Daniels Faculty of Architecture, Landscape, and Design

University of Toronto

Office dA/ADAMSON ASSOCIATES

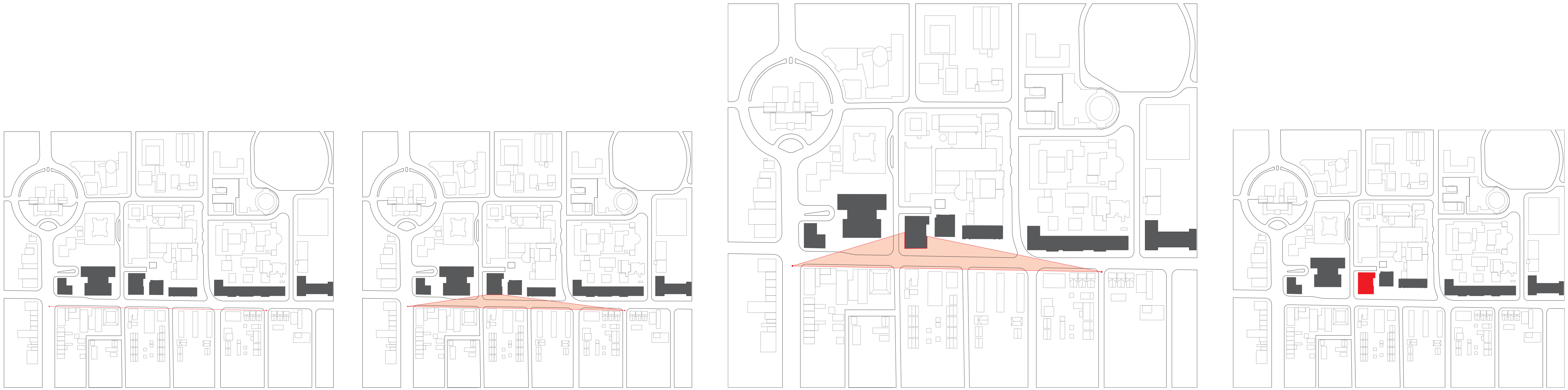
DANIELS FACULTY OF ARCHITECTURE, LANDSCAPE, AND DESIGN

BUILDING IN THE CITY: THE DANIELS FACULTY AS AN URBAN PROTAGONIST

The Daniels Faculty of Architecture, Landscape, and Design building, positioned at the Southwestern corner of the University of Toronto poses great potentials for the redefinition of the threshold into the campus. Given its key location, the existing building anchors this corner of the campus, and yet it does not engage the urban context in any specific way; to address this issue, our project speaks to the context in a variety of scales as a way of activating the site form the outside in, as well as the inside out.

First and foremost, it is important to note that the Daniels Building sits at the edge of College Street, while its neighbors all recede back some seventy to ninety feet; this results in the objectification of the building, giving it a certain figural prominence within the streetscape. Second, given that the most dominant approaches to the building are defined on the oblique --from Spadina as well as the eastern end of College Street –the buildings' corners gain urban significance as they become exposed to the most prominent views. We take advantage of these facts and develop a new entry sequence that

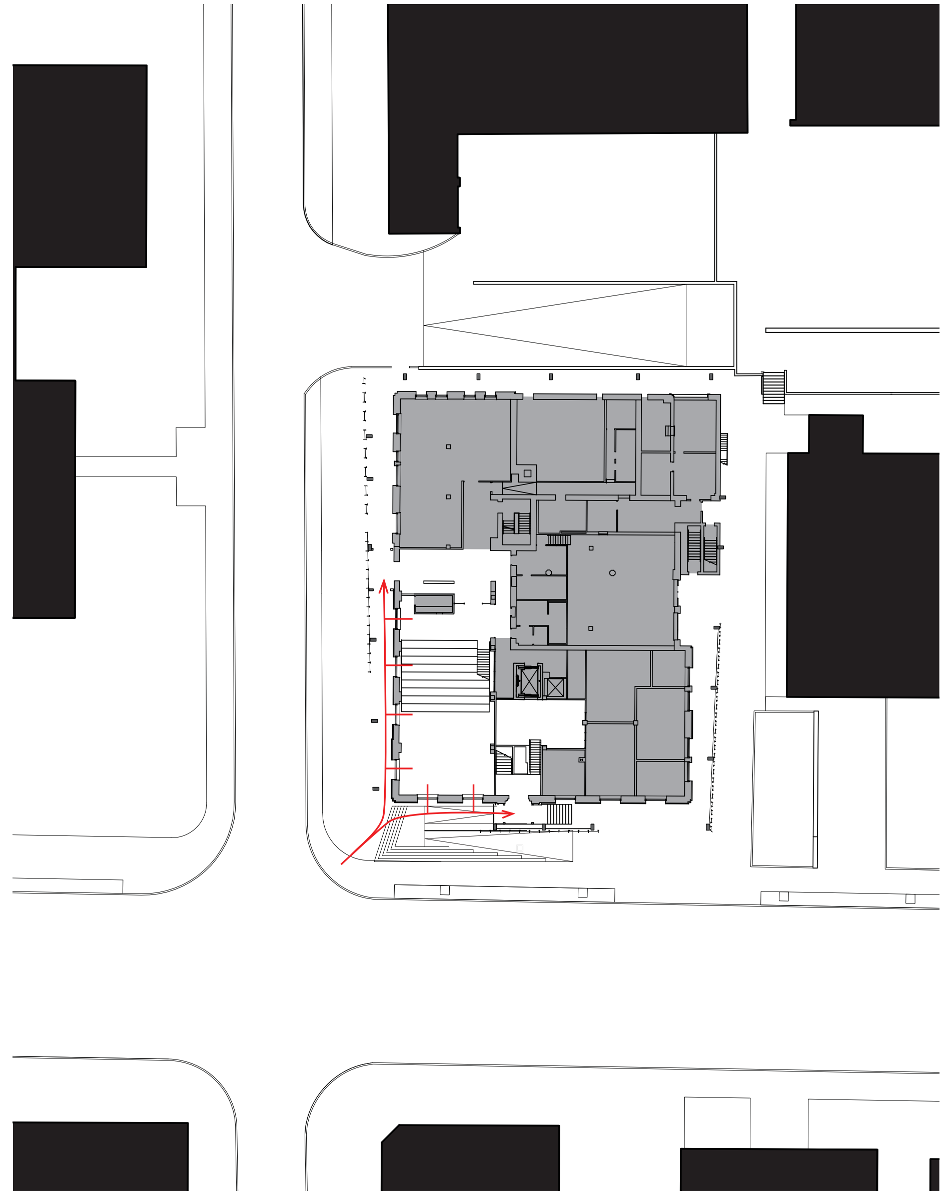
DFALD LOCATED AT SOUTHWEST CORNER OF CAMPUS ▼

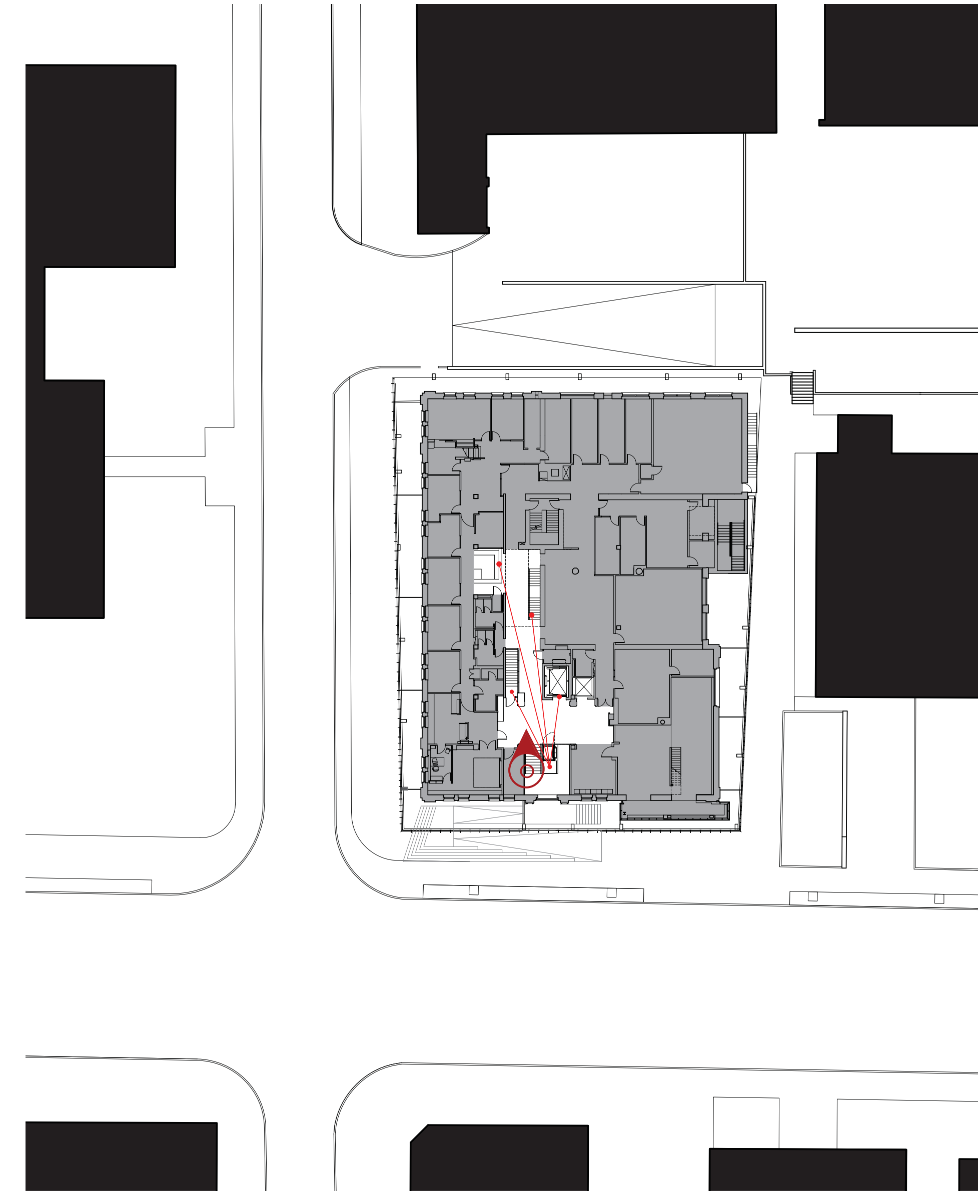


OBJECTIFICATION OF THE DFALD ▲
OBLIQUE VIEW FROM SPADINA ▼

engages the southwest, and the southeast corners, while offering an accessible entry for all of the building's inhabitants, up towards the piano nobile. Third, the Bahen Court to the northeast corner of the Daniels Building, anchors the student center and offers a potential urban link back into the campus. We attempt to reinforce this link, by cultivating both architectural and landscape strategies on the eastern edge of our building, linking College Street to the Bahen Court by way of a second stairway that exits towards the arcade and urban a walk connecting to the upper campus. Finally, Huron Street defines the western limit of the Daniels Building, and we reinforce this edge by giving access to a second entry and activating relationships between programs on the ground level, especially the auditorium which serves as a public room visible to the street.

Thus, the occasion of this expansion to the Daniels Building, is also an opportunity to create visual, accessible, and disciplinary links between the Faculty of Architecture, Landscape and Design with the broader campus, and in effect the city.



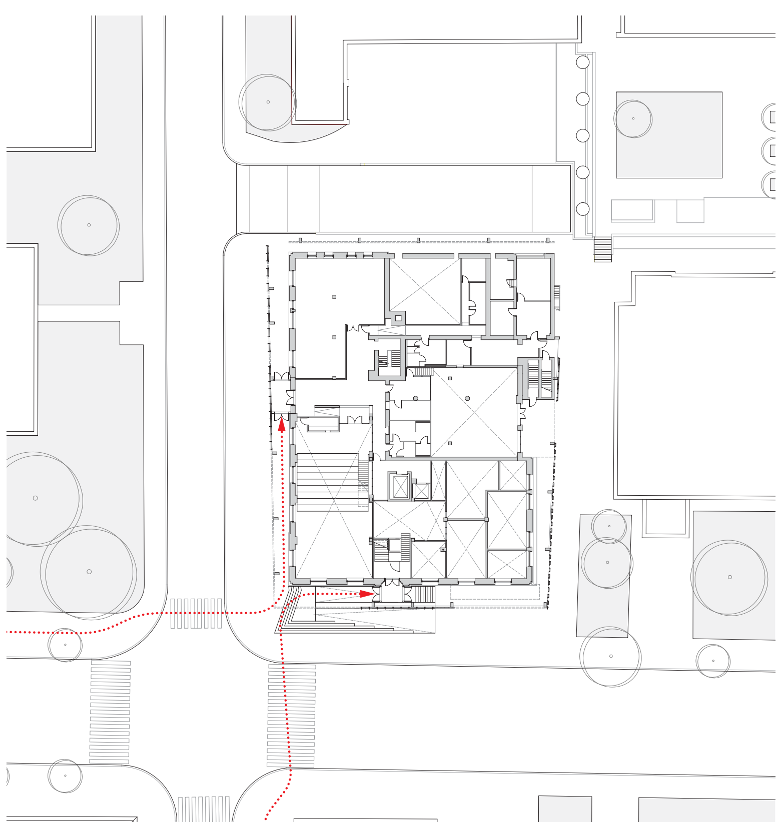


GROUND LEVEL FIGURE GROUND▲
MAIN LEVEL FIGURE GROUND ▶

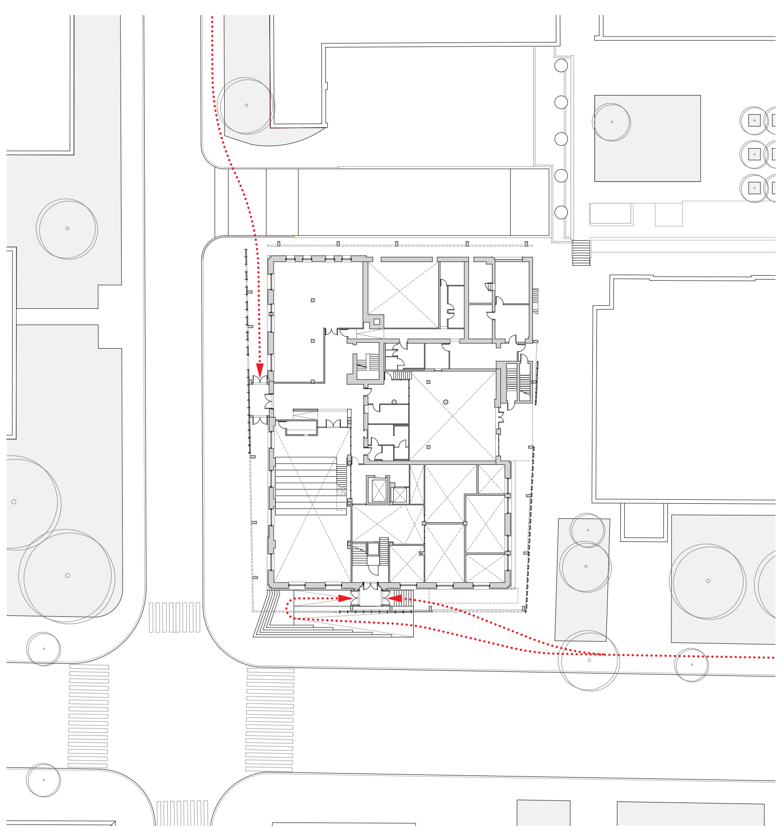
O • VIEW ON MAIN FLOOR ▼

ENTRY CONDITION: Acknowledging the oblique bias of the site, the main entry acknowledges the diagonal relationship the building maintains towards Spadina Street. The building skin is pulled up, revealing the original building behind, while opening up a “stramp” –a hybrid stair and ramp—that welcomes people of all abilities. We propose to address accessibility not so much as a technical requirement, but rather an urbanistic opportunity that bridges landscape and architectural strategies to produce a new geography for the building.

VIEW FROM STREET CORNER ▶
ENTRY SEQUENCE INTO BUILDING ▼



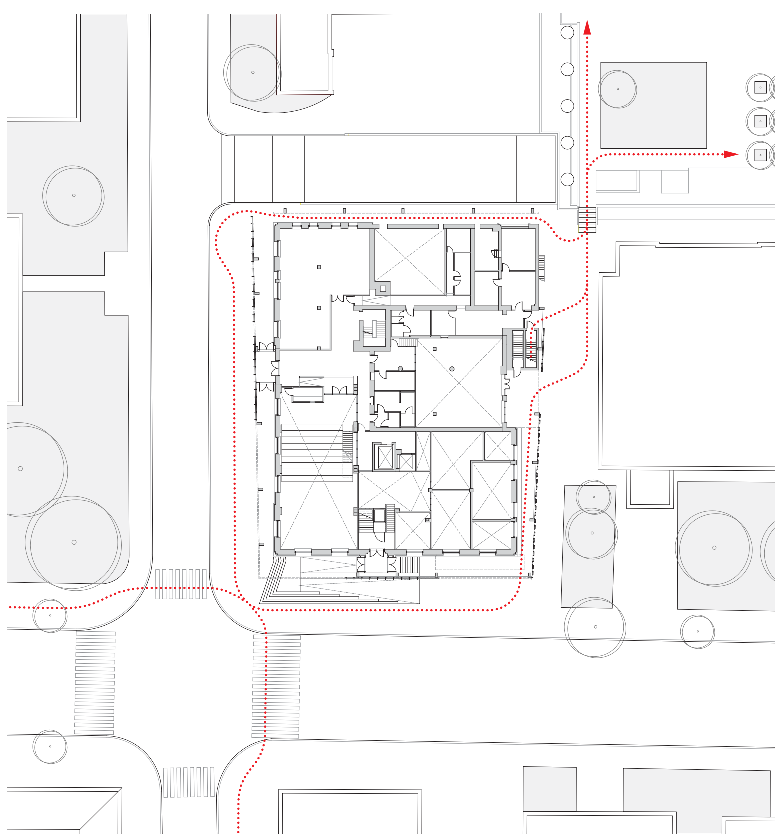
VIEW FROM NORTHWEST ▲
VIEW FROM SOUTHWEST ▶
ENTRY SEQUENCES ▼



THE OBLIQUE : The corners of the building take on an urban significance engaging the entry sequences in the southwest, southeast, and northwest corners of the Daniels Faculty. The use of these architectural moments and the supportive landscape strategies offering an urban walk connecting to the upper campus.

VIEW OF EAST ARCADE ▶

SEQUENCE AROUND BUILDING INTO BAHEN COURTYARD ▼

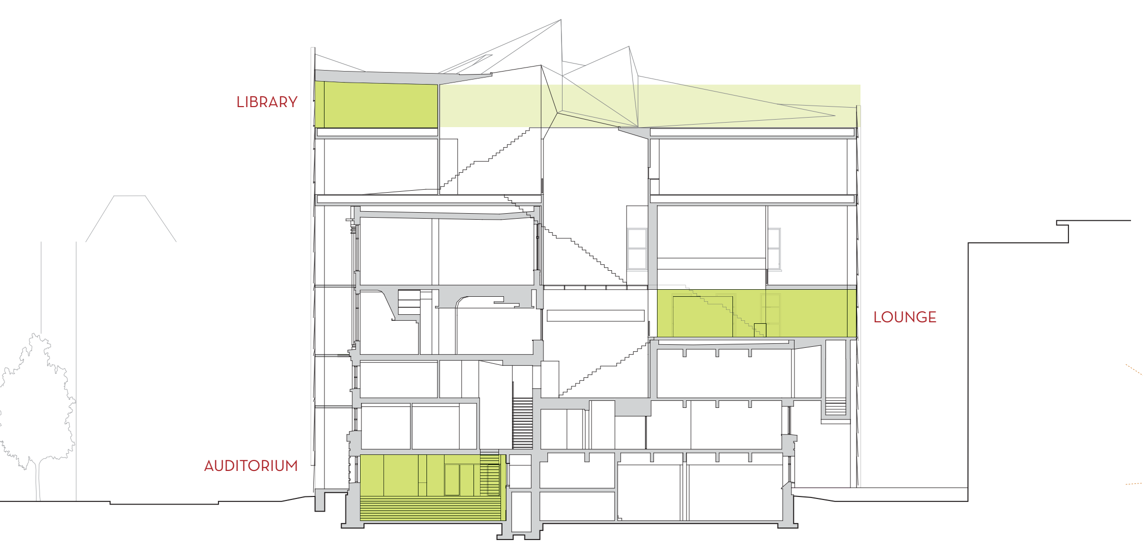


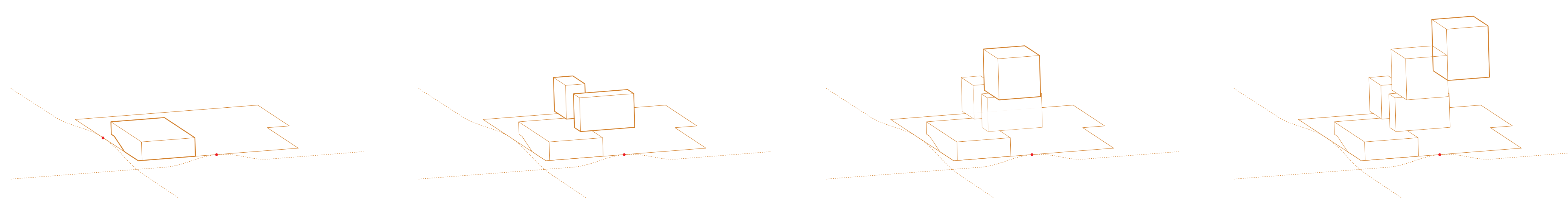
OVERCOMING STRATIFICATION IN A VERTICAL BUILDING

One of the great challenges of this project, is to create a sense of community, interdisciplinary interaction, and collaborative platforms within an existing building that is predisposed to separation and stratification. Arguably, this architectural hurdle is an important one to overcome as a way of dealing with pedagogical advancement in design related fields. The existing central staircase does effectively link the various floors to each other in a conventional way, but it offers little in creating places of exchange, mediation, participation, or debate. The core idea of our scheme is to create the possibility of interaction, using a series of interlocking double height spaces to facilitate links between collective spaces such as the student lounge and the review spaces with the studio spaces, research labs, Library, and the Auditorium.

In this programmatic stack, the auditorium sits at the lowest level, creating an anchor at the bottom of the building that is visible from the street, with windows are only closed off when formal lectures require the darkening of the room. The auditorium is designed as a multipurpose room with a partially flat floor that can accommodate critiques, classes, and other public events.

The top of the building is crowned with the new Library, essentially creating another public destination at the opposing pole of the building. The library offers a prospect over the city, while creating a public platform for research, study and debate for all students, faculty, and guests alike. The rooftop, atop the library, is composed of a green roof with a variety of environments. A multi-purpose terrace area is developed for events, installations, and general outdoor gatherings outside the library and there is an accessible ramp that builds up the landscape



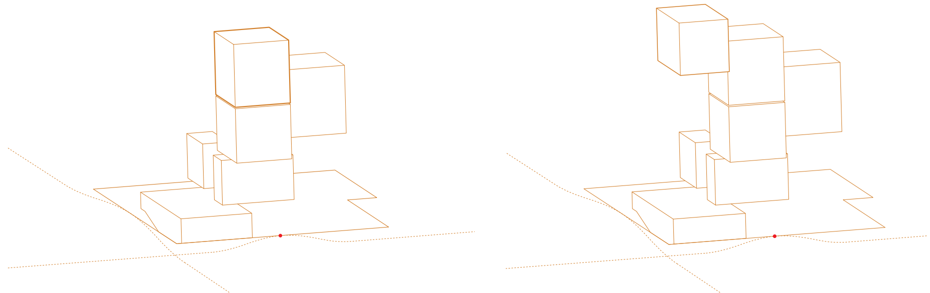


▲ BUILDING ANCHORS

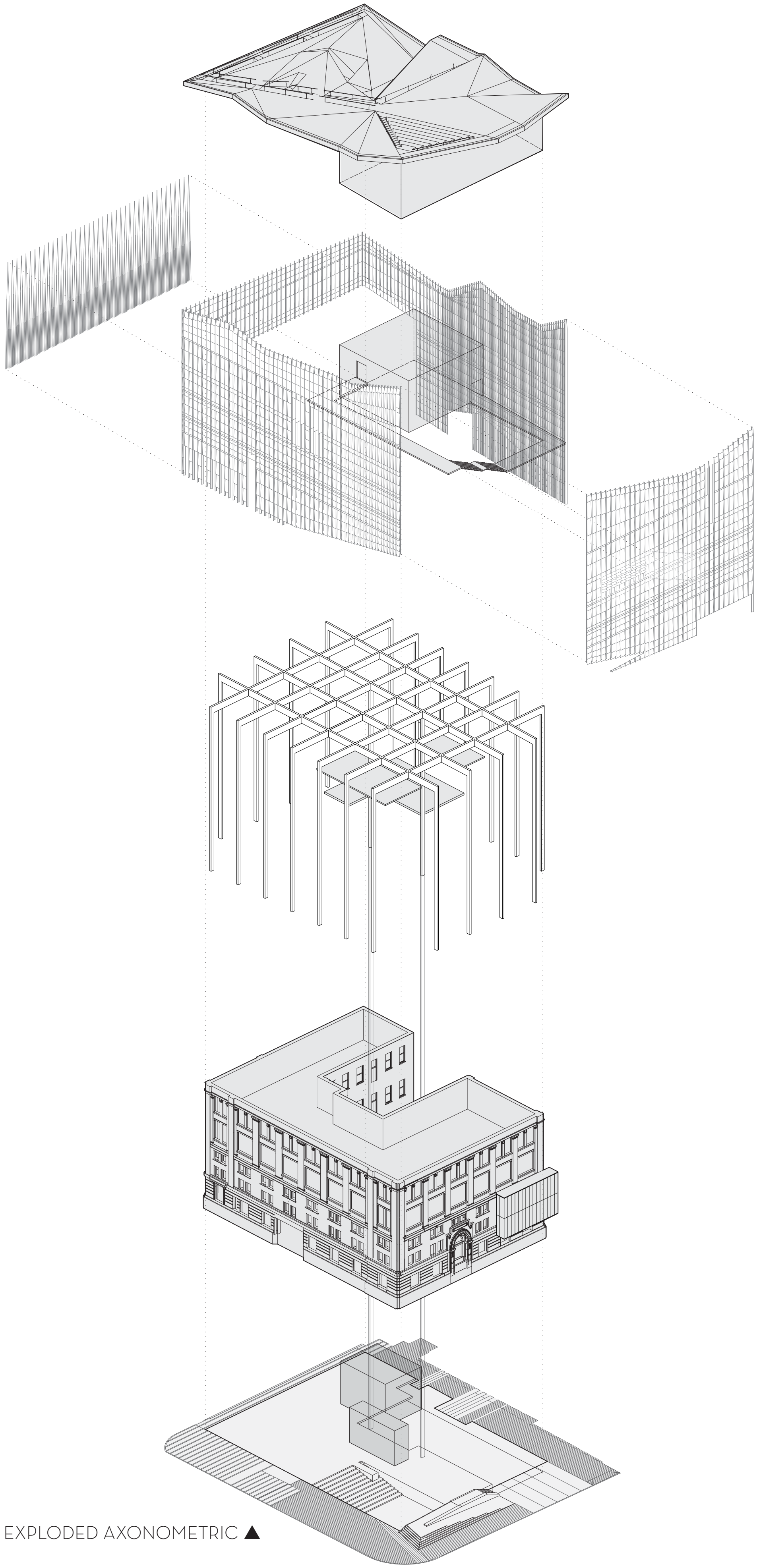
of the roof. This landscape is meant, beyond a visual and aesthetic proposition, to offer pedagogical possibilities for the students. Each terrace is planted with varying flora, and codified as an extension of the library itself. Areas can be reserved for student explorations, horticultural exercises and experiments. In this new ground of sorts, the ramp winds around and ascends to the southern edge, where an outdoors auditorium space is created at the pinnacle of the building.

In between the library and the auditorium, the student lounge acts as a central anchor on the third floor, with studios both above and below it. All studio spaces have some relationship with the formal review spaces and offer casual counter spaces where students can work on their laptops while looking into ongoing reviews. Thus, as the section of the building encounters all these programs, it offers strategic links from one level to another, using the elevator as the pragmatic medium of ascendance, while inserting stairs, ramps, and terraces as a broader landscape of events, programs, and terrains between which the various disciplines can dialogue.

CHUTES AND LADDERS: This project takes advantage of multiple circulation paths to develop varied itineraries up and down the building –this, as a way of fostering a dynamic and interactive social and intellectual life for its users. The elevator, the fire stairs achieve this at the most perfunctory level, while the landscape of ramps, stairs and terraces that ascend the building in its core, by way of atria, raise this idea to another level. In one instance, a staircase is brought to the exterior of the building, from the third to fourth floor, where the student lounge is set, and links this organizational idea to the urban condition of the street. A balcony and bench offer a public place of pause for fresh air.

