

SITE CHARACTERISTICS AND IMPROVEMENTS

41 Linskey Way is an existing, underutilized three-story brick building, with a partial below-grade basement, planned for adaptive reuse as part of PUD Special Permit #243. Constructed circa 1907 for factory and warehouse uses, the historic structure will be completely renovated, including a new one-story annex on the building's north side. The annex and part of the ground floor of the existing building will include 3,400 SF of Active Use space (per Section 13.59.31 of the Zoning Ordinance), including a Mixed-Mode Transportation Hub or Mobility Hub (The Hub) totaling at least 500 SF; with upper floors of the existing building planned for office use.

The proposed expanded building footprint will be set back from the northern property line to accommodate the Binney Street cycle-track, a generous pedestrian sidewalk to enhance the pedestrian experience, and public realm spaces suitable for sitting and passive uses. The Hub, referenced earlier, will be positioned at Binney and Second Streets in a highly visible, accessible location that will contribute to the project's objective to provide "an interesting, lively, and active presence at street level".

The western edge of the site contains a publicly accessible through block passage between 41 Linskey Way and the adjacent 100 Binney Street providing visual enjoyment; pedestrian connectivity to Binney Street from Kendall Square, the Charles River, and other neighborhood amenities; short term bicycle storage; frontage to the Active Use spaces; and outdoor seating. A portion of this through block passage was constructed with 100 Binney Street.

The experience at the eastern and southern edges of the site is limited by the proximity of the existing building to Second Street and Linskey Way, but will be dedicated to welcoming pedestrian sidewalks and a street tree buffer.

BUILDING DESIGN

The juxtaposition of the proposed contemporary addition with the preservation of the original brick facade will blend characteristics of the nearby, recently completed, modern laboratory and technical office buildings with architecture reflective of the neighborhood's former manufacturing era. The proposed addition will employ floor to floor glazing that will complement the existing masonry expression. This glazed component will be topped by a metal structure inspired from the surrounding area such as bridges and historical manufacturing buildings.

This highly transparent pavilion will embrace and revive the existing brick façade of 41 Linskey Way by allowing views from the street into the new addition where pedestrians will be able to appreciate how the conservation of the brick will be part of the new interior environment.

The curved façade on Binney Street relates to 100 Binney Street, creating a playful dialog between both curves. This gesture will allow for an urban moment that will improve the public realm activity on the intersection of both Second and Binney Street.

An extensive green roof of drought tolerant grasses and sedums will be installed on a slope to make it visible from street level. Additional insulation used in the construction of the slope will increase the R-value of the roof.

The existing windows of 41 Linskey Way will be replaced entirely by better performing windows and with a historical remembrance to its past.

MIXED MODE TRANSPORTATION HUB / MOBILITY HUB

Centrally located between the MBTA Red Line Kendall Square and Green Line Lechmere Stations (both approximately a 5 to 10 minute walk from the building), the Hub will provide area residents, commuters, and visitors with a more efficient transfer between transit modes. Real time information on schedules for MBTA transit and local shuttles, as well as availability of ride-hailing, and car and bike sharing services, will be displayed on digital signage. Hub users will enjoy a tempered shelter with the conveniences of interior seating arrangements, seating spilling outside into the through block passage, restrooms, free wifi, and charging stations for electronic devices.

A bus stop will be provided on Binney Street near the intersection with Second Street to serve the current shuttle busses that connect to public transit facilities. Bus passengers will be able to wait for buses inside the Mobility Hub, while using the provided wi-fi and charging stations. The Second Street curb adjacent to the 41 Linskey building will be available for short term parking or loading activities such as taxis, ride hailing services or other drop-off pick up activities.

As part of the 41 Linskey / 100 Binney development block, 90 long term bicycle parking spaces and 34 short-term bicycle parking spaces are provided. The long-term spaces are provided in the 100 Binney Street bike room, which is a well-lit and secure ground floor location that is easily accessible throughout the 41 Linskey plaza and visible from the Mobility Hub. Bicycle repair services are provided regularly inside the 100 Binney Street bike room and self serve bike fix-it stations are installed at other ARE building bike rooms. The short-term spaces are provided throughout the plaza area and near entrances to both the 100 Binney and 41 Linskey buildings to serve visitors to the site. ARE has also installed a Bluebike bikeshare station in the Binney Street northern sidewalk across from the Hub, to further improve the mobility and transportation options that employees and visitors of the area will have available to them.

Pedestrian and bicycle improvements implemented by ARE in connection with Special Permit 243 include pedestrian crossings, generous sidewalks, a dedicated cycle track and more than 700 short and long term bicycle parking spaces compare to the 435 required spaces.

Cambridge Article 22: Green Building Report

Issued: October 1, 2021

Project: 41 Linskey Way Cambridge, MA



Rendering courtesy of Elkus Manfredi Architects

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Section I. PROJECT DESCRIPTION

SITE CHARACTERISTICS AND IMPROVEMENTS

41 Linskey Way is an existing, underutilized three-story brick building, with a partial below-grade basement, planned for adaptive reuse as part of PUD Special Permit #243. Constructed circa 1907 for factory and warehouse uses, the historic structure will be completely renovated, including a new one-story annex on the building's north side, to include 3,400 SF of Active Use on the ground floor (per Section 13.59.31 of the Zoning Ordinance), including a Mixed-Mode Transportation Hub (The Hub); with upper floors planned for office use.

The proposed expanded building footprint will be set back from the northern property line to accommodate the Binney Street cycle-track, a generous pedestrian sidewalk to enhance the pedestrian experience, and public realm spaces suitable for sitting and passive uses. The Hub, reinforced earlier, will be positioned at Binney and Second Streets in a highly visible, accessible location that will contribute to the project's objective to provide *"an interesting, lively, and active presence at street level"*.

The western edge of the site contains a publicly accessible through block passage between 41 Linskey Way and the adjacent 100 Binney Street providing visual enjoyment; pedestrian connectivity to Binney Street from Kendall Square, the Charles River, and other neighborhood amenities; short-term bicycle storage; frontage to the Active Use spaces; and outdoor seating. A portion of this through block passage was constructed with the recently completed 100 Binney Street.

The experience at the eastern and southern edges of the site is limited by the proximity of the existing building to Second Street and Linskey Way but will be dedicated to welcoming pedestrian sidewalks and a street tree buffer. Additionally, the eastern edge will include a small building addition to provide secondary means of egress from the building and a bike sharing station.

BUILDING DESIGN

The proposed one story contemporary addition and the preserved brick façade will blend characteristics of the nearby, recently completed, modern laboratory and technical office buildings with architecture relative to the neighborhood's former manufacturing era. The proposed addition will employ floor to floor glazing that will complement the existing masonry expression.

MIXED MODE TRANSPORTATION HUB / MOBILITY HUB

Centrally located between the MBTA Red Line Kendall Square and Green Line Lechmere Stations (both approximately a 5 to 10 minute walk from the building), the Hub will provide area residents, commuters, and visitors with a more efficient transfer between transit modes. Real time information on schedules for MBTA transit and local shuttles, as well as availability of ride-hailing, and car and bike sharing services, will be displayed on digital signage. Hub users will enjoy a tempered shelter with the conveniences of interior seating arrangements, seating spilling outside into the through block passage, restrooms, free wifi, and charging stations for electronic devices.

Pedestrian and bicycle improvement implemented by ARE in connection with Special Permit 243 include pedestrian crossings, generous sidewalks, a dedicated cycle track and more than 700 short and long term bicycle parking spaces compared to the 435 required spaces.

Section II. AFFIDAVIT

I, Christopher Schaffner, do hereby affirm that I have thoroughly reviewed the supporting documents for the LEEDv4 Core and Shell rating system and confirm that the 41 Linskey Way project is targeted to exceed the requirement for Silver with **79** points (50 required for Silver) and **11** possible ('maybe') points. The 41 Linskey Way project, located in Cambridge, MA will be designed to meet the green building requirement under Article 22.20 of the Cambridge Zoning Ordinance.

Chris Schaffner, PE, LEED Fellow is Founder and CEO of The Green Engineer, Inc. Chris has over 30 years of experience in the design of building systems with a focus on energy efficiency and sustainability.

A long-time promoter of sustainable design, Chris has been a member of the US Green Building Council's (USGBC) LEED Faculty since 2001, training more than 9,600 building industry professionals in the use of the LEED Rating System. He is currently an elected member of the USGBC Advisory Council, as well as a volunteer with the LEED Advisory Committee. He previously served on the USGBC Board of Directors, as Chair of the Energy and Atmosphere Technical Advisory Group (TAG) and as a member of the Indoor Environmental Quality TAG, among other volunteer roles with the USGBC.

To date, Chris and The Green Engineer has managed or been involved in over 200 LEED certified projects.

An executed Cambridge Affidavit has been provided.



Christopher Schaffner, PE, LEED Fellow
Massachusetts PE Registration #37211 Mechanical
The Green Engineer, Inc.
LEED Administrator and Sustainability Consultant



Section III. LEEDv4 SCORECARD SUMMARY

The Project was reviewed for compliance using the USGBC’s LEED for Core and Shell Development, (LEED-CS), version 4 rating system. The Project is targeting **79** out of a possible 110 credit points with an additional **11** credit points still undergoing evaluation to determine feasibility of achievement. By targeting **79** credit points, the Project anticipates exceeding the City of Cambridge requirement to be LEED v4 Silver ‘certifiable’ (50 credit points). In addition to the City of Cambridge requirements, the Project will be registered under the LEED-CS v4 rating system and will be pursuing formal certification with the USGBC.

The team will continue to evaluate design options against LEED requirements with the goal to design and construct a building which minimizes its impact on the environment, creates an engaging and healthy space for occupants and reduces operating costs. Several credits remain designated as ‘Maybe’ due to the uncertainty of future design decisions, which is common at this phase of the Project. The team will continue to evaluate LEED credits to pursue to ensure enough of a "point cushion" to ensure the LEED Silver requirement is met.

The USGBC recently released the beta version of the LEEDv4.1 rating system which is intended to serve as an update to (and improvement upon) LEEDv4. [Recent guidance](#) issued by the USGBC allows LEEDv4 projects to substitute any prerequisite or targeted credit for the LEEDv4.1 equivalent. Credits this Project intends to pursue using the LEED v4.1 criteria have been denoted with [\(LEEDv4.1\)](#) adjacent to the credit name within the scorecard below and ensuing credit narratives.

