Harvard University | Science and Engineering Complex

BCDC
01 December 2015

BEHNISCH ARCHITEKTEN

PROJECT TEAM

PROJECT NAME: Science and Engineering Complex

ADDRESS/LOCATION: Western Avenue, Allston

PROPONENT:

President and Fellows of Harvard College
through the
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Stephen Stimson

PROJECT BACKGROUND

In 2007, Harvard University received approval to construct the Harvard Allston Science Complex (the 2007 Science Project). Construction of the 2007 Science Project started in late 2007 and resulted in the completion of the foundation and elements of the subsurface component of the project, and in 2009 the University announced that work on the project would be paused.

On November 9, 2015 Harvard submitted an Institutional Master Plan Notification Form / Notice of Project Change (IMPNF/NPC) intended to start the formal review of a revised Project under Articles 80B (Large Project Review) and 80D (IMP Review) of the Boston Zoning Code.

PROJECT SITE

The Project will be located in North Allston on the southerly side of Western Avenue, east of the intersection of Western Avenue and North Harvard Street, and east of Travis Street. Since the original project was approved in 2007, the size of the Project site has increased from approximately 8.5 acres to approximately 12.5 acres. The increase in size is attributable to the inclusion of the existing Harvard-owned building at 114 Western Avenue into the Project.

PROJECT CONTEXT

Since the original project was approved in 2007, there have been two important changes in the context of this project.

First, there have been significant changes in the built environment in the area around the site. Commercial activities have increased through the renovation of existing Harvard-owned buildings for use as Stone Hearth Pizza (182 Western Avenue) and SwissBakers (168 Western Avenue). Additional institutional uses have been added through the creation of the Harvard Innovation Lab at 125 Western Avenue and the renovation of 28 Travis Street for Harvard activities. Harvard-related community-oriented uses such as the Ed Portal and the Ceramics Program have been expanded and relocated to 224 Western Avenue from 175 North Harvard Street. The residential nature of the immediate area has changed with the construction of the Continuum Project in Barry's Corner and the relocation of the Charlesview Apartments to a new site further west on Western Avenue and the demolition of the former Charlesview buildings. In addition, both Continuum and Charlesview include ground floor retail space. And finally, the open space character has changed with Harvard's development of Ray Mellone Park to the southwest and the opening of the grove of trees on the former Charlesview site. As a result of these activities, the site of the Science and Engineering Complex (SEC) is no longer carrying the responsibility of a single project, but instead will be a contributor to a range of activities and uses along Western Avenue.

Second, at the time of the permitting of the 2007 Science Project, the University was in the early stages of developing its Institutional Master Plan for its Allston campus. That master planning effort was included in an IMPNF, filed in early 2007. The 2007 IMPNF presented a master plan that included both a 20-year plan and a 50-year vision. In response to the 2007 IMPNF, the BRA issued a Scoping Determination outlining the issues to be addressed in the new IMP. Due to the global financial downturn and its severely constraining effects, the University slowed its long-term master planning process and did not then file a new IMP.

Following a period of internal review and external outreach, the University withdrew its 2007 IMPNF and filed a new IMPNF in the Fall of 2012 and a new IMP in 2013. The 2013 IMP was approved by the BRA Board in October 2013 and the Boston Zoning Commission in November 2013. Although the SEC was not technically a Proposed Institutional Project in the 2013 IMP, it was included in the discussion of planning districts, as well as a background project in the technical analyses. As a result of the development of this planning framework, the SEC can be seen in the context of future development and institutional activities rather than as a stand-alone project as it was in the 2007 permitting process.

BUILDING PROGRAM AND DIMENSIONS

The Science and Engineering Complex as a whole is comprised of two components: a single building fronting on Western Avenue and the renovation and reuse of an existing building at 114 Western Avenue. The following table provides area calculations of uses within each building.

	SEC	114 Western	TOTAL
Dedicated Laboratory	209,000	0	209,000
Admin	8,400	12,200	20,600
Amenities/retail	31,000	1,700	32,700
Atrium, circulation	122,250	20,800	143,050
Teaching Environments	58,200	14,300	72,500
Core Layout	16,500	2,500	19,000
TOTAL	**445,350**	**51,500**	**496,850**

Note: All square footage numbers in this document refer to gross floor area as defined by the Boston Zoning Code.

The SEC is designed to have ground floor functions that open strategically onto Western Avenue and the central courtyard, two areas that will attract lively pedestrian activities. In addition to the entrance in the center of the building on Western Avenue, there will be building entrances located at the northwest corner (towards Barry's Corner) and northeast corner (facing Harvard Business School).

Consisting of three laboratory "blocks" and an exterior quadrangle, the SEC will span up to six floors above-grade, with two additional levels below ground at the courtyard level. The interior of the SEC will open to the courtyard, featuring recessed gardens that provide light into the lower floors of the building and accessible terraces with ample greenery and seating.

Research labs will comprise a mix of wet and dry spaces with both open lab research areas and enclosed specialty and core facilities. Research will range from robotics prototyping to materials synthesis. Core facilities may include soft lithography, rheology, motion capture, biological characterization, and machine fabrication shops.

Teaching environments will be focused on active learning spaces and will be located on the lower floors of the building. Program spaces include maker space, design studios, fabrication garages, clubhouse plaza rooms, as well as traditional flat and sloped floor classrooms. The communal areas in the atrium and the cafeteria/lounges will promote an innovative and interactive educational environment that reinterprets the spatial and social characteristics of Harvard Yard while reflecting Harvard's rich intellectual traditions. Throughout, they are complemented and supported by highly sustainable systems that will continue to inspire and, in turn, attract the best scientists and students to Harvard.

PUBLIC ACCESS TO SCIENCE COMPLEX BUILDINGS

Approximately 20,000 square feet of the SEC building programming (including circulation areas on the ground floor) will be accessible to the general public. This will include the large interior atrium, which will allow public passage from the entrances on Western Avenue into the central courtyard and the retail and food uses. The atrium, which will rise from the basement level, will be used as an active area for the public, as well as for students, faculty members, and researchers to showcase the ongoing research conducted by SEAS, such as robotics, innovative materials, and nanoengineering projects. Beyond these zones, persons with Harvard identification or persons with business within the building will be allowed to access other areas of the SEC. The outdoor open space associated with the SEC will also be open to the public.

LANDSCAPE AND PUBLIC REALM IMPROVEMENTS

The central courtyard of the Science and Engineering Complex site will comprise landscaped green space open to the public. Further, the landscape plan has been designed to complement the series of green corridors and open spaces proposed as part of the IMP, including connections to Rena Park and Ray Mellone Park to the southwest.

The landscape approach provides an opportunity to define a major new outdoor space. It will coordinate with the overall open space master plan for Allston by reinforcing connections from the future Greenway and the SEC open space. There will be a strong pedestrian connection through the SEC building at grade, linking the pedestrian realm along Western Avenue with the courtyard space.

The landscape design will accommodate a variety of outdoor seating options. The approach will allow for casual gathering as well as larger formal events. Overall site strategies include study of the potential for future flooding as a result of climate change. The outcomes of this study will be used to support the project's comprehensive climate resiliency strategy.

URBAN DESIGN

The design of the Science and Engineering Complex reinforces the key principles and goals of the IMP. While the building is institutional and researched-focus by nature, the design approach reflects a broader commitment to the larger Harvard, Allston, and Boston Community, as well as long term sustainability goals consistent with the IMP.