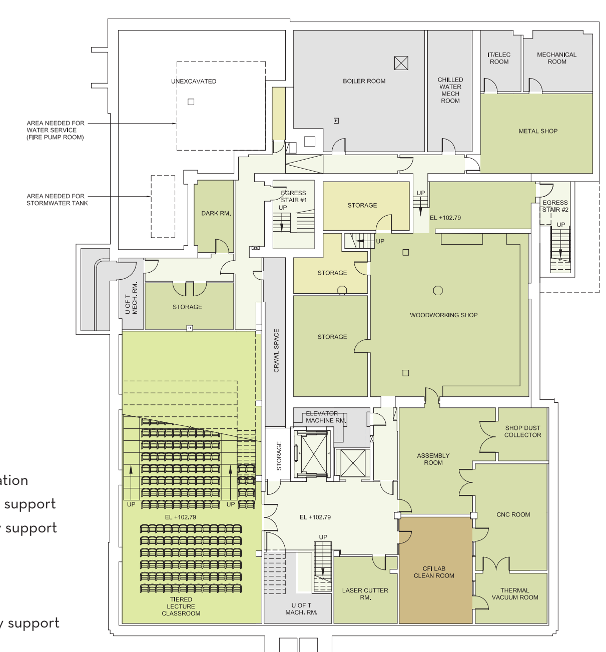


BUILD UP OF VOLUMES ◀
STRATEGIC VERTICAL LINKS ▶

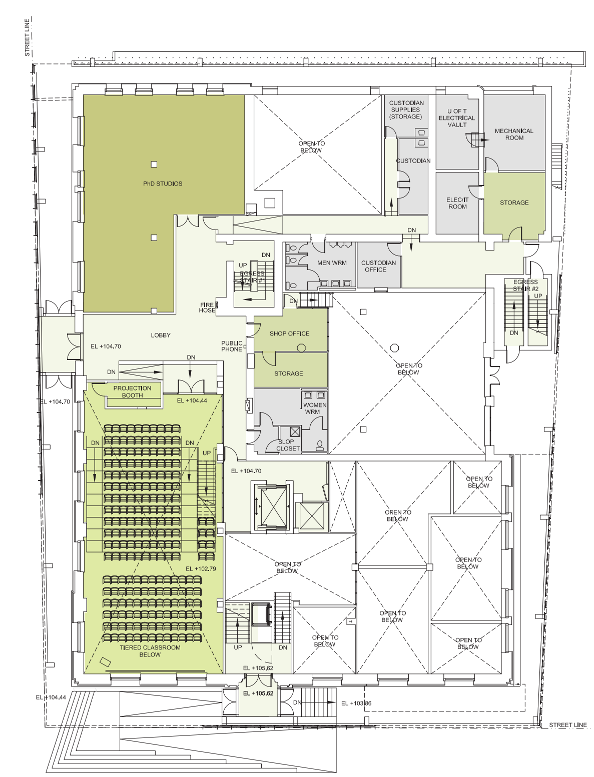


EXPLODED AXONOMETRIC ▲

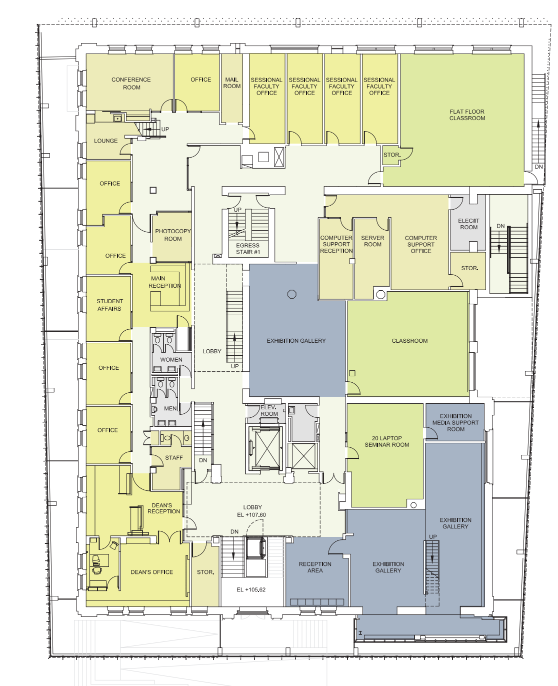
mechanical — circulation
studio — studio support
library — library support
shared
research
classroom
faculty — faculty support



▲ BASEMENT FLOOR PLAN

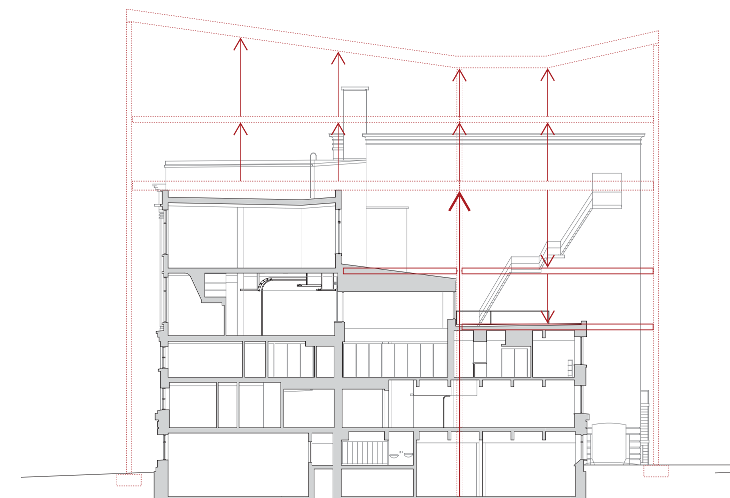


▲ GROUND FLOOR PLAN

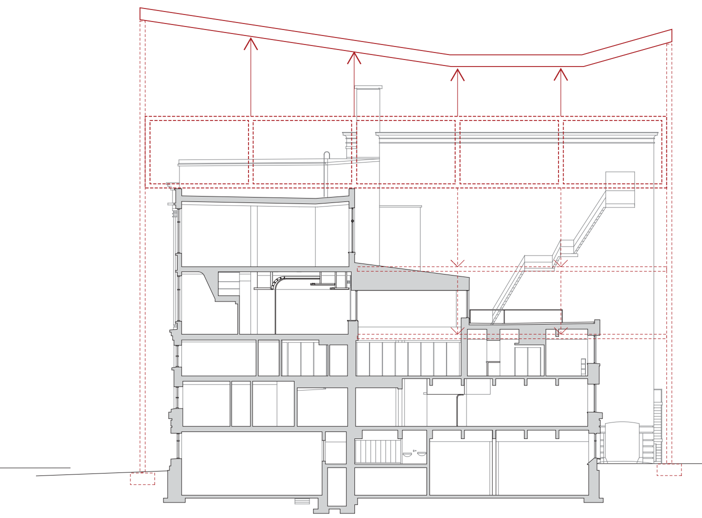


▲ MAIN FLOOR PLAN

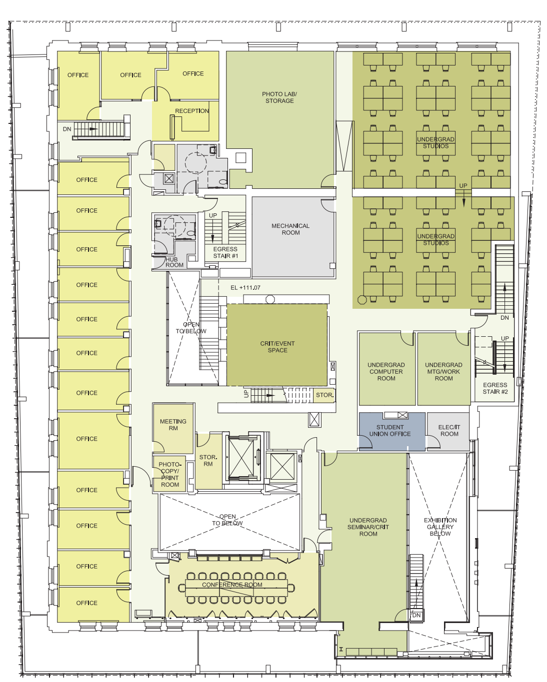
STRUCTURAL STRATEGIES: Two structural ideas were investigated as a means of maintaining the operational integrity of the building while the school season is in session. The first idea was to develop a Vierendeel Truss that spans the entire width of the building, offering a structural 'beam' from which to suspend the fourth and third floor, while also forming the foundation of the sixth floor. In contrast, the second idea was to surgically insert two columns and a shear wall within the center of the building to mitigate the otherwise long spans that would have to be overcome. The foundations for these structural elements could take about six weeks to completed, disrupting part of the wood shop. Each set of columns would only disrupt each floor one weekend at a time. And the shear wall will be constructed in conjunction with the elevator. The second solution is substantially more economical than the first.



CONSTRUCTION OPTION 1: COLUMNS ▲



CONSTRUCTION OPTION 2: VIERENDEEL TRUSS ▲

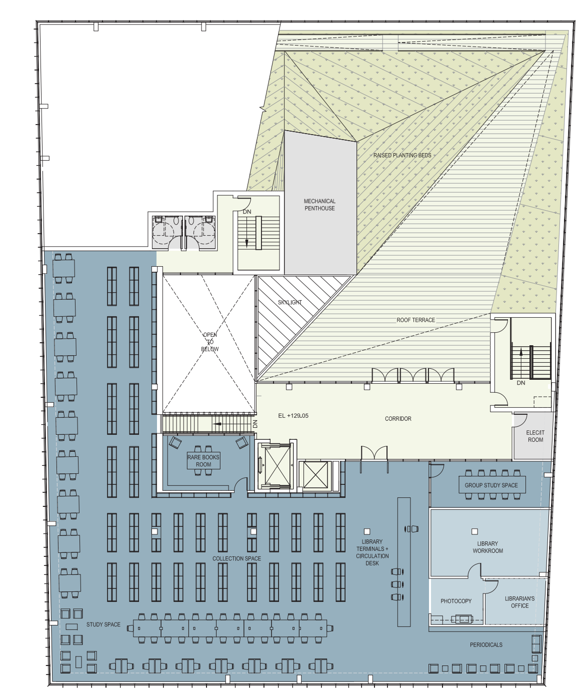


▲ SECOND FLOOR PLAN

▲ THIRD FLOOR PLAN

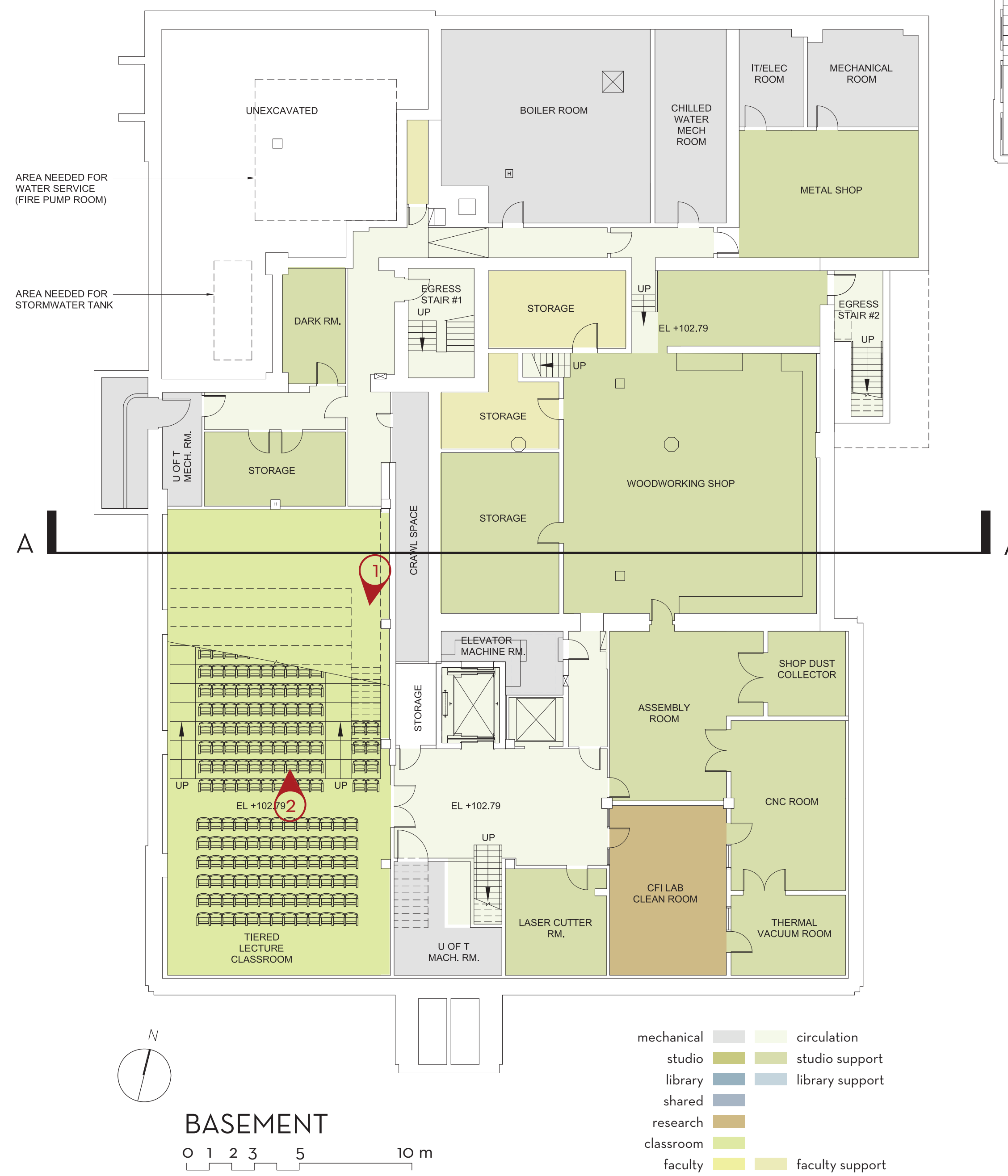
▲ FOURTH FLOOR PLAN

▲ FIFTH FLOOR PLAN



▲ SIXTH FLOOR PLAN

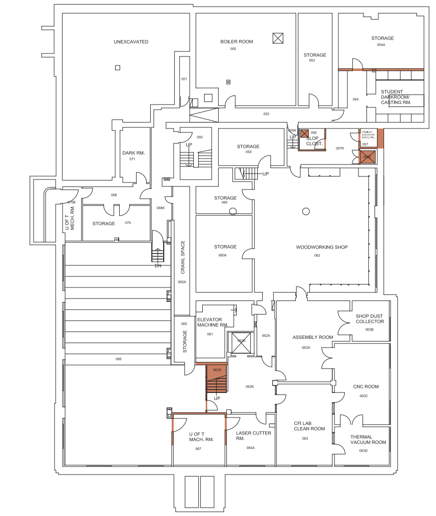
1 • VIEW INTO AUDITORIUM



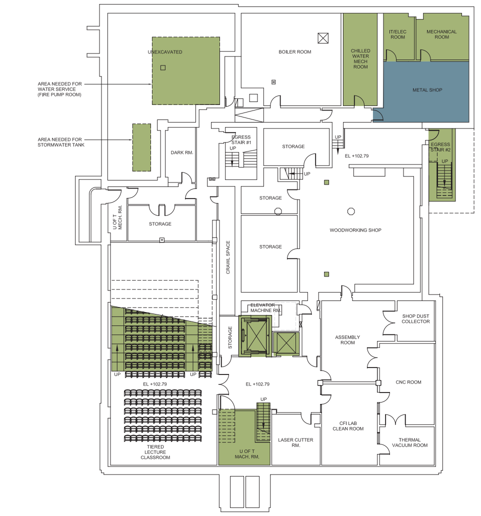
BASEMENT

mechanical		circulation	
studio		studio support	
library		library support	
shared			
research			
classroom			
faculty		faculty support	

