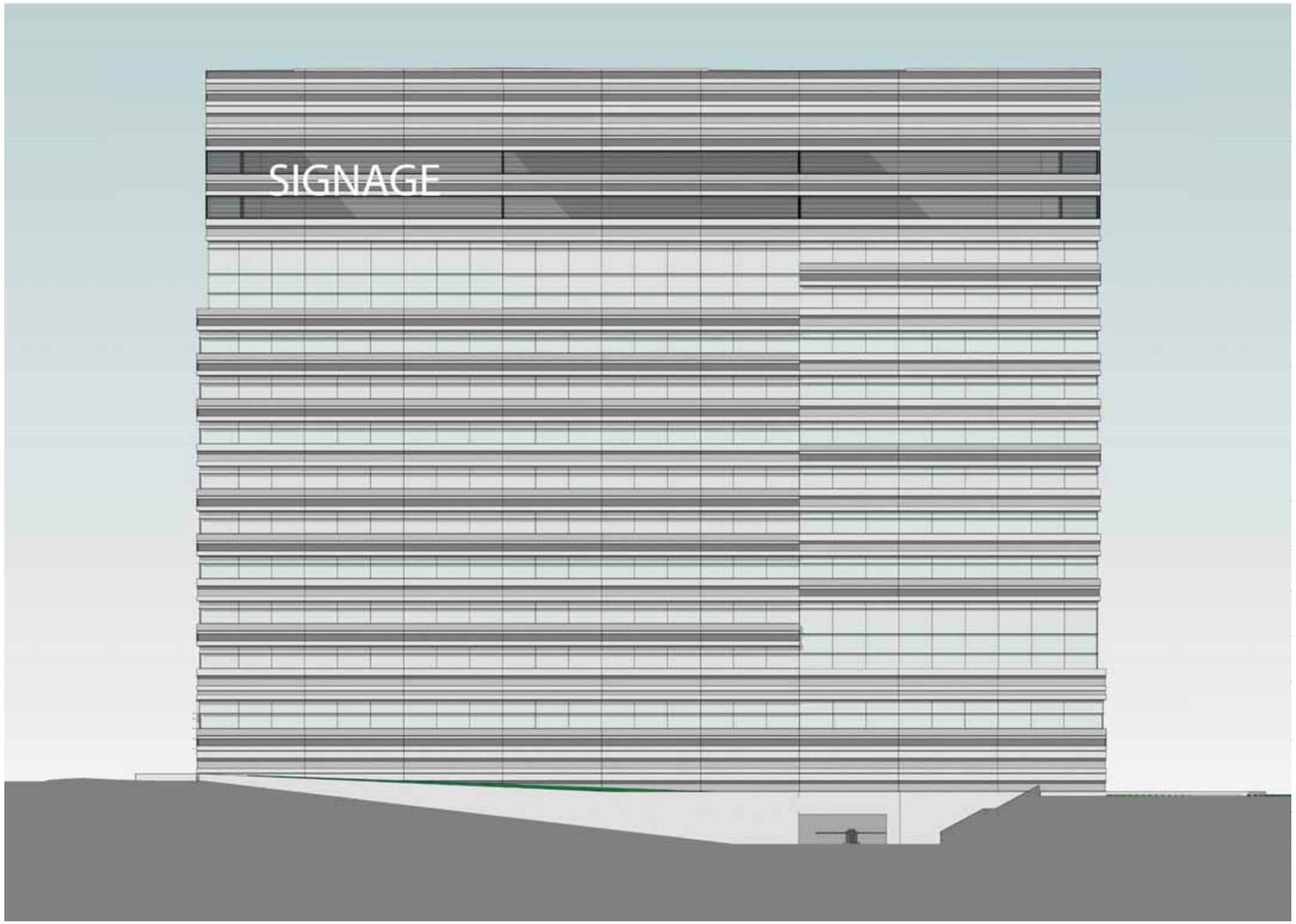
2019 APPROVED - BUILDING ELEVATIONS - WEST, EAST