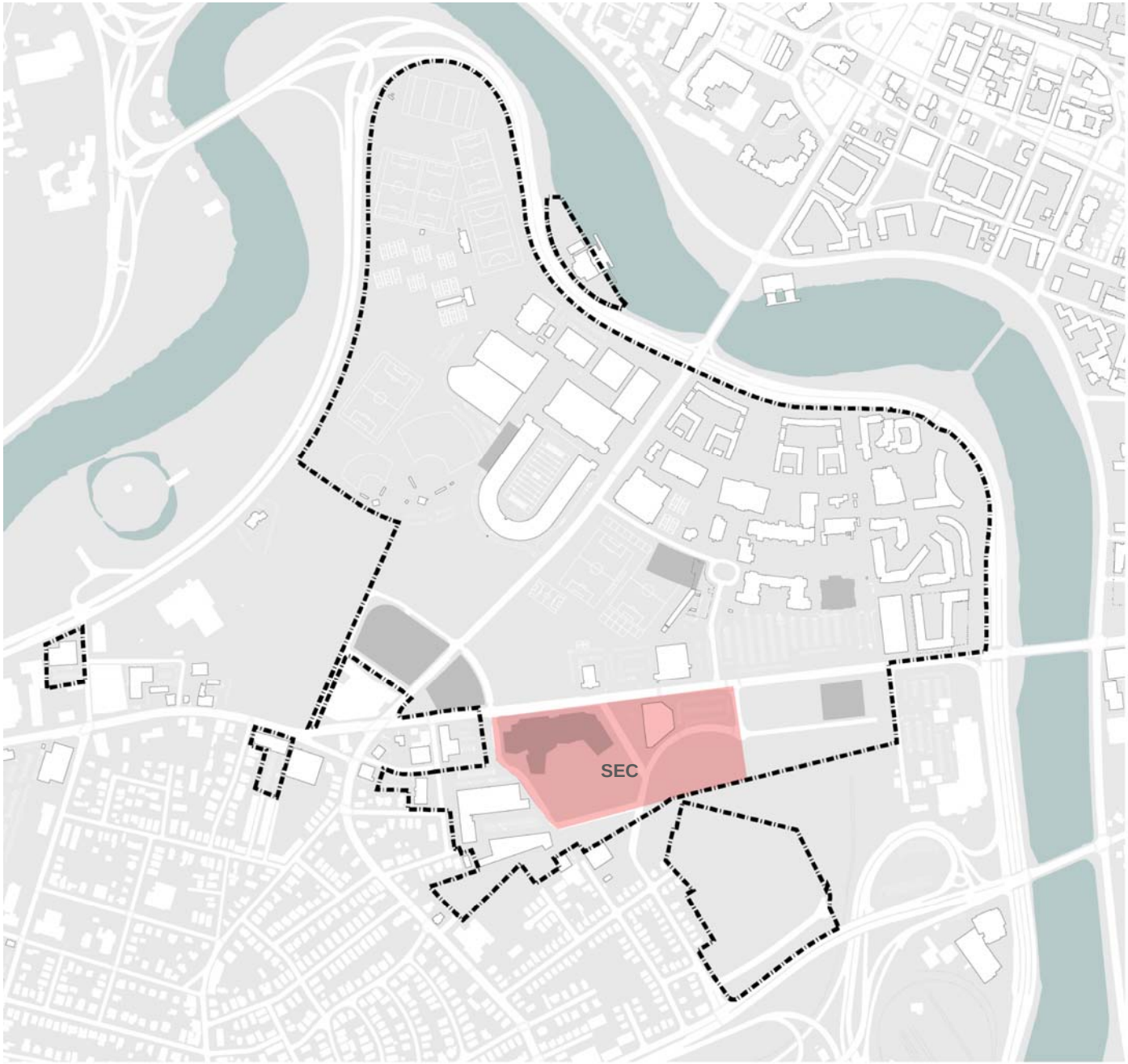
The design of the SEC lifts the majority of the laboratory programs two stories above the street, focusing the ground and second floor on programs and creative activities to activate Western Avenue and connect the public realm to the innovation of the SEAS community. The façade fronting Western Avenue is lined with program that contributes to street life, including a retail space and a maker/3d printing space to showcase creative enterprises and provide activity outside normal business hours.

The street frontage is broken down to address the pedestrian-scale by three recessed entrances which are double-height, flooded with natural light, and activated by exhibition space and other social spaces such as a cafe and a library. In addition to the middle entrance fronting Western Avenue, entrances are located to anchor the two ends of the site, on the west relating to Barry's Corner, and to the east relating more to the Harvard Business School campus.

The streetscape is based on the City of Boston's Complete Street Guidelines and the principles of the IMP. Materials consistent with these guiding documents will be used to create a cohesive street environment. Pervious materials will be used to manage all stormwater on site. Gathering spaces will be developed near the entrances and will include benches, bicycle parking, trash/recycling/composting receptacles, lighting, etc. to create a vibrant connection between building occupants and the Allston community.

The south side of the SEC engages the residential scale of the adjacent Allston neighborhood and provides open space consistent with the goals of the IMP and planned Greenway south of the site. The south side of the building is terraced, which creates a finer grain that relates to the quieter residential scale of the neighborhood beyond.

The courtyard landscape design creates generous and varied opportunities for use on paved and soft surfaces. The scale of spaces is appropriate for the typical daily user loads while allowing for large events like graduation. The design makes visible the systems and qualities of the lost landscape of the greater Boston area and the Allston salt marshes through progressive stormwater management and collection.


SEC

2015 SCIENCE & ENGINEERING COMPLEX

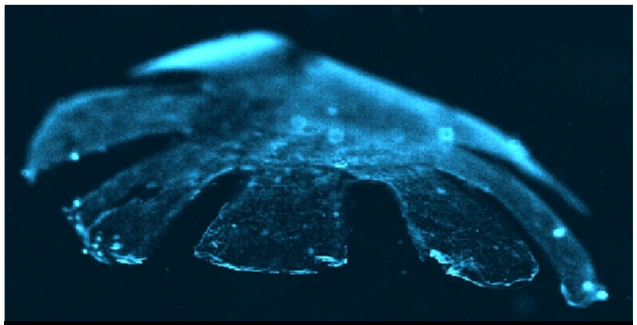
- Single new building
- Initial project
- 496,850 gross square feet including existing 114 Western Avenue building
- Northern portion of site
- Southern portion of site preserved for future development
- Primary home for the John A. Paulson School of Engineering and Applied Sciences
- No foundation construction needed
- Entire site landscaped
- Parking at surface next to / behind 114 Western Avenue
- Height comparable to 2007 project
- The project is expected to generate over 800 construction jobs.

