

orson  
sedmina\

/architectural  
designer

/contact

orson.sedmina  
@gmail.com  
@protonmail.me  
416.450.8515  
upper, 36 vaughan rd  
toronto on ca  
M6G2N3

Bachelor of Architectural Science\  
/Selected works  
/Toronto Metropolitan University

/education

2009-2014

/Market MoCCA (Museum of Contemporary Canadian Art)

▪ Academic year 4 ▪ ARC820 Option Studio II Prof John Cirka

/Everything is Past; futurespace + grasping time

▪ Academic year 4 ▪ ARC820 Option Studio II Prof John Cirka

/Amorphous Agency; civic architecture +

monument & government for the 21st century

▪ Academic year 4 ▪ ARC720 Option Studio I Prof George Kapelos

/Use It or Lose It; adaptive reuse + the small building

▪ Academic year 4 ▪ ARC856 The Small Building Prof Barush Zone

/Traditional Yet Progressive; the toronto museum project

▪ Academic year 3 ▪ ARC620 & ARC623 Integration Studio II &  
Principles of Detailing Prof Arthur Wigglesworth

/Toronto Museum Project; construction documents

▪ Academic year 3 ▪ ARC622 Documentation and the Construction Contract  
Prof Baruch Zone

/Geometers Studion; a mathematician's studio + tectonics & materiality

▪ Academic year 3 ▪ ARC621 Tectonics & Materiality Prof John Cirka

/Urban Iceberg; generative population valuve + eVolo skyscraper competition

▪ Academic year 2 ▪ ARC405 Collaborative Exercise II  
Prof Arthur Wigglesworth

/Micro Connection; the gateway project + ryerson U master-plan

▪ Academic year 2 ▪ ARC403 Site Development & Planning  
Prof Patrick Saavedra

/The Artist's Studio; gros morne national park + elementali inspiration

▪ Academic year 2 ▪ ARC301 Design Studio Prof Olena Kobets-Singkh

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## MARKET MoCCA

*futurespace studio +  
the museum of contemporary canadian art*

Academic year 4  
ARC820 Option Studio II  
Professor John Cirka  
208 Augusta Ave. Toronto ON

The object of this studio was to locate and create a viable space for the recently uprooted Museum of Contemporary Canadian Art, while engaging in an architectural dialogue with issues of temporality and the dissipative experience of time.

Through an intensive study of current philosophical and empirical sources, how one experiences time through the mediums of space, distance, and form led to the formulation of a design methodology. This was then applied to the art museum typology, and framed into the vernacular and socio-economic milieu of Toronto's Kensington Market where a large property had recently been vacated.

Experiencing art is, at base, a physical and temporal act. It was found that each moment, or now, is cognitively registered over a 4.2 second span. Taking into account average walking speed, this implies that an experience of now covers a distance of 5 meters. This is taken as the basis for form manipulation, as well as a framing tool for specific moments. Added to this is the concept of time dilation due to gravity over a distance, whereby it is now possible to measure a slight time difference over only one meter. Dilation of form is used to evoke this principle.

FormZ, RenderZone, SketchUp, AutoCAD Architecture 2014  
Adobe Photoshop / InDesign

- 1 (left) Site plan, Toronto's Kensington Market
- 2 (center) Rendered view of the East elevation from the NE
- 3 (top right) Rendered view of the East elevation from the SE
- 4 (bottom right) Rendered view of the West elevation

moCCA

museum of  
contemporary  
canadian art



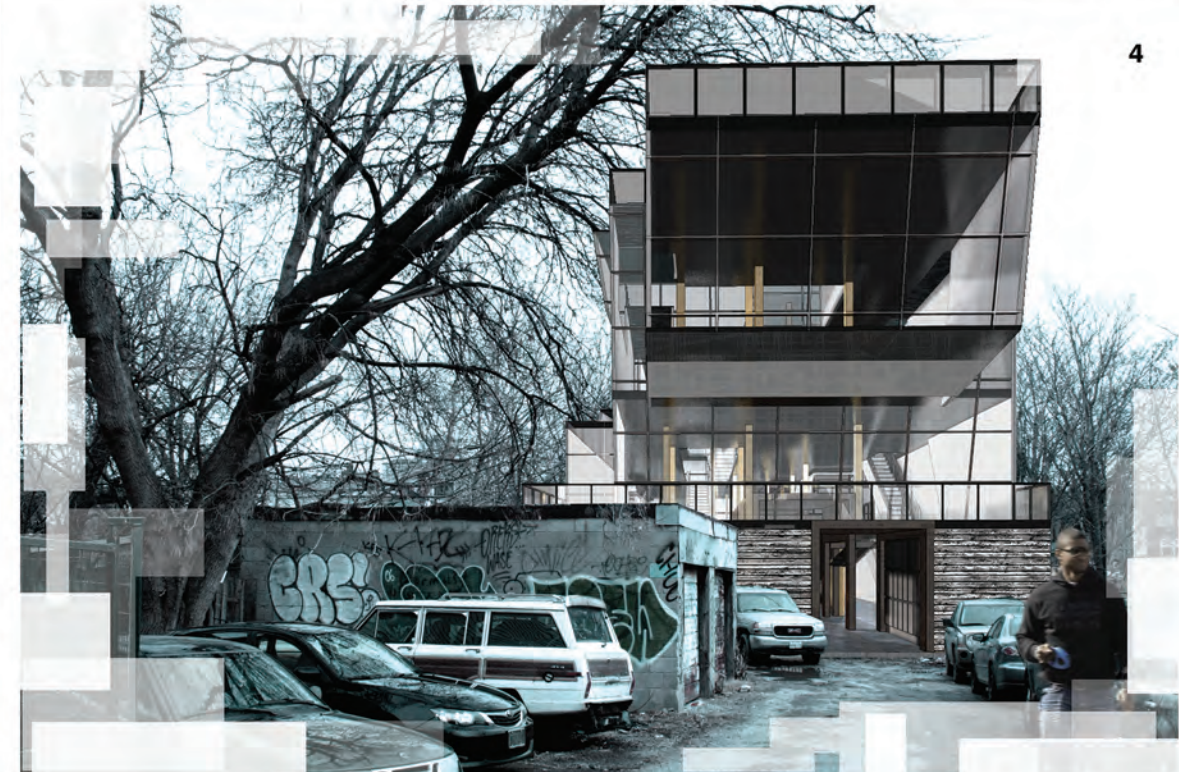
2



3



4



DESIGN METHODOLOGY

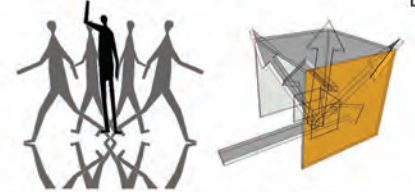
Now lasts on average between 2 and 3 seconds.  
Researchers suggest that this window is the "subjective present".  
"How your brain creates now" *New Scientist* 2015

The average walking speed of a human is 5km/h or approx 1.4m/s.  
Therefore each glimpse of our subjective present is, on average,  
experienced over 4.2M



"Time condemns us to change. We would rather not change, but we have no choice. Change does not happen in a sequentially linear way, but simultaneously, in many directions at once. Each thing is growing and decaying at the same time, only at different rates. Change is not defined in a sequence of succeeding frames, but in a matrix of frames that each occupy the same space and moment."

Lebbeus Woods

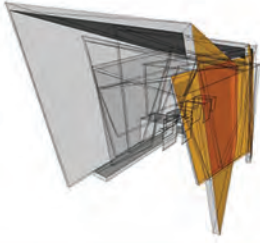


We observed time dilation from relative speeds of less than 10 meters per second by comparing two optical atomic clocks connected by a 75-meter length of optical fiber. We can now also detect time dilation due to a change in height near Earth's surface of less than 1 meter. This technique may be extended to the field of geodesy, with applications in geophysics and hydrology as well as in space-based tests of fundamental physics.  
"Optical Clocks and Relativity" *Science*, Vol. 329 No. 5999 PP. 1630-1633

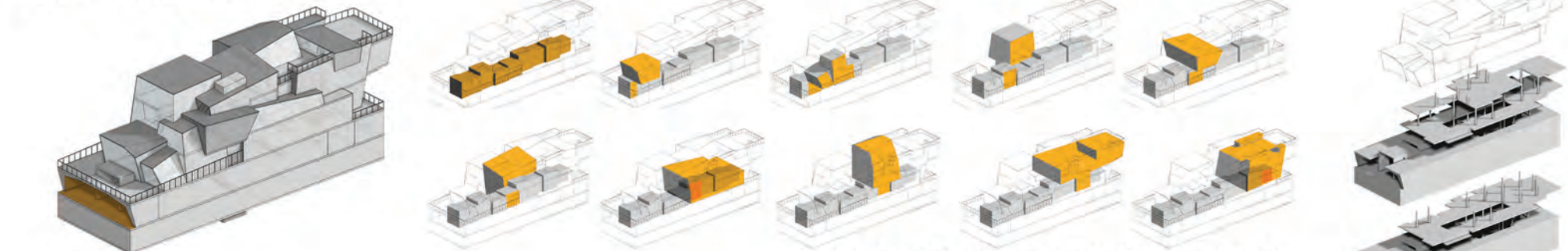


The task of the architect is to set in motion, in a particular direction, a chain of events he cannot control.  
Transformation. Transmutation. Transfiguration.

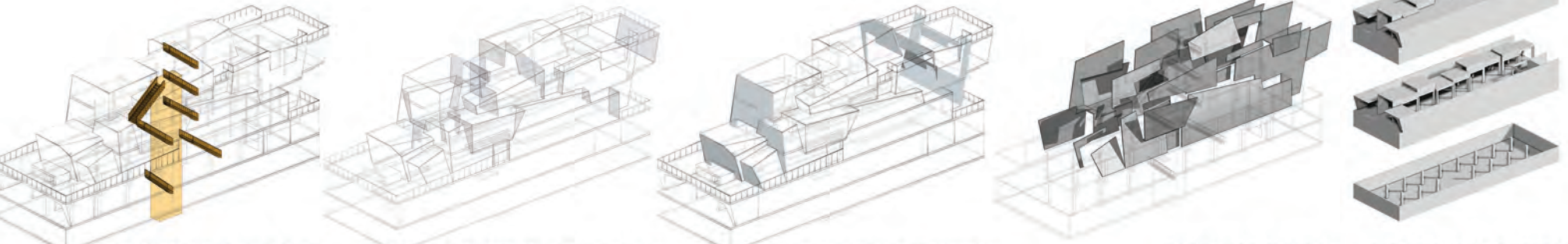
Lebbeus Woods



AXONOMETRIC STUDIES



FORM / TEMPORAL / EXPERIENTIAL MANIPULATION



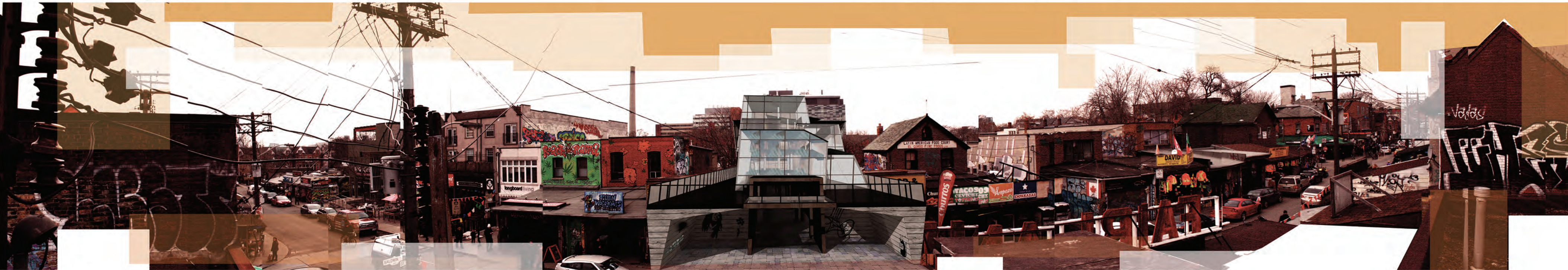
VERTICAL CIRCULATION

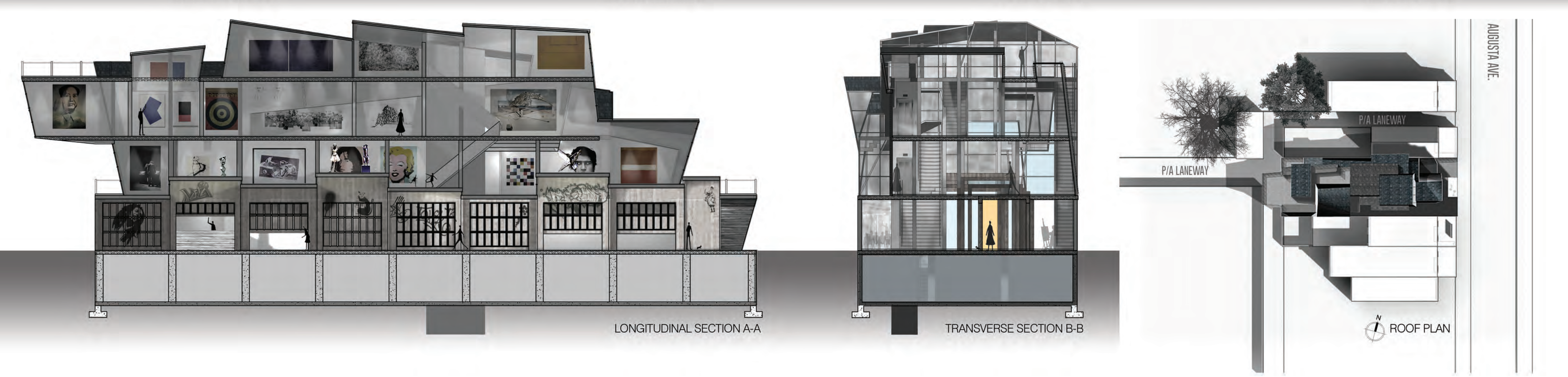
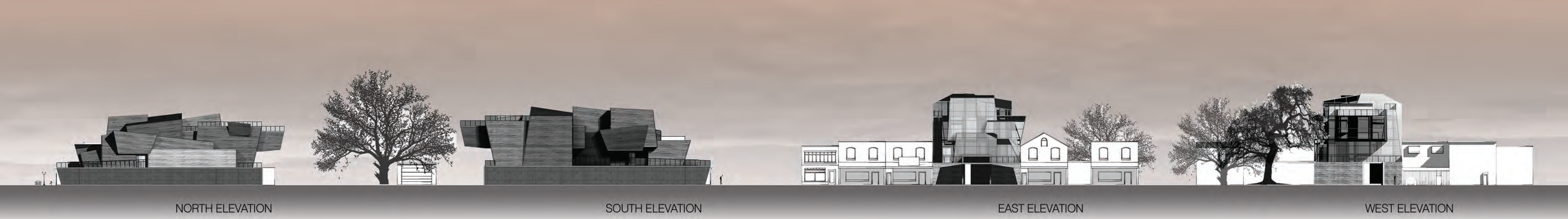
TRANSPARENT FENESTRATION

