MULTIPURPOSE ACADEMIC BUILDING

WENTWORTH INSTITUTE OF TECHNOLOGY

BOSTON CIVIC DESIGN COMMISSION **BRIEFING PACKAGE**

02/07/2017

PROJECT DESCRIPTION

1. PROJECT TEAM

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2. INTRODUCTION

Wentworth Institute of Technology proposes to construct a Multipurpose Academic Building (MpA) designed to meet the next evolution in the collegiate study of several engineering disciplines. It will provide modern academic space for Wentworth's existing student body and will enhance the campus experience in a new "state-of-the-art" building.

The new four-story building, approximately 64 feet in height and approximately 69,000 gross square feet, will contain laboratories, group meeting space, offices, and support/storage space on upper floors, and a first-floor maker space, manufacturing, and gathering space intended to invite the campus population to experience first-hand Wentworth's engineering capabilities and teachings. The MpA Building will accommodate Wentworth's transition from providing engineering technology programs to engineering and innovation programs, such as a new biological engineering program. This transition requires new and different teaching and learning spaces and configurations that will promote more collaboration and interdisciplinary approaches to the curriculum. The Project, which is a response to the evolution of engineering education at Wentworth, is intended to meet the needs of the existing student body, and is not driven by, or expected to result in, a measurable increase in enrollment.

The Project will be located at the center of the Wentworth campus on the eastern edge of the Academic Quadrangle situated between Watson Hall and the Nelson Recreation Center on Parker Street, across from the Annex Complex. The Site is approximately 0.8 acres (33,268 square feet) and currently contains three existing outdoor tennis courts.

An Expanded Project Notification has been submitted by Wentworth Institute of Technology in accordance with Article 80B of the Boston Zoning Code. The purpose of the filing is to commence Large Project Review under Article 80B and to attest to the project's consistency with a proposed amendment to Wentworth's current Institutional Master Plan as described in the companion Institutional Master Plan Notification Form to be approved by the Boston Planning & Redevelopment Agency and the Boston Zoning Commission.
Engaging public outreach has always been a central tenet of Wentworth's planning and project development process. Wentworth is committed to continuing that outreach with the BPDA/Wentworth Community Task Force which includes representatives from nearby institutional, community, and civic organizations. In addition to the neighborhood input provided by the Task Force, the Article 80 Large Project Review process provides opportunity for further public review and comment on the Project.

3. EXISTING SITE AND CONTEXT

The Project will be located at the center of the Wentworth campus on the eastern edge of the Quad. The Project will be constructed on a site comprised of approximately 0.8 acres, and directly abuts Watson Hall, the Nelson Recreation Center, and the Quad, and also fronts on Parker Street, across from the Annex Complex. Wentworth owns the Site, which is presently comprised of three tennis courts, a paved area and open-air bicycle racks. The Project will be sited to take advantage of the recently constructed Wentworth pedestrian path (the "Pike"), which connects the Annex Complex to the Wentworth Campus, and to form the fourth built edge to the Quad.

The site on the Wentworth Campus is in an urban setting with various density and building heights ranging from high-rises and large institutional buildings along Huntington Avenue to smaller, residential buildings in the Mission Hill and Fenway neighborhoods. Within the Wentworth Campus, immediately adjacent to the Site, there are mid-scale academic buildings ranging from three stories to four stories in height. Building materials of the adjacent buildings range from the light colored brick features of the earliest Wentworth Campus buildings dating from the early 1900s, to concrete and precast concrete structures on the west side of Parker Street built during the late 1960s. Red-brick buildings are located across Parker Street in the immediate Site locus. Parker Street is an important spine that connects the Wentworth Campus to the city of Boston and the adjacent Mission Hill and Fenway neighborhoods.

4. BUILDING PROGRAM

As a result of curriculum changes at Wentworth, a need has been identified for a single academic building to house a number of interrelated disciplines, including the new biological engineering program. The programming of the new building is intended to meet the requirements of the various and evolving engineering disciplines both through the more open physical layout of the learning and collaboration spaces, and also with the ground floor gathering and presentation spaces. The program defines space for larger state-of-the-art equipment and technology within the lab spaces. The more open collaboration spaces will be able to physically accommodate mixed project teams comprised of, for example, architecture, civil engineering, structural engineering, and construction management students. These teams will work together in an interdisciplinary manner much the way they will in their future professional roles. Wentworth's current, generally compact, classroom set-ups and spread of disciplines among multiple buildings does not provide or foster the type of interdisciplinary collaboration the MpA Building will provide. In addition, the new larger lab spaces in the MpA Building will allow current students to expand their learning experiences beyond the curriculum that Wentworth is presently able to offer in its smaller and more traditional academic buildings.

The Project program is comprised of open collaboration spaces, teaching laboratories and support spaces, project rooms, maker-spaces for Civil Engineering, Biological Engineering, Biomedical Engineering, Mechanical Engineering, and EPIC/Accelerate Programs, and offices and conference rooms to support these programs.

Level	Uses	Floor Area	Gross Floor Area[1]
Basement	Mechanical, Storage	5,000	N/A
Ground Floor	Lobby, Maker Spaces and Shops, Project Rooms, Offices	16,460	16,460
Second Floor	Offices, Conference Rooms, Study Lounges, Labs, Lab Support	17,283	17,283
Third Floor	Offices, Conference Rooms, Study Lounges, Labs, Lab Support	17,763	17,763
Fourth Floor	Offices, Conference Rooms, Study Lounges, Labs, Lab Support, Future Growth Space	17,494	17,494
Roof Area	Mechanical Penthouse	3,012	N/A
Total		**77,012**	**69,000**

5. URBAN AND ARCHITECTURAL DESIGN GOALS

The following elements are important in fulfilling Wentworth' s aspirations for the new academic building as well as enhancing and strengthening the public realm.

Scale
The height, massing, and positioning of the new building should be consistent with existing buildings along Parker Street and with the Quad.

Define the Street and Quad
The position and alignment of the new building should provide a generous street side public plaza and Quad side definition of the main campus space.

Gateway
Strengthen the Pike to connect the campus across Parker Street. Create a campus gateway with entries on Parker and the Quad adjacent to the Pike. Enhance site porosity with a secondary passage between the building and Watson.

Showcase
Express the forward looking vision for the building' s program. Create a transparent and inviting ground floor with activities open to the campus and community. Open the upper laboratories to Parker Street and the Quad to put science and engineering on display.

6. BUILDING MASSING AND ORGANIZATION

The building massing fits into the Wentworth four story scale and height. This matches the main buildings facing the quad – Wentworth, Dodd and Williston Halls as well as the student Center, Beatty Hall. This creates a uniformly scaled and more formal central quad for the campus. The building is set back from the street a minimum of 35 feet, slightly further than its neighbors, appropriate for the gateway to the Pike. The south is a tree lined 32 feet at the tightest point and the north path adjacent to Watson Hall is 28 feet wide.

The first floor is the showcase for the neighborhood and the Institute – a series of open glazed spaces including a multipurpose entry, lecture and gallery area, a manufacturing lab and an ideation space called Accelerate. A seating tier is integrated with the stair as it ascends to the second floor. This can be used for seating for lectures or informal gathering. The upper three floors, all similar in organization, are offices on the south façade and labs facing east and west. Part of the top floor is shell space for future growth. This organization forms a "C" around the building core of circulation, building support and lab prep areas.

7. BUILDING MATERIALS AND SUSTAINABILITY

As a showcase of activity at the Institute, this building is as open as possible, with glass facades under a cantilever of the second floor. The upper 3 floors, the east and west facades that house the labs are enclosed in curtain wall with vertical sun shading elements that shade the sun and provide scale to the façade. The mechanical systems are sized to incorporate the energy reducing effect of these vertical sunshades.

A light perforated metal veil covers the south and north facades that unites the building masses and provides some shading on the south facing offices. The veil pulls away from the building to further shade and reduce glare at the heavily used public entry and gallery. It billows out to cover the north facing study areas. Despite the openness of the building facades, the building is roughly 44% glass, 56% solid wall.

The site grading raises the building finished floor approximately one foot above the public sidewalk level, helping to protect the building from water inundation during extreme events.

8. LANDSCAPE

The design of the landscape and streetscape for the MpA Building is intended to improve and enhance the overall experience and character of the Wentworth campus while facilitating student activity and programming.

The public realm planned to surround the MpA Building will be designed to improve student movement and extend the indoor building program on all four sides. The landscape will provide informal gathering areas to foster interaction and collaboration between students, faculty and staff members.

Circulation into the MpA Building and around it will be greatly enhanced with widened walkway areas. Along Parker Street, the open circulation space will be expanded and will become a welcoming entry to the building as well as a gathering area partially sheltered by a 10 foot overhang. The "pocket plaza" will include planting of small trees and groundcover as well as sculptural seatwalls responding to the angular movements of the building's "veil". Planting and seating benches have been located strategically to achieve MAAB compliant movement to the building's entries and social spaces. All improvements will be on Wentworth property; the existing City of Boston sidewalk will be maintained.

The walkway along the south side of the building - the Pike - has been kept relatively open for easy movement and clear visibility into and out of the building. In contrast, the western edge of the Pike has been enhanced with additional green space, tree planting, and seating, thus increasing the tree canopy and providing for moments of pause.

The area between the MpA Building and Watson Hall will provide a new pedestrian connection from Parker Street to the Quad, as well as opportunities for outdoor work space. This area has been designed with a simple planting of trees in tree grates, keeping it intentionally open for flexible movement and outdoor work and display space.

To the west the MpA building opens up to the green Quad. This location is anticipated to be one of casual outdoor gathering as well as a place for special activities such as outdoor dining events. Seating is provided through both fixed sculptural seating and moveable tables and chairs.

New tree planting throughout will enhance the urban tree canopy, providing shade in the summer and seasonal interest without inhibiting pedestrian movement. Paving material will be a combination of porous pavers and cast in place concrete. Custom seating will be constructed with precast concrete and durable wood elements.

Many of the landscape initiatives will enhance the site sustainability and resiliency of the project. The current site is a tennis court that is entirely impermeable at the same level as the sidewalk. The landscape surfaces will be primarily permeable to help with storm water management. Because the site is located within the Groundwater Conservation Overlay District, a subsurface water recharge system will be included as well as filtration for phosphate. The project will also increase the net tree canopy over time. Currently there are 5 shade trees on the site that will be removed due to construction, several of them mature. The new design will replace these trees with approximately 10 new shade trees as well as several flowering understory trees and increased groundcover. Planting will be selected to be low maintenance, low water intensive, and primarily native or adapted.

The landscape associated with the MpA building will expand circulation, create new gathering areas, and add tree planting and specialty seating. The resultant design will build upon current campus qualities, such as the Pike and the Quad, while improving connections and pedestrian circulation, as well as provide outdoor social and learning opportunities.

9. PARKING AND ACCESS

The Project does not require additional parking spaces and will not create an increased demand for parking. No new loading docks are required for service deliveries. Users of the MpA Building are expected to use the currently available existing modes of transportation. Pedestrian access into the MpA Building will be through two main entries located adjacent to the Pike, one facing Parker Street and one facing the Quad. Deliveries for the MpA Building purposes will arrive at a central shipping/receiving location on campus, and will then be sent to the MpA Building entrance that faces Watson Hall. Supplemental access through the building will be provided at other entrances. The MpA Building will utilize the existing driveway in the East Lot on the north side of Watson Hall.

