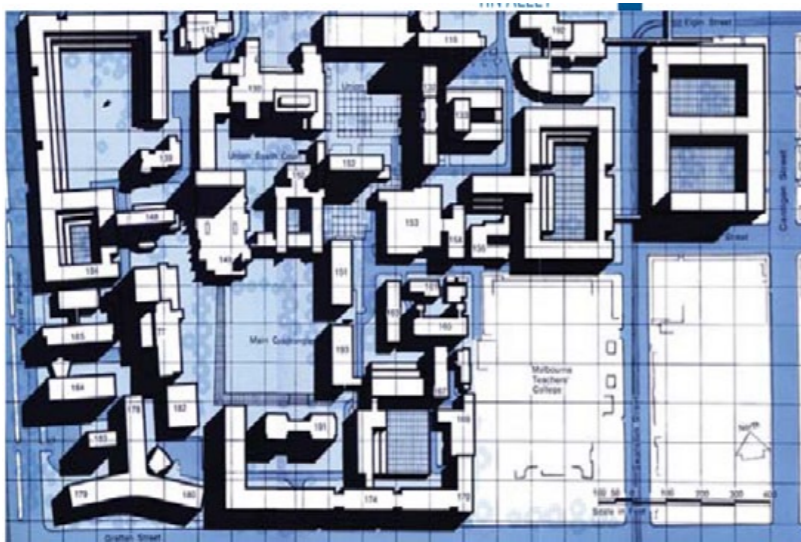
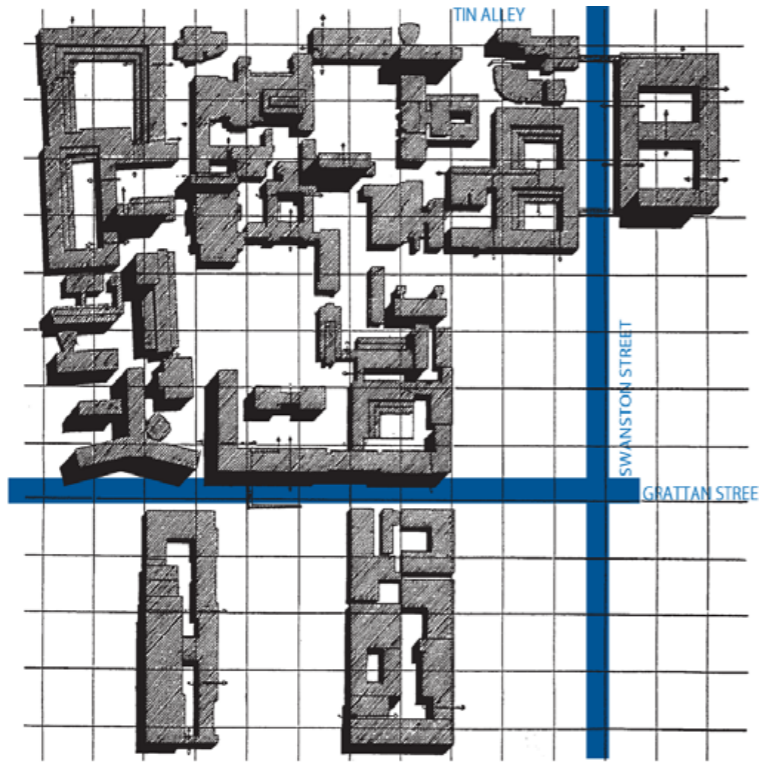


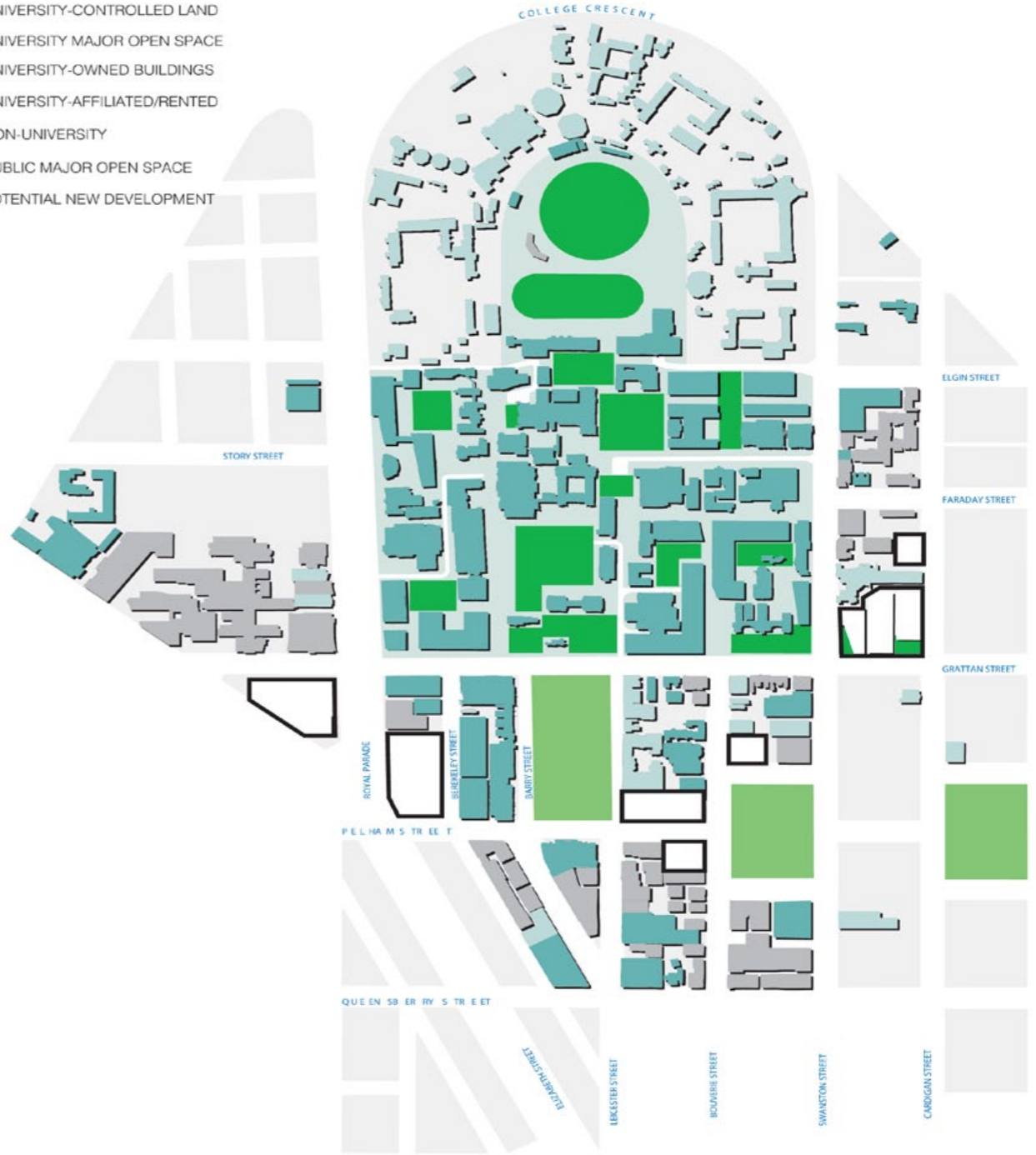


ARCHITECTURE
BUILDING
PLANNING



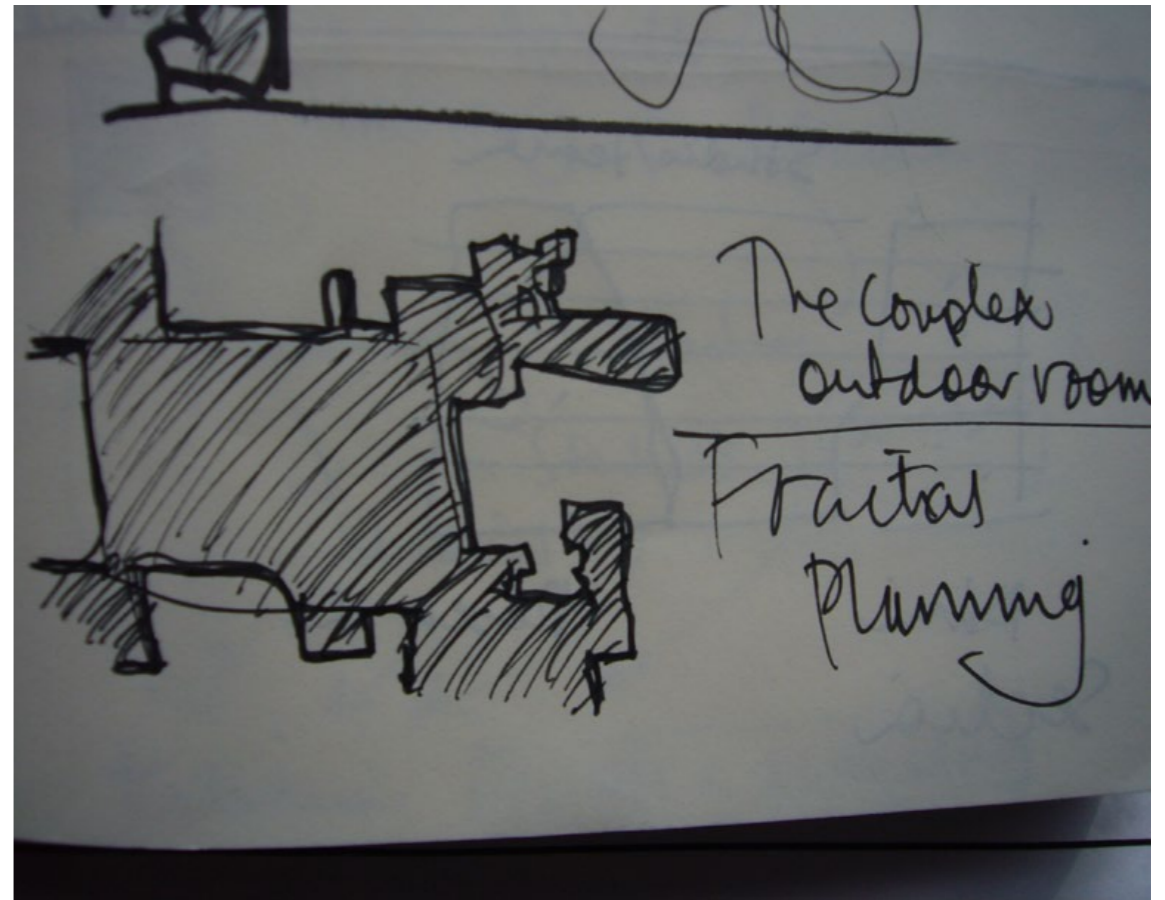


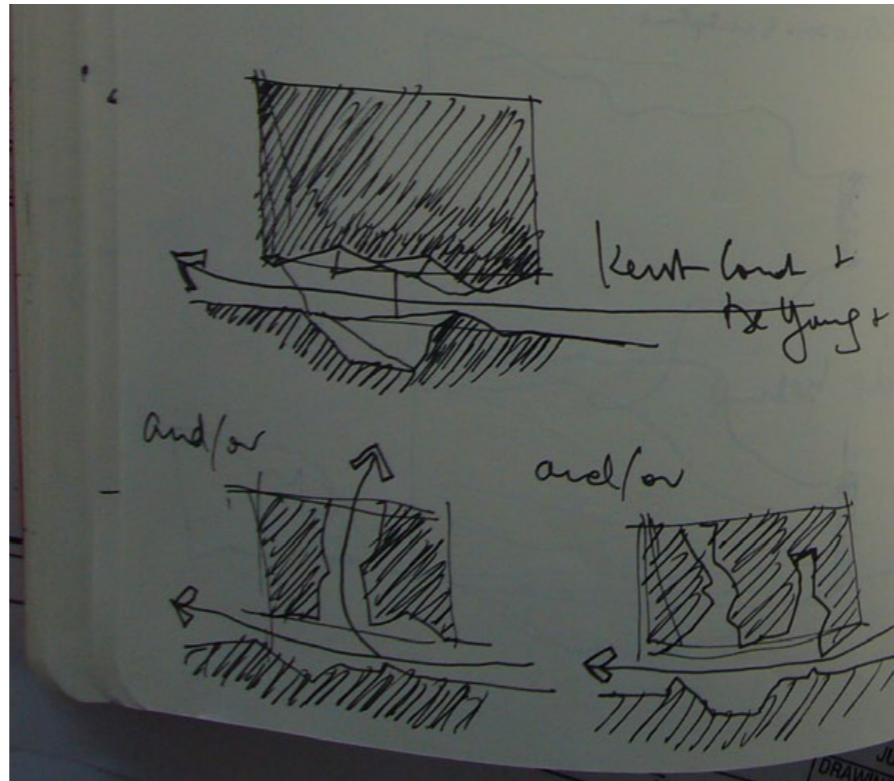
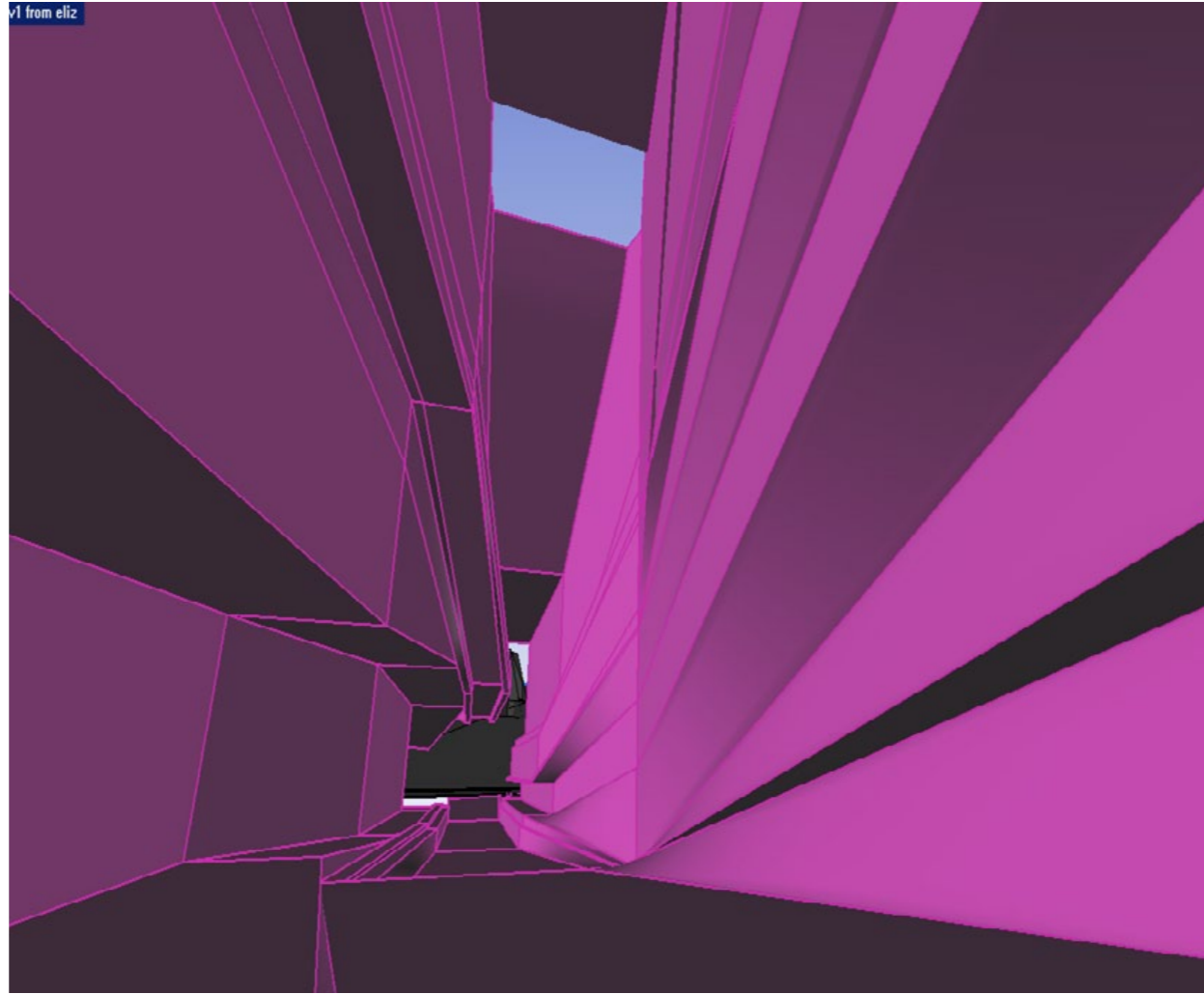
- UNIVERSITY-CONTROLLED LAND
- UNIVERSITY MAJOR OPEN SPACE
- UNIVERSITY-OWNED BUILDINGS
- UNIVERSITY-AFFILIATED/RENTED
- NON-UNIVERSITY
- PUBLIC MAJOR OPEN SPACE
- POTENTIAL NEW DEVELOPMENT