Y	M	N			
1	0	0	Integrative Process		1
1			Credit 1	Integrative Process	1

Y	M	N			
19	1	0	Location and Transportation		20
		N	Credit 1	LEED for Neighborhood Development Location	20
2			Credit 2	Sensitive Land Protection	2
3			Credit 3	High Priority Site	3
6			Credit 4	Surrounding Density and Diverse Uses	6
6			Credit 5 (LEEDv4.1)	Access to Quality Transit	6
1			Credit 6 (LEEDv4.1)	Bicycle Facilities	1
1			Credit 7 (LEEDv4.1)	Reduced Parking Footprint	1
	1		Credit 8 (LEEDv4.1)	Electric Vehicles	1

Y	M	N			
10	0	1	Sustainable Sites		11
Y			Prereq 1	Construction Activity Pollution Prevention	Required
1			Credit 1	Site Assessment	1
1		1	Credit 2 (LEEDv4.1)	Site Development - Protect or Restore Habitat	2
1			Credit 3	Open Space	1
3			Credit 4 (LEEDv4.1)	Rainwater Management	3
2			Credit 5	Heat Island Reduction	2
1			Credit 6	Light Pollution Reduction	1
1			Credit 7	Tenant Design and Construction Guidelines	1

Y	M	N			
4	1	6	Water Efficiency		11
Y			Prereq 1	Outdoor Water Use Reduction	Required
Y			Prereq 2	Indoor Water Use Reduction	Required
Y			Prereq 3	Building-Level Water Metering	Required
1		1	Credit 1	Outdoor Water Use Reduction	3

2	1	3	Credit 2	Indoor Water Use Reduction	5
		2	Credit 3	Cooling Tower Water Use	2
1			Credit 4	Water Metering	1

21	3	9	Energy and Atmosphere		33
Y			Prereq 1	Fundamental Commissioning and Verification	Required
Y			Prereq 2	Minimum Energy Performance	Required
Y			Prereq 3	Building-Level Energy Metering	Required
Y			Prereq 4	Fundamental Refrigerant Management	Required
4		2	Credit 1	Enhanced Commissioning	6
14	2	2	Credit 2	Optimize Energy Performance	18
1			Credit 3	Advanced Energy Metering	1
		2	Credit 4	Demand Response	2
		3	Credit 5	Renewable Energy Production	3
	1		Credit 6	Enhanced Refrigerant Management	1
2			Credit 7	Green Power and Carbon Offsets	2

9	5	0	Materials and Resources		14
Y			Prereq 1	Storage and Collection of Recyclables	Required
Y			Prereq 2	Construction and Demolition Waste Management Planning	Required
6			Credit 1 (LEEDv4.1)	Building Life-Cycle Impact Reduction	6
1	1		Credit 2 (LEEDv4.1)	BPDO – EPD	2
	2		Credit 3 (LEEDv4.1)	BPDO - Sourcing of Raw Materials	2
1	1		Credit 4 (LEEDv4.1)	BPDO – Material Ingredients	2
1	1		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
2	1		Credit 2 (LEEDv4.1)	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

6	0	0	Innovation		6
1			Credit 1	Exemplary Performance: Protect & Restore Habitat	1
1			Credit 2	Innovation: Purchasing – Lamps (Low-Mercury Lighting)	1
1			Credit 3	Innovation: O+M Starter Kit (IPM + Green Cleaning)	1
1			Credit 4	Exemplary Performance: Reduced Parking Footprint	1
1			Credit 5	Pilot Credit: Integrative Analysis of Building Materials	1
1			Credit 6	LEED Accredited Professional	1

4	0	0	Regional Priority (earn up to 4 points)		4
1			Credit 1	Regional Priority Credit: SSc4 Rainwater Management	1
1			Credit 2	Regional Priority Credit: LTc3 High Priority Site	1

1			Credit 3	Regional Priority Credit: EAc2 17% (8 points)	1
1			Credit 4	Regional Priority Credit: MRc1 (2 points)	1

79	11	20	TOTALS	Possible Points:	110
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Section IV. LEED Credit Narrative

As detailed below, the Project meets the LEEDv4 Core and Shell Minimum Program Requirements and each of the required Prerequisites. Additionally, the following credits are being targeted.

A. Integrative Process (IP)

IP Credit 1 Integrative Process 1 credit point

The Project has met the intent of this credit through identification of cross discipline opportunities to design a sustainable building project. Sustainable design focused meetings were conducted throughout the design process to assist the team in establishing shared sustainable design and energy / water 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.

The Project has already conducted numerous interdisciplinary early meetings focusing on sustainability. These meetings have included the ownership group, architect, MEP engineer, civil engineer, landscape architect, energy analyst, utility representative, and sustainability expert. Early energy modeling has been performed and is providing real feedback on decision-making. This early work has pushed the design to increase the performance of the envelope and HVAC systems and explore additional opportunities for decreasing water use within the Project.

B. Location and Transportation (LT)

LT Credit 2 Sensitive Land Protection 2 credit points

The Project will meet the credit requirements by being located on land that has been previously developed.

LT Credit 3 High Priority Site 3 credit points

The Project will meet the credit requirements by being located on a site in a U.S. Department of Housing and Urban Development's Difficult Development Area as shown in the map below. An environmental site assessment was performed, and site remediation efforts will be conducted to determine that the site is clean.



LT Credit 4 Surrounding Density and Diverse Uses

6 credit points

The Project will meet Option 1 for Surrounding Density by being located in an area with an average density greater than 35,000 sf/acre of buildable land. The Project will meet Option 2 for Diverse Uses by being located within ½ mile walking distance of at least 8 publicly available diverse uses in at least three separate use categories.

The Project are located within ½ mile of the following 9 diverse uses:

1. Lily P's
2. Bank of America
3. Lechmere Canal Park
4. Church
5. CVS
6. T.J. Maxx
7. B.Good
8. Google

LT Credit 5 Access to Quality Transit (LEEDv4.1)

6 credit points

The Project is located within ½ mile walking distance of the Red Line MBTA at Kendall Square and Green Line at Lechmere station. A shuttle bus service is within a ¼ mile of the building entrance with drop off locations at North Station and Red and Green MBTA lines.

LT Credit 6 Bicycle Facilities (LEEDv4.1)

1 credit point

The project will be using an existing building, 100 Binney St., that is adjacent to the project building to meet the credit requirements of the following:

- At least four long-term (covered) spaces within 300 feet of any functional project entrance.
- At least 4 short-term (exterior) spaces within 200 feet of the main entrance.
- At least one shower that is accessible to all full-time employees.

LT Credit 7 Reduced Parking Footprint (LEEDv4.1)

1 credit point

No new parking will be constructed as a part of the Project. Off-site parking spaces allocated in 50 and 60 Binney St. garage at .9 spaces per 1,000 square feet (15 spaces) will be provided which results in a 76.19% reduction compared to the base ratio (63 spaces). Eligible for Exemplary Performance.

LT Credit 8 Electric Vehicles (LEEDv4.1)

1 "Maybe" point

No new parking will be constructed as a part of the Project. Off-site parking spaces allocated in 50 and 60 Binney St. garage at .9 spaces per 1,000 square feet (15 spaces) will be provided. Based on a 15-space quantity, the project would be required to provide at minimum of 1 EVCS or 2 EVCS-ready spaces. The Owner is still considering whether either of these options will be pursued.

C. Sustainable Sites (SS)

SS Prerequisite 1: Construction Activity Pollution Prevention

Required

The construction manager will be required to submit and implement an appropriate 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 credit point

A comprehensive site assessment will be completed as part of the Project. The site assessment will include topography, hydrology, climate, vegetation, soils, human use, and human health effects and was used to inform the design.

SS Credit 2: Site Development- Protect and Restore (LEEDv4.1)

1 credit point

The Owner will provide financial support equivalent to \$6 per square foot for the total site area to East Cambridge Open Space Trust exceeding the \$0.20 per square feet credit requirements.

SS Credit 3: Open Space (LEEDv4.1)

1 credit point

The landscape design is still being refined but the intent is to provide ample accessible open space that is a mix of pedestrian-oriented and vegetated. As per preliminary calculations, the landscape design is providing 30% of the site area as open space with a minimum of 25% of the open space being vegetated with two or more types of vegetation.

SS Credit 4: Rainwater Management (LEEDv4.1)

3 credit points

The stormwater design is still being refined but the Project must meet or exceed the City requirement of infiltrating the 1.72" storm event, which exceeds the 95th percentile rainfall event (1.55") for the area. LID and GI strategies include a green roof, and subsurface infiltration system.

SS Credit 5 Heat Island Reduction 2 credit points

The roof and non-roof hardscape materials of the Project will include light-colored surfaces to reduce the overall heat island effect impact on the Project site. The new roof membrane on the existing portion of the building will be a high albedo roof product with an initial SRI value of 82 minimum and there will be a green roof on the new addition.

SS Credit 6 Light Pollution Reduction 1 credit point

The Project will meet upright and light trespass requirements by complying with the LEED v4 BUG Rating method. To meet credit requirements, the site lighting will not exceed the LEEDv4 allowable luminaire backlight, upright and glare ratings for Lighting Zone 3. Façade lighting will have automatic shut off between midnight and 6:00 am.

SS Credit 7 Tenant Design and Construction Guidelines 1 credit point

Tenant Design and Construction Guidelines will be developed outlining the sustainable design and energy efficiency measures in the core and shell phases and providing detailed guidance for the office tenants to design and build in alignment with the Project sustainability goals. Information will also be included to assist tenants in pursuing Commercial Interiors LEED certification for their spaces.

D. Water Efficiency (WE)

WE Prerequisite 1 Outdoor Water Use Reduction, 30% Required

Using native/adaptive plant species selection the Project's landscape water requirement (as calculated by the EPA WaterSense Water Budget Tool) will be reduced by at least 30% from the calculated baseline for the site's peak watering month. The landscape design will include softscape areas which will be planted with a diverse palette of materials which are native, adaptive, and low-maintenance.

WE Prerequisite 2 Indoor Water Use Reduction, 20% Reduction Required

Through the specification of low flush and flow and high efficiency plumbing fixtures, The Project will reduce potable water consumption by at least 30% over the baseline calculated for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements.

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 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 – Reduced Irrigation 1 credit point

The Project landscape design will implement strategies for at least a 50% reduction in potable water use for irrigation by selecting native/adaptive and drought tolerant plant species along with water-efficient irrigation technologies.

WE Credit 2 Indoor Water Use Reduction 2 credit points, 1 "Maybe" point

Through the specification of low flow and high efficiency plumbing fixtures, the Project will implement water use reduction strategies that at a minimum result in a 30% reduction in 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. The specified plumbing fixtures will be WaterSense Labeled where applicable and will be specified to be low flush / flow fixtures. Specified fixtures will include 1.28 / 0.9 dual water closets, 0.125 gpf urinals, 1.75 gpm showers, and 0.5 gpm

lavatories. In addition to plumbing fixtures, water consuming appliances will contribute to the project's indoor water consumption. The 41 Linskey project will reduce this impact via selection of efficient appliances holding applicable certifications such as ENERGY STAR qualified dishwashers and icemakers.

A third area of concern related in indoor water consumption is process water used in heat rejection. This category of water use is not relevant to this particular project because design does not incorporate water in heat rejection processes.

WE Credit 4 Water Metering

1 credit point

The total potable water for the building will be continuously tracked and monitored via one permanently installed water meter for the total potable water use for the building and grounds. Readings from the meter can be compiled into monthly and annual summaries which allow building operations staff to evaluate actual water consumption against the anticipated design water consumption, and to identify unexpected peaks in usage.

In addition to the whole building water metering, submetering will also be installed to track water used for irrigation and boiler operation. This metering will achieve goals similar to the whole building metering but will allow system operation to be evaluated on a more granular level.

E. Energy and Atmosphere (EA)

EA Prerequisite 1 Fundamental Commissioning and Verification

Required

The project scope of work will be required to comply with the prerequisite in accordance with ASHRAE Guideline 0-2005 and ASHRAE Guideline 1.1-2007 for HVAC & R systems.

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 Automation System

A commissioning agent has yet to be engaged, however, they will be brought onboard before the end of Design Development.

EA Prerequisite 2 Minimum Energy Performance

Required

To meet the prerequisite, the Project's building performance will demonstrate a minimum of 2% improvement in energy use by cost when compared to a baseline building performance as calculated using the rating method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2010.

Comprehensive, iterative energy modeling is being used to explore design options to provide substantiation for the LEED application. Energy performance goals were established during the Concept Design phase for the Project.