Perkins&Will

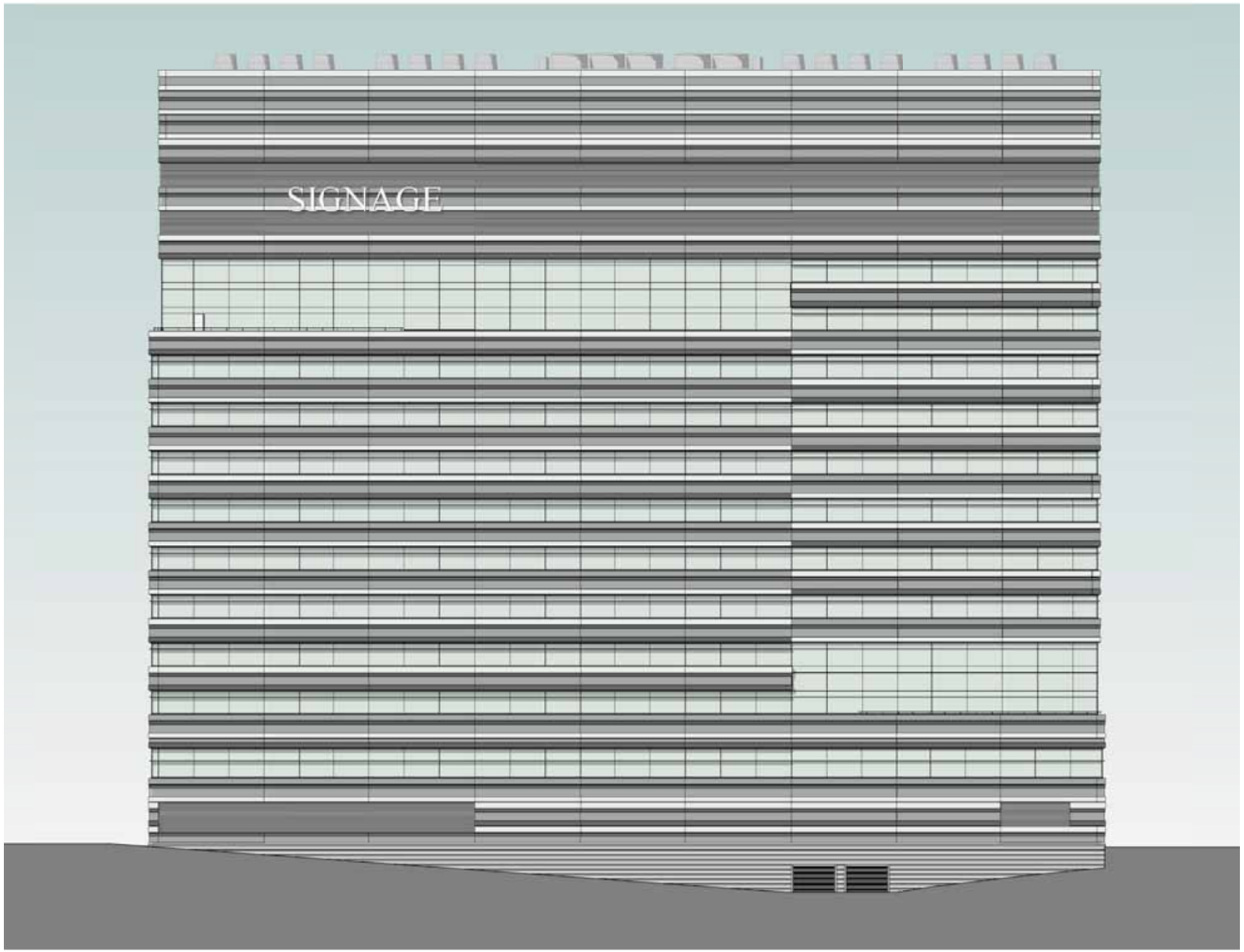
DIVCOWEST. Real Estate Investments

Cambridge Crossing