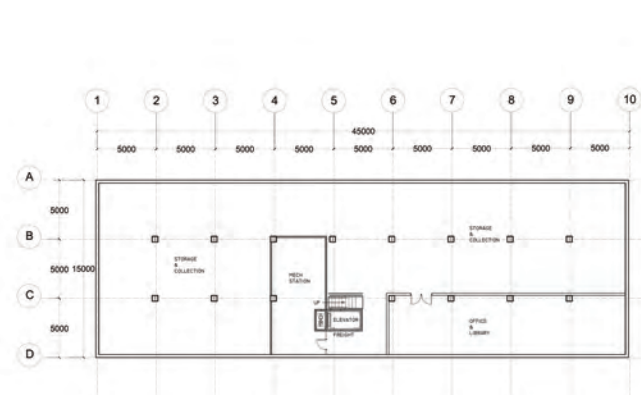
FRITTERED FENESTRATION

ENVELOPE PANELS

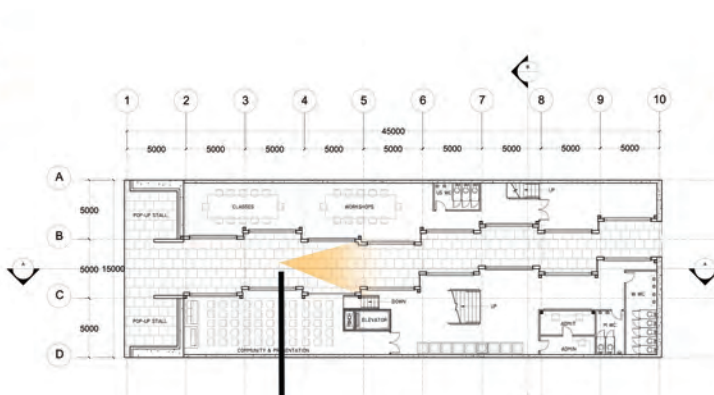
STRUCTURAL SYSTEM



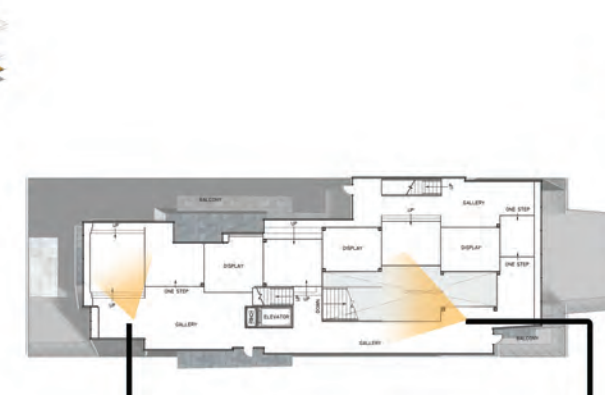




SUB FLOOR PLAN



GROUND FLOOR PLAN



2ND FLOOR PLAN



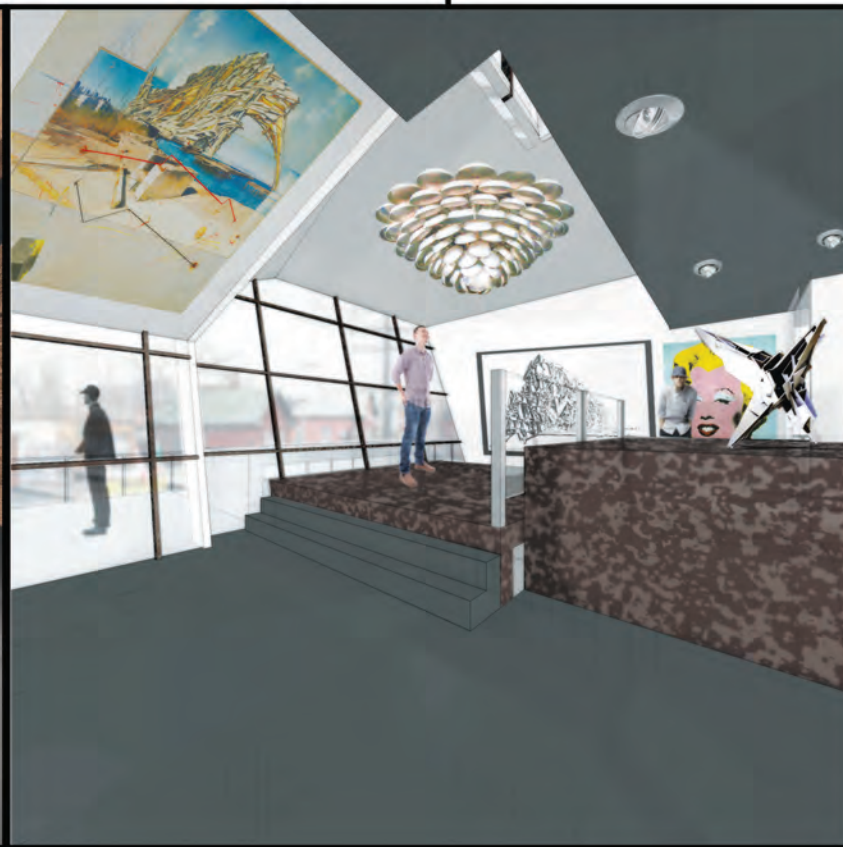
3RD FLOOR PLAN



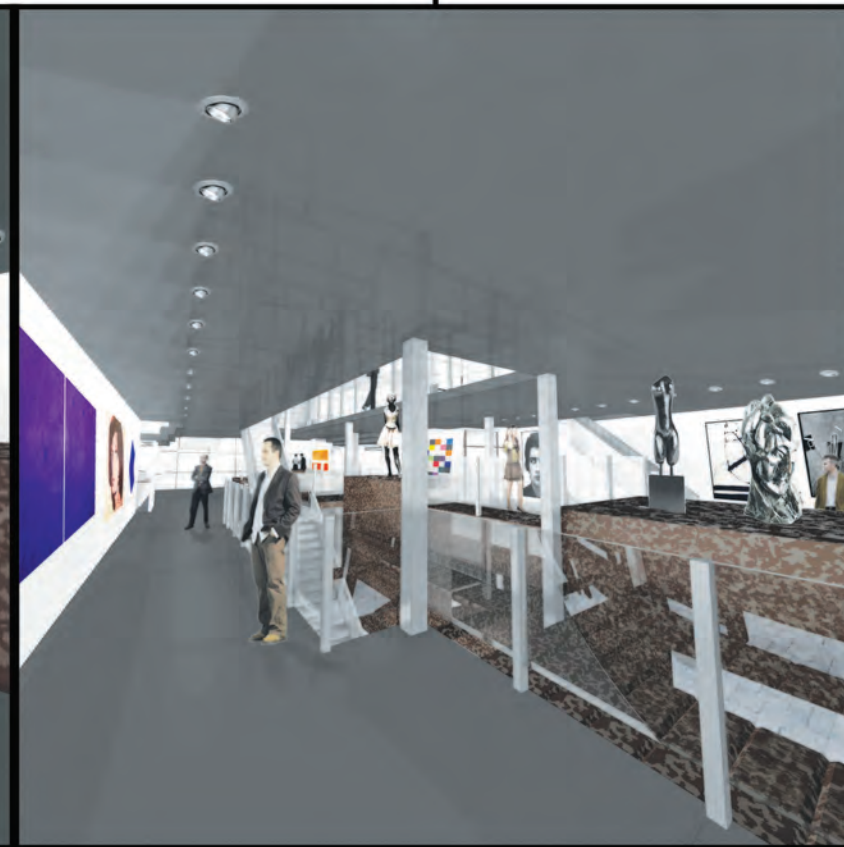
4TH FLOOR PLAN



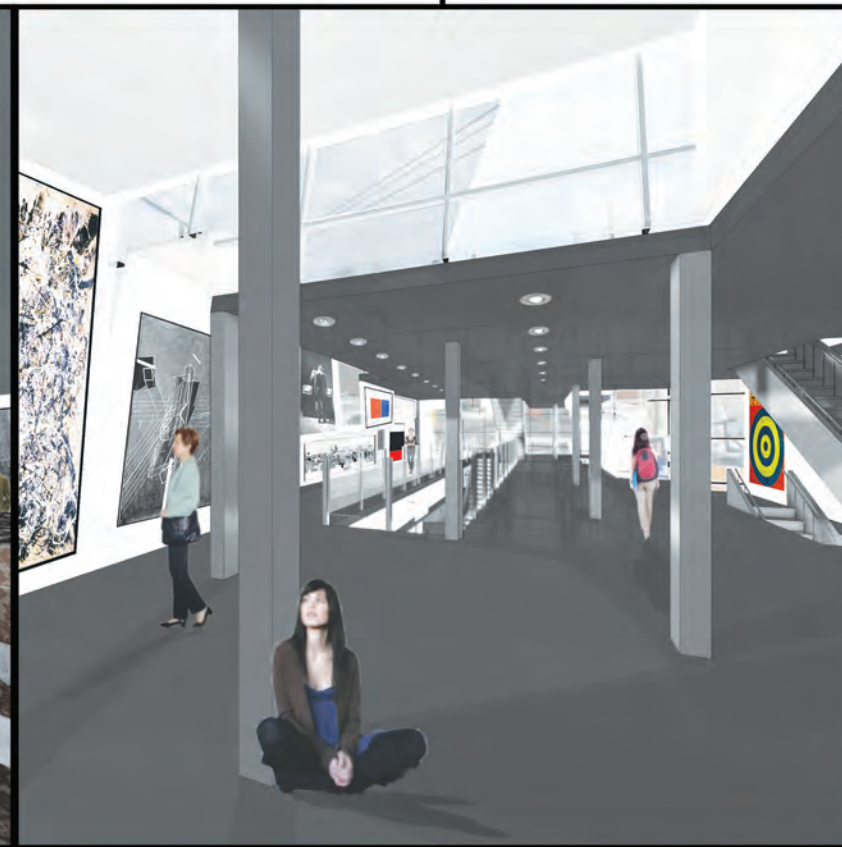
GRADE VIEW FROM THE EAST



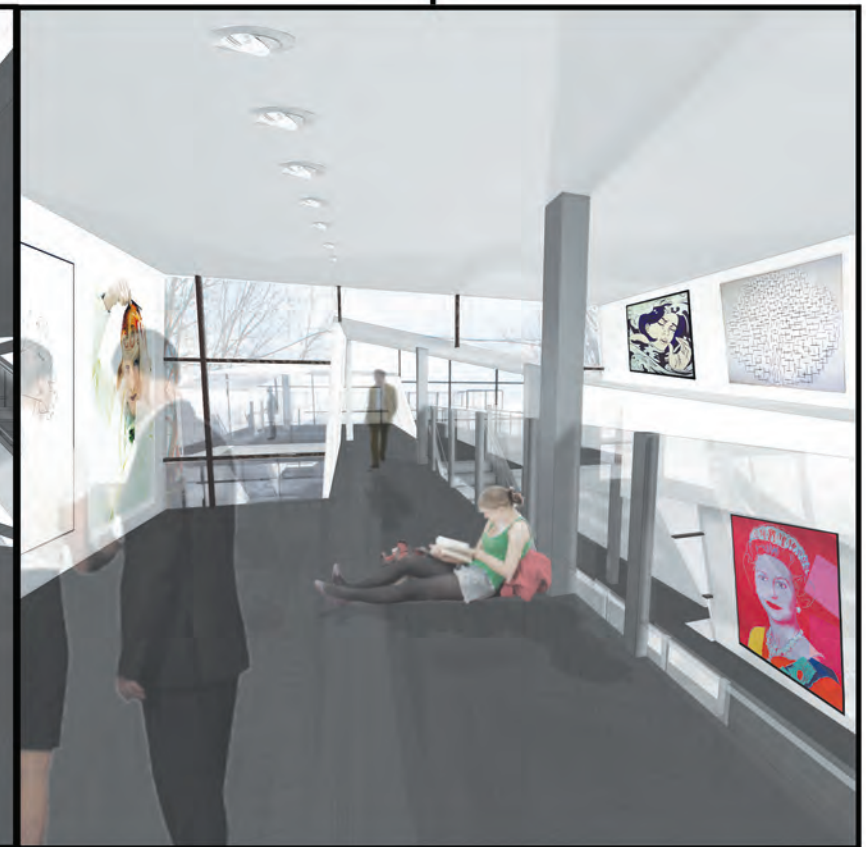
2ND FLOOR VIEW TO THE EAST



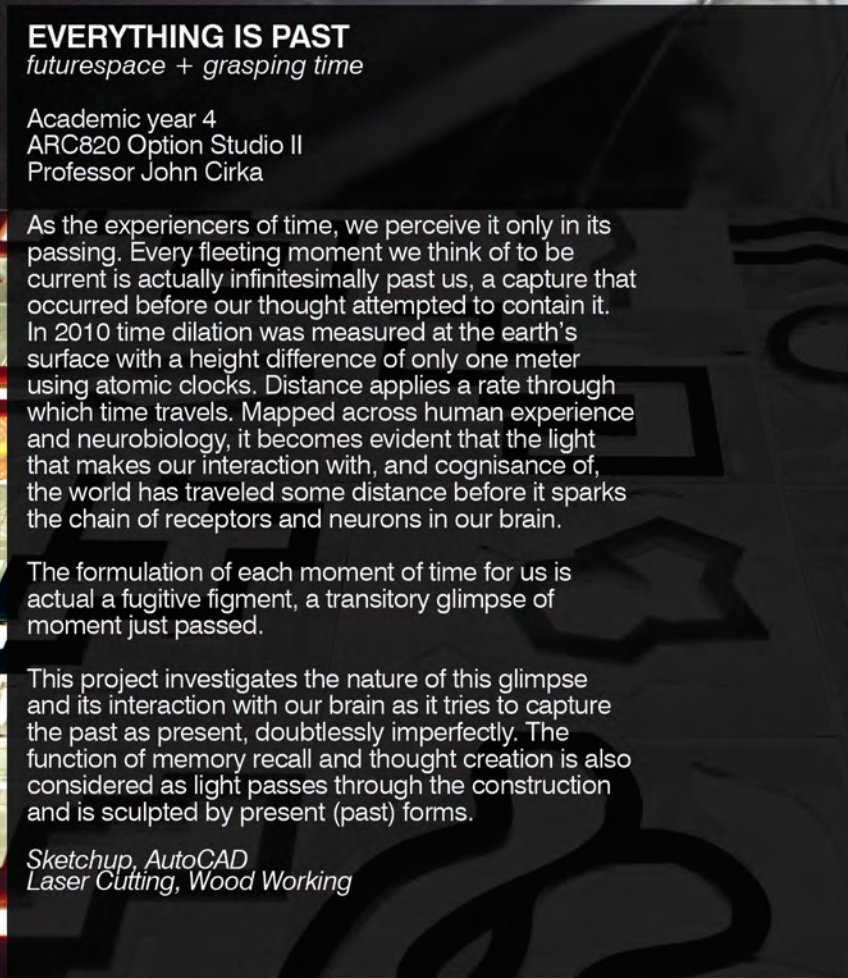
2ND FLOOR VIEW TO THE EAST



3RD FLOOR VIEW TO THE EAST



4TH FLOOR VIEW TO THE WEST



# EVERYTHING IS PAST

*futurespace + grasping time*

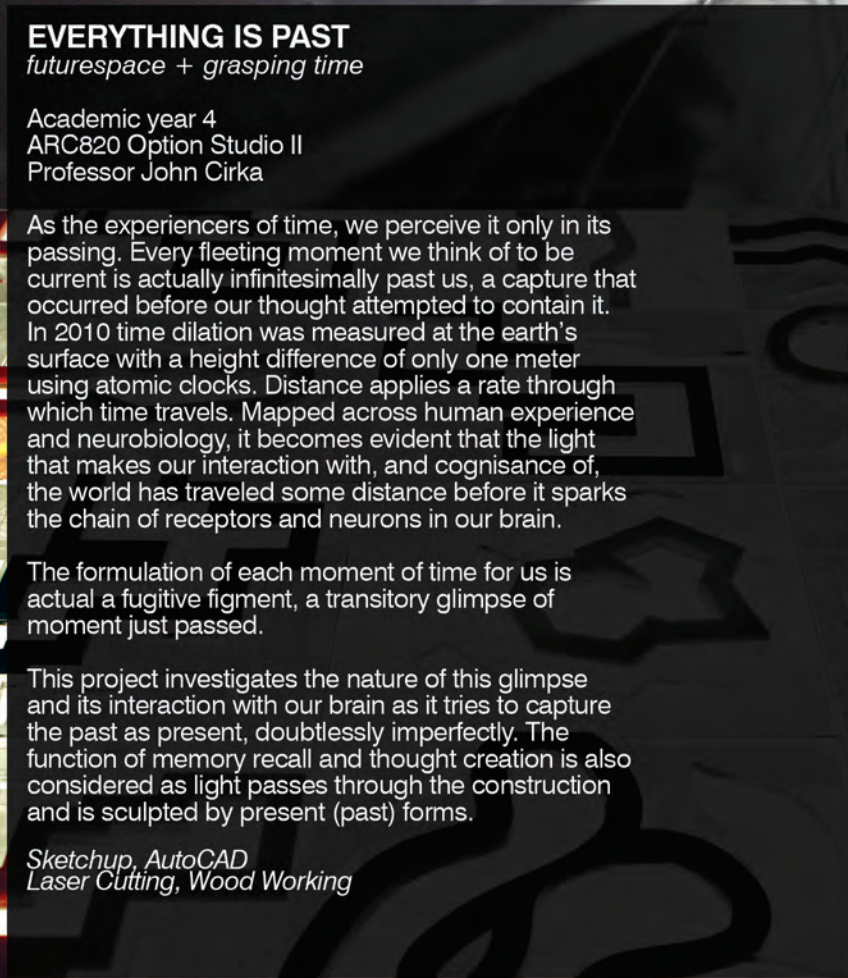
Academic year 4  
ARC820 Option Studio II  
Professor John Cirka