Preliminary energy modeling has been performed based on the building systems currently reflected in the design. The energy model being used to estimate annual energy use for the project has been created using the software program eQuest 3-64. The inputs for the program have been determined based on the anticipated building geometry, materials and systems, occupancy, and building schedules.

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. In addition to installing the meters, the Project will commit to sharing energy usage data with the USGBC for a five-year period beginning on the date each accepts LEED certification or typical occupancy, whichever comes first.

EA Prerequisite 4 Fundamental Refrigerant Management Required

CFC based refrigerants will not be used in the Project's HVAC & R systems.

EA Credit 1 Enhanced Commissioning 4 credit points

In addition to EApr1 Fundamental Commissioning and Verification requirements, Option 1 Path 1 Enhanced Commissioning will be pursued by the Project. The Building Owner will engage a commissioning agent to review the proposed design and verify the building systems meet the Owner's expectations and requirements.

The following commissioning process activities in addition to those required under EA Prerequisite Fundamental Commissioning and Verification will be completed by the commissioning agent, 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.

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

Additionally, the Owner has elected to pursue monitoring-based commissioning and will engage a third party to perform those services prior to the end of Design Development.

EA Credit 2 Optimize Energy Performance 14 credit points, 2 "Maybe" points

Based on early energy modeling, it is expected that the Project will achieve at least a 32% reduction using the EApc95 LEED Pilot Alternative Compliance Path Metric for greenhouse gas emission and source energy savings when compared to the ASHRAE 90.1-2010 LEED baseline. Energy modeling is still ongoing, and the design team is continuing to analyze different energy conservation measures to increase energy savings.

The electrical system will feature an LED based lighting design with dimming controls and occupancy sensors. The mechanical systems are being designed with a packaged dedicated outdoor air handling unit with energy recovery, variable refrigerant flow (VRF) fan coil units (FCU) and outdoor condensers, a few mini split heat pumps, and electric fin tube radiation for perimeter heating. Multiple air-cooled condenser systems consisting of one (1) or two (2) modules will be provided. Each module requires its own power connection. Each air-cooled condenser system will utilize two-pipe refrigerant piping mains that branch to the heat recovery branch circuit controllers. The branch circuit controller allows simultaneous cooling and heating of the indoor evaporator systems by connecting several indoor units to one outdoor unit. Each branch circuit controller requires dedicated power connection and means for condensate removal. Each indoor evaporator unit will have dedicated refrigerant piping

from the branch circuit controller. The spaces will utilize concealed ducted FCUs, low pressure supply and return ductwork to supply diffusers and return grilles. Careful design consideration of the refrigerant piping system must be adhered to for compliance with ASHRAE and LEED Requirements. Each FCU will be equipped with an R410a coil, a fan with an electronically commutated motor (ECM), condensate drain pan with secondary connection, and filter. Refrigerant piping will be distributed horizontally from the associated zone branch control circuit. Electric perimeter baseboard heating is provided for supplemental heating on the extreme cold days.

EA Credit 3 Advanced Energy Metering

1 credit point

A minimum of one meter per energy source per floor is required for compliance. Submeters will be installed capable of metering total tenant energy use.

Base building-level energy meters will be installed to capture and monitor full building energy consumption for all energy sources serving the building. In addition, submetering will be installed to monitor all individual energy end uses that represent 10% or more of the total annual consumption of the building. End uses that constitute more than 10% of the total energy consumption will be identified based on the outputs of the energy model generated under EA p2 & EA c2.

All meters and submeters will be permanently installed and capable of transmitting data to a remote location. The meters will record at intervals of one hour or less, and will be capable of reporting hourly, daily, monthly, and annual energy use. Electricity meters will record both consumption and demand, and whole-building electricity meters will record the power factor. All metered data will be collected via the building automation system which will be remotely accessible and capable of storing data for at least 36 months. This level of metering will allow the building operations team to track energy use over time, compare actual performance against expected performance, identify abnormal peaks in usage and the cause of these peaks, and to develop ongoing strategies for energy conservation.

EA Credit 6 Enhanced Refrigerant Management

1 "Maybe" point

The project will have no CFC-based refrigerants. If possible, the HVAC&R equipment will be designed to have a weighted average refrigerant impact of less than 100, however, this can be difficult with a VRF system due to the high amount of distributed refrigerant. Calculations will be run once equipment has been selected to determine compliance.

EA Credit 7 Green Power and Carbon Offsets

2 credit points

The Owner will purchase Green Power and Carbon Offsets to offset 100% of the predicted annual building energy use for a period of 5 years.

F. Materials and Resources (MR)

MR Prerequisite 1 Storage and Collection of Recyclables

Required

Storage of collected recyclables will be accommodated in a designated recycling area within the building. Recyclable materials collected will include mixed paper, corrugated cardboard, glass, plastics, and metals, and the disposal of batteries and electronic waste. A contracted waste management company will collect the recyclables on a regular basis.

MR Prerequisite 2 Construction and Demolition Waste Management Planning

Required

The Project will meet the requirements of this prerequisite by including a Construction Waste Management section in Division 1 of the project manual. The specification will include direction for the construction manager to submit and implement a compliant waste management plan for the duration of construction. Waste diversion goals for the Project will include at least five materials targeted for diversion.

MR Credit 1 Building Life-Cycle Impact Reduction (LEEDv4.1) 6 credit points
The Project is reusing >75% of the existing building structure (including floor and roof decking) and envelope (the exterior skin and framing, excluding window assemblies and nonstructural roofing materials).

MR Credit 2 BPDO - EPDs (LEEDv4.1) 1 credit point, 1 "Maybe" point
The Project will attempt this credit via Option 1. The technical specifications will include direction for the construction manager and their sub-contractors to provide and submit materials and products Environmental Product Declarations that conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope. The team will work to provide documentation for 10 different permanently installed products sourced from at least 3 different manufacturers.

MR Credit 3 BPDO: Sourcing of Raw Materials (LEEDv4.1) 2 "Maybe" points
. The technical specification will include information for applicable products and materials to meet one of the following extraction criteria (as applicable): Extended producer responsibility, Bio-Based materials, FSC wood, Materials reuse, Recycled Content, and/or regionally extracted and manufactured (within 100 miles of the site). Credit achievement cannot be determined until construction phase.

MR Credit 4 BPDO: Material Ingredients (LEEDv4.1) 1 credit point, 1 "Maybe" point
The Project will attempt this credit via Option 1. The project manual will include the information and direction for the construction manager and their sub-contractors to provide and submit materials and products documentation identifying the chemical make-up. The documentation may be Health Product Declarations, Cradle-to-Cradle or Declare certification. The team will work to provide documentation for 10 different permanently installed products sourced from at least 3 different manufacturers.

Additionally, the project will attempt to procure at least 5 products from 3 manufacturers that have a compliant material ingredient optimization report or action plan to meet Option 2.

MR Credit 5 Construction & Demolition Waste Management 1 credit point, 1 maybe point
The Project will meet the requirements of this credit by including a Construction Waste Management section in Division 1 of the project manual. The specification will include direction for the construction manager to attempt to divert a minimum of 50% of the demolition and construction waste generated on site from area landfills with a target of >75% diversion. The construction waste management plan will include tracking 5 waste streams. Diverted material reported will include at least three different material streams. Demolition waste will be separated on site as part of the strategy to meet this credit.

G. Indoor Environmental Quality (IEQ)

IEQ Prerequisite 1 Minimum IAQ Performance Required
The Project's mechanical systems are designed to exceed the requirements of ASHRAE Standard 62.1-2010 sections 4 through 7. Outdoor airflow monitors are included in the Project.

Air intake flow will be monitored for all mechanically ventilated spaces per the following:

- All Constant Volume (CV) Systems providing outside supply air will be equipped with a current transducer on the supply fan, airflow switch, pressure transducer, or similar device. These monitoring mechanisms will sound an alarm when the system is detected to not be operating as designed.
- Outdoor air will be provided to the building via a dedicated outdoor air system (DOAS) to provide the required ventilation. Outside air will be equipped with a direct outdoor airflow measurement device to measure the outdoor air intake flow. These

monitoring mechanisms will sound an alarm when the outdoor air flow value varies by 15% or more from the outside air setpoint which shall be determined per the ventilation requirements of ASHRAE 62.1-2010 and the IMC. The device will measure the minimum outdoor air intake flow with an accuracy of +/- 10%.

2009/2012/2015 International Mechanical Code			
Table: Required Outdoor Ventilation Air			
Room Type	SF per Person	CFM/ person	CFM SF
Locker/dressing rooms	-	-	-
Conference rooms	20	5	0.06
Office spaces	200	5	0.06
Main entry lobbies	100	5	0.06
Corridors	-	-	0.06
-	-	-	-

IEQ Prerequisite 2 Environmental Tobacco Smoke Control (LEEDv4.1) Required
Smoking will be prohibited in The Project and within 25' of the building. Signage will be posted within 10' of all building entrances to indicate the interior and exterior no-smoking policy.

IEQ Credit 1 Enhanced Indoor Air Quality Strategies 2 credit points
The Project is being designed to incorporate permanent entryway systems, properly enclosed and ventilated chemical use/storage areas, and compliant filtration media (MERV 13+).

Additionally, CO2 monitors will be provided in all densely occupied spaces that are part of the project scope.

To achieve a high level of indoor air quality, the Project design will include the following:

- Installation of CO2 sensors between 3' & 6' above the finish floor in all densely occupied spaces to monitor CO2 concentrations in the breathing zone. The installed sensors will be configured to have an audible or visual indicator, or to alert the building automation system if the sensed CO2 concentration exceeds the setpoint by more than 10%. Appropriate CO2 setpoints will be calculated via the methodology stated in ASHRAE 62.1– 2010, Appendix C.
- 10 foot walk-off systems at all primary points of entry.
- MERV 13 Filtration on all air handling units supplying outdoor air in accordance with ASHRAE Standard 52.2–2007
- Isolation of all areas where hazardous gases or chemicals may be present (e.g. janitorial closets, copying & print areas, etc.) via the following:
 - o Deck-to-deck partitions
 - o Self-closing doors
 - o Direct exhaust with exhaust rates dictated by ASHRAE 62.1–2010 or a minimum of 0.50 cfm per square foot (whichever is greater) to create negative pressure with respect to adjacent spaces when the doors to the room are closed.

IEQ Credit 2 Low Emitting Materials (LEEDv4.1) 2 credit points, 1 maybe point
The Project will attempt this credit through meeting the compliance criteria for the following compliant categories: interior paints and coatings, adhesives and sealants, flooring, insulation, ceilings, and composite wood. Intending to achieve at least 3 categories for 2 points.

IEQ Credit 3 Construction Indoor Air Quality Management Plan

1 credit point

The project manual for the Project will include direction for the construction manager to develop and implement an Indoor Air Quality Management plan in compliance with applicable control measures as stated in the SMACNA IAQ Guidelines for Occupied Buildings under construction 2nd Edition, 2007 ANSI/SMACNA 008-2008 Chapter 3. Additional measures will be implemented to ensure absorptive materials will be protected from moisture damage.

H. Innovation (IN)

INc1 Exemplary Performance: Protect or Restore Habitat (LEEDv4.1)

1 credit point

The Owner will provide financial support equivalent to \$6 per square foot for the total site area to East Cambridge Open Space Trust exceeding the \$0.40 per square feet Exemplary Performance requirements.