2020 PROPOSED - BUILDING ELEVATIONS - WEST, EAST



2017 APPROVED - BUILDING ELEVATION - NORTH

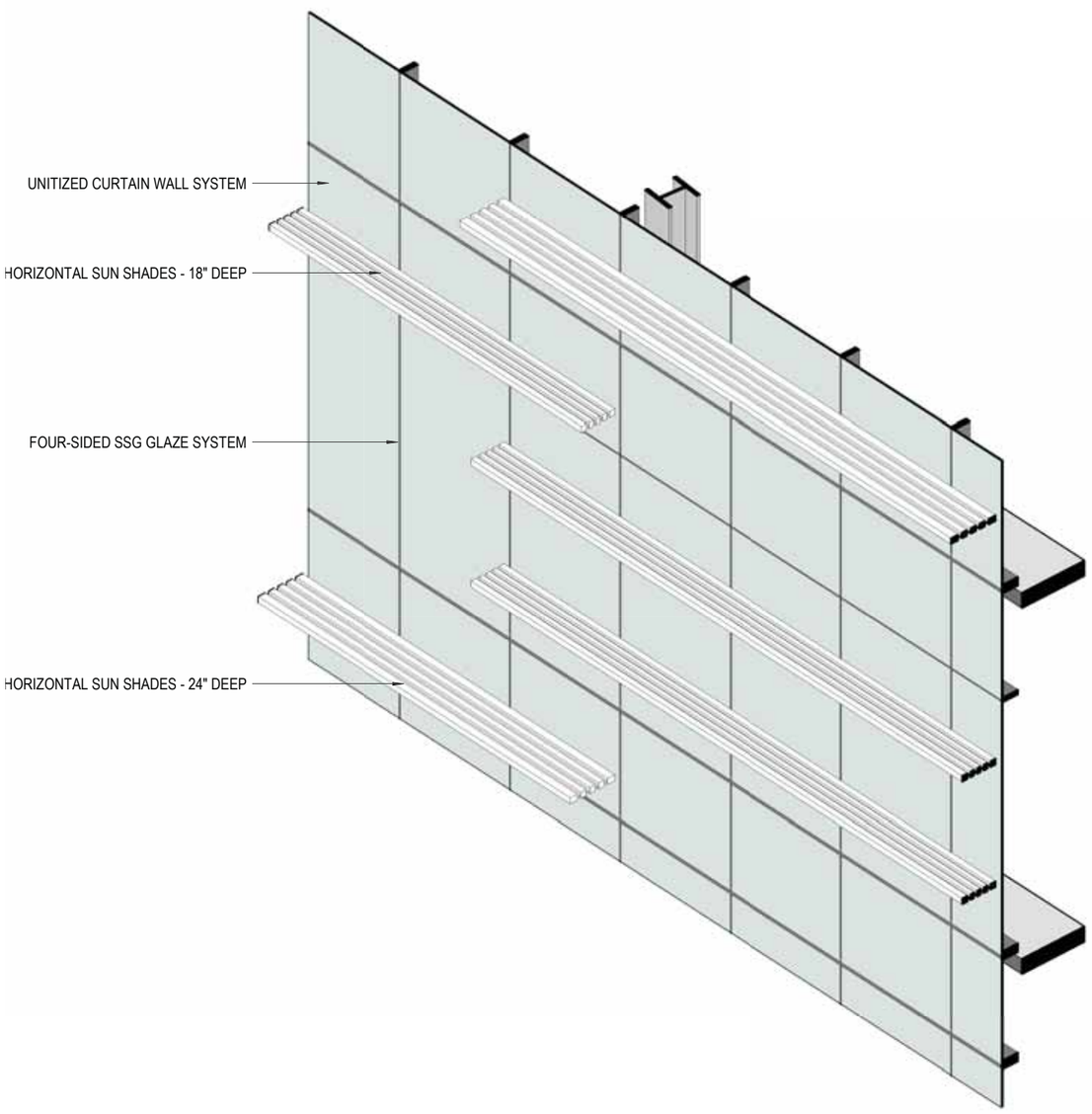