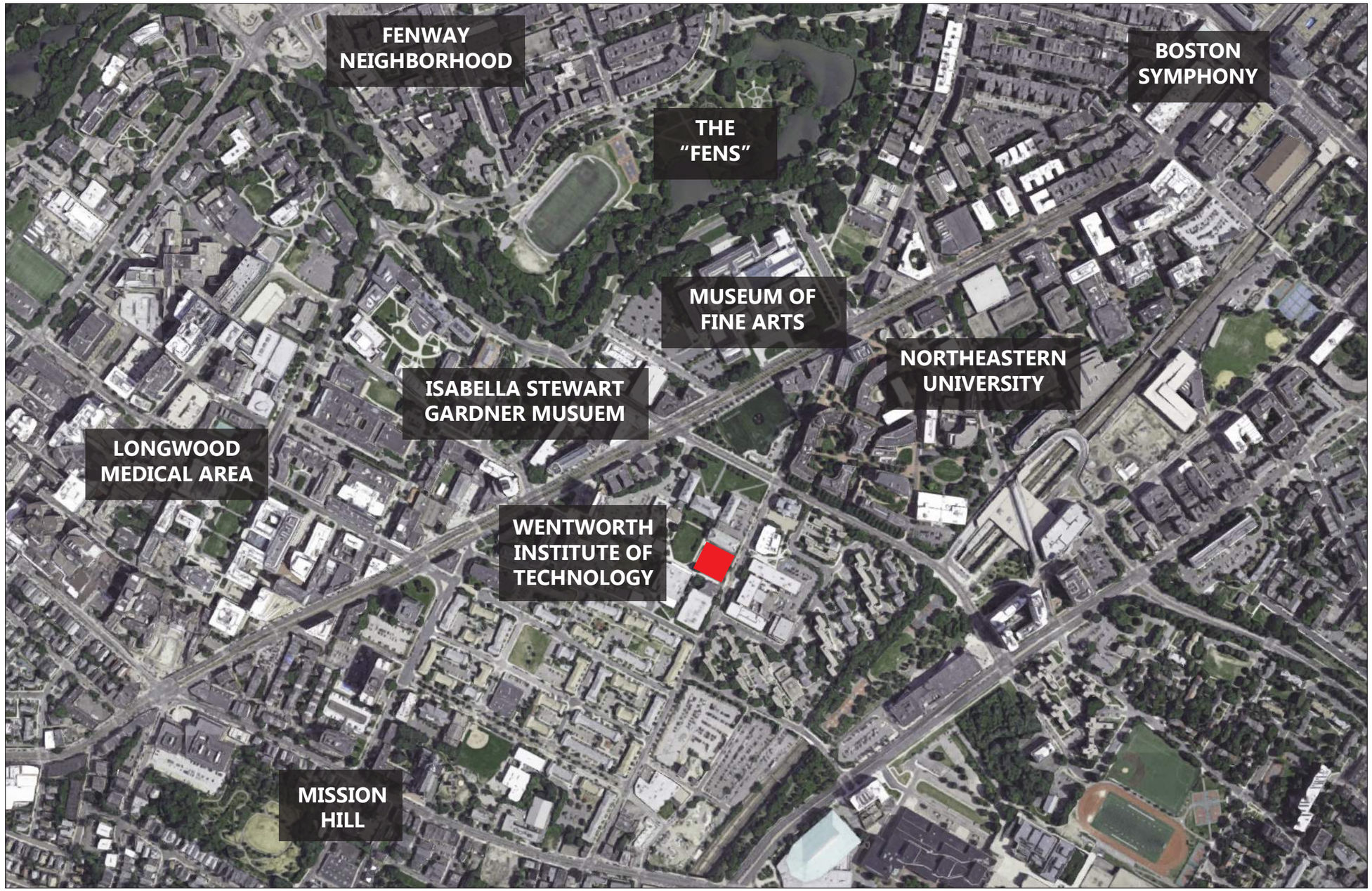
10. CONSISTENCY WITH ZONING REGULATIONS AND ORDINANCES

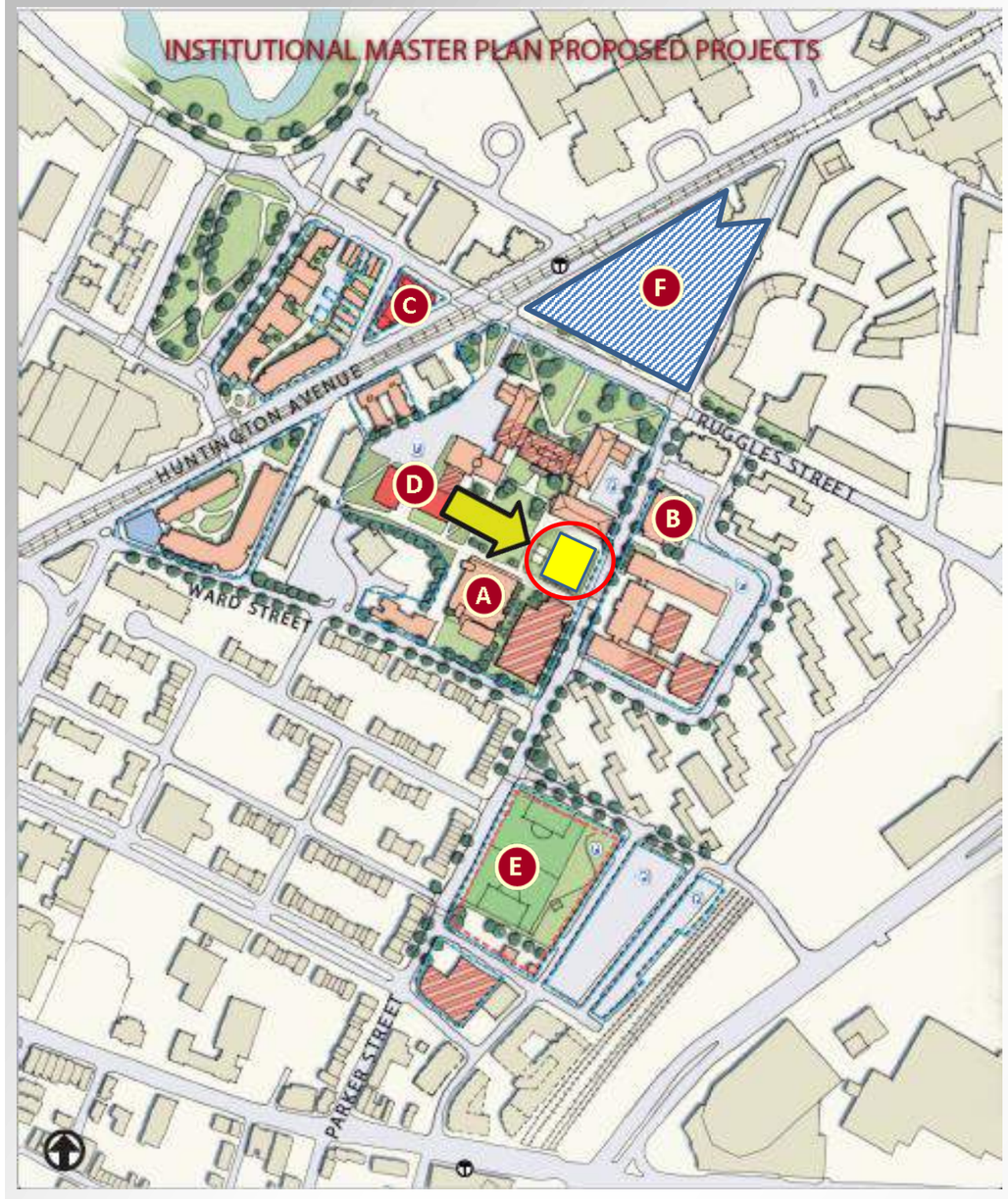
The Site is located in the Wentworth Institute of Technology Institutional Subdistrict within the Mission Hill Neighborhood District. The Site is located within Wentworth' s Institutional Master Plan Area and the Groundwater Conservation Overlay District.

According to Section 59-26, any Proposed Institutional Project for the erection of any structure that is to be used or occupied for an Institutional Use shall be consistent with an approved Institutional Master Plan, subject to certain exemptions not applicable to the Project. Wentworth is filing concurrently with its PNF an IMPNF to amend its IMP for approval by the BPDA and the Zoning Commission. Under Section 80D-11 of the Zoning Code, after the Project receives from BPDA a certification of consistency with the amended IMP and a certification of compliance with Article 80B' s Large Project Review requirements, the Project is deemed to be in compliance with the use, dimensional, parking, and loading requirements of the underlying zoning, including special purpose overlay districts established under Section 3-1A of the Zoning Code, notwithstanding any provision of the underlying zoning to the contrary and without the requirement for further zoning relief.

11. COMPLIANCE WITH THE INSTITUTIONAL MASTER PLAN

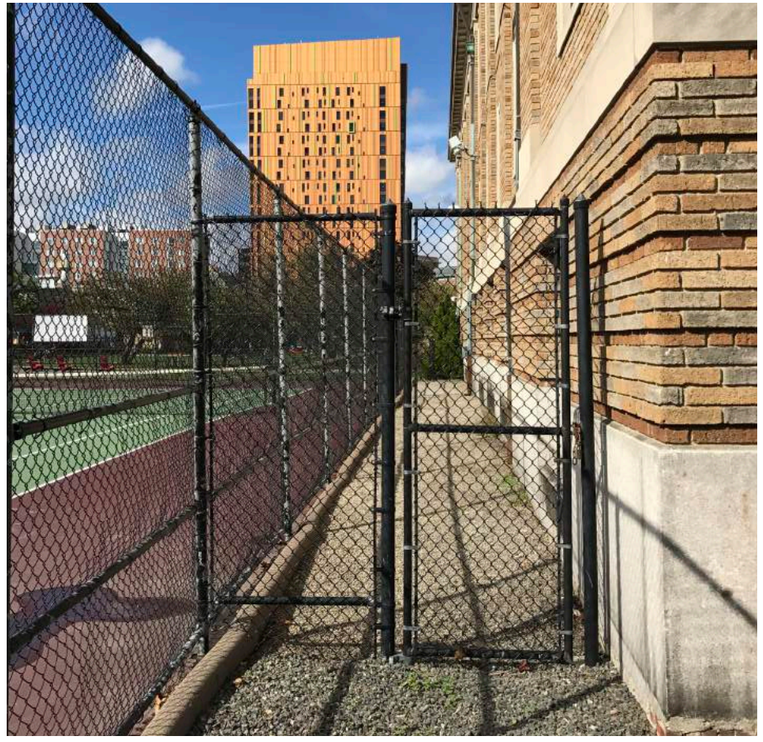
The Project is a modification and relocation of a project described in the IMP as a new 45,000 sf academic facility to be located at the site of Willson Hall and a portion of the West Lot. As a result of curriculum changes at Wentworth, a need has been identified for a single academic building to house a number of disciplines, including the new biological engineering program. In order to meet the needs of its students and faculty, Wentworth developed a plan to locate the MpA Building in an area of the campus that is currently undeveloped in order to maintain the academic space in Kingman and Willson Halls and to accommodate a number of engineering disciplines in one contained location. The Project represents a net increase of approximately 24,000 gsf of academic space over the project described in the IMP. This modest increase in gsf and the change in location requires an amendment to the IMP.