As the experiencers of time, we perceive it only in its passing. Every fleeting moment we think of to be current is actually infinitesimally past us, a capture that occurred before our thought attempted to contain it. In 2010 time dilation was measured at the earth's surface with a height difference of only one meter using atomic clocks. Distance applies a rate through which time travels. Mapped across human experience and neurobiology, it becomes evident that the light that makes our interaction with, and cognisance of, the world has traveled some distance before it sparks the chain of receptors and neurons in our brain.

The formulation of each moment of time for us is actual a fugitive figment, a transitory glimpse of moment just passed.

This project investigates the nature of this glimpse and its interaction with our brain as it tries to capture the past as present, doubtlessly imperfectly. The function of memory recall and thought creation is also considered as light passes through the construction and is sculpted by present (past) forms.

*Sketchup, AutoCAD  
Laser Cutting, Wood Working*



# EVERYTHING IS PAST

*futurespace + grasping time*

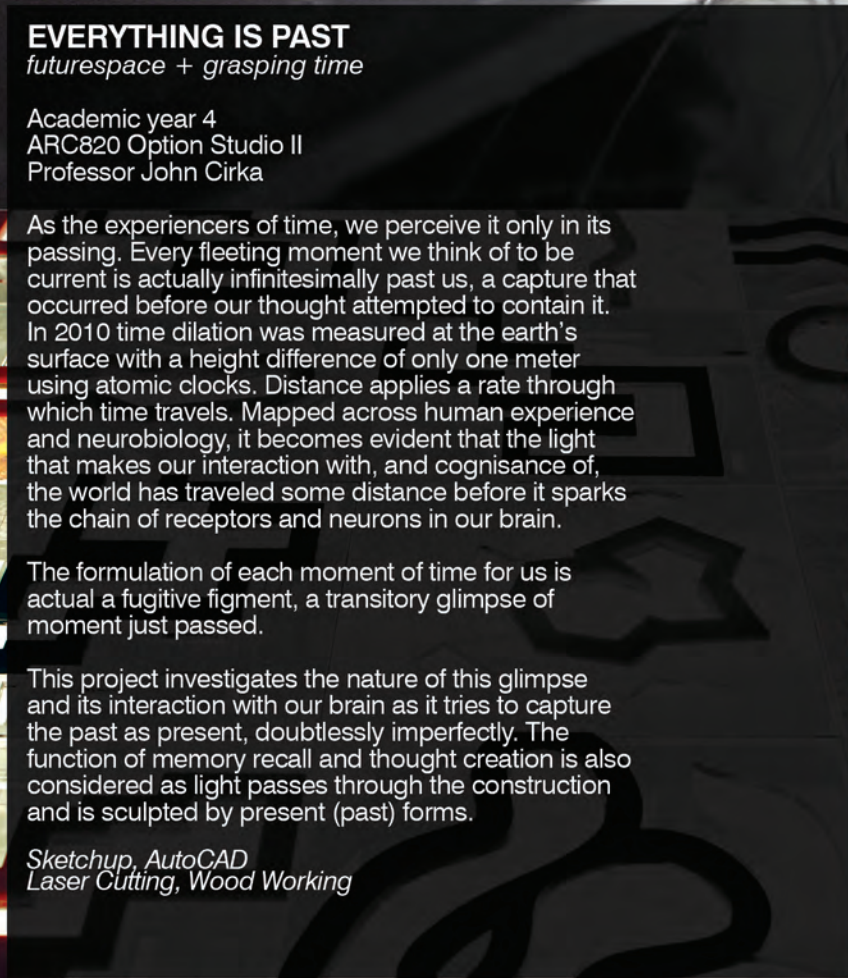
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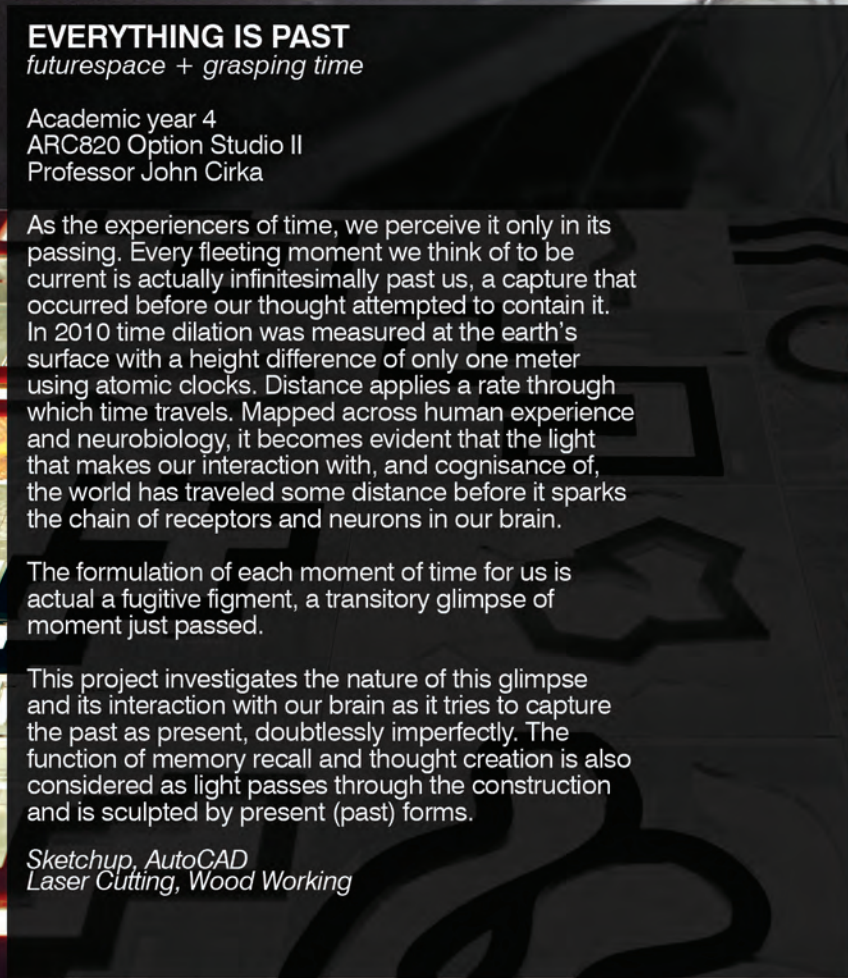
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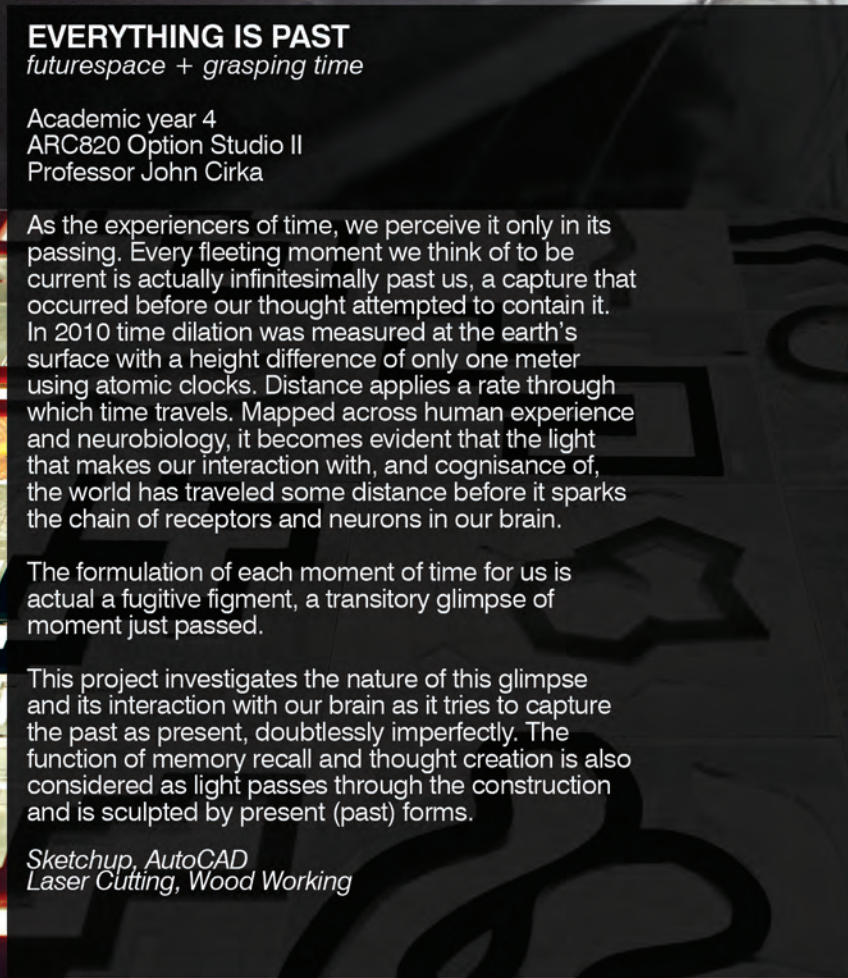
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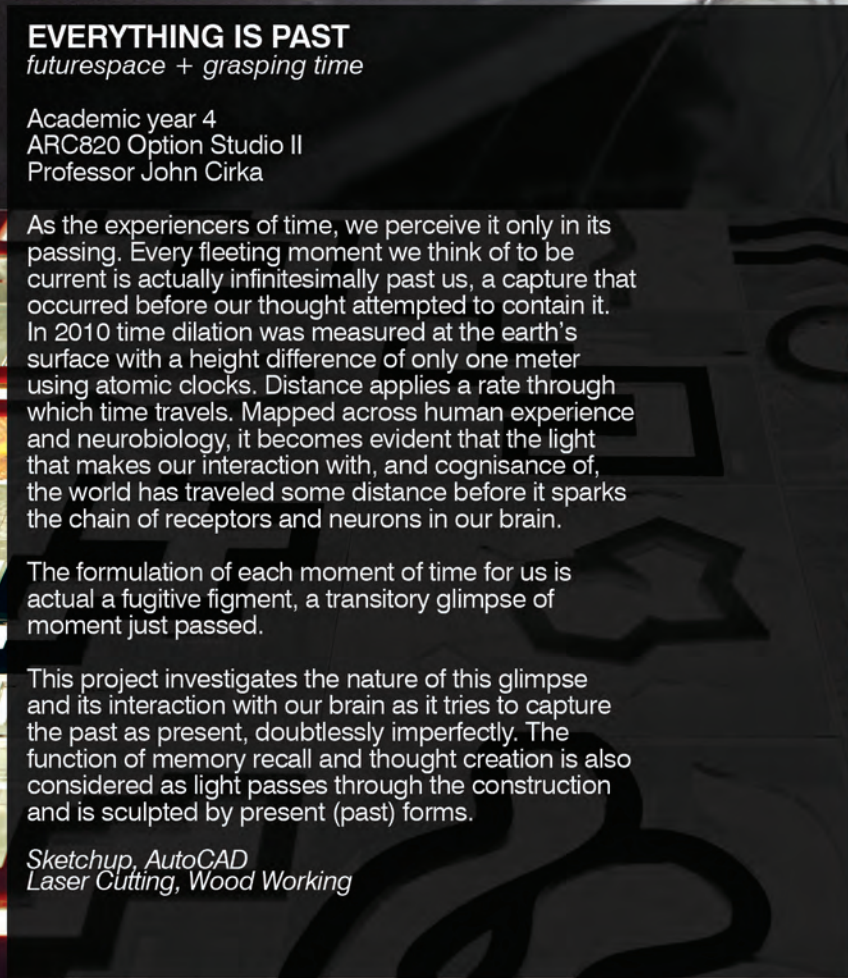
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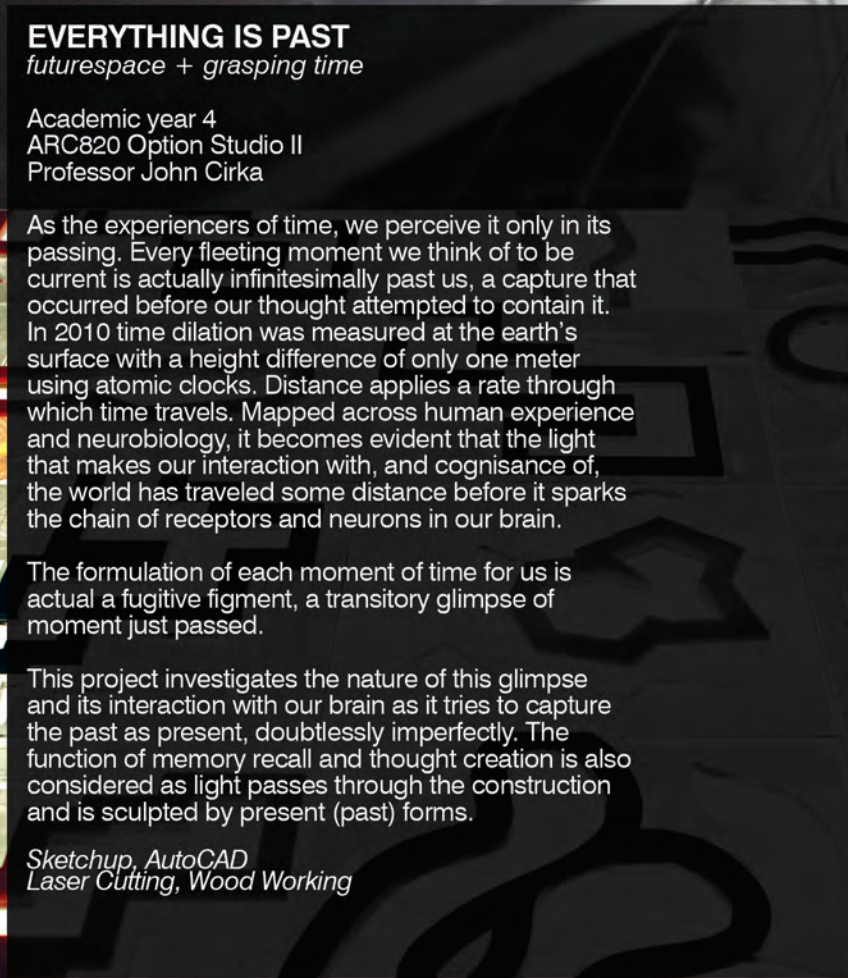
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Laser Cutting, Wood Working*