Academic Program Context

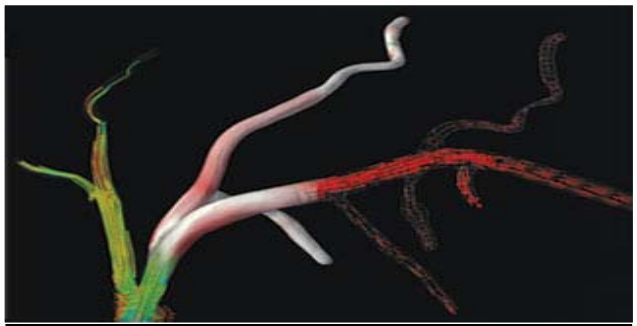
HSCI
HARVARD STEM CELL INSTITUTE®

HARVARD
John A. Paulson School of Engineering and Applied Sciences

John A. Paulson School of Engineering and Applied Sciences

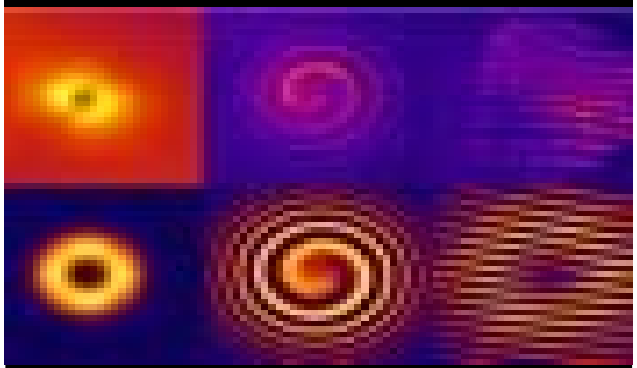


Translational life sciences

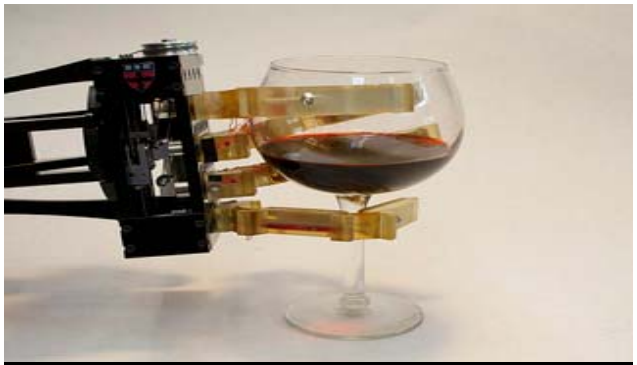


Applied Computation

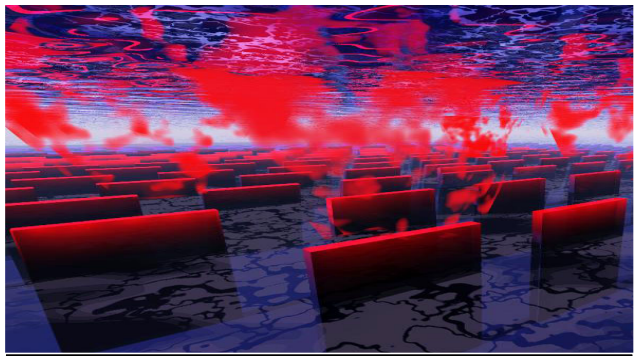
Environmental science



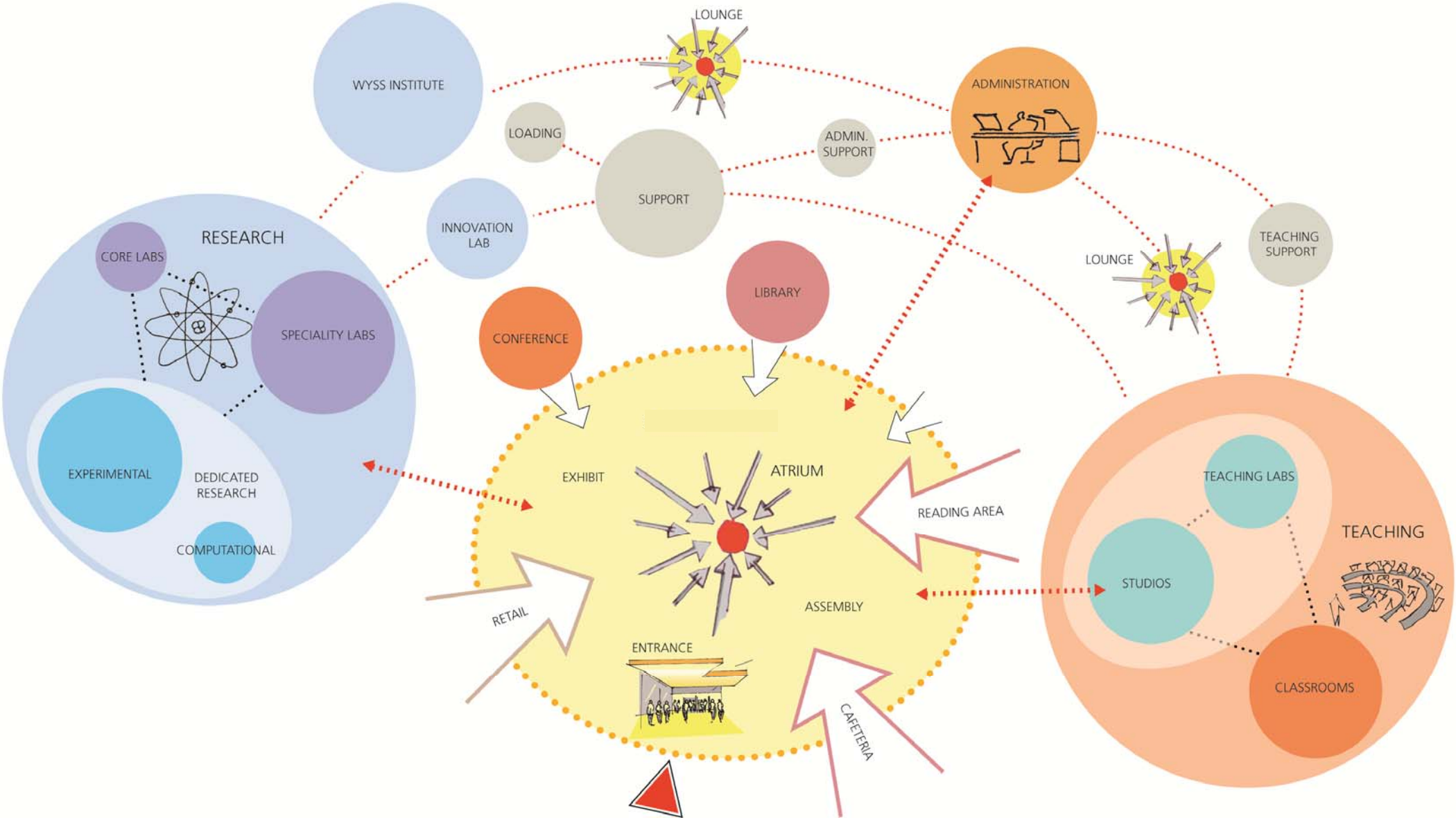
Nano engineering



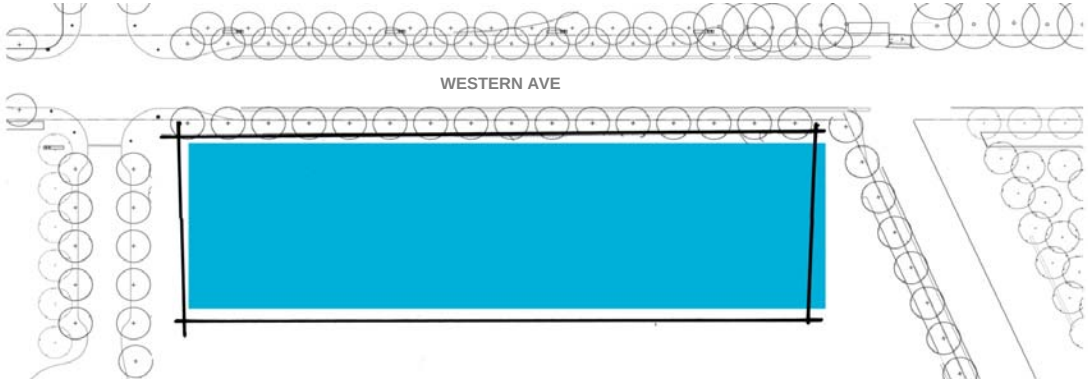
Robotics and Control Theory



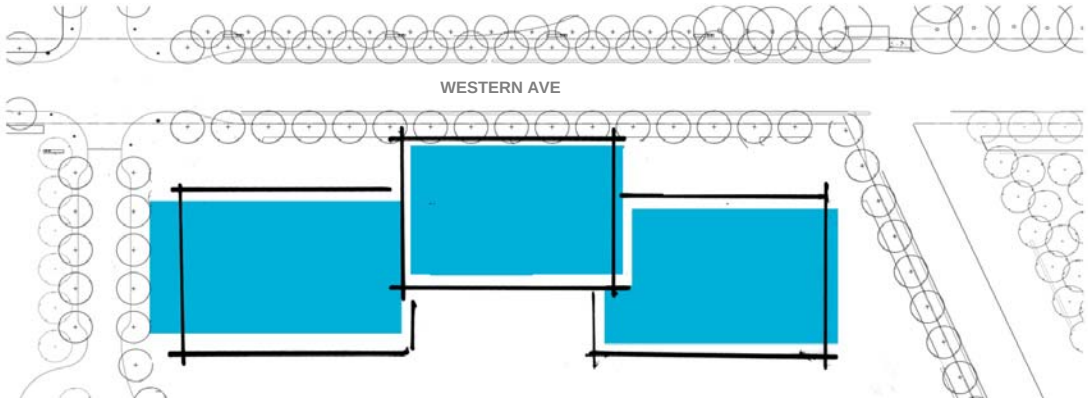
Materials for Energy

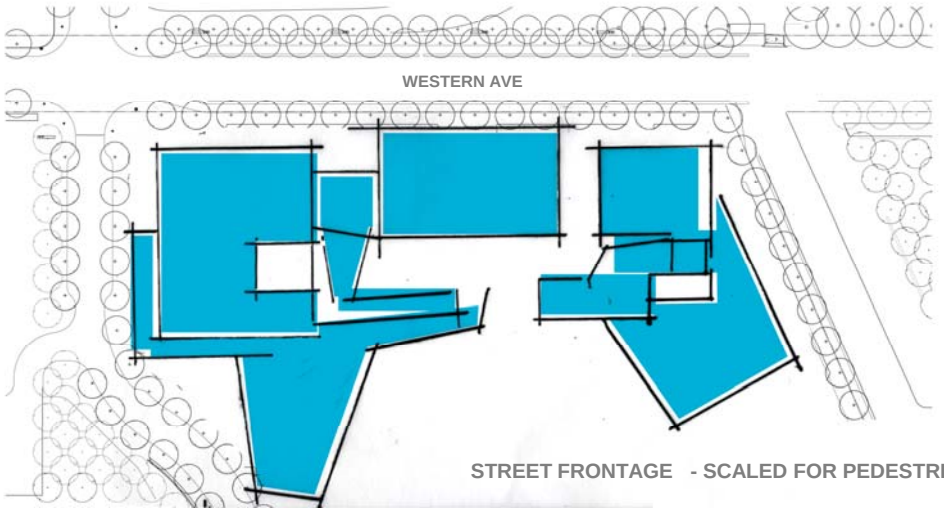

WYSS INSTITUTE
LOUNGE
ADMINISTRATION
LOADING
ADMIN. SUPPORT
SUPPORT
INNOVATION LAB
RESEARCH
CORE LABS
SPECIALITY LABS
LIBRARY
CONFERENCE
LOUNGE
TEACHING SUPPORT
EXPERIMENTAL
DEDICATED RESEARCH
COMPUTATIONAL
EXHIBIT
ATRIUM
READING AREA
TEACHING LABS
TEACHING
STUDIOS
RETAIL
ASSEMBLY
ENTRANCE
CAFETERIA
CLASSROOMS