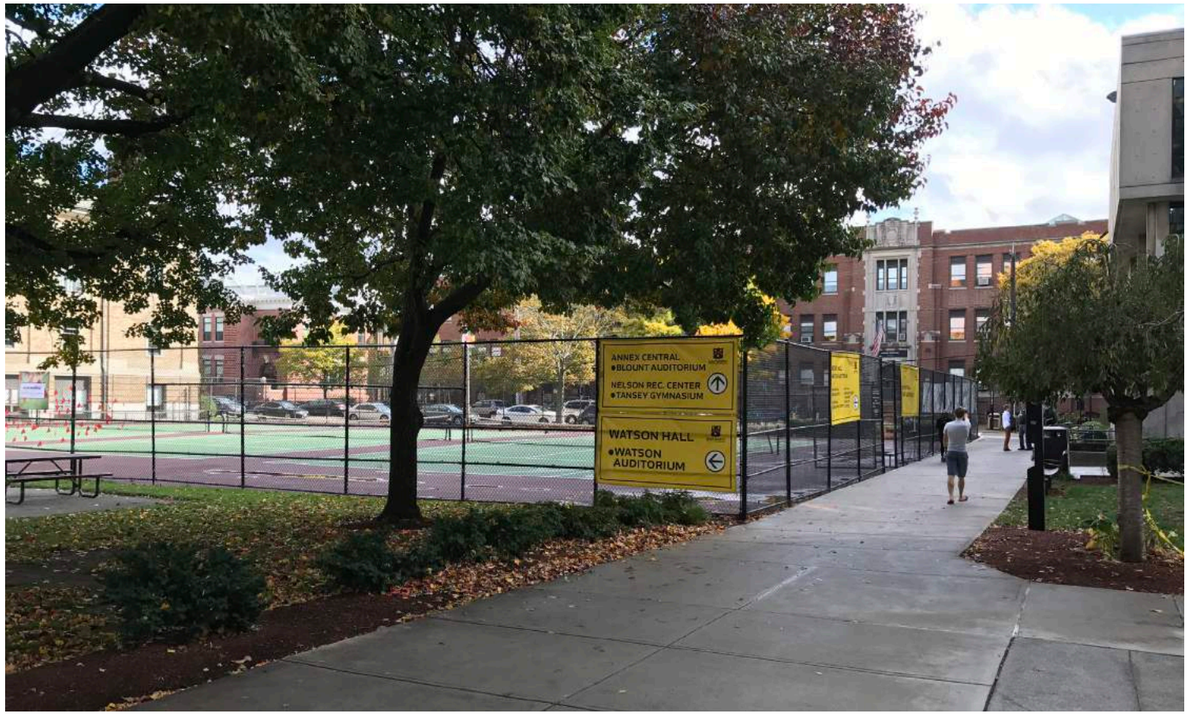

FENWAY NEIGHBORHOOD
BOSTON SYMPHONY
THE "FENS"
MUSEUM OF FINE ARTS
NORTHEASTERN UNIVERSITY
ISABELLA STEWART GARDNER MUSUEM
LONGWOOD MEDICAL AREA
WENTWORTH INSTITUTE OF TECHNOLOGY
MISSION HILL



- A Flanagan Campus Center
- B Center for Sciences & Biomedical Engineering (formerly Ira Allen)
- C Student Apartments @ 525 Huntington Ave
- D Center for Engineering & Technology
- E New Sweeney Field with Parking Below
- F Potential Future Project (500 Huntington Avenue)
- Existing Campus Buildings
- IMP Proposed Future Projects
- IMP Proposed Future Project
- Potential Future Residence Hall
- Planned Renovation
- Property Boundary
- Potential Future Development
- Proposed Multipurpose Academic Building