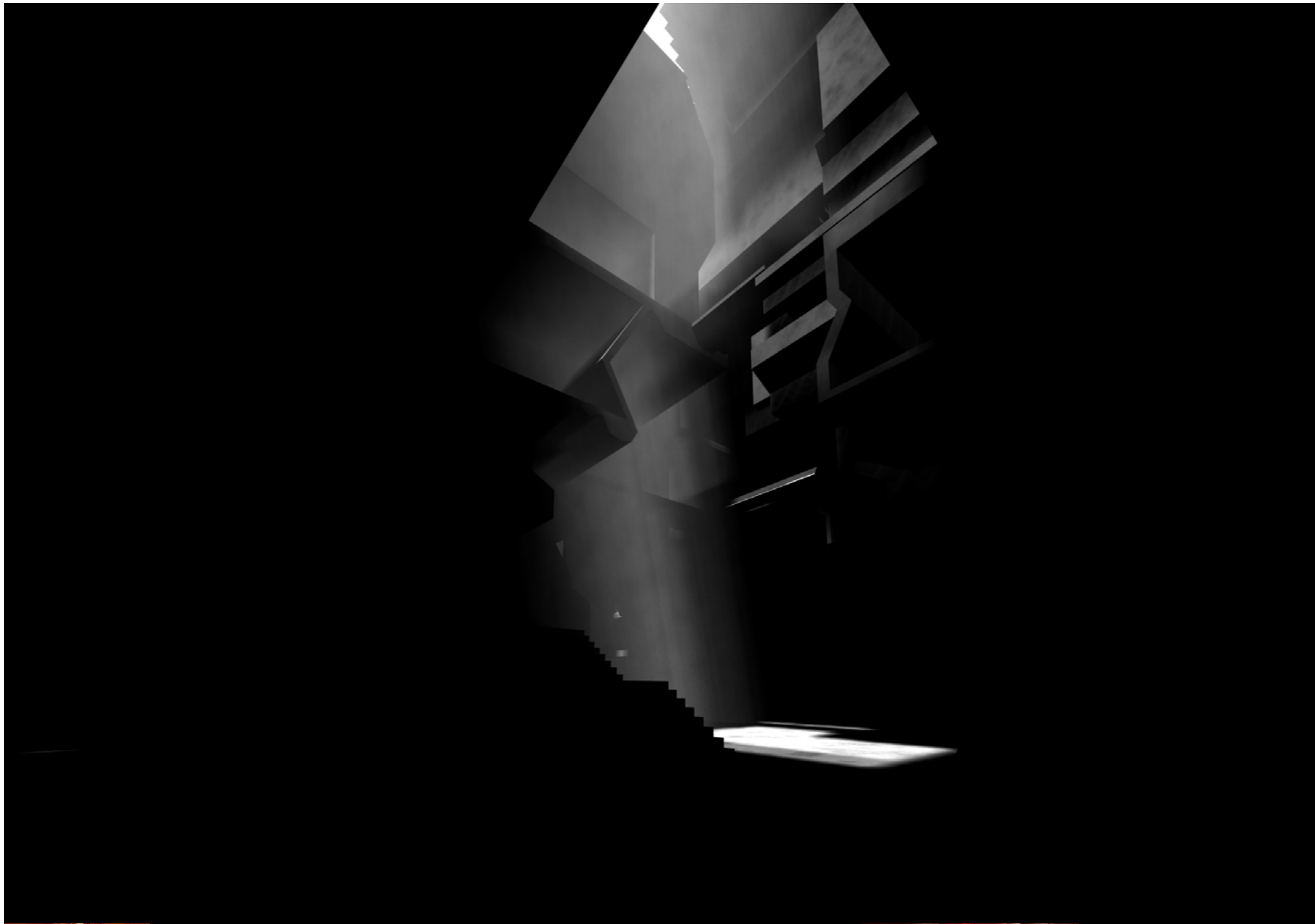


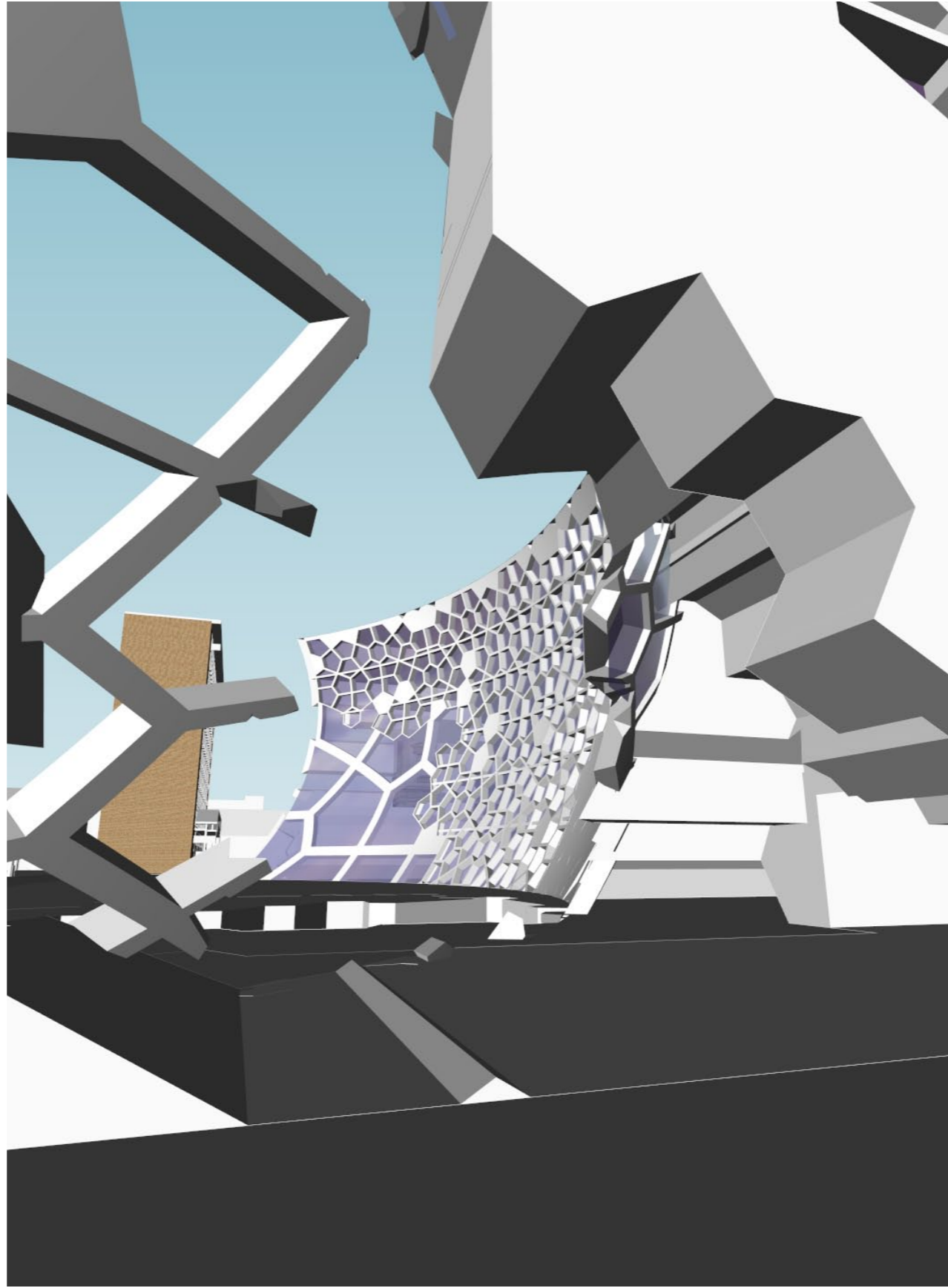


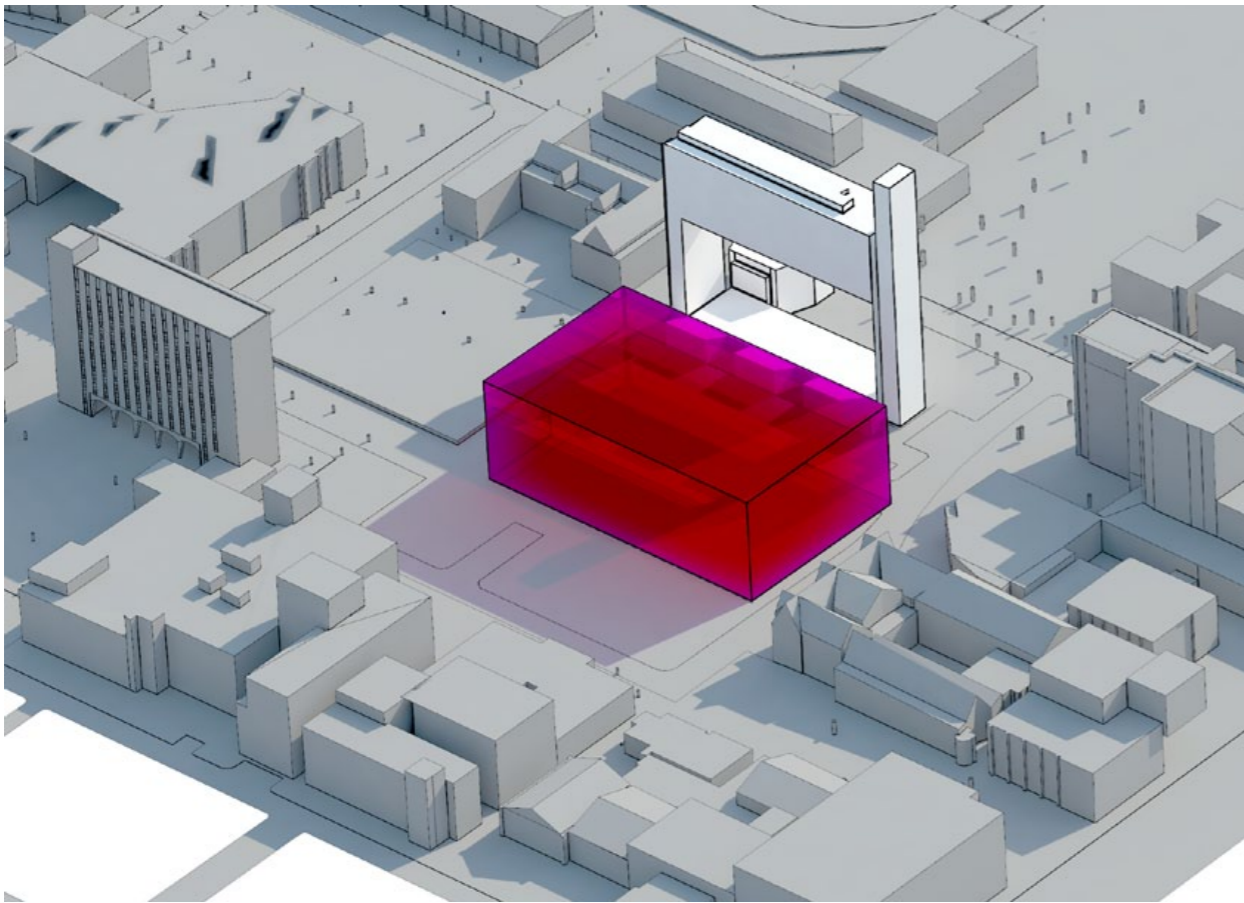
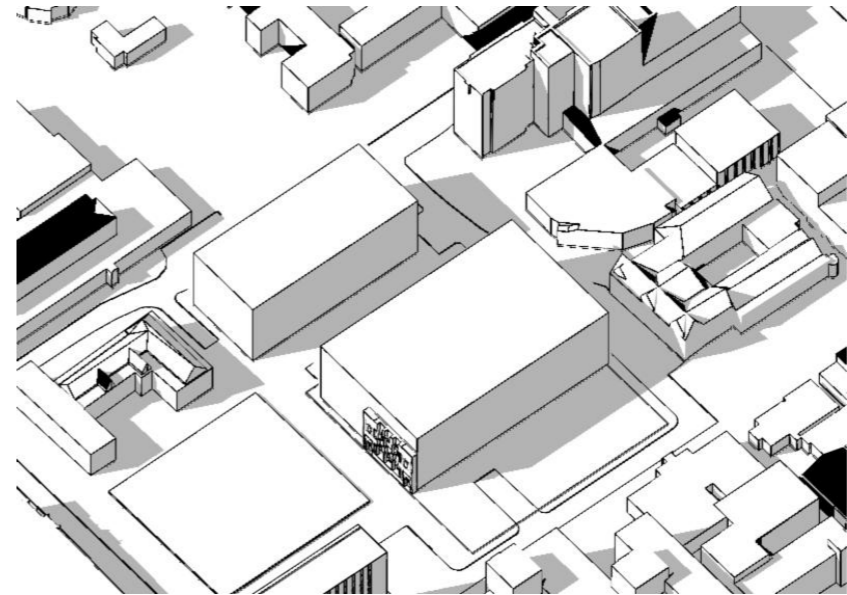
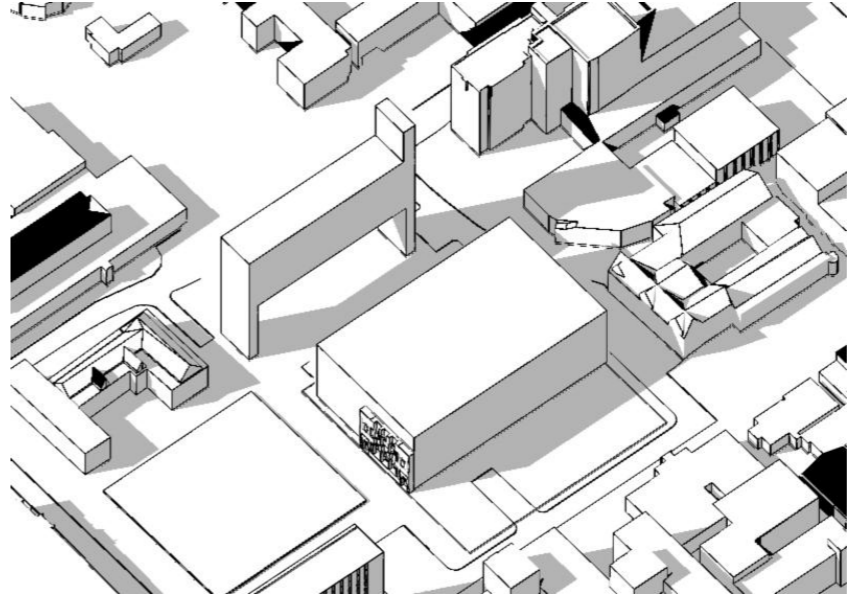
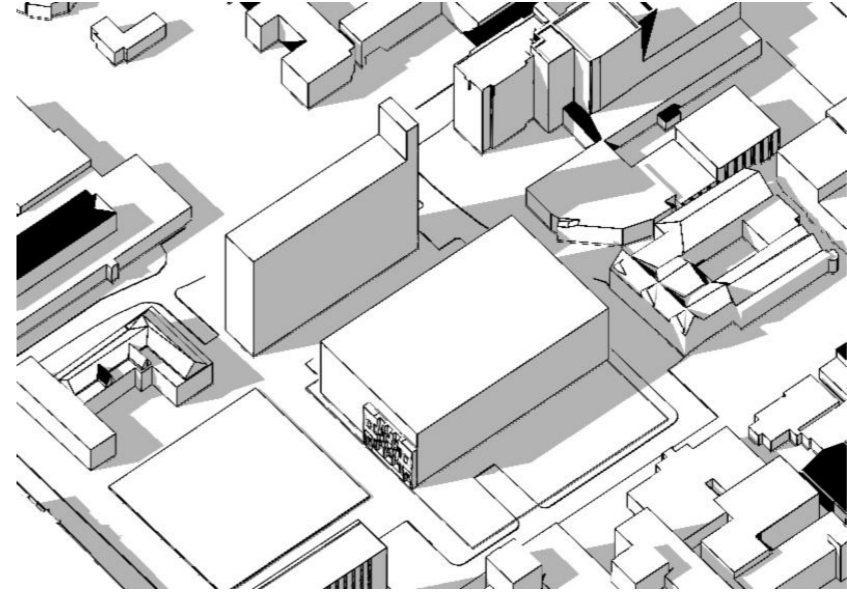
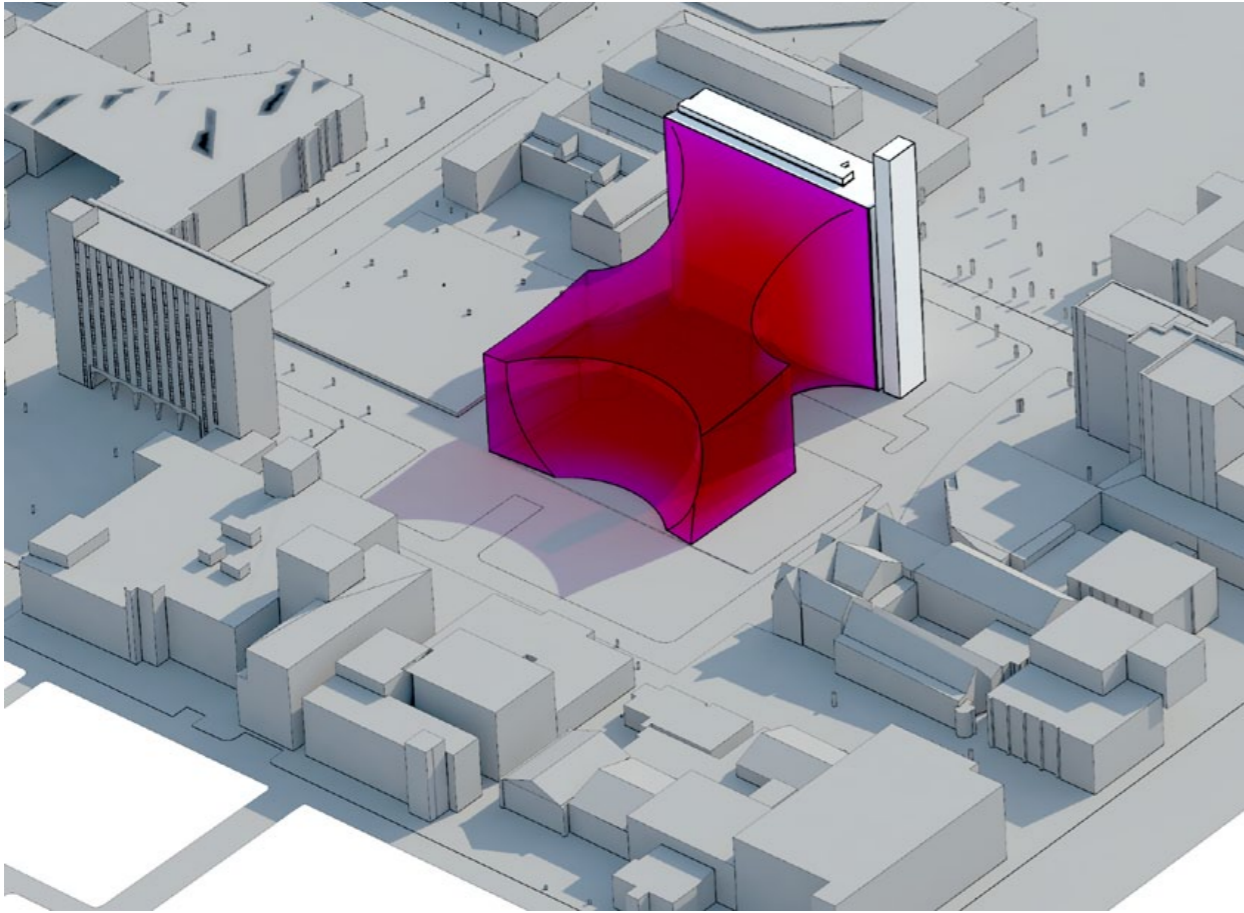
Architectural drawings showing a plan view of a building complex with various rooms and corridors, rendered in black and white.

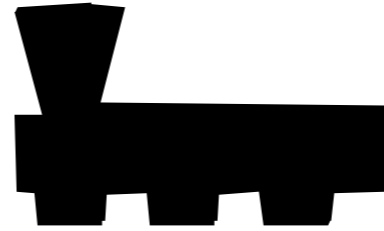
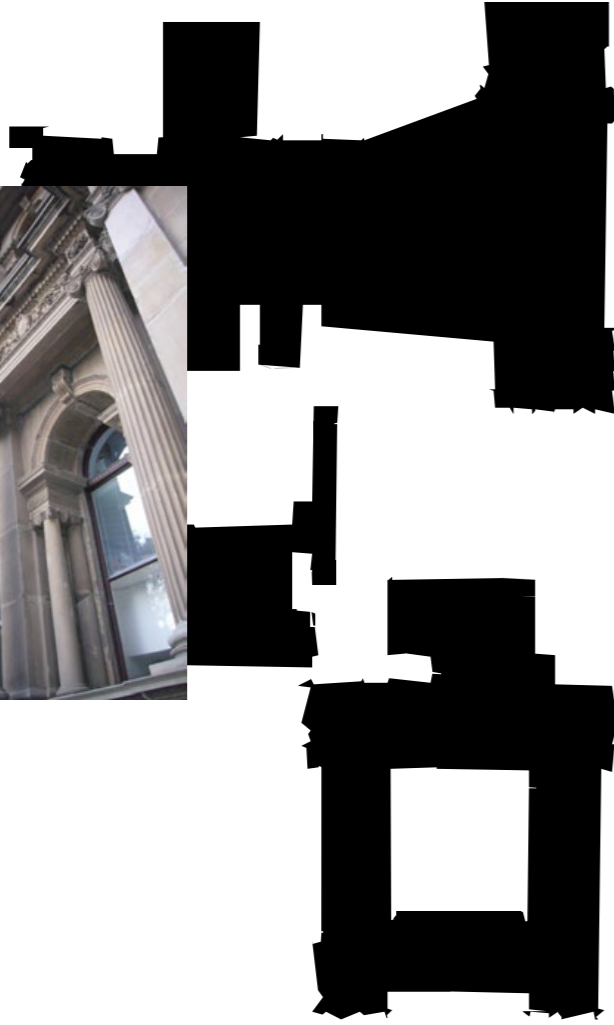


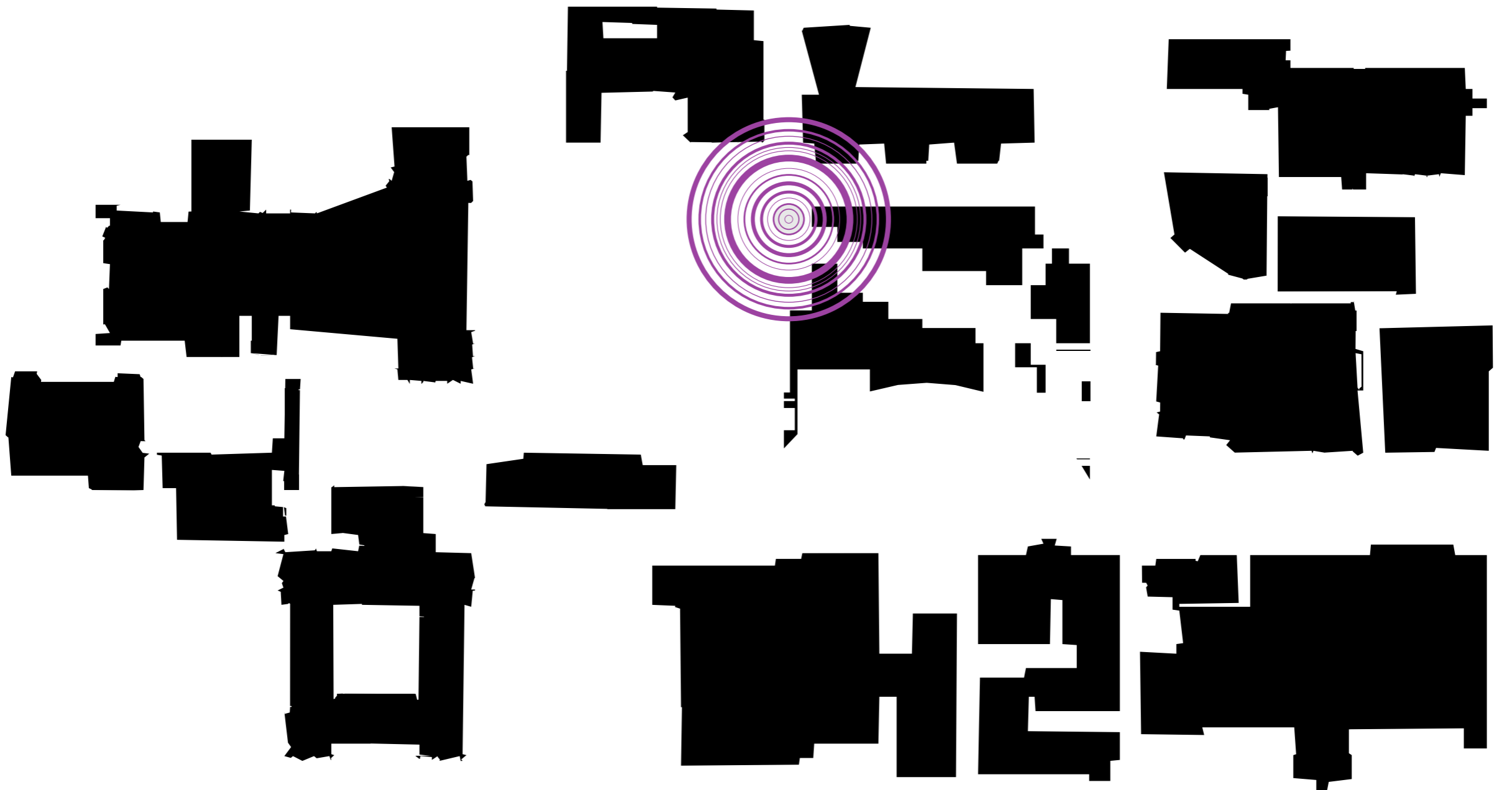


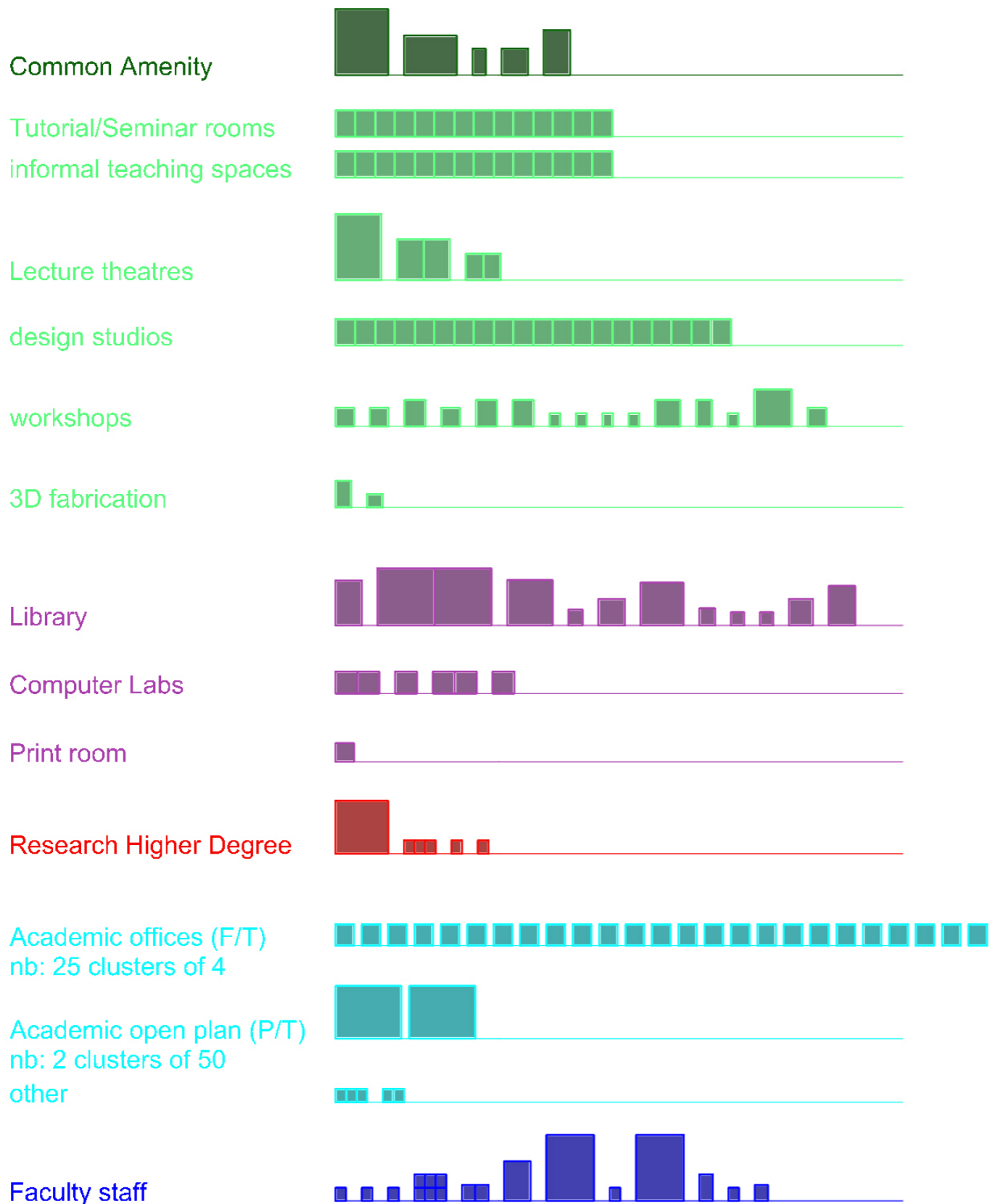


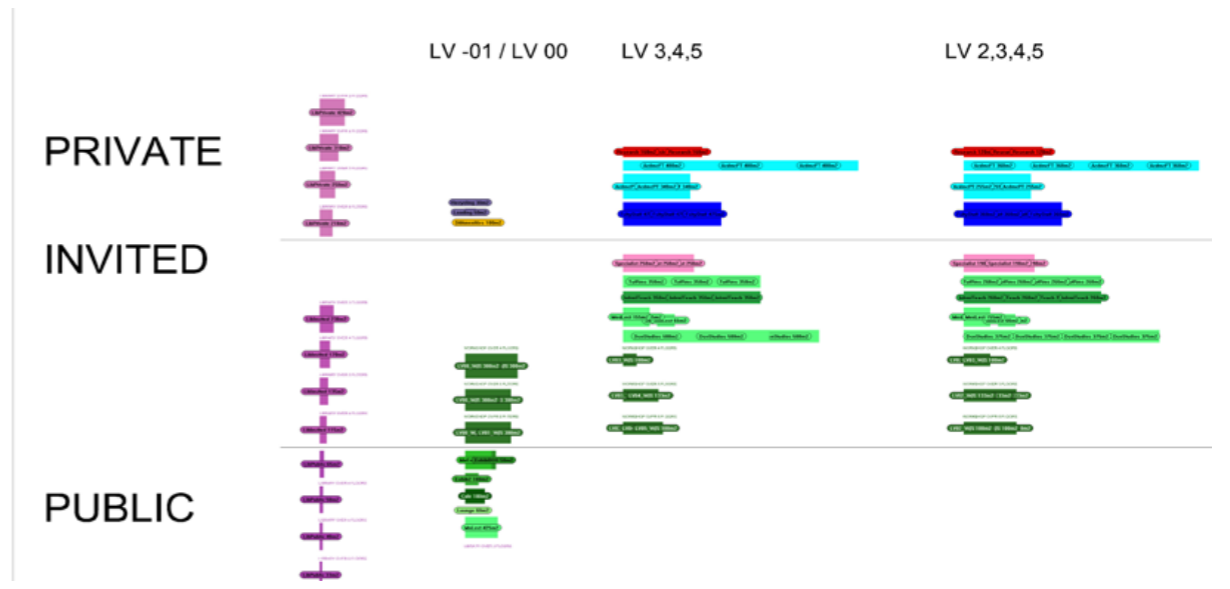
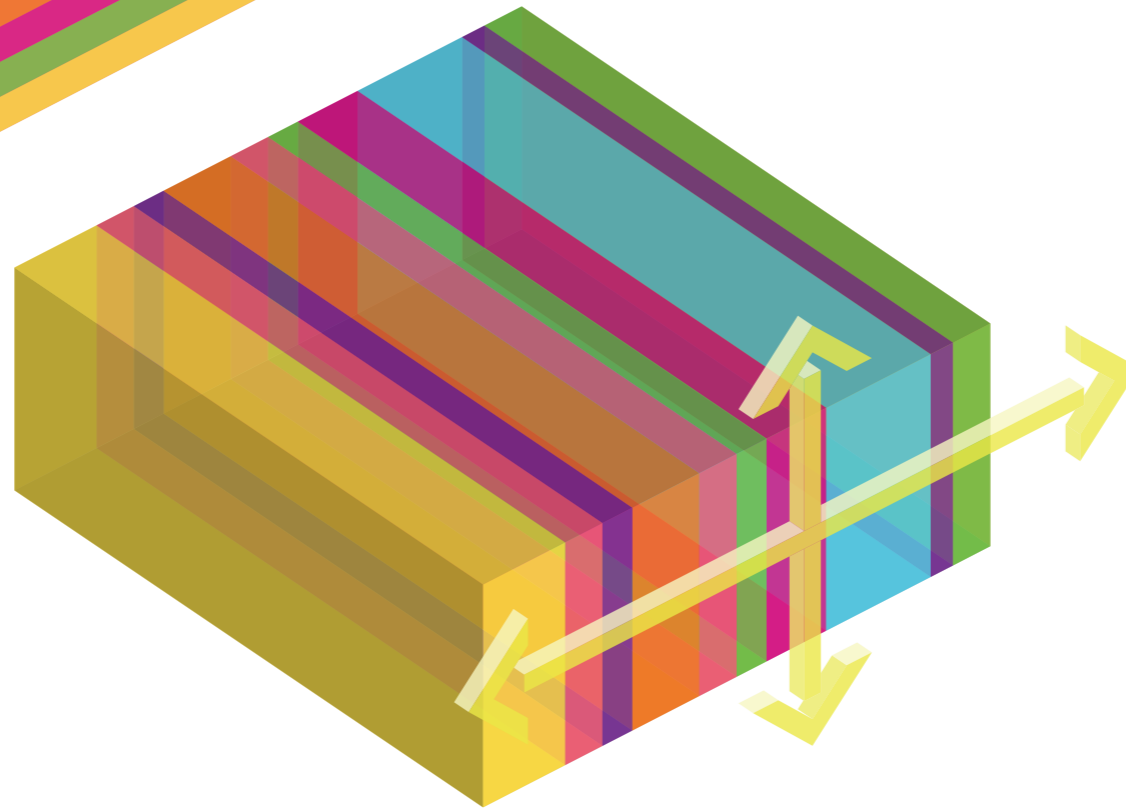
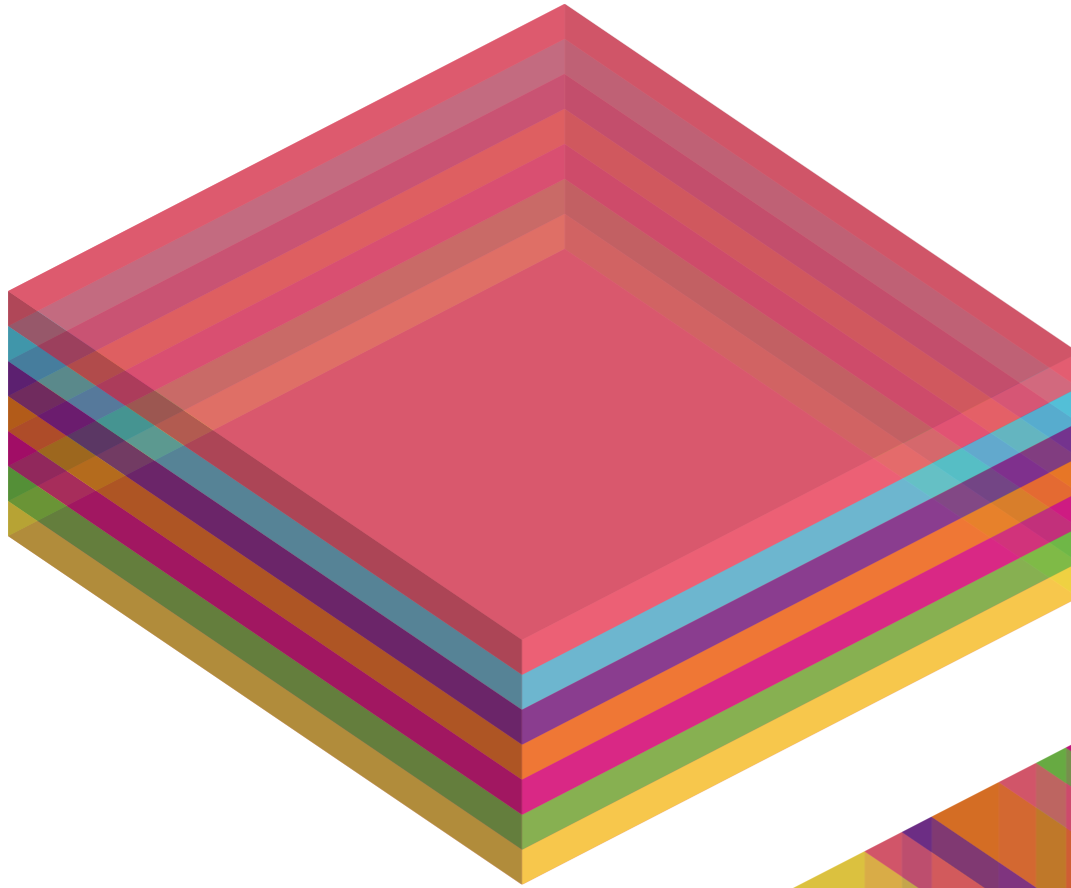