DIVCOWEST. Real Estate Investments
Cambridge Crossing

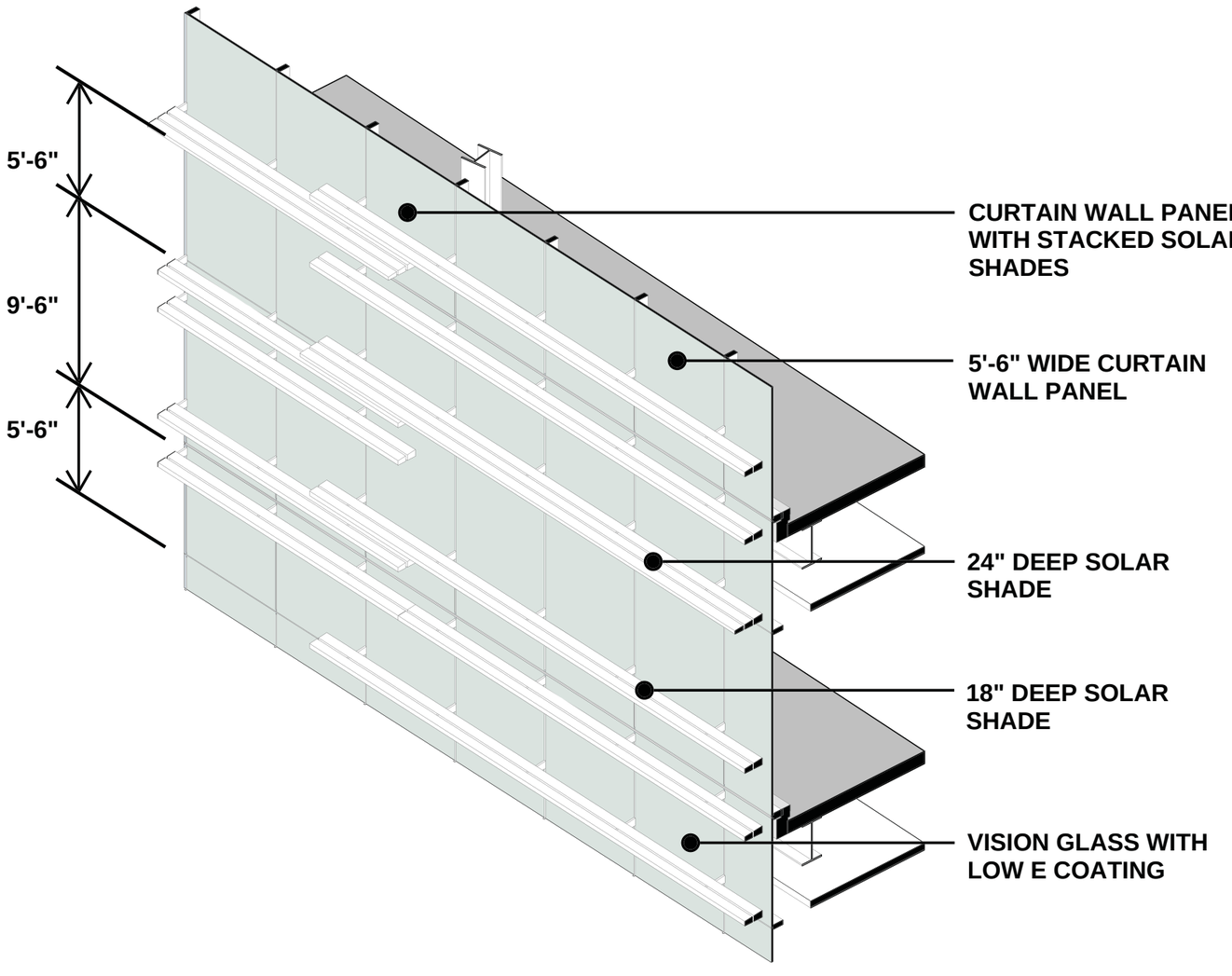
2019 APPROVED - BUILDING ELEVATION - NORTH