WENTWORTH
WELCOME TO WENTWORTH




ANNEX CENTRAL
•BLOUNT AUDITORIUM
NELSON REC. CENTER
•TANSEY GYMNASIUM
WATSON HALL
•WATSON AUDITORIUM

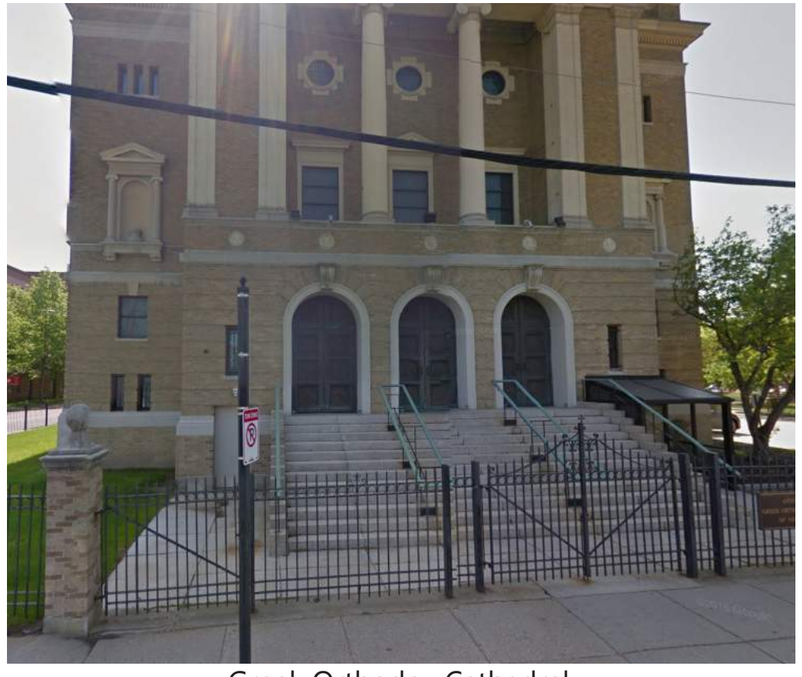

HELP/INFO
Mock Interview Day
OCTOBER 25TH

Nelson Recreation Center

Watson Hall

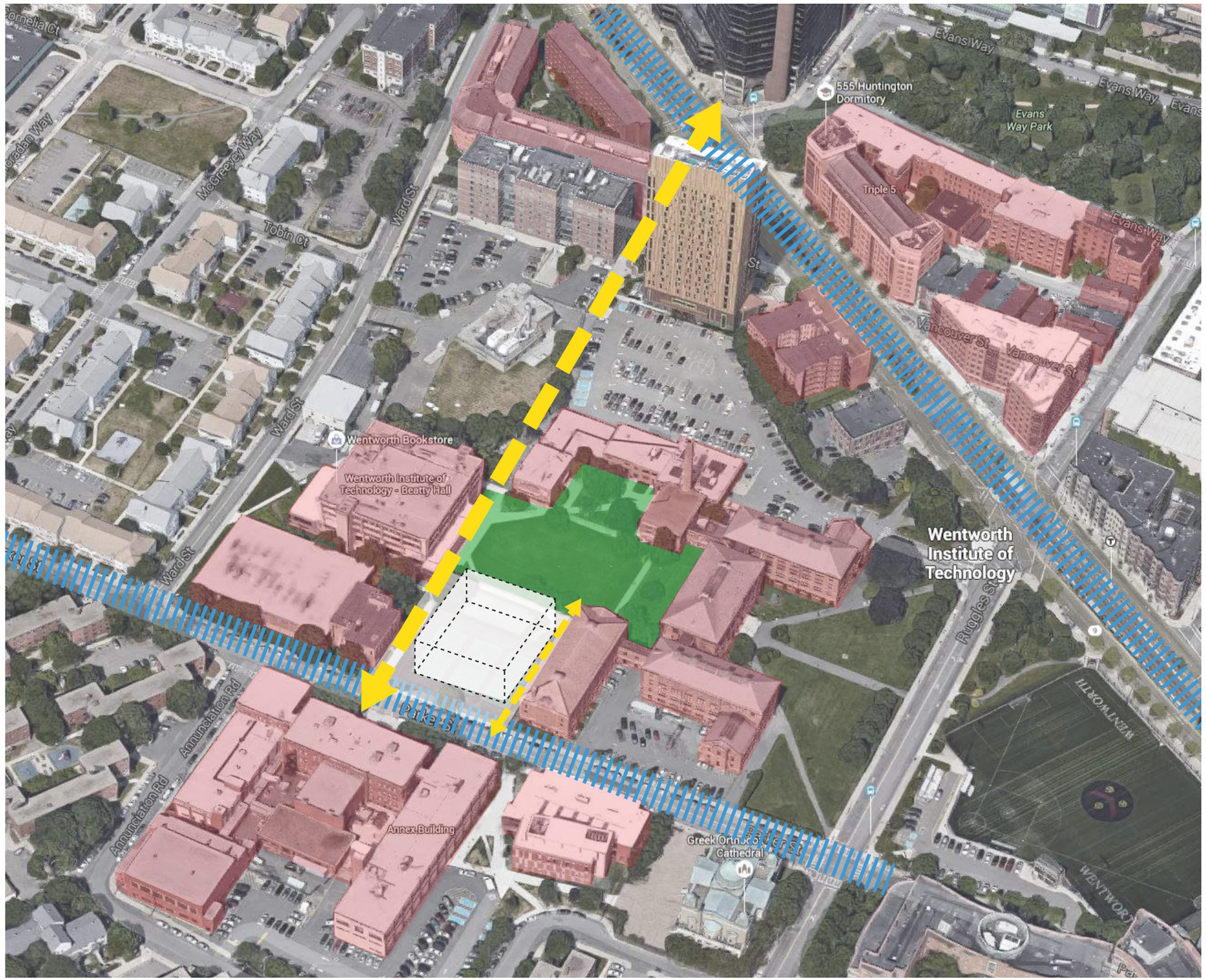
Beatty Hall

Annex Central



Greek Orthodox Cathedral

Wentworth Hall

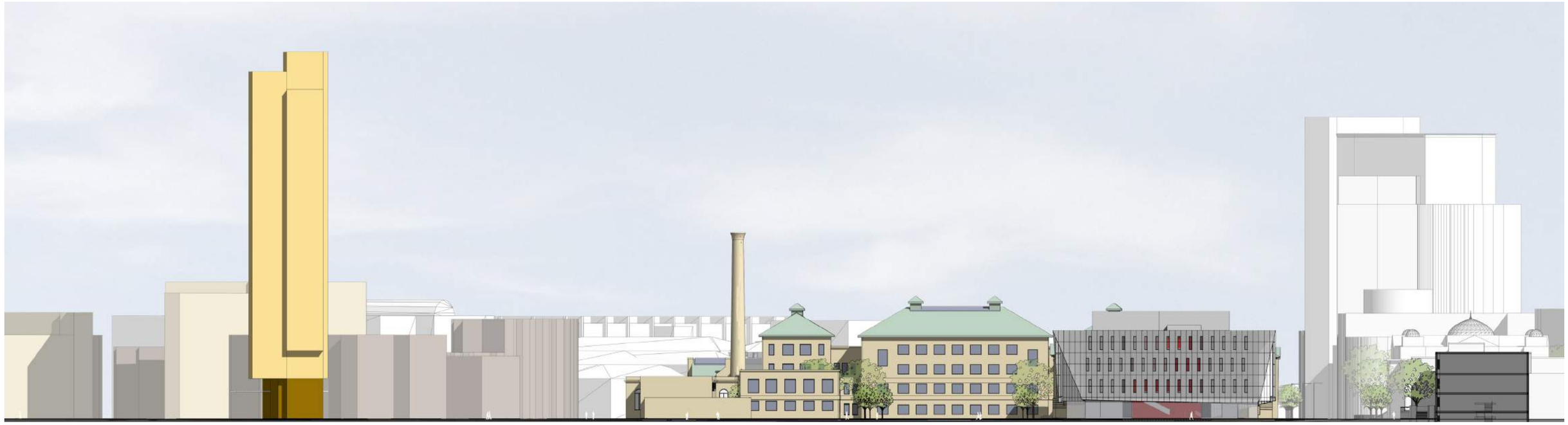


URBAN + ARCHITECTURAL DESIGN GOALS

- SCALE
- STREET AND QUAD DEFINITION
- GATEWAY
- SHOWCASE

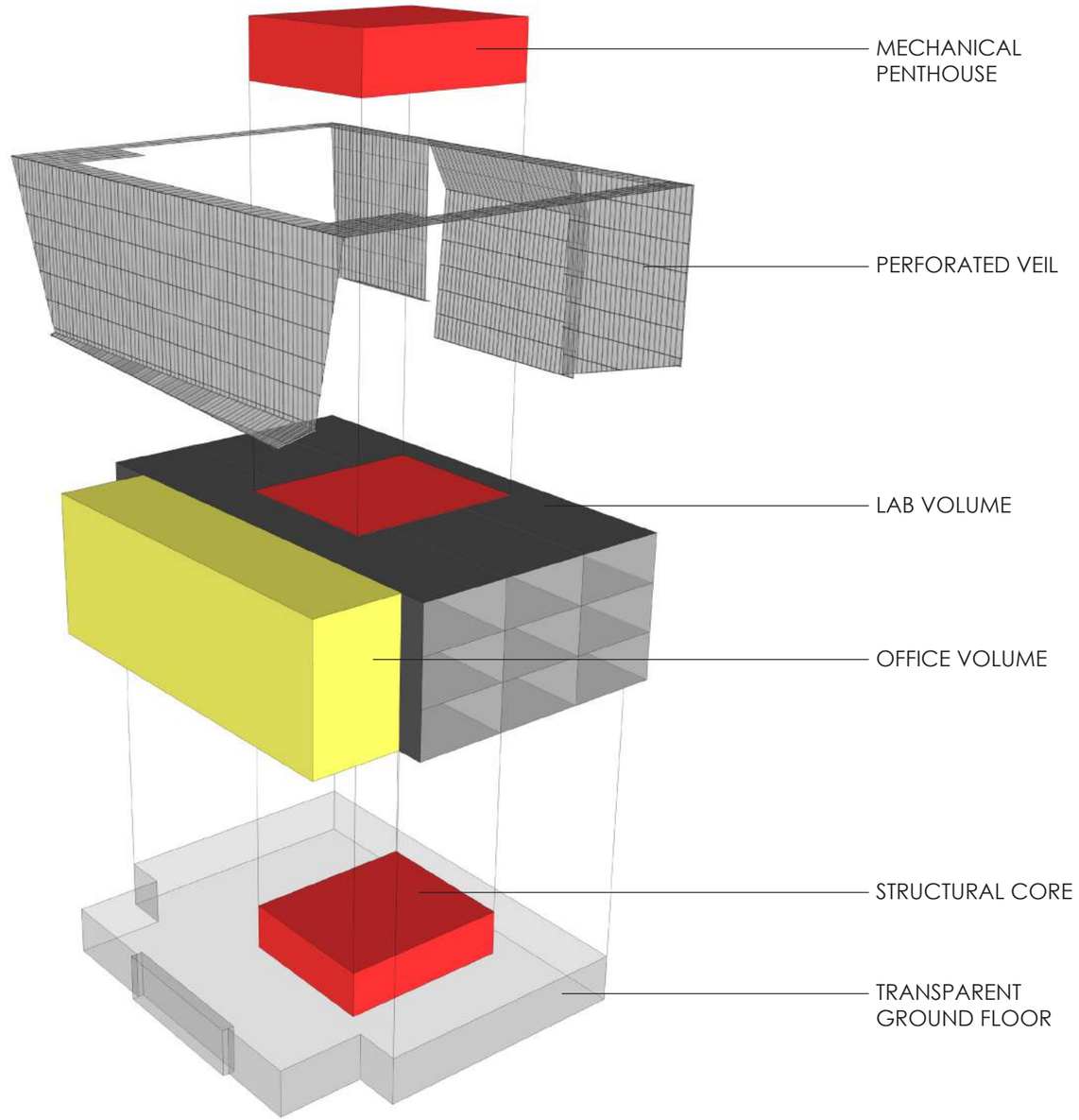
BUILDING DESIGN

COMPACT 4-STORY VOLUME
JOINING PARKER STREET AND QUAD

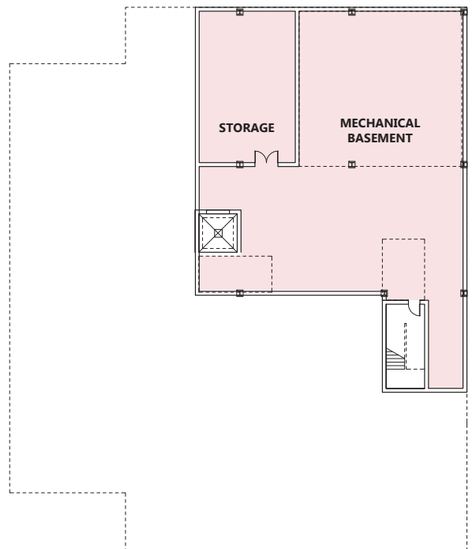


SECTION THROUGH QUAD

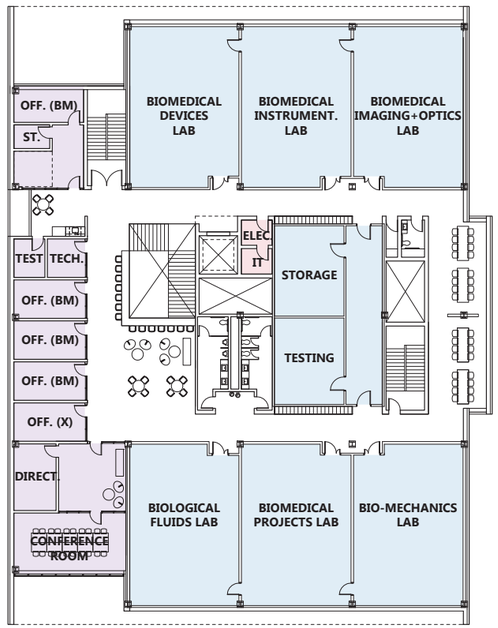
PARKER STREET ELEVATION


MECHANICAL
PENTHOUSE
PERFORATED VEIL
LAB VOLUME
OFFICE VOLUME
STRUCTURAL CORE
TRANSPARENT
GROUND FLOOR

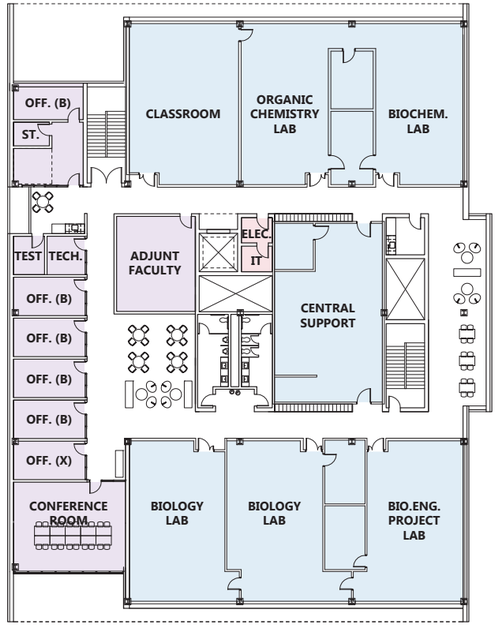
GROUND FLOOR PLAN



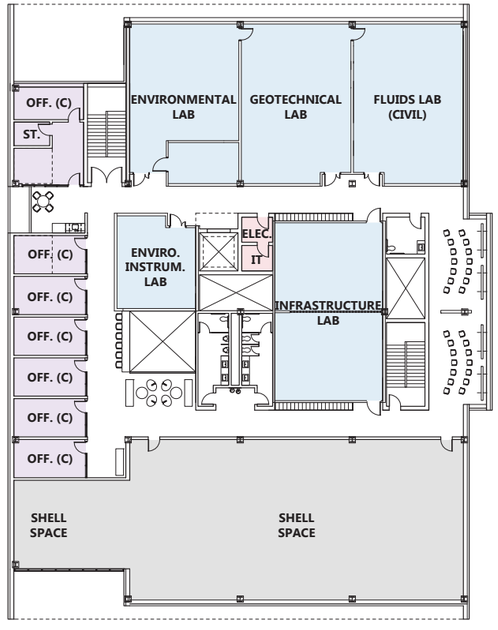
BASEMENT FLOOR PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN



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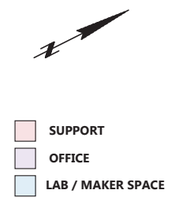
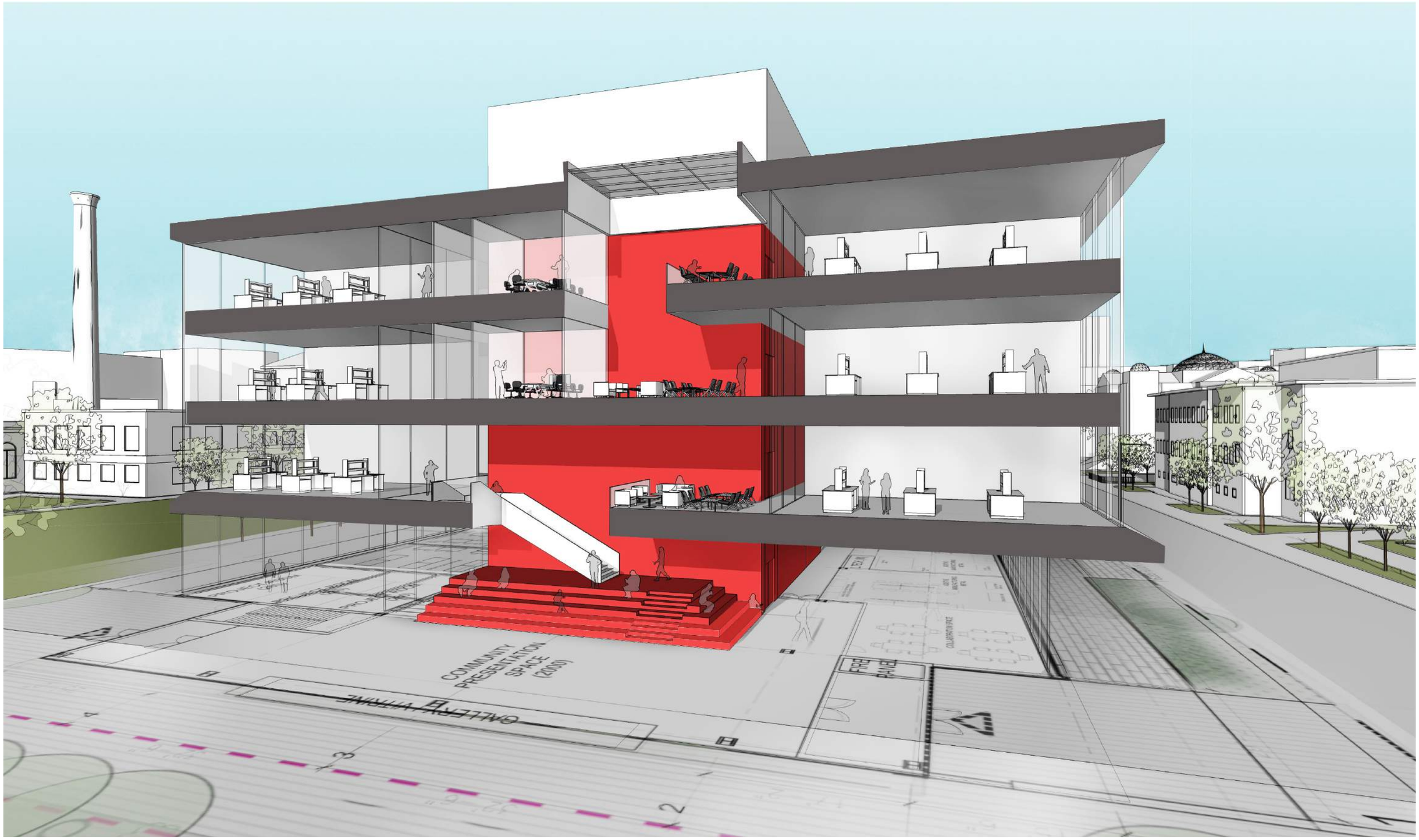
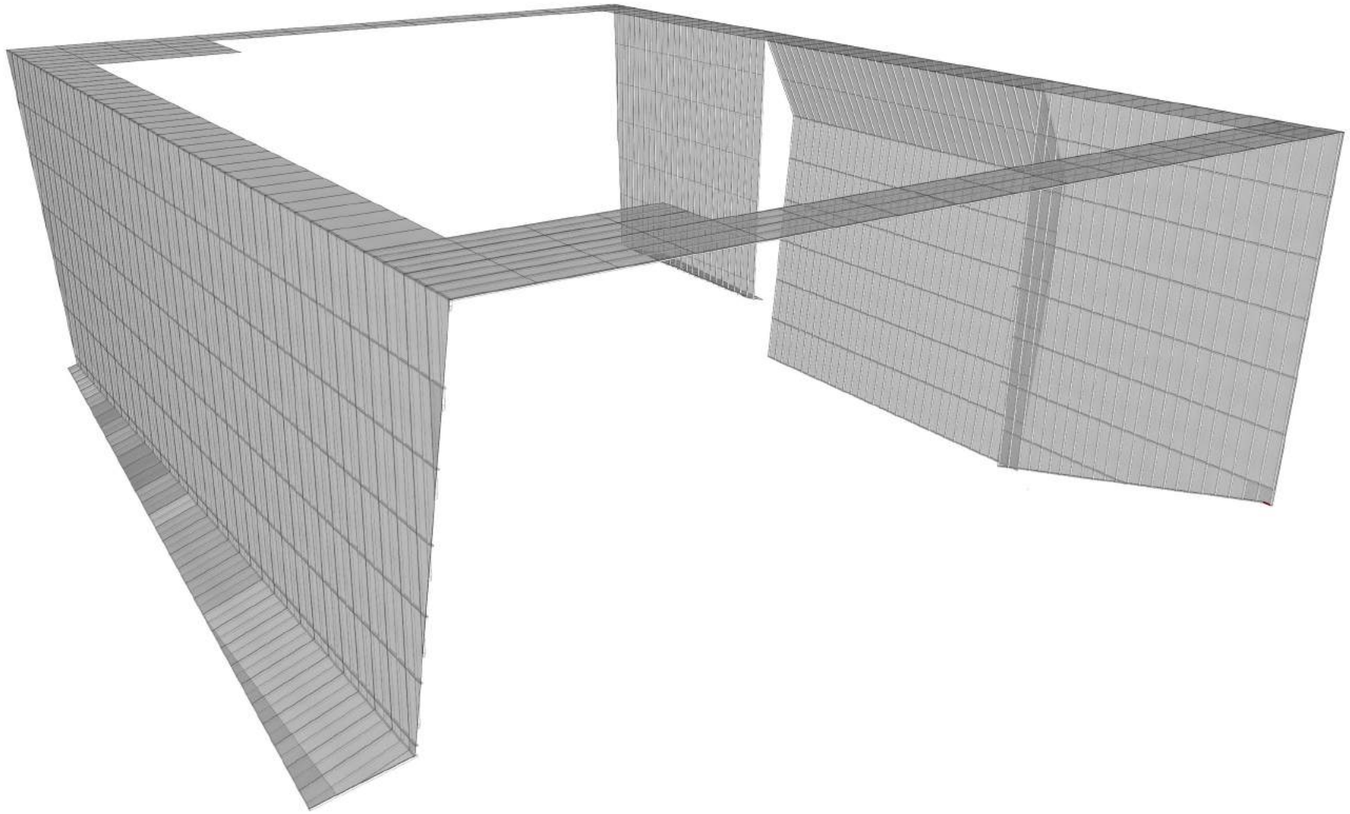
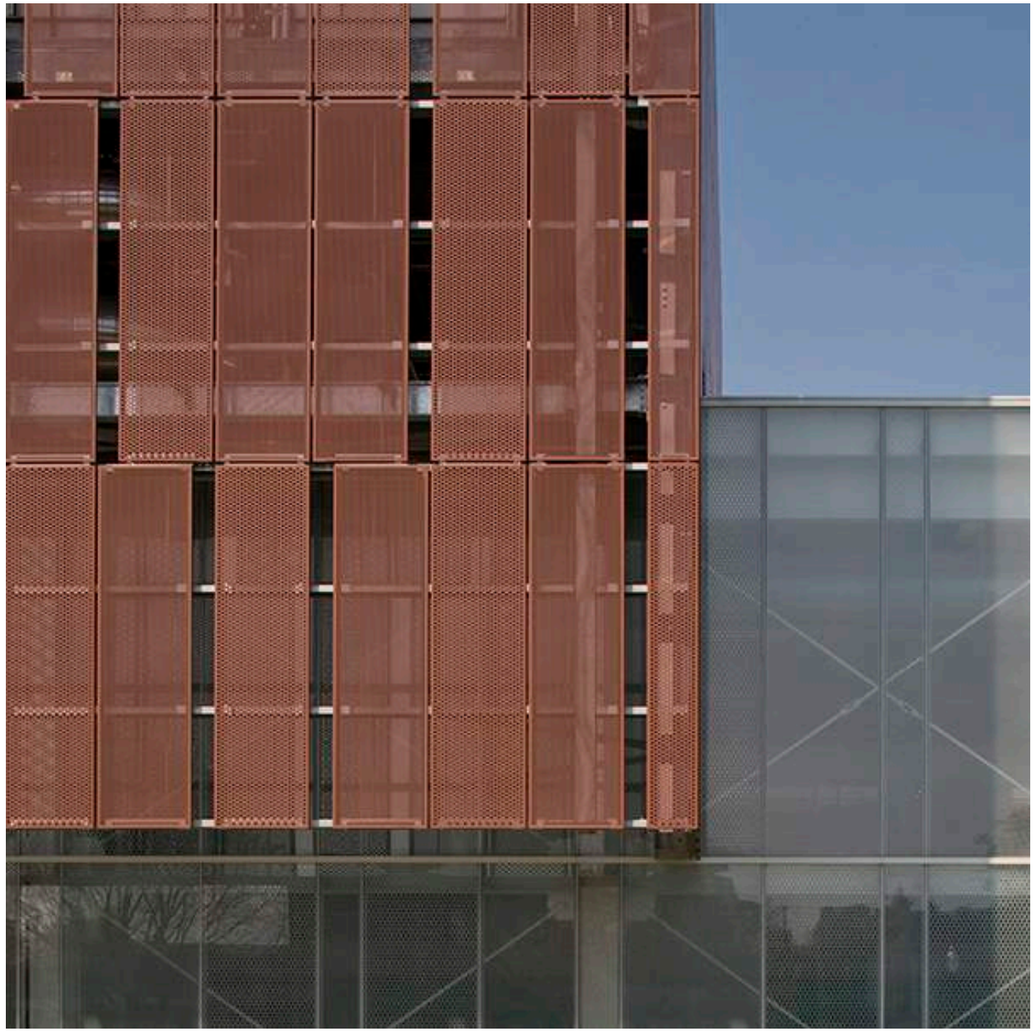
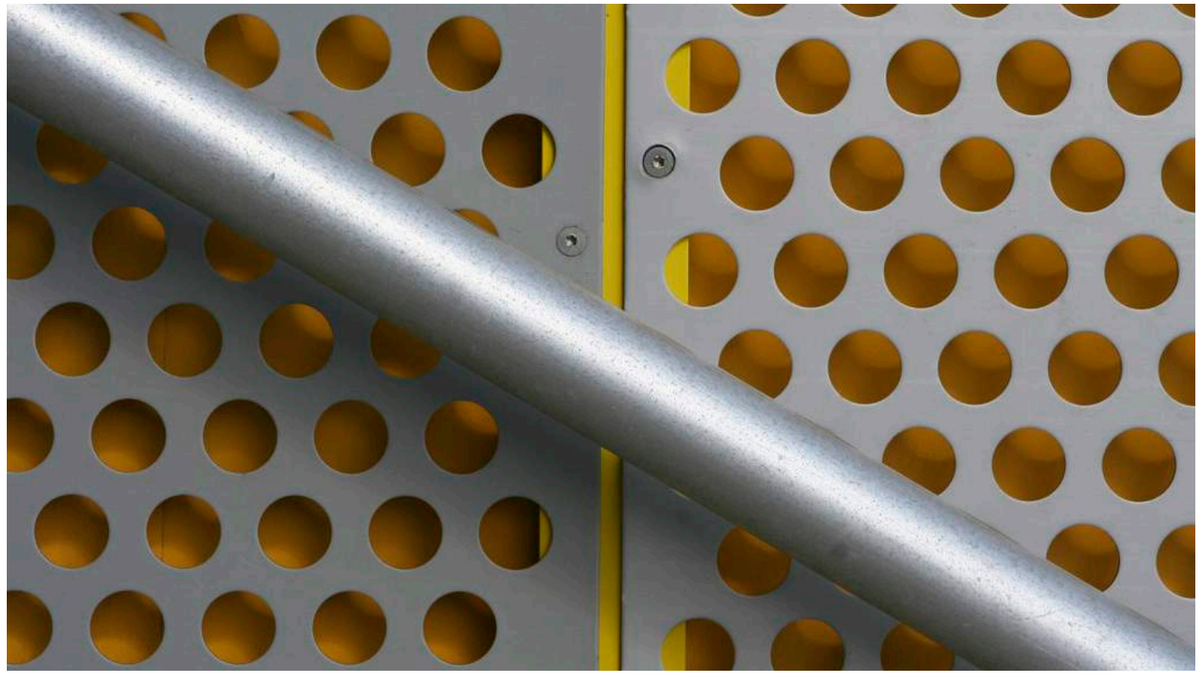