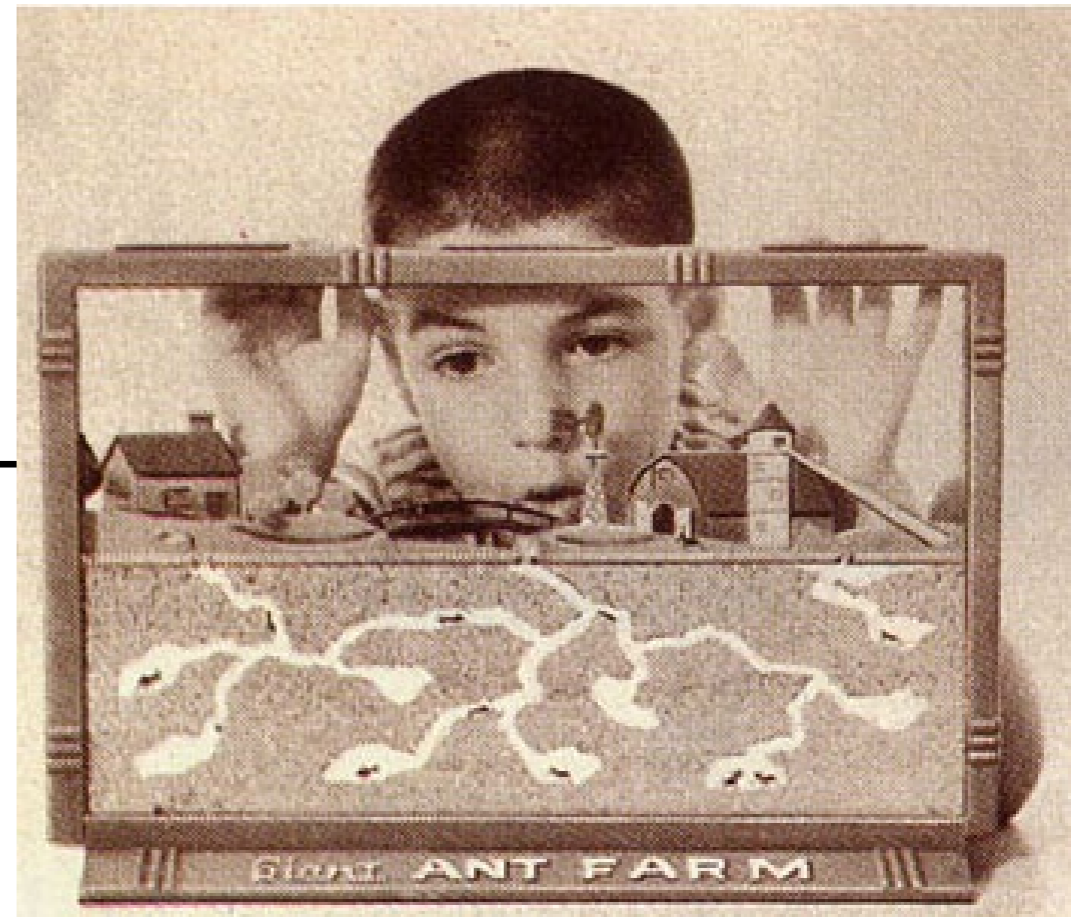
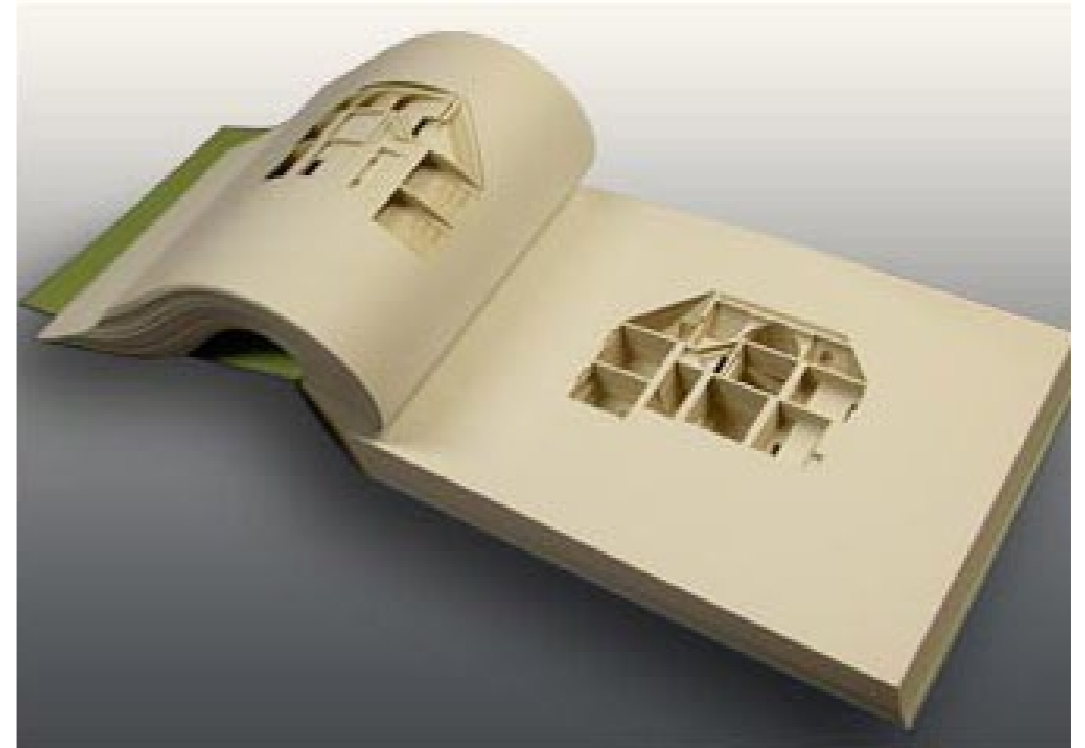
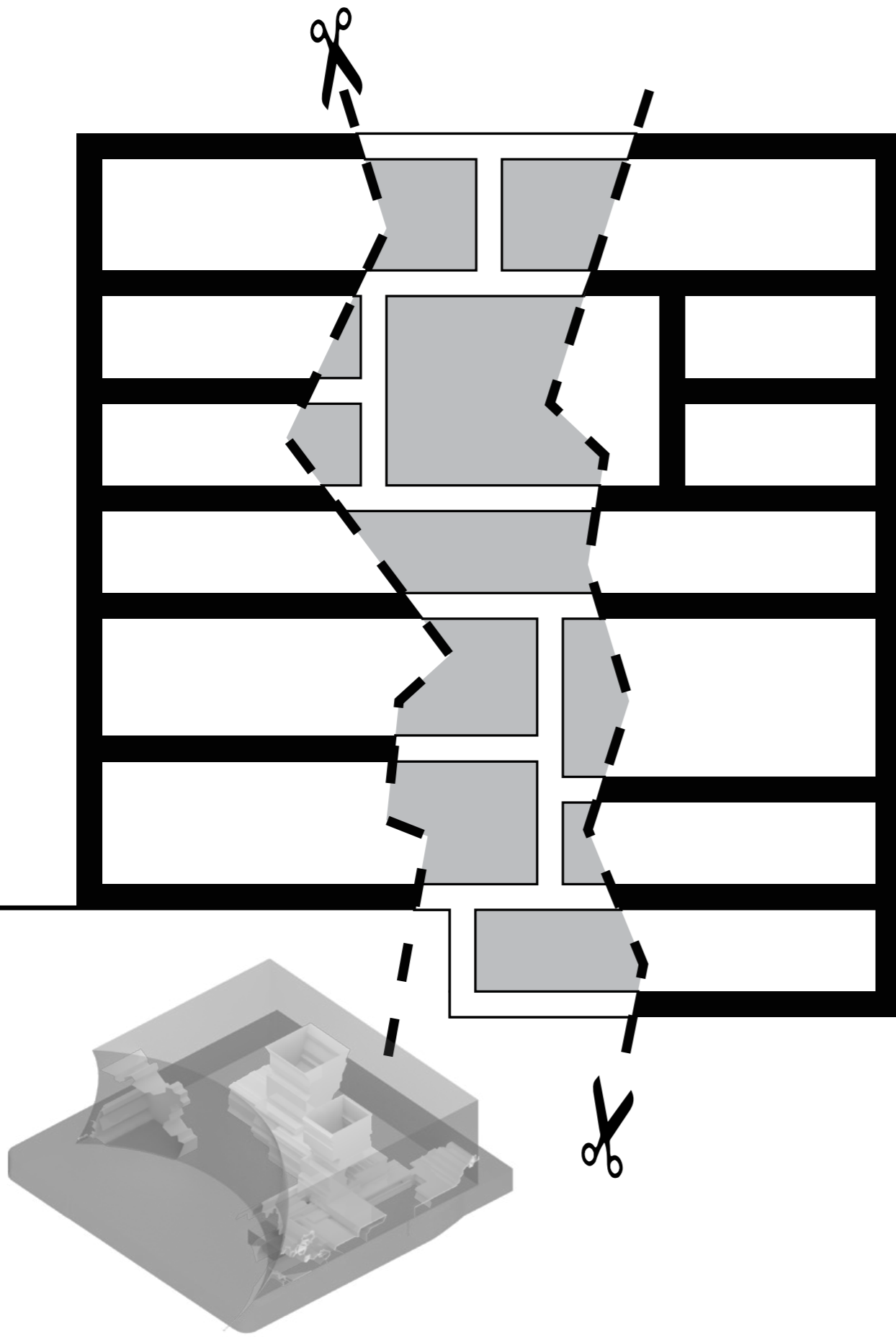


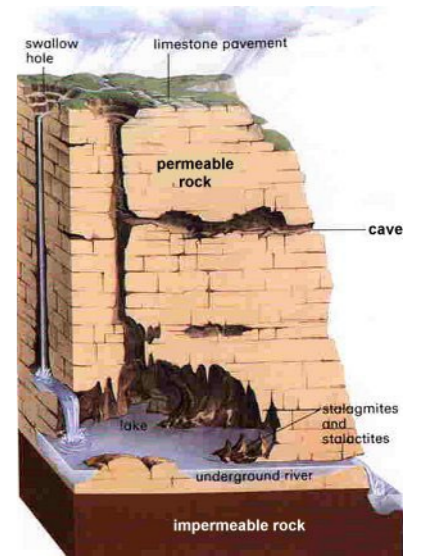
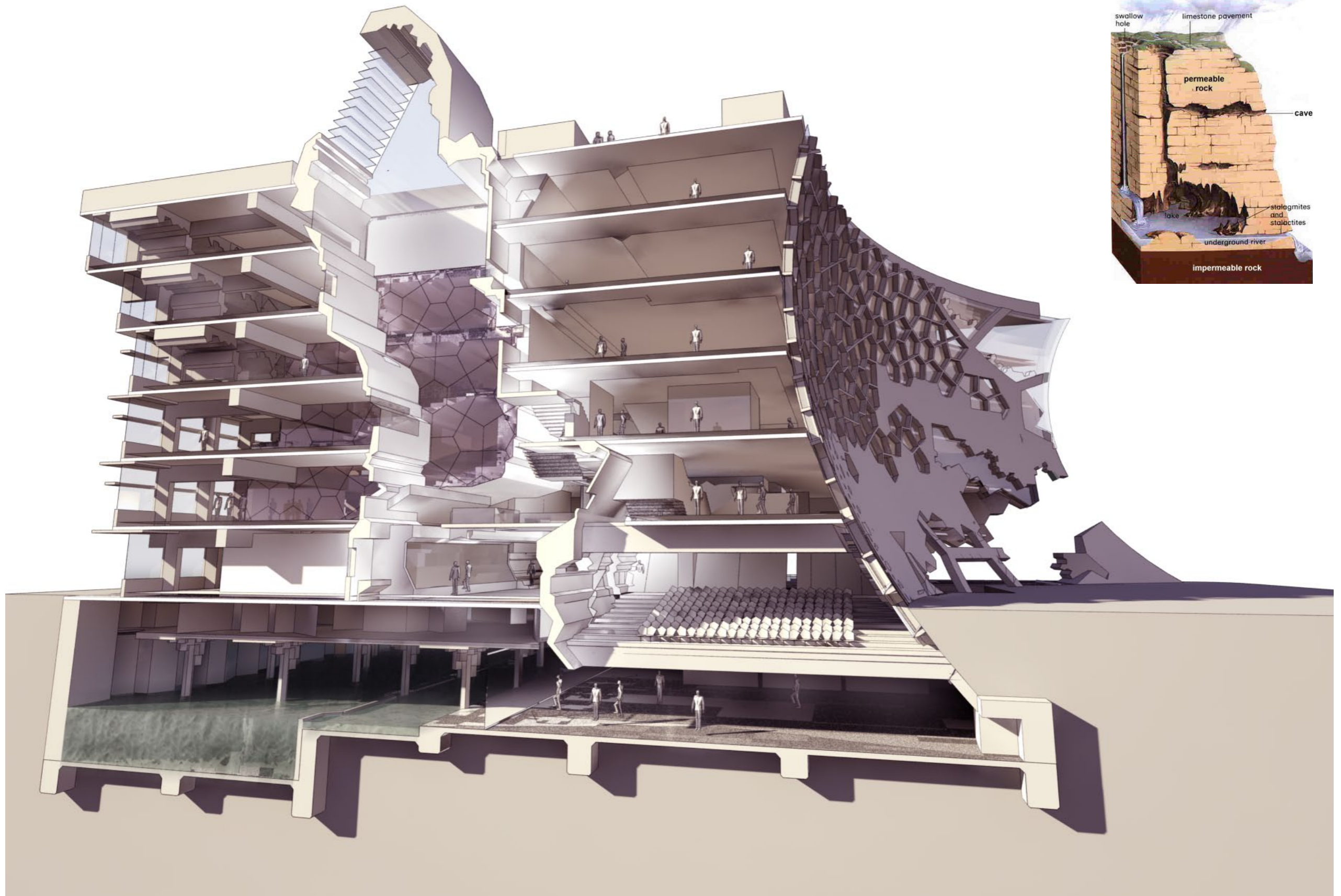


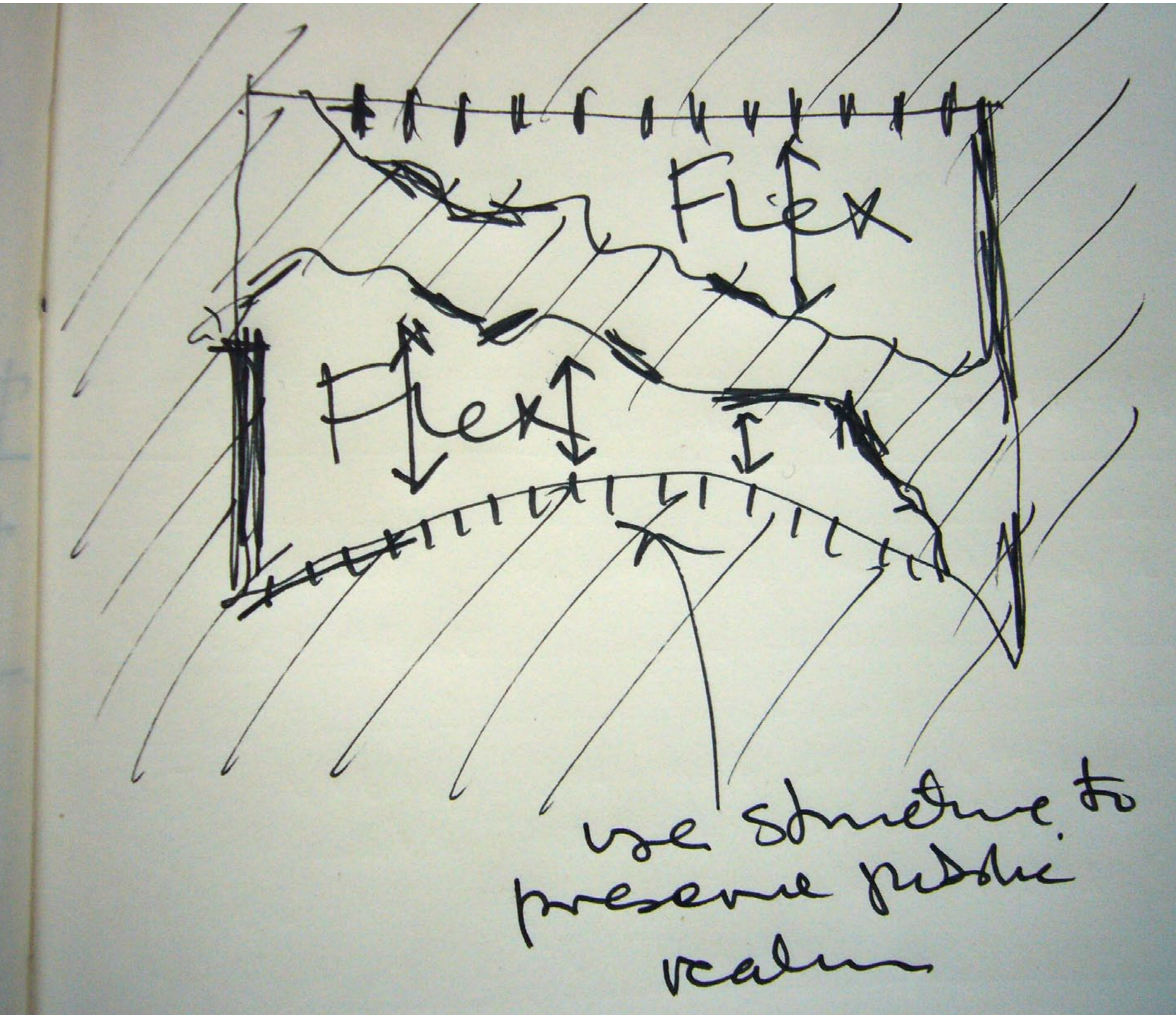


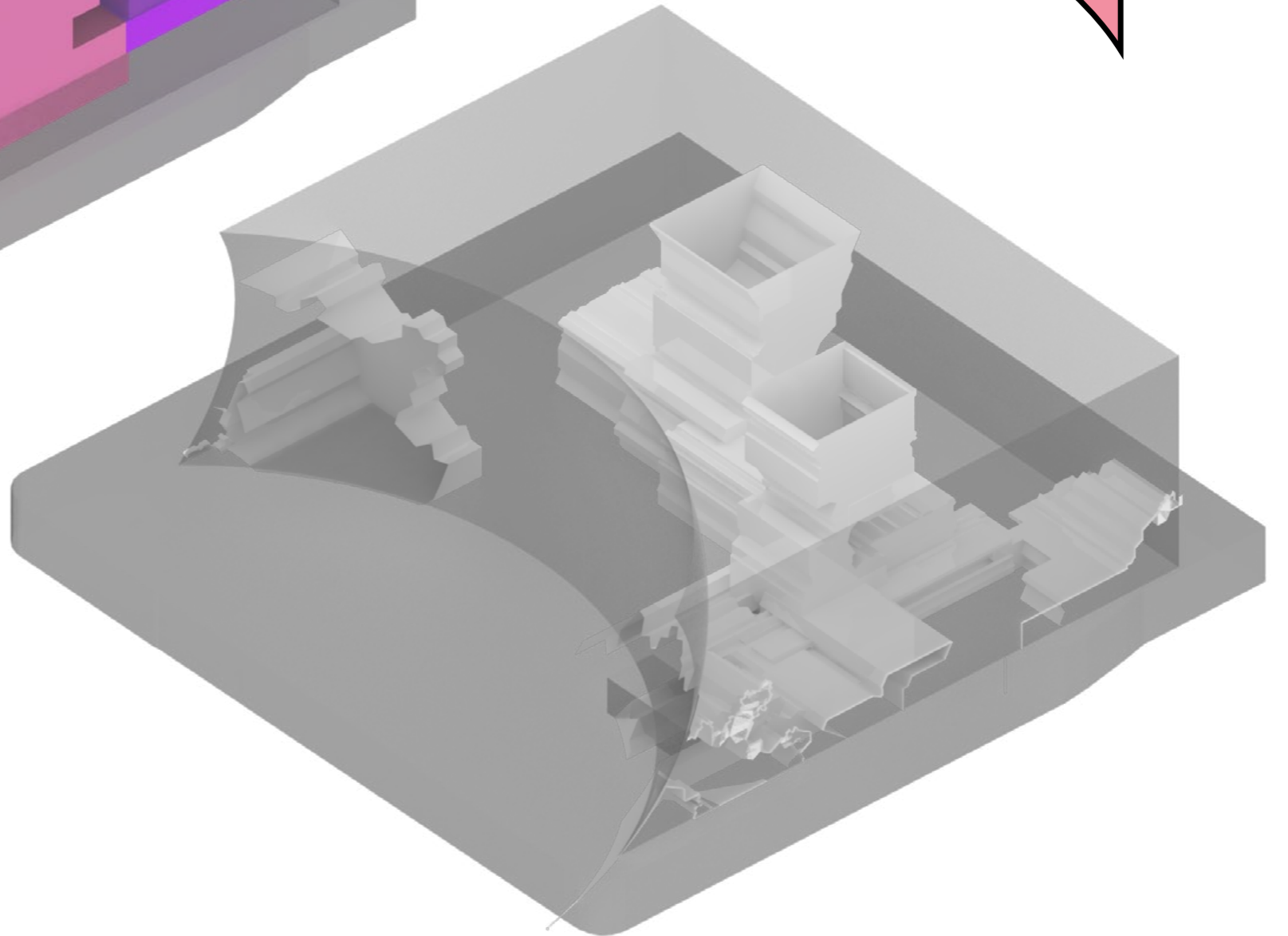
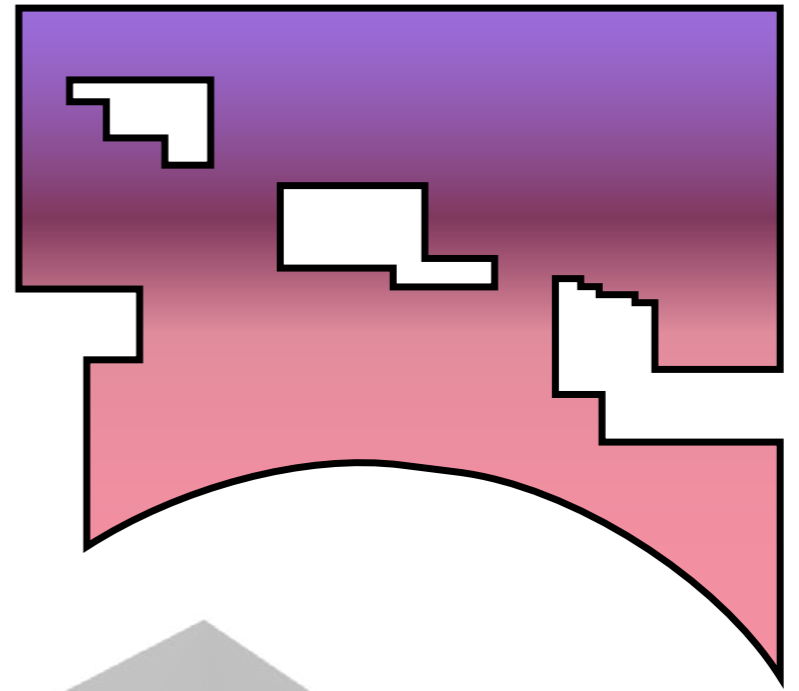
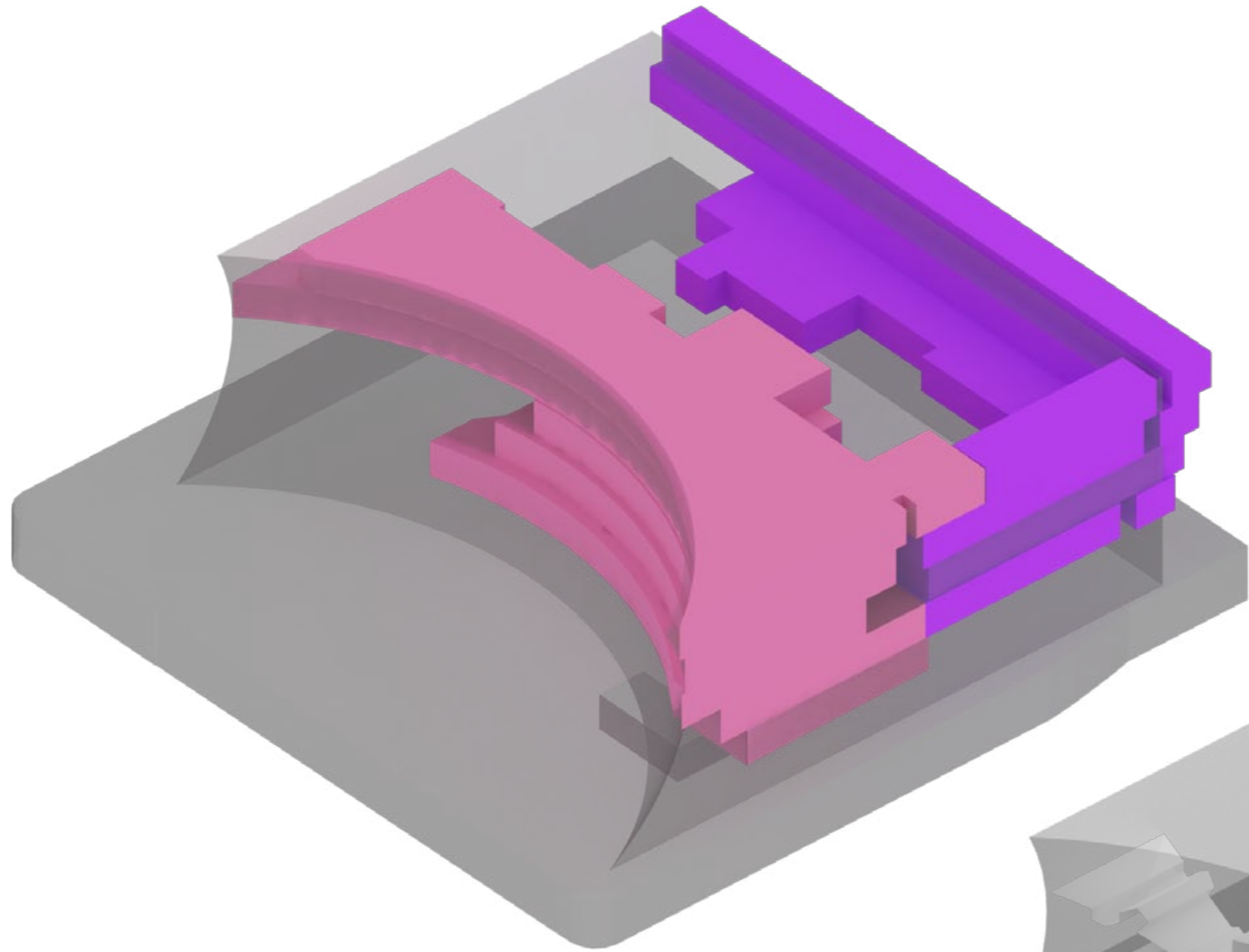