ADAPTATION OF THE “GRAIN“ TO FAMILIAR SCALES



STREET FRONTAGE - 500’

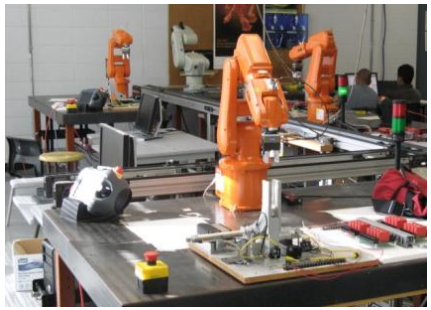
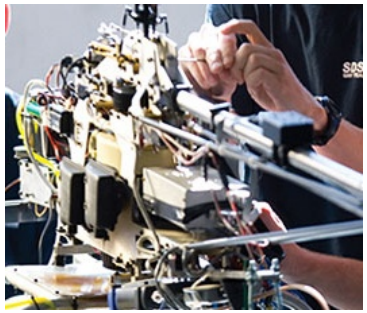


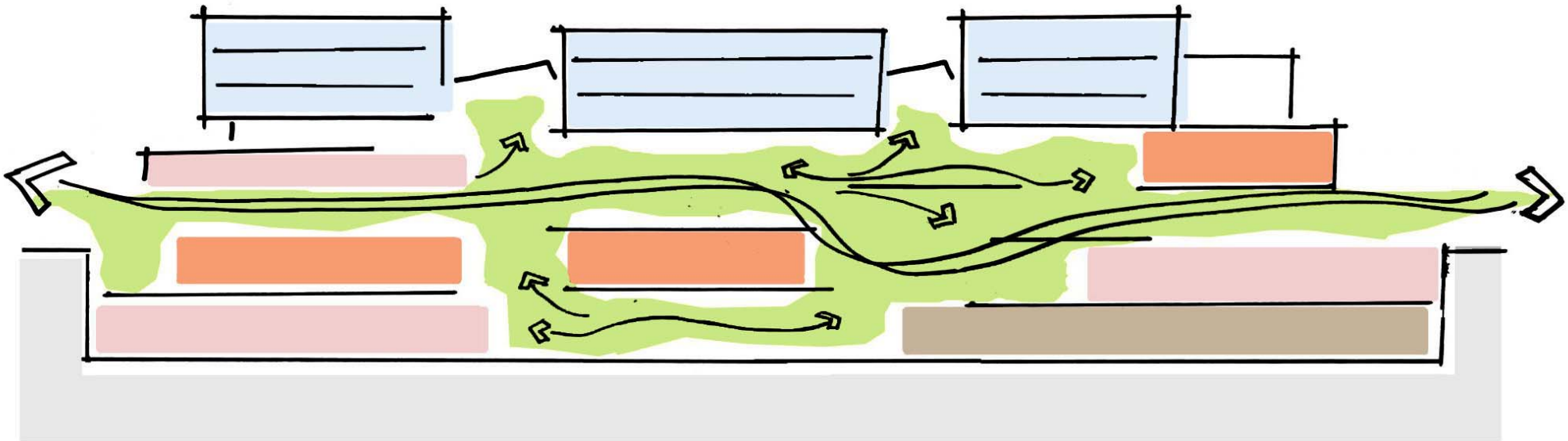


STREET FRONTAGE - SCALED FOR PEDESTRIANS

PROGRAM

RESEARCH AS FLOATING ABOVE

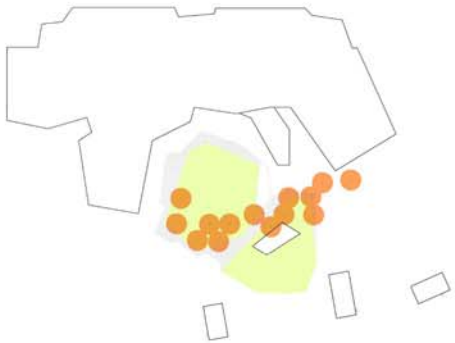



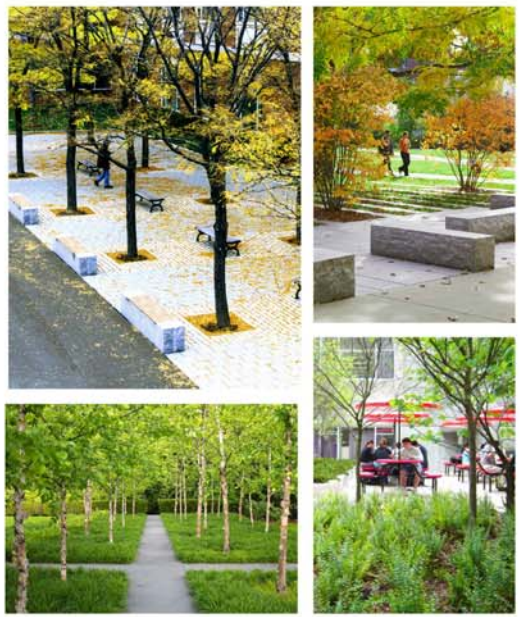
EXTENSION OF STREET AS COLLABORATIVE MARKETPLACE



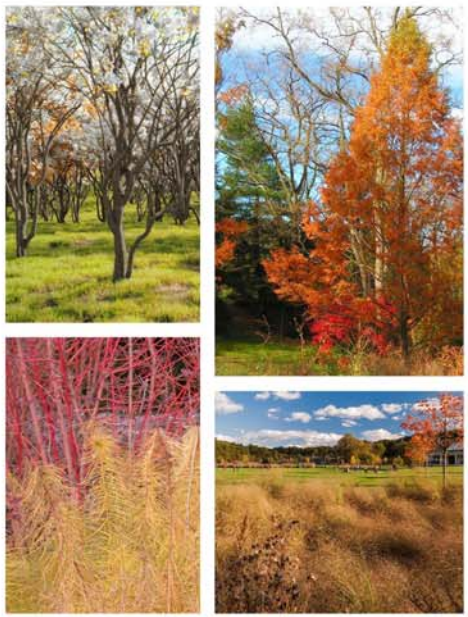
SITE PLAN


WESTERN AVENUE
ACADEMIC WAY
STADIUM WAY
HAGUE STREET
PARKING
ROTTERDAM STREET
PARKING
MULTI FUNCTIONAL LAWN
SCIENCE DRIVE
0
50
100