▼ EXISTING PLAN

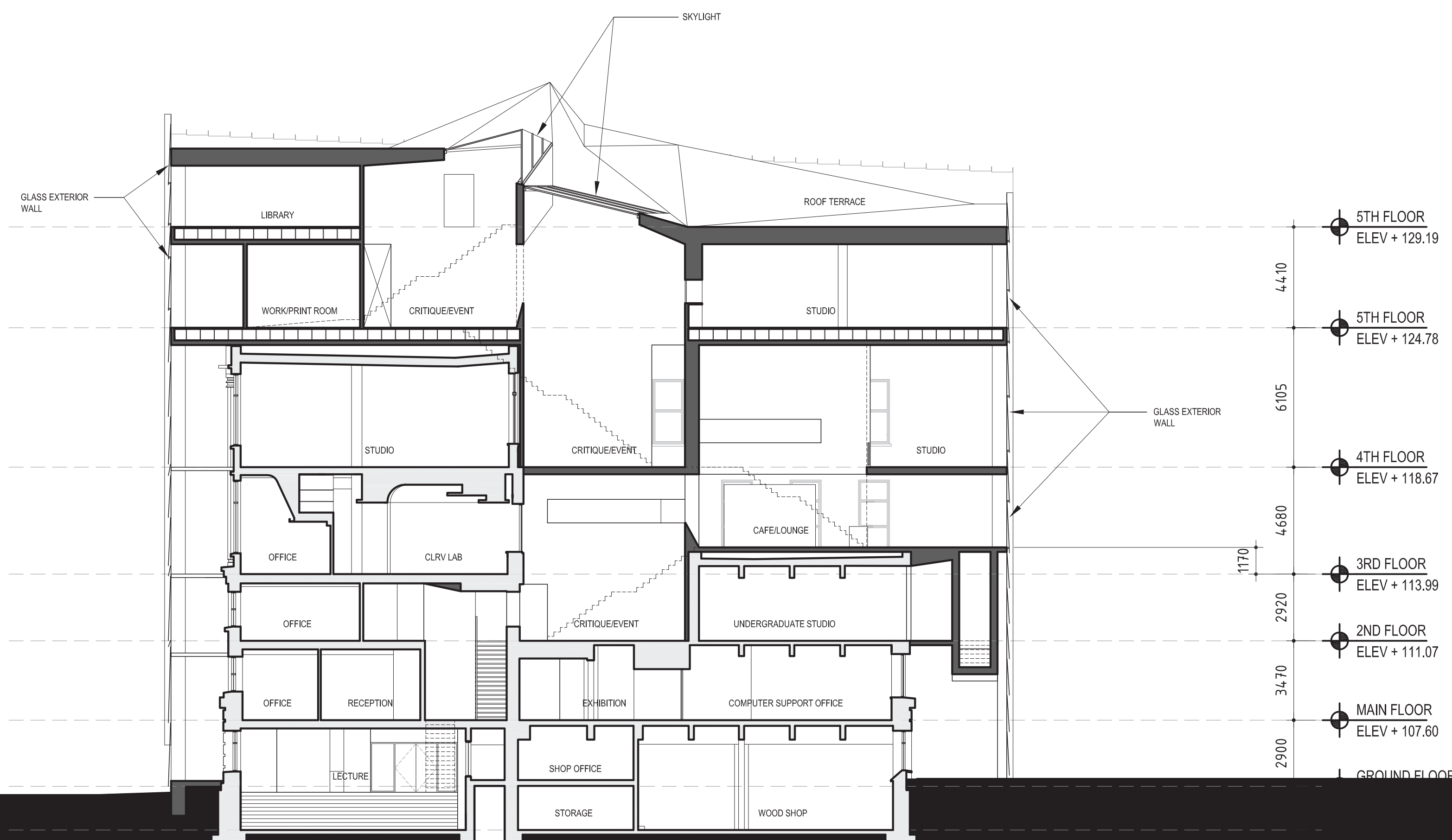


▼ RENOVATION PLAN



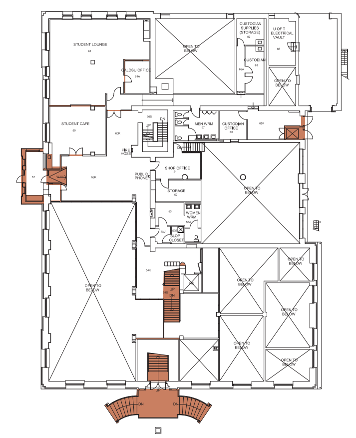
PHASE 1
PHASE 2
DEMOLITION

2 • VIEW OF AUDITORIUM ▲

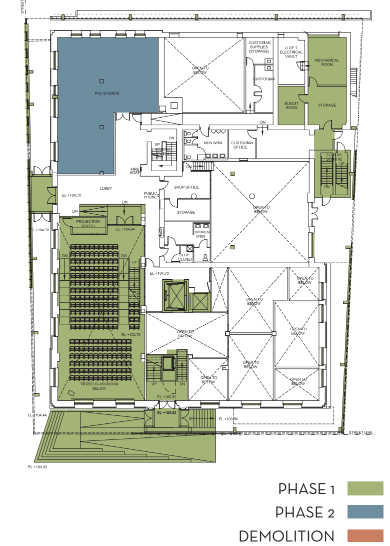


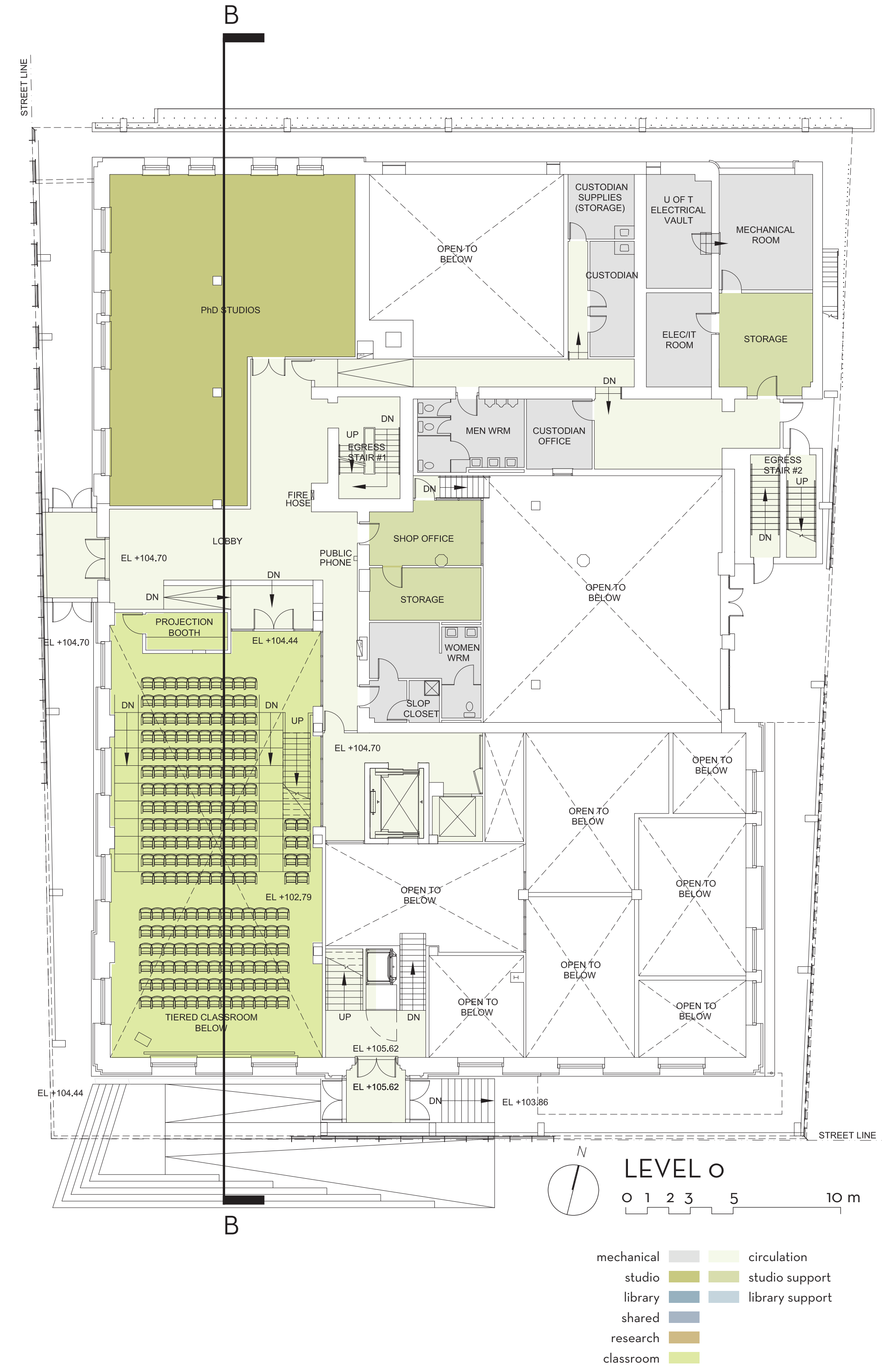
SECTION A

▼ EXISTING PLAN

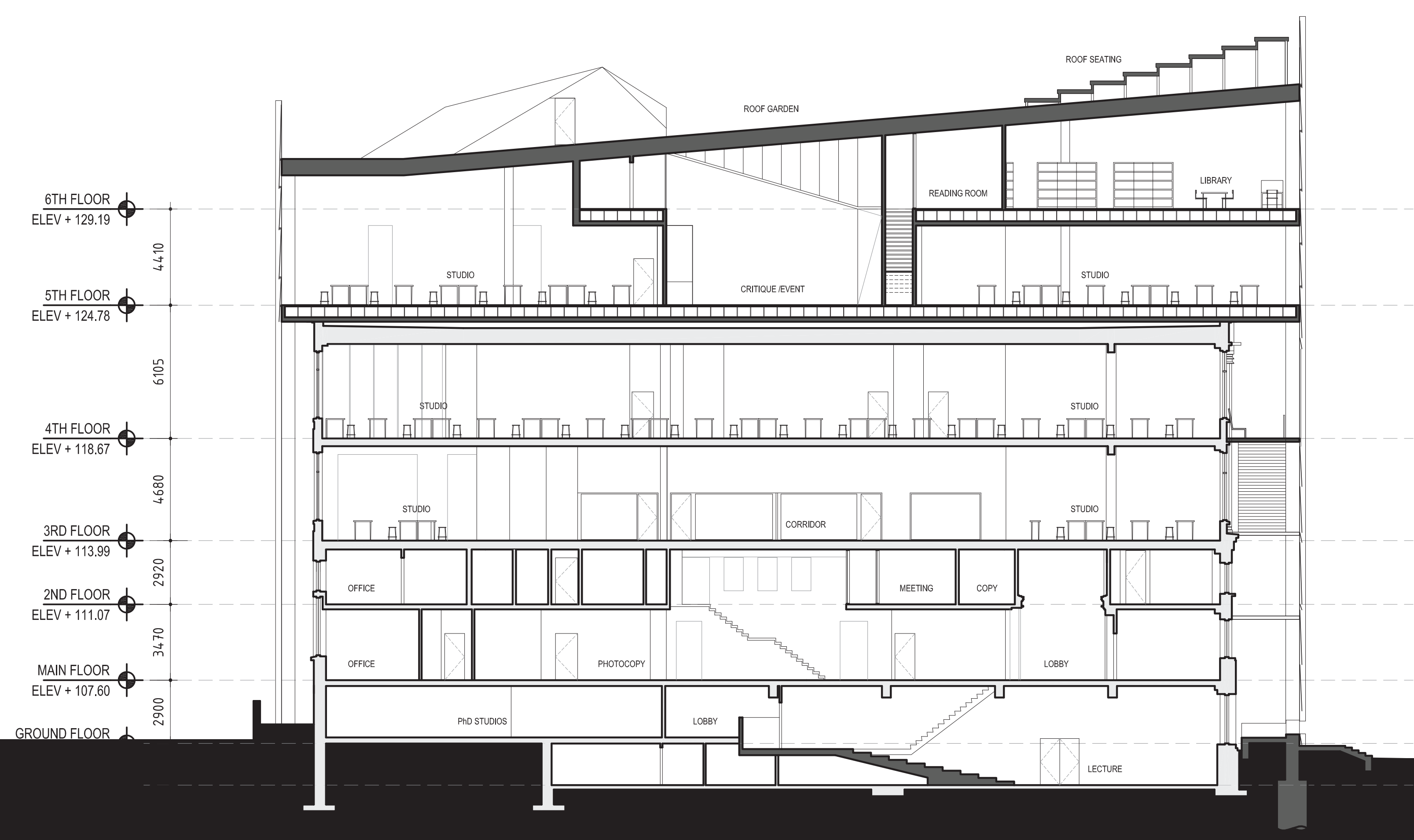


▼ RENOVATION PLAN



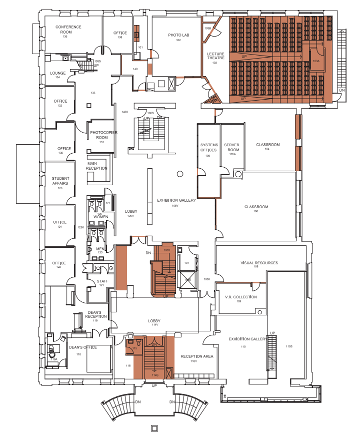


LEVEL 0



SECTION B

▼ EXISTING PLAN

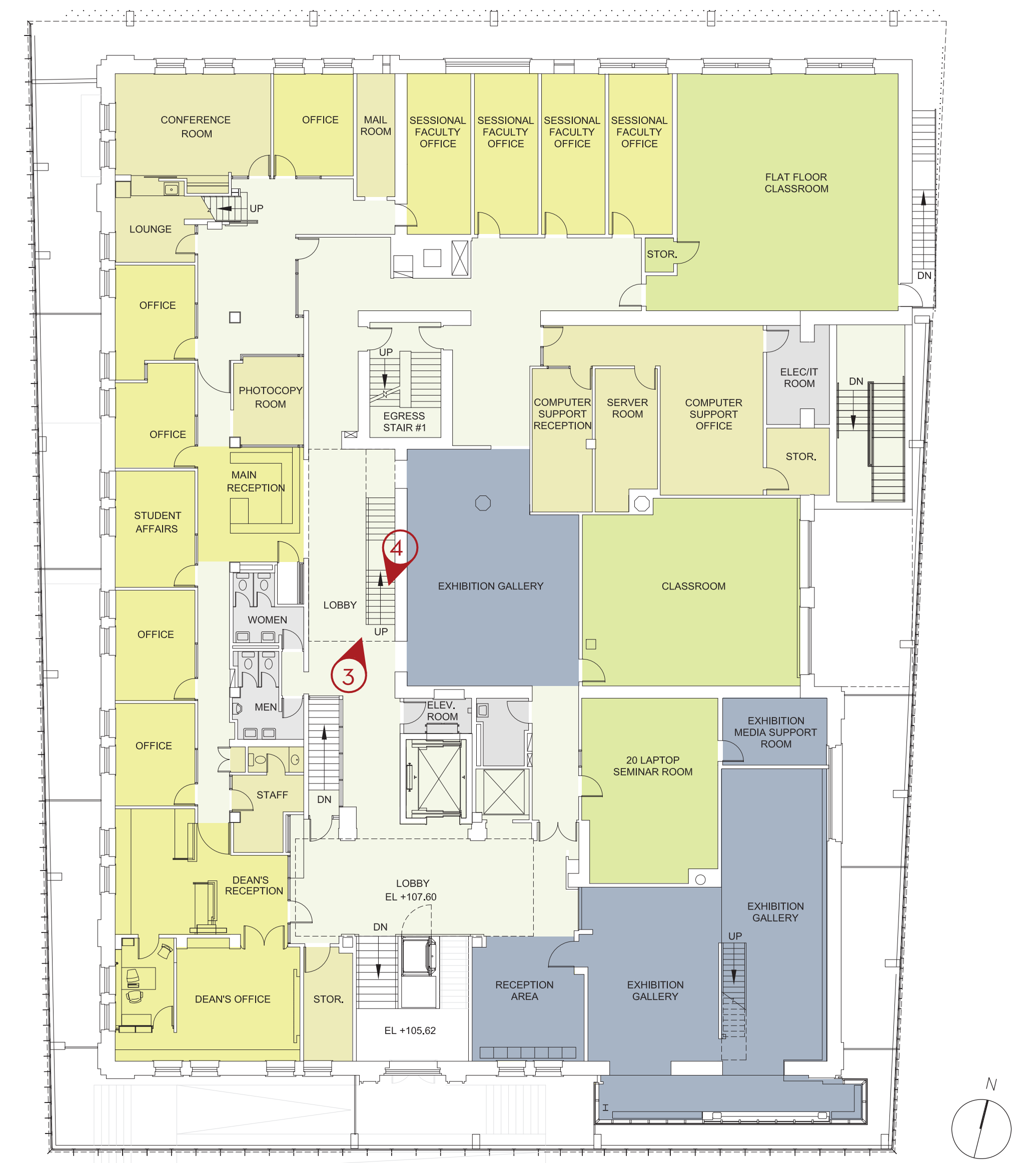


▼ RENOVATION PLAN

PHASE 1	green
PHASE 2	blue
DEMOLITION	orange

3 • VIEW TOWARDS ACSENT STAIR ▼

4 • VIEW TOWARDS AUDITORIUM ENTRY ▼

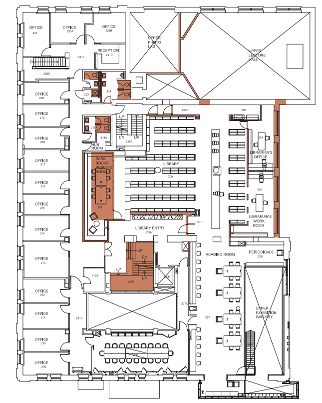


LEVEL 1

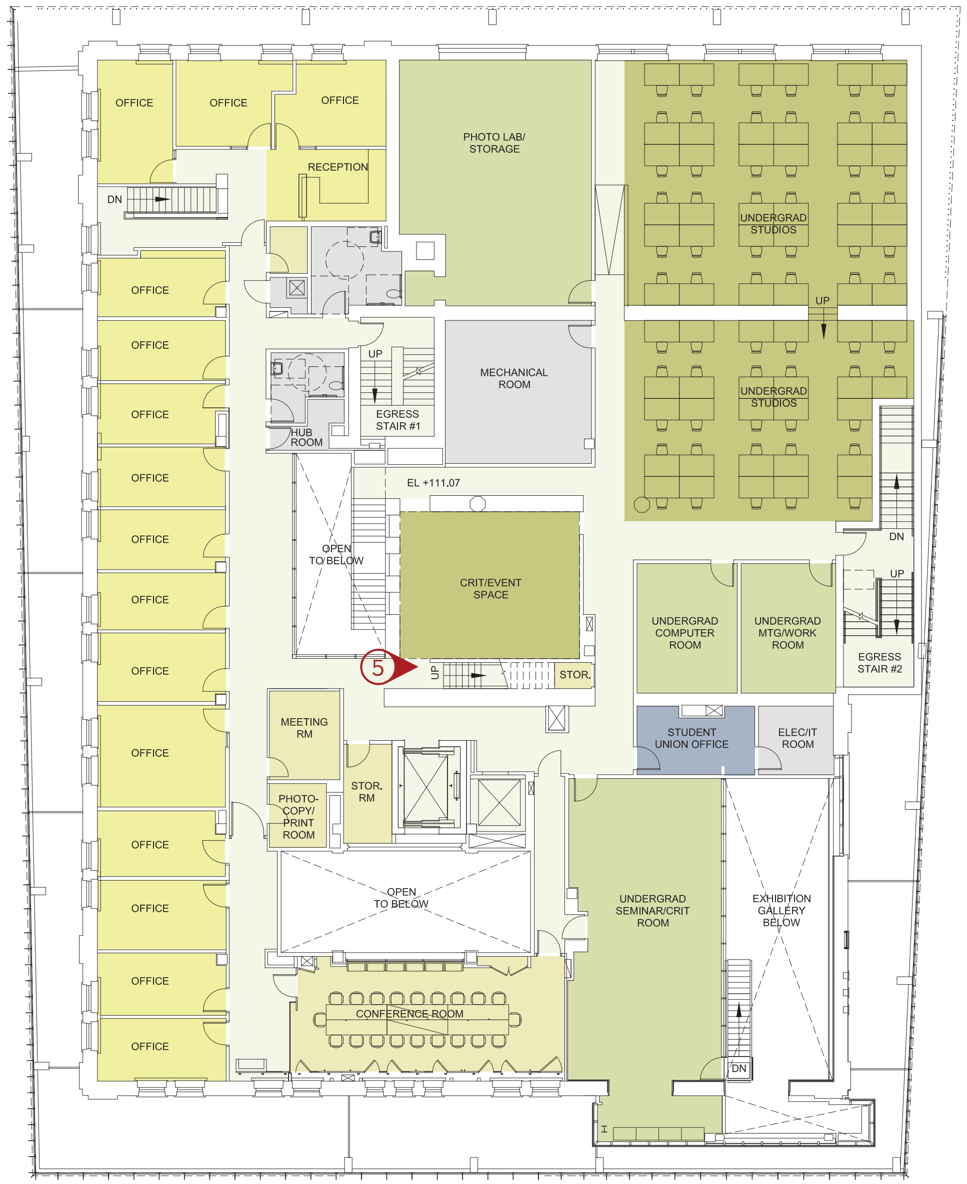
0 1 2 3 5 10 m

mechanical			circulation
studio			studio support
library			library support
shared			
research			
classroom			
faculty			faculty support

EXISTING PLAN ▼



RENOVATION FLOOR PLAN ▼



N

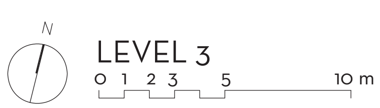
LEVEL 2

0 1 2 3 5 10 m

mechanical	circulation
studio	studio support
library	library support
shared	
research	
classroom	
faculty	faculty support

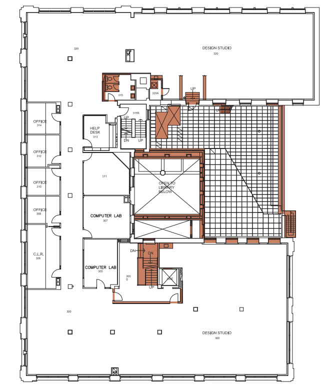
MATERIALITY: The material choices for this building are meant to serve as a tough piece of infrastructure for the students – creating a backdrop for the work that is produced within the building. In this sense, we see the interiors as flexible and open loft spaces, fitted for flexibility and appropriation. The interiors are volumes clad in plaster, homosote, and blanched perforated plywood, creating a neutral backdrop for pin-ups, presentations, mock-ups, projections, and events. Polished concrete floors offer a durable surface for the flexible layouts, while tall open ceilings give ample space for exposed ductwork, sprinklers and lighting.

LEVEL 3



mechanical			circulation
studio			studio support
library			library support
shared			
research			
classroom			
faculty			faculty support

▼ EXISTING PLAN

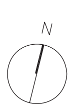


▼ RENOVATION PLAN

PHASE 1
PHASE 2
DEMOLITION

7 • STUDENT LOUNGE ▼

6 • STAIRWAY TO THE STUDENT CENTER ▼

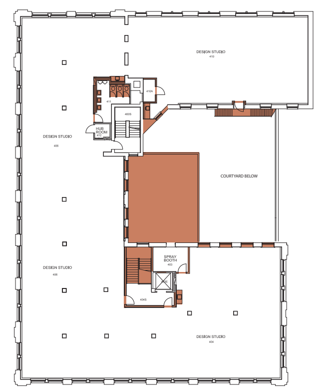


LEVEL 4

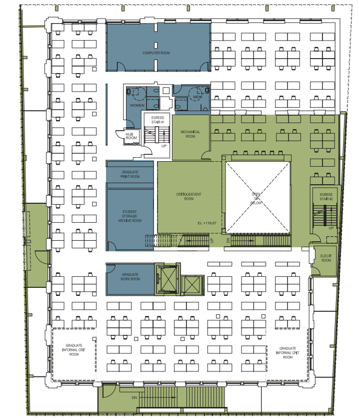
0 1 2 3 5 10 m

mechanical			circulation
studio			studio support
library			library support
shared			
research			
classroom			
faculty			faculty support

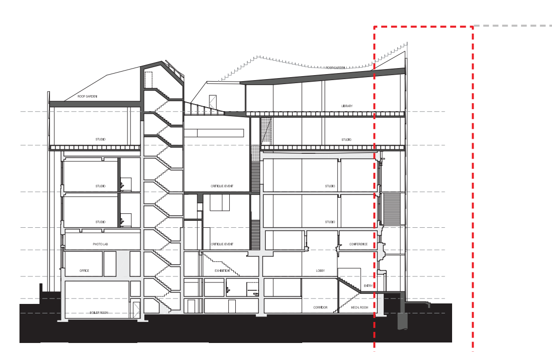
▼ EXISTING PLAN

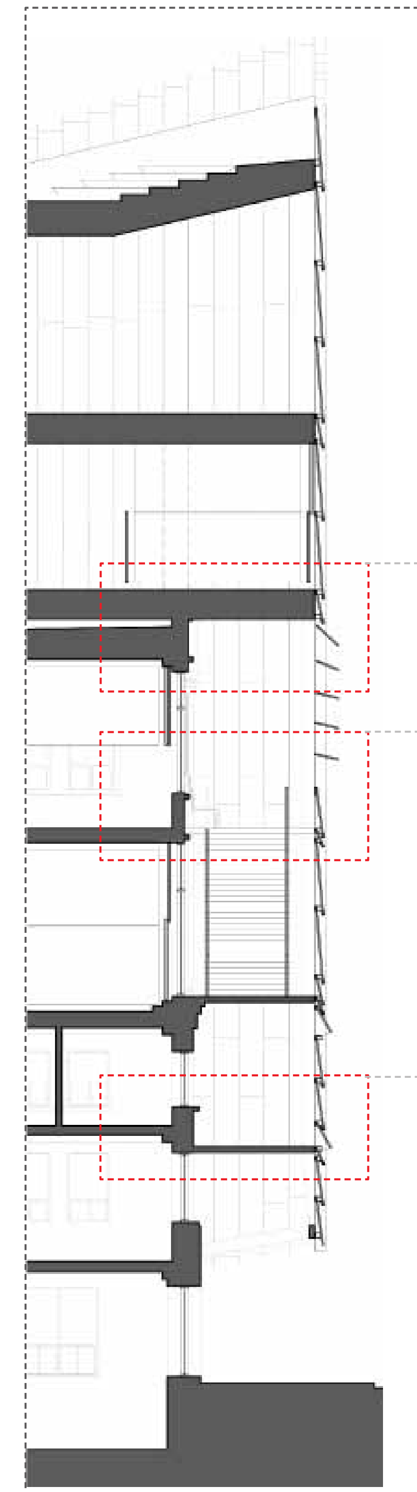


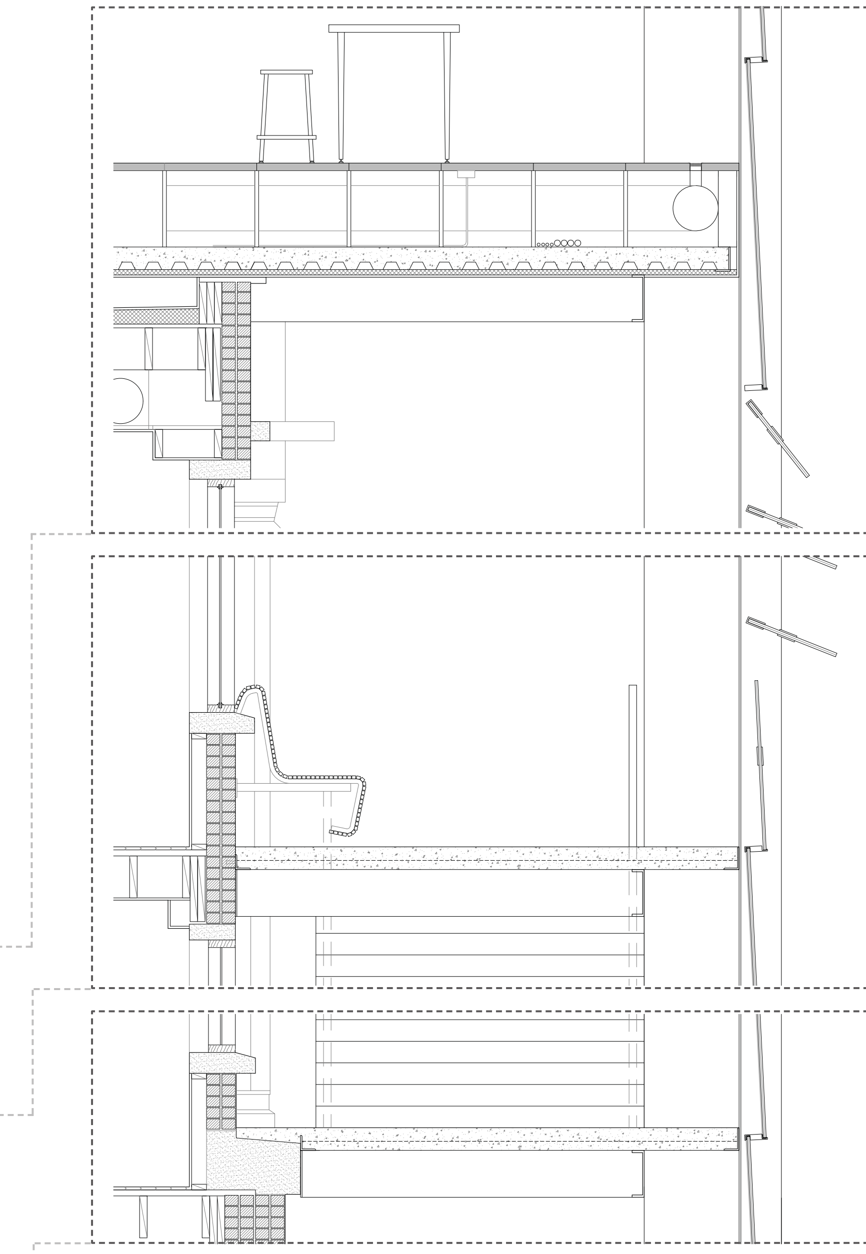
▼ RENOVATION PLAN



PHASE 1
PHASE 2
DEMOLITION

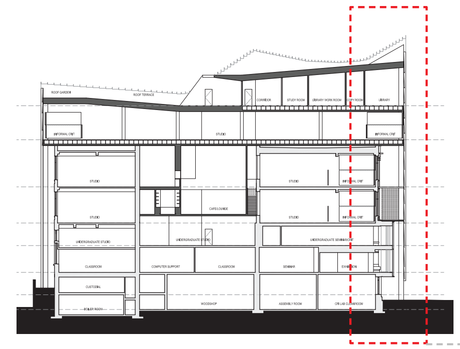


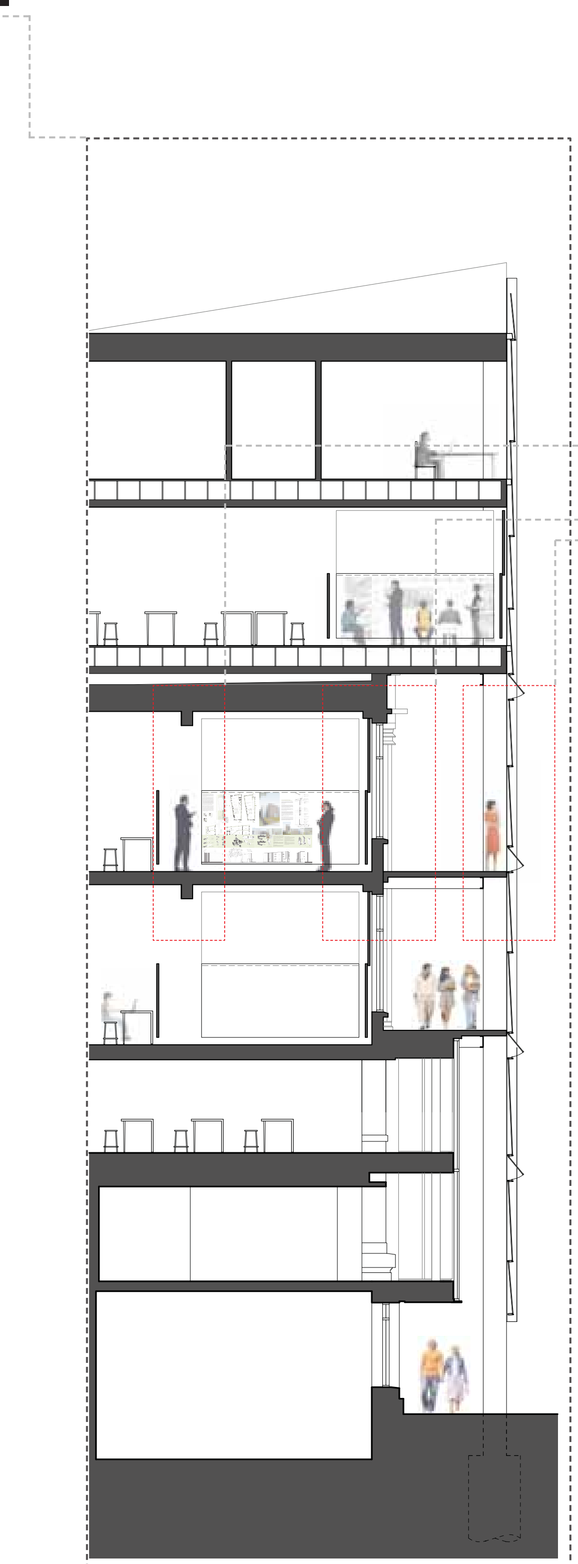




SECTION 1:50

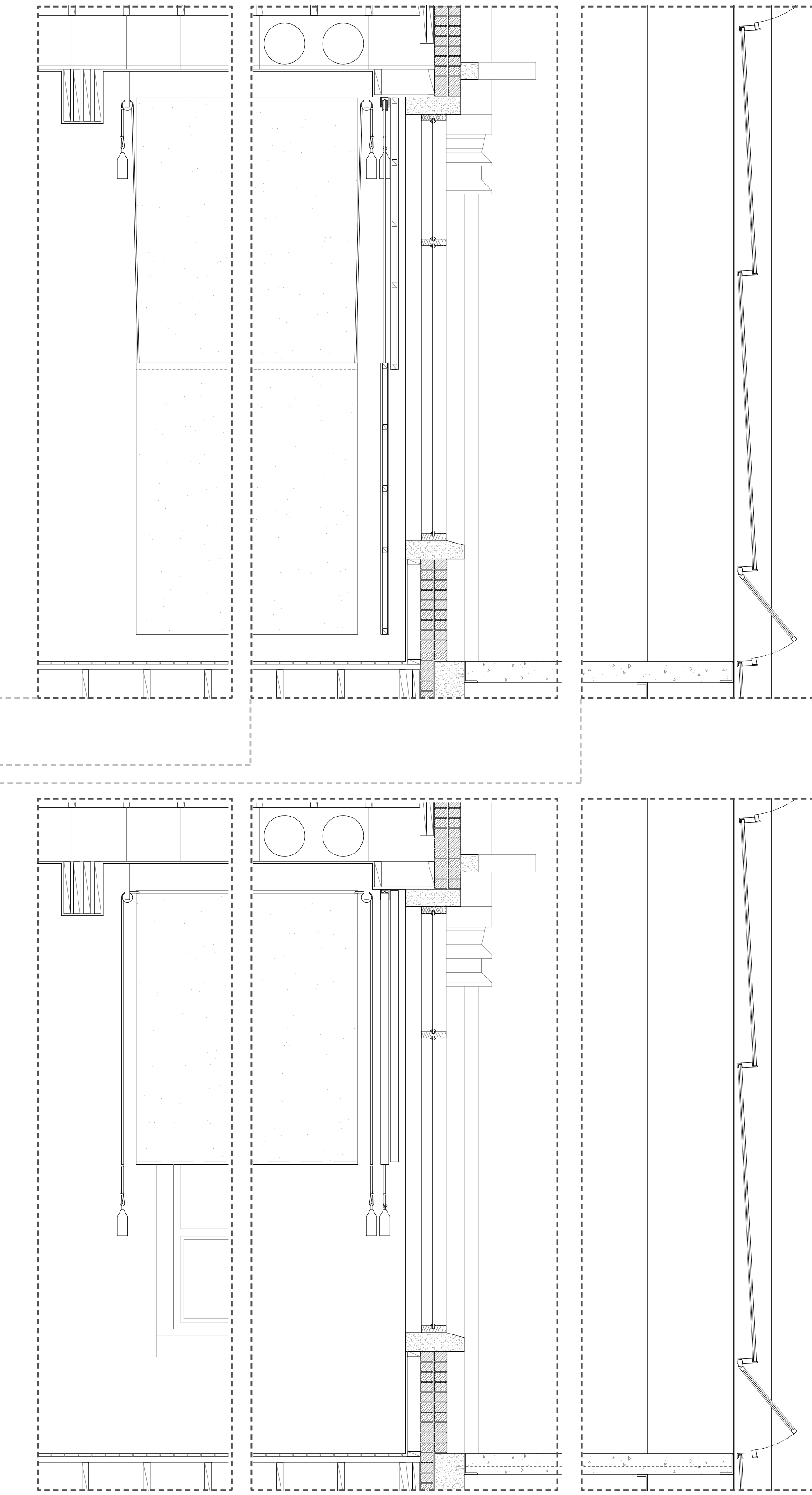
PUBLIC CORNERS: Just as the exterior corners of the building are exploited to create broader urban connections across the site, the buildings' interior corners are set up with discrete public spaces – crit rooms that anchor each corner in a centrifugal fashion. These spaces are housed with large panels of homosote pin-up board that are rigged on vertical tracks, opening up to the views after reviews are over.





8 • STAIR TO FIFTH FLOOR ▼

9 • CRIT ROOM #3 ▼



SECTION 1:50

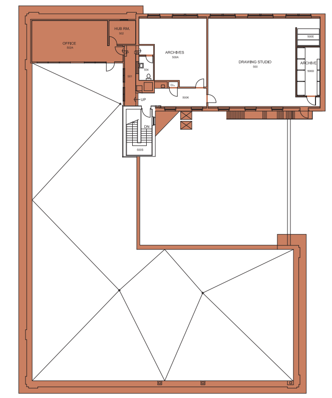
N

LEVEL 5

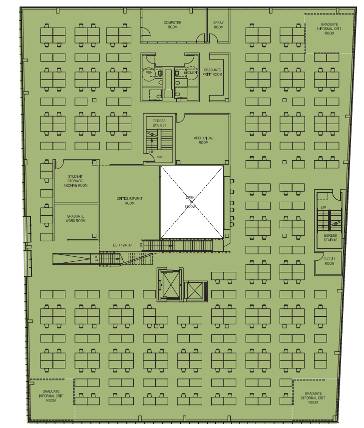
0 1 2 3 5 10 m

mechanical — circulation
studio — studio support
library — library support
shared
research
classroom
faculty — faculty support

▼ EXISTING PLAN



▼ RENOVATION PLAN



PHASE 1
PHASE 2
DEMOLITION

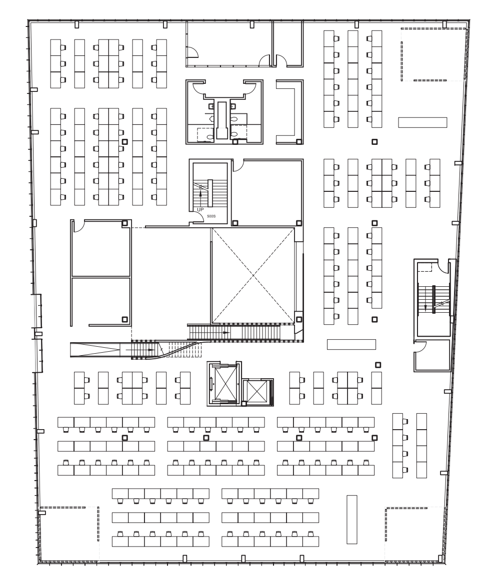
ORGANIZATION AND PEDAGOGICAL MODELS: The studio is conceived of as a flexible space for different organizations to take place, offering varied pedagogical platforms. With that in mind, we have launched this research with three layouts, each suggesting different scales of community, communication, and collaboration. In each scenario, we respect the program in its determination that every student gets one desk and a half.

For the first scenario, we imagine that each studio contains a single space where all students have their own desk, while all sharing on single long table in the center. The communal table becomes a place to debate, have seminars, build collective models, or even have dinner. It sponsors a pedagogy that is collective and encourages discursive engagement.

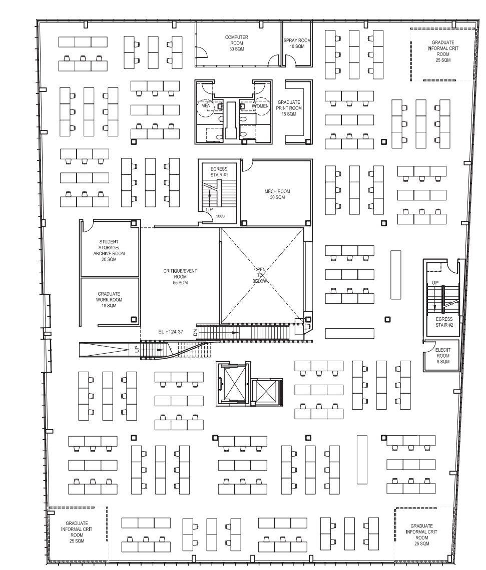
The second scenario breaks down that community into pods of six people, organized on a herring bone pattern, and thus establishing more dialogue with other studios, as much as with the students of their own studio. The team of six offers a space for collective dialogue, and yet tempers its scale of offer more privacy, individuality and containment.

The third scenario, breaks each community down further into gangs of four, essentially creating small think tanks. This scale creates a more even field, at once more private yet blended within the overall field of the entire floor.