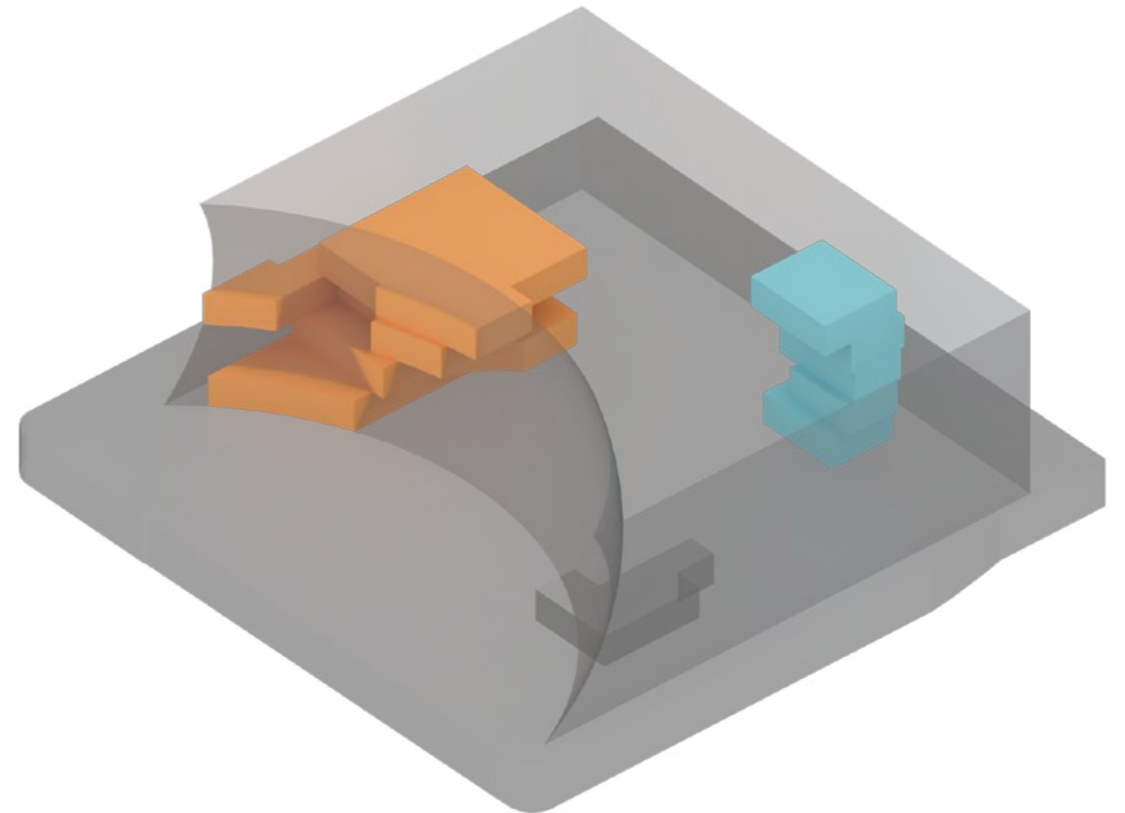
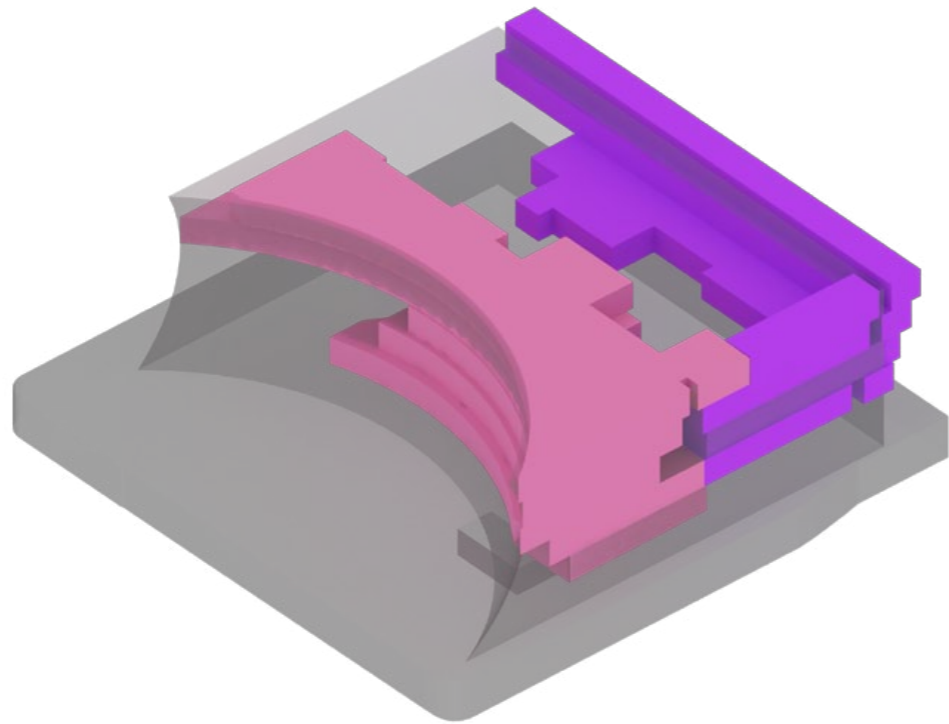
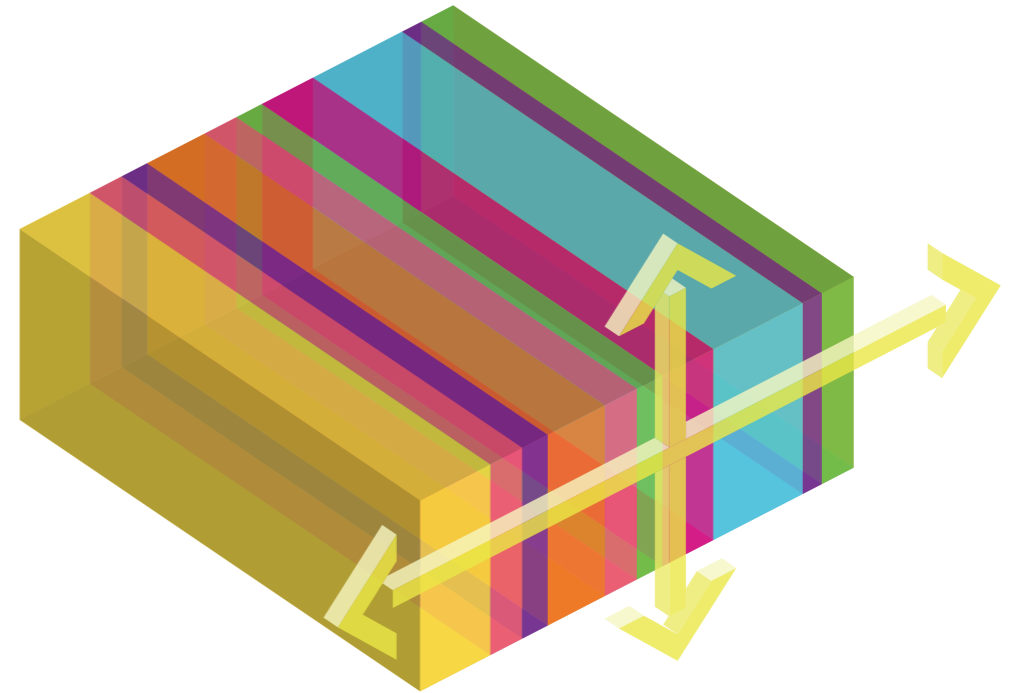
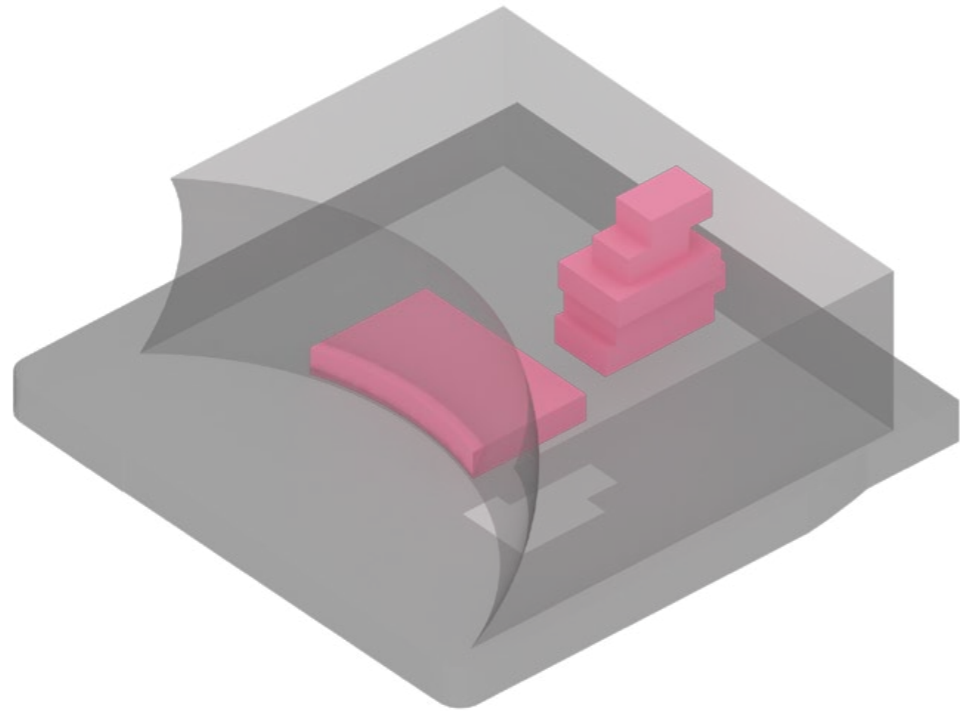


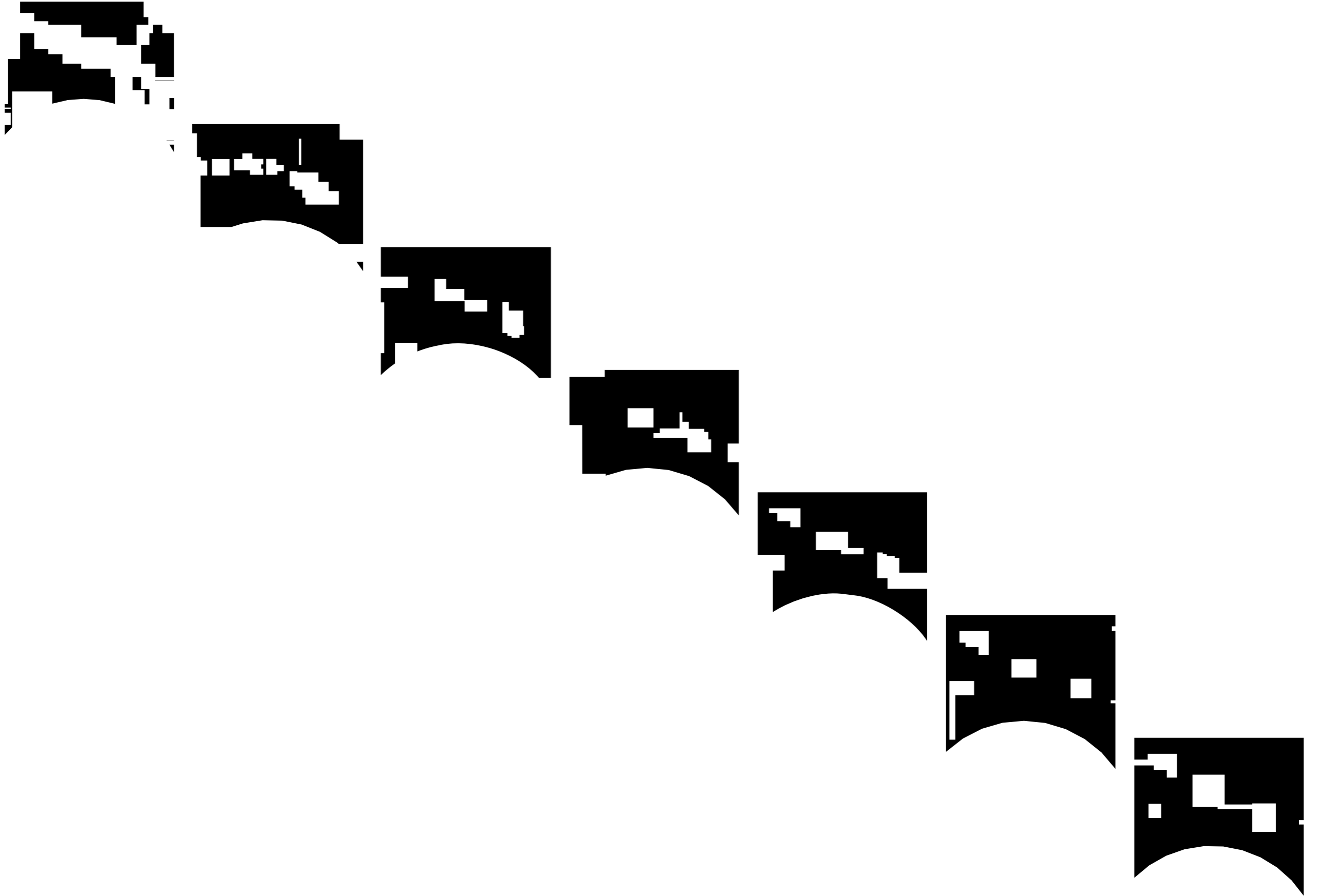






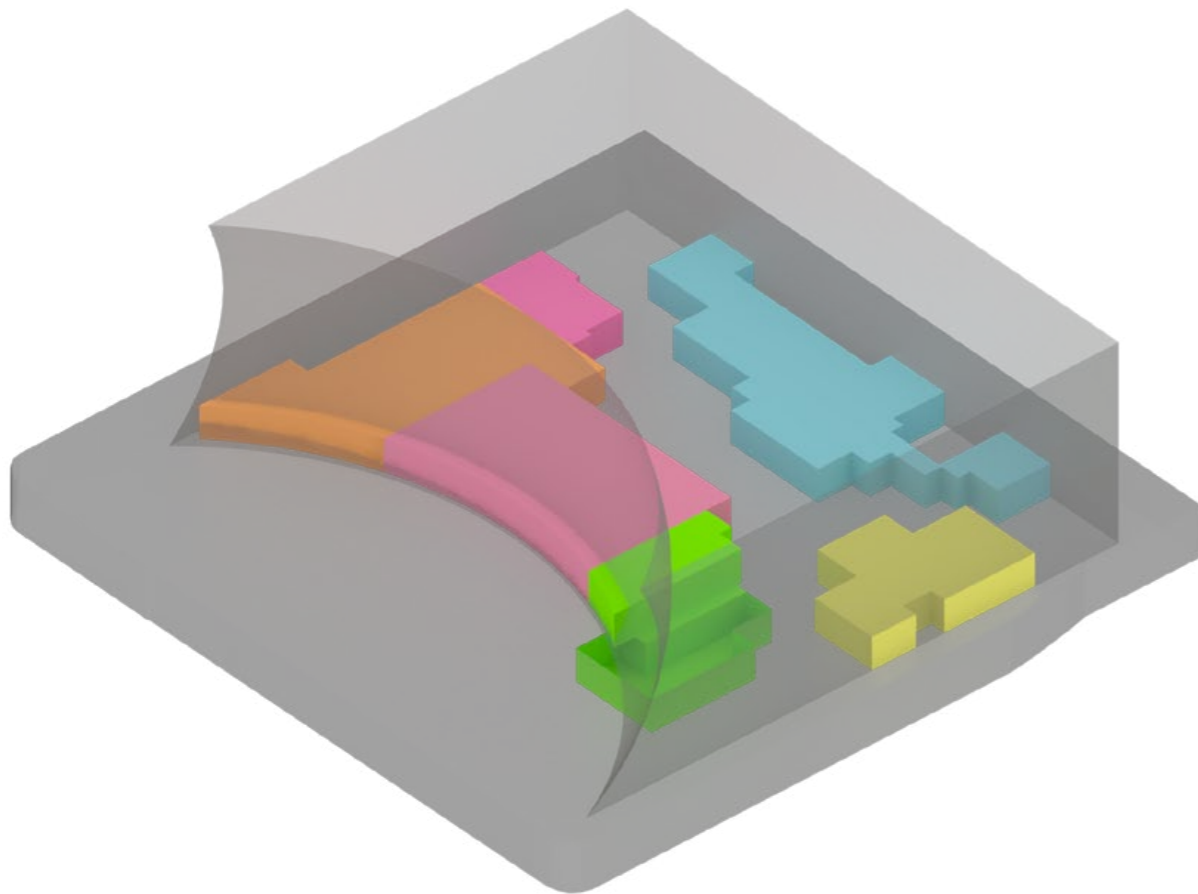
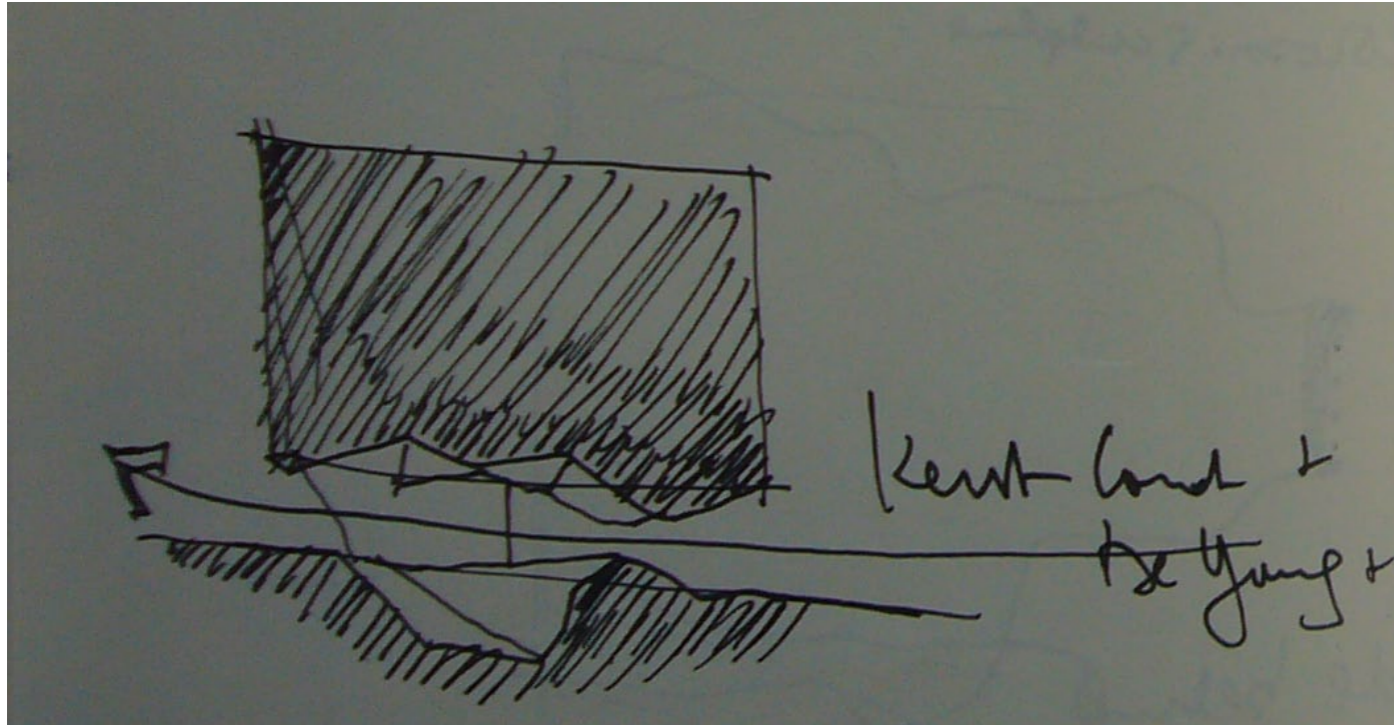






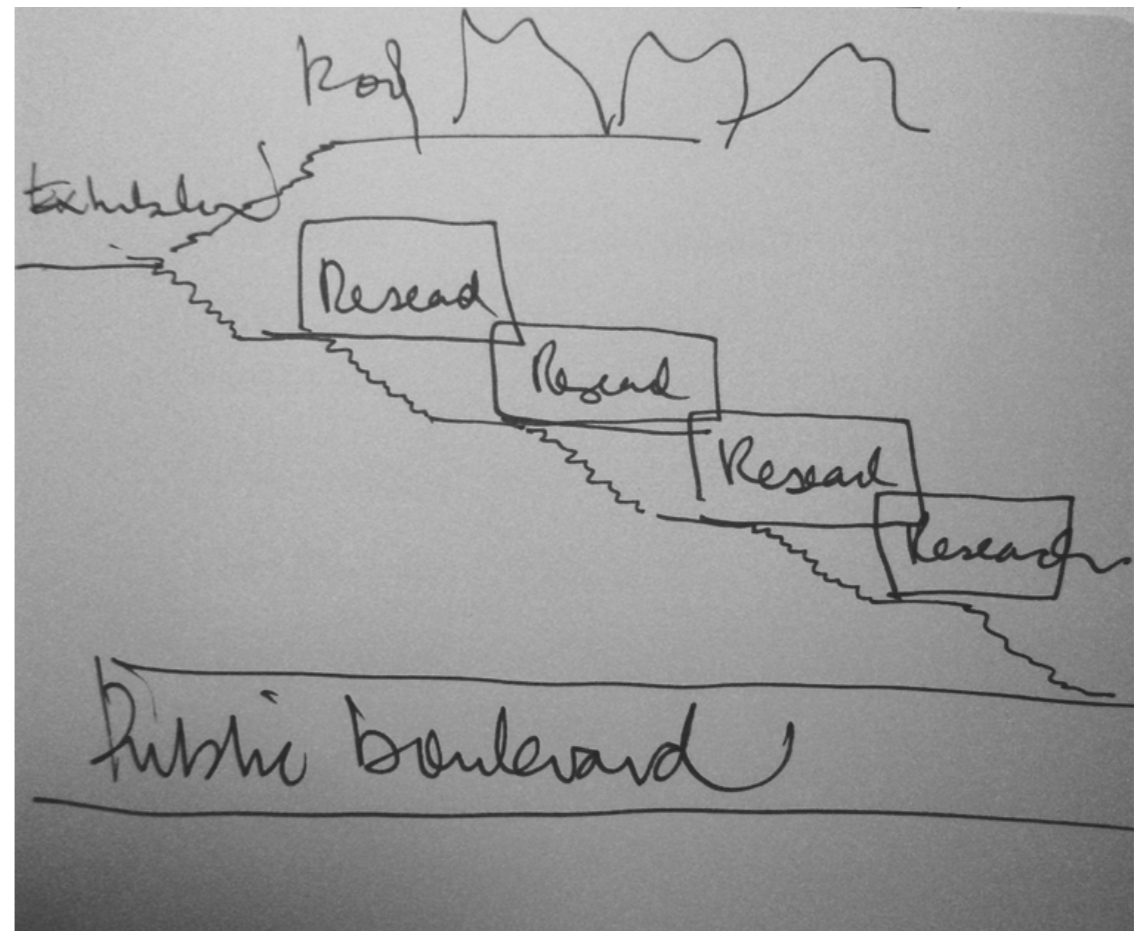
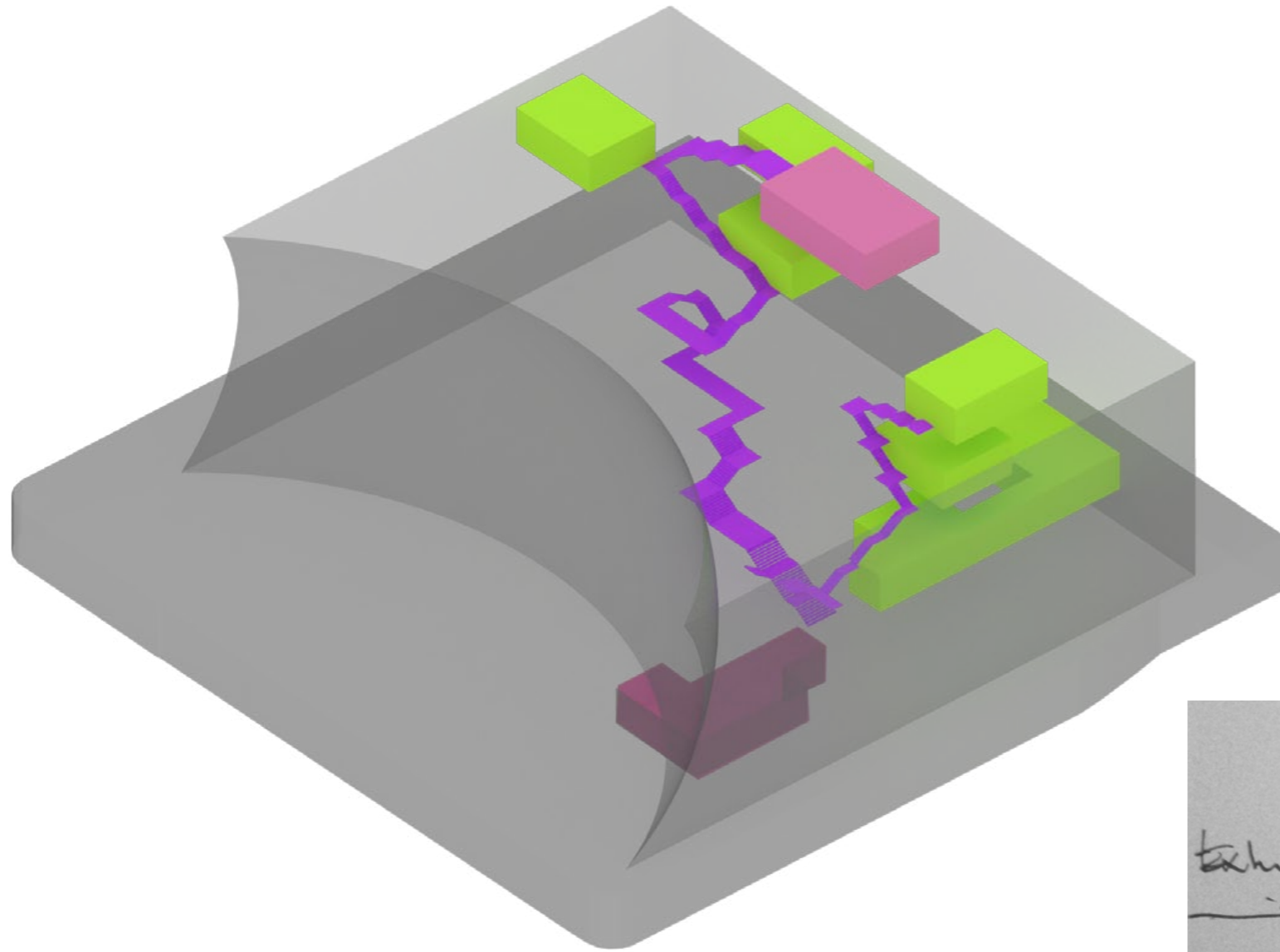
DIAGRAM_VOID FIGURE GROUND