PLAZA GROVE


SPECIMEN LAWN

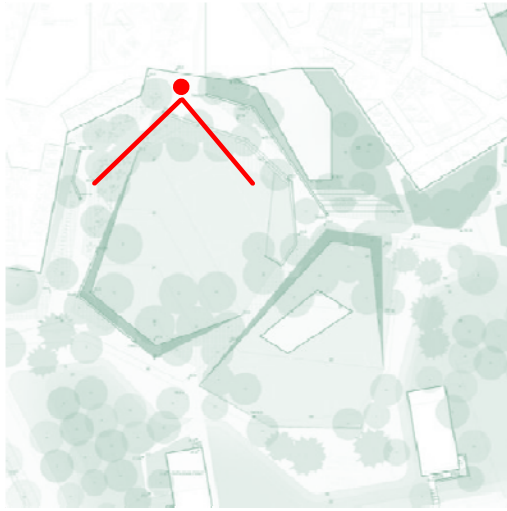

WILD SWALE


TREE NURSERY

SCIENCE DRIVE WALK

SITE MATERIALS & PROGRAM AREAS

SITE MATERIALS & PROGRAM AREAS

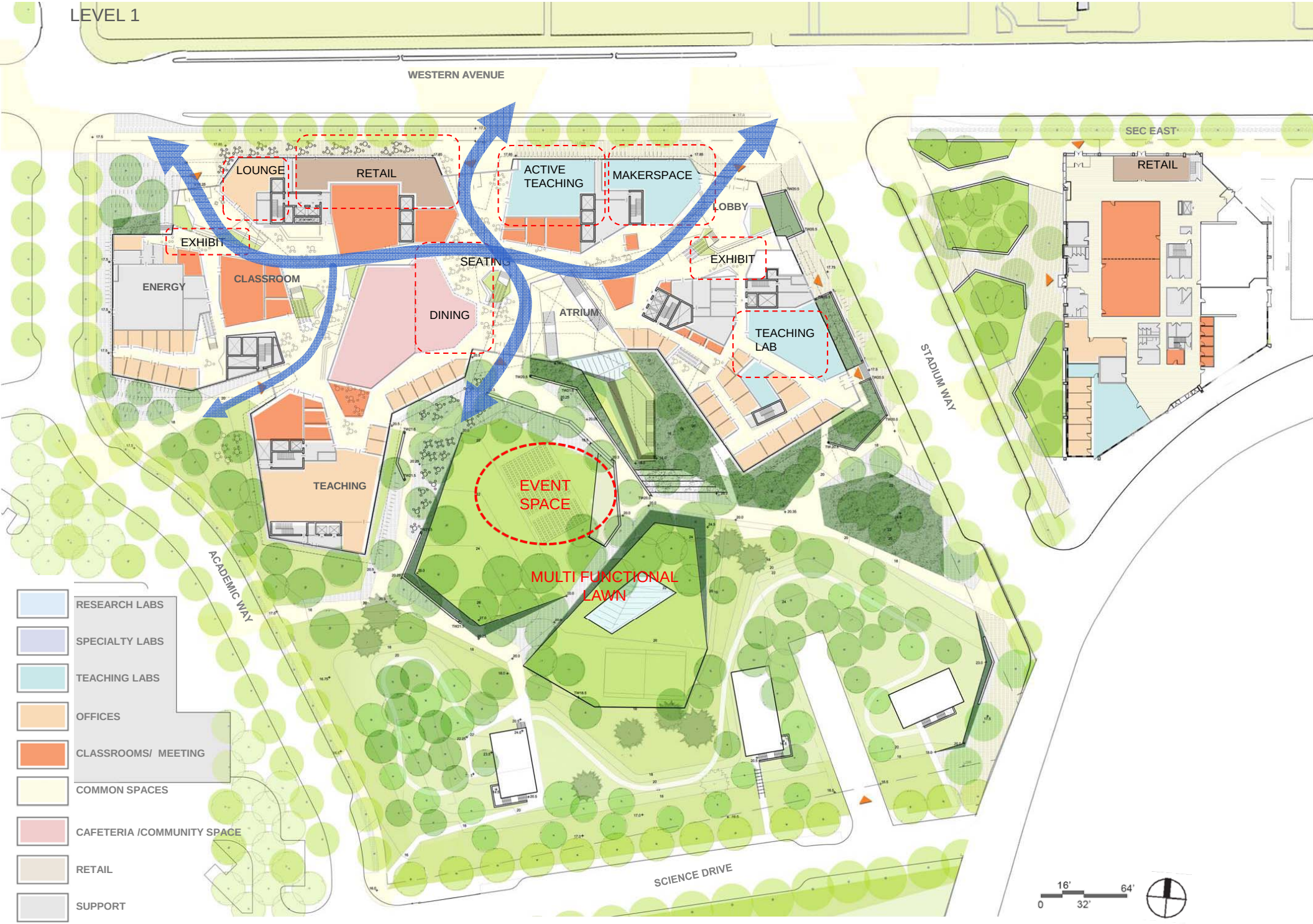


MULTI-FUNCTIONAL OPEN LAWN

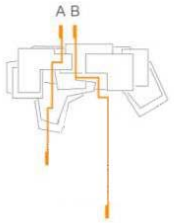
OUTDOOR CAFE

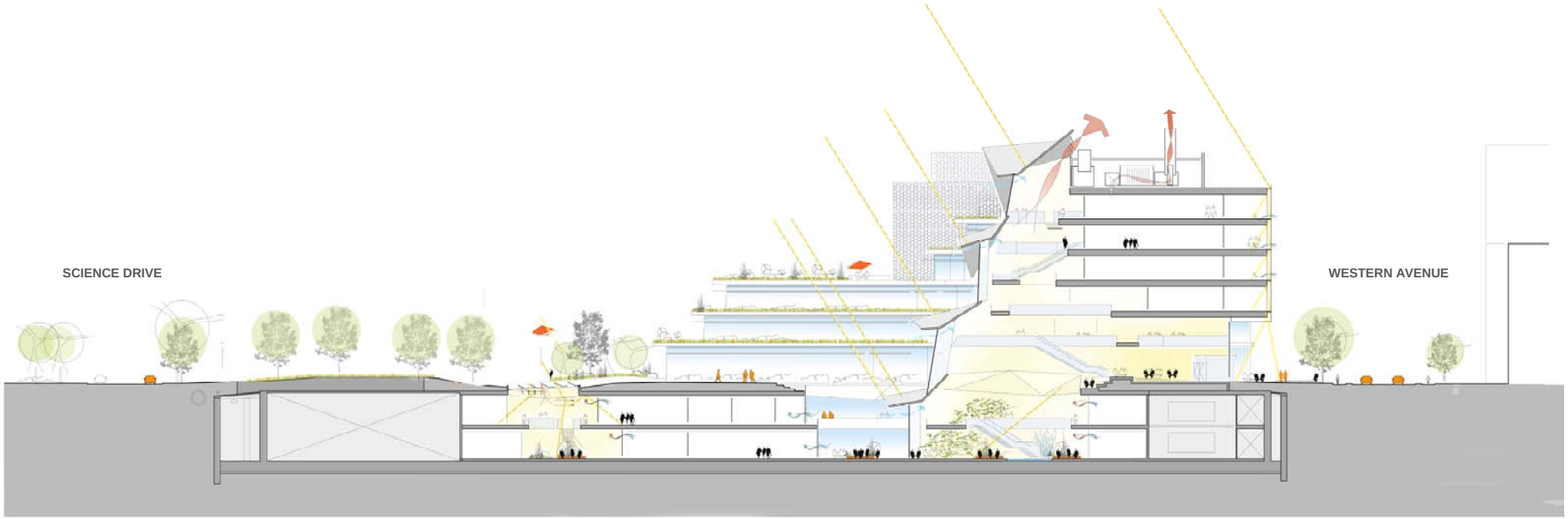
INFORMAL SEATING AREA

LEVEL 1


WESTERN AVENUE
LOUNGE
RETAIL
ACTIVE TEACHING
MAKERSPACE
LOBBY
EXHIBIT
SEATING
EXHIBIT
ENERGY
CLASSROOM
DINING
ATRIUM
TEACHING LAB
SEC EAST
RETAIL
STADIUM WAY
TEACHING
EVENT SPACE
MULTI FUNCTIONAL LAWN
ACADEMIC WAY
SCIENCE DRIVE
RESEARCH LABS
SPECIALTY LABS
TEACHING LABS
OFFICES
CLASSROOMS/ MEETING
COMMON SPACES
CAFETERIA /COMMUNITY SPACE
RETAIL
SUPPORT
16'
64'
0
32'