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*futurespace + grasping time*

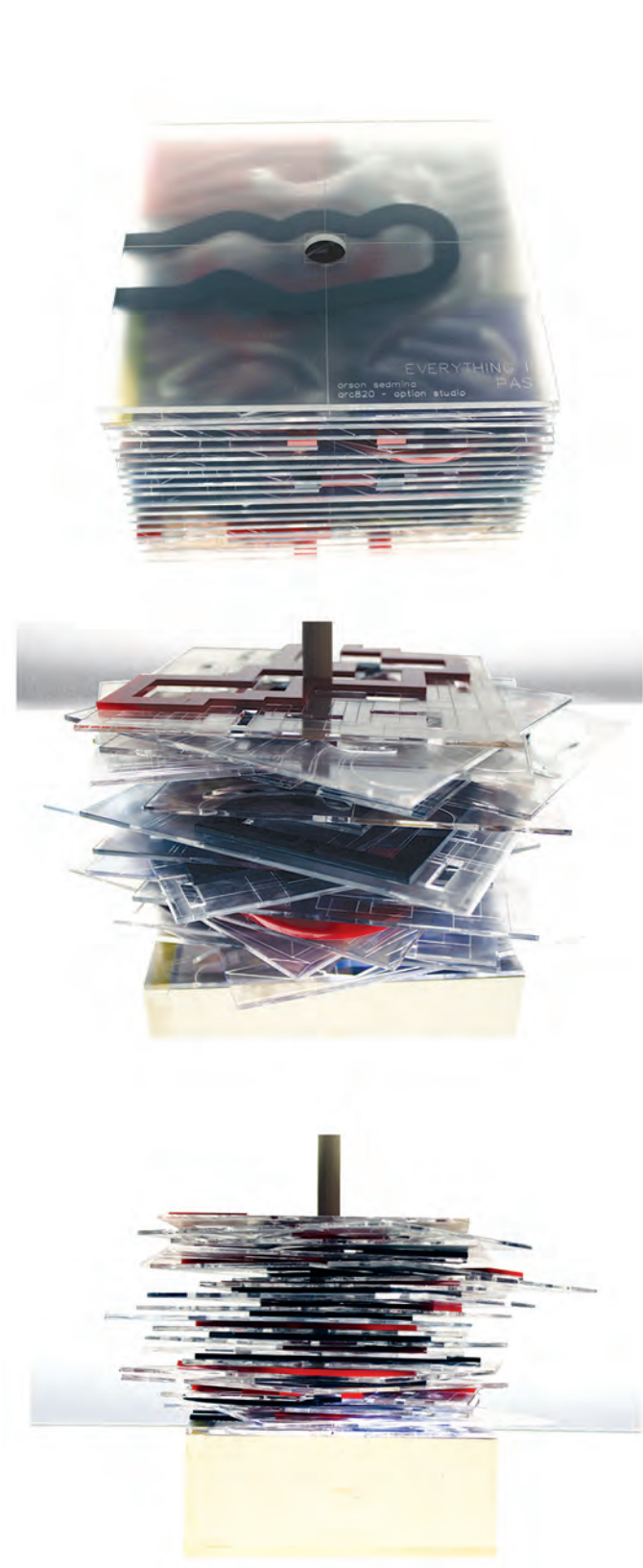
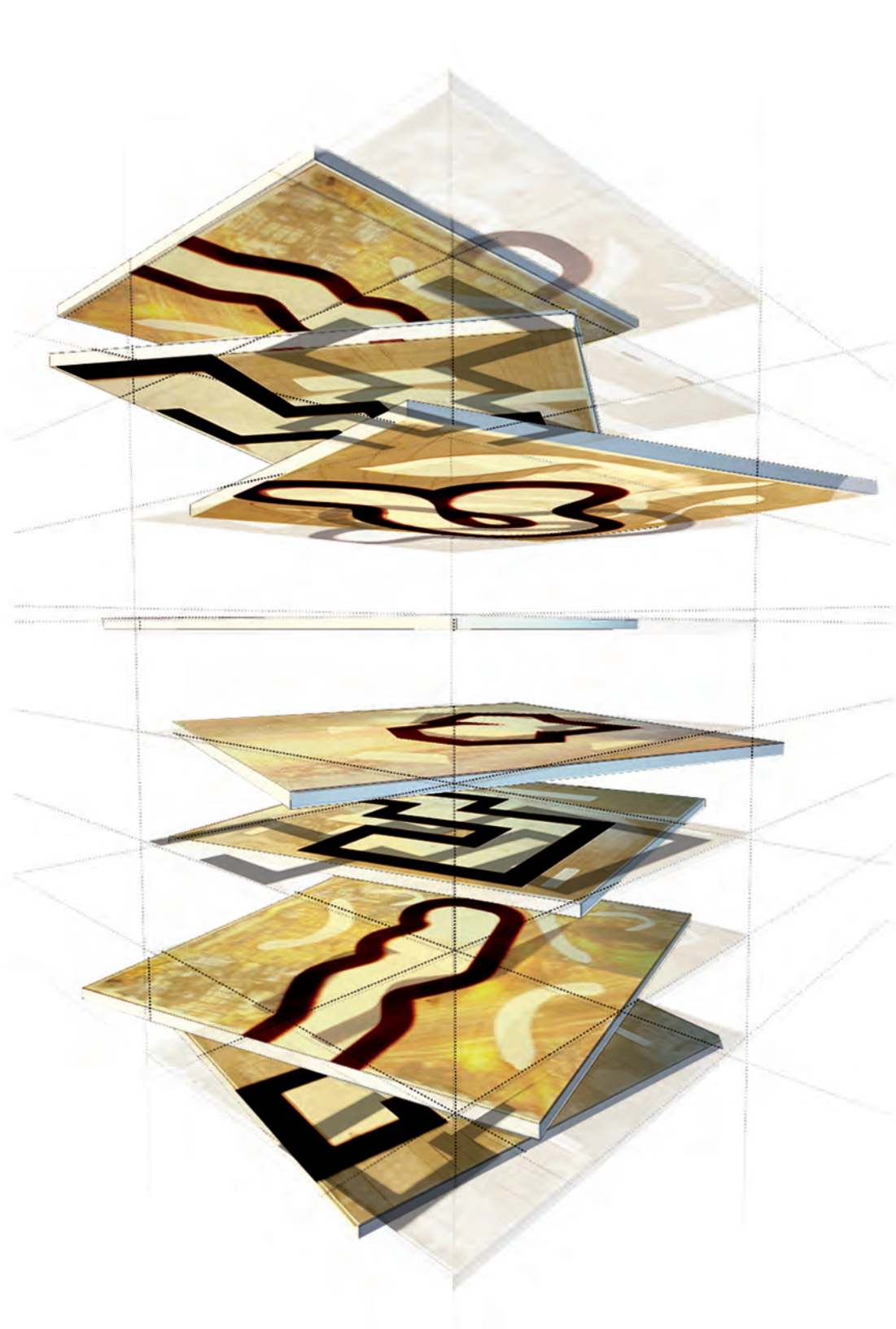
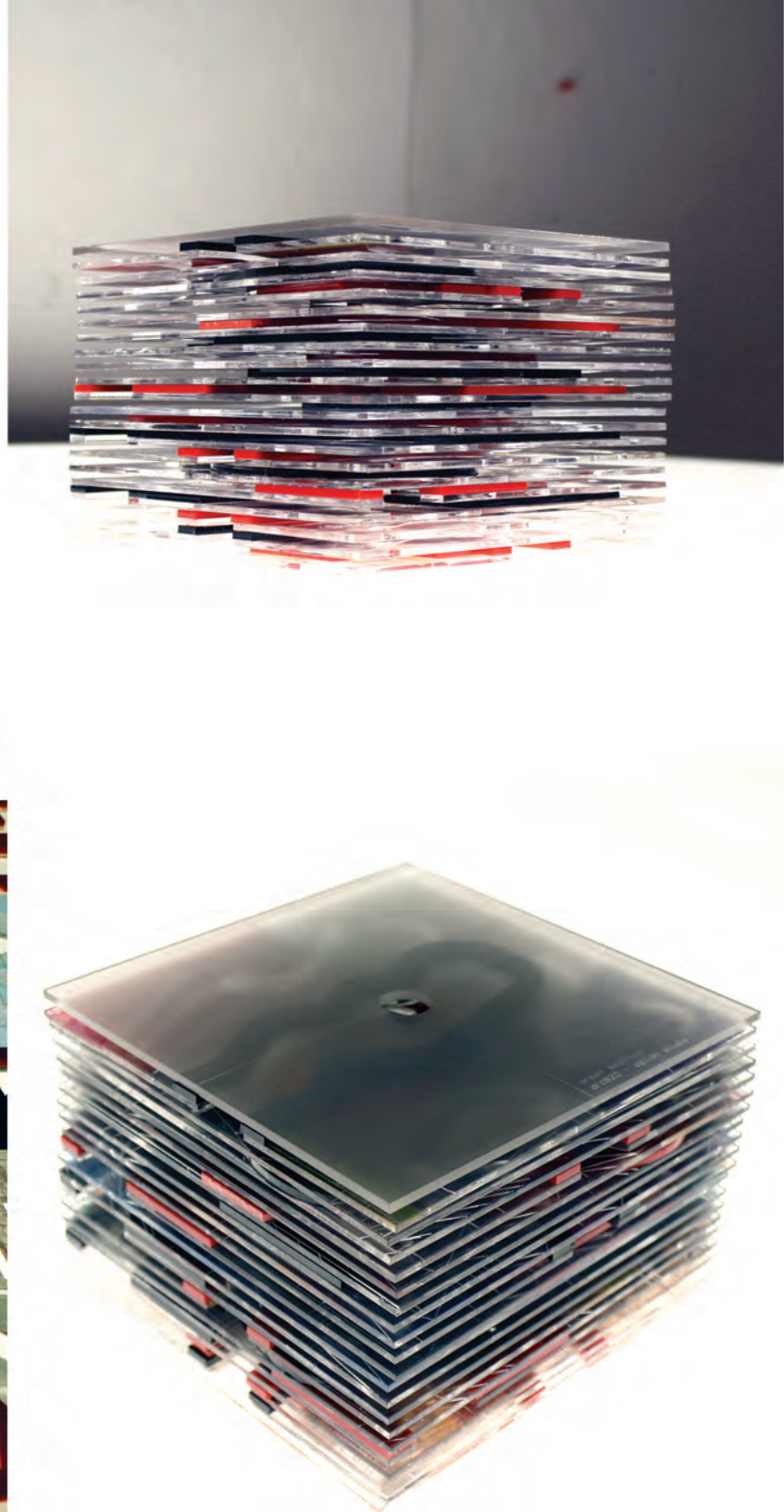
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*Sketchup, AutoCAD  
Laser Cutting, Wood Working*



## AMORPHOUS AGENCY

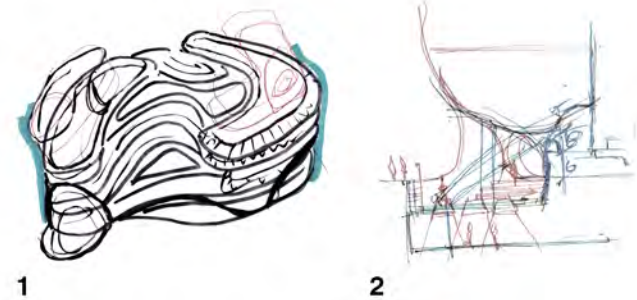
*civic architecture +  
monument & governance for the 21<sup>st</sup> century*

Academic Year 4  
ARC720 Option Studio I  
Professor George Kapelos

'Politics is not a game'. We hear it all the time. Real consequential decisions about quantitative and personal actions and services are made every day in municipal government, but most of us only take what we really need to know about government, what meets our needs and that's all.

This project aims to harness the dark matter that lies between the lay person, the everyday Joe, and the authoritarian or the service provider. It seeks to, through movement and form, force these two seemingly polar opposites together to create a symbiotic government that takes the best from each world, and acts upon its shared experience with great agency.

*FormZ, RenderZone, SketchUp, AutoCAD  
Photoshop, Illustrator, InDesign  
Hand Rendering: Graphite & Ink  
Laser Cutting, Wood Working*



- 1 (left top) entry and council chamber study  
2 (left bottom) amorphous sketch study  
3 (top right) rendered view from the NE at Queen & Bay  
4 (bottom right) rendered elevations East / North / West elevations