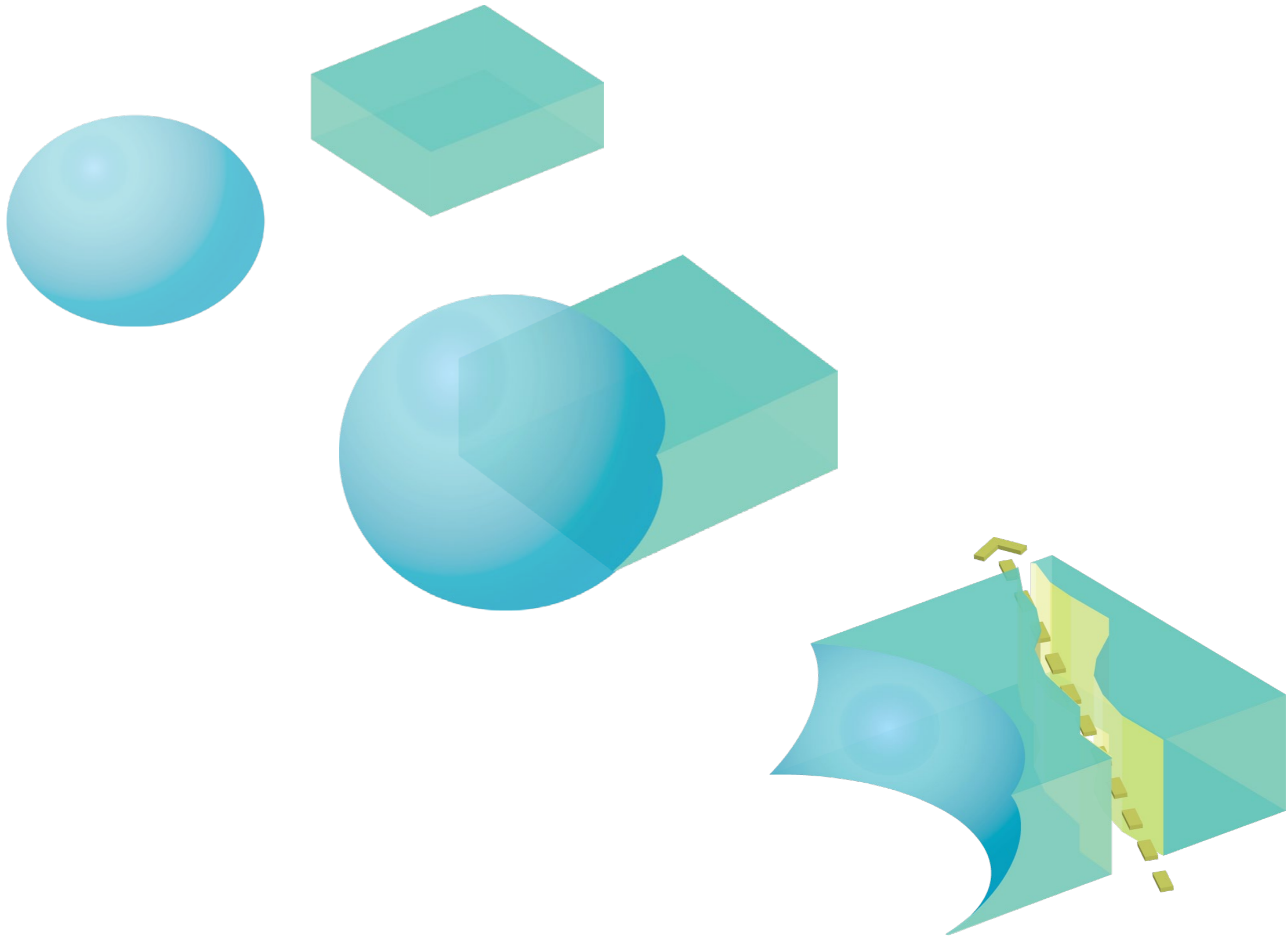
LIBRARY LECTURE STAFF STUDENT WORKSHOP ATTRACTORS RESEARCH



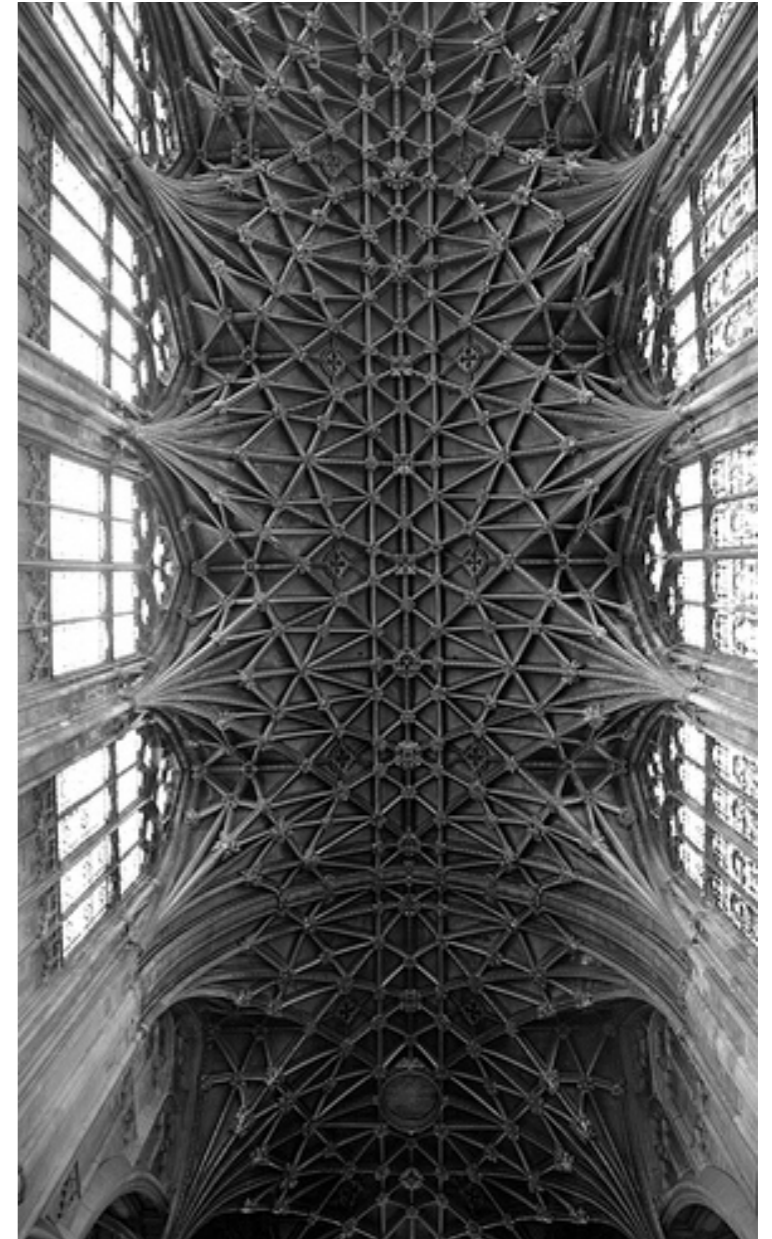
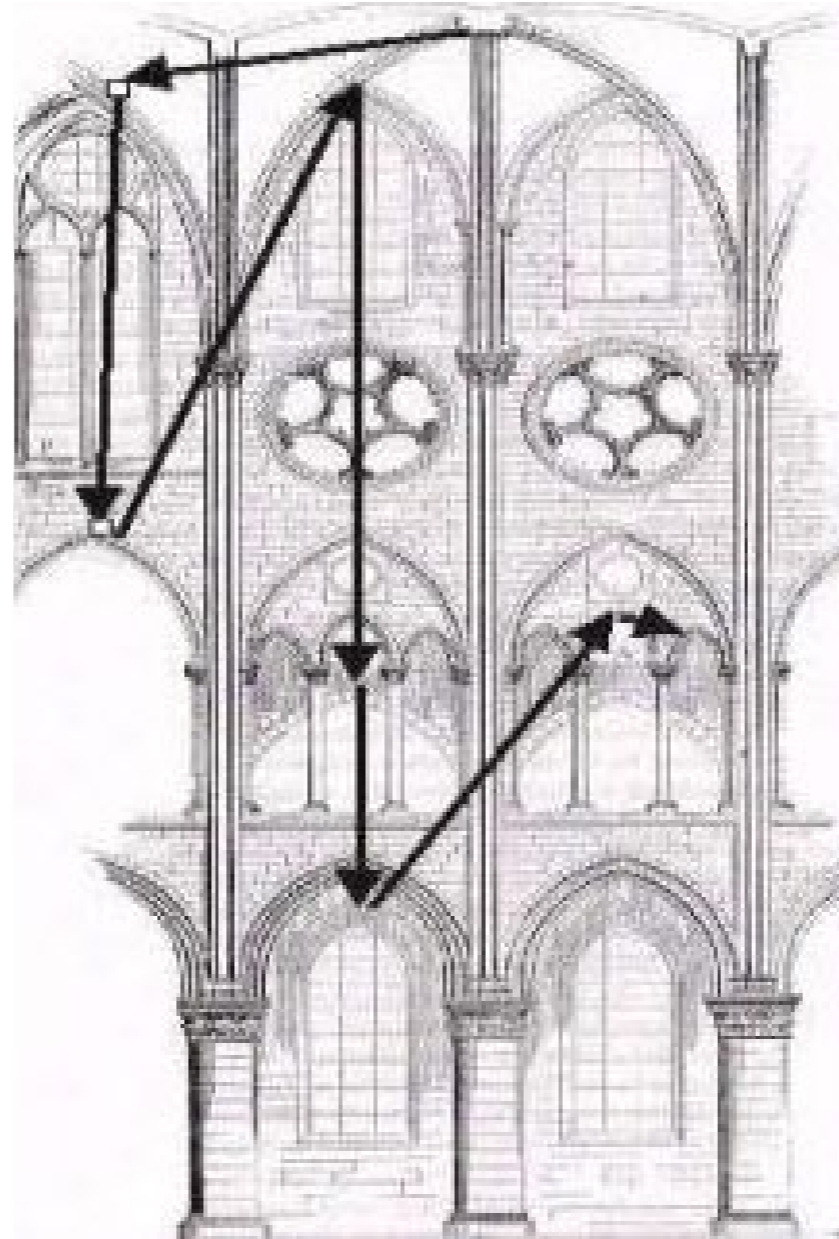
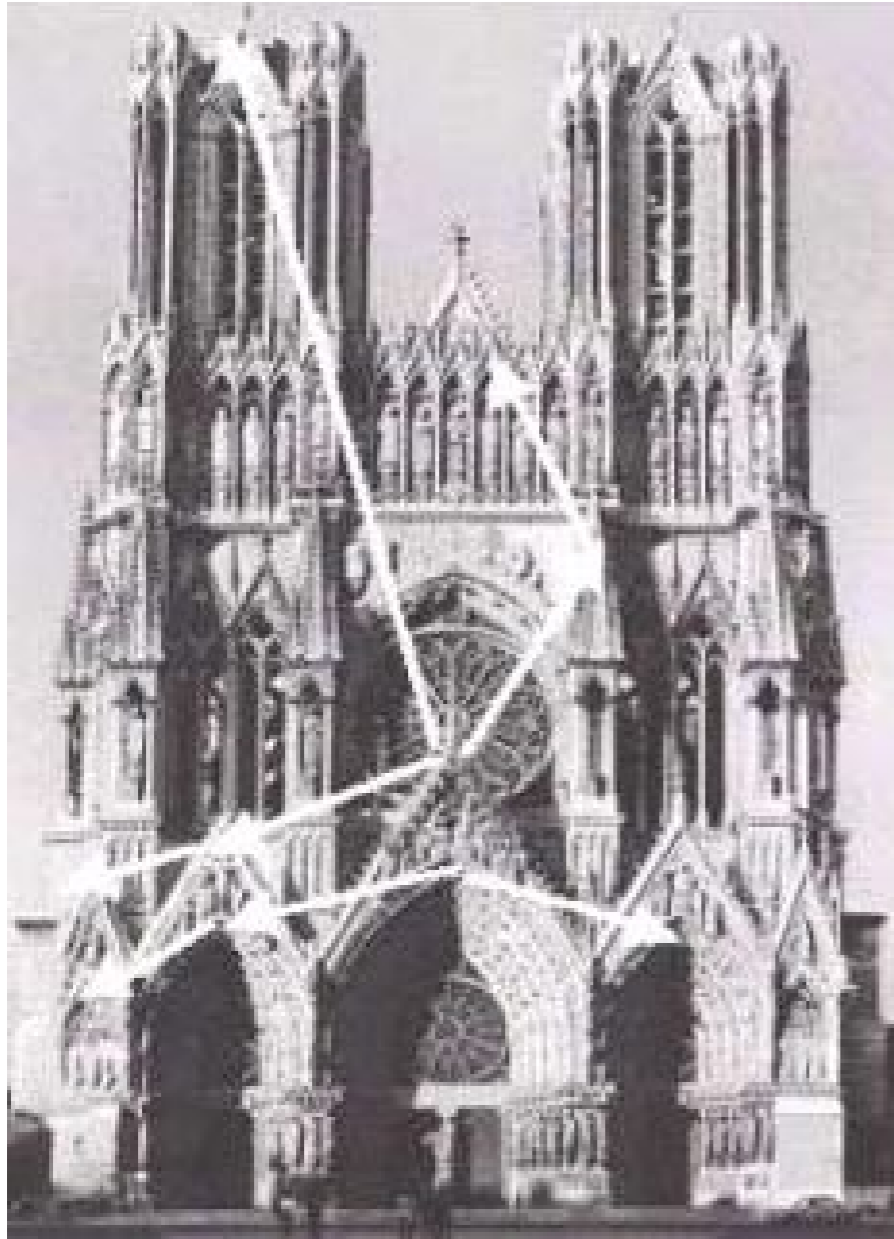


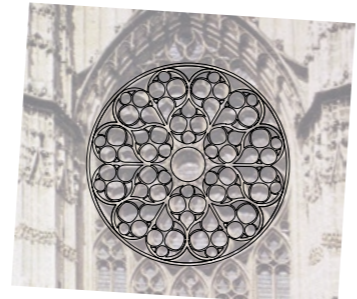
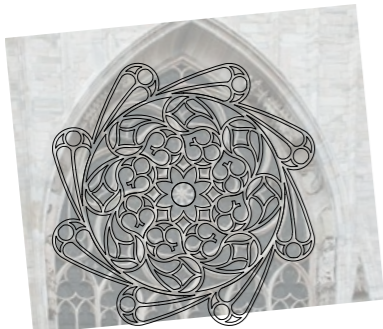
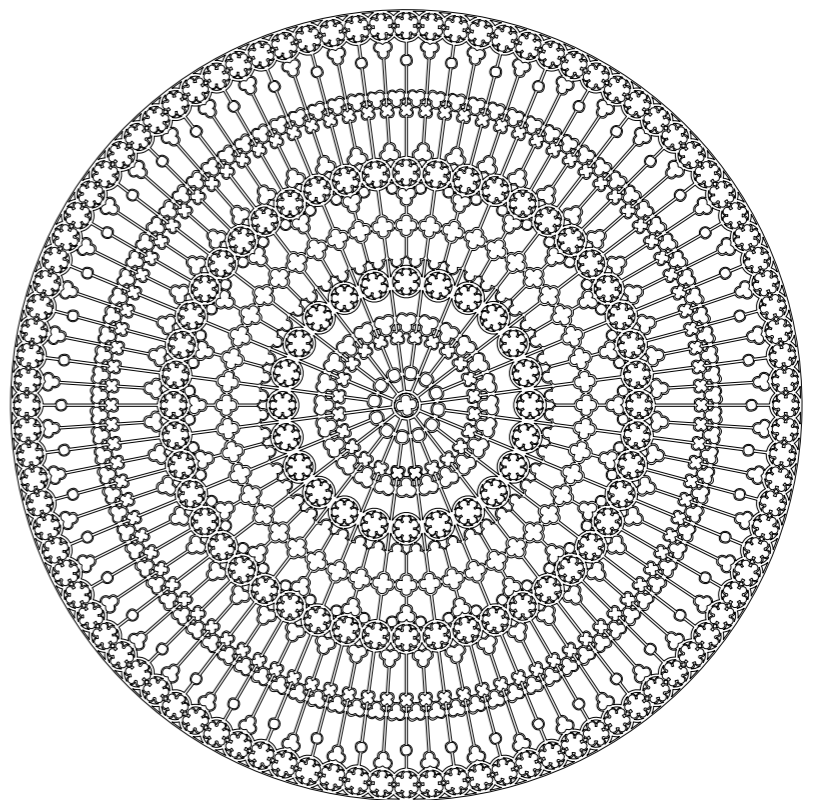
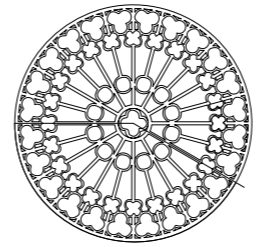
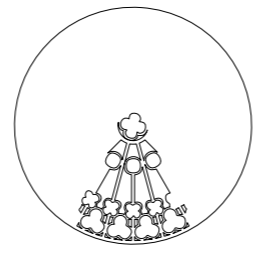
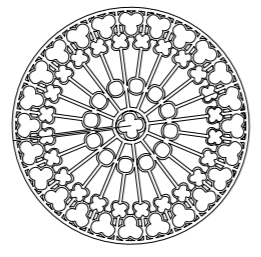
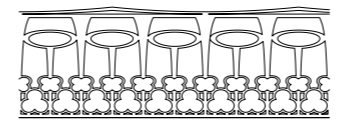
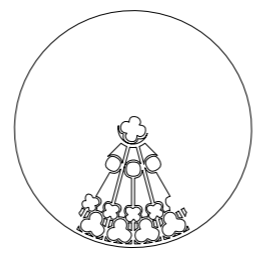
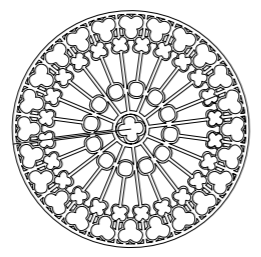
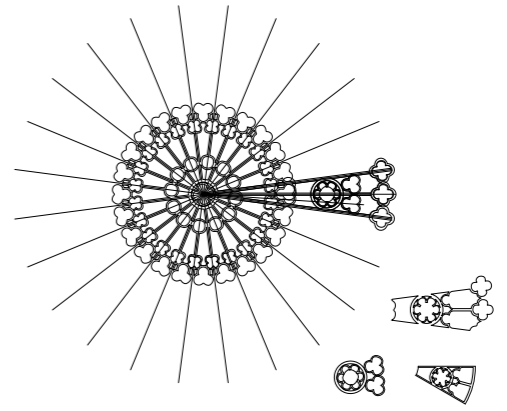
■ LIBRARY
 ■ LECTURE
 ■ STAFF
 ■ STUDENT
 ■ WORKSHOP
 ■ ATTRACTORS
 ■ RESEARCH

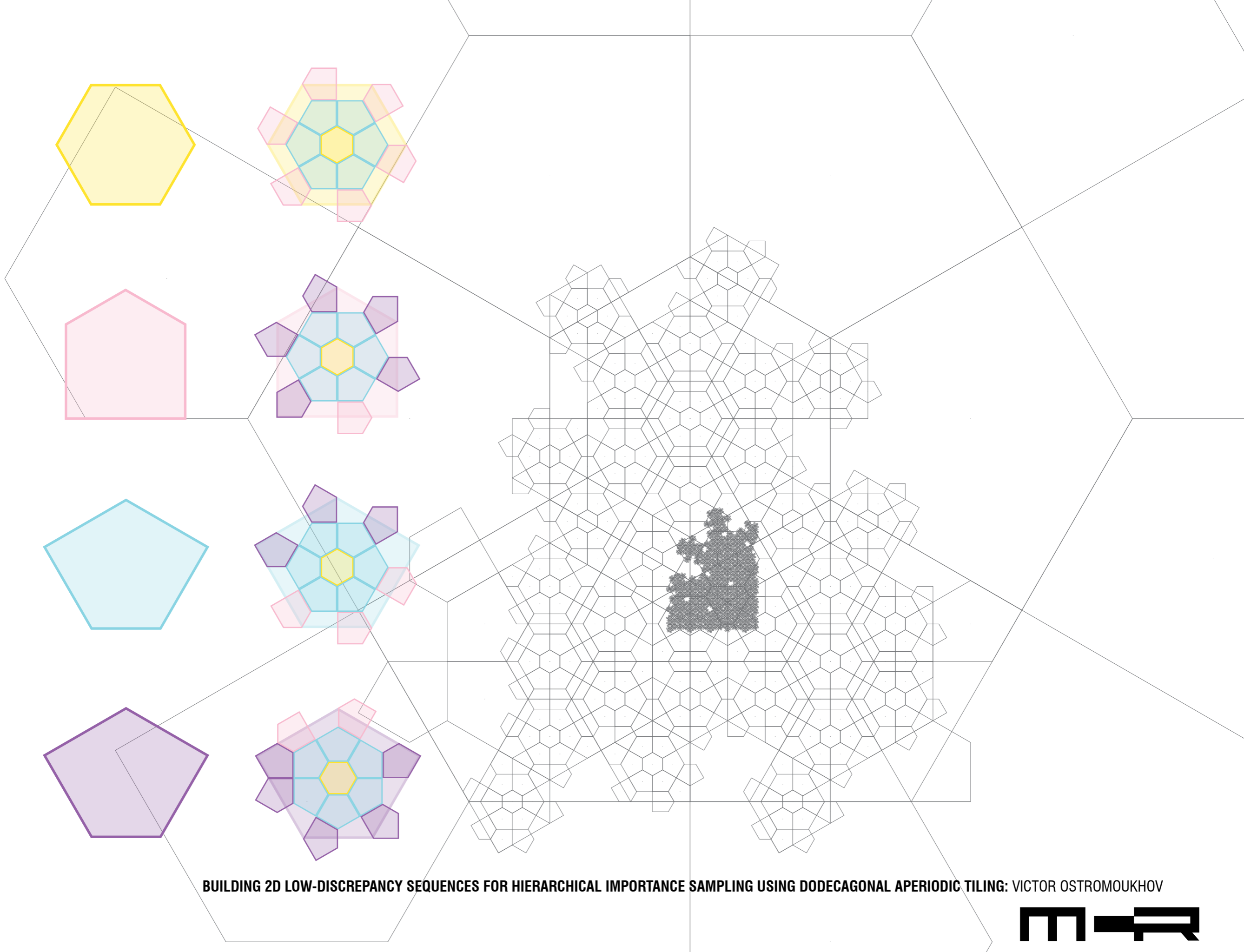






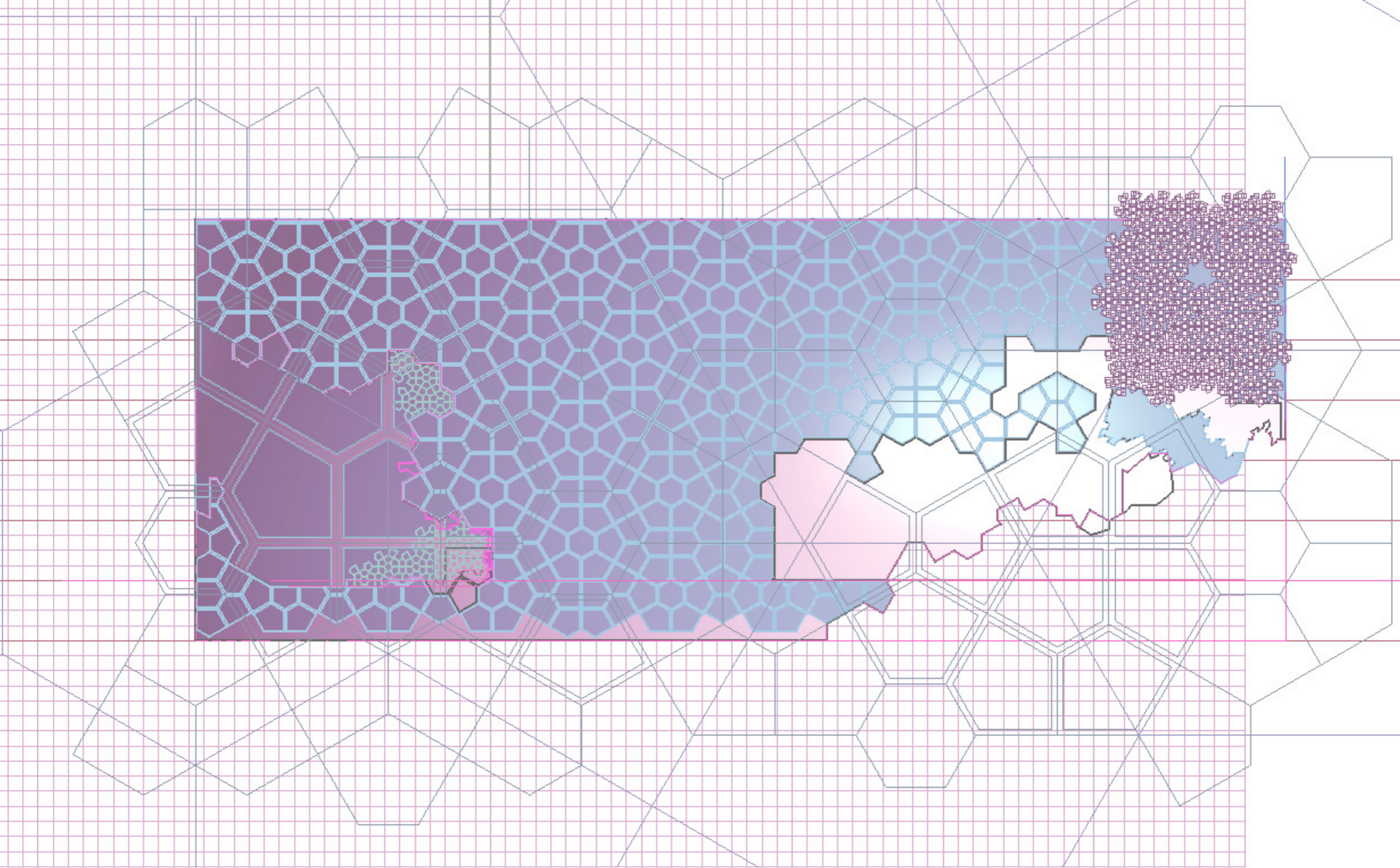






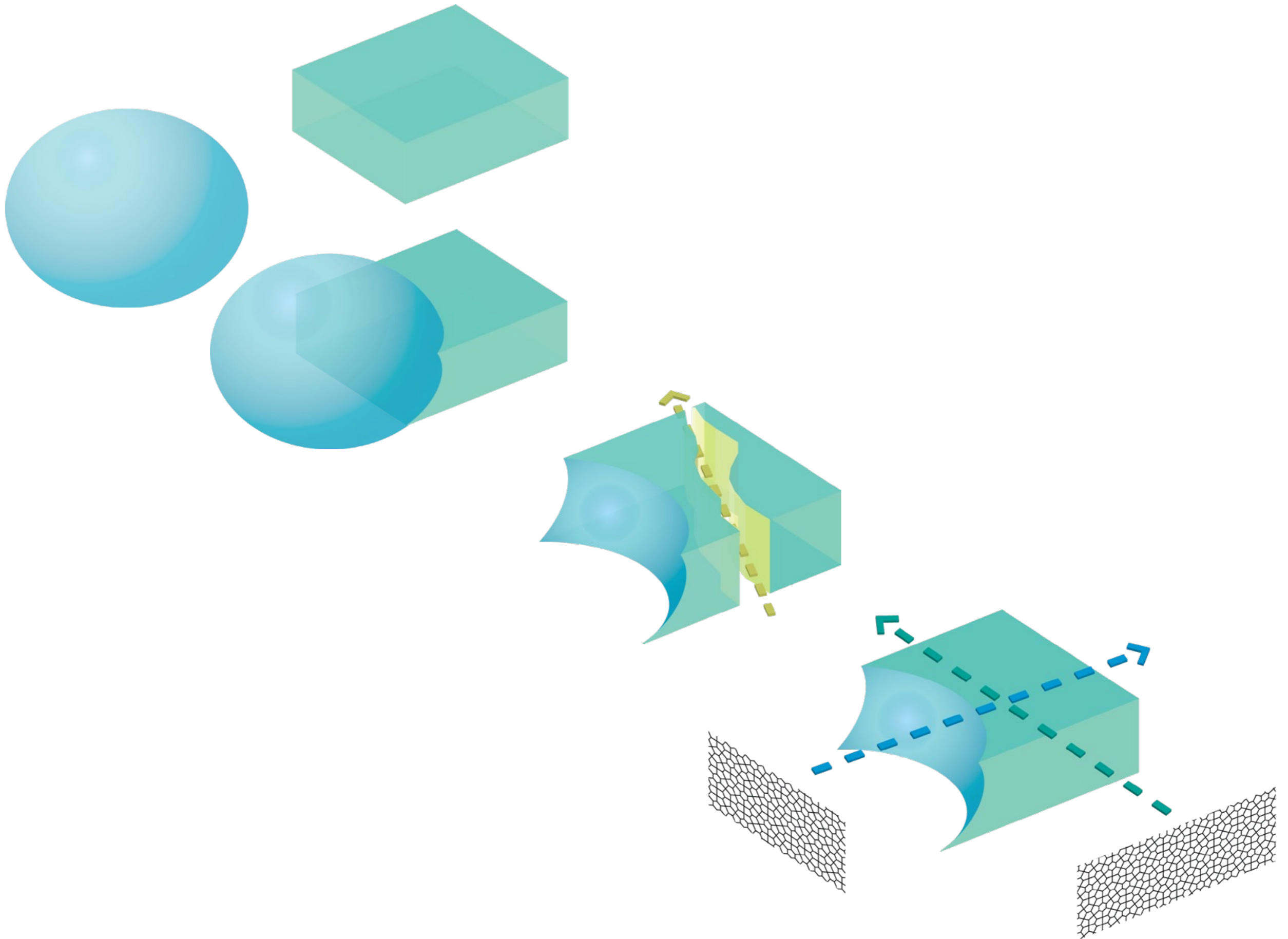
BUILDING 2D LOW-DISCREPANCY SEQUENCES FOR HIERARCHICAL IMPORTANCE SAMPLING USING DODECAGONAL APERIODIC TILING: VICTOR OSTROMOUKHOV