SECTION



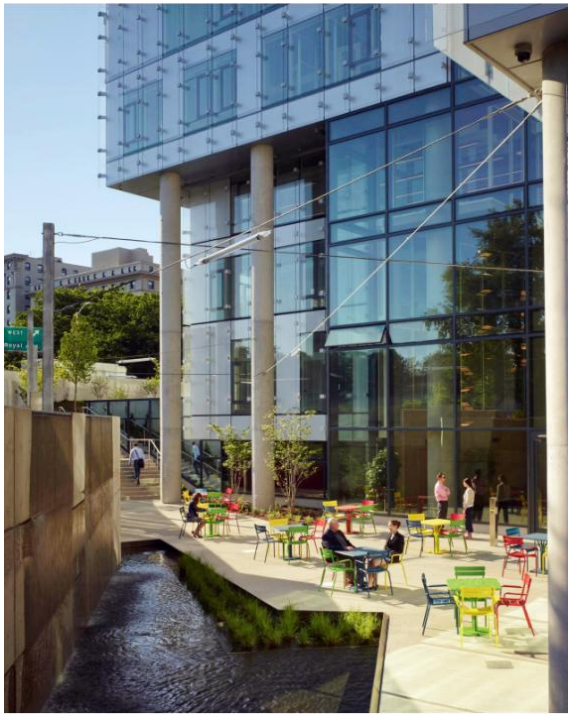


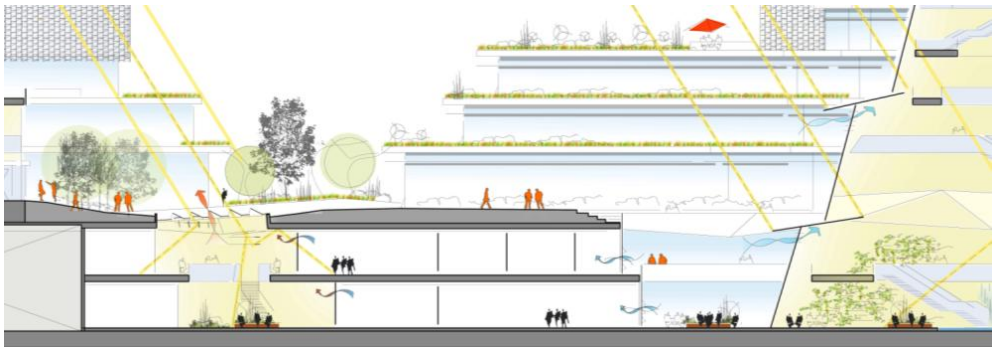
SECTION B

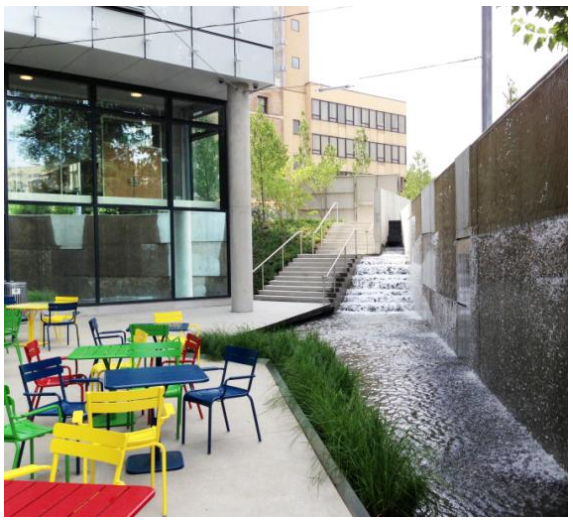
COLLABORATIVE SPACES:
VERTICAL CONNECTIVITY

VIEW OF CENTRAL ATRIUM

BELOW GRADE CONNECTION TO EXTERIOR







VIEW FROM WESTERN AVENUE EAST

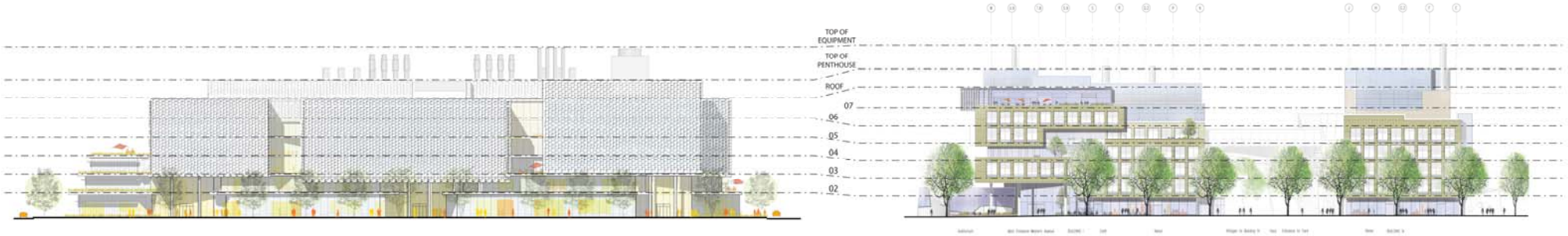
ORIGINAL IMP AERIAL VIEW TOWARDS NORTH EAST

UPDATED AERIAL VIEW TOWARDS NORTH EAST

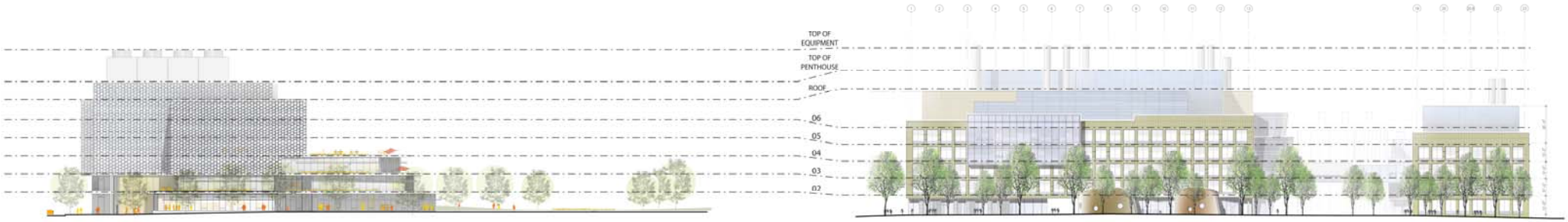
Courtesy of Harvard Planning and Project Management