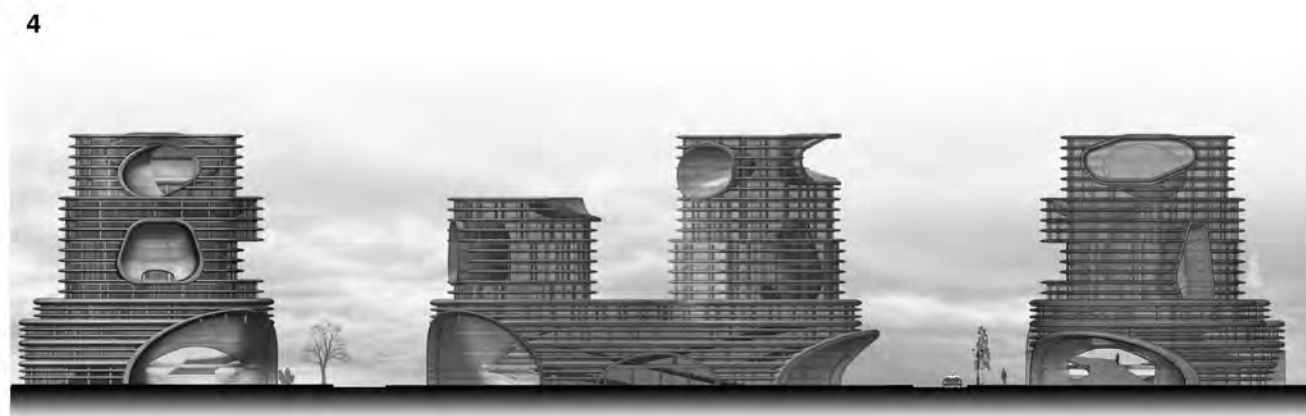
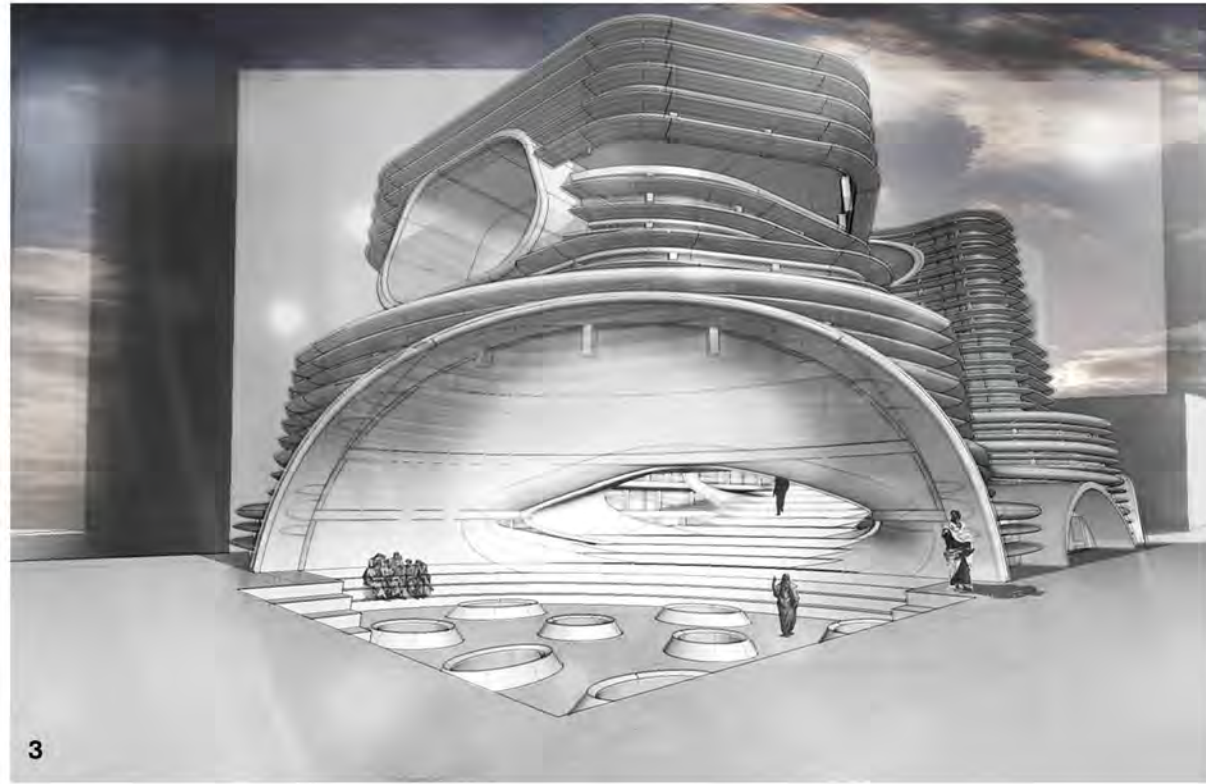


photo of original competition model



## AMORPHOUS AGENCY

*civic architecture +  
city hall & square competition*

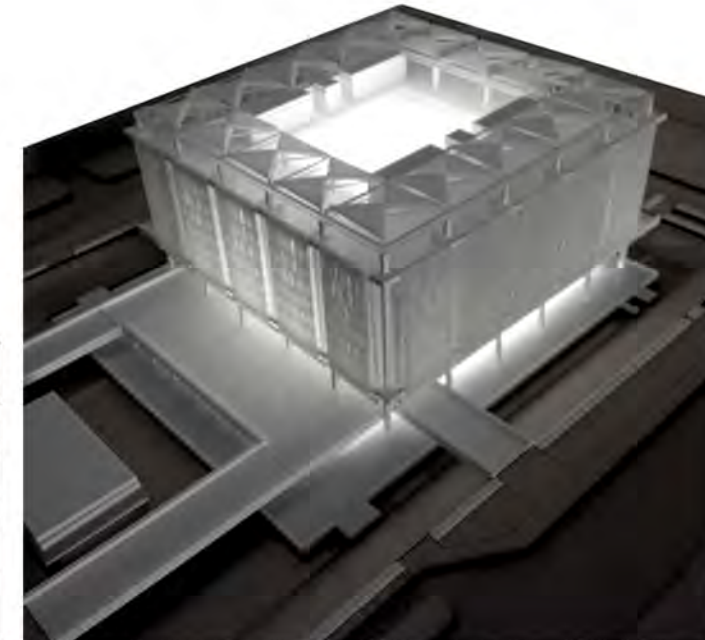
Academic Year 4  
ARC720 Option Studio I  
Professor George Kapelos

The international competition for Toronto's new City Hall entitled 'City Hall and Square' held in 1958 was the animus for an introductory portion of the term's studio course. Students were tasked, in teams of two, with recreating one of the finalist entries from the competition.

Through the study and almost biological dissection of the catalogued submission documents, a rich understanding of governance typology was uncovered. Novel and intricate programmatic, spatial, and structural planning and articulation was examined and recreated through the construction of a detailed scale model, which has since been featured in an exhibition celebrating the original competition.



student constructed replica model 1 : 400  
featured in *Shaping Canadian Modernity Exhibition (2015)*  
Ryerson University Department of Architectural Science  
Paul H. Cocker Gallery



## USE IT OR LOSE IT

*adaptive reuse +  
the small building*

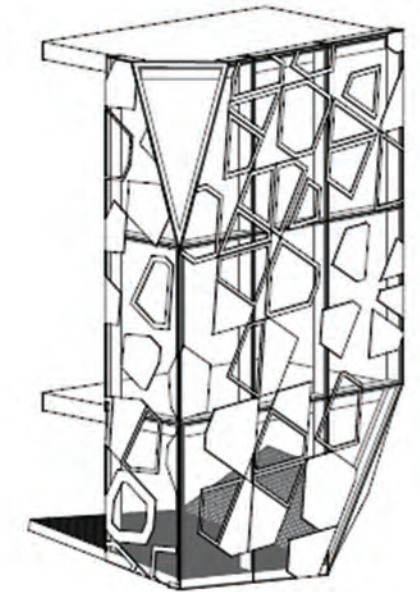
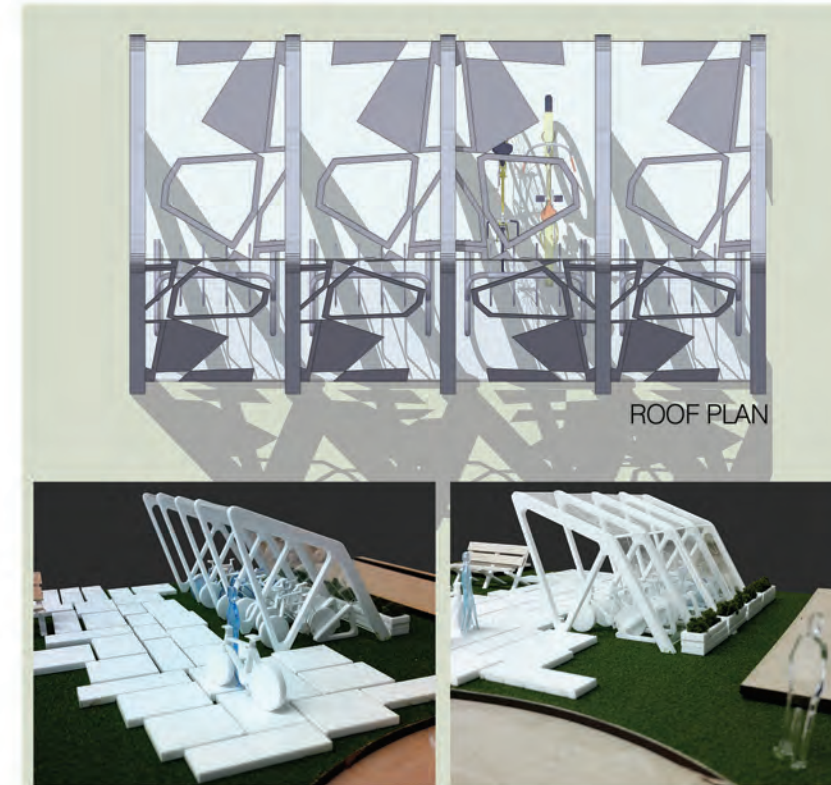
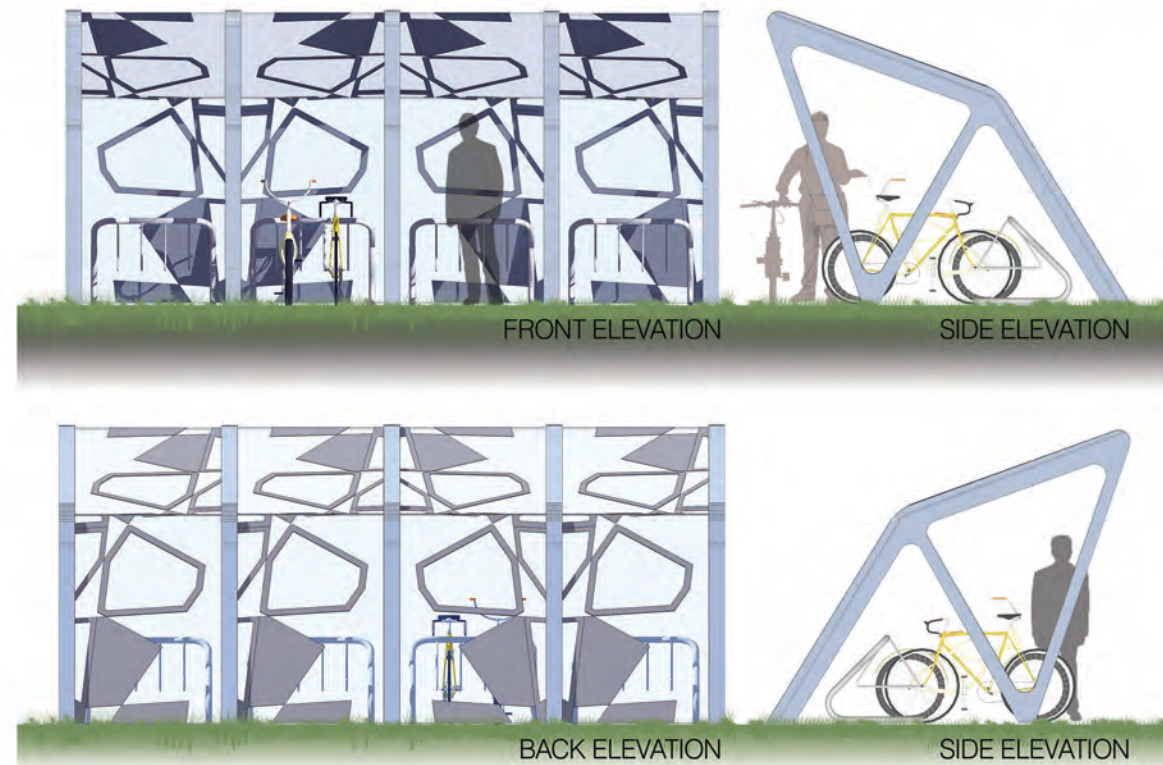
Academic year 4  
ASC856 The Small Building  
Professor Barush Zone  
325 Church Street, Toronto ON

A curtain wall mock-up for the Ryerson University Student Learning Centre building designed by SNOHETTA had been erected on the lawn south of the RU Architecture Science building. With the actual building nearing completion the student was tasked to reuse the building components of the mock-up, or else 'lose it' to demolition.

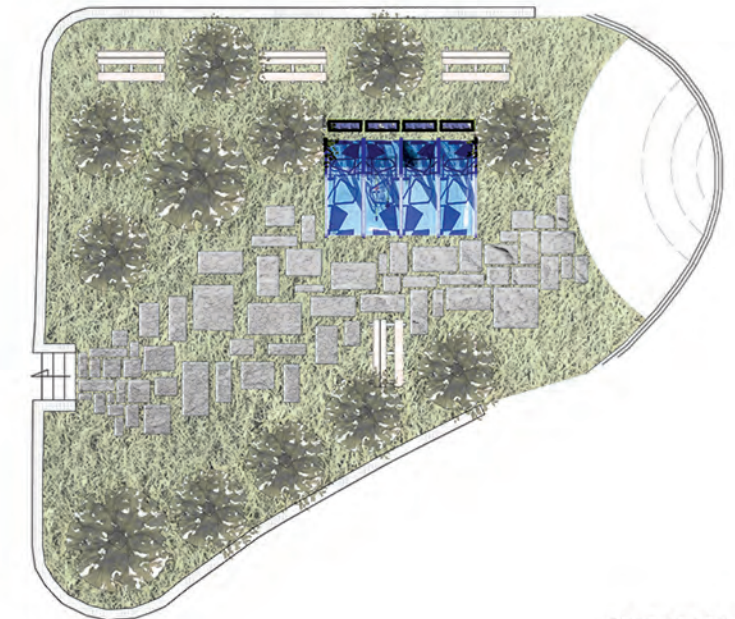
Designing something that adds both aesthetic and functional value to an urban campus while reusing materials that would otherwise be discarded was the essence of the project brief.

While more prevalent in Asian and Northern European countries, the covered bicycle rack is now appearing more frequently in Canada, especially in denser creative neighborhoods and cities. This proposal endeavours to retask the patterned glass panels and steel members as a shelter and water shedding structure.

*FormZ, RenderZone, AutoCAD  
Photoshop, InDesign  
Laser Cutting, Wood Working*



ORIGINAL STRUCTURE

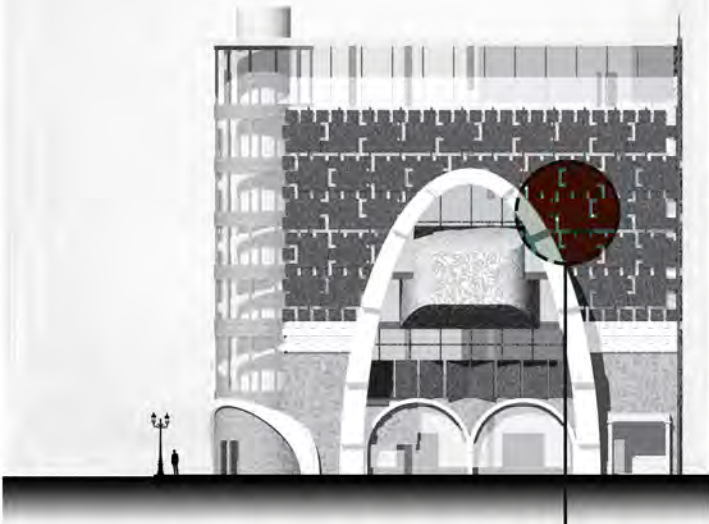


SITE PLAN

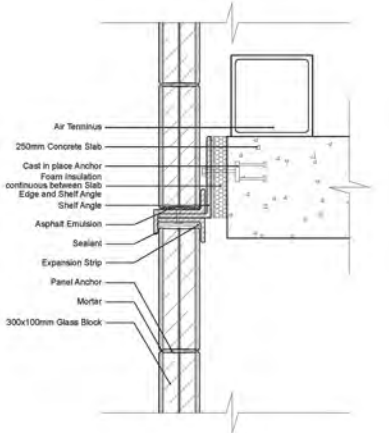


**TRADITIONAL YET PROGRESSIVE**  
*the toronto museum project*

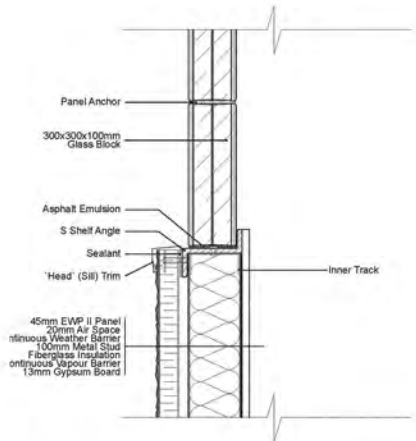
Academic year 3  
ARC620 Integration Studio II  
ASC623 Principles of Detailing  
Professor Arthur Wrigglesworth (both courses)  
Church & Front Street, Toronto ON