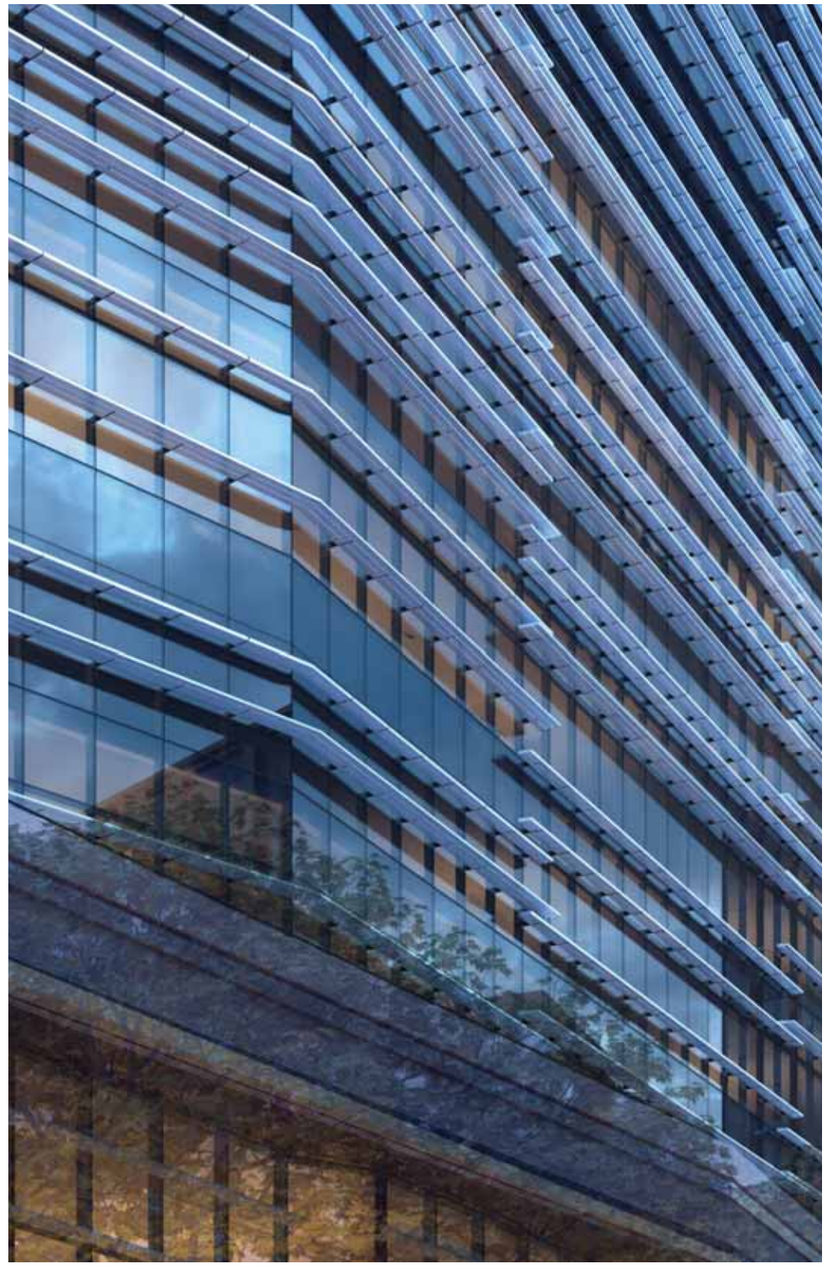
DIVCOWEST. Real Estate Investments
Cambridge Crossing