INc2 Exemplary Performance: O+M Starter Kit (IPM + Green Cleaning)

1 credit point

The Owner will create and implement a Green Cleaning and Integrated pest management plan to satisfy this credit.

INc3 Innovation: Purchasing - Lamps

1 credit point

The Project will achieve one innovation point by complying with LEED Innovation Credit: Purchasing – Lamps, which requires that the calculated average mercury content for the Project be below 35 picograms of Hg per lumen hour. The Project will be 100% LED.

INc4 Exemplary Performance: Reduced Parking Footprint (LEEDv4.1)

1 credit point

The Project is providing 15 parking spaces resulting in a 76.19% reduction compared to the ITE base ratio (63 spaces) which exceeds the 60% reduction required for Exemplary Performance

INc5 Pilot: Integrative Analysis of Building Materials

1 credit point

The Project will specify, purchase, and install three different permanently installed products that have a documented qualitative analysis of potential health, safety, and environmental impacts of the product over its life cycle. Other potential pilot credits being considered include SSpC75: Clean Construction, MRpC87: Verified Construction & Demolition Recycling Rates; WEpC110: Water Restoration Certificates; and WEpC115: Whole Building Water Use Reduction.

INc6 LEED Accredited Professional

1 credit point

Many members of the team are LEED Accredited Professionals (APs).

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, an additional credit is awarded to the project. LEEDv4 RPCs applicable to the Cambridge area include: LTc3 High Priority Site (2 points), SSc4 Rainwater Management (2 points), WEc2 Indoor Water Use Reduction (4 points), EAc2 Optimize Energy Performance (17%/8 points), EAc5 Renewable Energy Production (3%/2 points), and MRc1 Building Life-Cycle Impact Reduction (2 points).

The Project is currently tracking the following RPCs:

RPc1 SSc4 (2 points)	1 credit point
RPc2 LTc3 (2 points)	1 credit point
RPc3 EAc2 17%	1 credit point
RPc4 MRc1 (2 points)	1 credit point

DIMENSIONAL FORM

Project Address: 41 Linskey Way (Draft)

Application Date: October, 2021

	Existing	Allowed or Required (max/min)	Proposed	Permitted
Lot Area (sq ft)	9,626 SF	2 Acres Min. **	9,626 SF	
Lot Width (ft)		None		
Total Gross Floor Area (sq ft)	See chart on next page.			
Residential Base		N/A	N/A	
Non-Residential Base	12,654 GFA	1,533,200 GFA *	15,360 GFA	
Inclusionary Housing Bonus		N/A		
Total Floor Area Ratio		3.0 Max. *	Will comply	
Residential Base		N/A		
Non-Residential Base		3.0 Max. *		
Inclusionary Housing Bonus		N/A		
Total Dwelling Units	0	N/A	0	
Base Units	0	N/A	0	
Inclusionary Bonus Units	0	N/A	0	
Base Lot Area / Unit (sq ft)	0	N/A	0	
Total Lot Area / Unit (sq ft)	0	N/A	0	
Building Height(s) (ft)	45'-0"	120'-0"	45'-0"	
Front Yard Setback (ft)	N/A	See below ***	Will comply	
Side Yard Setback (ft)	N/A	None		
Side Yard Setback (ft)	N/A	None		
Rear Yard Setback (ft)	N/A	None		
Open Space (% of Lot Area)				
Private Open Space				
Permeable Open Space	0%	15% Min. ****	Will comply	
Other Open Space (Specify)				
Off-Street Parking Spaces		0.9 /1000 GFA	14 spaces	
Long-Term Bicycle Parking		0.22/1000 GFA	4 spaces	
Short-Term Bicycle Parking			*****	
Loading Bays			0	

Use space below and/or attached pages for additional notes:

See next page.

DIMENSIONAL FORM

Project Address: 41 Linskey Way

Application Date: October, 2021

ADDITIONAL NOTES TO DIMENSIONAL FORM:

*	Address	GFA
	225 Binney Street	297,187
	75/125 Binney Street	338,262
	50/60 Binney Street	467,509
	100 Binney Street	364,942

** Per CZO 13.43.2, the lot size requirement applies to the development parcel in which these buildings are contained.

*** Per CZO 13.43.41, on Binney Street: A setback of 10'-0" from the street line.

**** See CZO 13.45 for notes regarding this requirement.

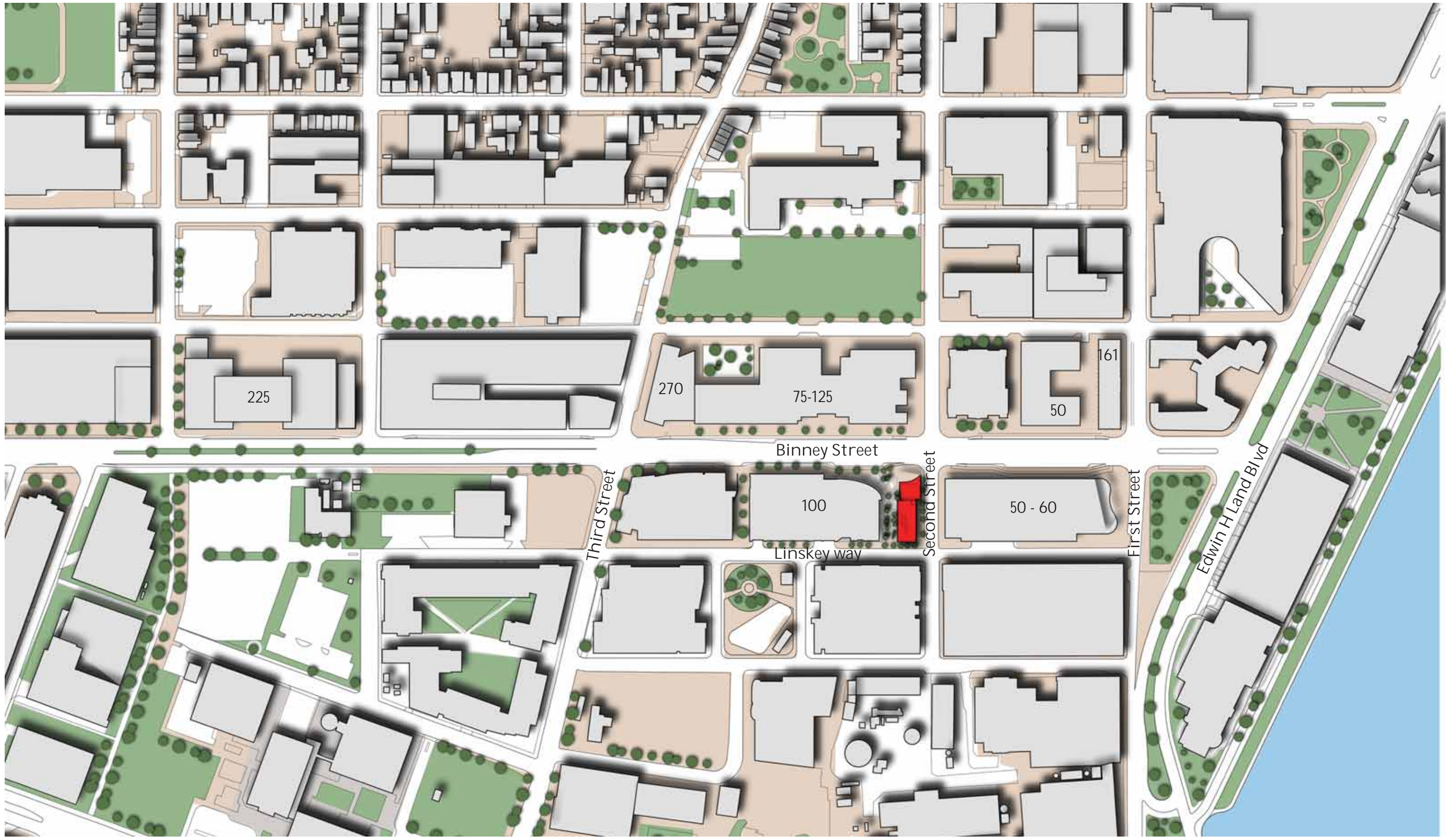
***** Exterior bicycle parking spaces:

100 Binney Street & 41 Linskey Way, 17 bicycle racks (34 bicycle parking spaces)

END

41
LINSKEY WAY
PLANNING BOARD DESIGN REVIEW
Special Permit # 243

October 26 , 2021



October 2021

Site Plan 



Second street



Binney Street



Binney Street



Linskey Way



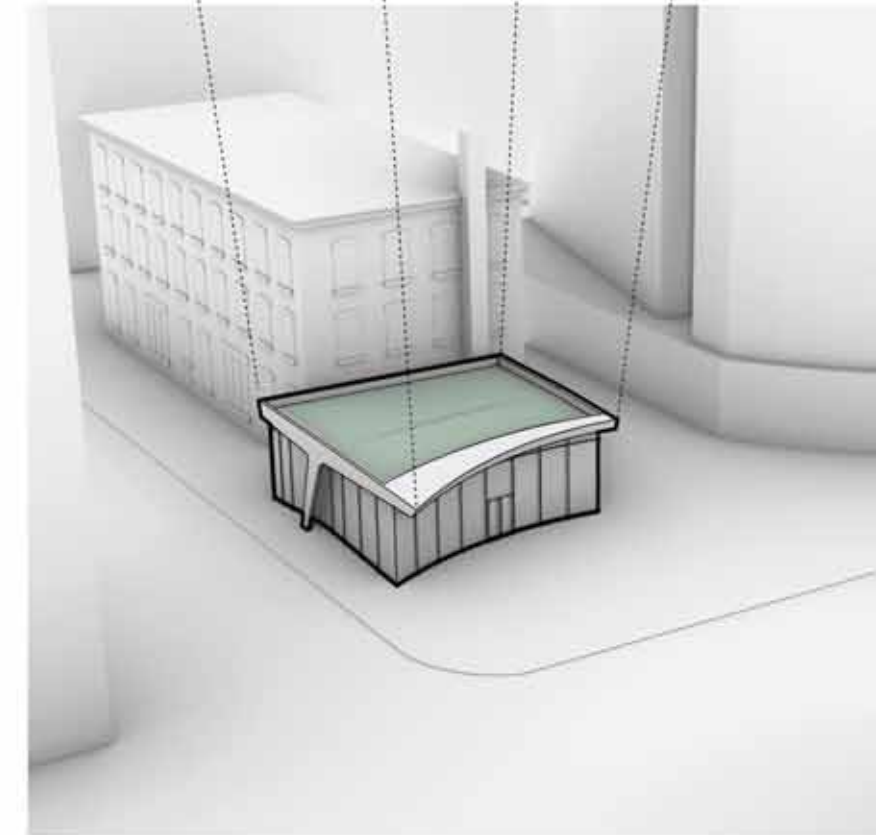
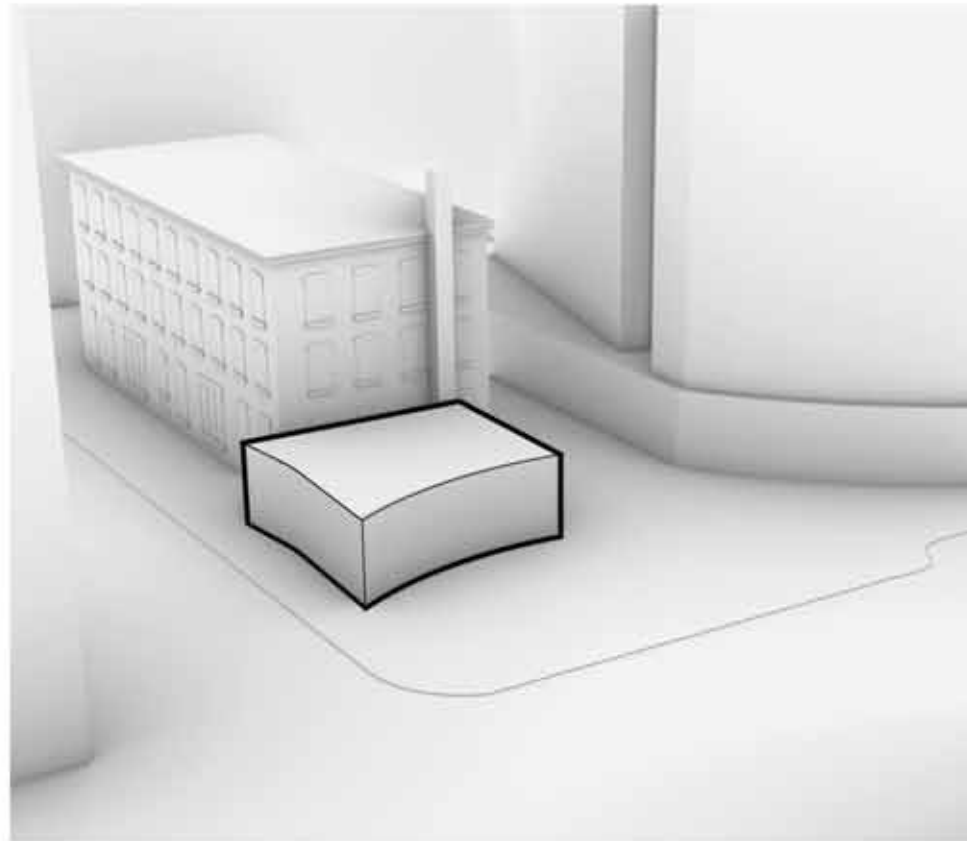
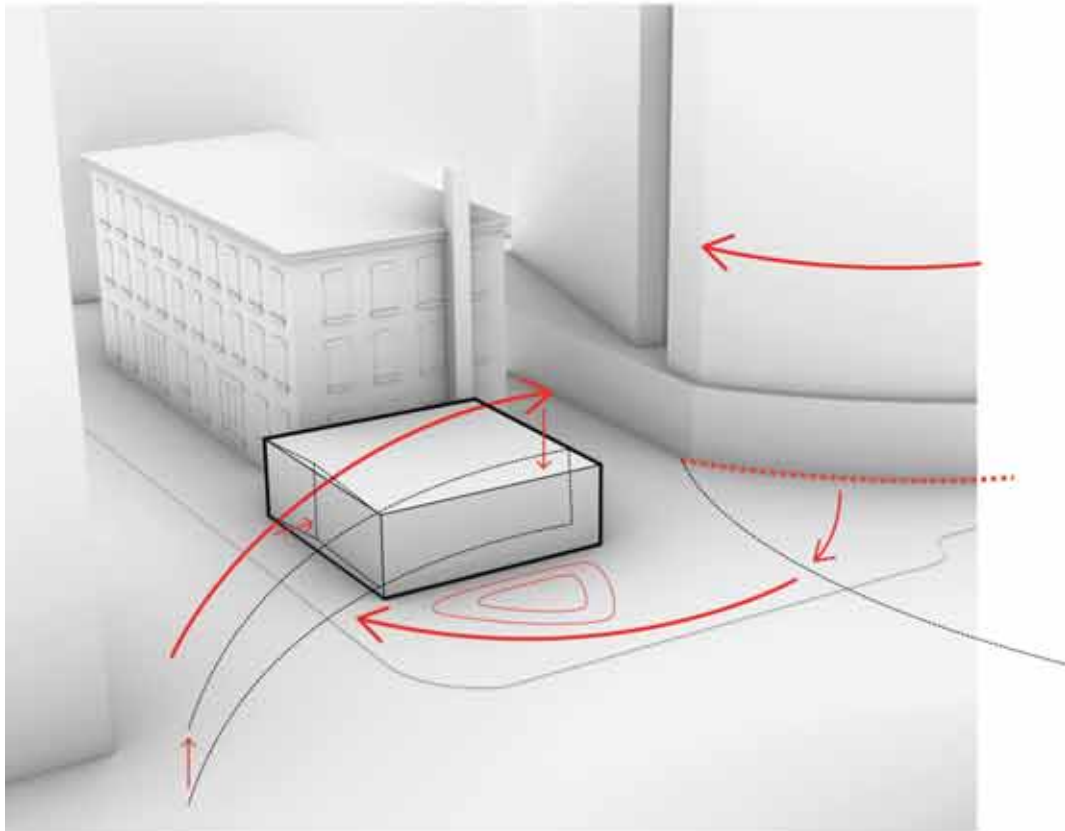
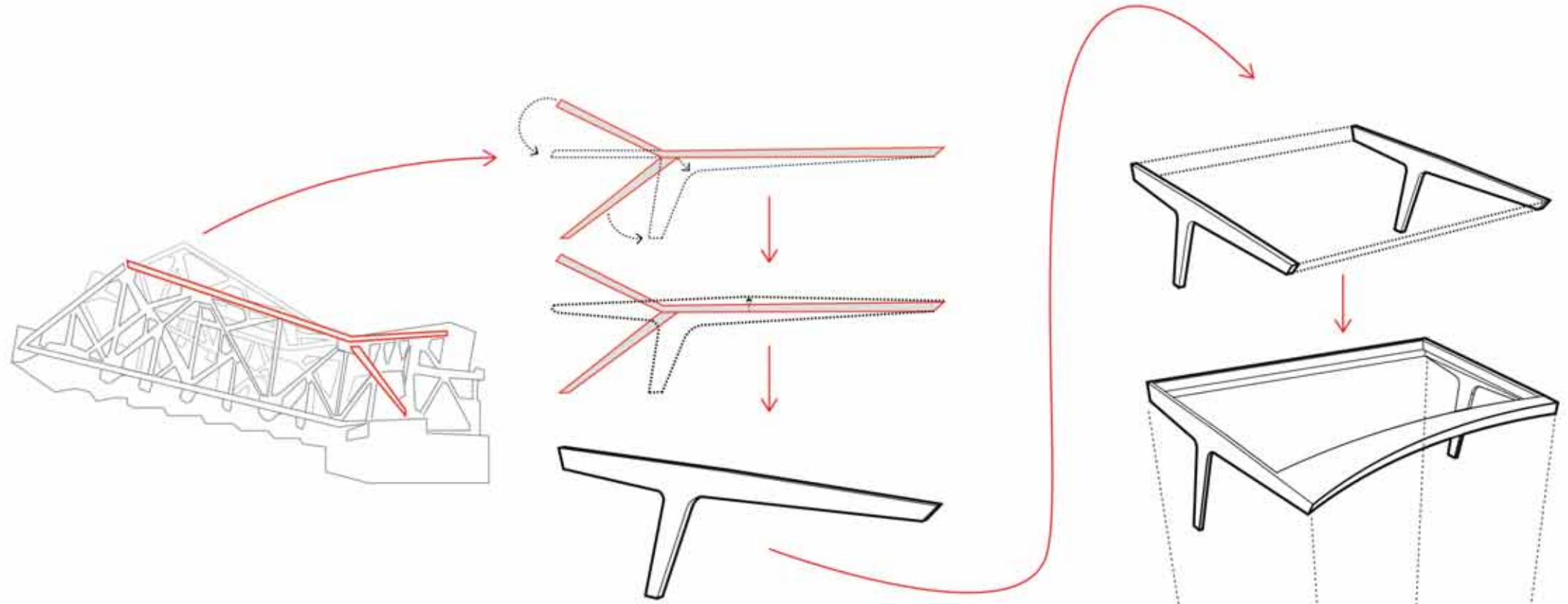
Binney Street