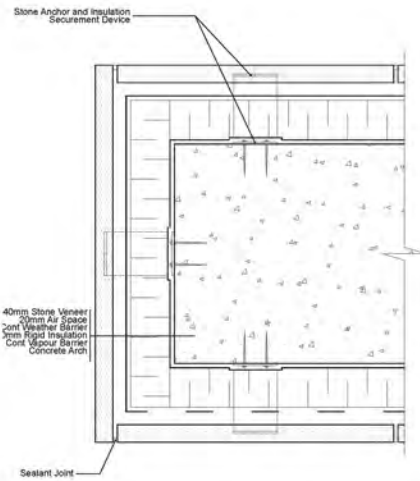
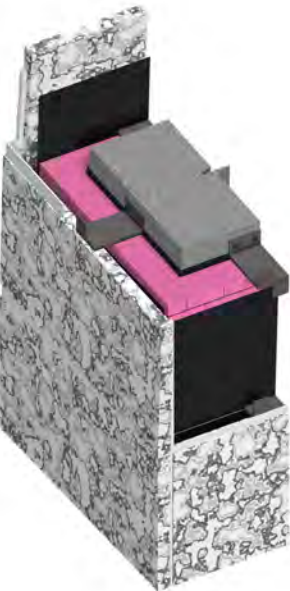
DETAILED AREA



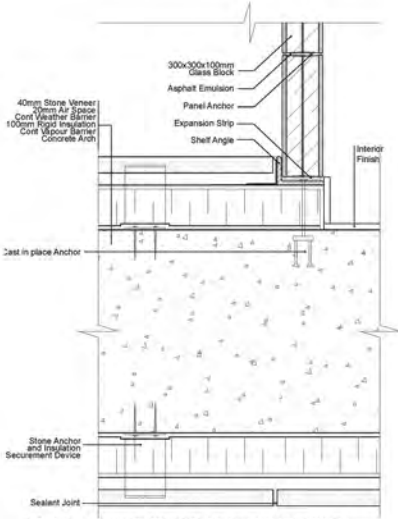
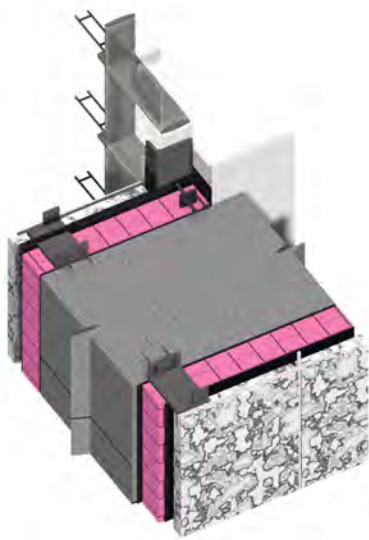
1A - Glass Block to Slab Edge Section Detail



2A - GB to IMWP "Head" Section Detail



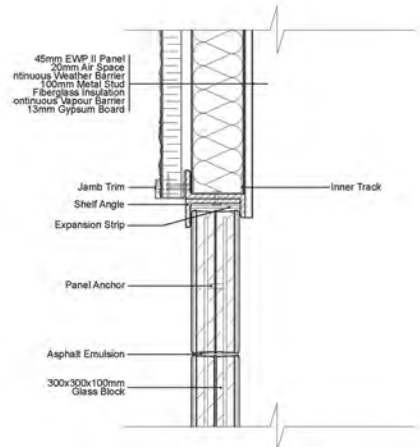
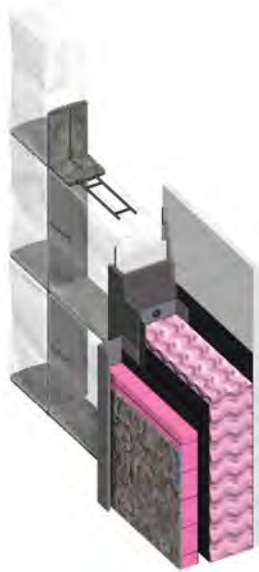
5A - Stone Veneer to Concrete Backup Arch Plan Detail



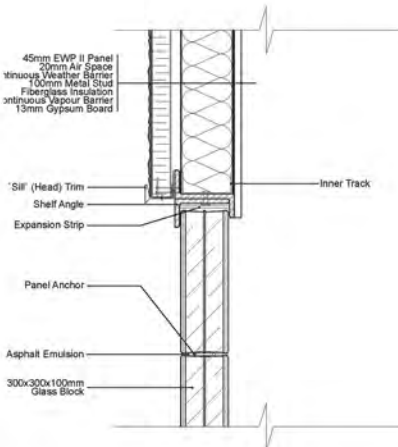
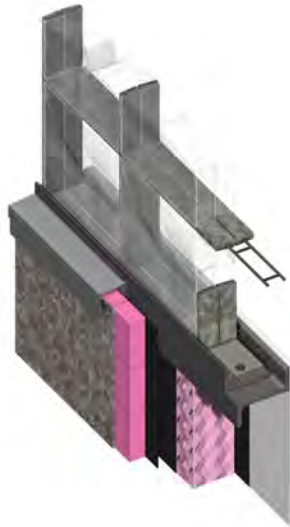
5A - Stone Veneer to Concrete Backup Arch Plan Detail

The design of a new archival Toronto Museum in the heart of the thoroughly studied and historically rich St.Lawrence Market was tasked to the students. Through interdependant course work incorporating detailing, light & sound in architecture, and project economics, a schematic design proposal was undertaken as a continued component over the course of an entire academic year. This project is representative of the work done in the two terms of the 'Integration Studio' year.

As a linked project to the Integration Studio courses, the major project in the Principles of Detailing course was intended to closely analyze an intricately designed intersection detail of the scheme. This intersection connects a structural feature with two different types of envelope panelling.



3A - GB to IMWP Jamb Plan Detail



4A - GB to IMWP "Sill" Plan Detail

# TORONTO MUSEUM PROJECT

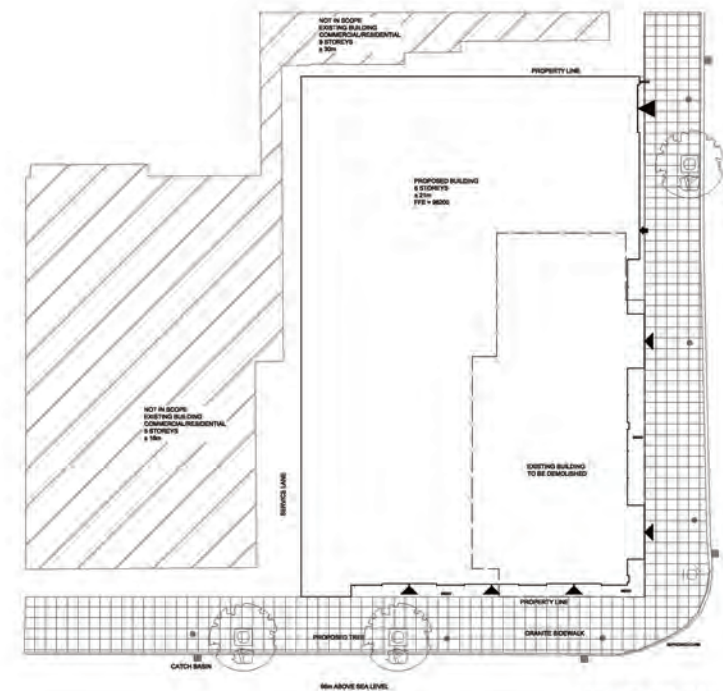
construction documents

Academic Year 3  
ASC622 Documentation and the  
Construction Contract  
Professor Baruch Zone  
Church & Front Street, Toronto ON

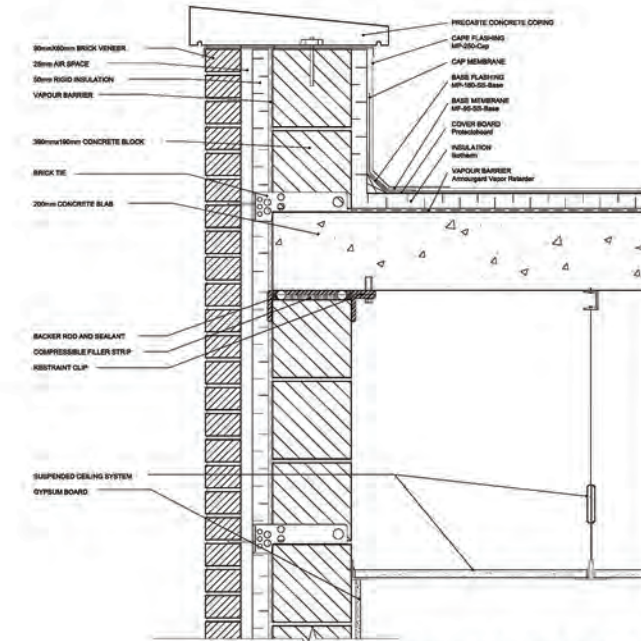
Completed as a group project, one student's scheme was selected to be extended into a full construction document set.

Throughout this project the production and coordination of the document set, along with a large portion of the actual drawing output, was completed by the student, under strict deadline constraints.

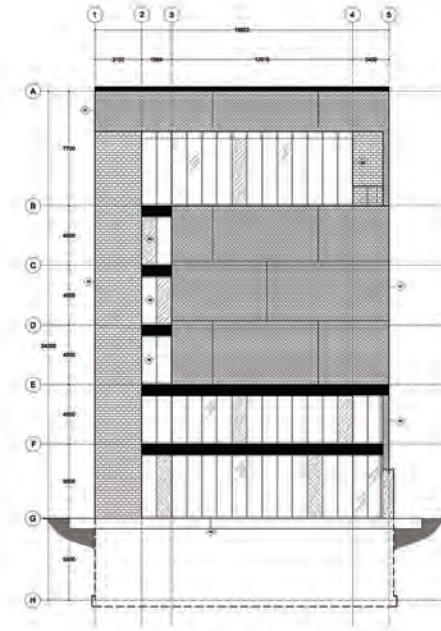
Sketchup, Vray  
Revit Architecture, AutoCAD  
Photoshop, InDesign