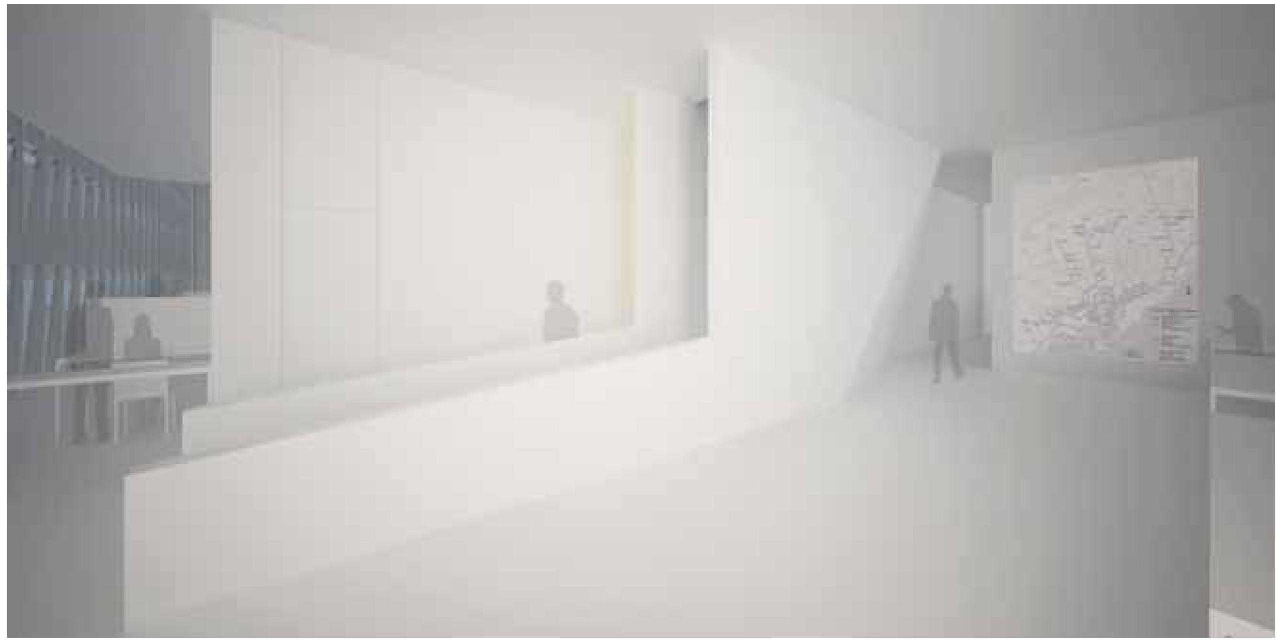
More than anything, one need not be restricted to any single organization, but rather one can adopt varied layouts according to different pedagogical models within each studio.

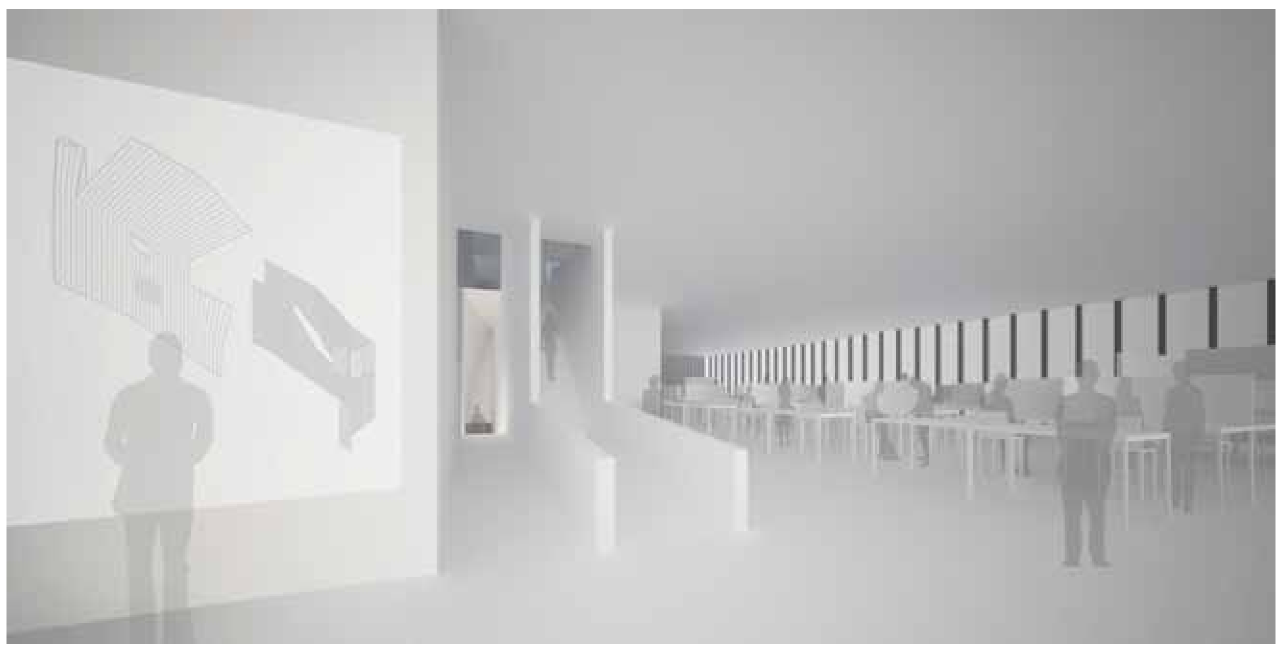


STUDIO LAYTOUT 1 ▲

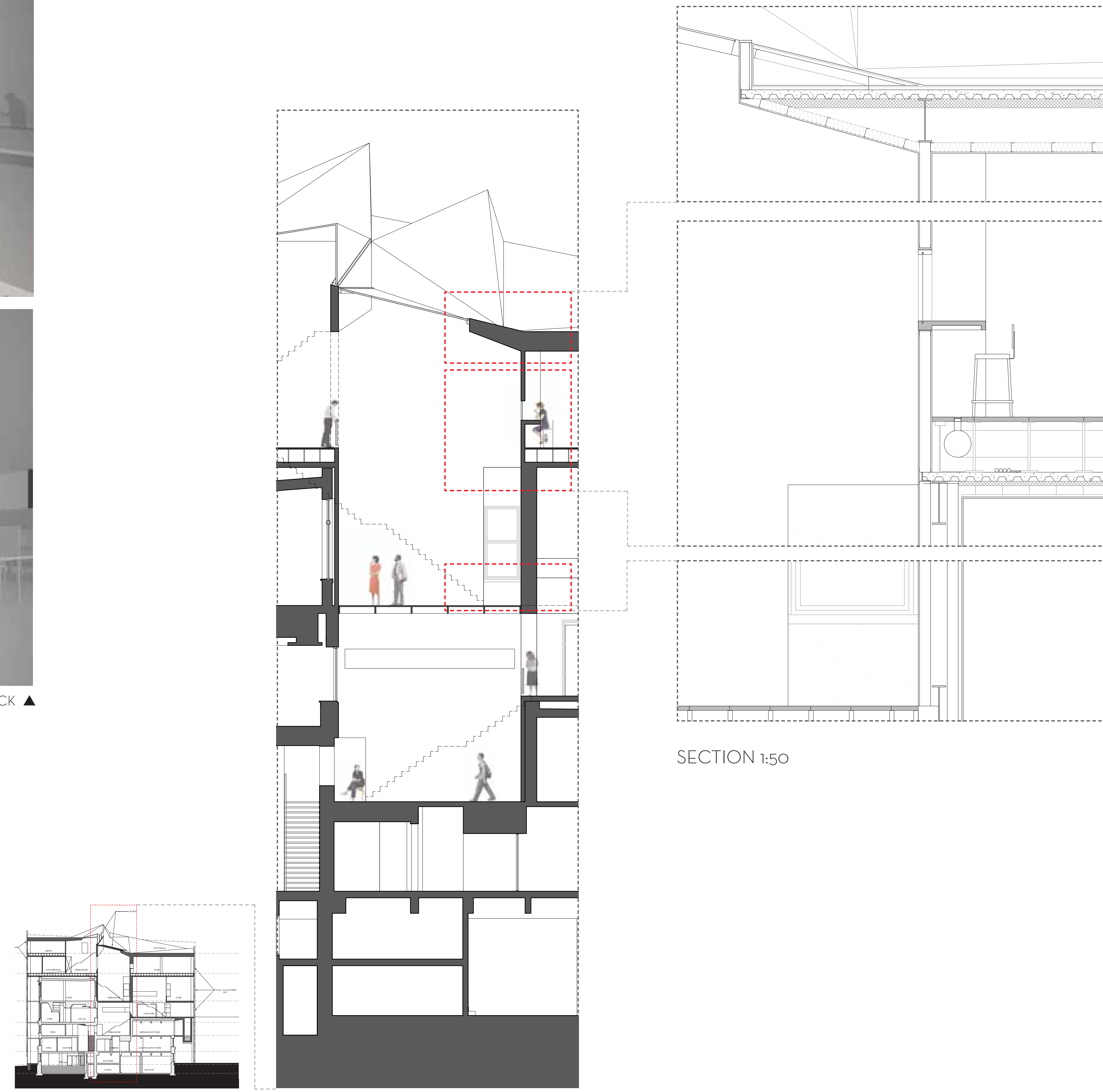


STUDIO LAYOUT 2 ▲

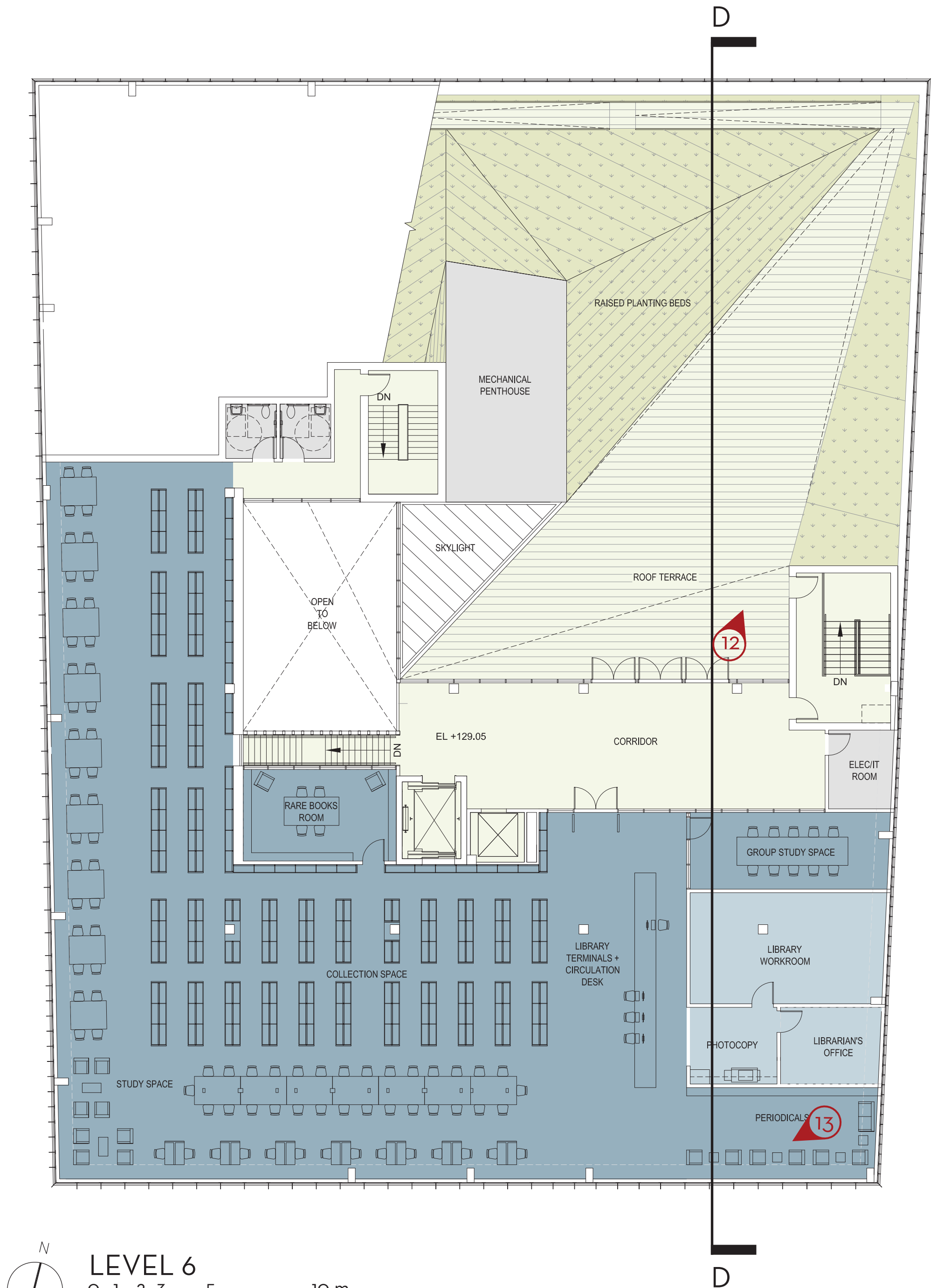




10 • 11 • RAMP AND STAIRS TO LIBRARY AND ROOF DECK ▲



SECTION 1:50

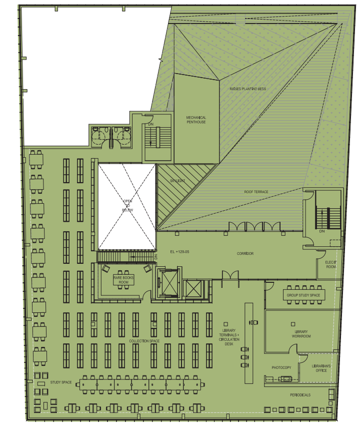


LEVEL 6

0 1 2 3 5 10 m

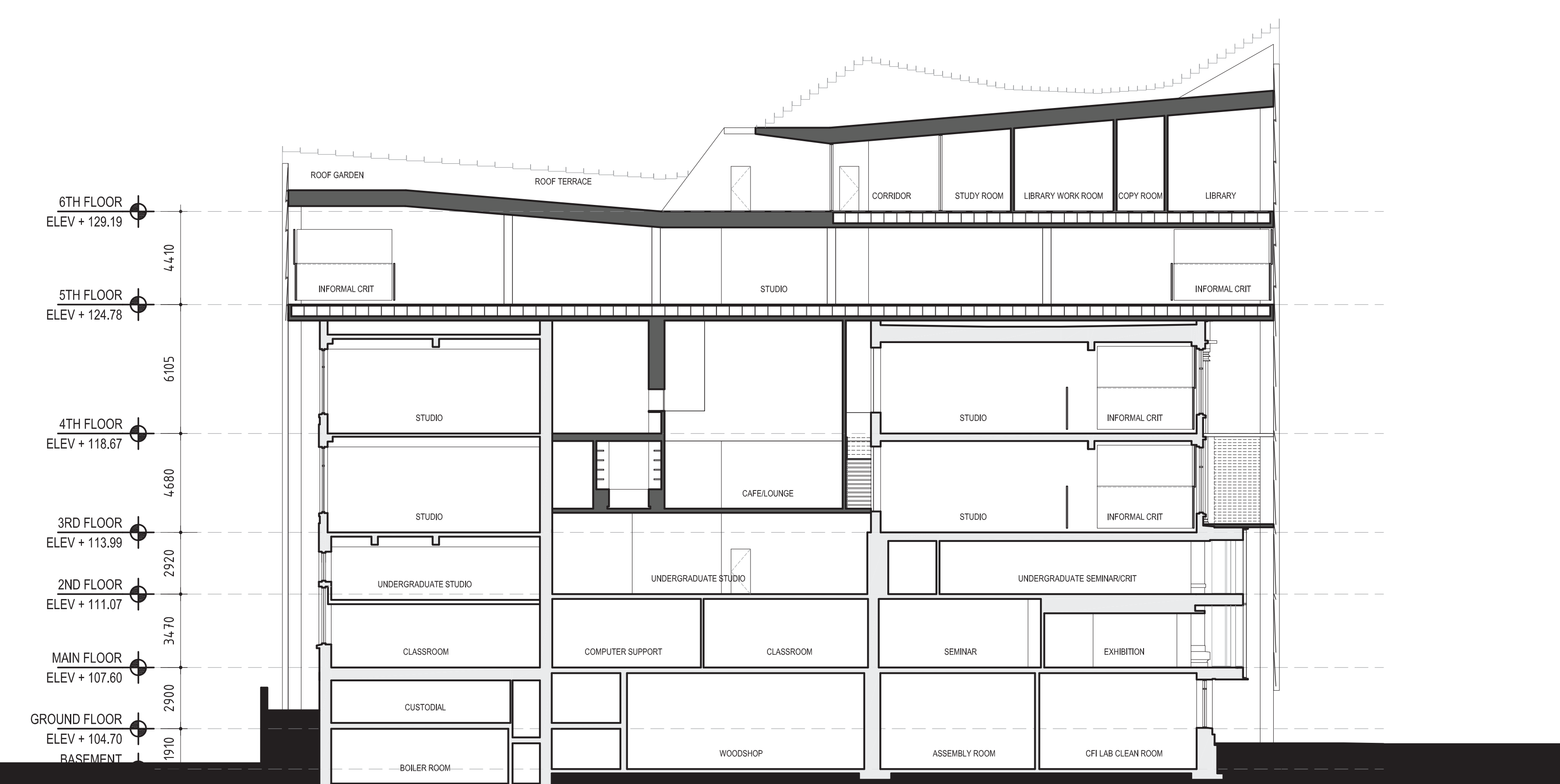
mechanical	circulation
studio	studio support
library	library support
shared	
research	
classroom	
faculty	faculty support