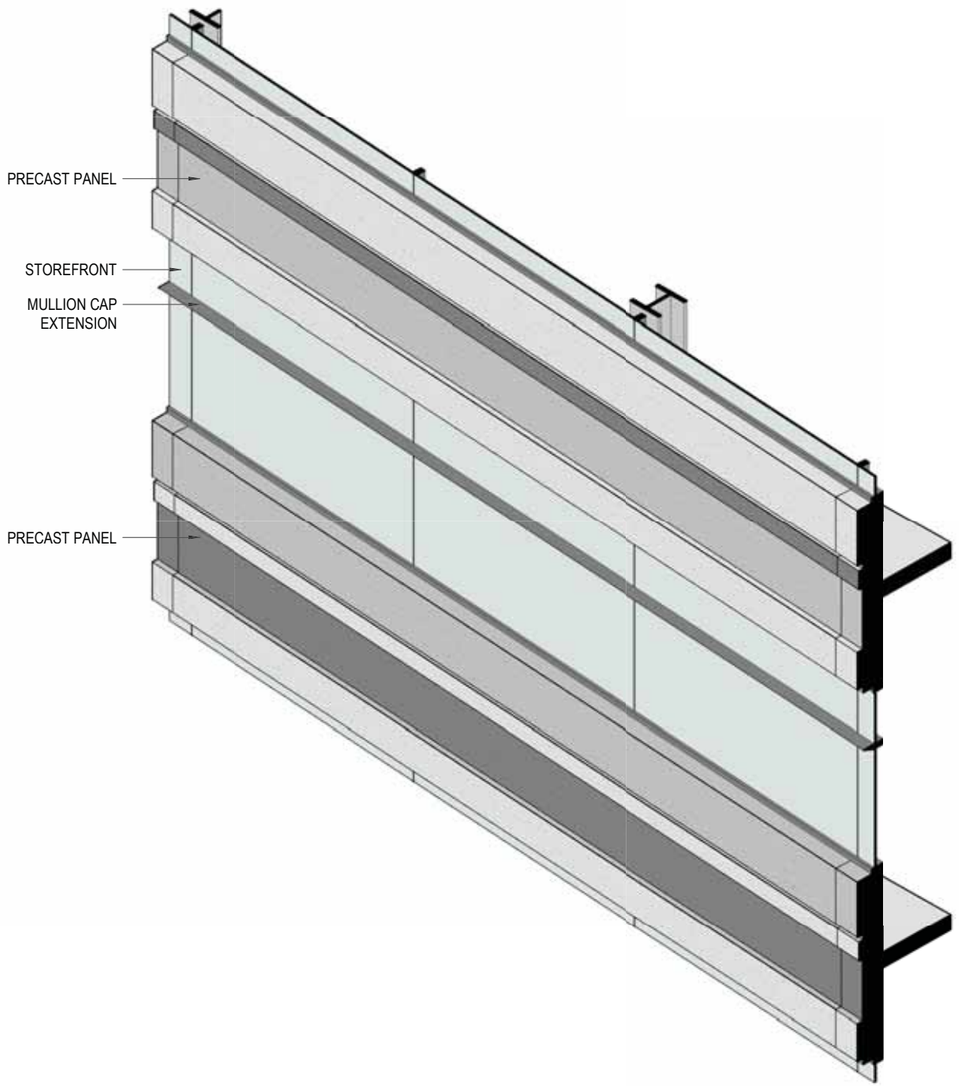
2020 PROPOSED - BUILDING ELEVATION - NORTH