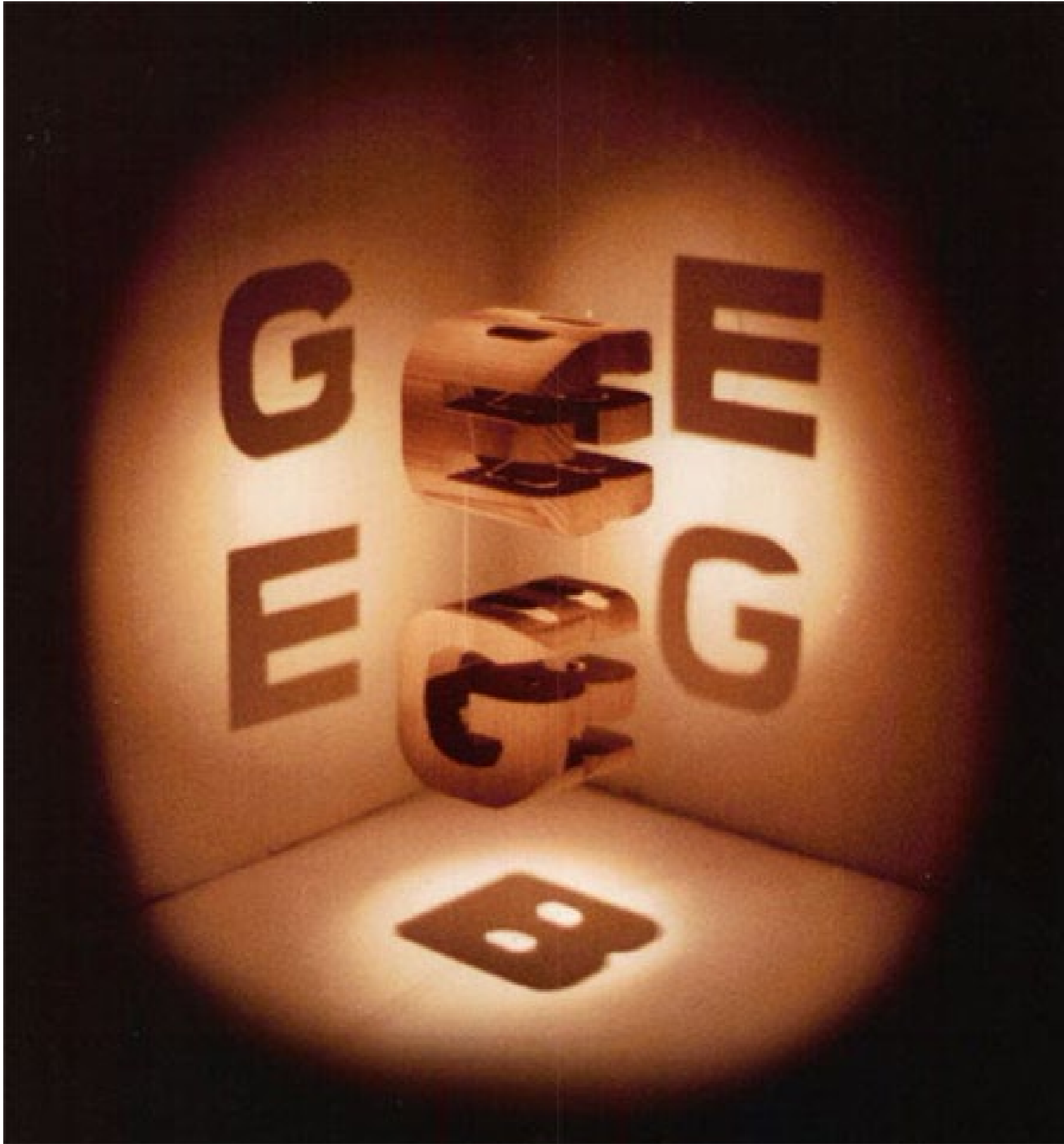


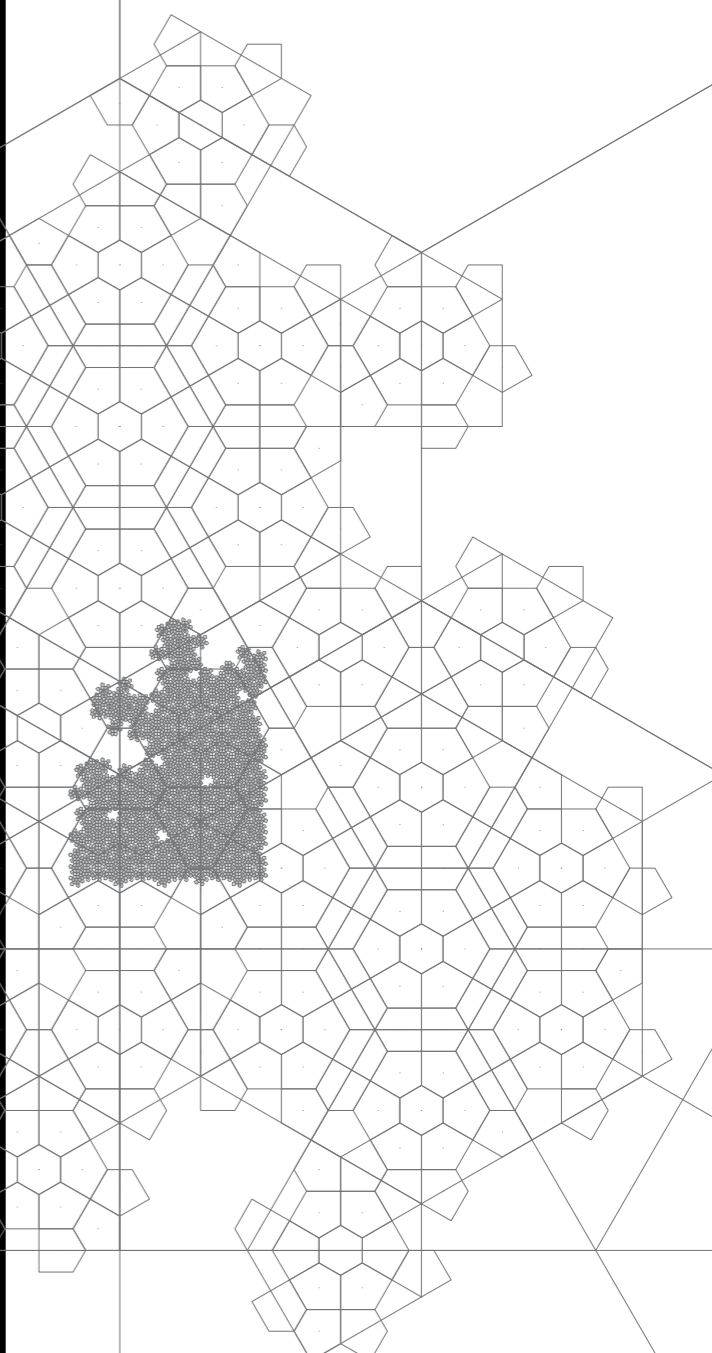
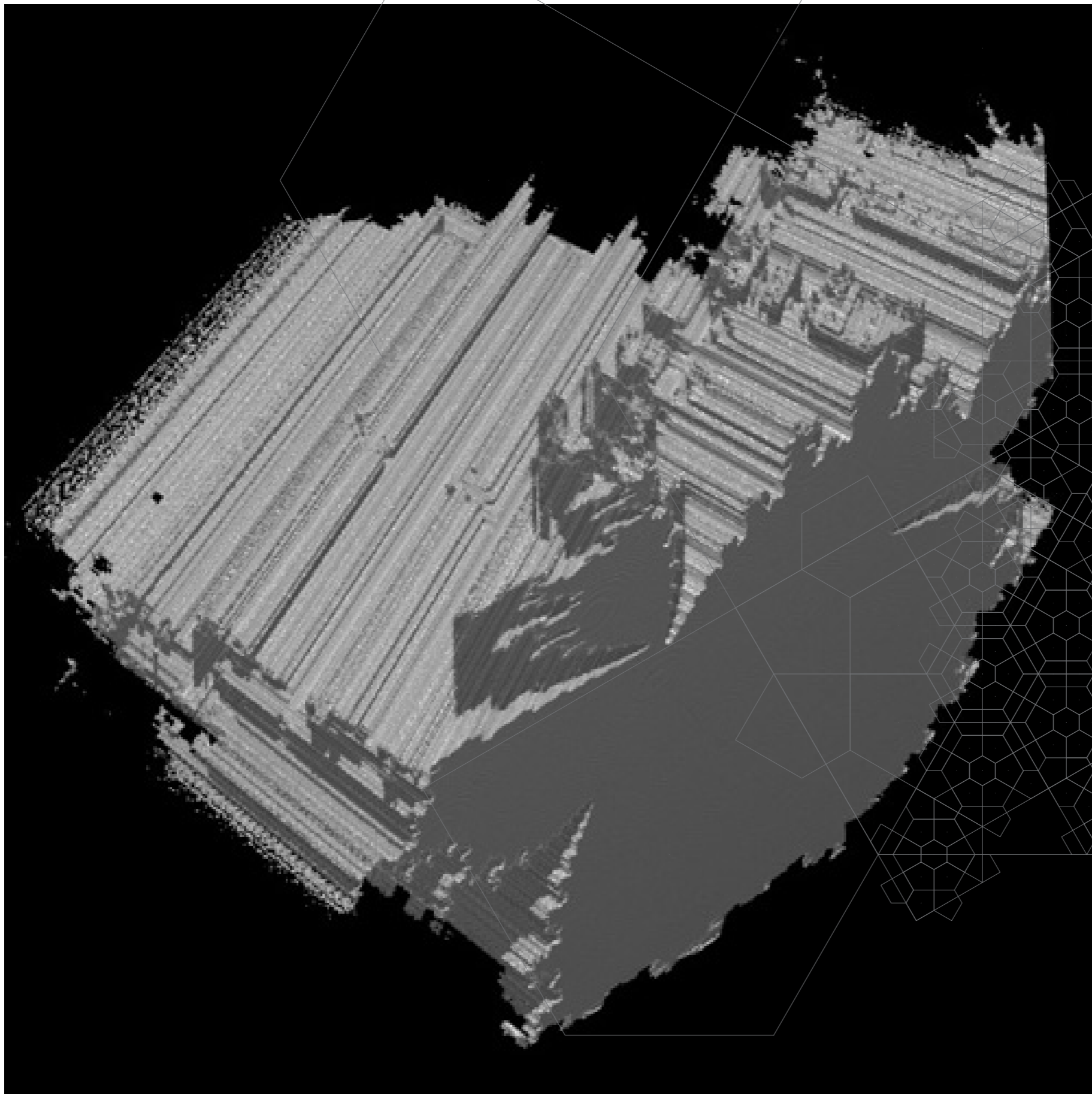