October 2021

SITE PHOTOS



CHARLES RIVER BRIDGE





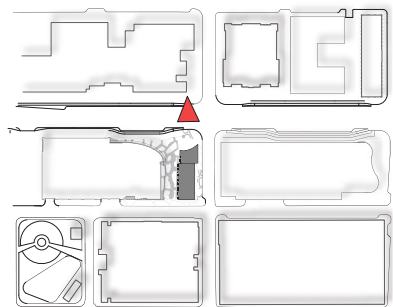
Binney street view

July 2019



Binney street view

October 2021



View comparison - submissions 2019 and 2021



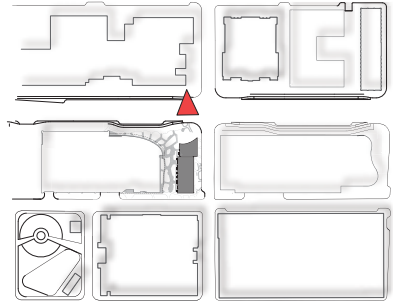
Binney street view

July 2019



Binney street view

October 2021



View comparison - submissions 2019 and 2021



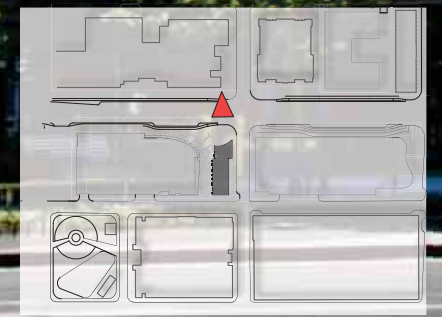
October 2021

Binney Street & Second Street



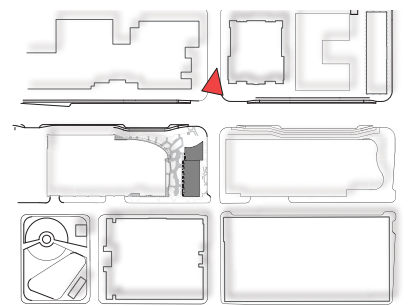
October 2021

Second Street



October 2021

Binney Street



October 2021

Binney Street



October 2021

Model photos



October 2021

Model photos



SECOND STREET

July 2019

North Elevation



SECOND STREET

October 2021



Elevation comparison - submissions 2019 and 2021



July 2019



October 2021



East Elevation

Elevation comparison - submissions 2019 and 2021

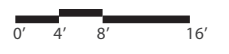


July 2019

North Elevation



October 2021



Elevation comparison - submissions 2019 and 2021



BINNEY STREET
July 2019

COURTYARD

Linskey way



BINNEY STREET
October 2021

COURTYARD

Linskey way

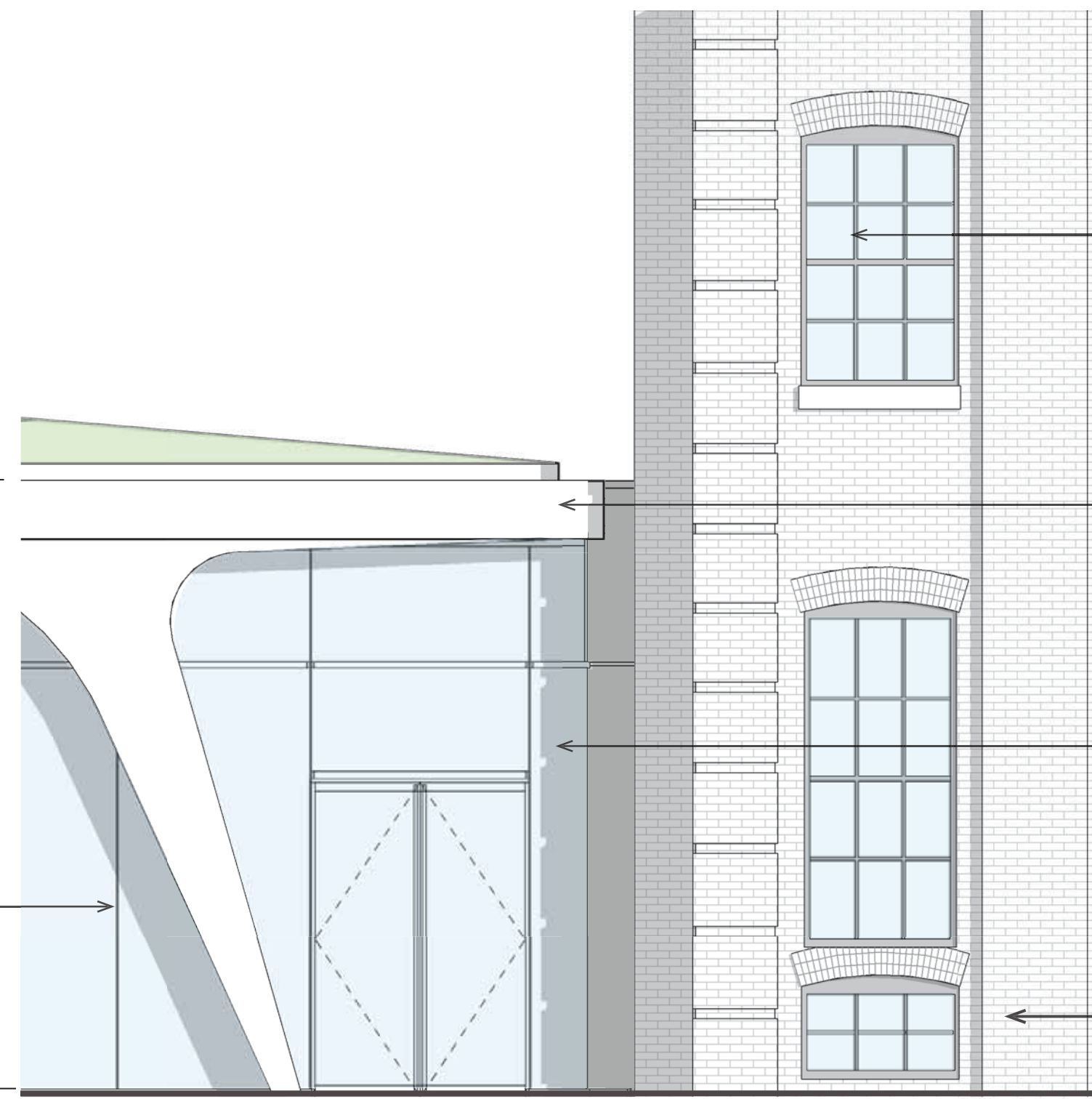




SSG CURTAIN WALL JOINTS

▼ +17'-6"

▼ +0'-0"

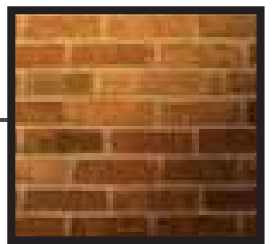


REPLACEMENT WINDOWS
(DOUBLE GLAZED LOW E
COATING GLAZING
ASSEMBLY)



METAL PANEL

VISION GLASS
(TRIPLE GLAZED LOW E
COATING
GLAZING ASSEMBLY)



EXISTING OR RESTORED BRICK

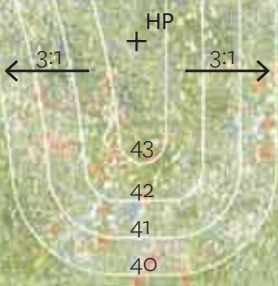
PARTIAL ELEVATION

WINDOW TO WALL RATIO: 36%
R-VALUE OPAQUE WALL: R-25
U-VALUE GLAZING ASSEMBLY U-0.32

Facade materials

SECOND STREET

Green Roof with grass on 3:1 slope

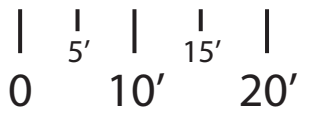


41 LINSKEY WAY

LINSKEY WAY

BINNEY STREET

100 BINNEY STREET



Proposed Landscape Plan - Current

View from 100 Binney



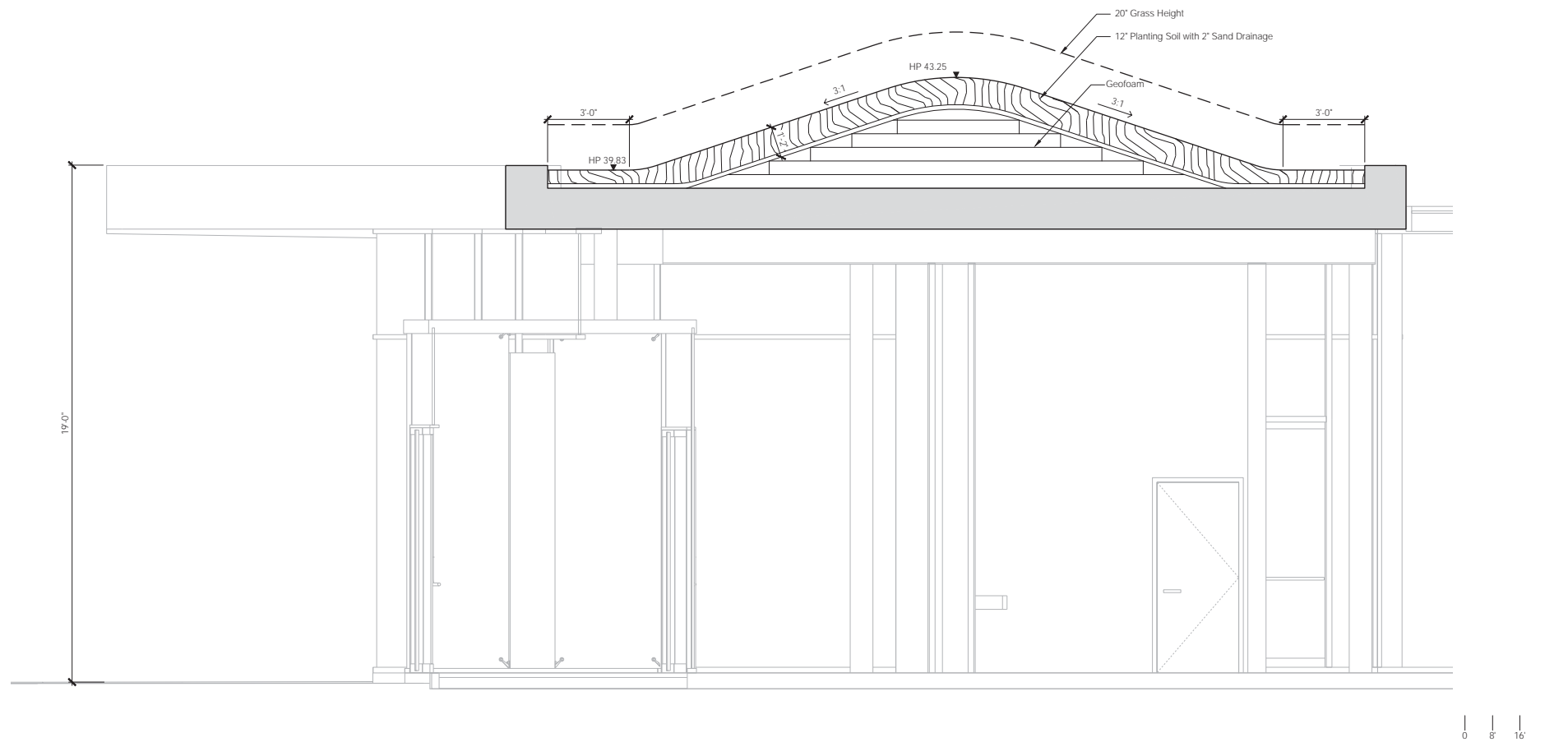
Front View



View from 60 Binney St / Second St



Section



Green Roof - Concept Image



Brooklyn Botanic Garden, NY, Weiss/Manfredi Architects + HM Wilte

Planting Palette (Examples)

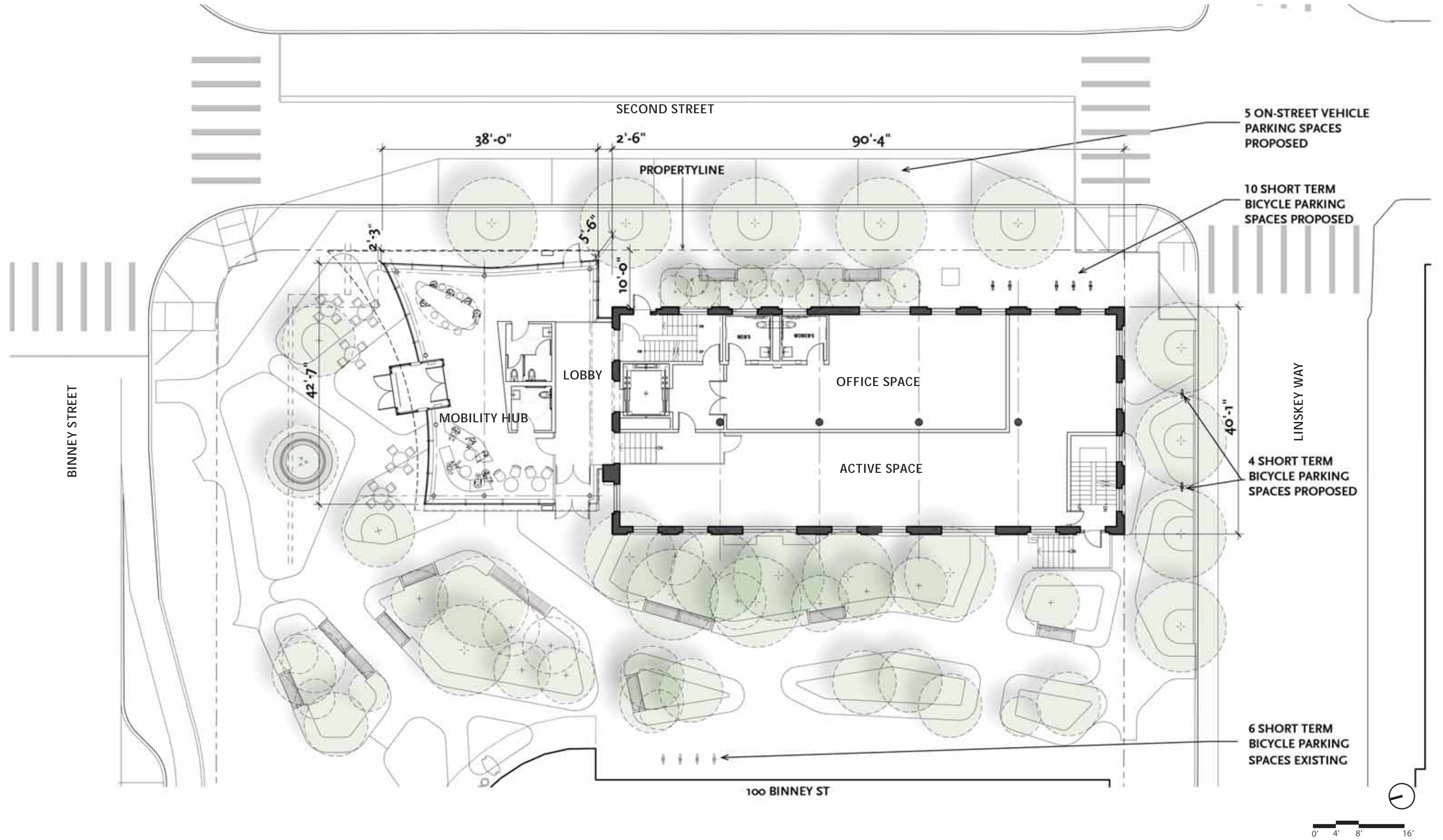


Blue Grama (Bouteloua gracilis) / Little Bluestem (Schizachyrium-scoparium)