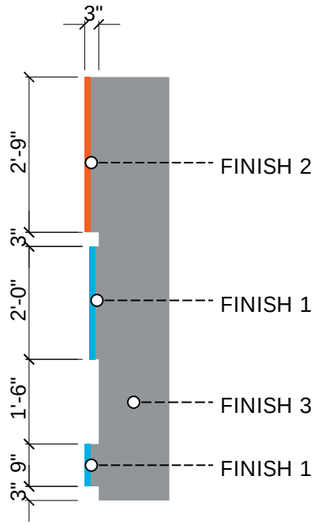


2017 APPROVED - WALL SECTION/MATERIAL - CURTAIN WALL

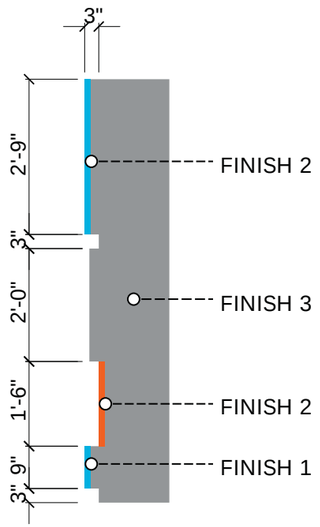

5'-6"
9'-6"
5'-6"
CURTAIN WALL PANEL WITH STACKED SOLAR SHADES
5'-6" WIDE CURTAIN WALL PANEL
24" DEEP SOLAR SHADE
18" DEEP SOLAR SHADE
VISION GLASS WITH LOW E COATING