▼ NEW CONSTRUCTION



PHASE 1
PHASE 2

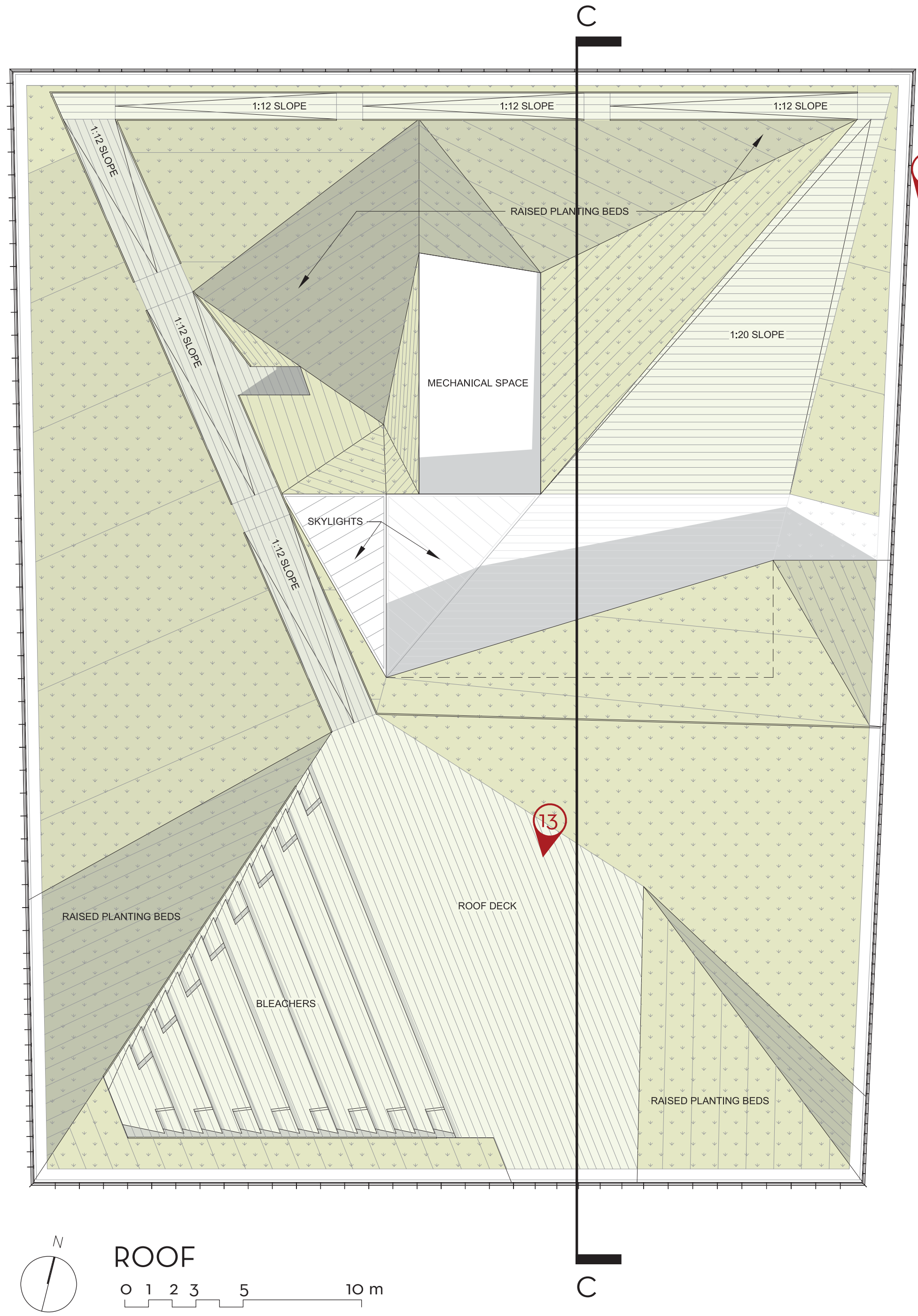
12 • ▲ VIEW ONTO ROOFTOP



SECTION D

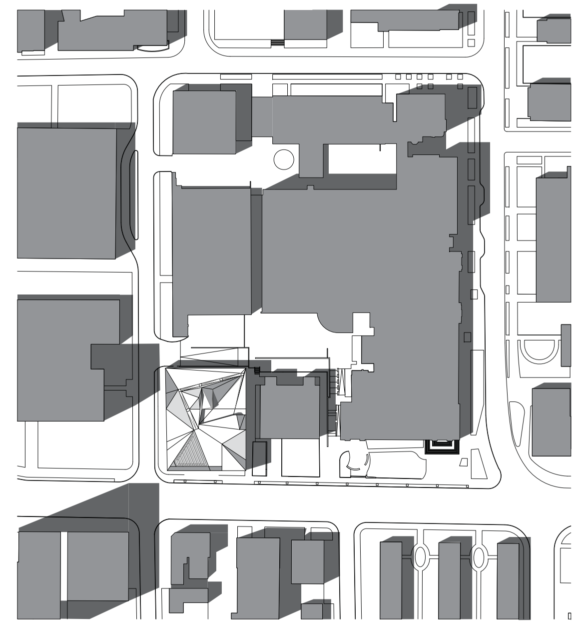
0 1 2 3 5 10 m

13 • VIEW OF LIBRARY ▼

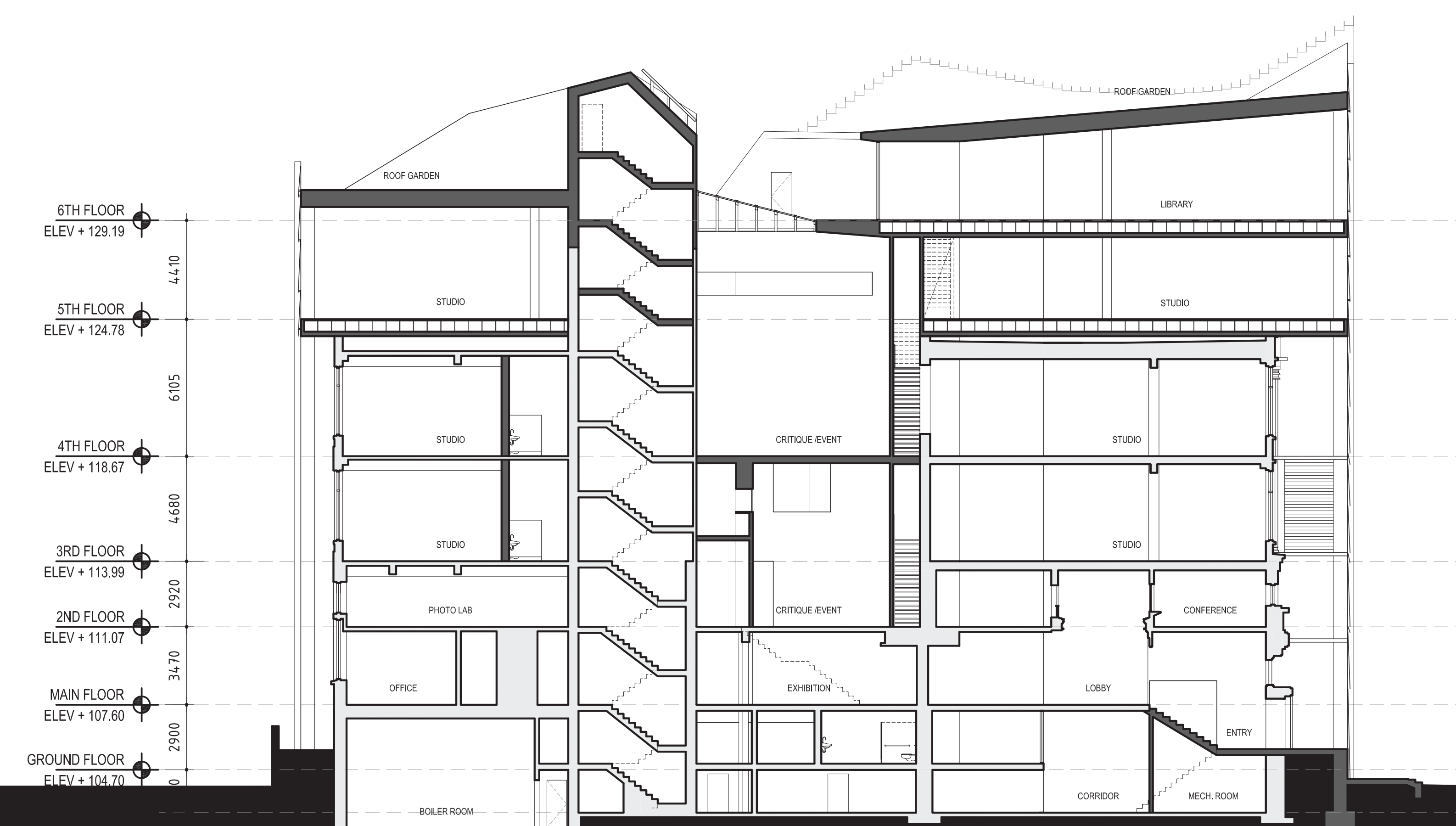


ROOF

0 1 2 3 5 10 m

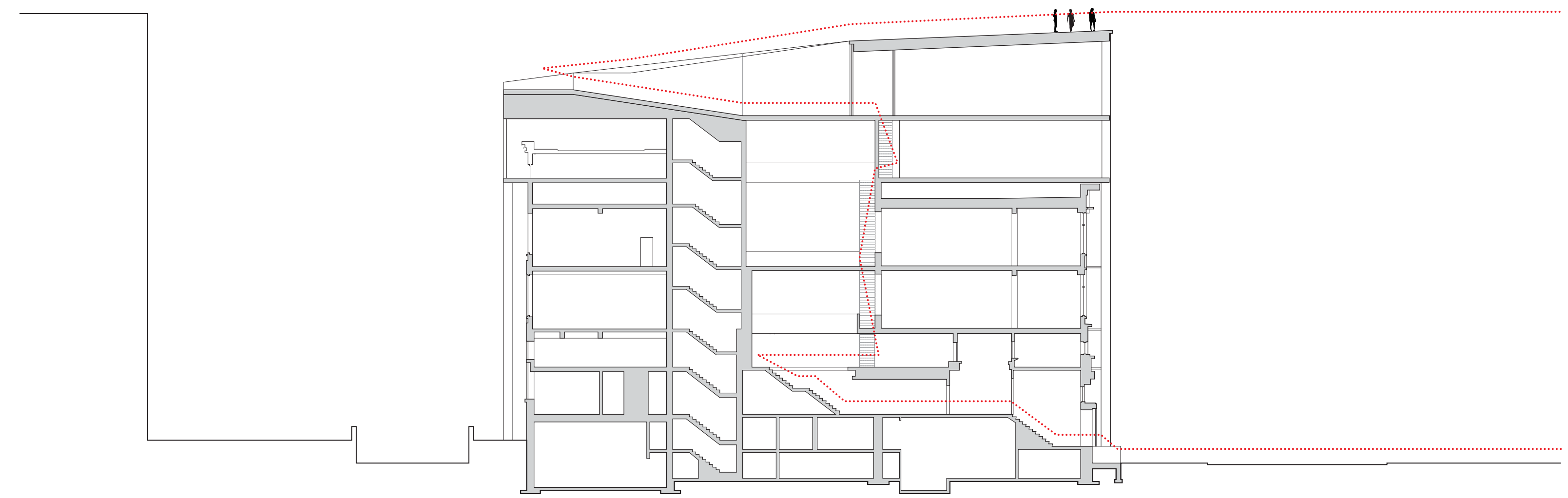


▲ SITE PLAN



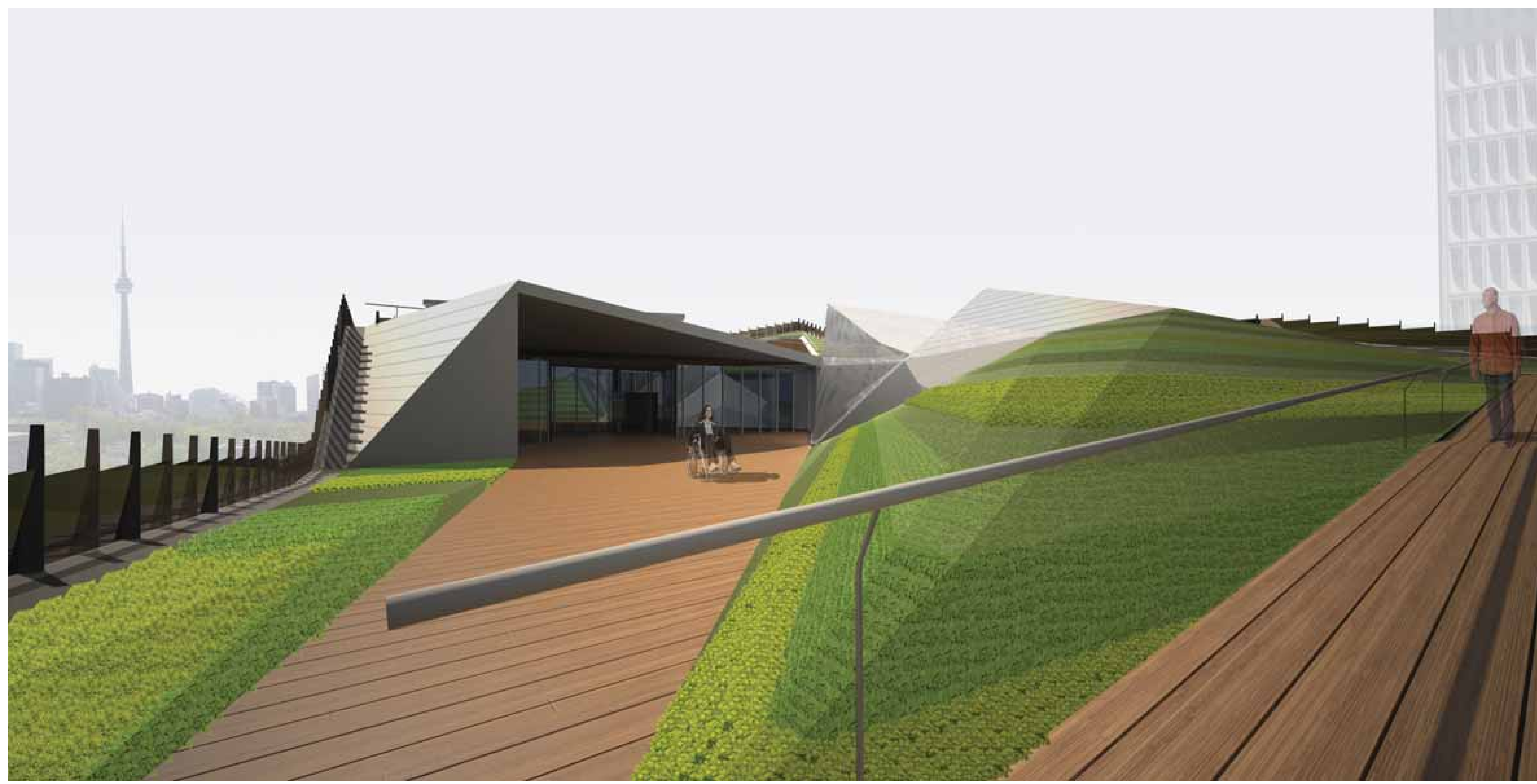
SECTION C

0 1 2 3 5 10 m



VERTICAL LINKS ▲

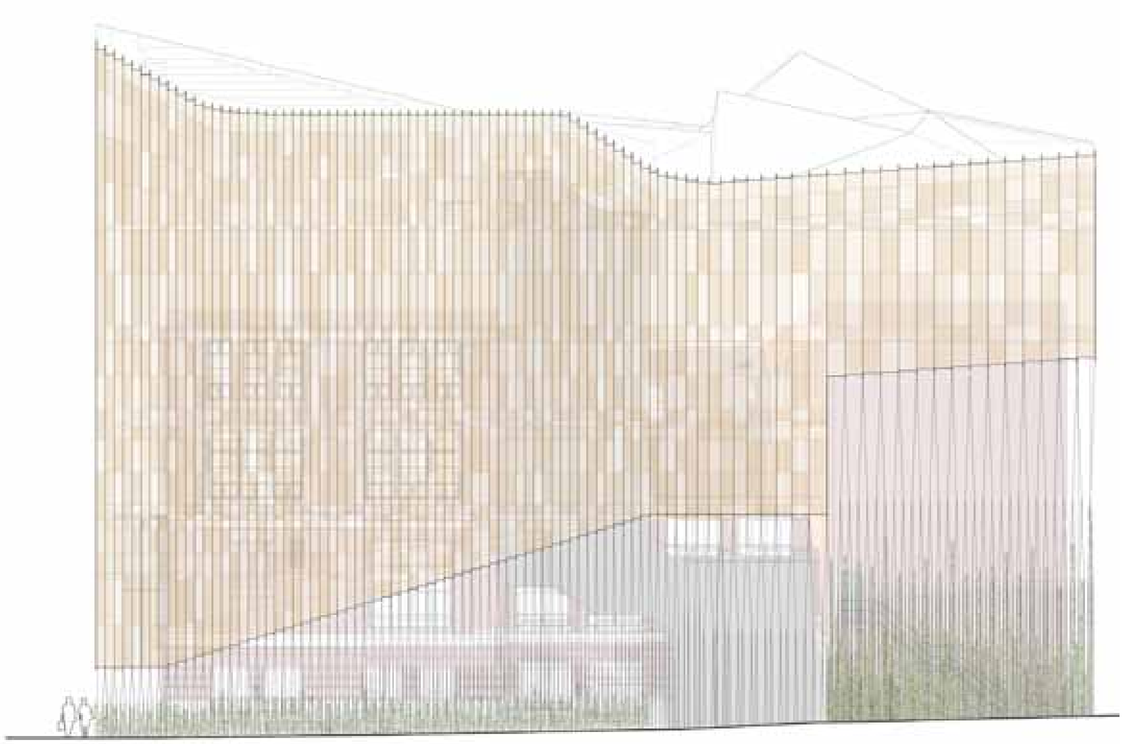
14 • ROOF TERRACE ▼



A SECOND SKIN : BETWEEN INFRASTRUCTURE, SUSTAINABILITY, AND AN ICON FOR THE CITY

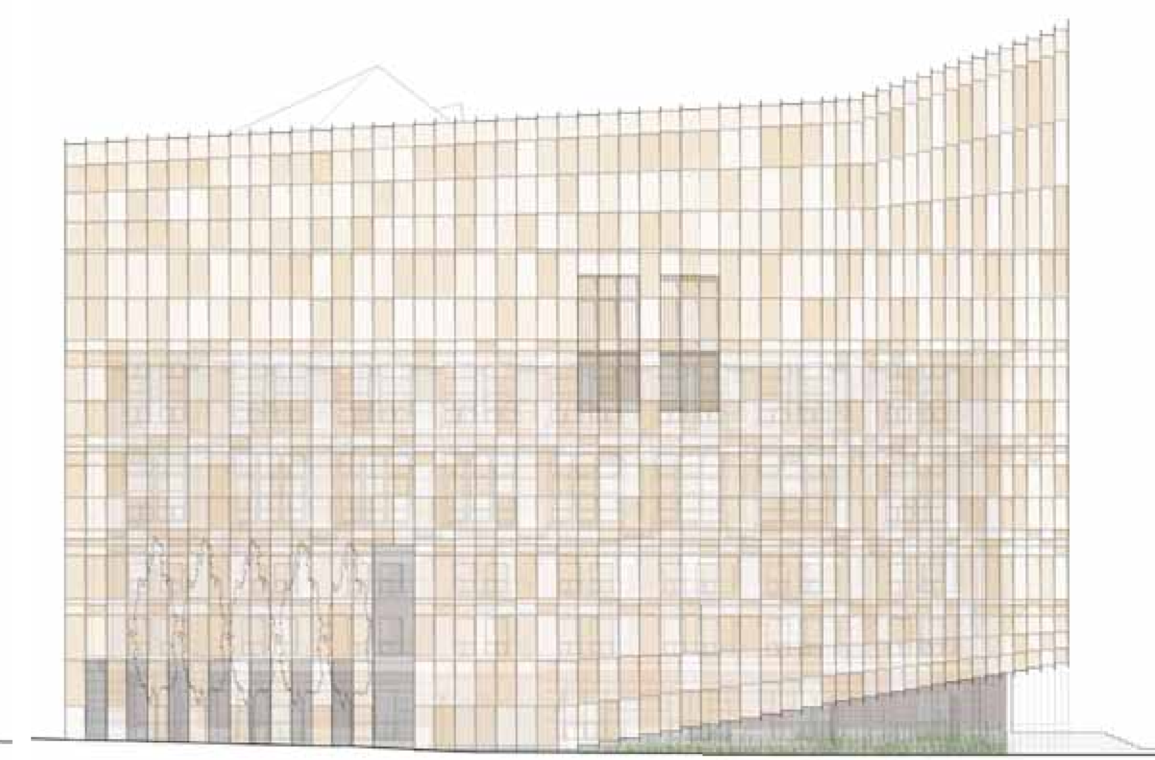
It is imperative that this building maintains its day to day operations during construction, while this extensive expansion and renovation is undertaken. If the goal of the building had been to create a second skin, there could be a healthy debate on various strategies that could best benefit the transformation of the building from both a cost point of view as well as energy savings. However, since it is essential that an entire building be built around an existing one –as a virtual helmet—it offers the possibility of dealing with the structure, skin, and spatial organization of the program in integrative ways. To this end, we researched ways of addressing the double skin strategy and have ultimately combined them to offer a hybrid solution, using varying strategies for site specific purposes.

The figure of the building is derived as a silhouette of those functions it clads and the urban duties it is meant to perform. The glazed skin system is fritted and appears to slide up and down the building in correspondence to the staircases, arcades, bleachers and other functions it shrouds. The form of the building, then, is disciplined by the logic of its tectonic units, while offering a powerful iconic profile that participates in the skyline of Toronto, and effectively speaks to the importance of the architectural institution within the city.



▲ EAST ELEVATION

▲ NORTH ELEVATION



▲ WEST ELEVATION

SUSTAINABILITY OVERVIEW:

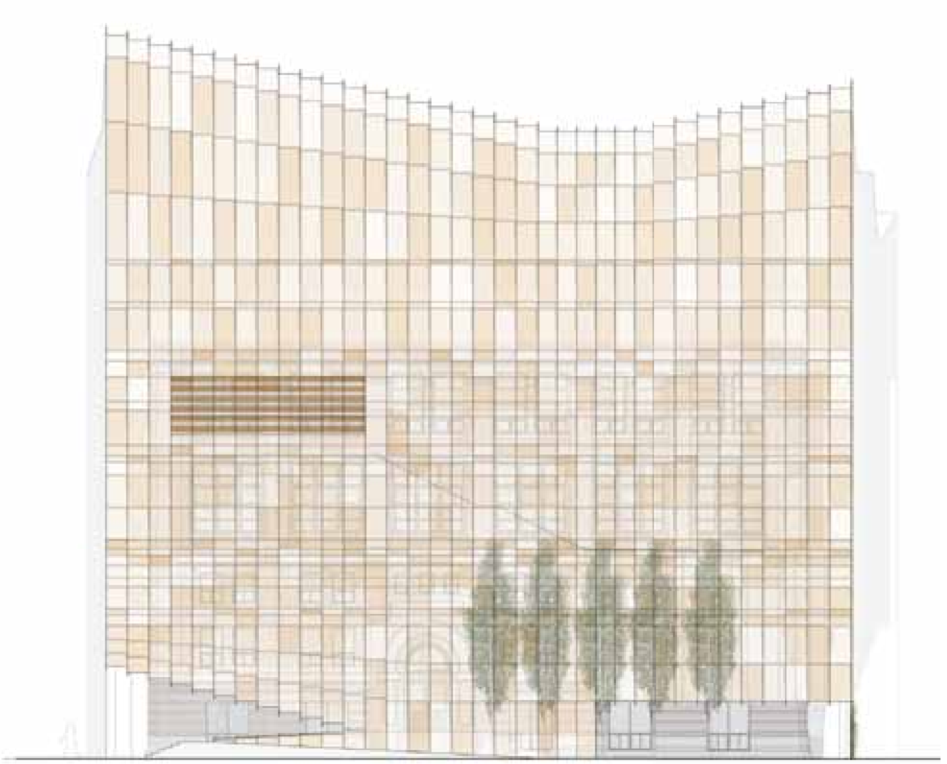
The addition to the Daniels Building at the University of Toronto will be an exemplar of revitalization of an existing university building into a high-performance, resource efficient facility that provides a comfortable and high quality indoor environment. By comprehensively addressing a wide gamut of sustainable concerns, the renovated Daniels Building will have a significantly reduced environmental footprint. The conceptual approach to the design is to first and foremost reduce the demand for resources (whether materials, energy, water, etc.) through pragmatic design, and then provide for the resulting demand efficiently. The rest of this narrative describes the key sustainable features of the Daniels Building.

Building Envelope

The existing envelope of the Daniels Building is the weak link in terms of building energy performance. Adding insulation to improve the envelope thermal performance would increase exposure of the existing façade to undue freeze-thaw cycles and quickly deteriorate the building. Instead, the renovated Daniels Building will be clad with a second glazed layer to create a double-façade. The IGU glazing of the double-façade has a high solar heat gain coefficient to allow solar energy through, but a low U-value to help minimize heat loss. In the winter, the façade is sealed closed to trap the heat from the solar radiation so that occupants can still open the operable windows on the existing wall. During the summer, the façade can be opened up at the top and the bottom of each floor to keep air flowing throughout the façade, and on cool summer days, building occupants can open existing operable windows for natural ventilation. Furthermore, the high-performance glazing of the double-façade will allow ample daylight to enter into the building. Manual hand cranks will open and close the façade; the façade will be open from late spring to early fall, and closed during the winter. Each hand crank will simultaneously open 4-6 openings on the façade.

Materials

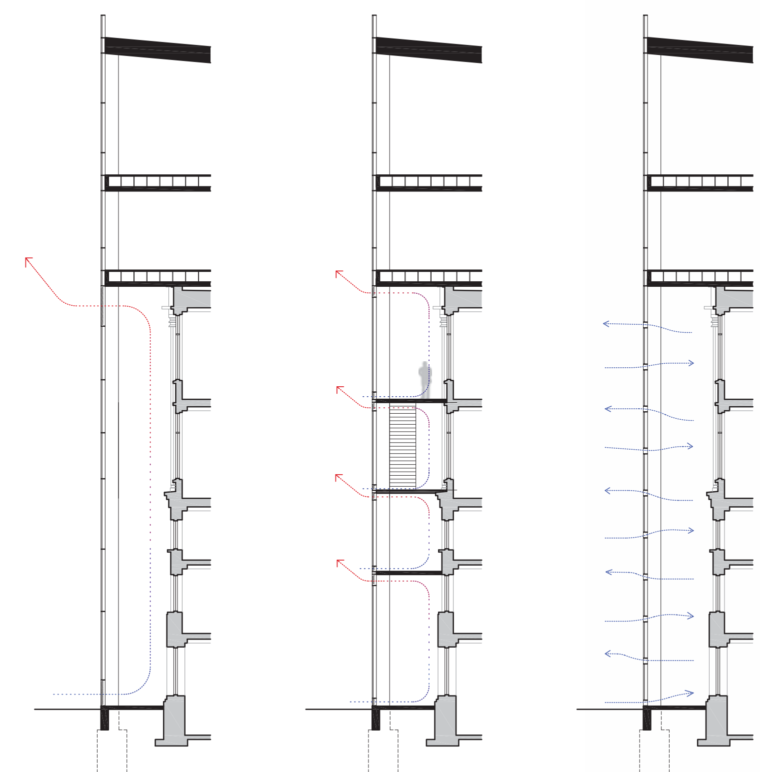
Building on the University's decision to reuse an existing building, which drastically reduces the demand for virgin materials, the design will further reduce the embodied energy of the Daniels Building by using environmentally preferable materials. New building materials, finishes, and furnishings will be locally sourced, and materials with high recycled content will be selected. New wood products will be certified to ensure that only sustainably forested wood is used. Additionally, the design team will identify opportunities to reuse any parts of the existing building materials that need to be removed as part of the renovation.

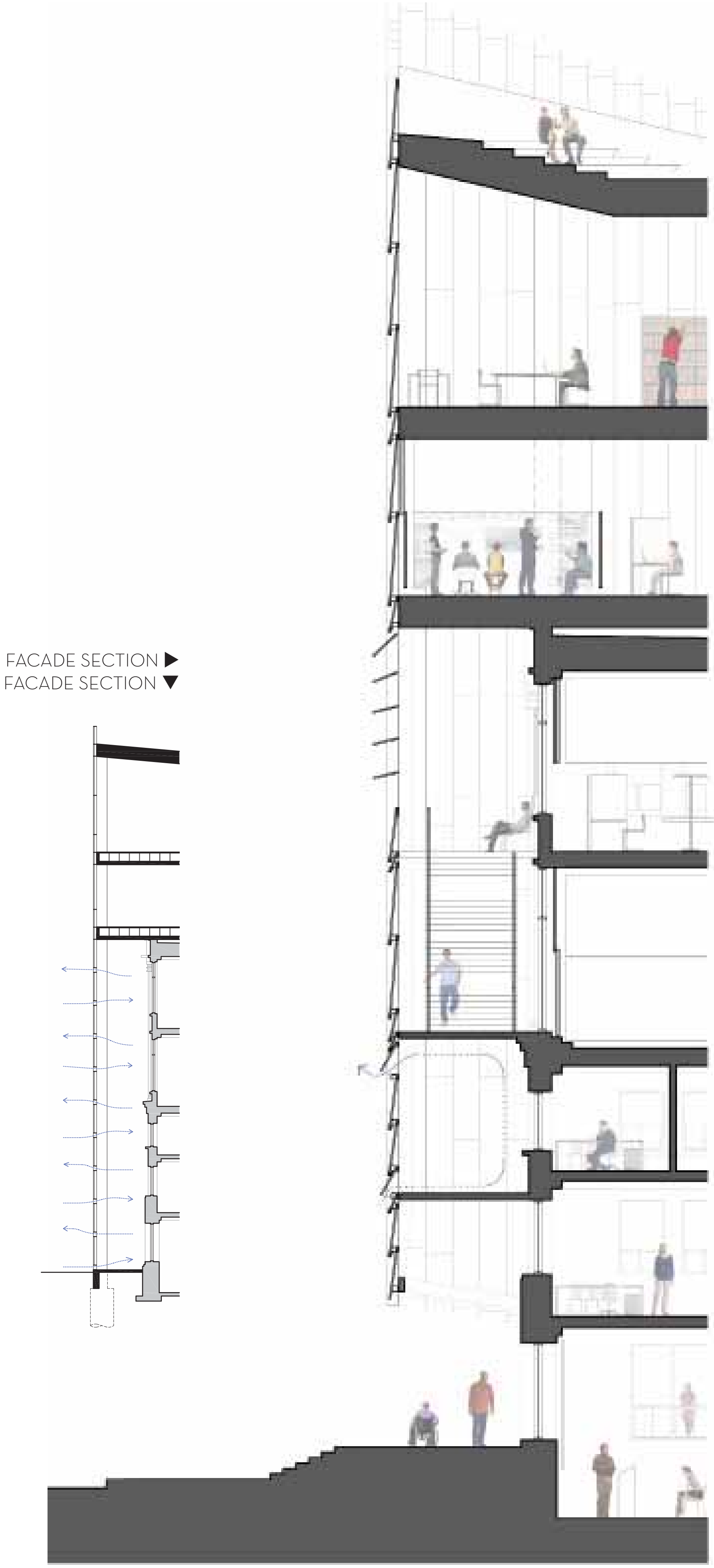


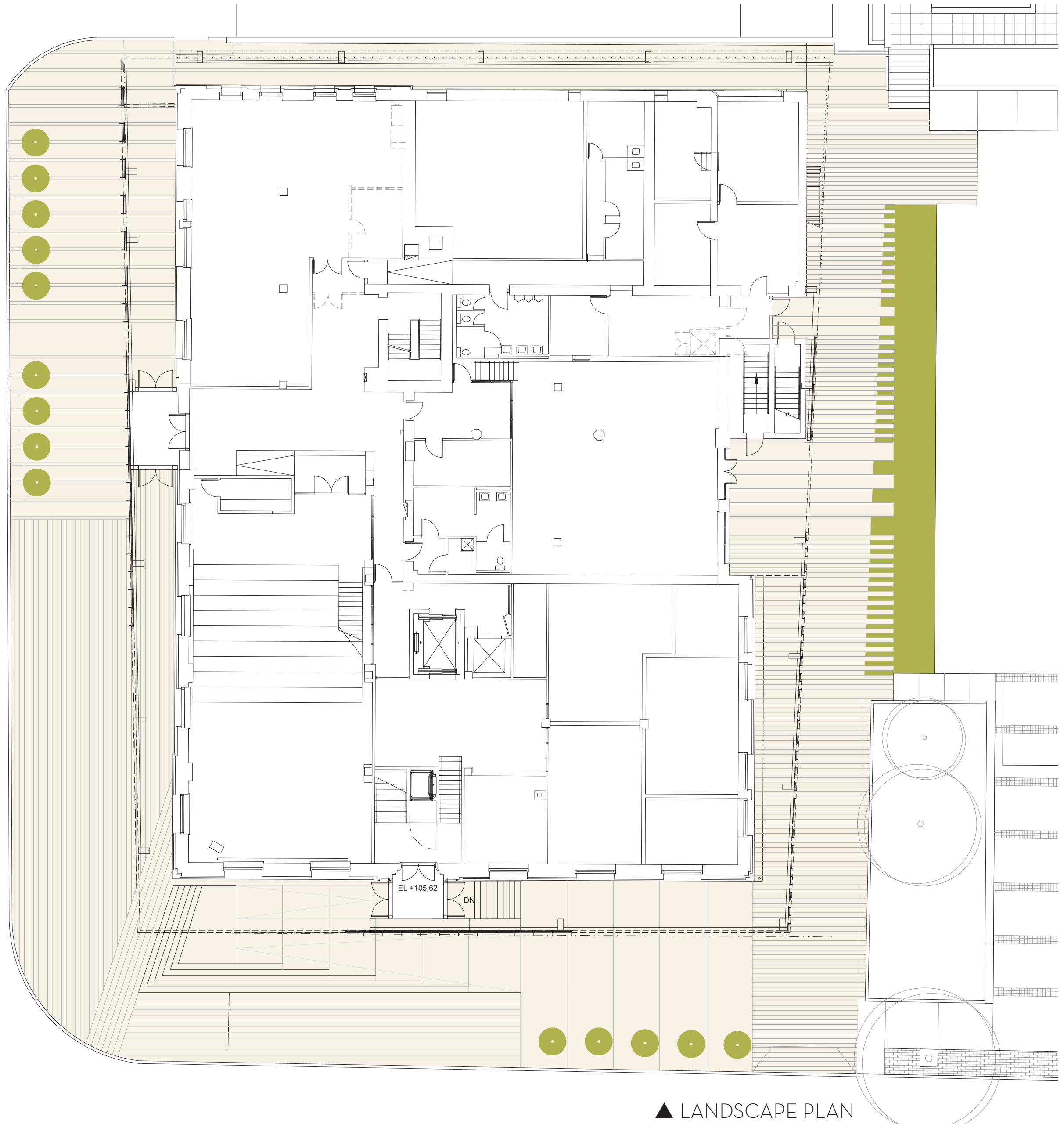
▲ SOUTH ELEVATION

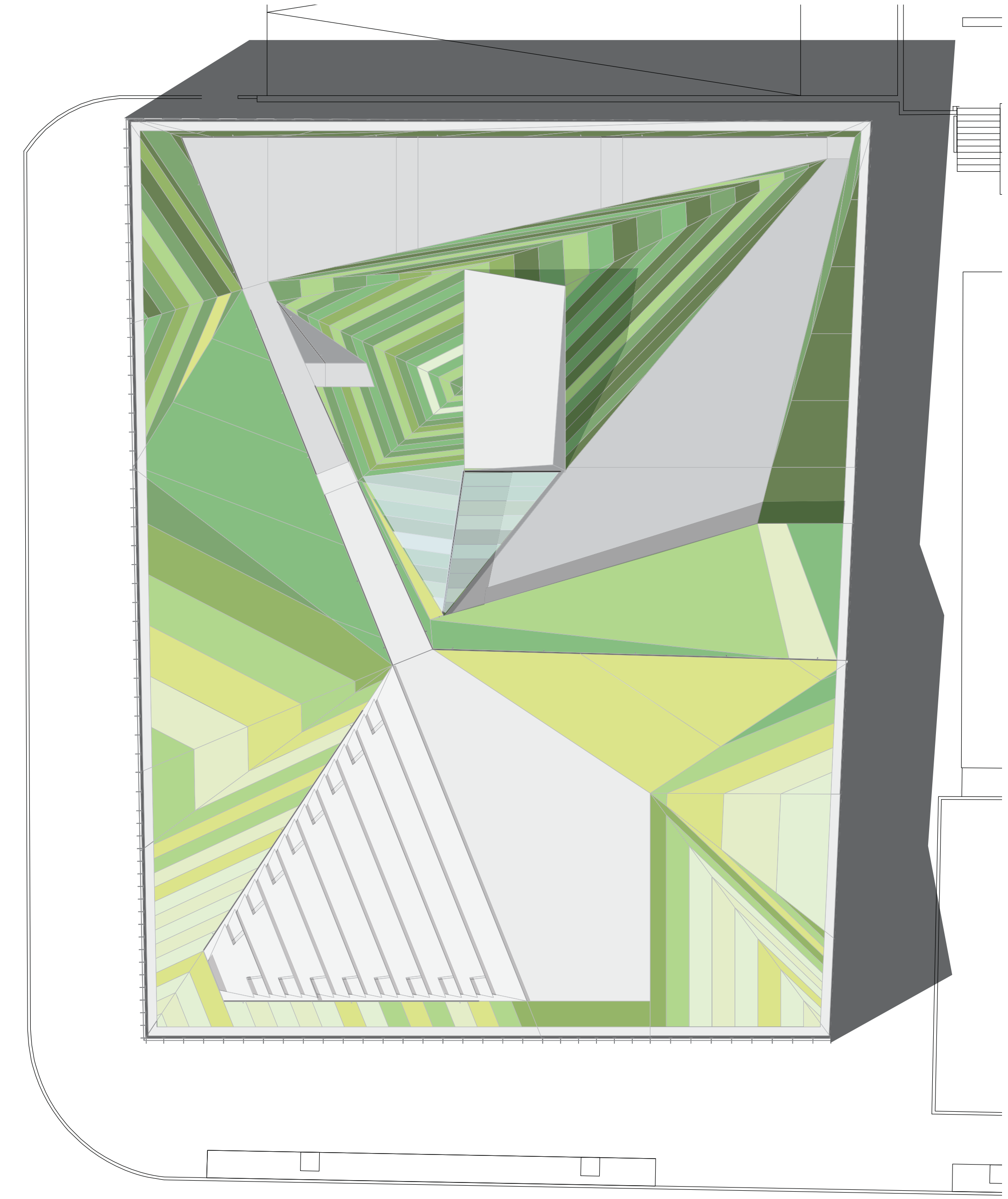
FACADE SECTION ▶

FACADE SECTION ▼









▲ LANDSCAPE PLAN
▶ ROOF PLAN

CONSTRUCTED GROUNDS
The roof of the building will be highly insulated to R-30 to further minimize conductive heat loss. A vegetated roof will contribute toward achieving this high roof insulation value.

Site

The Daniels Building is currently an integral part of the University fabric. The project therefore benefits from the transportation infrastructure provided by the University. The project includes a bus/shuttle stop at this key junction to provide easy access to the building. Additionally, bicycle racks are provided to provide and encourage alternative means of getting to the building. Showers within the project will provide the facilities for students and faculty to get refreshed after riding to the building.

The vegetated roof will not only reduce the urban heat island effect by keeping the roof surface cool, but will provide a testing ground for students, particularly landscape architecture students, a laboratory to study and experiment with different types of vegetation.

Lighting and Daylighting

The Daniels Building is currently a well-daylighted building. The addition of a double-façade helps to maintain the high daylight availability. The skylights at the top of the building allow daylight to penetrate into the deep recesses of the building. While daylight is abundantly available, there will be situations in the offices and studio spaces when too much daylight may create glare problems. Glare control screens will be installed to enable students and faculty to control for glare.

The electric lighting design will complement the daylighting. First, a highly energy efficient lighting design provides general ambient light, and task light are integrated into the lighting design in the work spaces so that light is provided to the task areas only as needed. A combination of dimmable fluorescent or LED light fixtures will provide energy efficient light. Daylight sensors and occupancy sensors will be provided in the perimeter offices and studio spaces so that electric light is used only when the additional light is needed. Over the course of the year, the perimeter spaces in the Daniels Building will be capable of operating with only daylight for more than 50% of the time.

At night, the site lighting will minimize light trespass from the building. The interior electric light will be designed to minimize light leaking out of the building, and all site lighting will be full cut-off fixtures. These strategies will help to protect the dark night time sky, and help to increase the visibility of the stars at night.

Indoor Environmental Quality

The high quality daylight and the extended time of use for operable windows help to create a high-quality indoor environment in the Daniels Building. Furthermore, the key spaces within the building will be conditioned using an underfloor displacement ventilation system, which provides the highest quality ventilation air to student and faculty occupied areas.

Furthermore, the building and mechanical system is designed to minimize pollutants within the building. All materials selected will be reviewed to ensure that harmful chemicals are not introduced into the building. In any spaces where chemical use is anticipated (such as spray booths, janitors closets, etc.) direct exhaust will be provided so that the contaminated air does not mix with rest of the building. All entry ways into the building will have depressed walk-off grills to trap dirt and pollutants.

The mechanical system incorporates MERV filters so that all the air delivered into the building is clean, and the air handling units monitor the airflow to ensure that the proper amount of outdoor air is always being delivered. The ventilation system, furthermore, is connected to CO2 sensors in the multi-occupant studios, critique spaces, reception hall, and lecture halls so that the ventilation rates are automatically increased if CO2 levels get too high.