41 Linskey Way - Green Roof Visibility Study

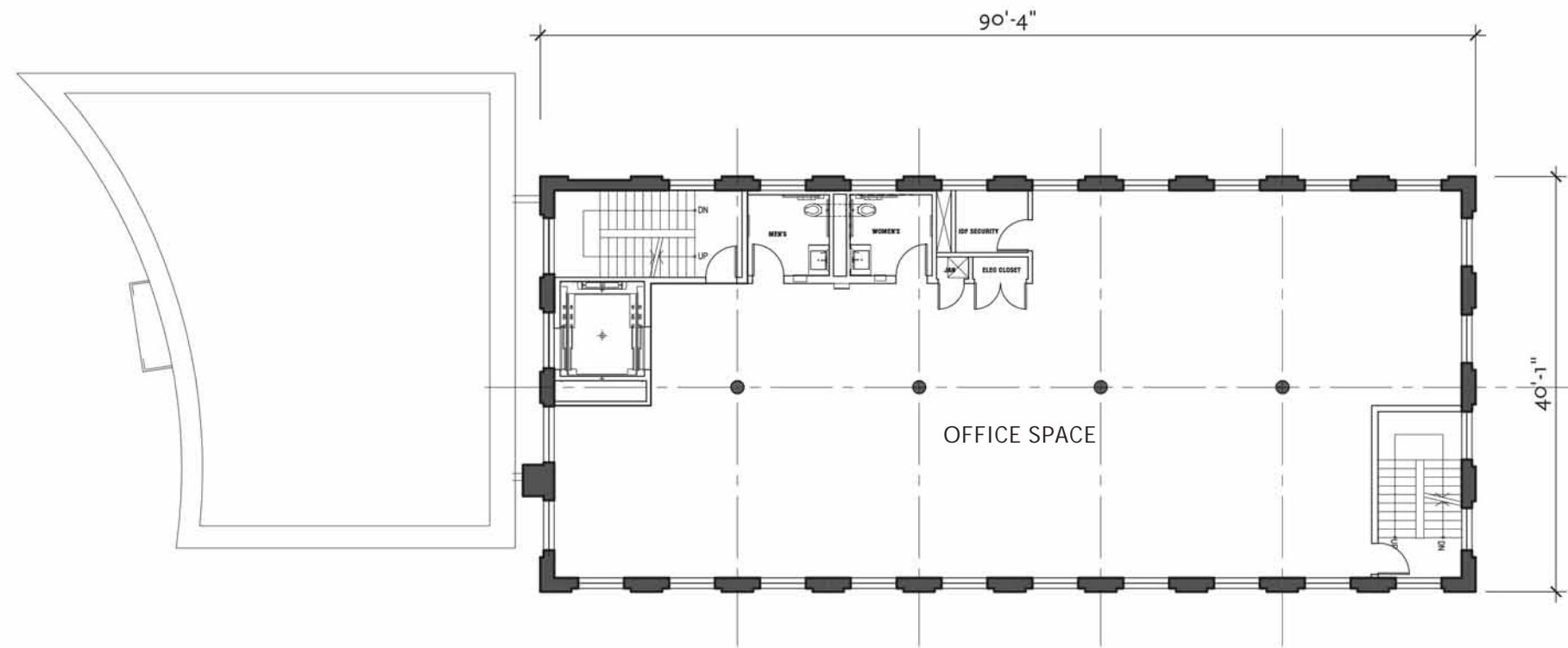
October 2021

Green Roof on the new Addition

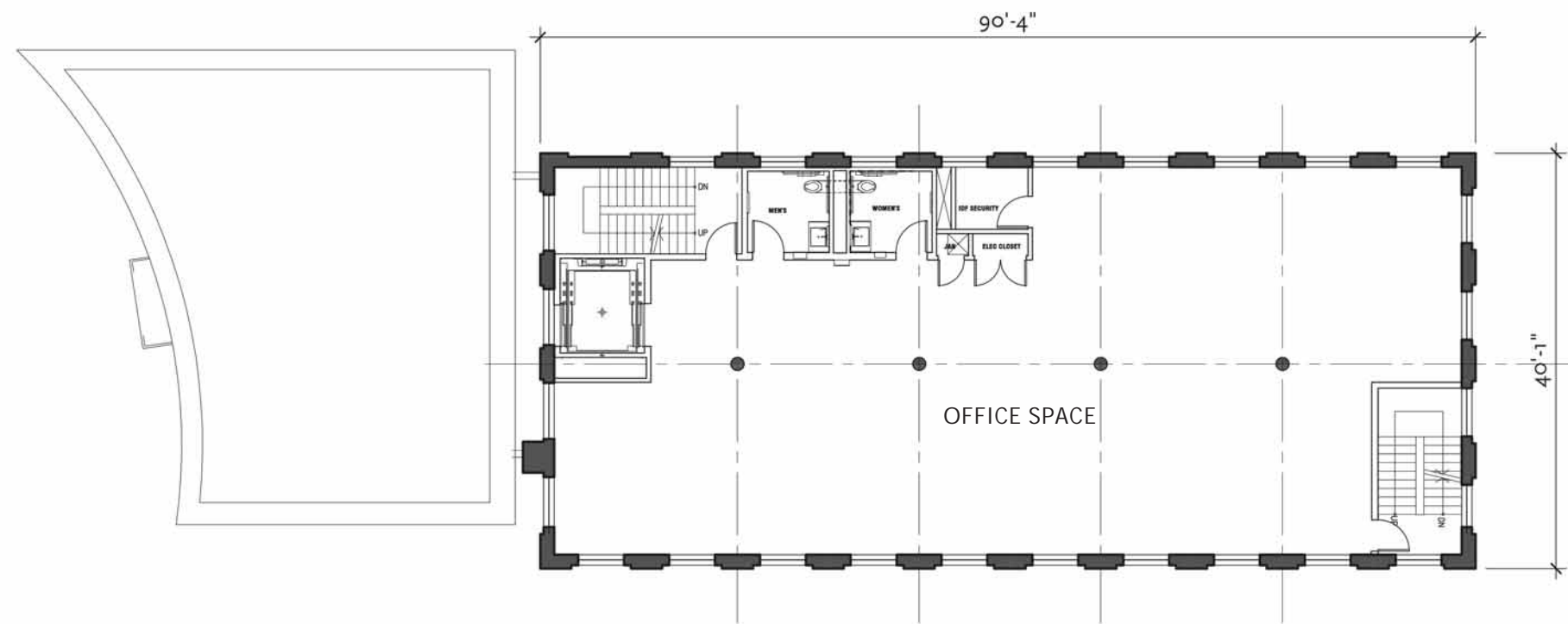


October 2021

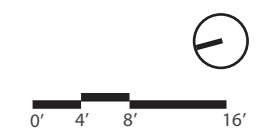
Ground Floor Plan

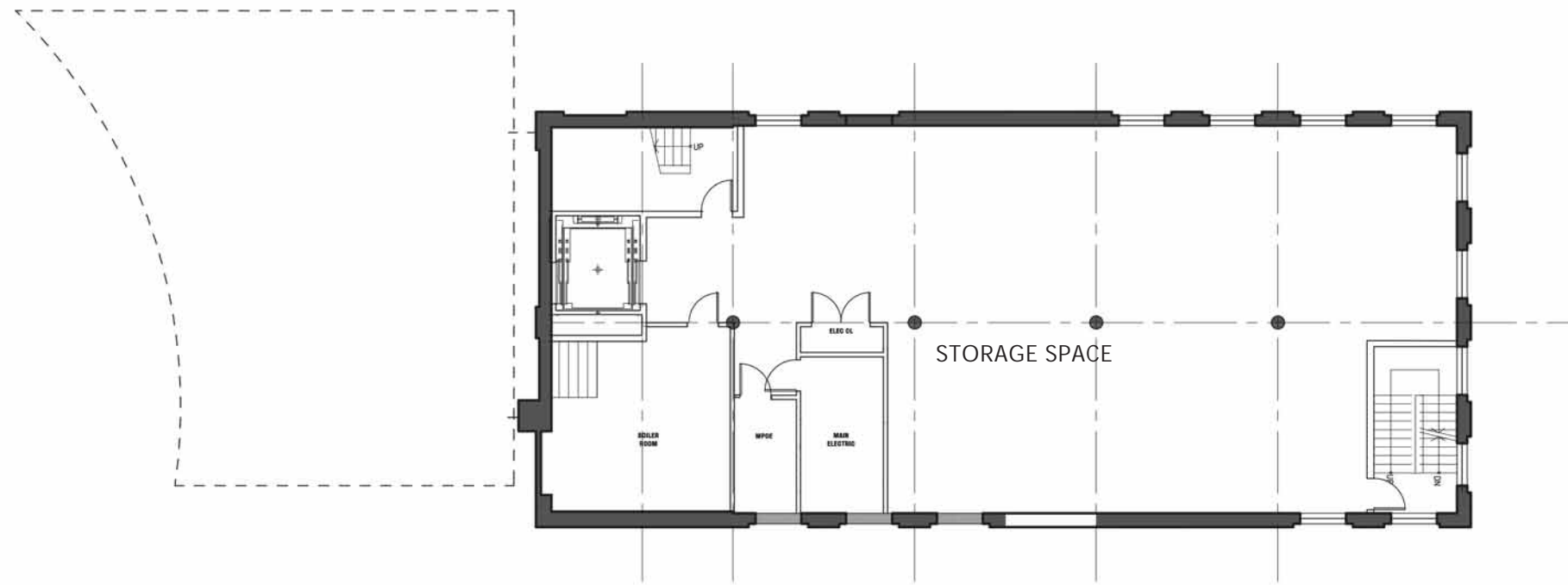


3RD FLOOR

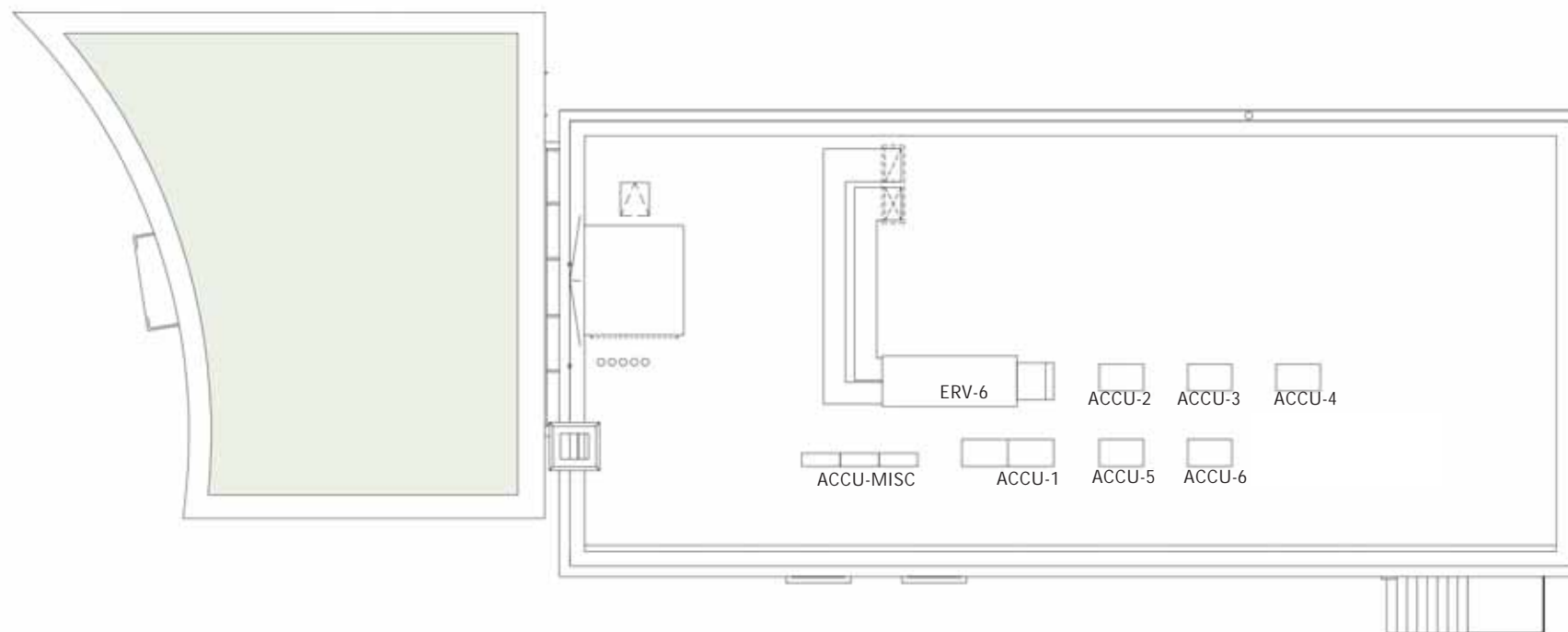


2ND FLOOR

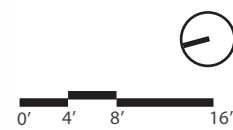




BASEMENT

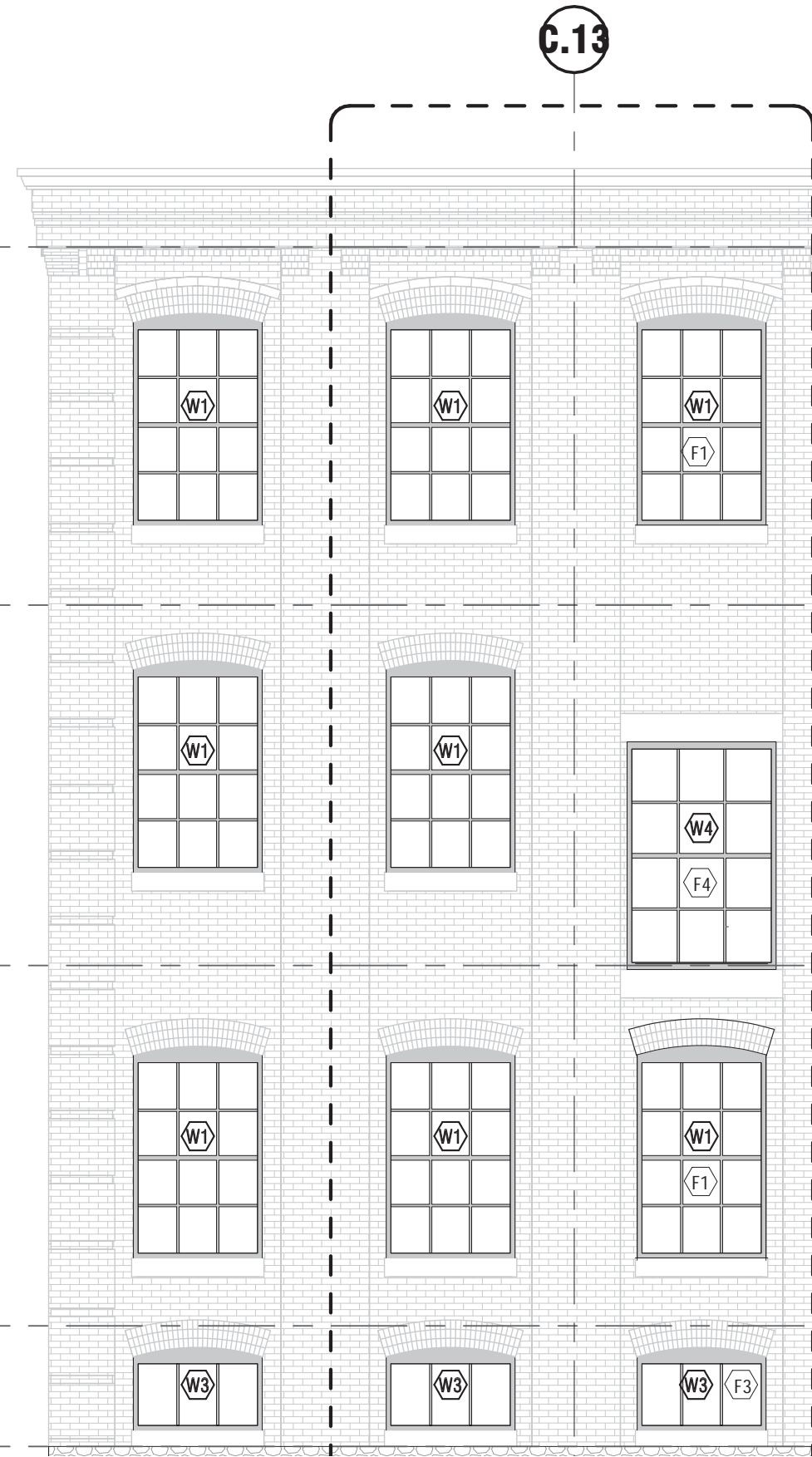


ROOF





Second street

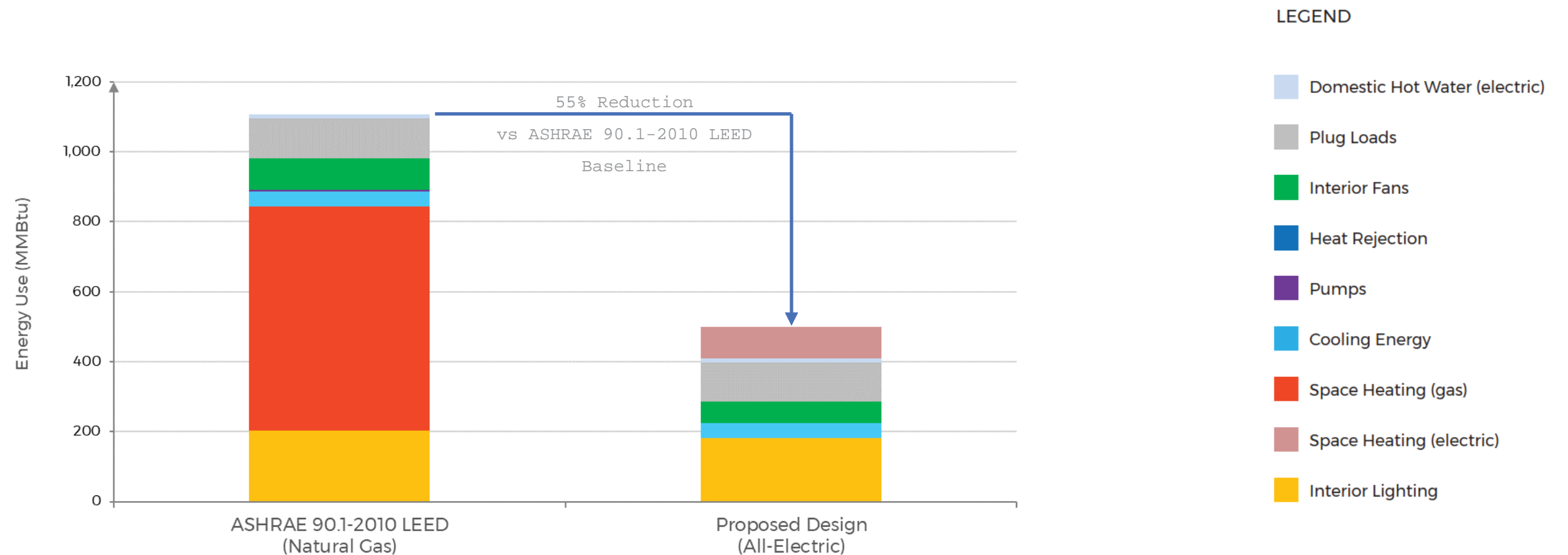


October 2021

WINDOW REPLACEMENTS TYPICAL

Energy Performance Summary

- Energy savings is 55% vs ASHRAE 90.1-2010 Baseline
- Improved building envelope including new double-glazed windows in existing building and triple glazing in new addition
- All-electric building with air-source VRF
- Dedicated Outside Air System with Energy Recovery Wheel





LEED V4 GOLD



DOAS WITH ENTHALPY RECOVERY WHEEL



ALL ELECTRIC VRF SYSTEMS



ENERGY PERFORMANCE (VS. LEEDV4 BASELINE)
55% REDUCTION IN SITE ENERGY USE
15% REDUCTION IN ENERGY COST
41% REDUCTION IN GREENHOUSE GAS EMISSION (USING CURRENT CHG RATES FOR ELECTRICITY)