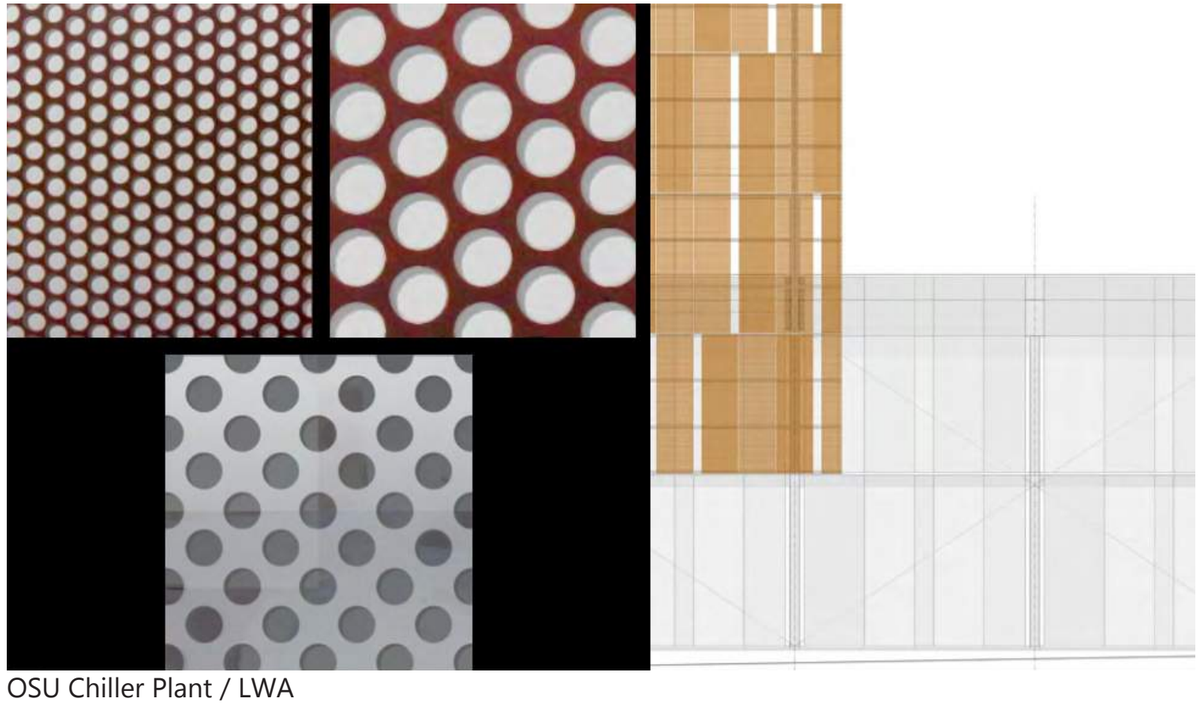

COMMUNITY
PRESENTATION
SPACE
(200)
GALLERY WITRINE
FIRE
PANEL



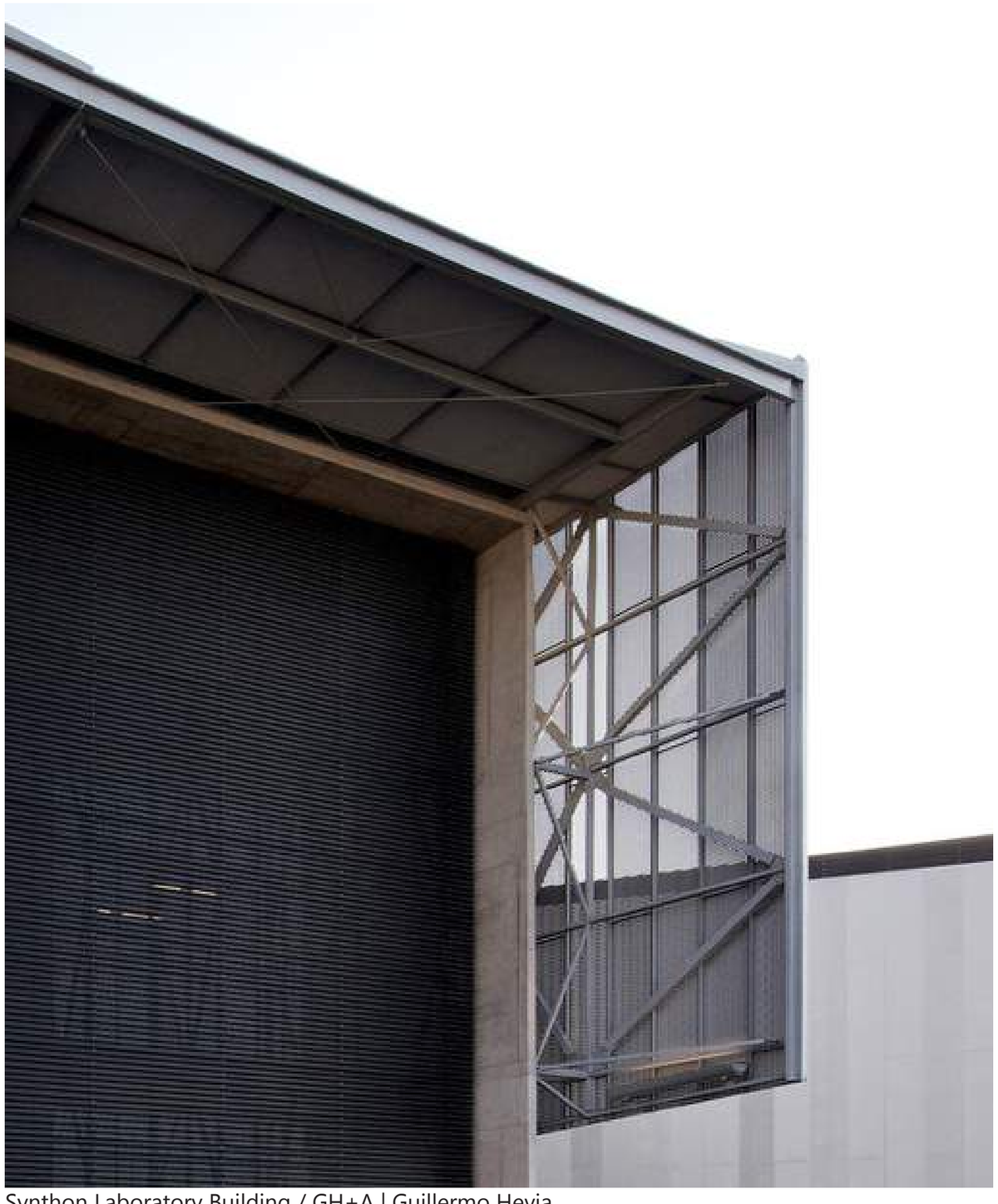




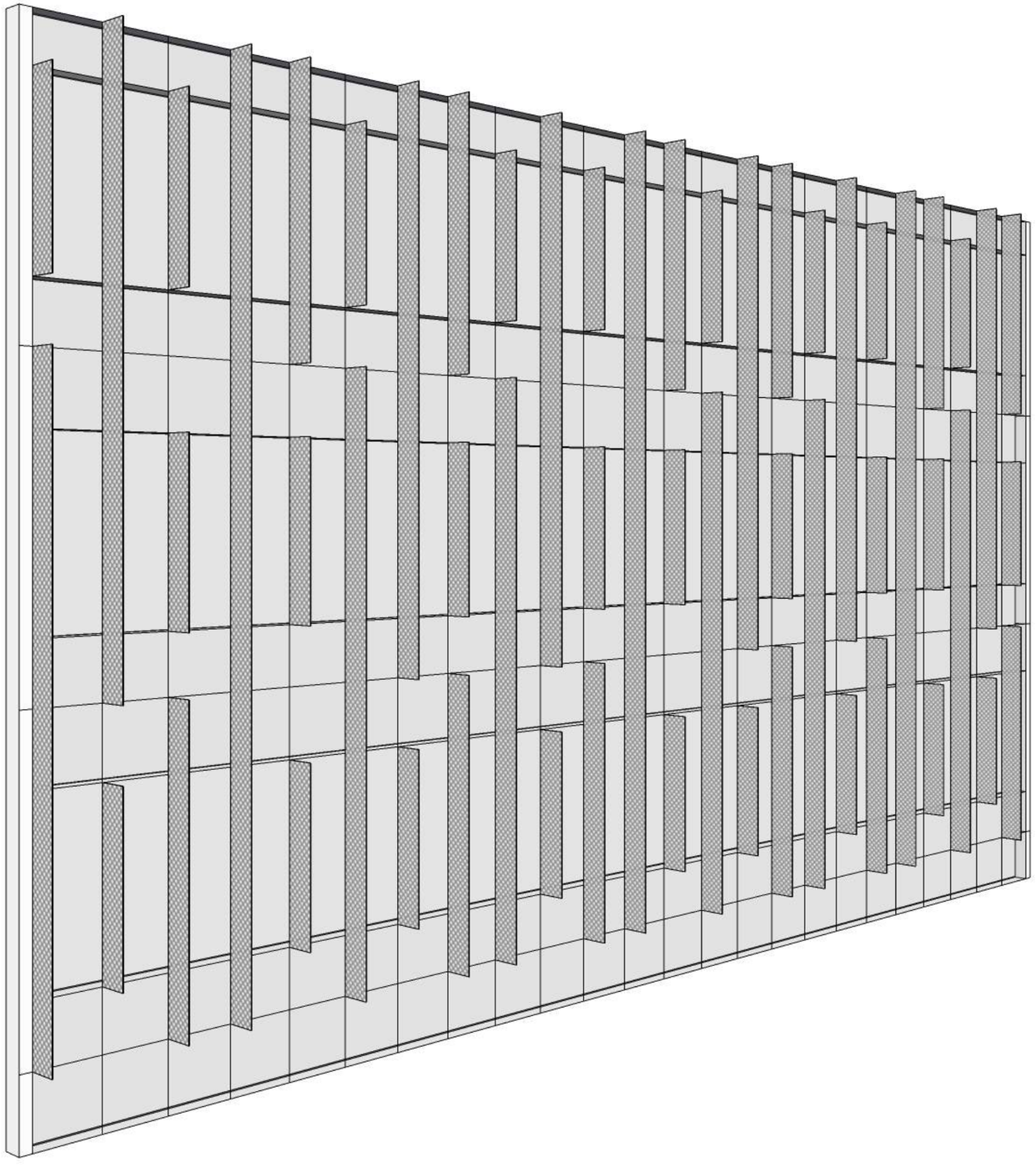
Simmons Hall / Steven Holl Architects



OSU Chiller Plant / LWA



Synthon Laboratory Building / GH+A | Guillermo Hevia

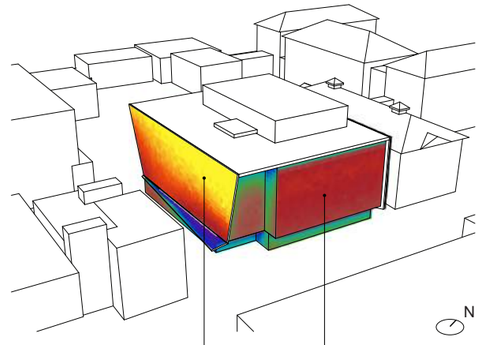


Preliminary Facade Shading and Solar Radiation Study

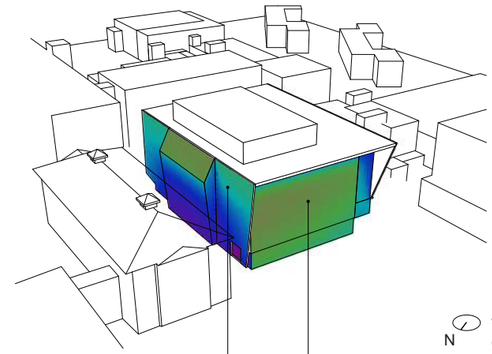
8385 Wentworth Institute of Technology Multi-purpose Academic Building, December 6, 2016

AVERAGE ANNUAL INCIDENT SOLAR RADIATION, 8AM TO 6PM

Southeast perspective



Northwest perspective



South facade receives the greatest amount of solar radiation. Shading strategies or reduced WWR is necessary for this facade.

East facade also receives significant solar radiation. Shading strategies are needed to block unwanted solar heat gain.

Solar radiation received by the north facade is typically considered to set the baseline for targets on other facades. Average annual solar radiation: Appx. 250-500 kWh/m²

West facade receives less solar radiation than the east facade, however shading strategies are needed.