During construction, best construction practices will be implemented to ensure that the existing spaces as well as the new spaces are not contaminated.

Mechanical System

The mechanical system will be upgraded to efficiently provide heating, cooling and ventilation to the building. Floor by floor dedicated variable volume air handling units with 100% outdoor air economizer capability provide fresh air to the building. Additionally, a dedicated central enthalpy heat recovery system will operate when the air systems are not in economizer mode. This approach not only saves energy, but helps to keep create more comfortable conditions in the building by maintaining humidity levels in the winter.

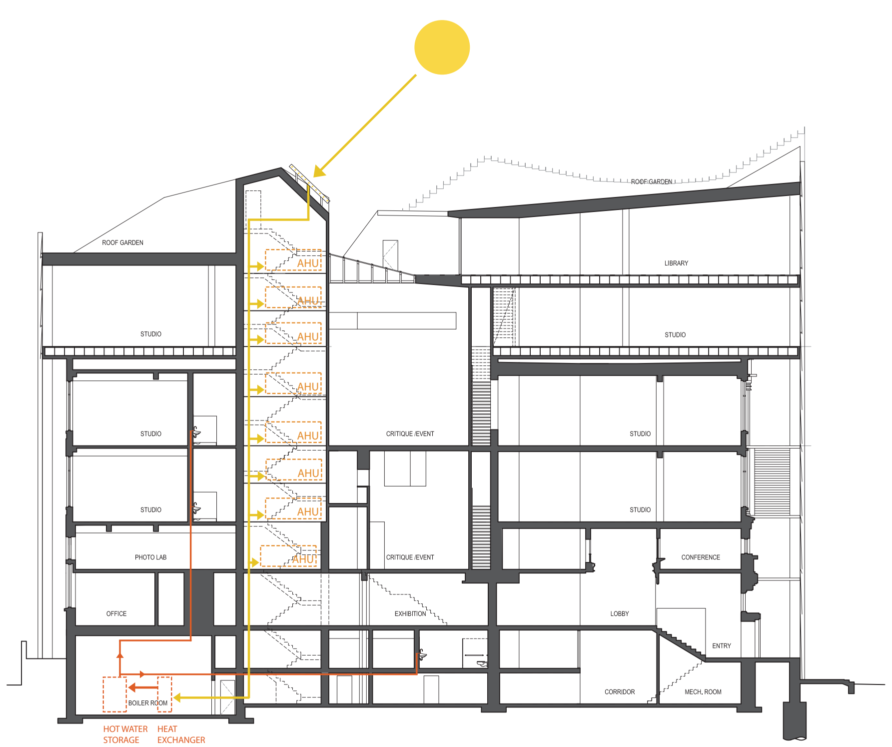
On the system side, the new floors on levels 5 and 6, as well as the auditorium in the basement, will be provided with an underfloor displacement ventilation system. With the tall ceilings, the displacement ventilation system conditions just the lower occupied zone, providing the freshest and cleanest air to the students and faculty.

To help reduce the heating energy consumption, an evacuated tube solar collector will be incorporated into the roof design. The solar collector will be used to provide domestic hot water, and for preheating the ventilation air. The solar collector will be able to provide about 50% of the hot water demand in the building.

Even with the additional floor area, with the addition, the Daniels Building annually will use 60-70% less energy than the current building.

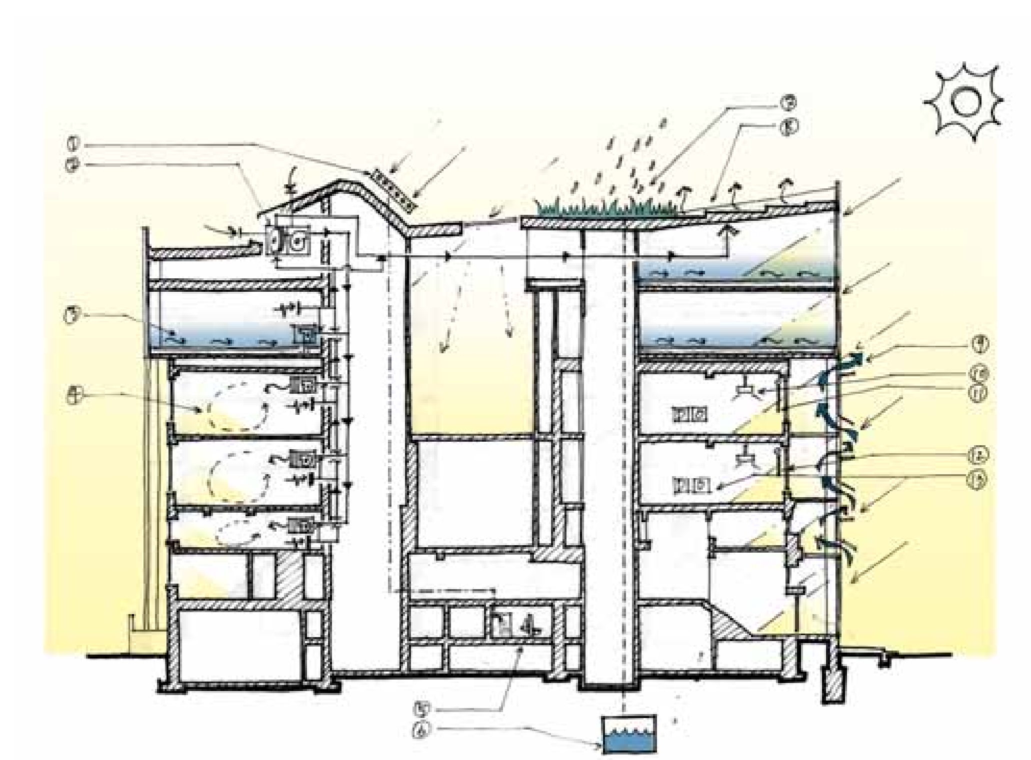
Water

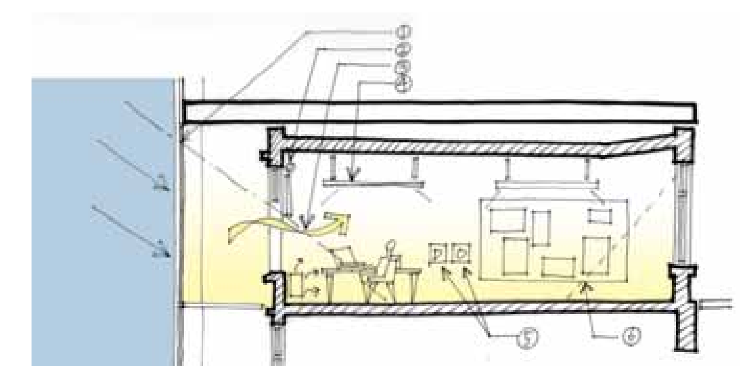
Rain will be collected from the building roof, and stored in a stormwater tank. The water from sinks will also be treated and collected in the stormwater tank. The collected storm and grey water will be used to irrigate the green roof and to provide water for toilet and urinal flushing. Low-flow plumbing fixtures will consist of lavatories (0.5 gallons per minute), showers (1.5 gallons per minute), pint-flush urinals, and dual-flush toilets. In aggregate, the Daniels Building will reduce potable water consumption by more than 40%.



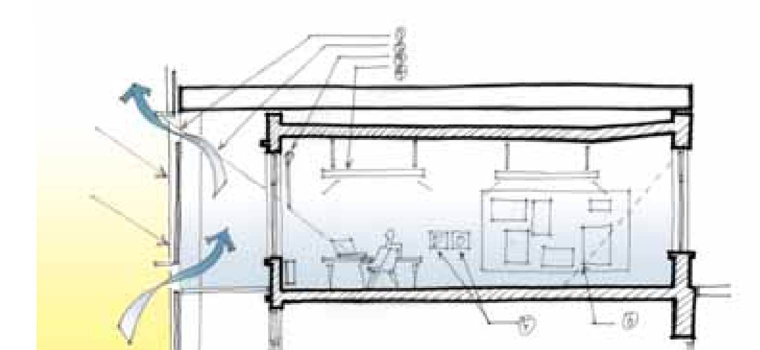
SUNLIGHT STUDY THROUGH BUILDING SECTION ▲

SUSTAINABILITY STUDY ▶

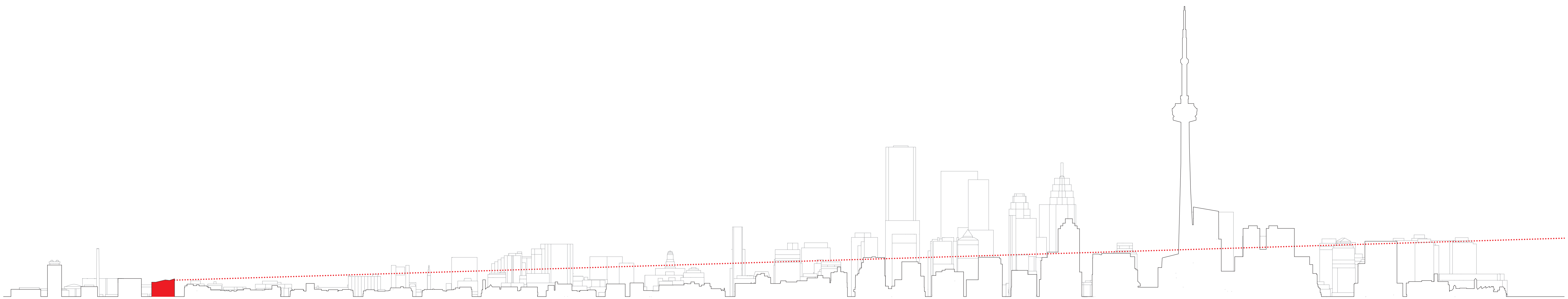




SUSTAINABILITY STUDY OF FACADE ▲



SUSTAINABILITY STUDY OF FACADE ▲



AREA CALCULATIONS

rm #/ floor #	SPACE PROGRAM	REQUIRED AREAS total rooms proposed	new units proposed	NASM per unit	exisitng NASM	Total exist + add proposed NASM	DESIGN PROPOSAL AREAS new construction- proposed NASM		# of units	nasm per unit
	FACULTY OFFICES + SUPPORT SPACE									
	faculty offices									
2nd+3rd	faculty offices single	15	0	12.00	188.20	188.20	188.20			
	other faculty offices/shared or hoteling offices									
3rd	faculty office multi	4	4	13.00	35.81	52.00	52.00			
213	sessional faculty offices multi	1	0	13.00	22.14	22.14	22.14			
1st	sessional faculty offices multi	4	4	14.55		58.20	67.50			
2nd	photocopy/print room	1	1	6.00		6.00	6.00			
	central admin, staff offices and support spaces									
118	deans office	1	0		27.42	27.42	27.42			
122	academic admin office	1	0		14.06	14.06	14.06			
124	academic admin office	1	0		14.06	14.06	14.06			
132	academic admin office	1	0		14.01	14.01	14.01			
138	M Arch Program Director office	1	0		14.02	14.02	14.02			
221	M UD program director office	1	0		14.99	14.99	14.99			
221A	M LA Program director office	1	0		14.31	14.31	14.31			
221B	BAAS Program director office	1	0		14.32	14.32	14.32			
118A	dean's assistant	1	0		7.87	7.87	7.87			
119	deans recpetion/waiting are	1	0		13.03	13.03	13.03			
119	supp admin office single	1	0		13.03	13.03	13.03			
126	student affairs office	1	0		16.41	16.41	16.41			
130	supp admin office single	1	0		13.96	13.96	13.96			
129	central student reception	1	0		14.53	14.53	14.53			
133	supp admin office single	1	0		11.58	11.58	11.58			
221C	reception/supp admin office single	1	0		10.34	10.34	10.34			
051	office storage	1	0		3.80	3.80	3.80			
059	office storage	1	0		19.80	19.80	19.80			
060	office storage	1	0		19.41	19.41	19.41			
116	storage room	1	0		14.85	14.85	9.41			
2nd	meeting room						10.04			
121	staff washroom	1	0		13.32	13.32	13.32			
121A	closet	1	0		0.69	0.69	0.69			
127	closet	1	0		1.84	1.84	1.84			
131	photocopy room	1	0		10.43	10.43	10.43			
134	kitchenette/lounge	1	0		11.24	11.24	11.24			
136	conference room	1	0		28.79	28.79	28.79			
208	conference room	1	0		51.00	51.00	51.00			
1st	mail room	1	0		8.09	8.09	8.00			
1st	computer support reception	1	1	15.00		15.00	15.00			
1st	computer support office	1	1	30.00		30.00	48.50			
105A	server room	1			14.00	14.00	14.00			
	STUDIOS-LABORATORIES + SUPPORT SPACE									
	program studios-laboratories									
3/4/5	M Arch studios-laboratories		266	9.60	1,174.43	2,553.60	1,589.12	(studio only)	266	9.6
3rd+4th	MLA studios-laboratories		68	9.60	270.00	652.80	405.60	(studio only)	68	9.6
3/4/or5	MUD studio-laboratories		14	9.60	65.10	134.40	83.20	(studio only)	14	9.6
grund	PhD studio-laboratories		14	9.60		134.40	140.00	(studio only)	14	9.6
2nd	Undergraduate (BAAS) studios-laboratories		60	4.05	103.96	243.00	175.00	(studio only)	66	4.4
	undergrad studio-laboratories support spaces									
2nd	undergrad studio-laboratories seminar/crit room	1	1	75.00		75.00 (incl in studio)	75.00			
2nd	undergrad studio-laboratories meeting/work room	1	1	20.00		20.00 (incl in studio)	20.00			
2nd	undergrad studio-laboratories computer room	1	1	20.00		20.00 (incl in studio)	20.00			
	grad studio-laboratories support spaces									
5th	spray room	1	0		10.51	10.51 (incl in studio)	10.00			
3/4/5	grad studio-laboratories informal crit spaces	6	6	25.00		150.00 (incl in studio)	200.00			
3/4/5	grad studio-laboratories workroom	3	3	18.00		54.00 (incl in studio)	54.00			
4/5	grad studio-laboratories printroom	2	2	15.00		30.00 (incl in studio)	30.00			
105V	student exhibition area/critique area	1	0		55.09	55.09 (incl in studio)	64.20			
	student exhibition area/critique area	1	0		23.79	23.79 (incl in studio)	23.79			
	critique area/conference space									
2/4/5	critique event rooms	3	3	50.00		150.00 (incl in studio)	170.00			
3rd	critique/event support kitchenette	1	1	15.00		15.00 (incl in studio)	15.00			
6th	exterior terrace									
	shared program/research support space									
bsmt	metal shop	1	1	75.00		75.00 (incl in studio)	75.00			
060A	shop storage	1	0		24.90	24.90 (incl in studio)	24.90			
062	wood/gen shop	1	0		125.43	125.43 (incl in studio)	125.43			
51	supervisor's office multi	1	0		15.49	15.49 (incl in studio)	15.49			
52	office storage	1	0		12.48	12.48 (incl in studio)	12.48			
063A	structure + construction lab	1	0		41.96	41.96 (incl in studio)	41.96			
063B	dust collection room	1	0		12.24	12.24 (incl in studio)	12.24			
064A	laser cutter	1	0		20.68	20.68 (incl in studio)	20.68			
071	darkroom	1	0		12.00	12.00 (incl in studio)	12.00			
ground	archway storge/mock-up room	1	1	40.00		40.00 (incl in studio)	42.00			
2nd	photo lab + storage	1	0		45.49	45.49 (incl in studio)	45.49			
2nd	photolab addition	1	1	20.00		20.00 (incl in studio)	22.95			
305	computer lab	1	0		20.21	20.21 (incl in studio)	20.21			
307	computer lab	1	0		24.41	24.41 (incl in studio)	24.41			
5th	computer lab	1	1	30.00		30.00 (incl in studio)	30.00			
4th	computer lab	1	1	60.00		60.00 (incl in studio)	60.00			
5th	studio storage/archive room	1	1	20.00		20.00 (incl in studio)	20.00			
4th	studio storage/archive room	1	1	30.00		30.00 (incl in studio)	30.00			
063D	thermal vacuum room	1	0		16.82	16.82 (incl in studio)	16.82			
063C	CNC workshop	1	0		36.12	36.21 (incl in studio)	36.12			
313	print room	1	0		12.71	12.71 (incl in studio)	12.71			

	RESEARCH LABORATORIES + SUPPORT SPACE						
	digital fabrication lab						
063	clean lab	1	0		35.94	35.94	35.94
	centre for landscape research						
3rd	research lab	1	0		25.88	25.88	30.00
311	visualization lab	1	0		25.11	25.11	25.11
	LIBRARY STAFF + SUPPORT SPACE						
6th	librarian's office	1	1	13.00	19.05	13.00	13.00
6th	library workroom	1	1	35.00	24.45	35.00	35.00
6th	library terminals/circ desk		0		26.47	26.47	40.00
6th	photocopy room	1	0		5.27	5.27	8.00
6th	collection space		39000	0.01	85.01	195.00	221.00
6th	study space		362	0.60	106.03	217.20	220.00
	SHARED COMMON, EXHIBITION,+ SUPPORT SPACE						
3rd	student café	1	0		37.42	37.42	38.00
3rd	student lounge	1	0		90.68	90.68	125.00
2nd	student union office	1	0		10.19	10.19	18.00
110	exhibition gallery/critique space	1	0		106.86	106.86	106.86
110	exhibition lobby	1	0		12.94	12.94	12.94
main	exhibition media support room + storage	1	1	12.50		12.50	12.50
	CLASSROOMS						
main	classroom storage	1	0		1.66	1.66	1.66
106	classroom - flat floor	1	0		66.39	66.39	66.39
066	lecture/theater/auditorium - tiered floor	1	1	225.00		225.00	195.00
main	classroom - flat floor	1	1	90.00		90.00	90.00
main	20 laptop seminar room	1	1	45.50		45.50	42.00

TOTAL AREA (SQ M) required 5,792.95 proposed 5,941.25 delta 148.30

program space remains untouched

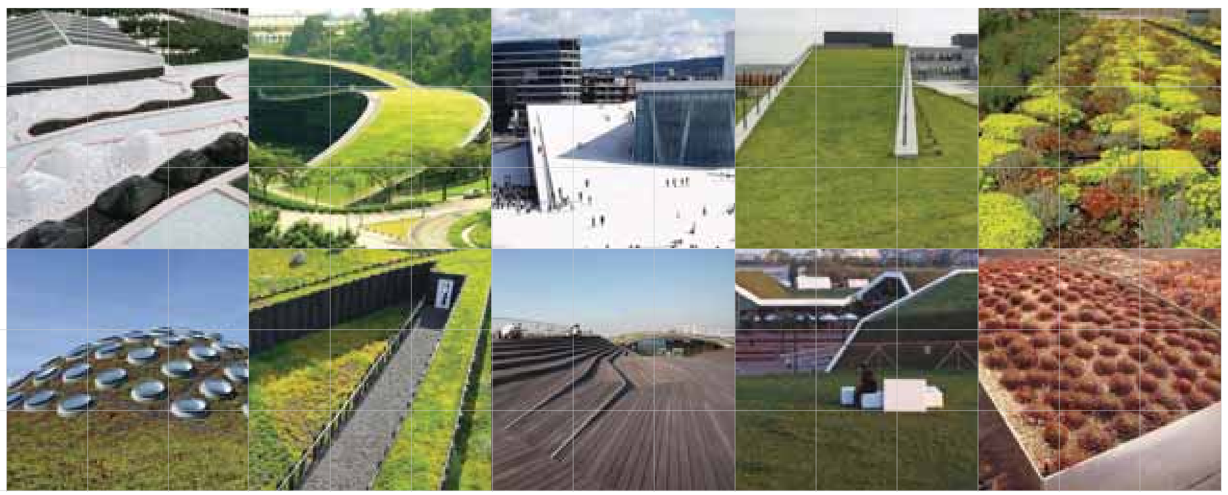
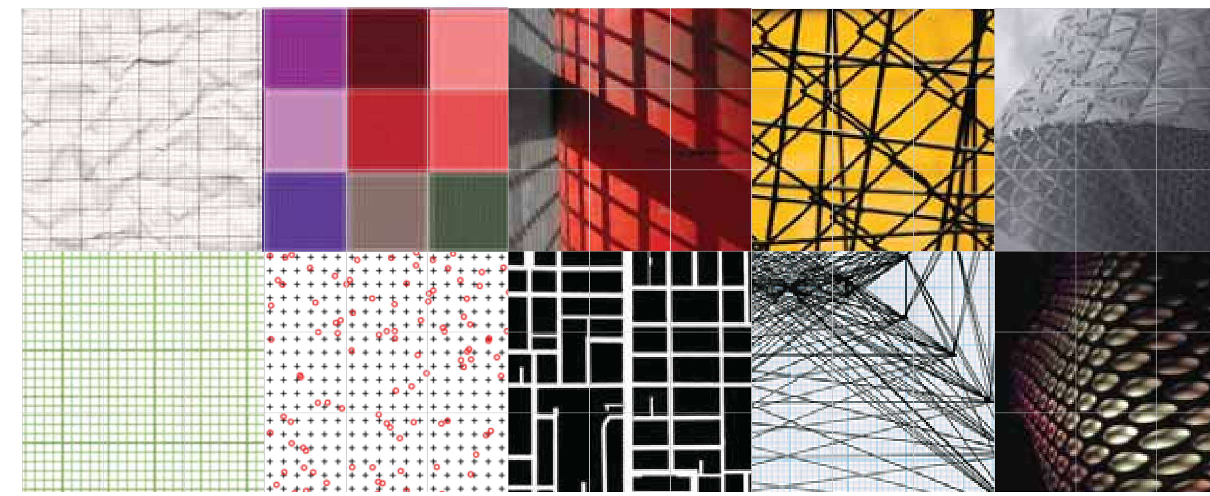
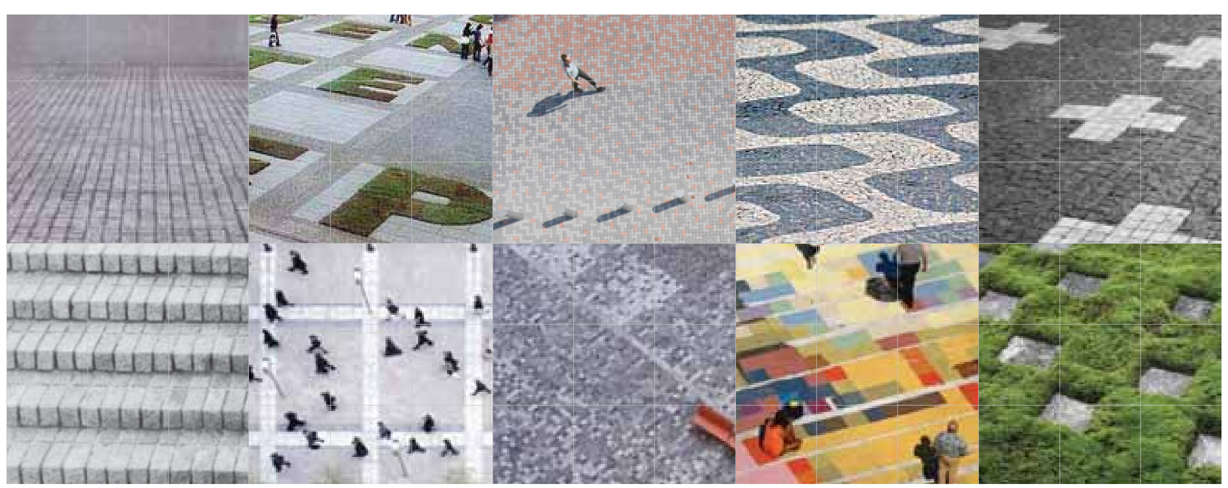
LEED SCORECARD

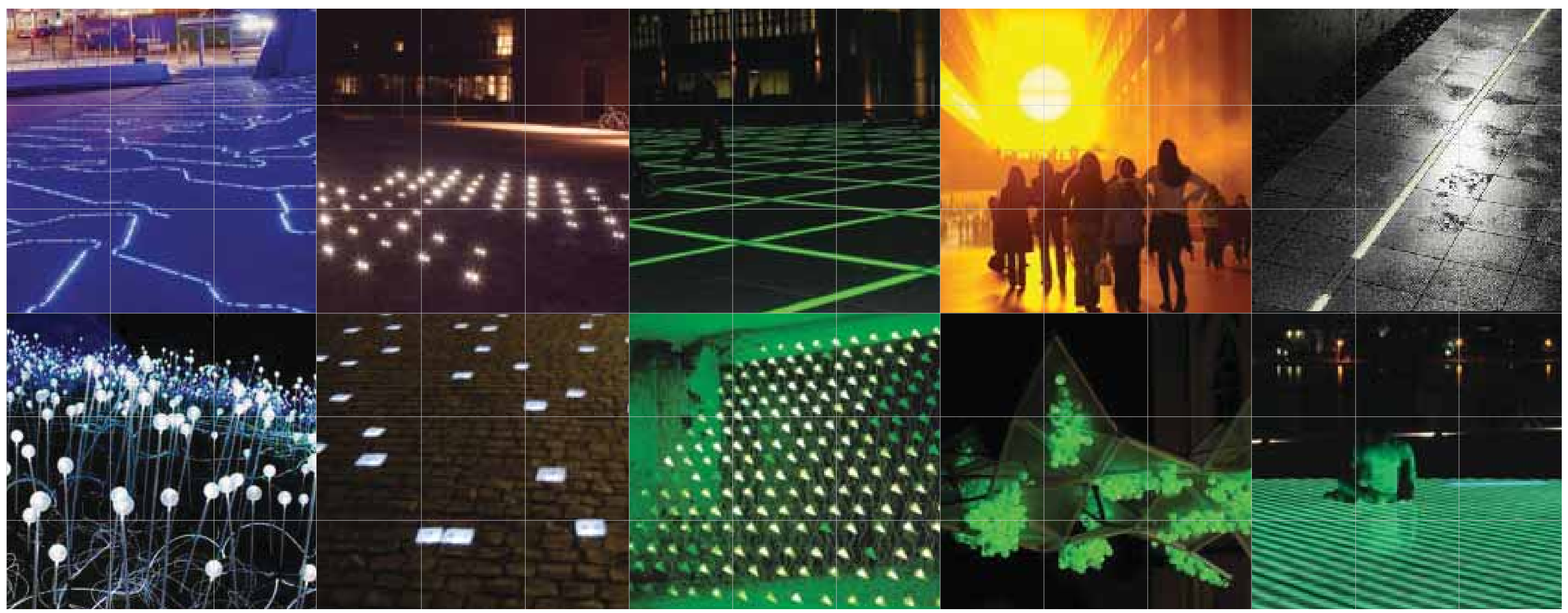
LEED-2009 Scorecard 4828 University of Toronto

Certified 50 to 59 points Silver 60 to 69 points Gold 70 to 79 points Platinum 80 or more points
Achievability rating: **Hi** = 90%, **Med** = 60%, **Low** = 10%, **NP** = not possible.