SOUTH ELEVATION



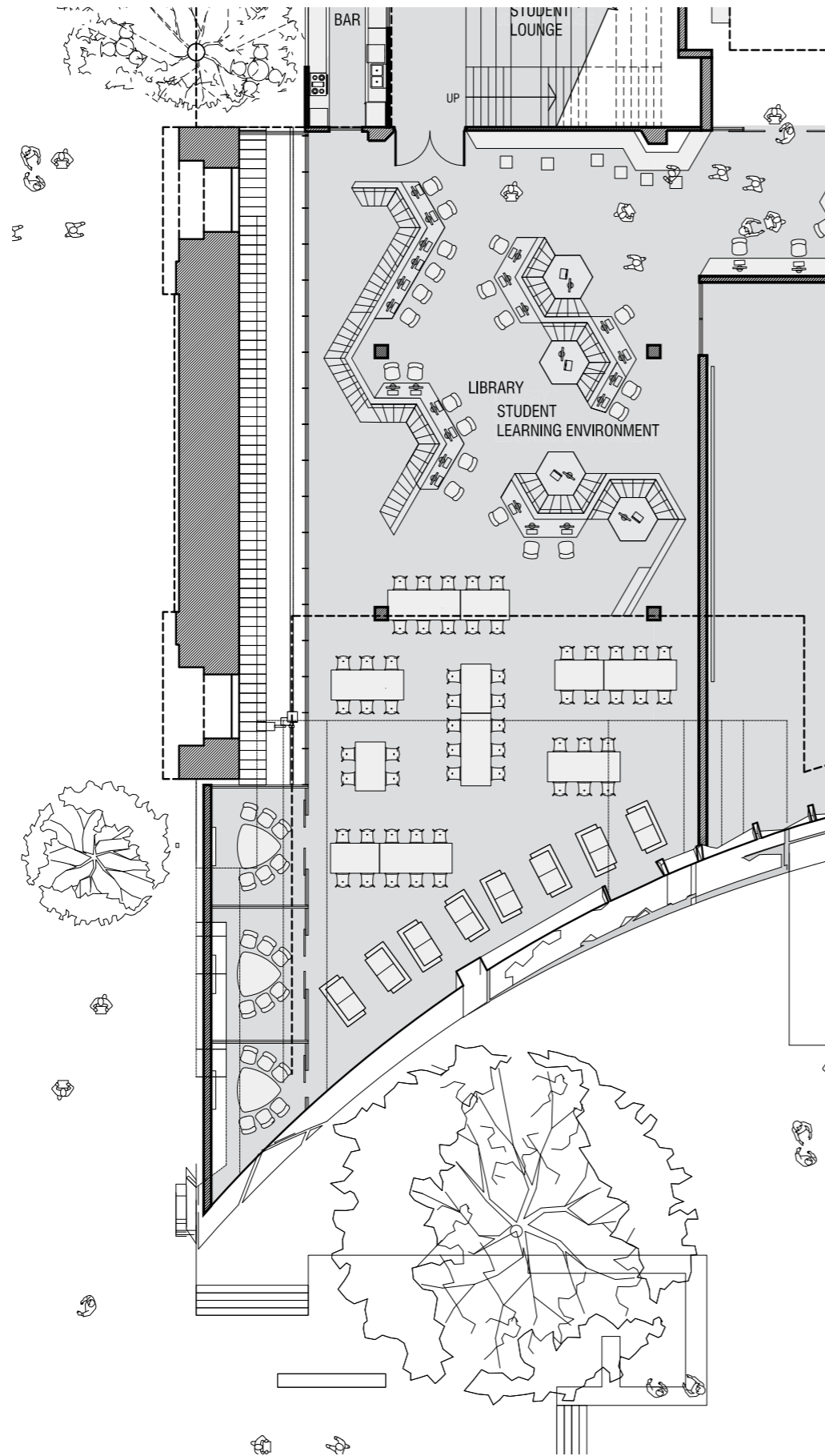


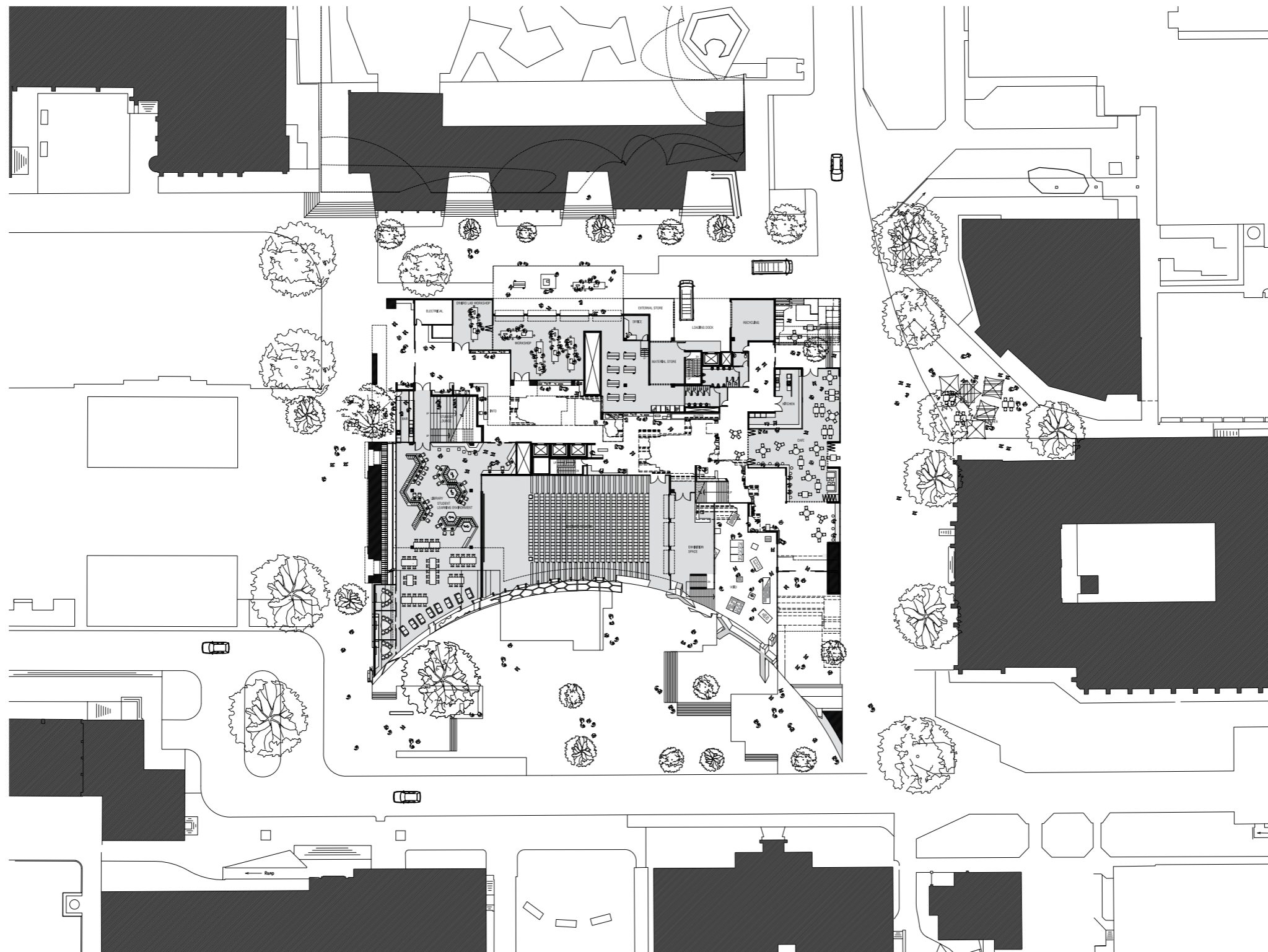






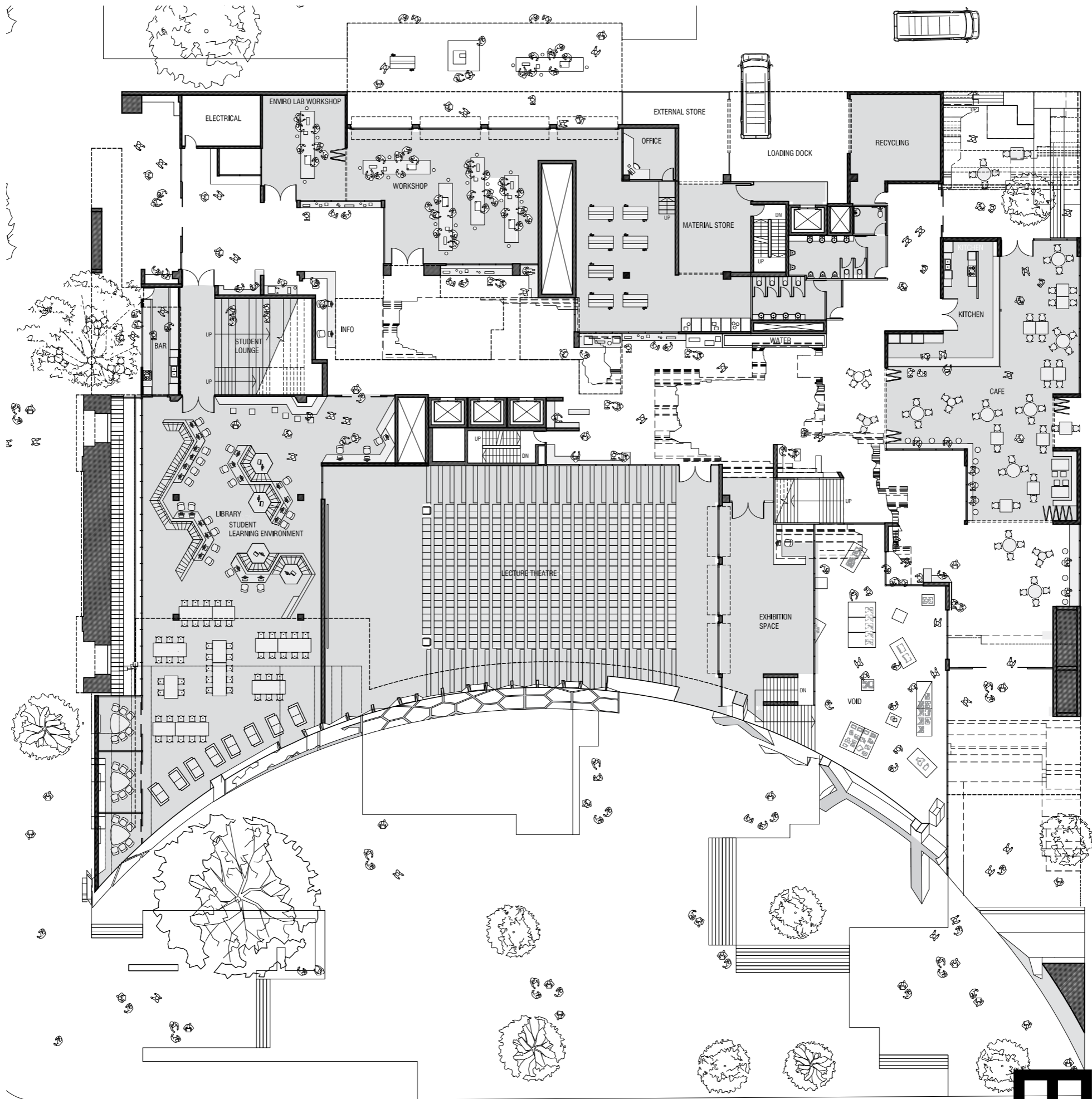






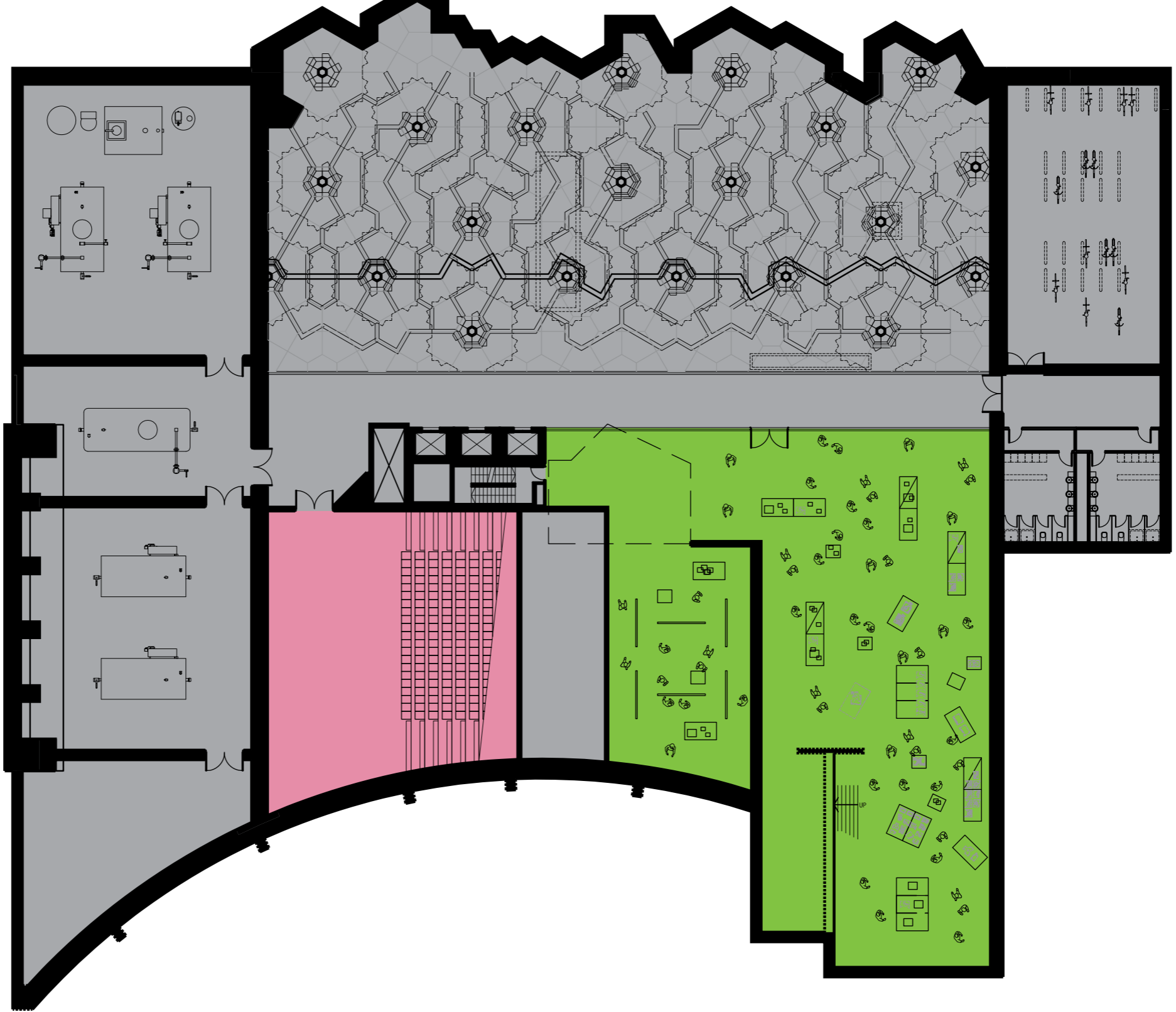
CONTEXT PLAN





GROUND FLOOR PLAN





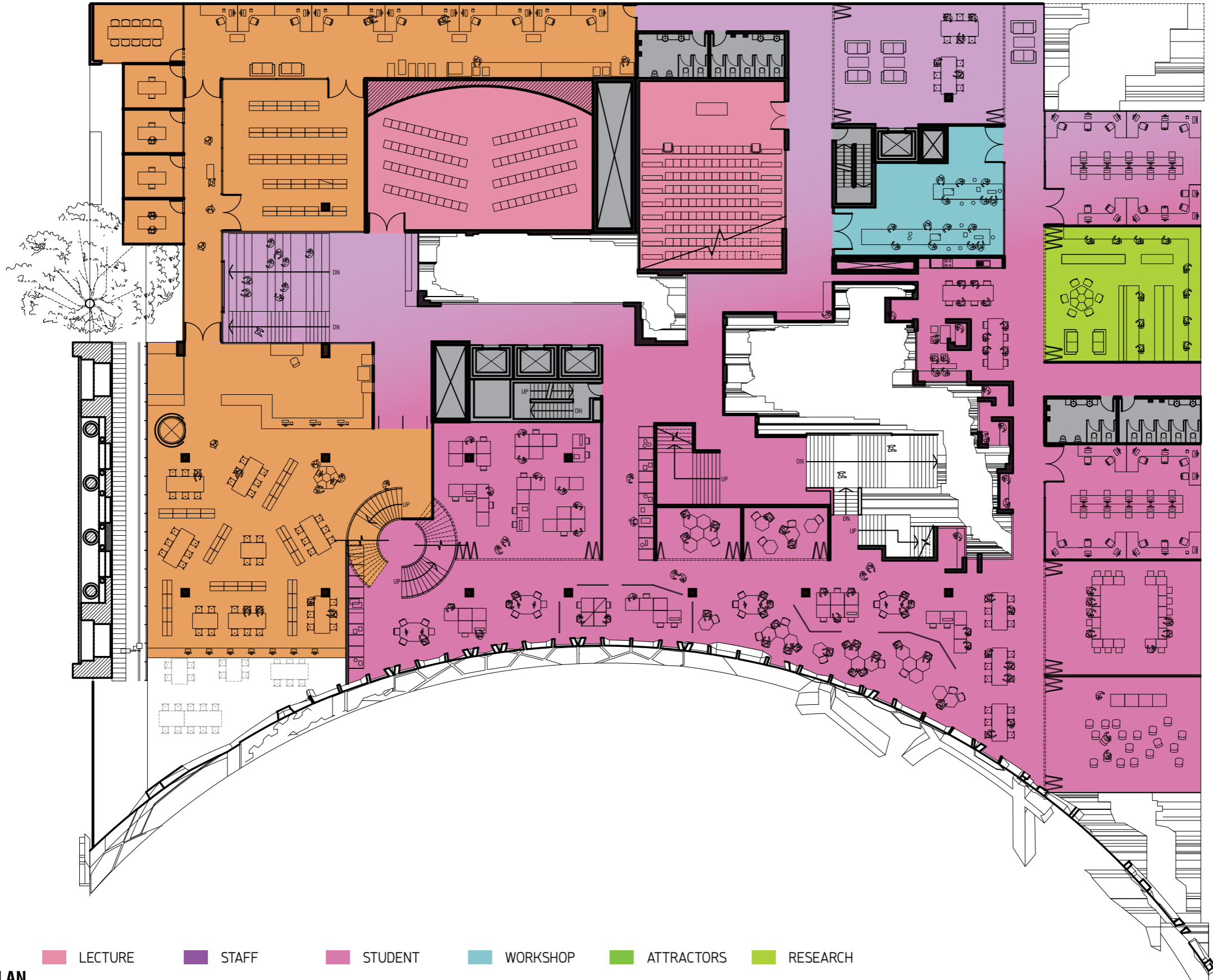
BASEMENT PLAN





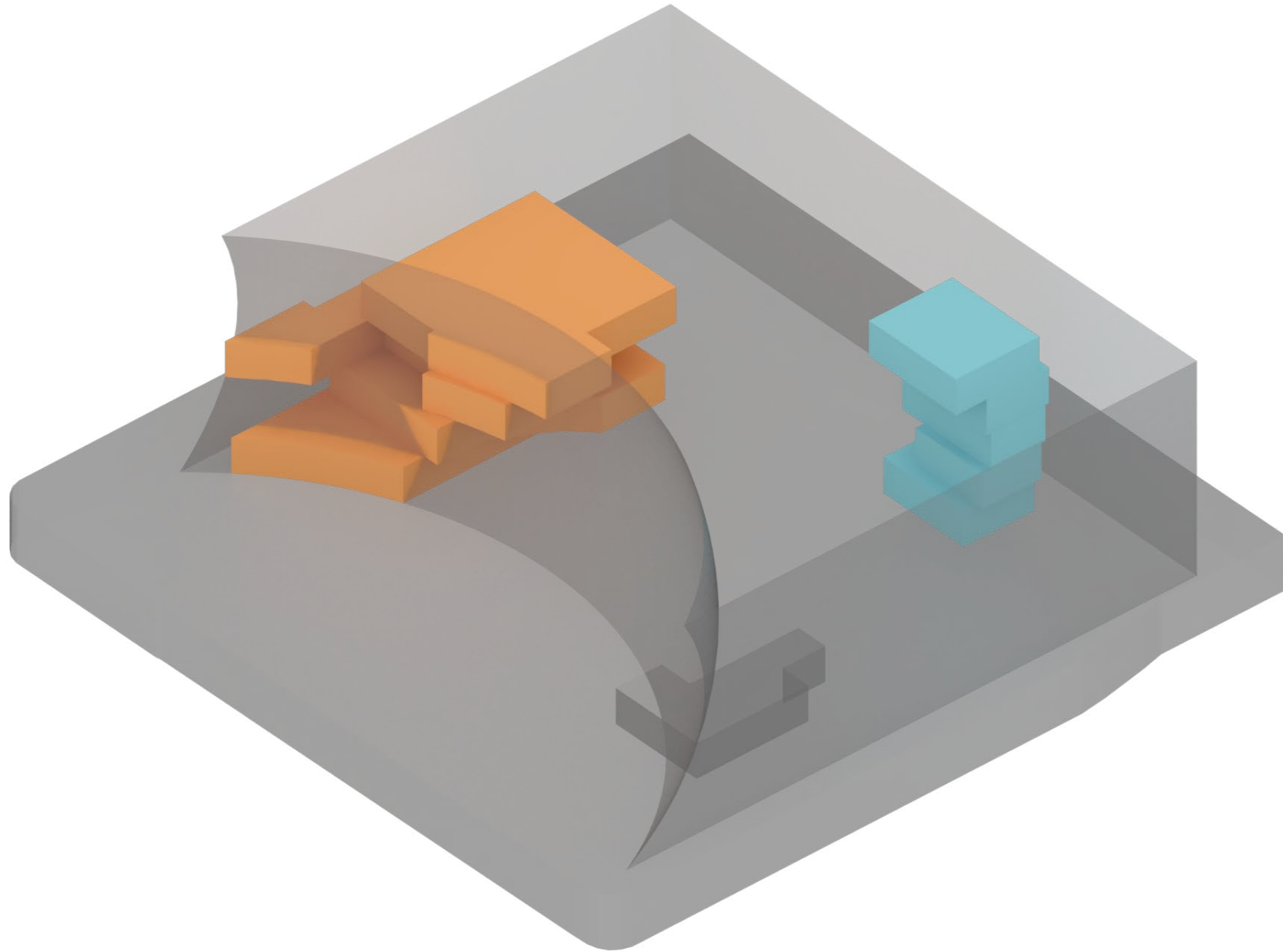
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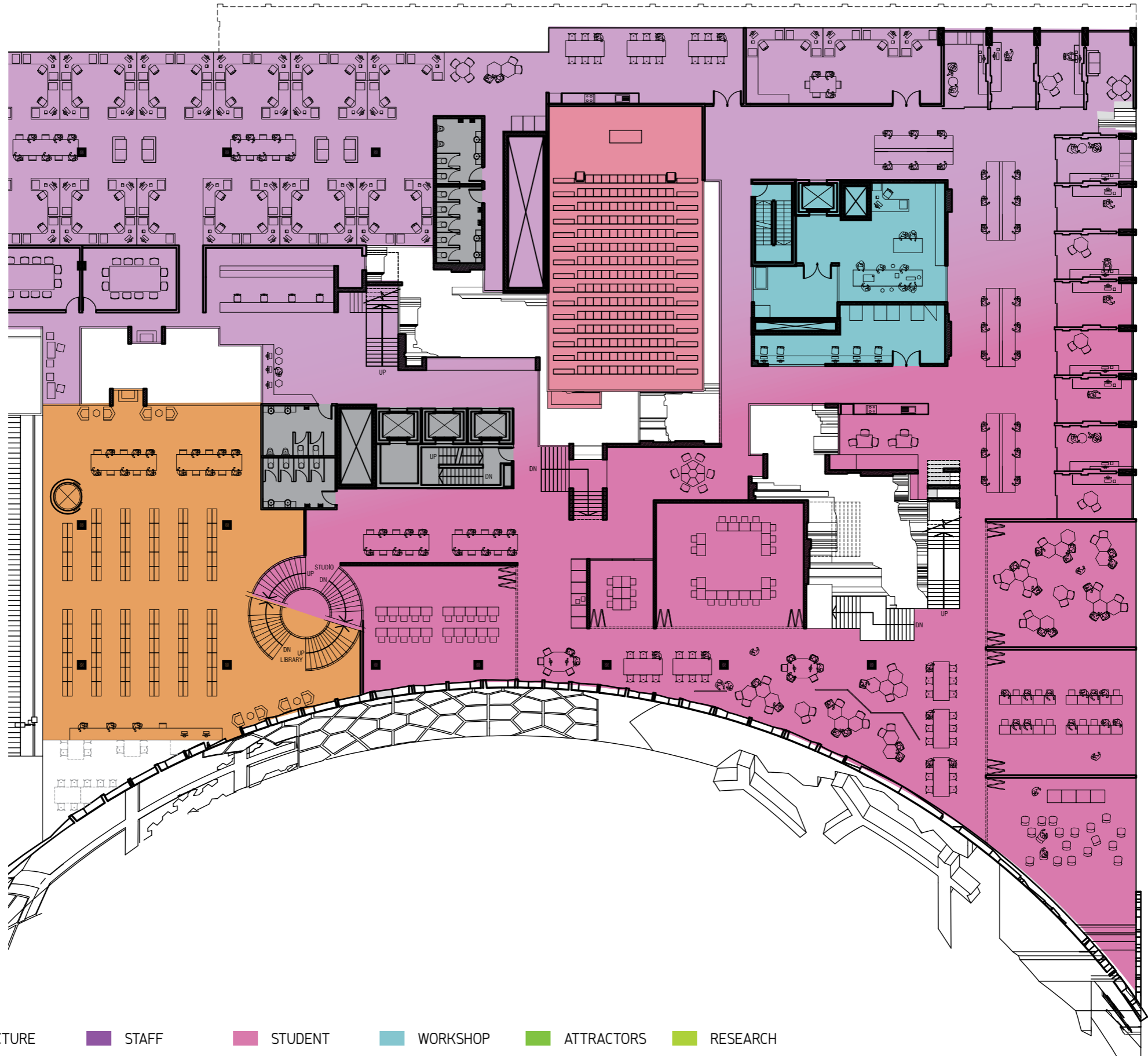
LIBRARY
 LECTURE
 STAFF
 STUDENT
 WORKSHOP
 ATTRACTORS
 RESEARCH
LEVEL 1 PLAN





LIBRARY LECTURE STAFF STUDENT WORKSHOP ATTRACTORS RESEARCH





- LIBRARY
- LECTURE
- STAFF
- STUDENT
- WORKSHOP
- ATTRACTORS
- RESEARCH

LEVEL 2 PLAN

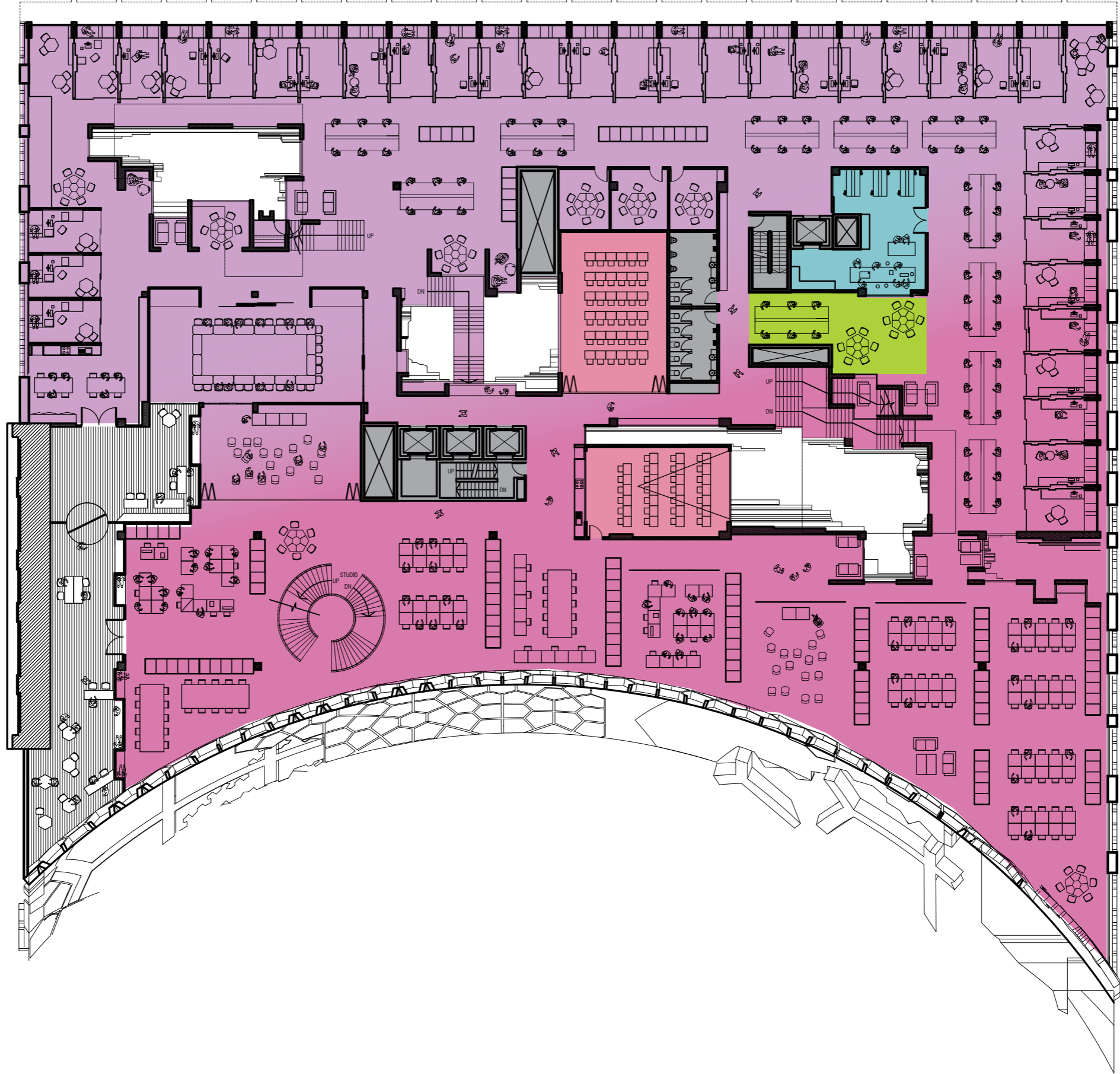




- LIBRARY
- LECTURE
- STAFF
- STUDENT
- WORKSHOP
- ATTRACTORS
- RESEARCH

LEVEL 3 PLAN





- LIBRARY
- LECTURE
- STAFF
- STUDENT
- WORKSHOP
- ATTRACTORS
- RESEARCH

LEVEL 4 PLAN

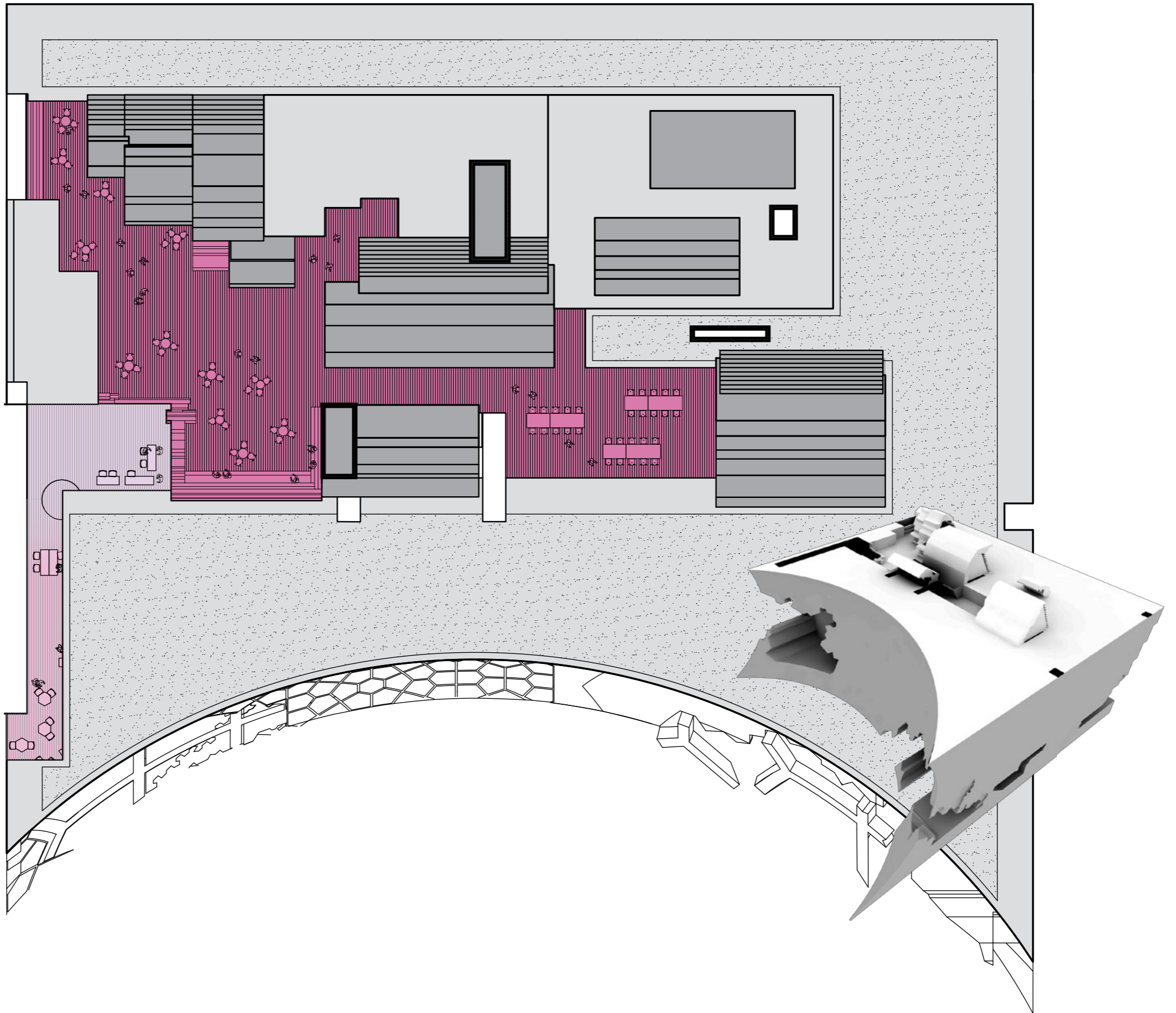




LIBRARY
 LECTURE
 STAFF
 STUDENT
 WORKSHOP
 ATTRACTORS
 RESEARCH

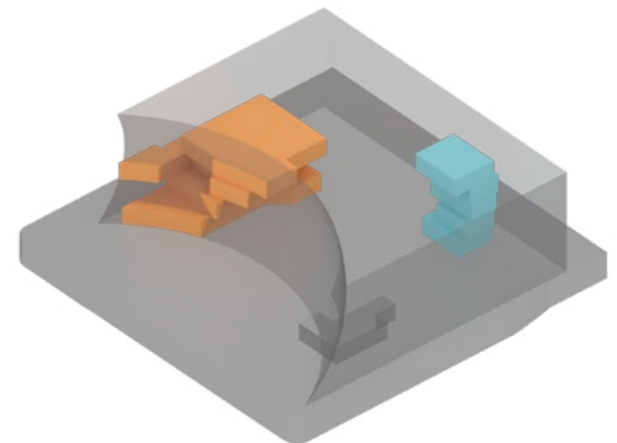
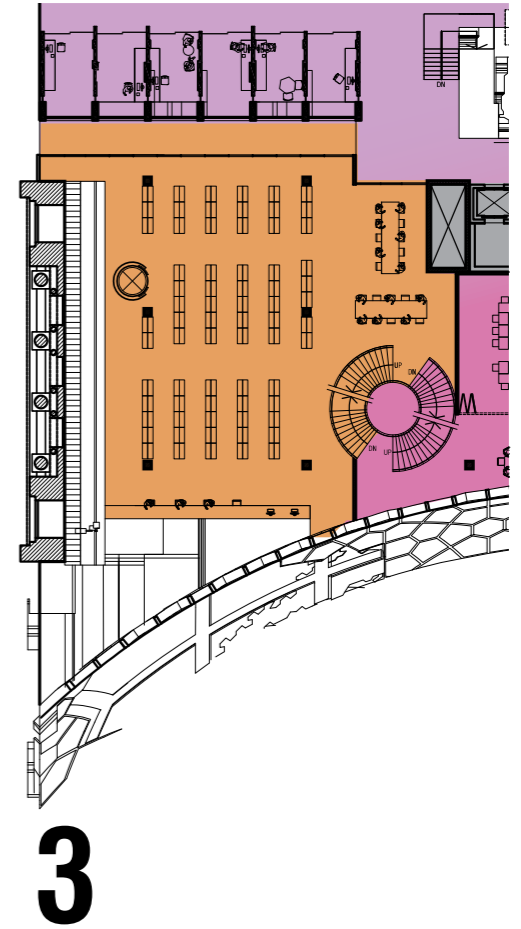
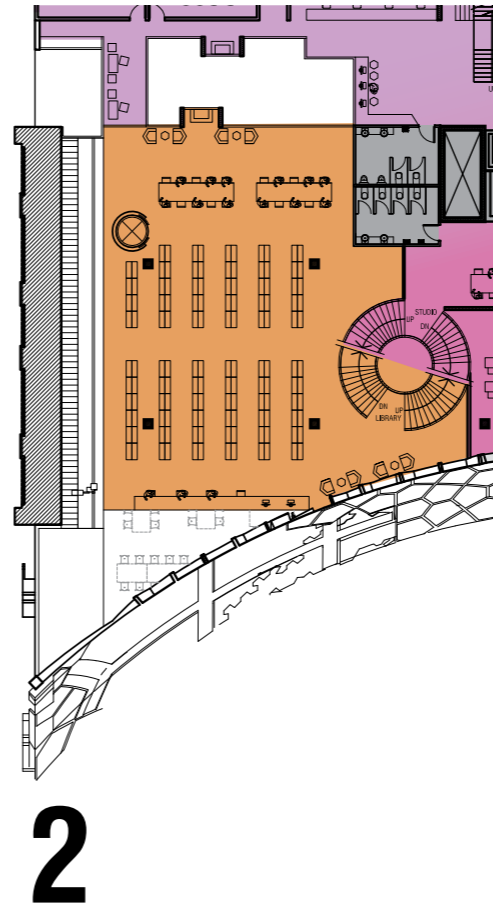
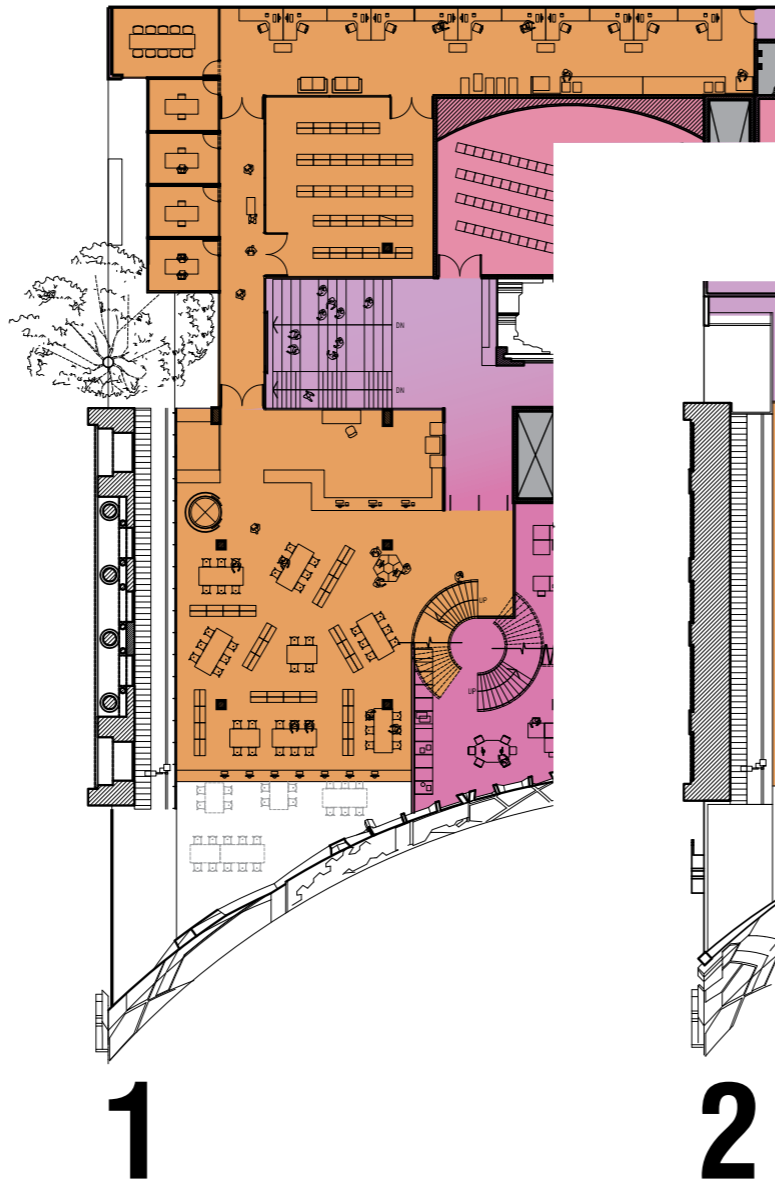
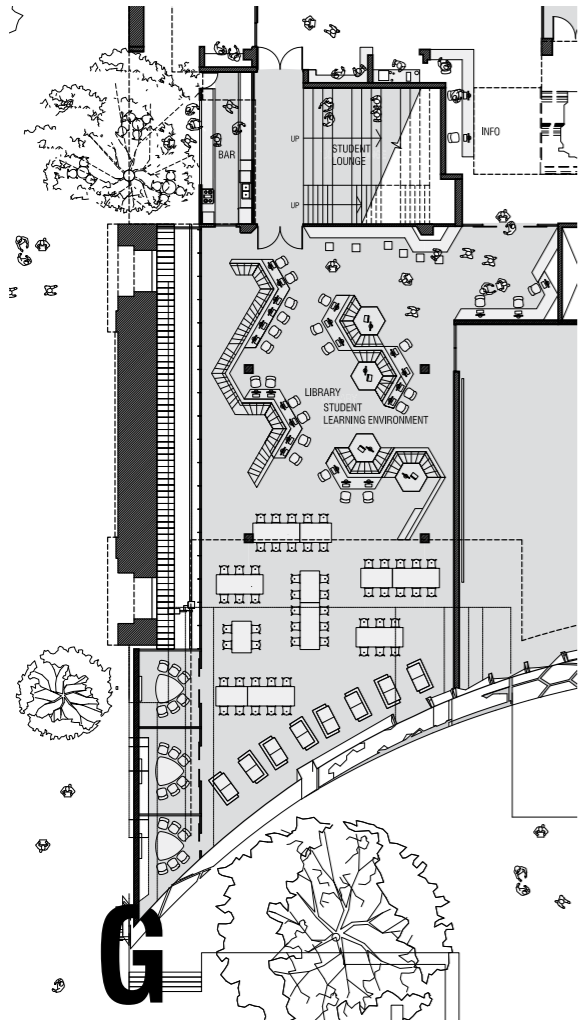
LEVEL 5 PLAN

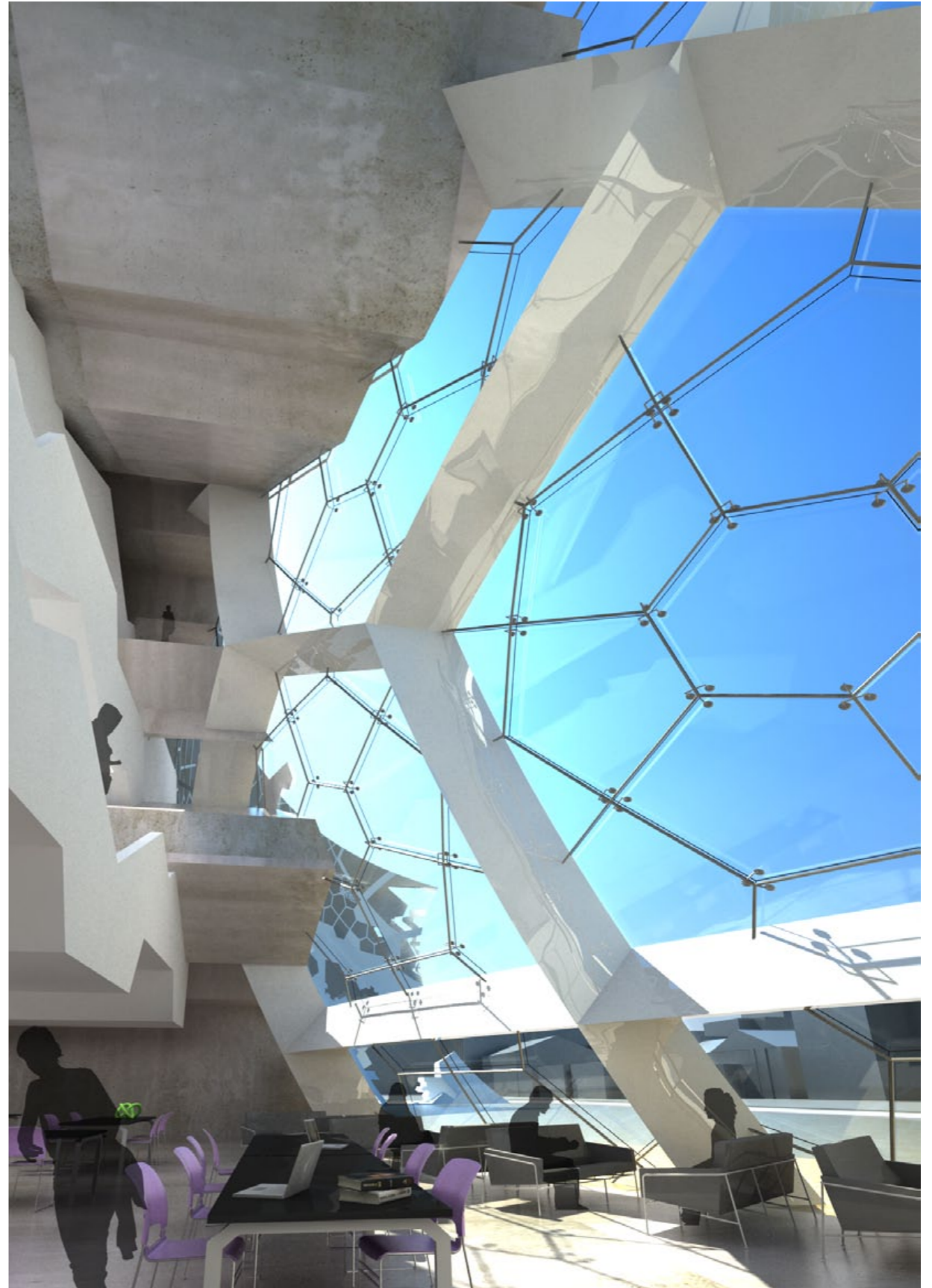
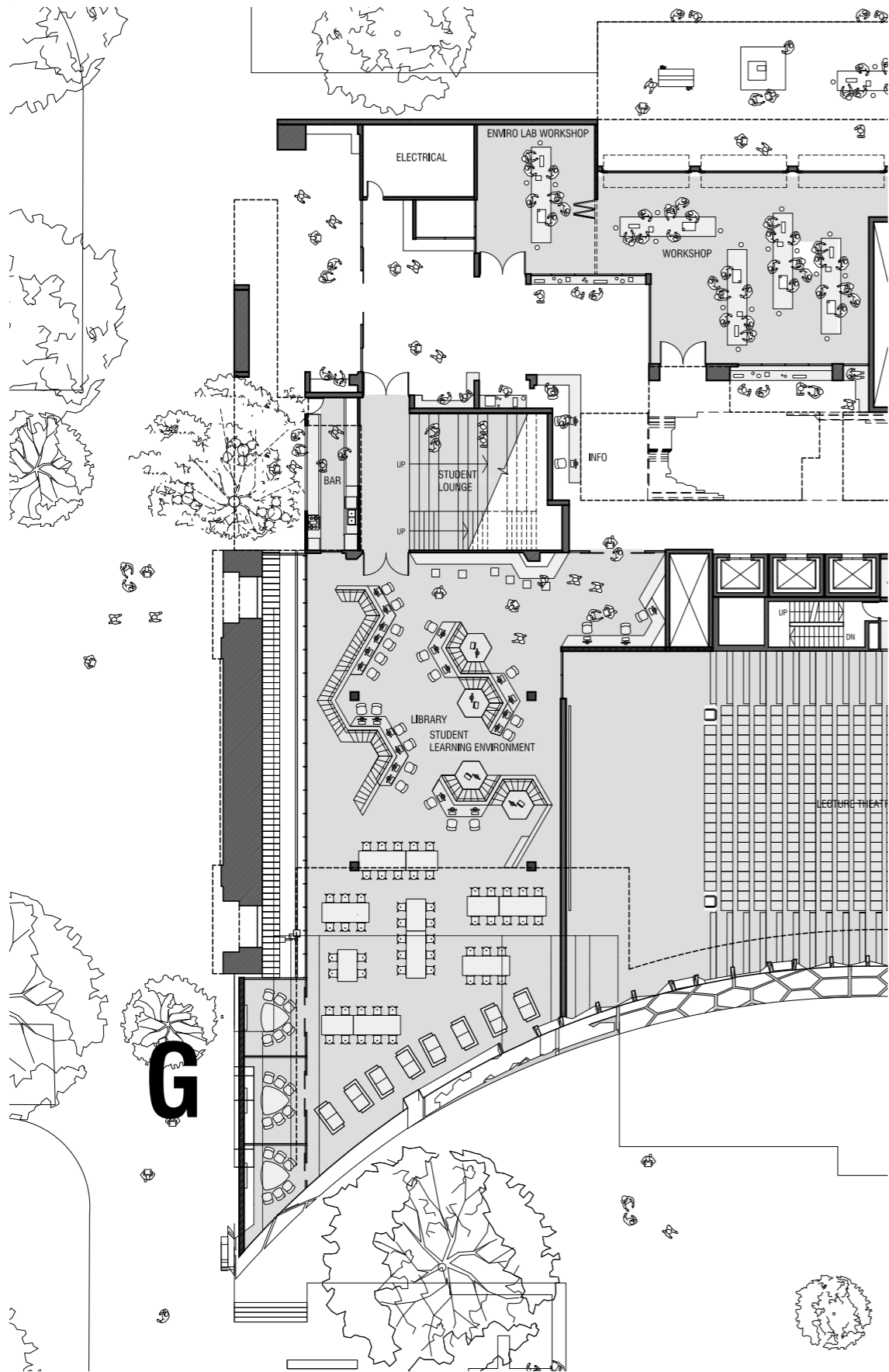