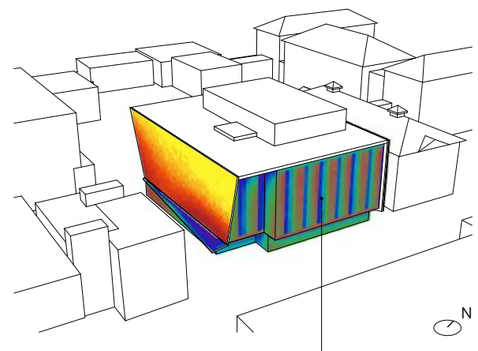
atelier ten
Environmental Design Consultants + Lighting Designers
45 East 20th Street 4th Floor New York NY 10003 T +1 (212) 254 4500 atelierten.com

Preliminary Facade Shading and Solar Radiation Study

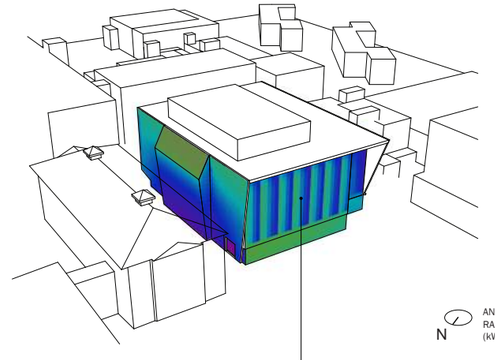
8385 Wentworth Institute of Technology Multi-purpose Academic Building, December 6, 2016

AVERAGE ANNUAL INCIDENT SOLAR RADIATION, 8AM TO 6PM
WITH SHADING (Shading geometry is based on LWA's Sketchup model)

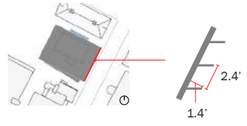
Southeast perspective



Northwest perspective

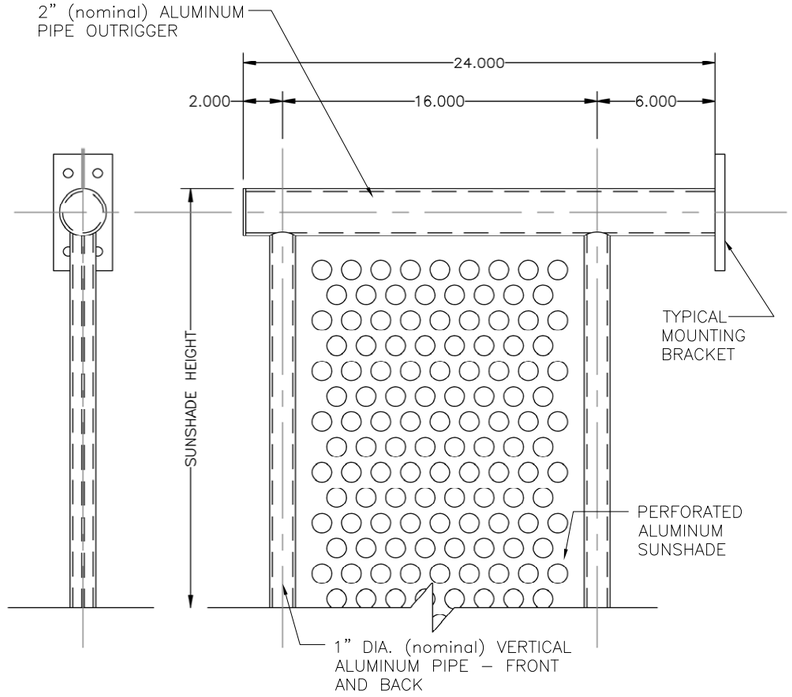


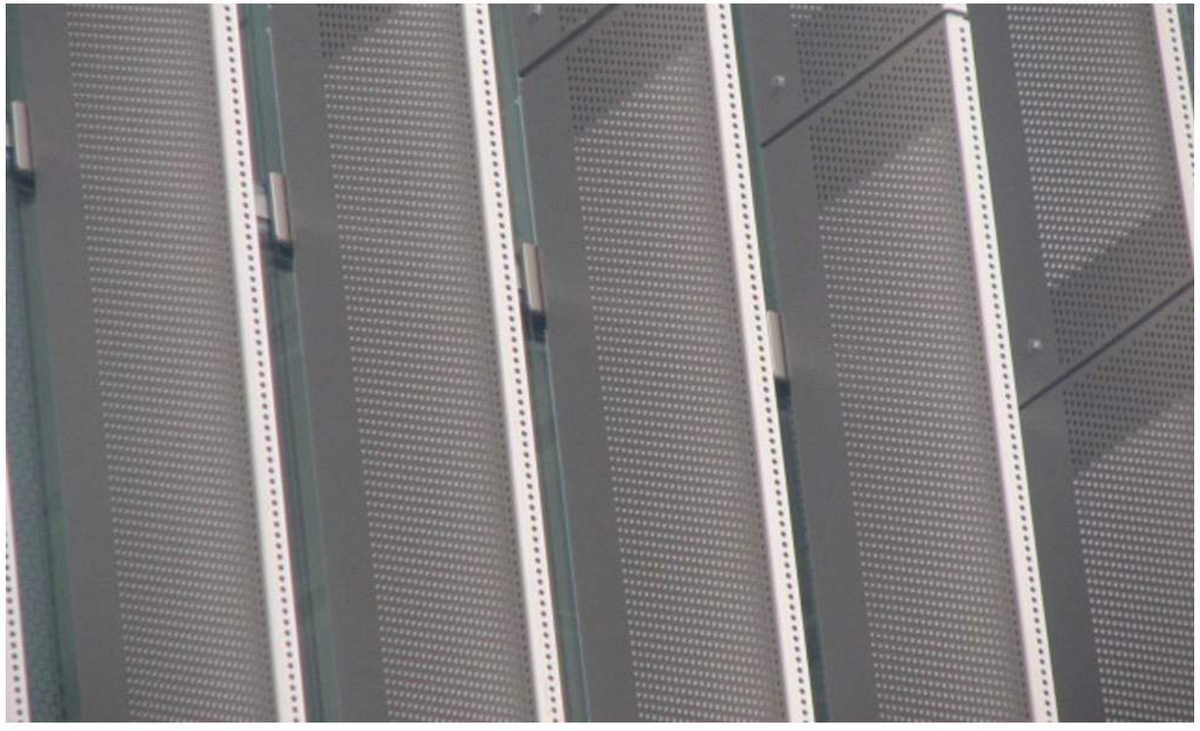
Fixed opaque vertical fins provide a significant reduction in solar radiation exposure.



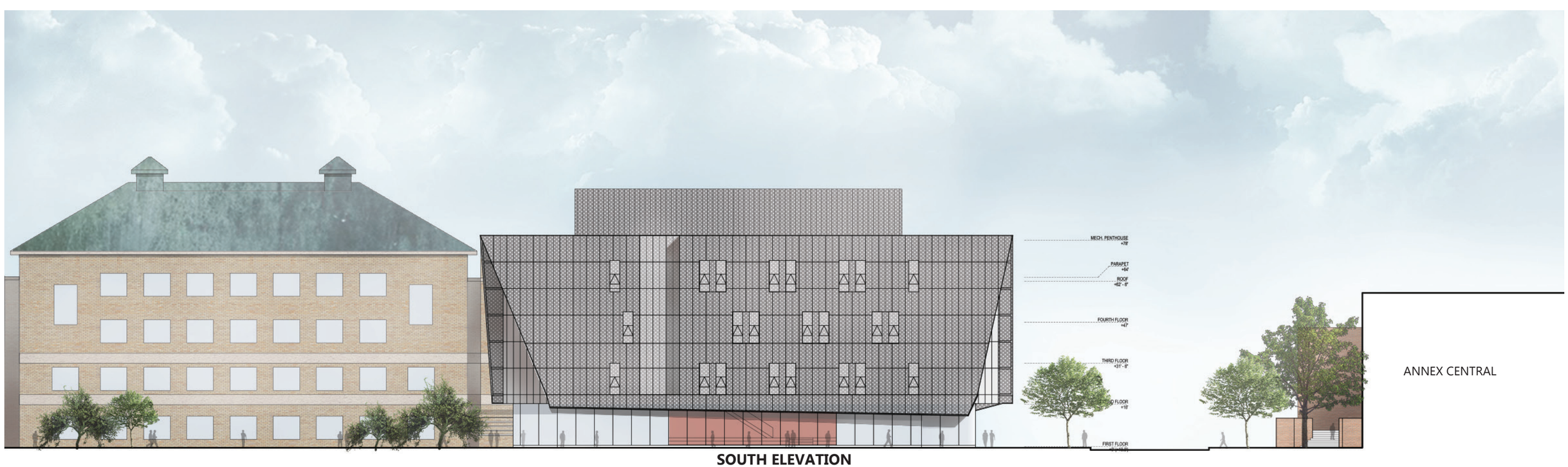
Fixed opaque vertical fins provide a significant reduction in solar radiation exposure.

atelier ten
Environmental Design Consultants + Lighting Designers
45 East 20th Street 4th Floor New York NY 10003 T +1 (212) 254 4500 atelierten.com


2" (nominal) ALUMINUM PIPE OUTRIGGER
24.000
2.000
16.000
6.000
SUNSHADE HEIGHT
TYPICAL MOUNTING BRACKET
PERFORATED ALUMINUM SUNSHADE
1" DIA. (nominal) VERTICAL ALUMINUM PIPE – FRONT AND BACK