Achievability hi	med	low	NP			
72	13	8	17	73	**Projected Points**	

hi	med	low	NP	Credit	Item	Standard
					Prerequisites	**Standard**
Y				SS Prereq 1	**Construction Activity Pollution Prevention**	Create and implement erosion control plan that meets the 2003 EPA Construction General Permit.
Y				WE Prereq 1	**Water Use Reduction**	Reduce water use by 20% over an Energy Policy Act of 1992 baseline.
Y				EA Prereq 1	**Fundamental Commissioning of Building Energy Systems**	Engage commissioning agent, and develop and execute a commissioning plan.
Y				EA Prereq 2	**Minimum Energy Performance**	Reduce energy cost by 10%, compared to ASHRAE 90.1-2007, Appendix G
Y				EA Prereq 3	**Fundamental Refrigerant Management**	Eliminate CFCs in building HVAC&R.
Y				MR Prereq 1	**Storage & Collection of Recyclables**	Provide space for the collection and storage of paper, cardboard, glass, plastic, and metals.
Y				IEQ Prereq 1	**Minimum IAQ Performance**	Meet sections 4 through 7 of ASHRAE 62.1-2007.
Y				IEQ Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	Prohibit smoking inside building, and locate exterior smoking areas at least 25 feet away from building.
19	2	0	5		**Sustainable Sites**	**Standard**
1				SS Credit 1	**Site Selection**	Do not develop sites that are prime farmland, floodplains or wetlands, parkland, or key habitat.
5				SS Credit 2	**Development Density and Community Connectivity**	Locate project in dense areas or near key community services.
			1	SS Credit 3	**Brownfield Redevelopment**	Locate project on a remediated brownfield site.
6				SS Credit 4.1	**Alternative Transportation:** Public Transportation Access	Locate project within 1/2 mile of a rail station or 1/4 mile of two bus lines.
1				SS Credit 4.2	**Alternative Transportation:** Bicycle Storage & Changing Rooms	Provide bicycle racks for 5% of occupants and showers for 0.5% of occupants.
			3	SS Credit 4.3	**Alternative Transportation:** Low-Emitting and Fuel-Efficient Vehicles	Provide preferred parking for hybrid vehicles for 5% of the project's parking capacity.
2				SS Credit 4.4	**Alternative Transportation:** Parking Capacity	Do not exceed zoning requirements; preferred carpool parking for 5% of parking capacity.
			1	SS Credit 5.1	**Site Development:** Protect or Restore Habitat	Restore 50% of site to native or adapted vegetation.
	1			SS Credit 5.2	**Site Development:** Maximize Open Space	Exceed zoning open space requirements by 25%.
1				SS Credit 6.1	**Stormwater Design:** Quantity Control	No net increase site runoff, OR, reduce over existing conditions by 25%.
1				SS Credit 6.2	**Stormwater Design:** Quality Control	Develop stormwater plan that meets local best management practice, and removes 80% TSS.
	1			SS Credit 7.1	**Heat Island Effect:** Non-Roof	Use open-grid paving, light-colored paving, or provide shade on 50% of all hardscape.
1				SS Credit 7.2	**Heat Island Effect:** Roof	Use light-colored membrane for 75% of roof or vegetated roof for 50% of roof.
1				SS Credit 8	**Light Pollution Reduction**	No nighttime light trespass from building AND meet exterior lighting requirements of ASHRAE 90.1-2007.
6	4	0	0		**Water Efficiency**	**Standard**
2	2			WE Credit 1	**Water Efficient Landscaping**	Reduce potable water used for irrigation by 50% OR No potable water use for irrigation.
	2			WE Credit 2	**Innovative Wastewater Technologies**	Reduce water used for sewage conveyance by 50%.
4				WE Credit 3	**Water Use Reduction**: 30% / 35% / 40%	Reduce water use by over an Energy Policy Act of 1992 baseline.
19	3	5	8		**Energy & Atmosphere**	**Standard**
3				EA Credit 1	**Optimize Energy Performance:** 12% / 14% / 16%	Reduce building energy cost compared to ASHRAE 90.1-2007, Appendix G
3				EA Credit 1	**Optimize Energy Performance:** 18% / 20% / 22%	Reduce building energy cost compared to ASHRAE 90.1-2007, Appendix G
3				EA Credit 1	**Optimize Energy Performance:** 24% / 26% / 28%	Reduce building energy cost compared to ASHRAE 90.1-2007, Appendix G
1	1	1		EA Credit 1	**Optimize Energy Performance:** 30% / 32% / 34%	Reduce building energy cost compared to ASHRAE 90.1-2007, Appendix G
	1	1	1	EA Credit 1	**Optimize Energy Performance:** 36% / 38% / 40%	Reduce building energy cost compared to ASHRAE 90.1-2007, Appendix G
		2	2	EA Credit 1	**Optimize Energy Performance:** 42% / 44% / 46% /48%	Reduce building energy cost compared to ASHRAE 90.1-2007, Appendix G
	1	1		EA Credit 2	**On-Site Renewable Energy:** 1% / 3%	Produce renewable energy on-site, calculated by cost.
			2	EA Credit 2	**On-Site Renewable Energy:** 5% / 7%	Produce renewable energy on-site, calculated by cost.
			3	EA Credit 2	**On-Site Renewable Energy:** 9% / 11% / 13%	Produce renewable energy on-site, calculated by cost.
2				EA Credit 3	**Enhanced Commissioning**	Design review, post occupancy review, recommissioning manual.
2				EA Credit 4	**Enhanced Refrigerant Management**	Select refrigerants with low global warming potential and ozone depletion potential.
3				EA Credit 5	**Measurement & Verification**	Develop an M&V plan that meets IPMVP, Options B or D.
2				EA Credit 6	**Green Power**	Purchase Green-e certified electricity supply for 2 years, for 35% of building's electricity demand.
12	1	1	0		**Materials & Resources**	**Standard**
3				MR Credit 1.1	**Building Reuse:** Maintain Existing Walls, Floors, & Roof, 55% / 75% / 95%	Maintain existing building structure and envelope.
1				MR Credit 1.2	**Building Reuse:** Maintain Existing Interior Nonstructural Elements	Use existing interior nonstructural elements in at least 50% of the completed building.
2				MR Credit 2	**Construction Waste Management:** 50% / 75%	Recycle and/or salvage construction waste, and create a construction waste management plan.
	1	1		MR Credit 3	**Materials Reuse:** 5% / 10%	Use salvaged, refurbished, or reused materials, calculated by cost.
2				MR Credit 4	**Recycled Content:** 10% / 20% (post-consumer + 1/2 pre-consumer)	Use materials or products with recycled content, calculated by cost.
2				MR Credit 5	**Regional Materials:** 10% / 20%	Use materials extracted, processed, and manufactured within 500 miles, calculated by cost.
1				MR Credit 6	**Rapidly Renewable Materials**	Use rapidly renewable materials for 2.5% of construction materials, calculated by cost.
1				MR Credit 7	**Certified Wood**	Use FSC-certified wood for 50% of wood-based materials, calculated by cost.
13	2	0	0		**Indoor Environmental Quality**	**Standard**
1				IEQ Credit 1	**Outdoor Air Delivery Monitoring**	Install monitoring of outdoor air on ventilation systems.
1				IEQ Credit 2	**Increased Ventilation**	Increase ventilation rates by 30% above ASHRAE 62.1-2004.
1				IEQ Credit 3.1	**Construction IAQ Management Plan:** During Construction	Develop an IAQ plan that meets SMACNA IAQ Guidelines for Occupied Buildings Under Construction.
1				IEQ Credit 3.2	**Construction IAQ Management Plan:** Before Occupancy	Provide air quality testing or building flush-out prior to occupancy.
1				IEQ Credit 4.1	**Low-Emitting Materials:** Adhesives & Sealants	Use adhesives and sealants that comply with the SCAQMD Rule #1168
1				IEQ Credit 4.2	**Low-Emitting Materials:** Paints & Coatings	Use products with VOC levels specified in Green Seal Standard GS-11 and SCAQMD Rule 1113.
1				IEQ Credit 4.3	**Low-Emitting Materials**: Flooring Systems	Use carpet that meets the CRI Green Label requirements and FloorScore compliant hard surface flooring.
	1			IEQ Credit 4.4	**Low-Emitting Materials:** Composite Wood & Agrifiber Products	Use materials with no added urea-formaldehyde resins or adhesives.
1				IEQ Credit 5	**Indoor Chemical & Pollutant Source Control**	Provide floor grates at doors, sufficient exhaust in chemical use areas, and MERV 13 filters.
1				IEQ Credit 6.1	**Controllability of Systems:** Lighting	Provide lighting controls for 90% of individuals and group lighting controls.
1				IEQ Credit 6.2	**Controllability of Systems:** Thermal Comfort	Provide comfort controls or operable windows for 50% of individuals and group spaces.
1				IEQ Credit 7.1	**Thermal Comfort:** Design	Meet ASHRAE 55-2004, Thermal Comfort Conditions for Human Occupancy.
	1			IEQ Credit 7.2	**Thermal Comfort:** Verification	Meet IEQc7.1 AND Perform a thermal comfort survey after occupancy, and correct identified problems.
1				IEQ Credit 8.1	**Daylight & Views:** Daylight	Achieve 2% glazing factor, or 25 footcandles, in 75% of regularly occupied spaces.
1				IEQ Credit 8.2	**Daylight & Views:** Views	Provide direct views to the outside in 90% of regularly occupied spaces.
3	1	2	0		**Innovation in Design**	**Standard**
1				ID Credit 1.1	**Innovation in Design**, tba	Pending USGBC judgment.
1				ID Credit 1.2	**Innovation in Design**, tba	Pending USGBC judgment
	1			ID Credit 1.3	**Innovation in Design**, tba	Pending USGBC judgment
		1		ID Credit 1.4	**Innovation in Design**, tba	Pending USGBC judgment
		1		ID Credit 1.5	**Innovation in Design**, tba	Pending USGBC judgment
1				RP Credit 2	**LEED™ Accredited Professional**	LEED accredited professional on design team.
0	0	0	4		**Regional Priority**	**Standard**
			1	RP Credit 1.1	**Regional Priority**, tba	Currently, there are no Regional Priority credits in Canada
			1	RP Credit 1.2	**Regional Priority**, tba	Currently, there are no Regional Priority credits in Canada
			1	RP Credit 2	**Regional Priority**, tba	Currently, there are no Regional Priority credits in Canada
			1	RP Credit 2	**Regional Priority**, tba	Currently, there are no Regional Priority credits in Canada

Landscape

Coen + Partners

The landscape architecture scope includes the design of the 1,179 square-meter exterior ground plane for the new structure, including adjacent sidewalks and alleyways, and a 1,643 square-meter roof-top garden and terrace areas, in collaboration with the architect and larger project team. The landscape architect seeks to employ materials and methods with aesthetic and ecologic integrity, including the selection of locally-sourced and indigenous materials, materials with recycled content, and materials with low energy and maintenance requirements.

The exterior ground plane scope includes grading and drainage for entire site. The site is surfaced with 1,179 square-meters of dry-laid unit pavers and/or cast-in-place pavement extending from building edge to curb edge, including proposed ramps and stairs and existing adjacent sidewalks and alleyways. Unit sizes and/or score lines vary, creating a textured surface that is influenced and organized by the action of the proposed building skin and entry points. The entrance at College Street is accessed through a 24 linear-meter ramp and staircases with approximately 45 linear-meters of brushed aluminum or stainless steel railings.

Plantings at the ground plane consist of 14 100mm-caliper native, deciduous street trees and 55 linear-meters of native twining-vines planted at the building façade. Proposed plantings are to receive amended structural soil for all planting pits and drip irrigation. Site furnishings include 25 bike racks and 4 trash receptacles. The exterior lighting scheme is focused on the illumination of the building façade; linear in-ground fixtures wrap the skin and existing façade at the perimeter. In-ground linear fixtures extend from the building into adjacent pavement areas, highlighting changes in pavement texture and/or entrance areas.

The landscape scope for the rooftop includes a 1,643 square-meter intensive green roof system, from Hydrotech Membranes Corporation or similar, and all grading and drainage structures. The green roof is organized around a series of terraces, ramps, and intensely planted sloping planes that ascend from the library access point. The rooftop is surfaced with 450 square-meters of exterior decking or eco-deck, with approximately 125 linear-meters railings. A 154 square-meter area of wood or eco-deck bleachers ascends to the southwest corner of the rooftop, providing space for casual seating and outdoor lectures.

With exception to a 50 square-meter mechanical area surfaced with granular pavement, the remaining 1,061 square-meter area is planted in stripes demarcating the topography of the planes; plantings are composed of mature, container-grown native groundcovers, forbs, grasses, and low shrubs. The garden is a classification of plant species that are suitable for use in the local ecosystem. All planted areas are to receive irrigation and amended rooftop soil in coordination with recommendations by the green roof system manufacturer. Site furnishings include 3 trash receptacles, a 20 linear-meter metal and/or wood bench and movable tables and chairs. The rooftop lighting scheme features in-ground linear fixtures extending as stripes through the sloped ramps, bleachers, and terrace gathering areas.

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Mechanical
TMP

The mechanical building systems will be designed to meet the occupant comfort and life safety needs as well as integrate with the building to address sustainable design practices for energy efficiency and conservation.

Plumbing
The plumbing system will have a storm water system collecting in a cistern to be utilized for irrigation and flushing of selected urinal and water closet groupings.

The sanitary drainage flow and domestic water use will be reduced through the use of low flow fixtures.

Domestic hot water will be preheated via the building solar collector.

Fire Protection
A complete building sprinkler system zoned on a floor-by-floor basis will be provided as well as an extended fire standpipe system. The system will be combined served by a new fire pump station.

Heating, Ventilation and Air Conditioning (HVAC)

1. Heating
Heating is based on the high temperature hot water heating system from the University of Toronto system. Within the building, the heating will be split into separate circuits to permit higher grade heat to serve envelope heating devices such as fin tube heating, and a lower grade heating circuit that heats the ventilation air stream. The lower grade heating circuit will permit integration with the solar panel technology as well as potential heat recovery and water-to-water heat pump technology if ultimately deemed cost effective.

2. Ventilation
Ventilation to meet applicable ASHRAE 62 standards will be provided as a function of the outdoor air portion of the air handling unit (AHU) supply air stream.

Building air handling systems will utilize economizer operation and maintain a range of outdoor air supplied to the building from minimum conditions to meet ASHRAE 62 up to 100% outdoor air under airside economizer control. CO_2 and demand ventilation control will be employed as a LEED point if deemed cost effective.

3. Air Conditioning
Chilled water from the Bahen Center will be routed to the building and used for air conditioning by circulation through cooling coils in all air handling units.

The building will be served by VAV systems capable of 100% outdoor air in keeping with the Trans-Solar report recommendations. Existing building floors will be served by overhead VAV systems. New floors will utilize underfloor air design providing benefits in ventilation effectiveness, extending economizer operating range and providing a platform for high levels of individual control and convenience and flexibility for future changes.

Structural
Halcrow Yolles

The general framing for the proposed structural work will generally utilize composite structural steel with reinforced concrete on steel deck. This work will be carried out generally within the phase one construction period. From our perspective working on similar overbuild construction projects, all of the intervention into the ongoing operation of the school, except for some work in the basement area, can be carried out on weekends supplemented by some over-night activities. The structural construction effort will commence with the construction of a new exit stair on the east side of the building. Upon completion of this work, areas of the building will be made redundant and this will permit a main effort of the phase one work to progress.

The vertical framing will be supported on a foundation drilled concrete piles with perimeter tie grade beam framing at the perimeter of the building. Local foundations for the new elevator framing and other vertical elements will be supported on spread interior footings located below the existing slab on grade construction.

There are a number of options for the framing of the roof addition: 1) a vierendeel truss clear spanning the existing roof between the fifth and sixth floor framing, 2) a long span deep plate girder located at the fifth floor framing spanning the existing roof, or 3) an alternate with two or three interior column or wall elements supporting a spine floor at the sixth floor which supports columns to the roof and hangers to support the new fifth floor. We believe that this alternative can be accomplished with minimal disruption to the building operations and that it represents substantial savings (over three quarters of a million dollars). ` The volumes created by the sloped roof construction will permit the use of slightly deeper construction to support the program. The floor and roof framing will generally consist of a minimum of 114 mm concrete slab on 76 mm steel composite to achieve the fire separation without requiring spray fire proofing to the steel deck..

The installation of the new elevator will require the excavation and construction of new foundations in the area of the basement elevator pit. We will take advantage of this work to install a new vertical support for the structure above by construction the west wall of the shaft in reinforced concrete. The construction of this wall will generally be carried out from within the elevator shaft except for an approximate 300 mm temporary intrusion into the adjacent corridors. This wall will be utilized to reduce the cost of the over-build construction by providing an additional strategically placed vertical support.

The perimeter framing outside of the existing building structure will consist of structural steel columns with horizontal girt framing and ties. This framing supports the roof, the exterior glazing, and local stair framing with ties to reduce the slenderness of the perimeter columns to minimize the sizes of the perimeter elements. The columns will also participate in the lateral diagonal bracing to resist the lateral forces due to wind and seismic loads.

The drilled concrete pile elements will extend to resist the loads by end bearing and skin friction with the soil below. These drilled pile elements are linked together with reinforced concrete beams which also provide the support of the ramps and entry levels.

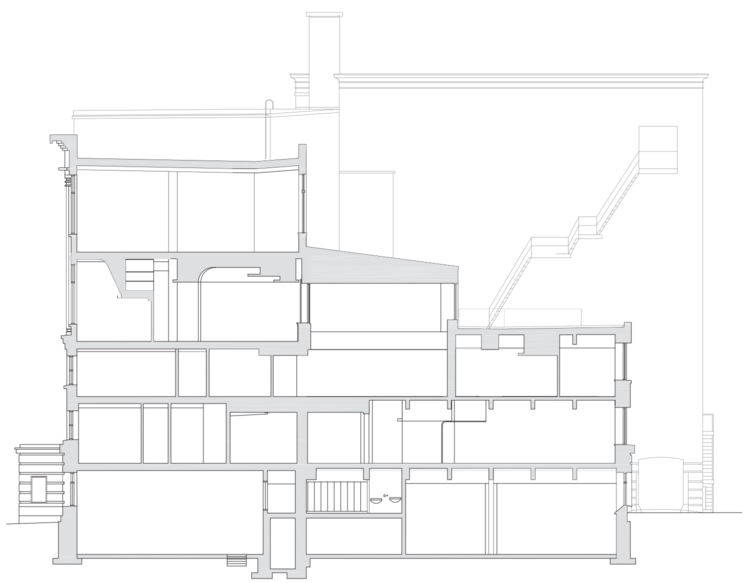
Local re-framing within the building such as the new raked seating, and infill of existing openings will be constructed of formed reinforced concrete framing, with longer span areas constructed in composite reinforced concrete on structural steel framing. New mechanical, electrical and plumbing sleeves will be reviewed in the context of their impact on the existing framing and may need local steel or concrete reinforcement.

Electrical
Mulvey+Banani

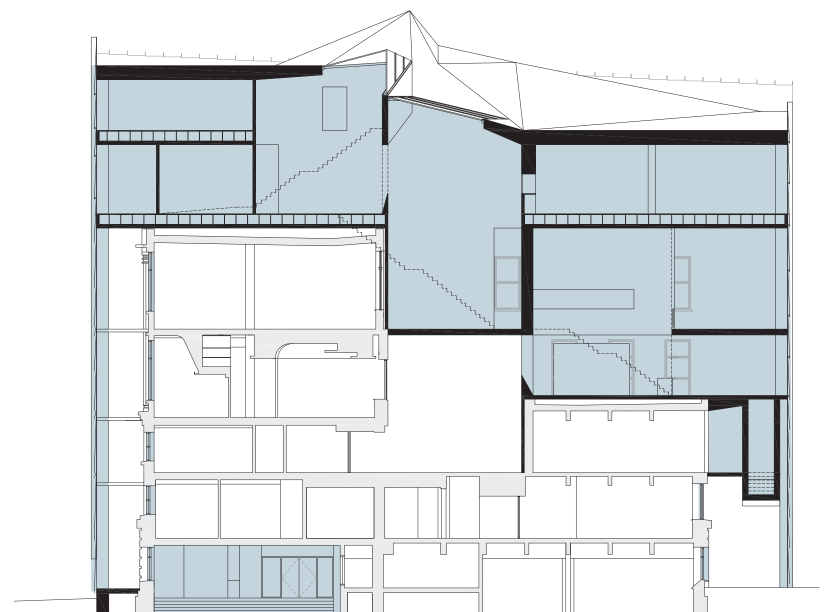
The building will be upgraded to utilize state of the art components intended to satisfy the needs of a contemporary highly automated environment. The major features of the building can be described as follows:

- New Lighting system throughout, utilizing most current and most energy efficient light sources, such as LED, T8 and T5 Lamps in combination with electronic ballasts.
- New Microprocessor based lighting control in combination with occupancy sensors and photoelectric sensors interconnected with sunshades to allow for individual room by room control and also allow for daylight harvesting.
- New Fire Alarm System employing fully addressable and self diagnostic devices.
- New power distribution system from the existing electrical room to each of the floor, new branch wiring and new devices throughout.
- New Complete telecommunications system cabling system for voice and data cabling and CATV cabling throughout the complex.

Based on the present building load, we assume that the existing electrical service will be adequate to support the building loads, existing and new. The service capacity will be monitor throughout the design process and will be modified/upgraded s required.

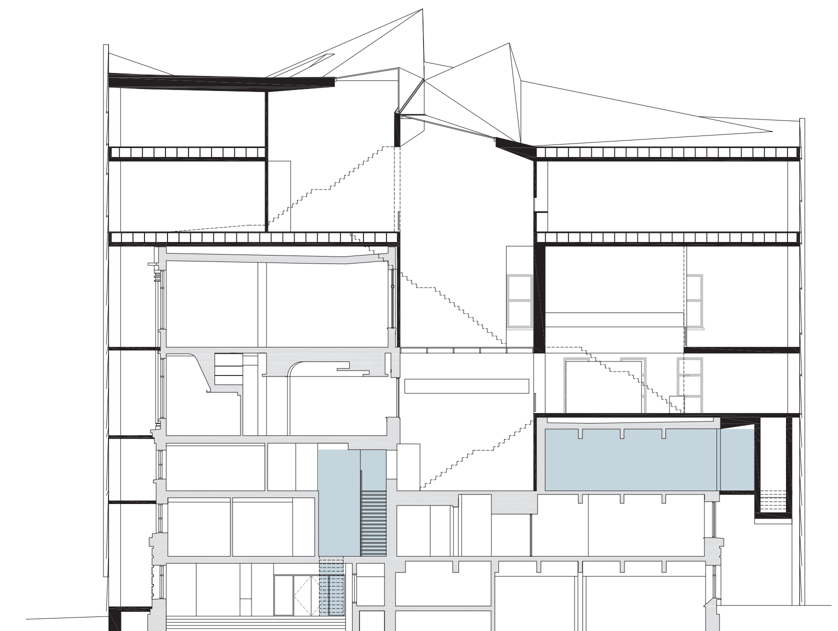


existing condition



phase 1

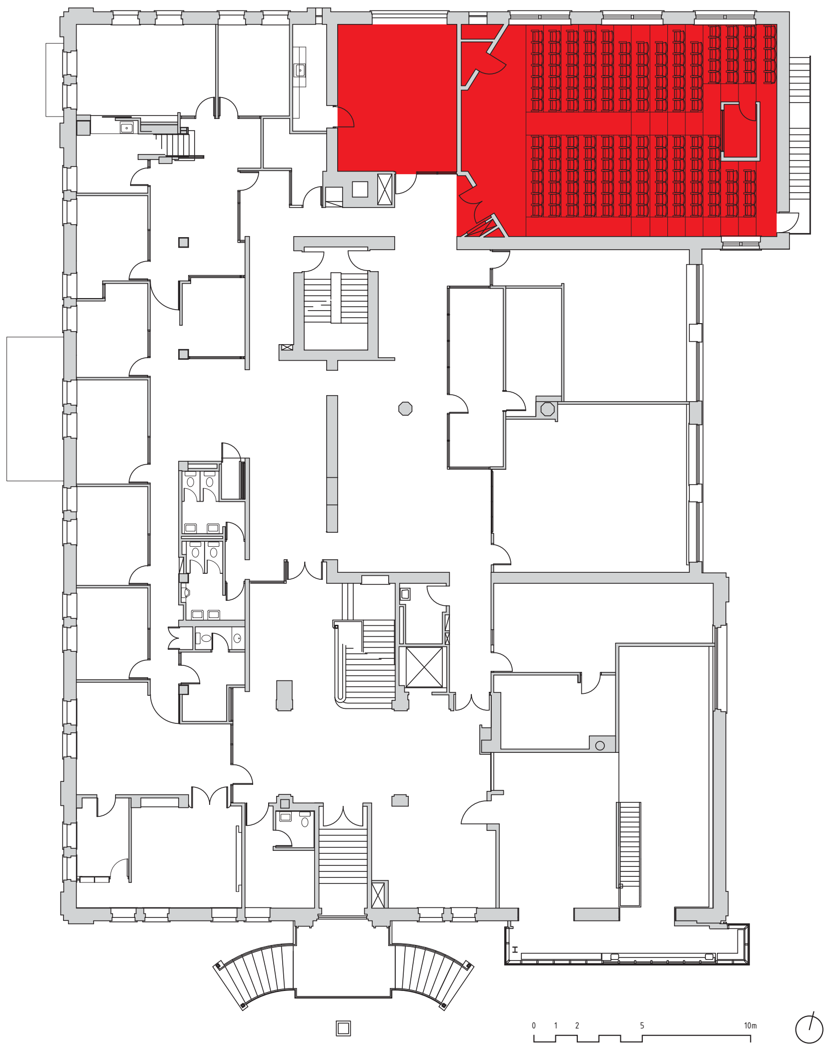
- all new construction
- replace existing windows
- renovate 066 into new tiered lecture theater



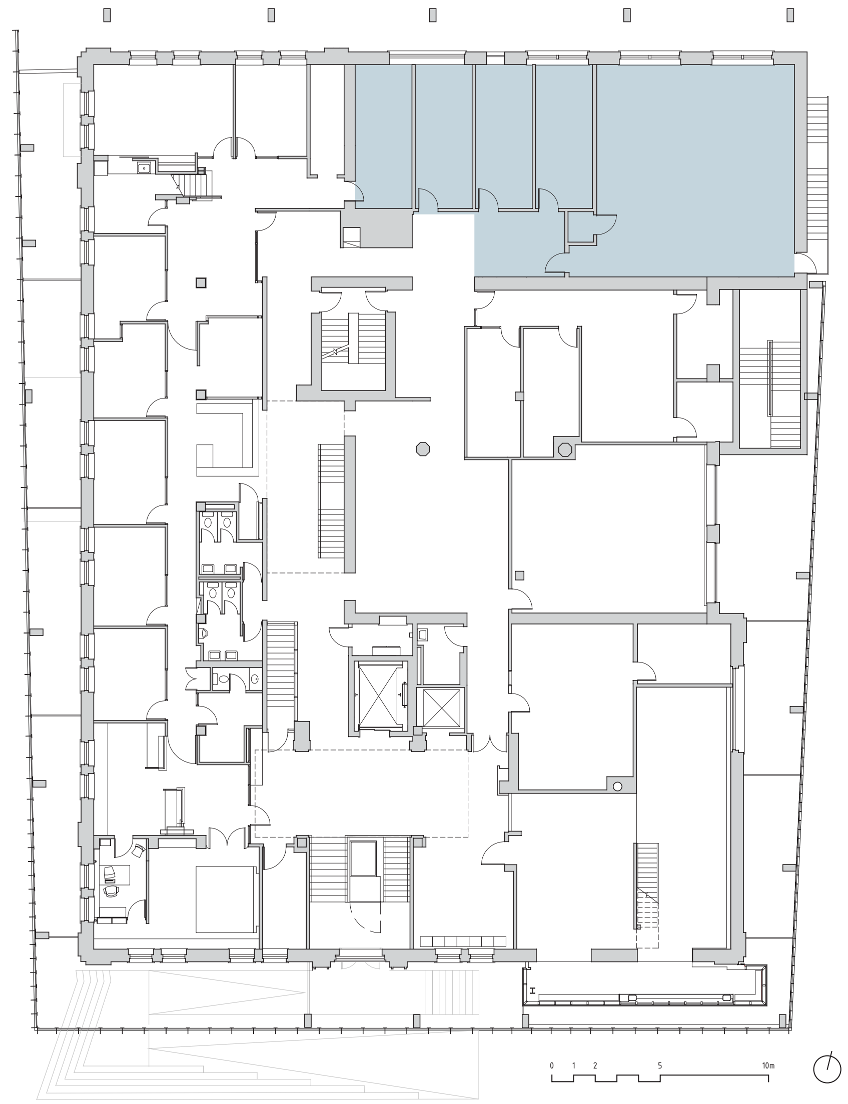
phase 2

- renovate exisitng auditorium into undergraduate studio and support spaces
- insertion of new stairs in ground and main levels (optional)
- upgrades to existing building