EMBODIED CARBON
75% REUSE OF EXISTING STRUCTURE AND ENCLOSURE



HIGH PERFORMANCE ENVELOPE
LOW-E CURTAIN WALL ASSEMBLY
R-30 ROOF (EXISTING AND ADDITION)
WWR – 35.9%



BICYCLE STORAGE
14 SHORT-TERM

HEALTHY INTERIOR AIR QUALITY
LOW -EMITTING INTERIOR FINISHES



INDOOR WATER USE REDUCTION
> 30% REDUCTION IN INDOOR WATER



STORM WATER MGMT
ON SITE SUBSURFACE INFILTRATION



GREEN ROOF



41 Linskey Way Landscape Plan - Approved 2019



41 Linskey Way Proposed Landscape Plan - 2021



October 2021

100 Binney Street and 41 Linskey Way Proposed Landscape Plan



Granite Setts Pavement



Exposed Aggregate Concrete Pavement



Concrete Pavement



Decomposed Granite



Trash and Recycling Receptacle



Bike Rack



Metal Bench



Ginkgo biloba
Ginkgo



Gleditsia triacanthos var. inermis
Honey Locust



Amelanchier x grandiflora
Apple Serviceberry



Hydrangea quercifolia
Oakleaf Hydrangea



Buxus microphylla
Boxwood Hedge



Dryopteris Maginalis
Leatherwood Fern



Hemerocallis Joan Senior
Daylily



Hemerocallis Fragrant Returns
Daylily

APPENDIX



October 2021

100 Binney Street and 41 Linskey Way Proposed Landscape Plan