CURRENT DESIGN

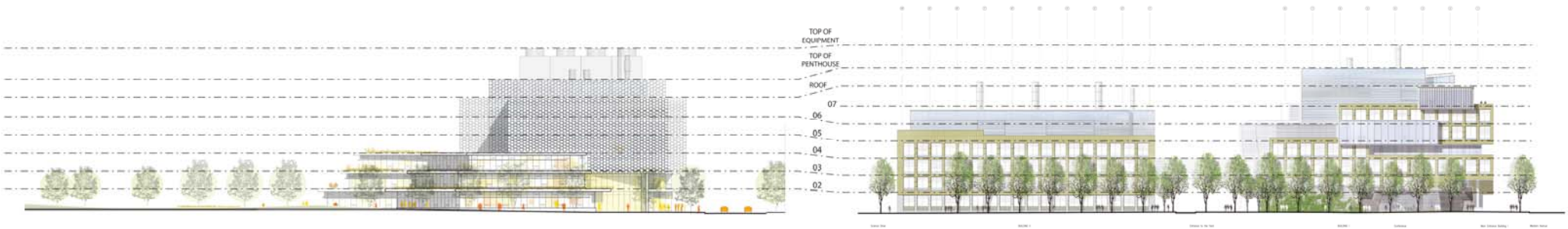
2008 DESIGN



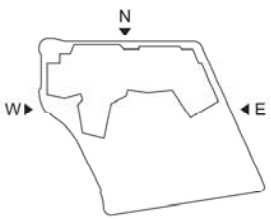
NORTH | WESTERN AVENUE



WEST | ACADEMIC WAY

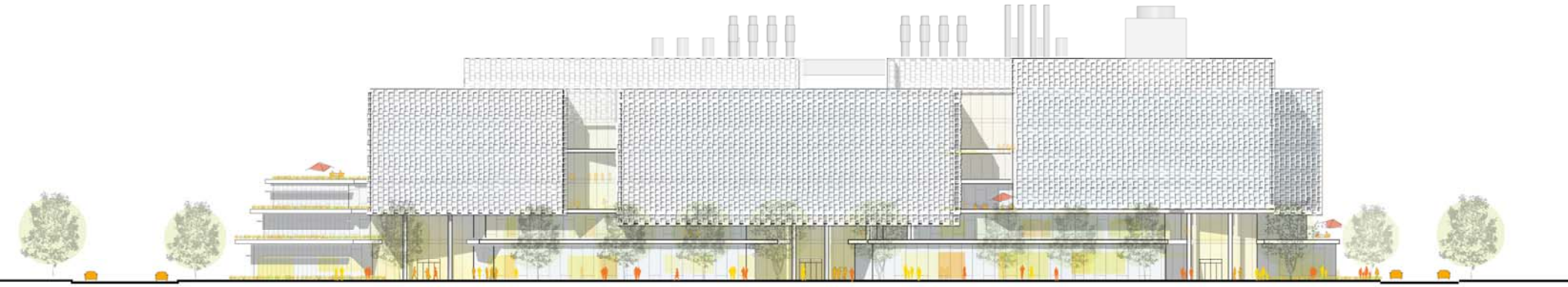


EAST | STADIUM WAY



0 64 128 ft

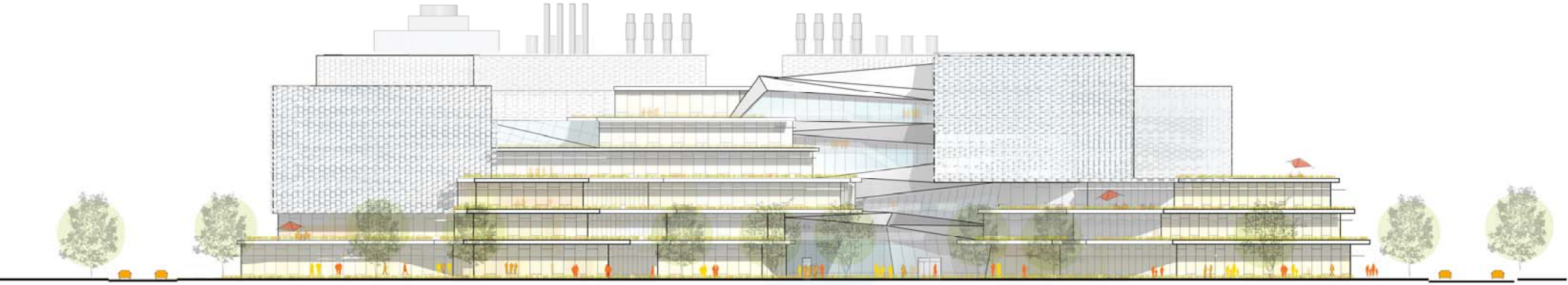
ELEVATIONS



Stadium Way

Academic Way

NORTH



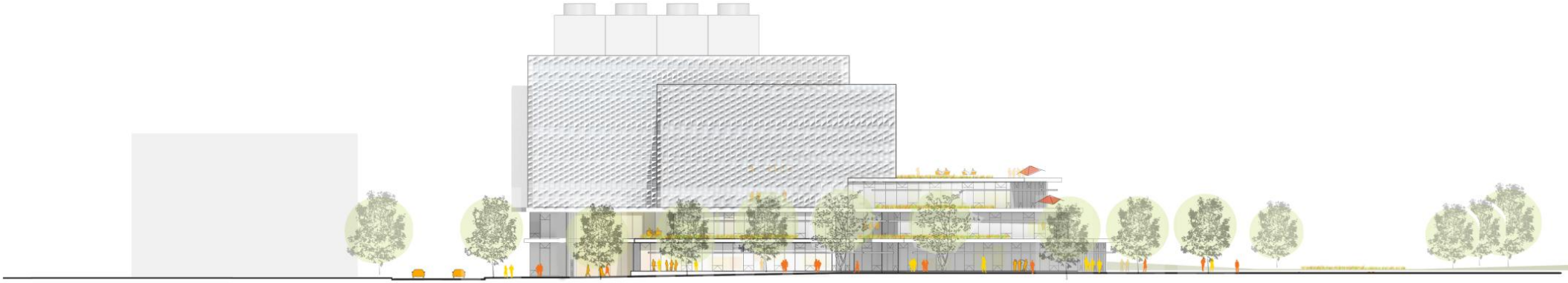
Academic Way

Stadium Way

SOUTH

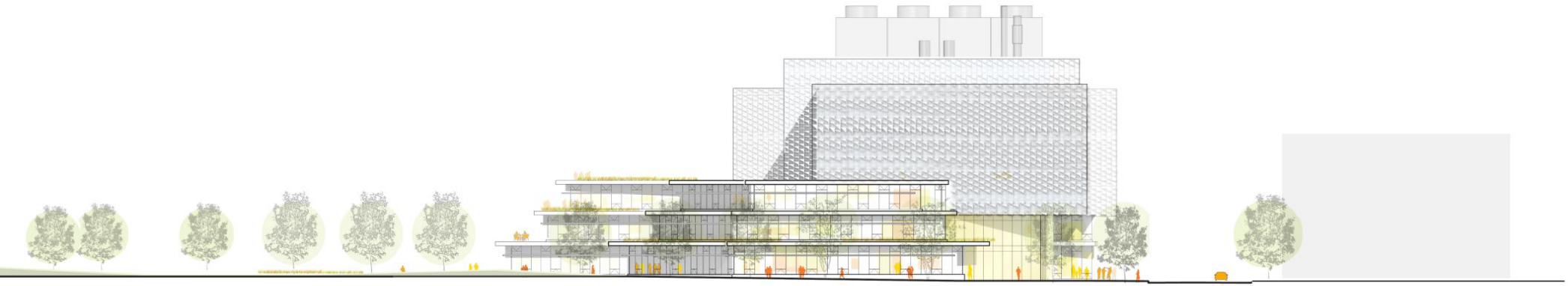
16' 64'
0 32'

ELEVATIONS



Western Avenue

WEST



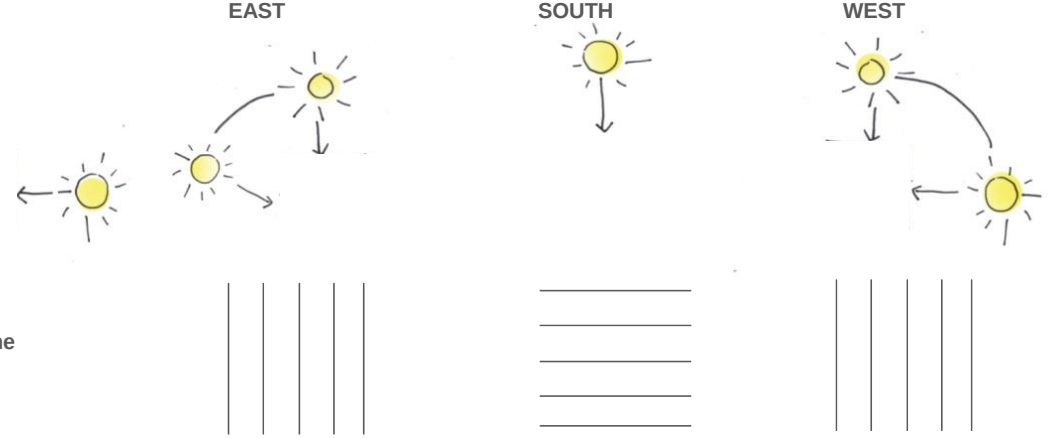
Western Avenue

EAST

**VERTICAL/
HORIZONTAL SHADING**

MODULE SHAPE PER ORIENTATION

NORTH **EAST** **SOUTH** **WEST**



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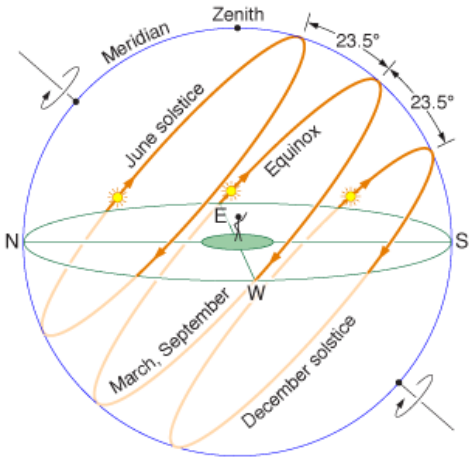
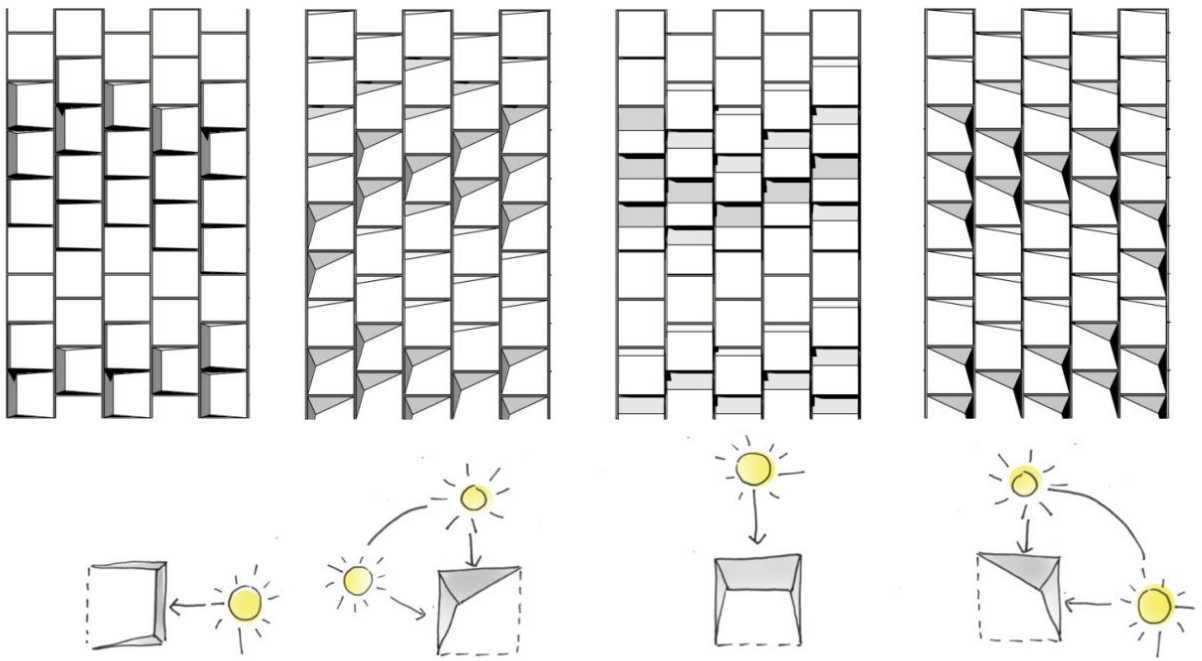
A 3 DIMENSIONAL SHADE