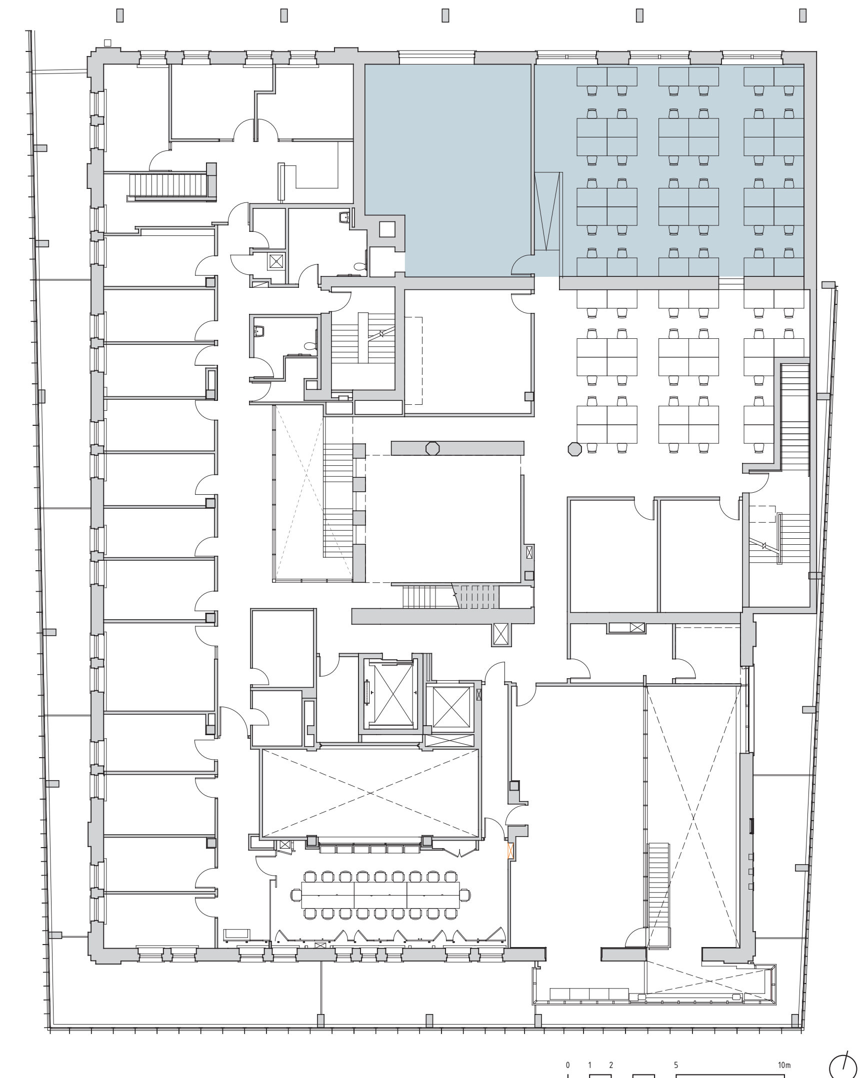
Office dA



Level 1 Demolition Plan



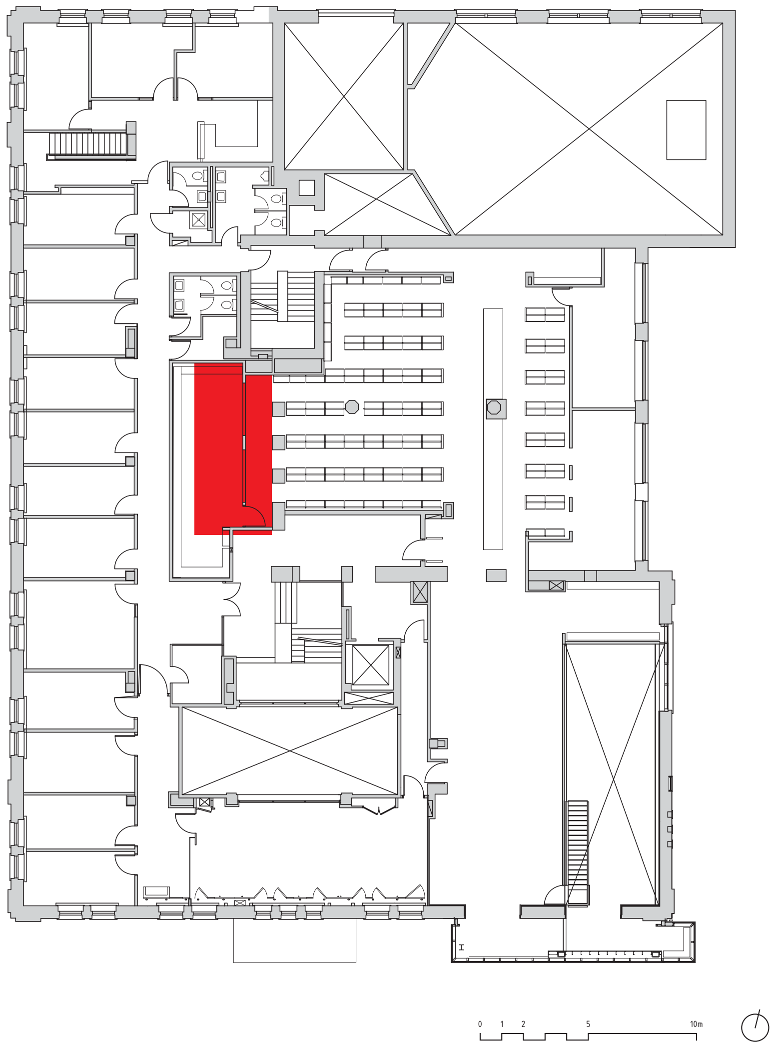
Level 1 Renovation Plan



Level 2 Renovation Plan

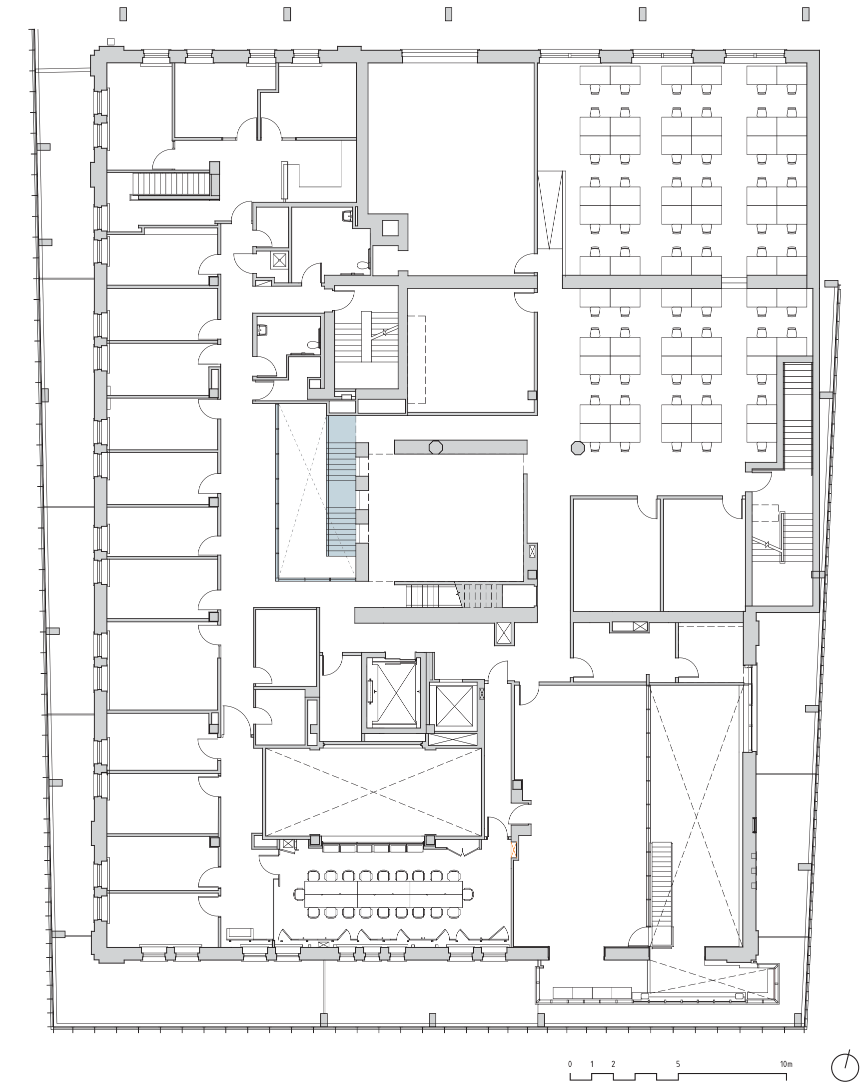
As represented in Program Planning Options A & B (May 2009) submitted to Office dA by the University of Toronto, we assumed the demolition of the existing auditorium in order to make available additional square footage within the existing building.

Phase 2: Renovate Existing Auditorium into Undergraduate Studios & Support Spaces

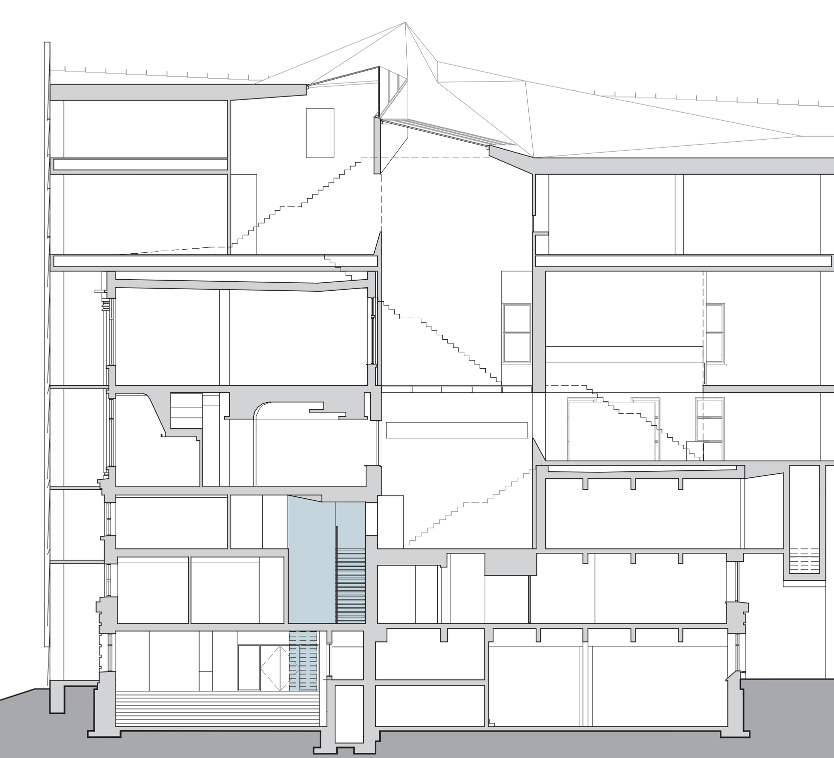


Level 2 Demolition Plan

Level 1 Renovation Plan

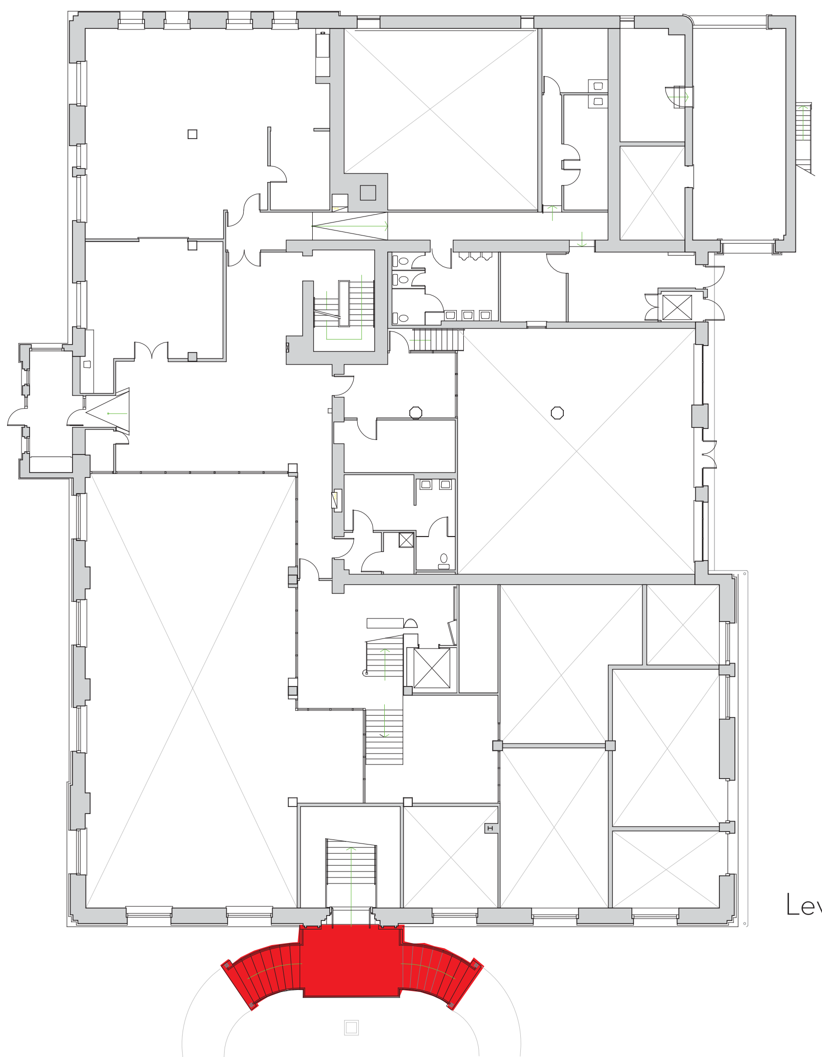


Level 2 Renovation Plan

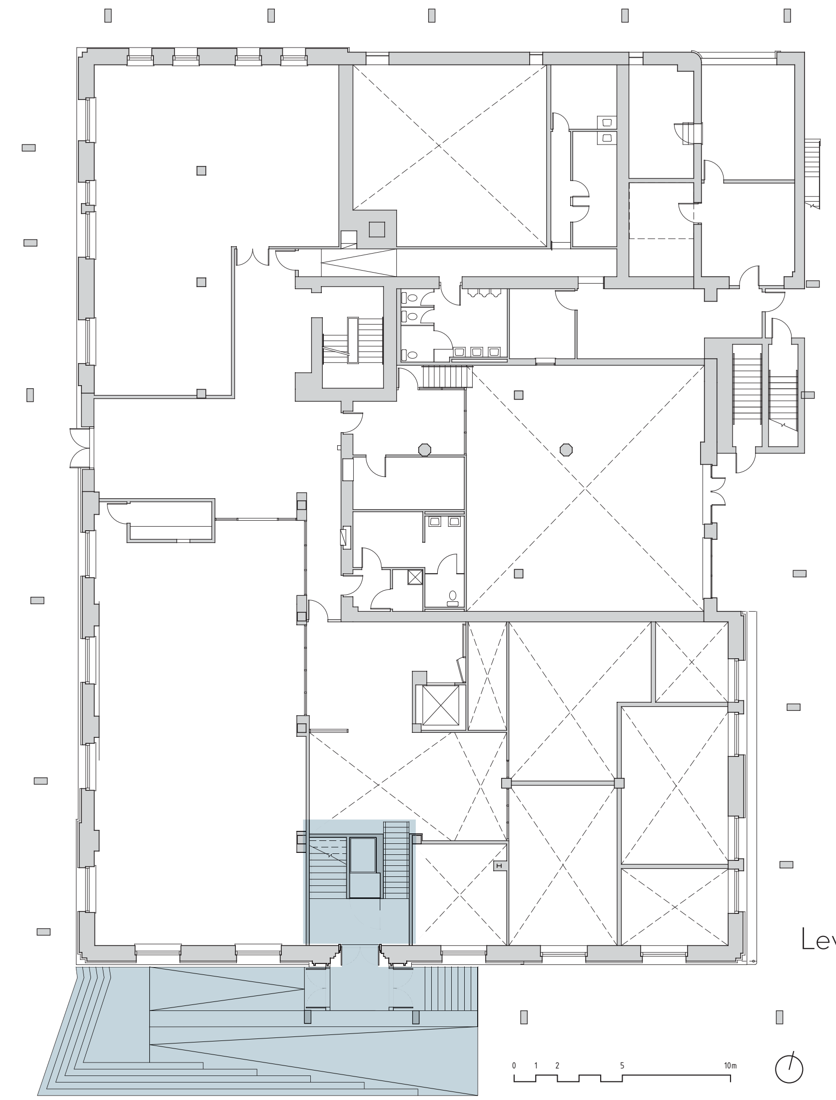


Phase 2: Insertion of New Stairs in Ground and Main Levels (Optional)

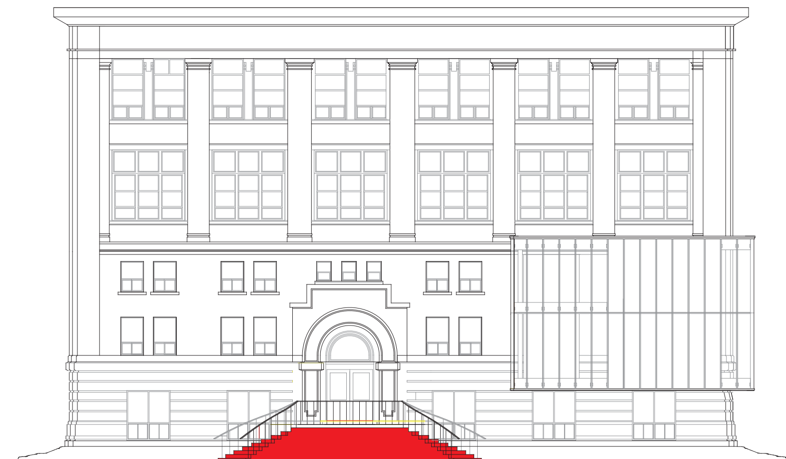
New Accessible Main Entrance (Optional)

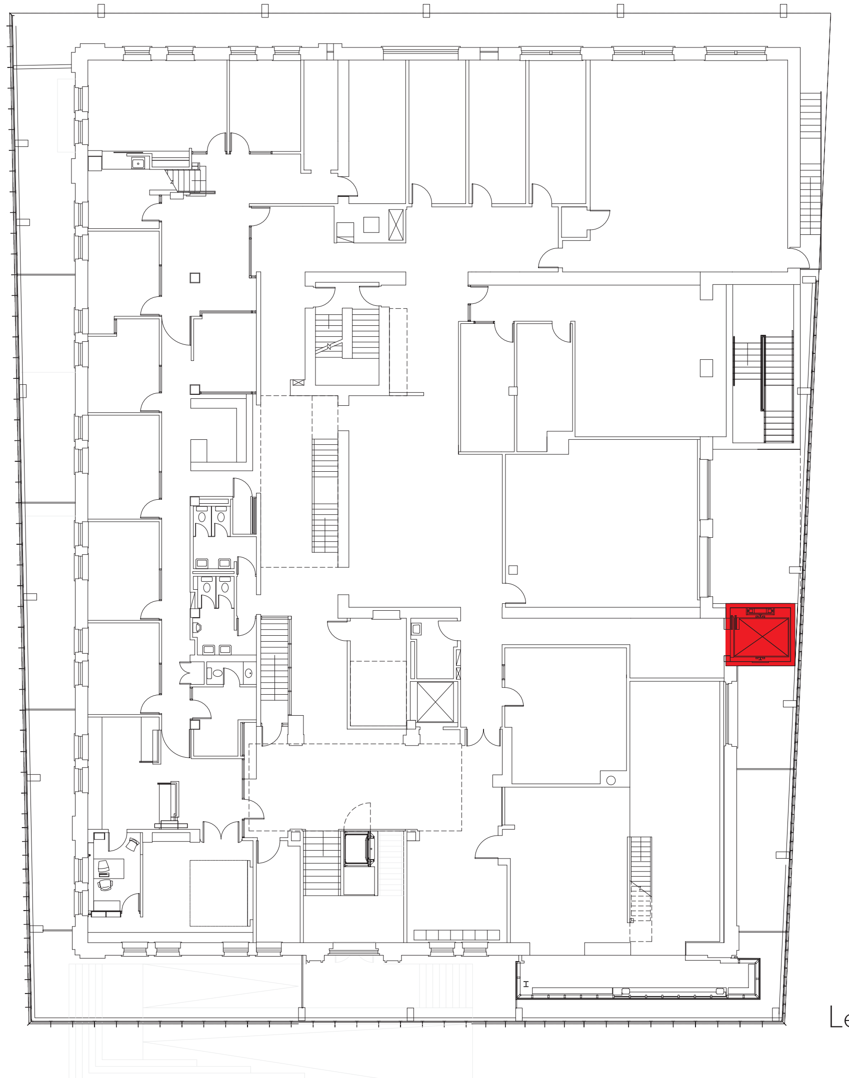


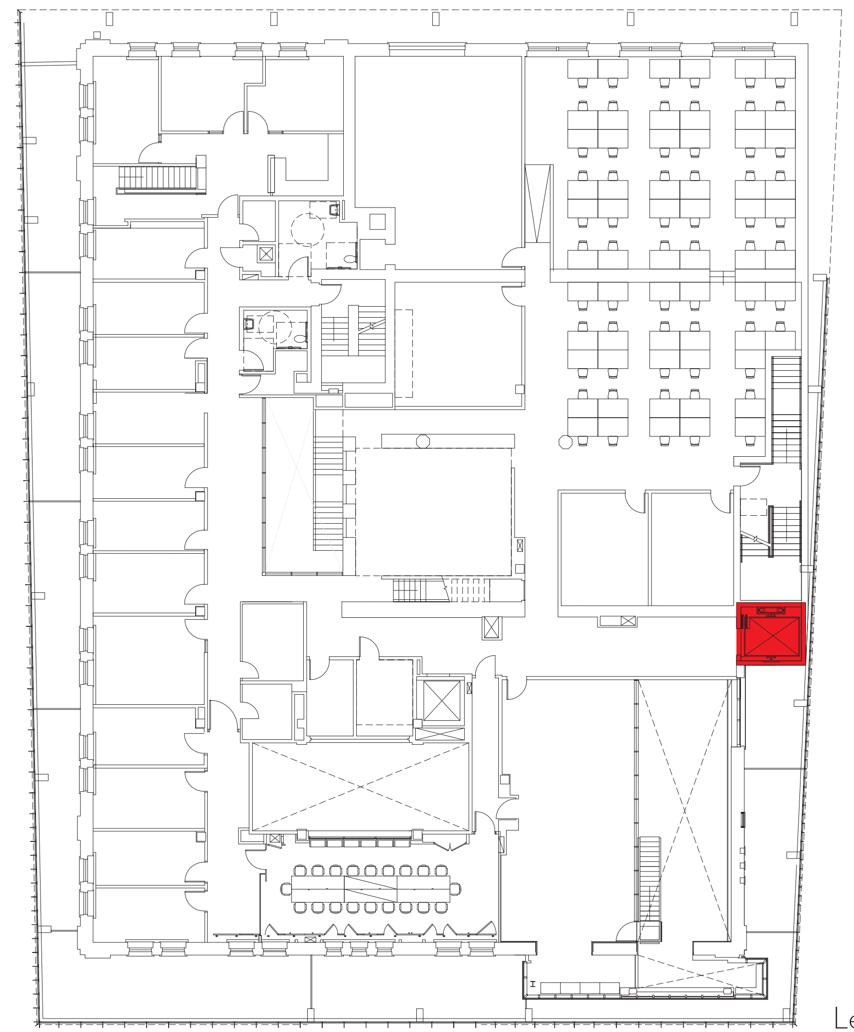
Level 0 Demolition Plan



Level 0 Renovation Plan

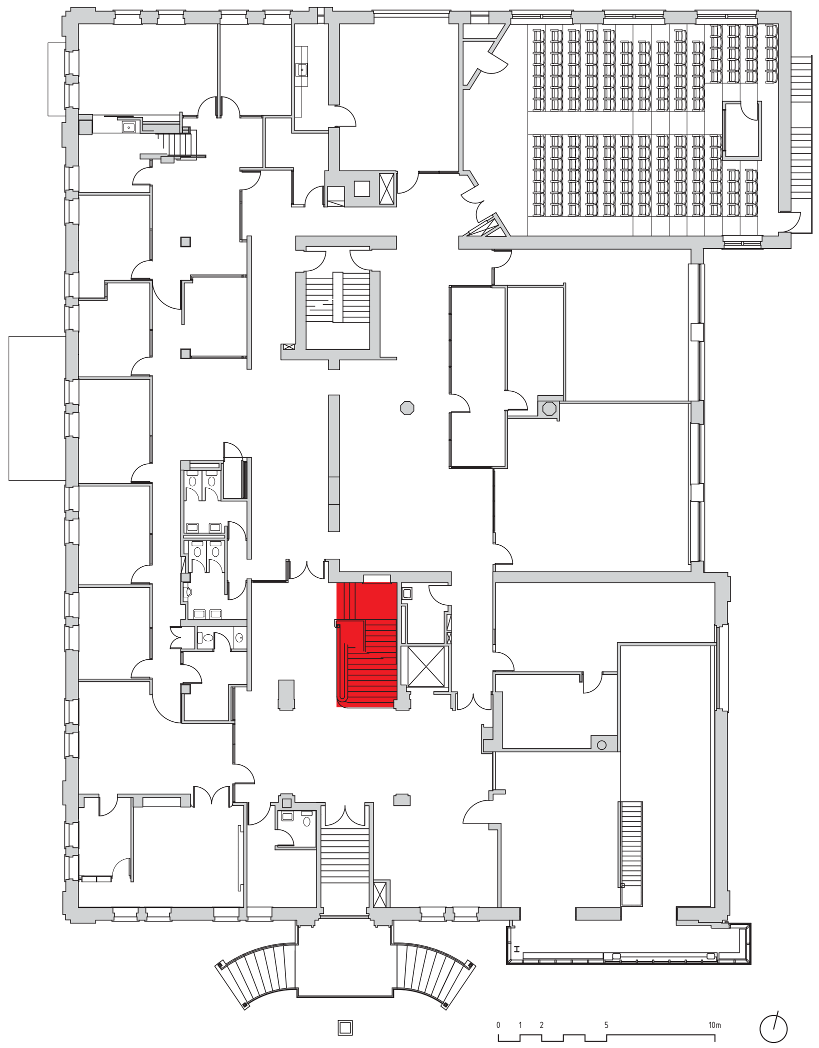




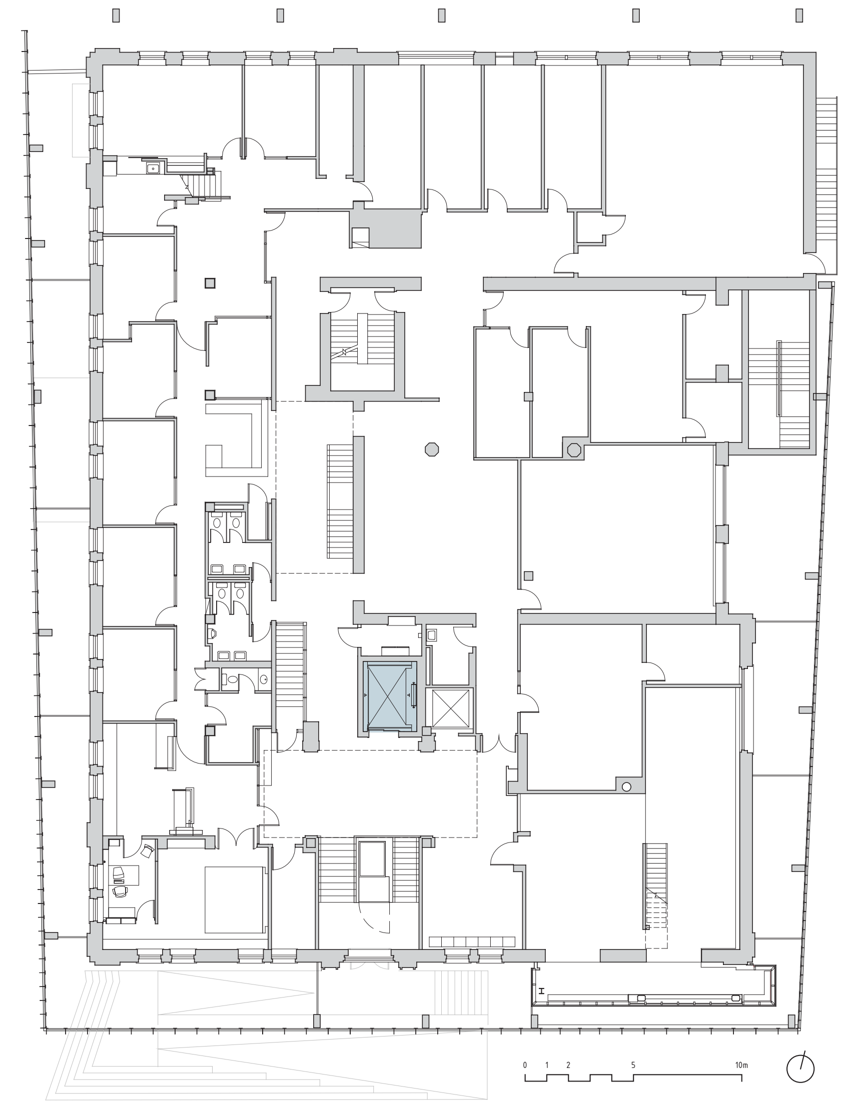


Most economical and least disruptive location for a new loading elevator would be on the east side of the building. It's relationship to the entry, studios, and other program is not the most advantageous.

Elevator Study - Option 1



Level 1 Demolition Plan



Level 1 Renovation Plan

Placing a new elevator in the center of the building makes the most sense from the point of view of the long-term operations of the school. This location has better accessibility from the entries and it is easily accessible from all programs on every floor. To that end this option researches the possibility of locating the elevator in place of the existing stair.

The installation of a new elevator at this location will require the excavation and construction of new foundations in the area of the basement elevator pit. We will take advantage of this work to install a new vertical support for the structure above by construction the west wall of the shaft in reinforced concrete. The construction of this wall will generally be carried out from within the elevator shaft except for an approximate 300 mm temporary intrusion into the adjacent corridors. This wall will be utilized to reduce the cost of the over-build construction by providing an additional strategically placed vertical support.

Building Statistics Comparison (Proposed Design vs. Planning Option A)

Existing	Office dA	Daniel's Faculty	delta
Basement	1204.9 SQM	1206.0 SQM	-1.1 SQM
Ground	633.0 SQM	635.6 SQM	-2.6 SQM
Level 1	1332.0 SQM	1325.4 SQM	6.6 SQM
Level 2	1014.3 SQM	1025.5 SQM	-11.2 SQM
Level 3	1065.3 SQM	1063.6 SQM	1.7 SQM
Level 4	1063.4 SQM	1064.9 SQM	-1.5 SQM
Level 5	SQM	310.5 SQM	-310.5 SQM
Total Gross Area	6312.9 SQM	6631.5 SQM	-318.6 SQM
Addition			
Basement	15.8 SQM	33.4 SQM	-17.6 SQM
Ground	46.5 SQM	177.5 SQM	-131.0 SQM
Level 1	31.0 SQM	31.5 SQM	-0.5 SQM
Level 2	60.8 SQM	67.6 SQM	-6.8 SQM
Level 3	269.1 SQM	253.1 SQM	16.0 SQM
Level 4	221.8 SQM	253.1 SQM	-31.3 SQM
Level 5	1253.1 SQM	959.1 SQM	294.0 SQM
Level 6	661.0 SQM	247.9 SQM	413.1 SQM
Total Gross Area	2559.1 SQM	2023.2 SQM	535.9 SQM
Total Gross Building Area	8872.0 SQM	8654.7 SQM	217.3 SQM