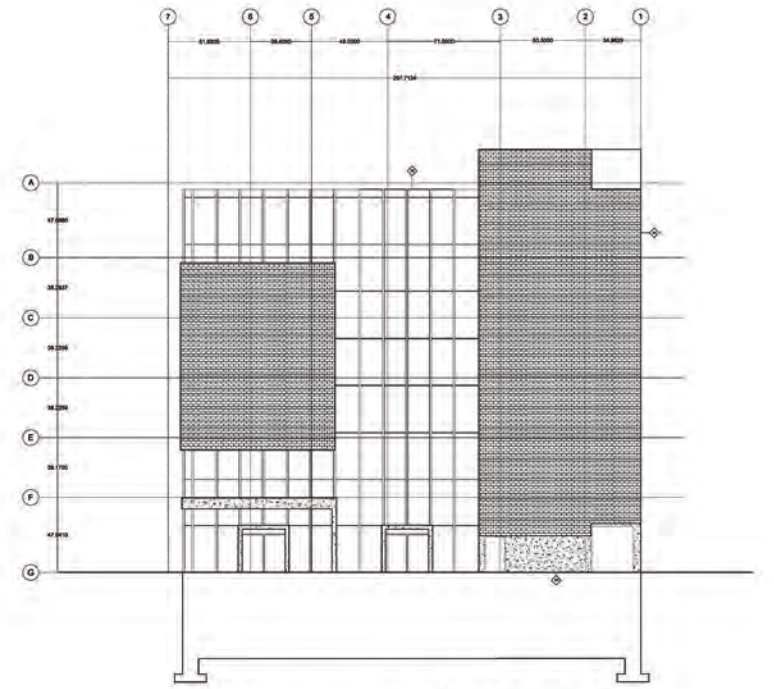
SITE PLAN



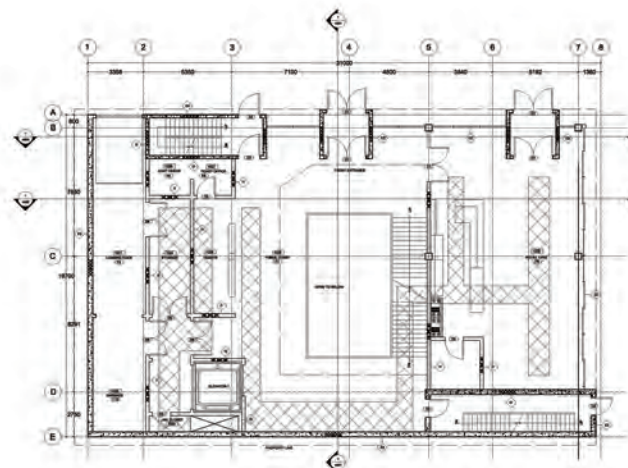
ROOF MEMBRANE & PARAPET



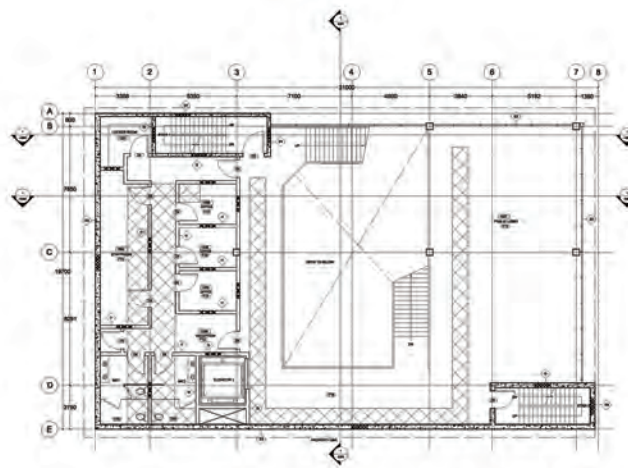
SOUTH ELEVATION



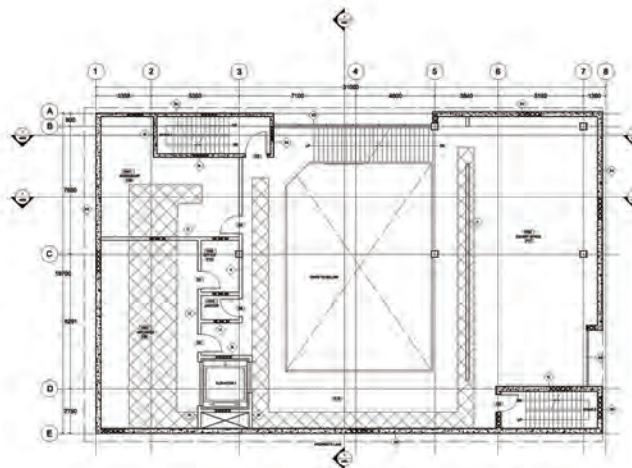
EAST ELEVATION



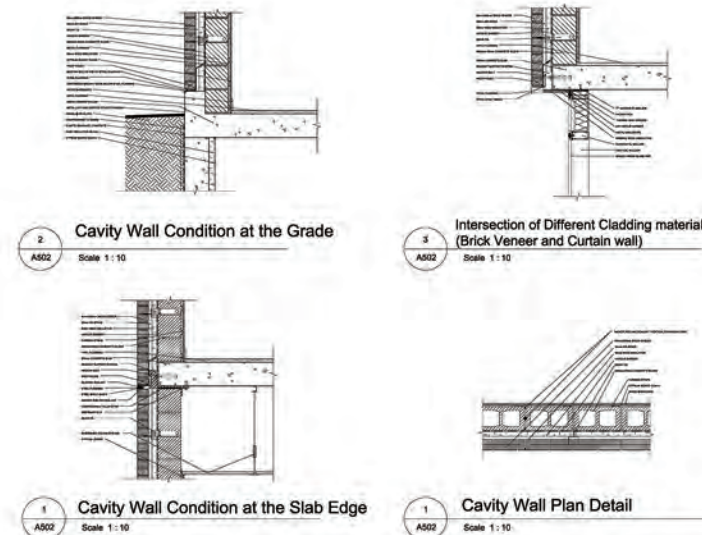
GRADE PLAN



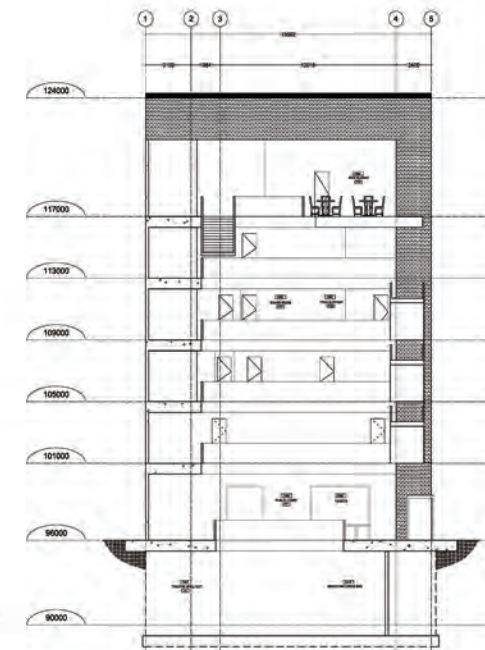
2ND FLOOR PLAN



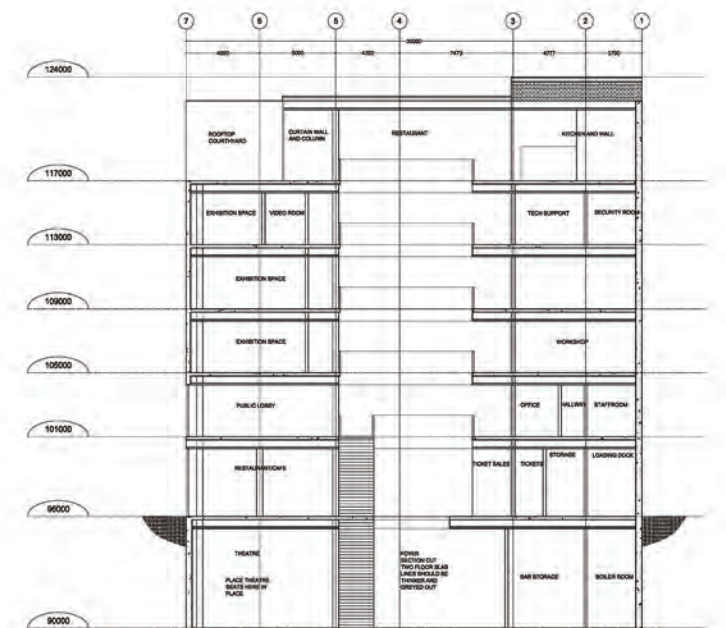
3RD FLOOR PLAN



WINDOW / WALL DETAILS



TRANSVERSE SECTION



LONGITUDINAL SECTION

# GEOMETERS STUDIO

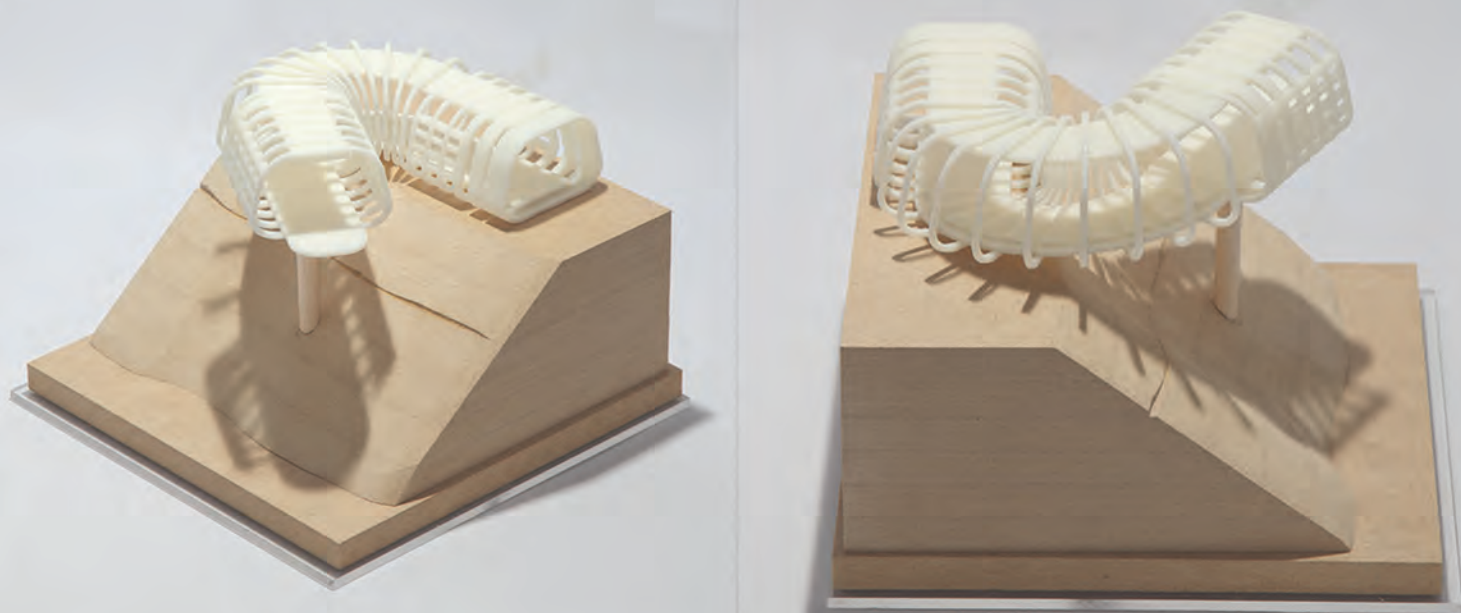
*a mathematician's studio +  
tectonics & materiality*

Academic year 3  
ASC621 Tectonics and Materiality  
Professor John Cirka

The design of a studio for a  
mathematician of advanced  
geometry that overlooks a Toronto  
ravine was tasked to the student  
with very specific programmatic  
and volumetric restrictions, thus  
encouraging a study of tectonic  
and materiality

FormZ, AutoCAD  
Photoshop, InDesign  
3D Printed Model, Wood Working

1



2



3



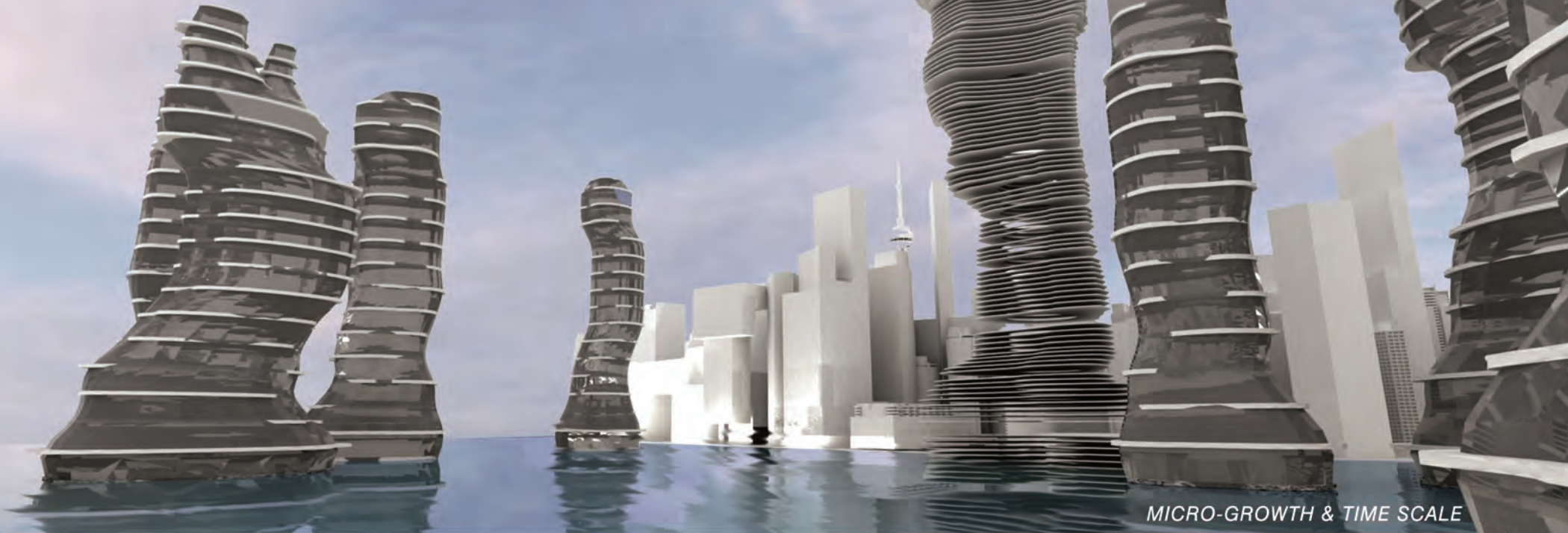
1 (top left) - photographed 3D printed model  
2 (bottom left) - rendered elevations  
South / North / East / West Elevation  
3 (top right) - perspective renders

**URBAN ICEBERG**  
*generative population valve +  
 eVolo skyscraper competition*

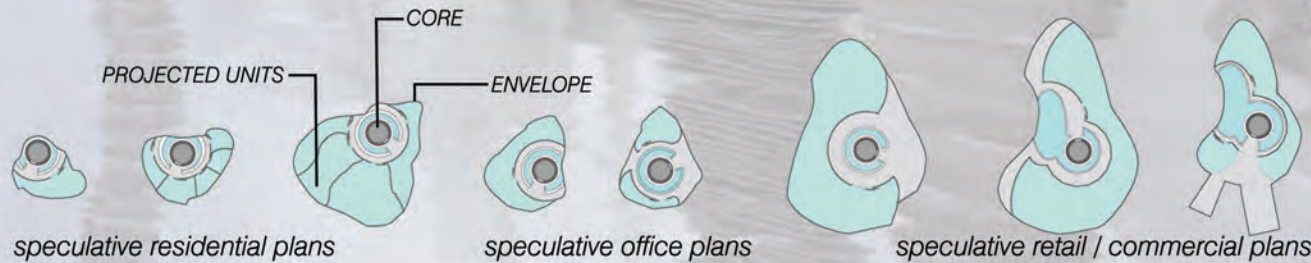
Academic year 2  
 ASC405 Collaborative Exercise II  
 Professor Arthur Wigglesworth  
 Toronto Waterfront

*FormZ, Bonzai3D, RenderZone  
 SketchUp, Vray  
 Photoshop, InDesign*

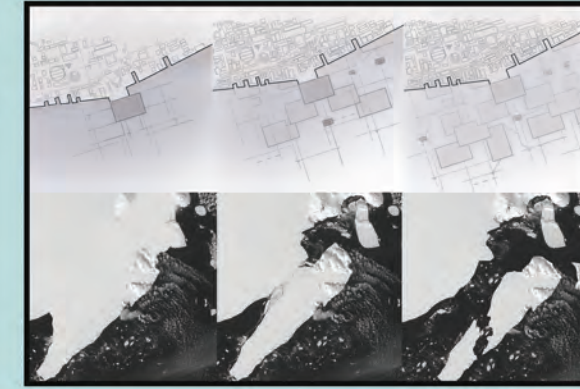
Completed as an entry into the 2010 eVolo Skyscraper Competition, this new typological evolution of the mixed-use skyscraper was conceived as a population valve for overcrowded port cities, so as to mitigate sprawl and create ultra-dense interconnected pockets of urban life. Using processes similar to the geological and hydrological nature of the calving of actual icebergs at sea, intricate, interactive, and evolutionary zoning restrictions are placed on the development of these urban pockets that would create the conditions necessary for a self-generating, and self-sustaining typological architectural intervention that directly reflects the needs and wants of the prospective inhabitants.



Informed by the creation and lifecycle of actual icebergs, inherent in the growth of these autonomous population offshoots would be a regulation concerning the critical mass of the tower itself (height, population, density) that would stipulate when that particular 'iceberg' would cease growing and calve new versions of itself into the harbour. Again, infrastructural demand and linkages would be precursors to such nodal growths, each with aggressive and comprehensive integration with other existing nodes and the landmass with which it must relate.



**POPULATION VALVE GROWTH**



VIEW OF THE CORE

**MACRO-GROWTH & TIME SCALE**



On the micro-scale, generation of form would occur as residents fabricated their plotted units to fit their desires and affix them to the structure, resulting in an exterior form that reflects the socio-economic individualism of each resident while conforming to the logarithmic function of zoning regulations: relationships would be generated relating each layer of growth to the one before and after, as well as between units on the horizontal plane.