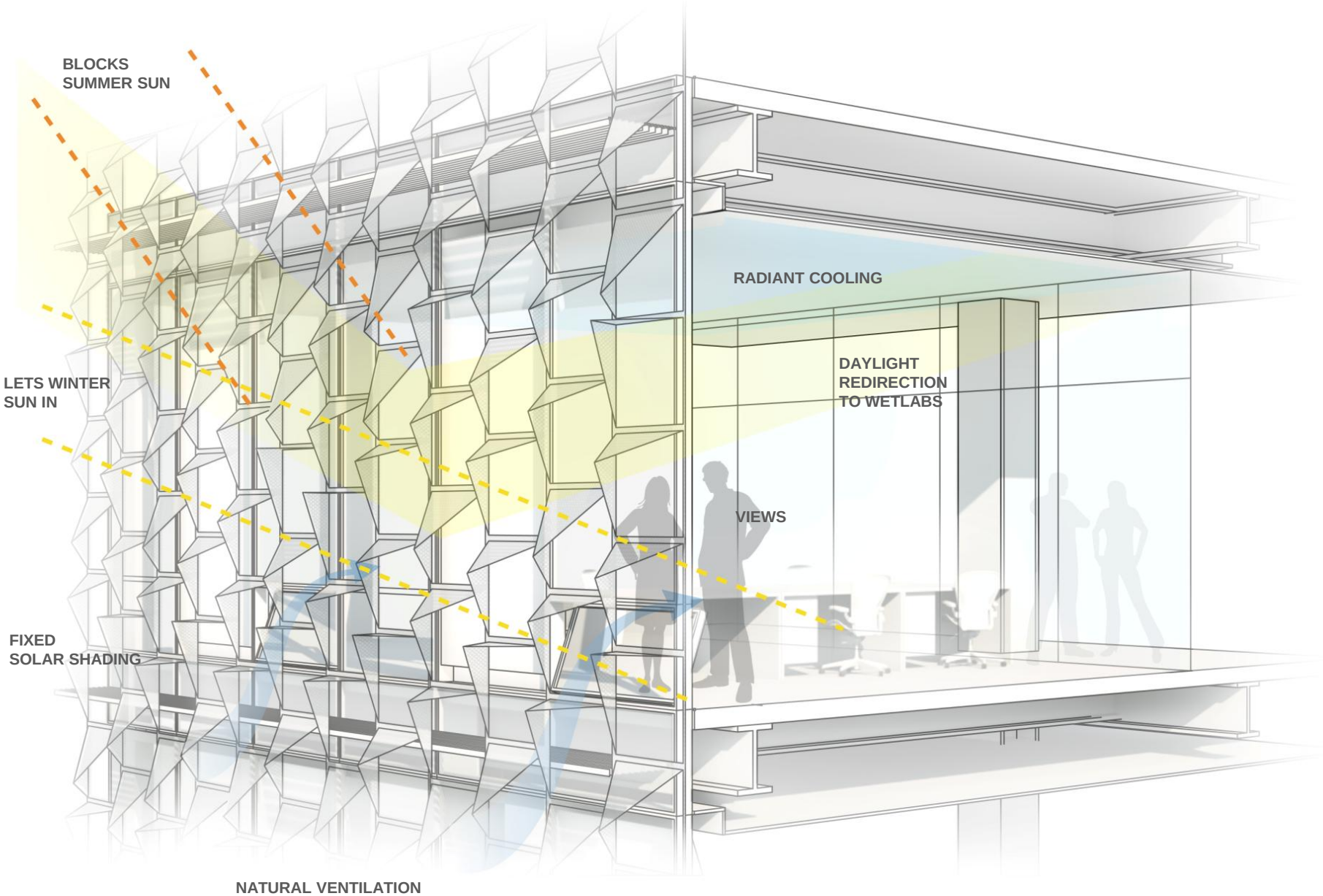


MODULE SHAPE PER ORIENTATION

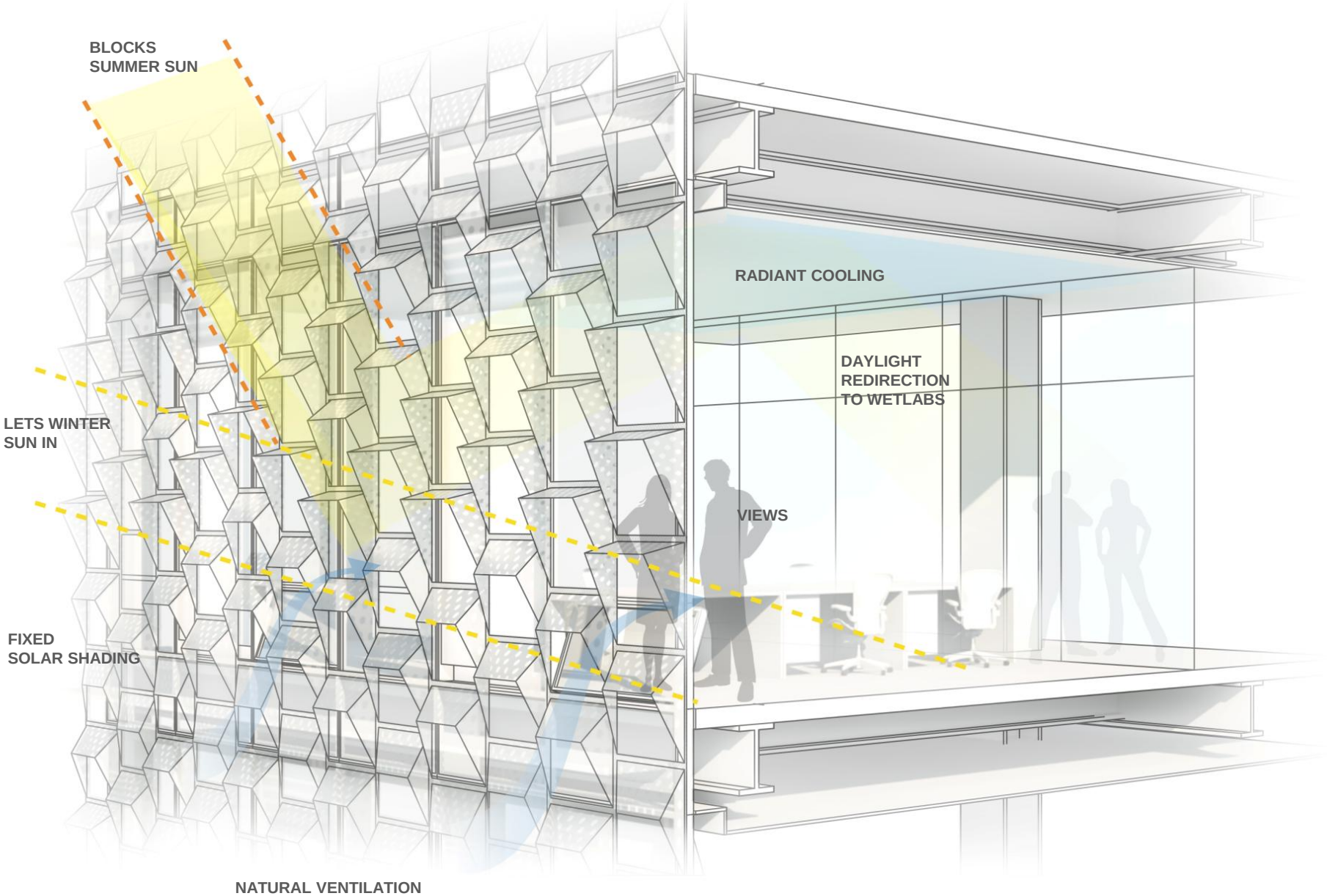


FACADE PERFORMANCE
NORTH

FACADE PERFORMANCE
EAST



FACADE PERFORMANCE
SOUTH



VIEW FROM NORTH OF WESTERN AVENUE

ENTRY FACADE ON WESTERN AVENUE

SOUTH COURTYARD VIEW