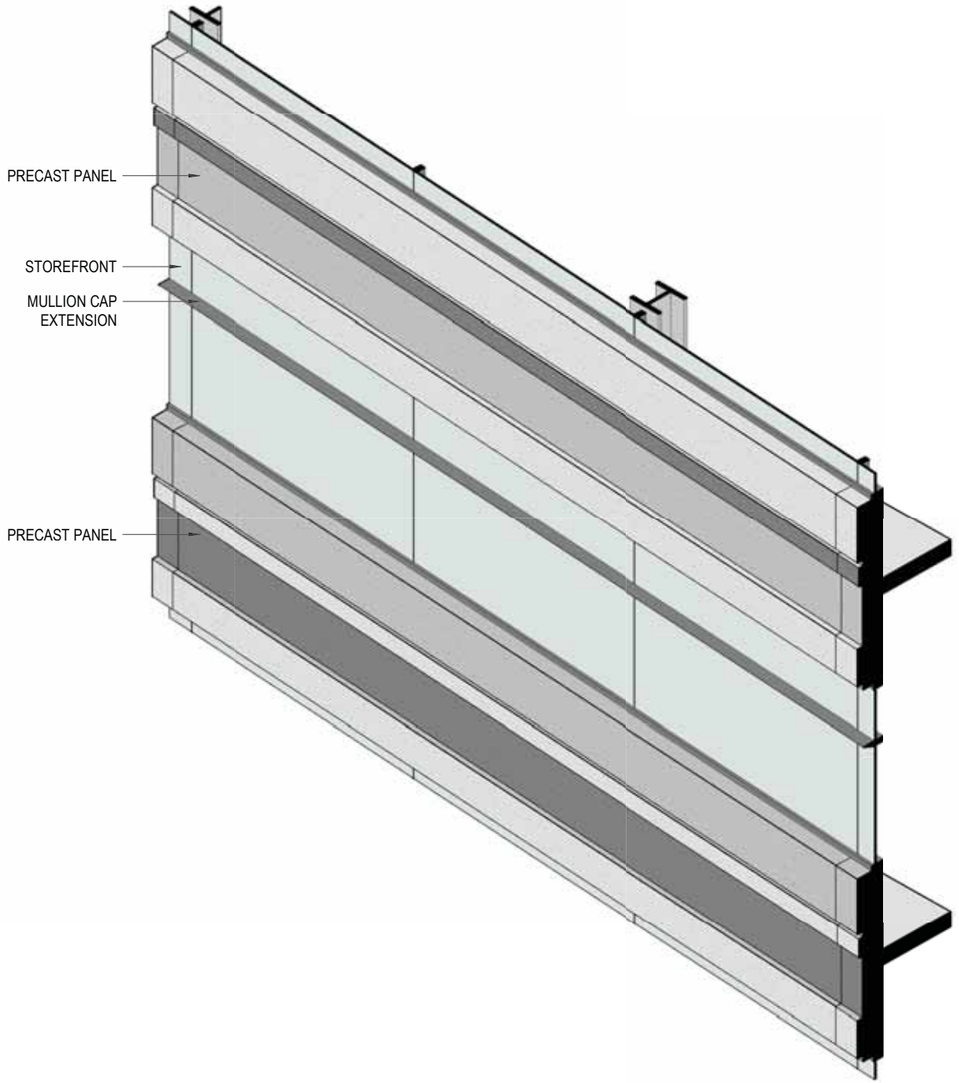


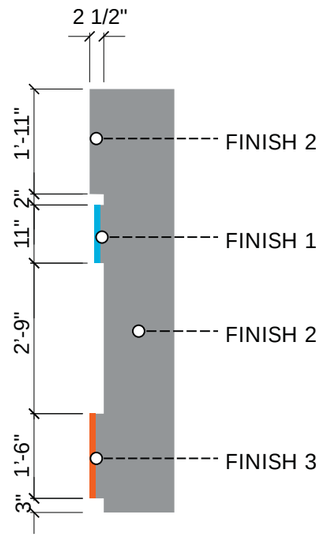


PRECAST PANEL TYPE A

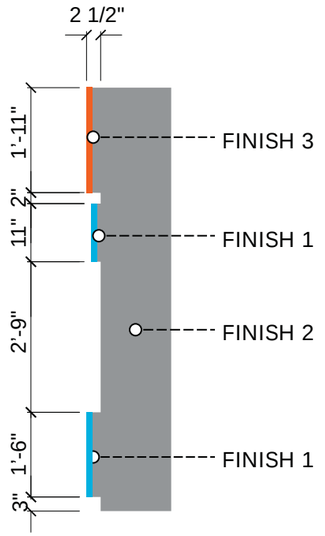


PRECAST PANEL TYPE B





PRECAST PANEL TYPE A



PRECAST PANEL TYPE B

2017 APPROVED - VIEW FROM WATER ST. LOOKING EAST

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2019 APPROVED - VIEW FROM WATER ST. LOOKING EAST

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2020 PROPOSED - VIEW FROM WATER ST. LOOKING EAST

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2017 APPROVED - VIEW OF BUILDING ENTRY FROM WATER ST. SIDEWALK

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2019 APPROVED - VIEW OF BUILDING ENTRY FROM WATER ST. SIDEWALK

Perkins&Will

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2020 PROPOSED - VIEW OF BUILDING ENTRY FROM WATER ST. SIDEWALK

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2017 APPROVED - VIEW OF GARAGE ENTRY

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2019 APPROVED - VIEW OF GARAGE ENTRY

Perkins&Will

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2020 PROPOSED - VIEW OF GARAGE ENTRY

Perkins&Will

DIVCOWEST. Real Estate Investments
Cambridge Crossing

2017 APPROVED - VIEW FROM GILMORE BRIDGE

DIVCOWEST. Real Estate Investments
Cambridge Crossing

2019 APPROVED - VIEW FROM GILMORE BRIDGE

DIVCOWEST. Real Estate Investments Cambridge Crossing

2020 PROPOSED - VIEW FROM GILMORE BRIDGE

DIVCOWEST. Real Estate Investments Cambridge Crossing

2017 APPROVED - VIEW FROM MBTA RAIL YARD

DIVCOWEST. Real Estate Investments Cambridge Crossing

2019 APPROVED - VIEW FROM MBTA RAIL YARD

DIVCOWEST. Real Estate Investments Cambridge Crossing

2020 PROPOSED - VIEW FROM MBTA RAIL YARD

DIVCOWEST. Real Estate Investments
Cambridge Crossing

2019 APPROVED - VIEW FROM OPEN SPACE

DIVCOWEST. Real Estate Investments Cambridge Crossing

2020 PROPOSED - VIEW FROM OPEN SPACE

Perkins&Will

2019 APPROVED - VIEW FROM WATER STREET

DIVCOWEST. Real Estate Investments Cambridge Crossing

2020 PROPOSED - VIEW FROM WATER STREET

DIVCOWEST. Real Estate Investments

Cambridge Crossing

2019 APPROVED - VIEW FROM WATER ST LOOKING INTO SERVICE DRIVE

DIVCOWEST. Real Estate Investments Cambridge Crossing

2020 PROPOSED - VIEW FROM WATER ST LOOKING INTO SERVICE DRIVE