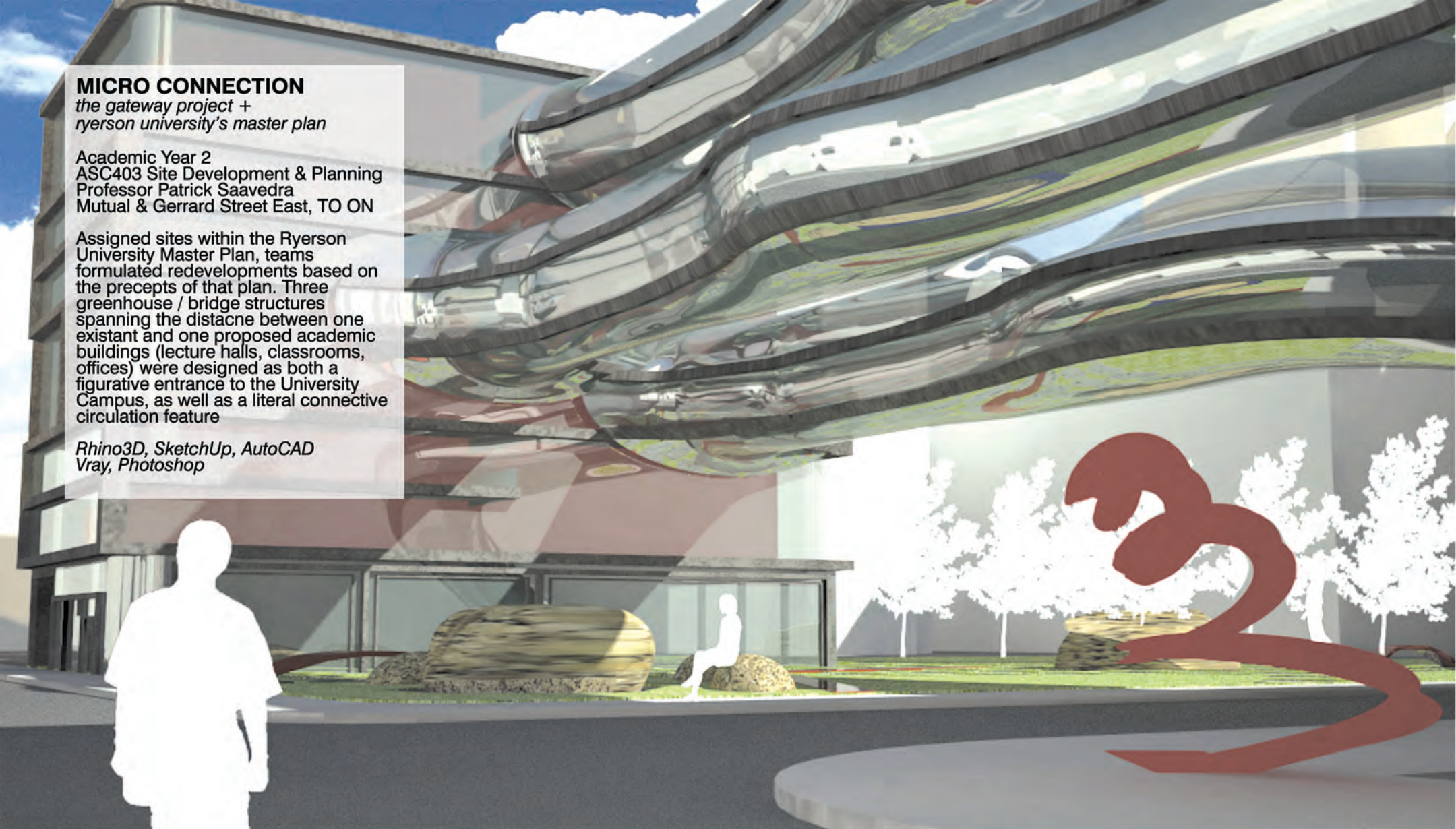
LONITUDINAL SECTION

# **MICRO CONNECTION** the gateway project + ryerson university's master plan

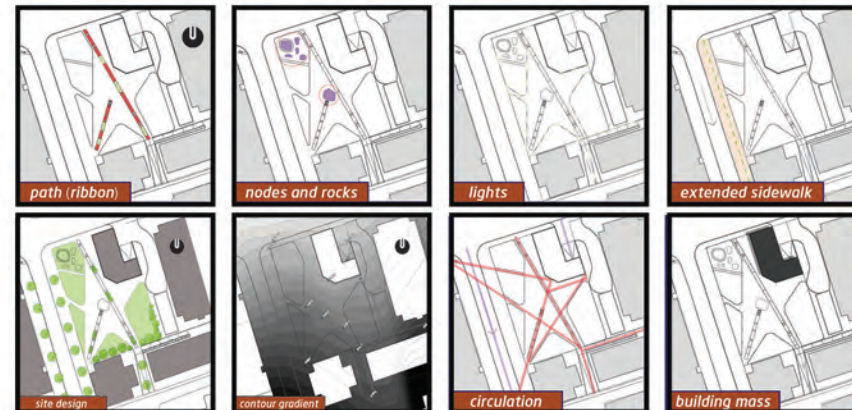
Academic Year 2  
ASC403 Site Development & Planning  
Professor Patrick Saavedra  
Mutual & Gerrard Street East, TO ON

Assigned sites within the Ryerson University Master Plan, teams formulated redevelopments based on the precepts of that plan. Three greenhouse / bridge structures spanning the distacne between one existant and one proposed academic buildings (lecture halls, classrooms, offices) were designed as both a figurative entrance to the University Campus, as well as a literal connective circulation feature

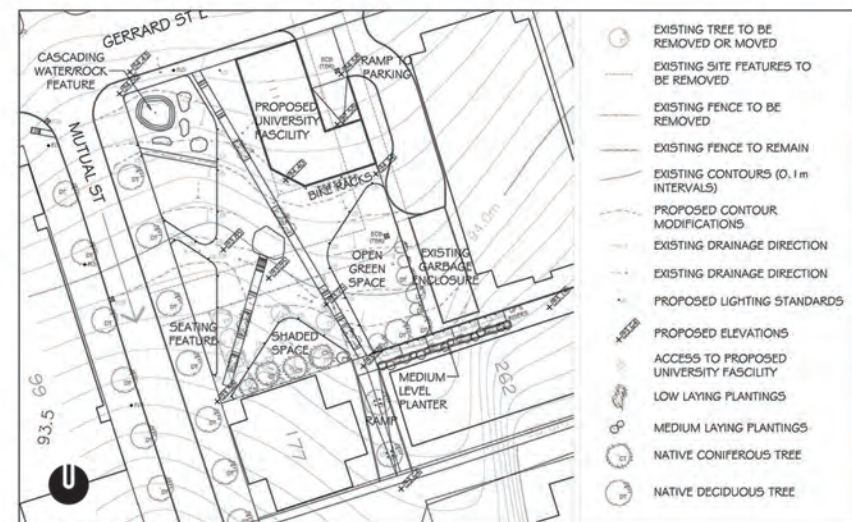
Rhino3D, SketchUp, AutoCAD  
Vray, Photoshop



GREENHOUSE / BRIDGE SECTION

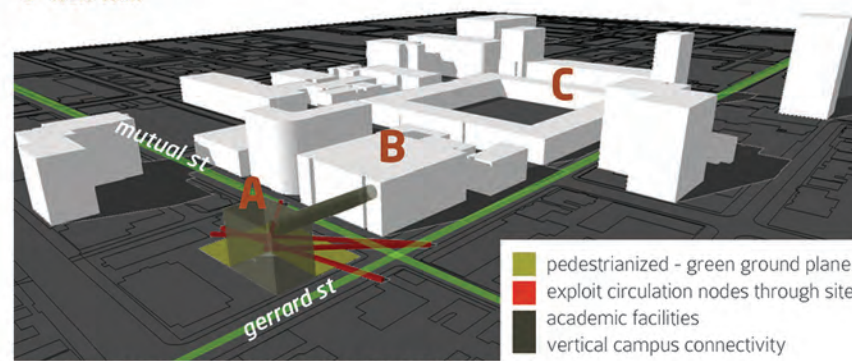


SITE STUDIES

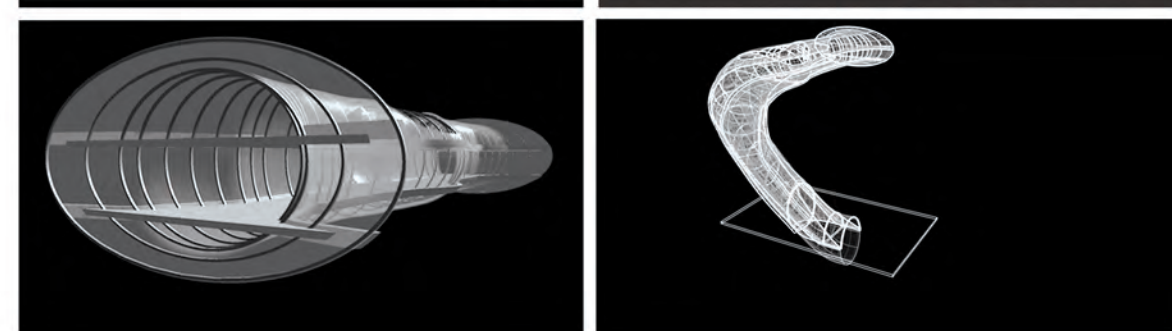
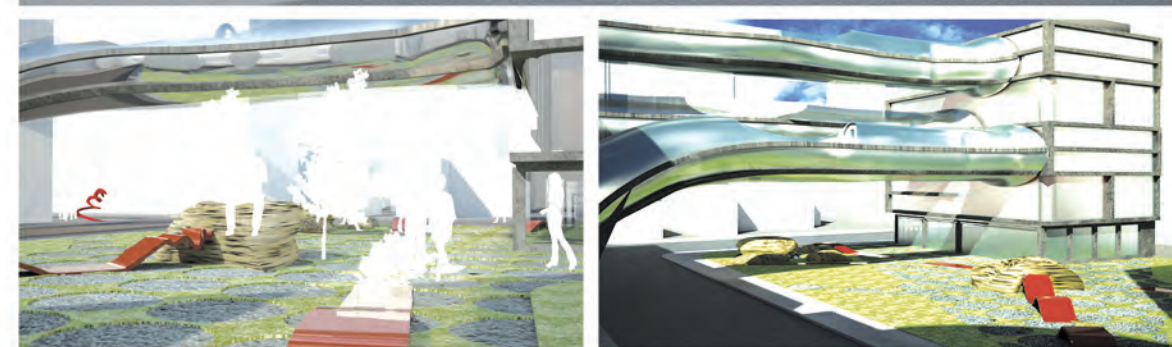
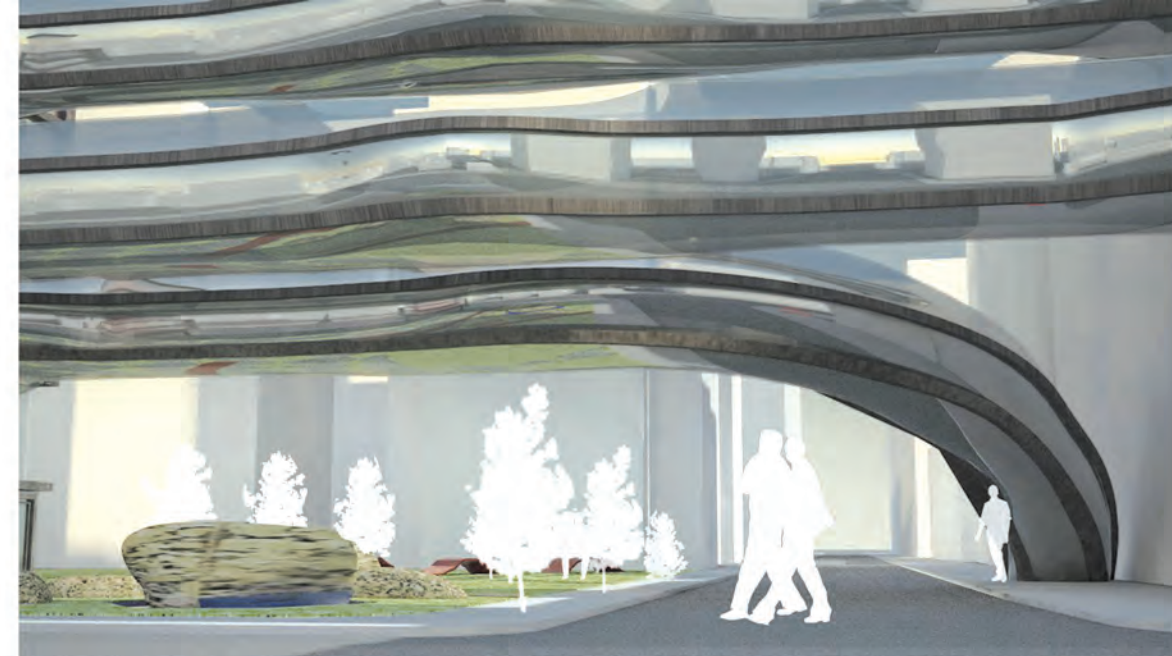


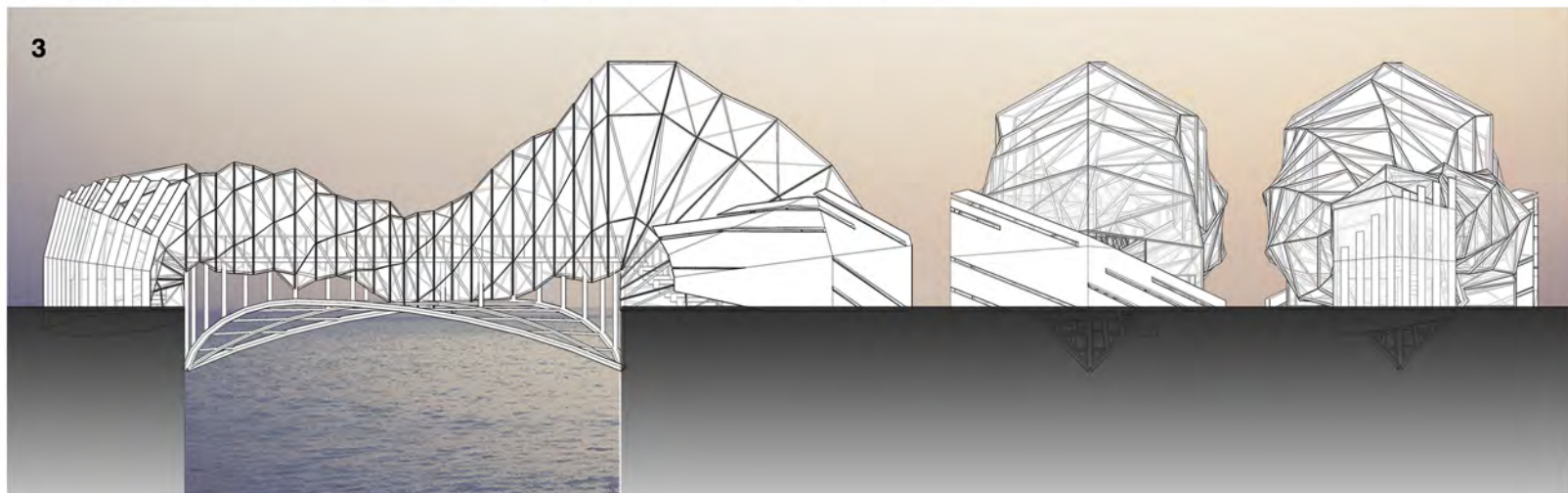
SITE PLAN

A 111 Gerrard St - Original Design Schematic  
B Erin Palin Hall  
C Kerr Hall



MASTER PLAN CONTEXT / PROPOSAL





## THE ARTIST'S STUDIO

*gros morne national park +  
elemental inspiration*

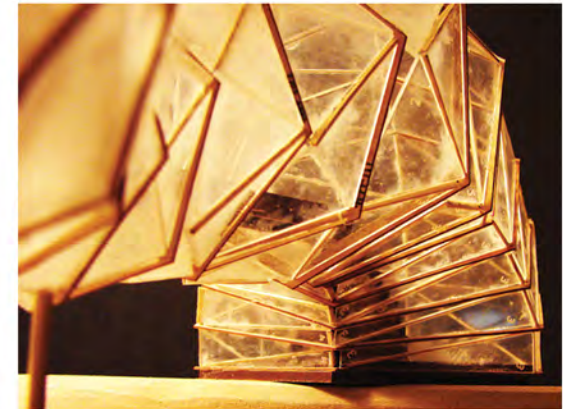
Academic Year 2  
ASC301 Design Studio  
Professor Olena Kobets-Singkh

An artist's studio is to be built within the rugged and sublime grounds of Gros Morne National Park in Newfoundland, Canada. As a starting point for inspiration the students were to choose one of the 'elements of nature', in this case air, to be reflected through form, techtonics, and materiality.

A number of sites were also offered. The one chosen reflects the sublime and rugged nature of the national park, as well as the intersection between wind, water, and geology.

Finally, design consideration was given to atomospheric phenomena, as iterated through a serpentine and rotated geometry.

*SketchUp, AutoCad  
Photoshop, Hand Drafting & Rendering  
Laser Cutting MDF & Acrylic*



- 1 (top left) - perspective rendered view from the North
- 2 (middle left) - perspective rendered view from the SW
- 3 (bottom left) - elevation drawings  
North / West / East elevation
- 4 (opposite) - physical model  
scale 1 : 250