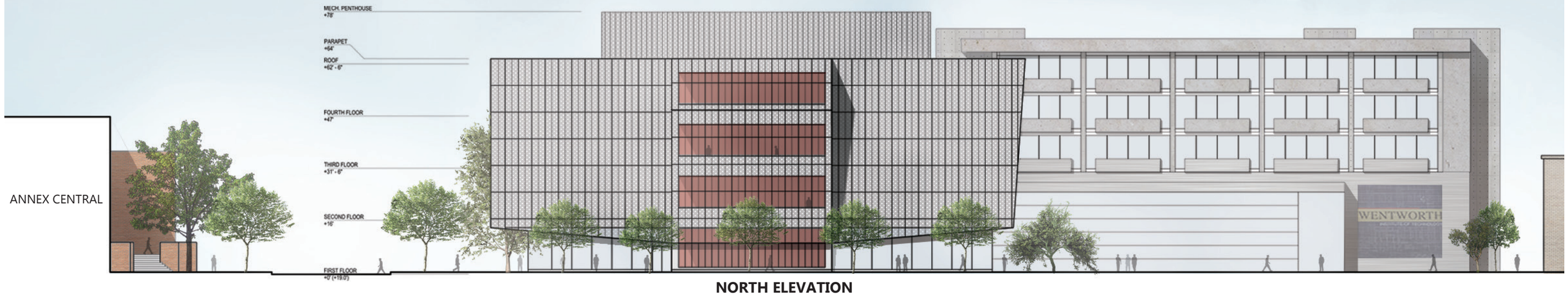


EAST ELEVATION

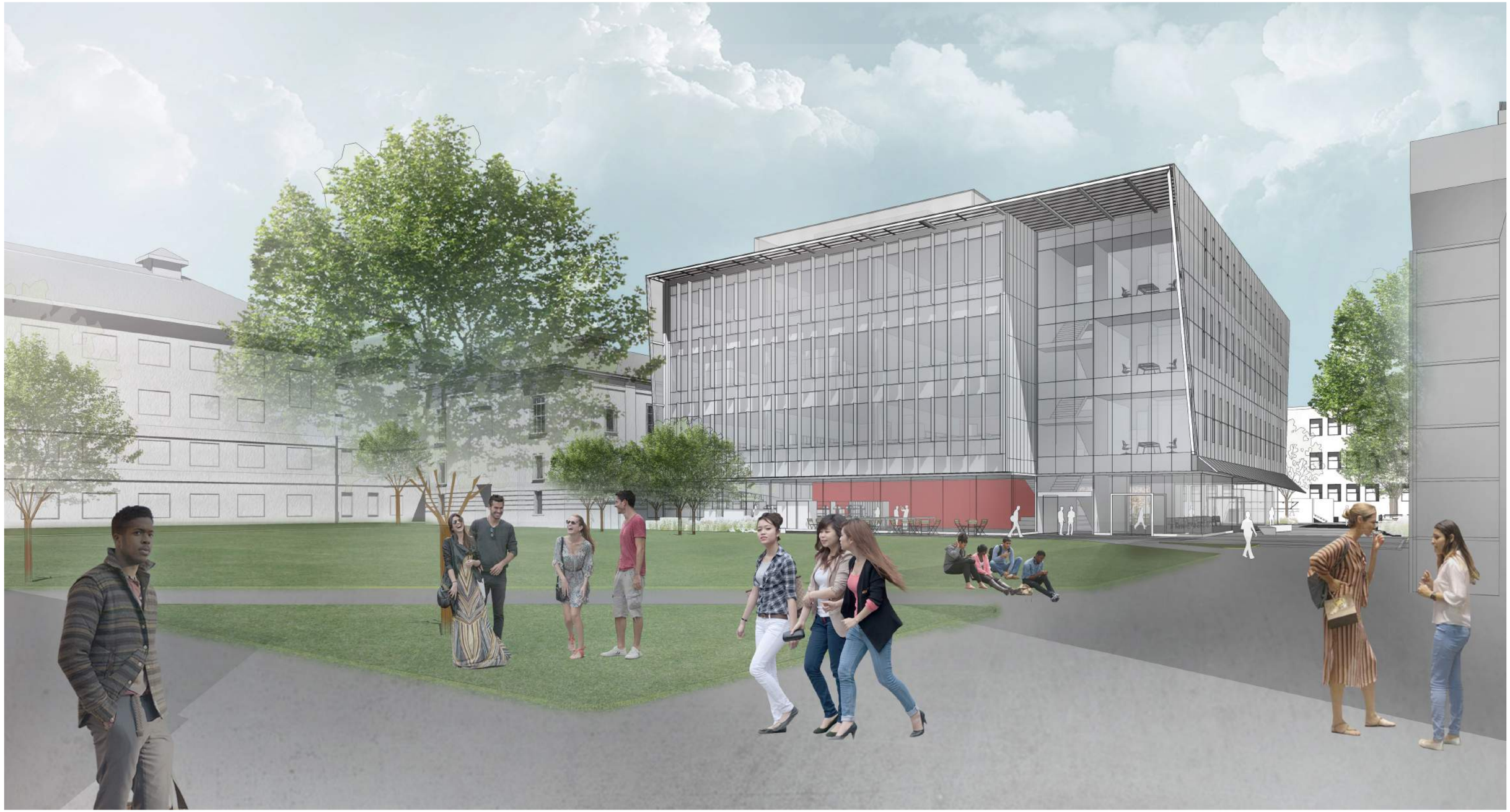


SOUTH ELEVATION

WEST ELEVATION

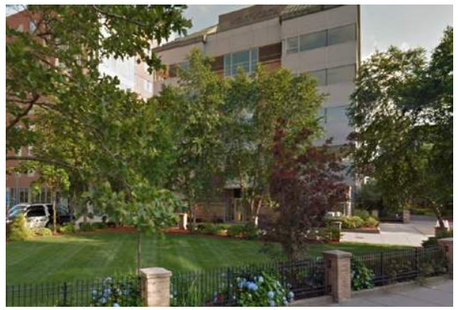


NORTH ELEVATION

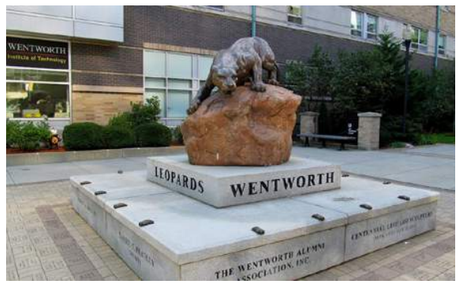


LANDSCAPE DESIGN


Wheelock College
Brookline Campus
Wheelock College
Main Campus
Simmons College
Residence
Campus
Wheelock College
Brookline Campus
Emmanuel College
Landmark Center
Simmons College
School of Management
Back Bay Fens
SimmonsCollege
Main Campus
Museum of Fine Arts
Riverway
Massachusetts
College of
Pharmacy and
Health Sciences
Massachusetts
College of Art
Wentworth Institute
of Technology
Children's
Hospital
Boston
Beth Israel Deaconess
Medical Center
East Campus
Beth Israel Deaconess
Medical Center
West Campus
Dana-Farber
Cancer Institute
Brigham
and Women's
Hospital
Harvard Medical School
Harvard School of
Dental Medicine
Harvard School of
Public Health
Boston Latin School
Isabella Stewart
Gardner Museum
Museum School
Northeastern
University
Countway
Library
Massachusetts
Mental Health Center
Joslin Diabetes
Center
Galleria Food Court
Shops, Hotel
Merck
Research
Laboratories
Blackfan
Research
Center
New Research
Building
Harvard Institutes
of Medicine
Carl J. Shapiro
Clinical Center
The Winsor School
Temple Israel
To Brookline Village
To Simmons College School of Management
Parking
Colleges of the Fenway Walking Paths
& Campus Map Location
http://www.colleges-fenway.org
Colleges
of the Fenway



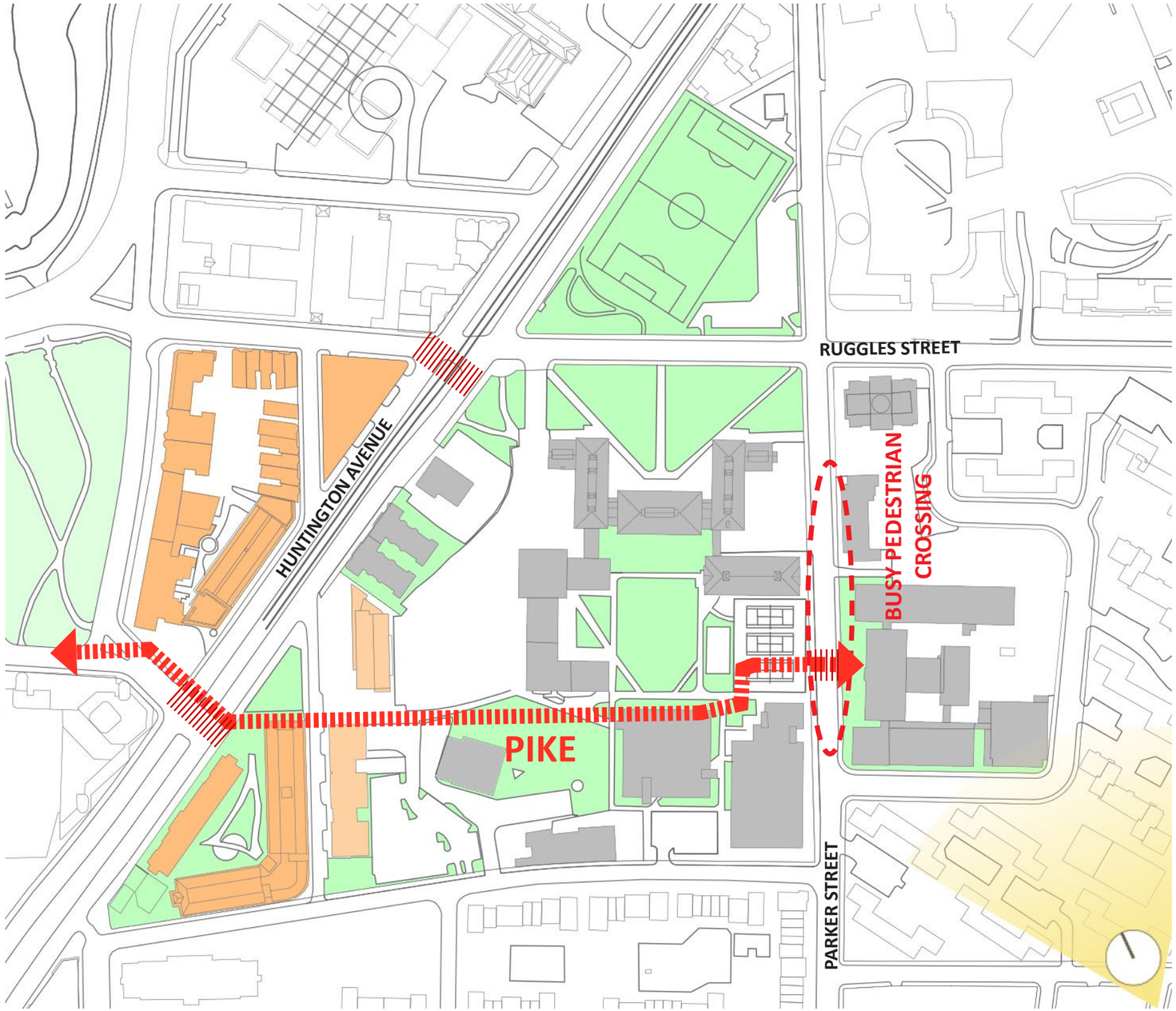
HUNTINGTON VANCOUVER TRIANGLE



LEOPARD STATUE

PARK AT BAKER HALL BUILDING

BUSY CROSSING TO THE LEARNING INNOVATION AND TECHNOLOGIES



SWEENEY FIELD

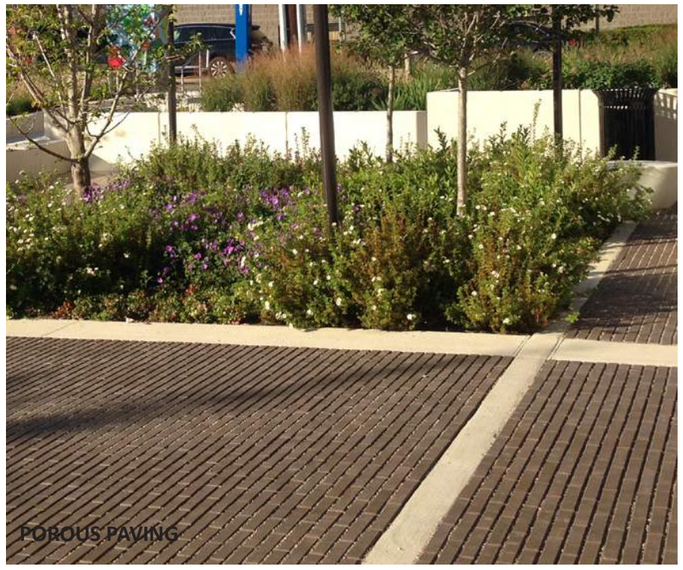
MAIN ENTRY LAWN

THE QUAD


THE "PIKE"
BEATTY HALL
BIKE SHELTER
ENTRY
WORK SPACE
WATSON HALL
BENCH
TANSEY
GYMNASIUM
ENTRY
RAMP
BENCH
BENCH
PARKER ST.

PIKE

SEATING



POROUS PAVING