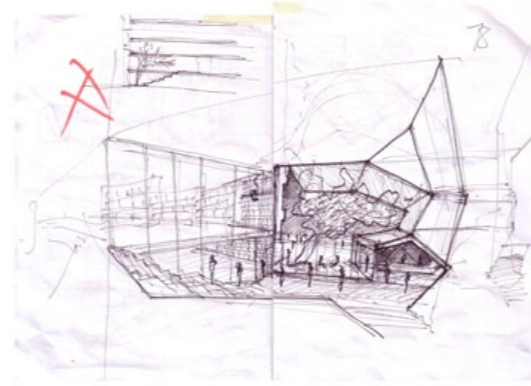
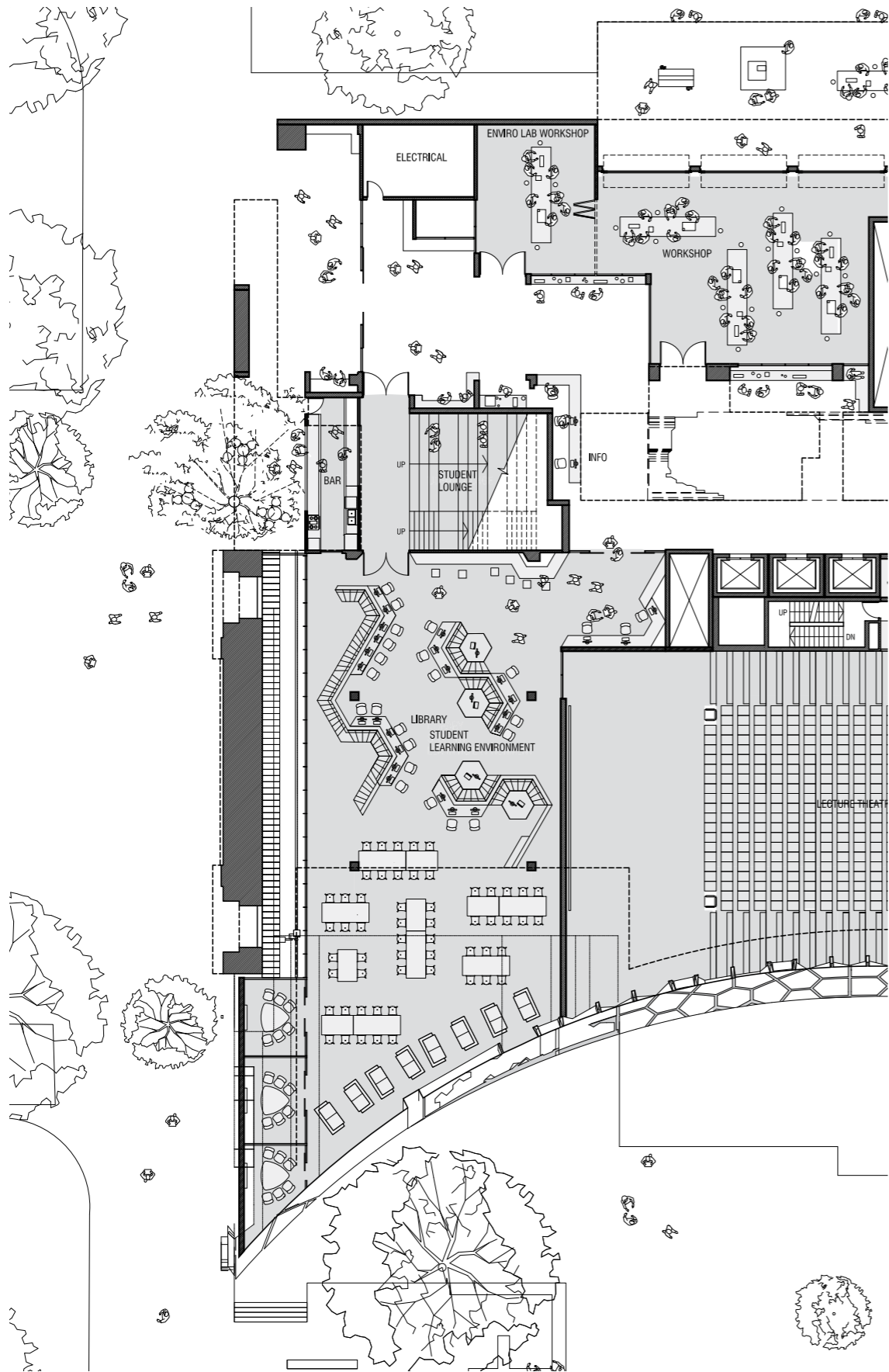


ROOF PLAN

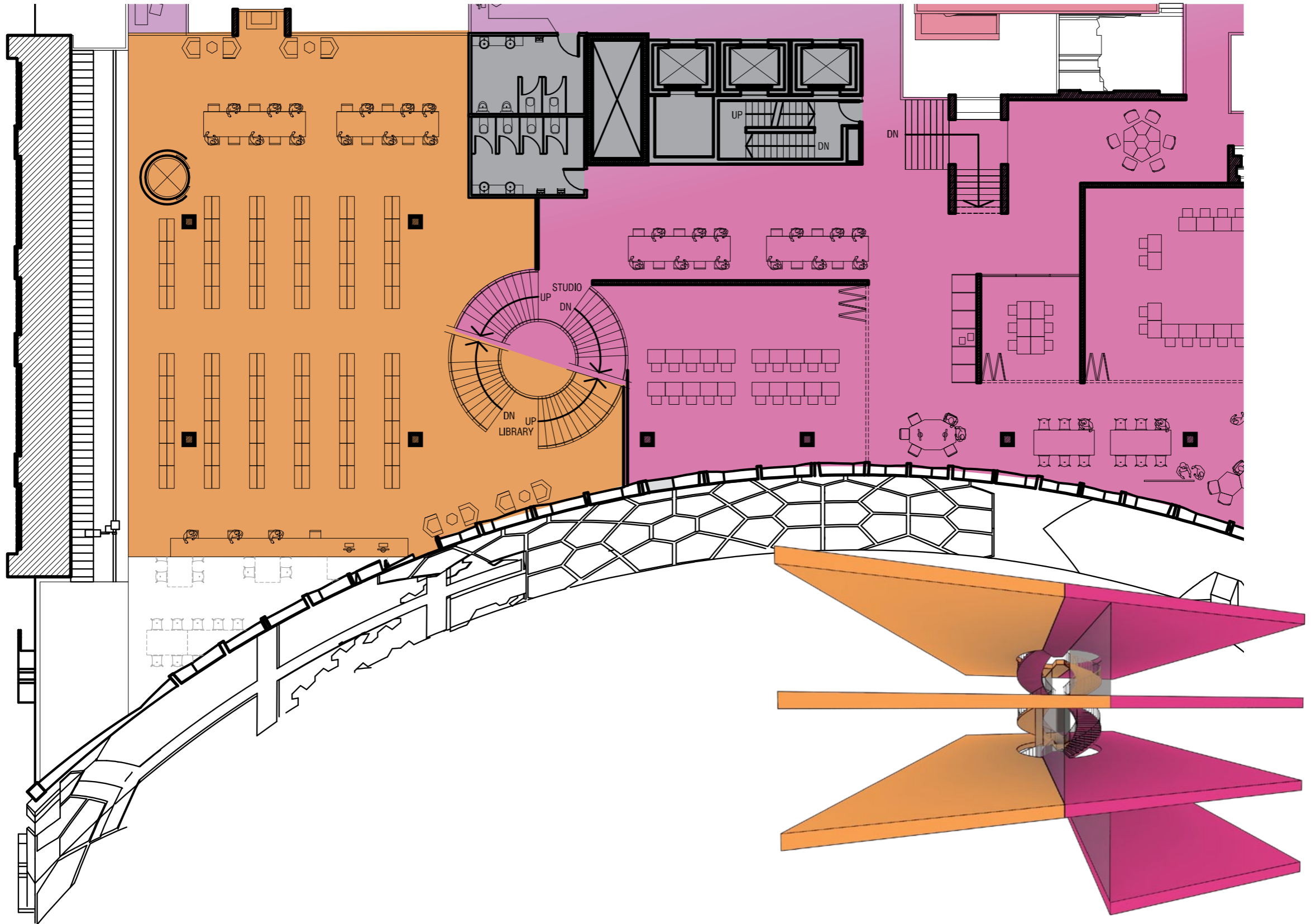




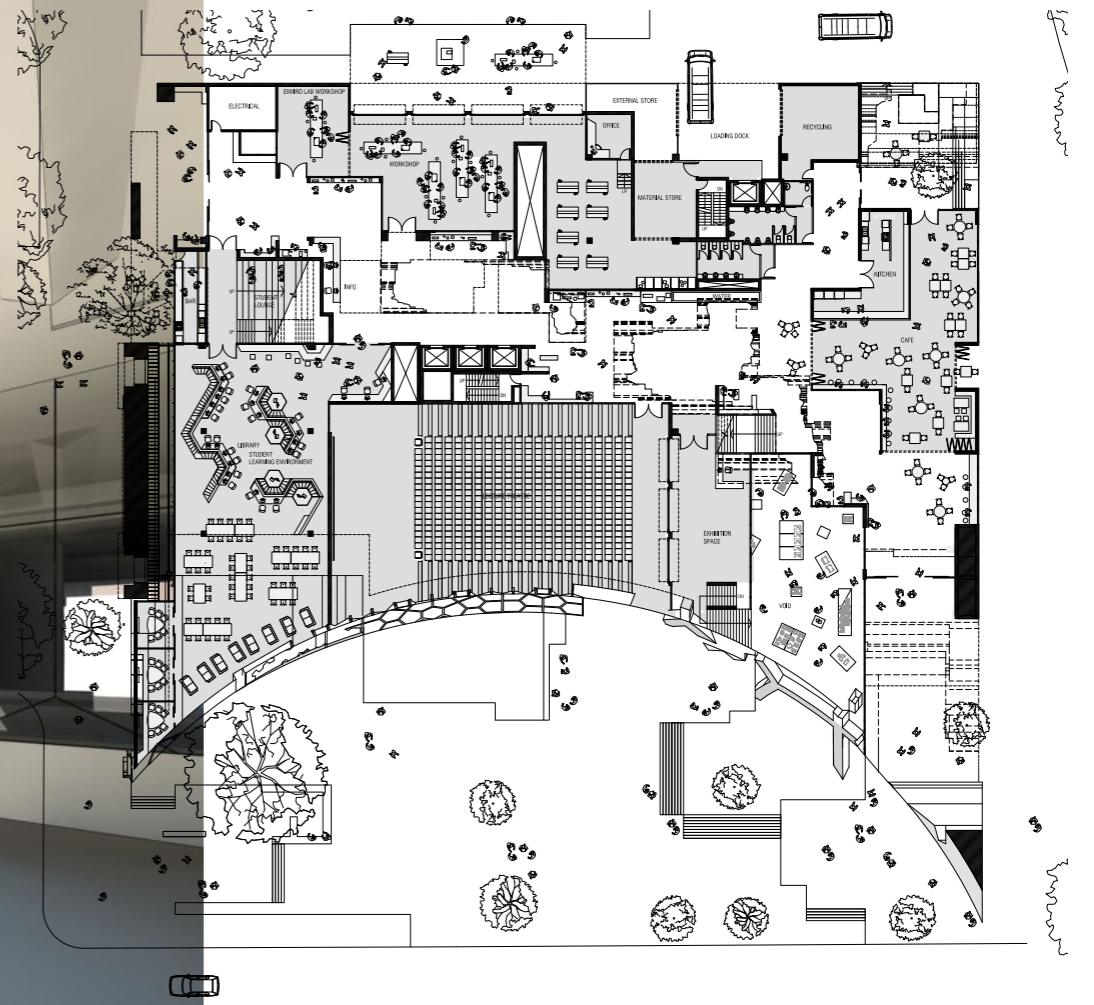
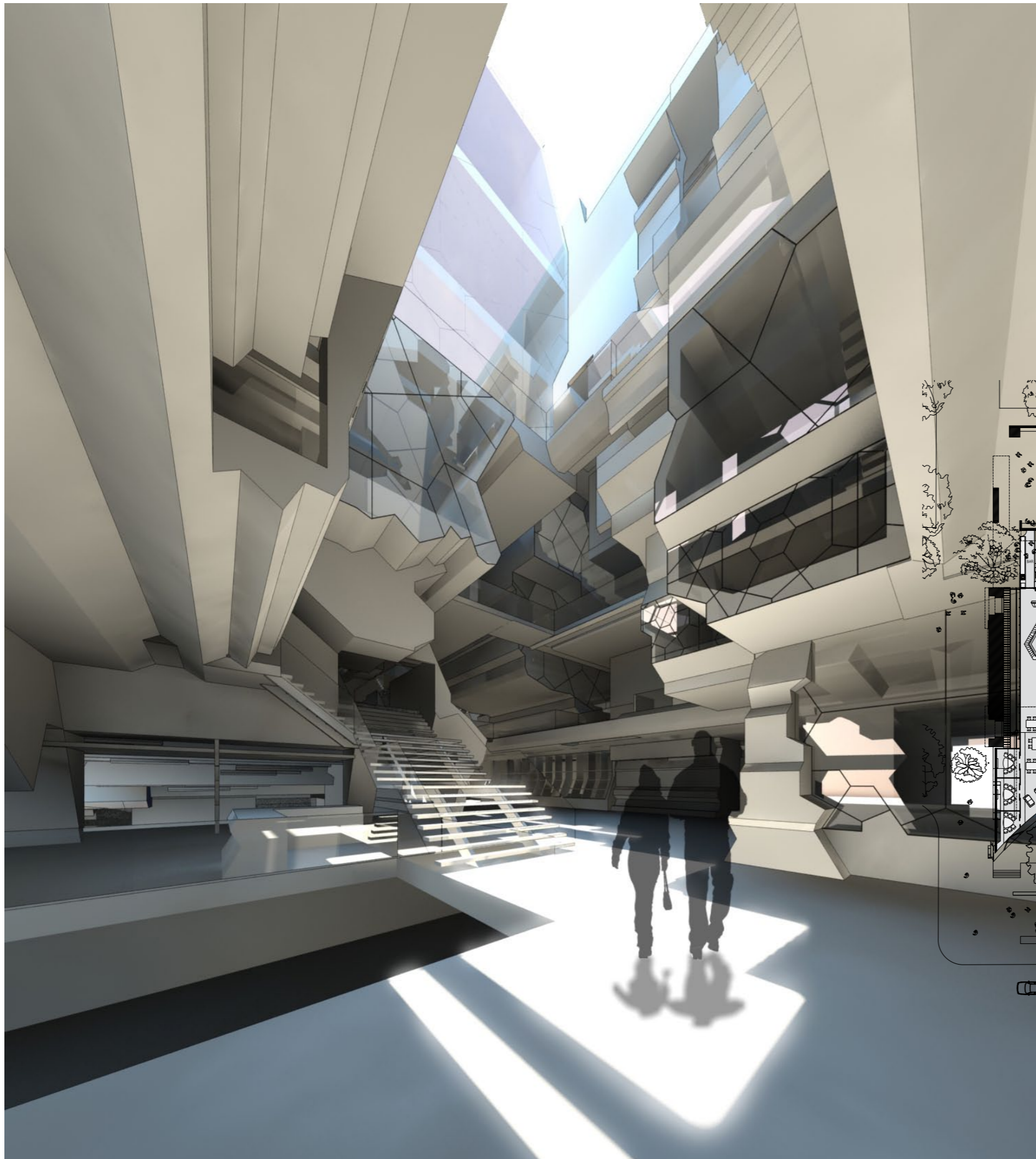




STUDENT LOUNGE



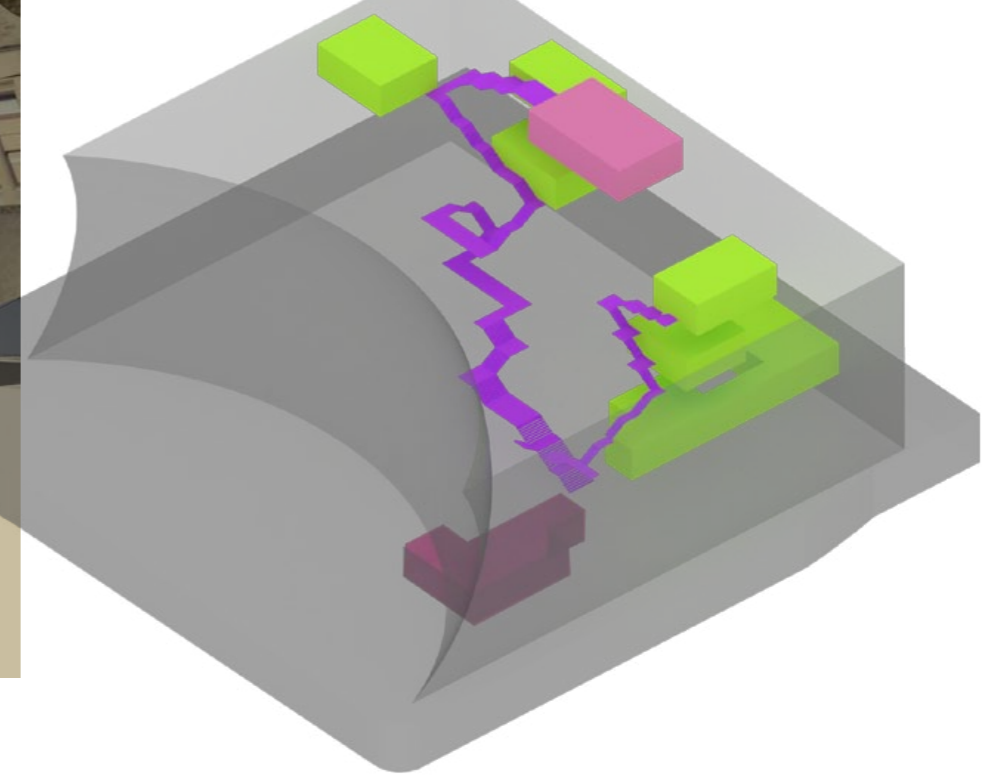
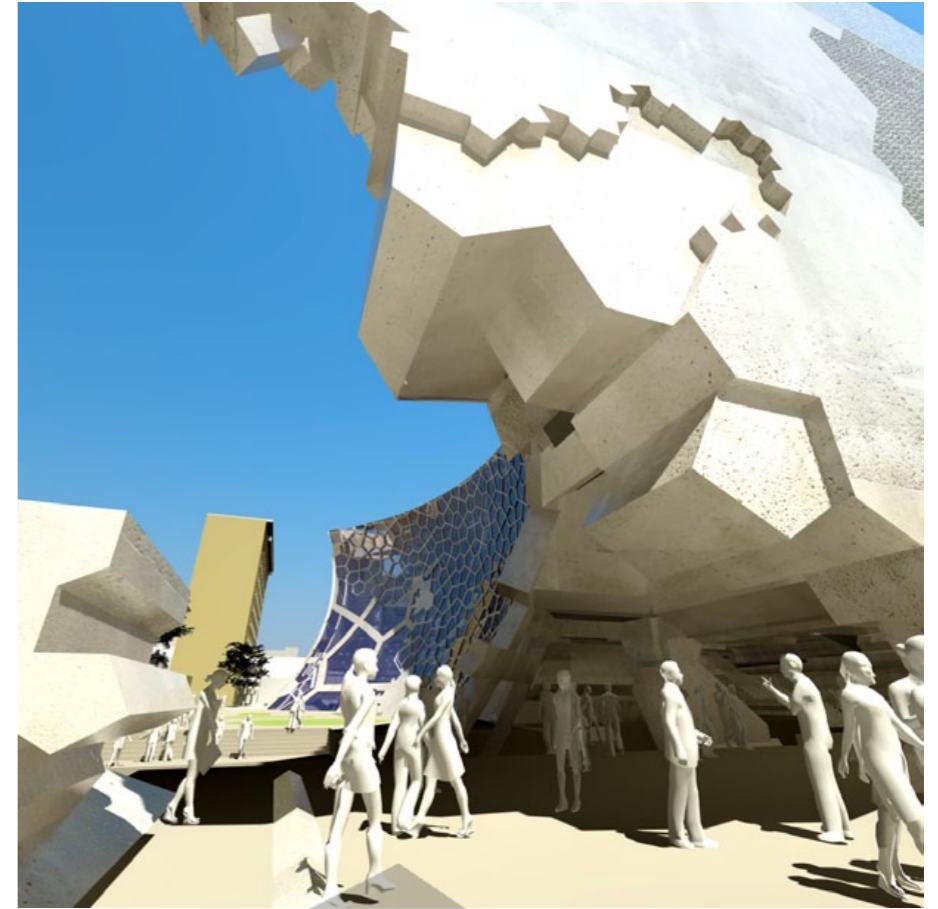
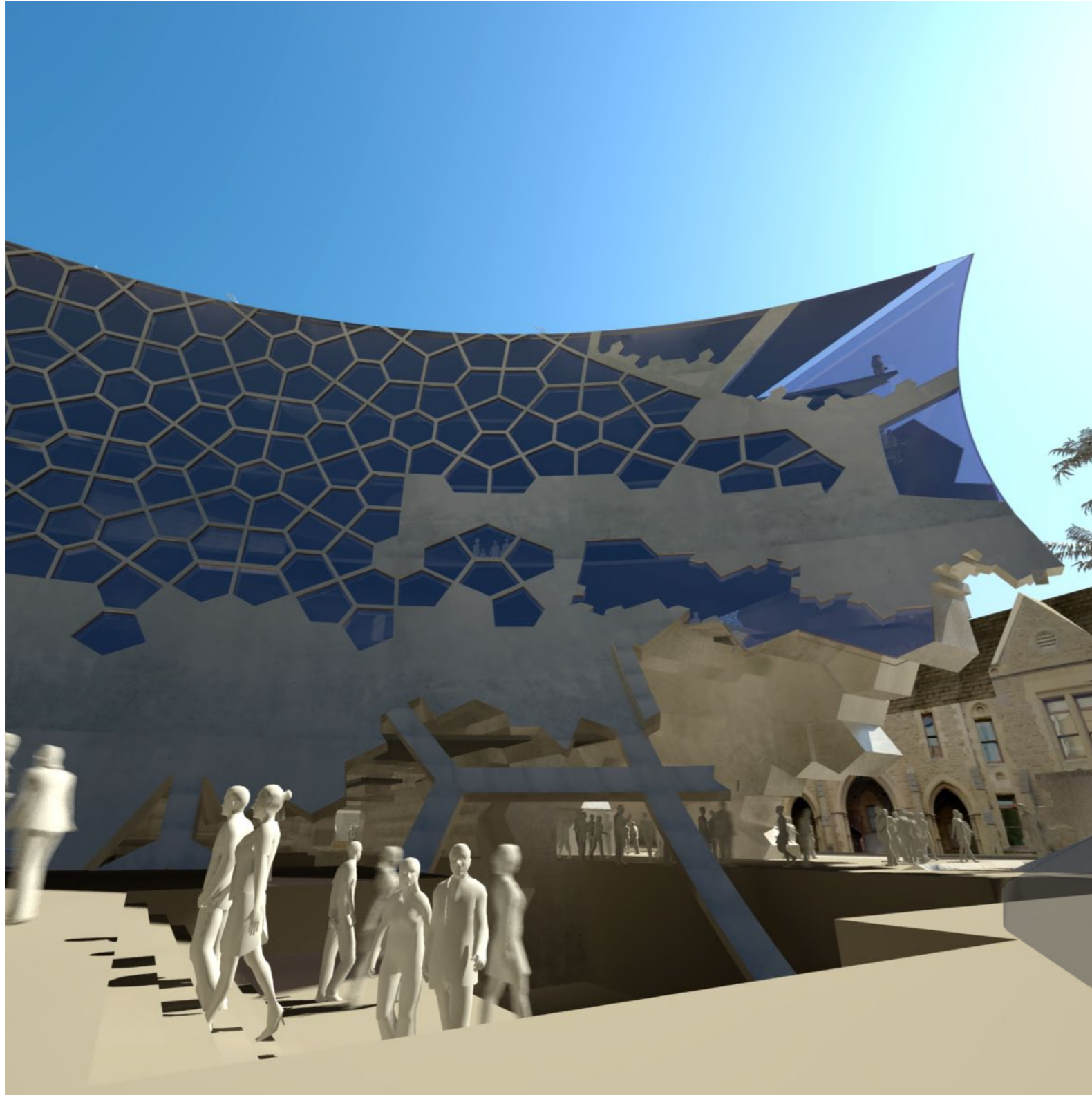
LIBRARY + DESIGN STUDIO DOUBLE HELICAL STAIR

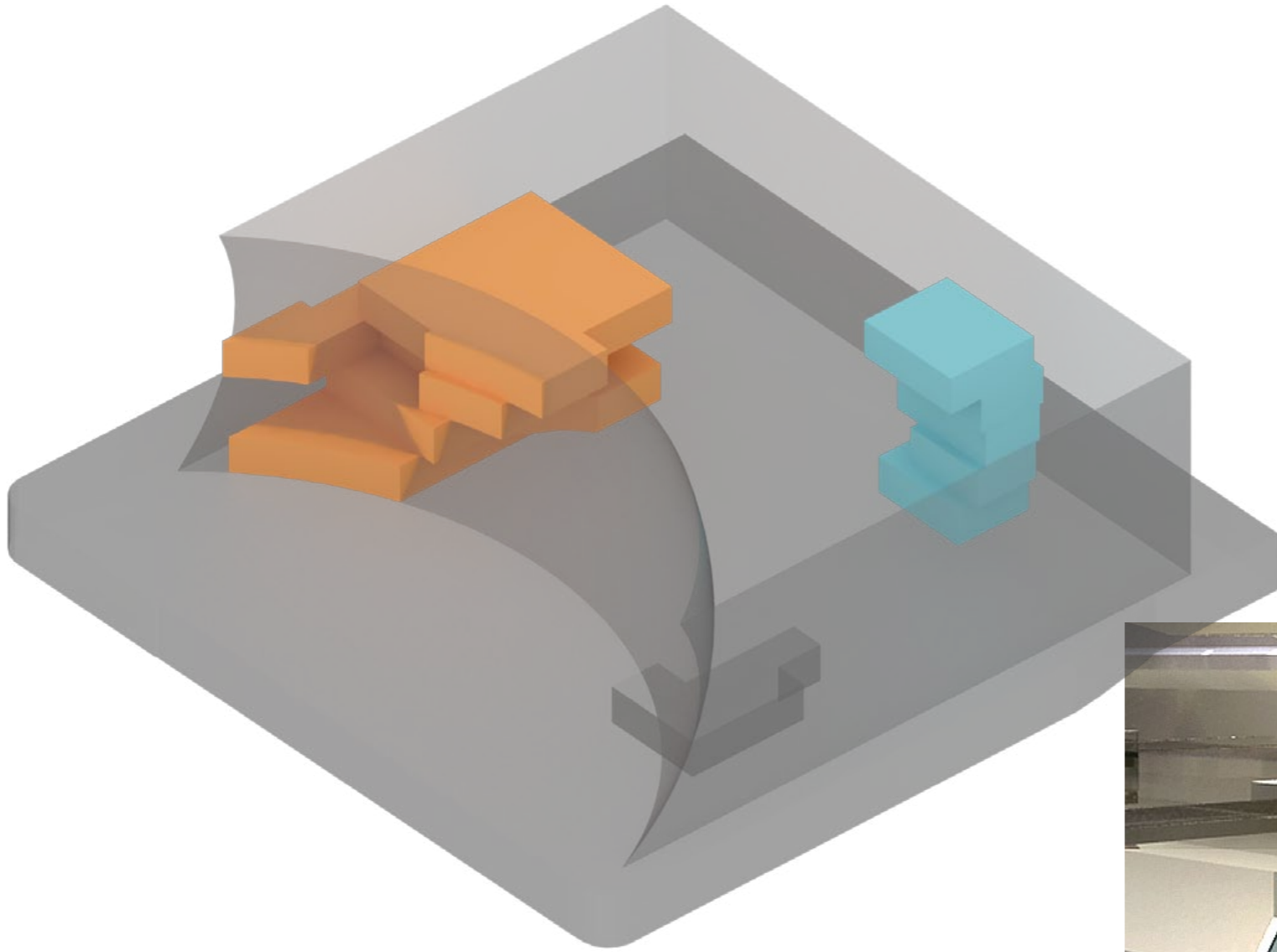




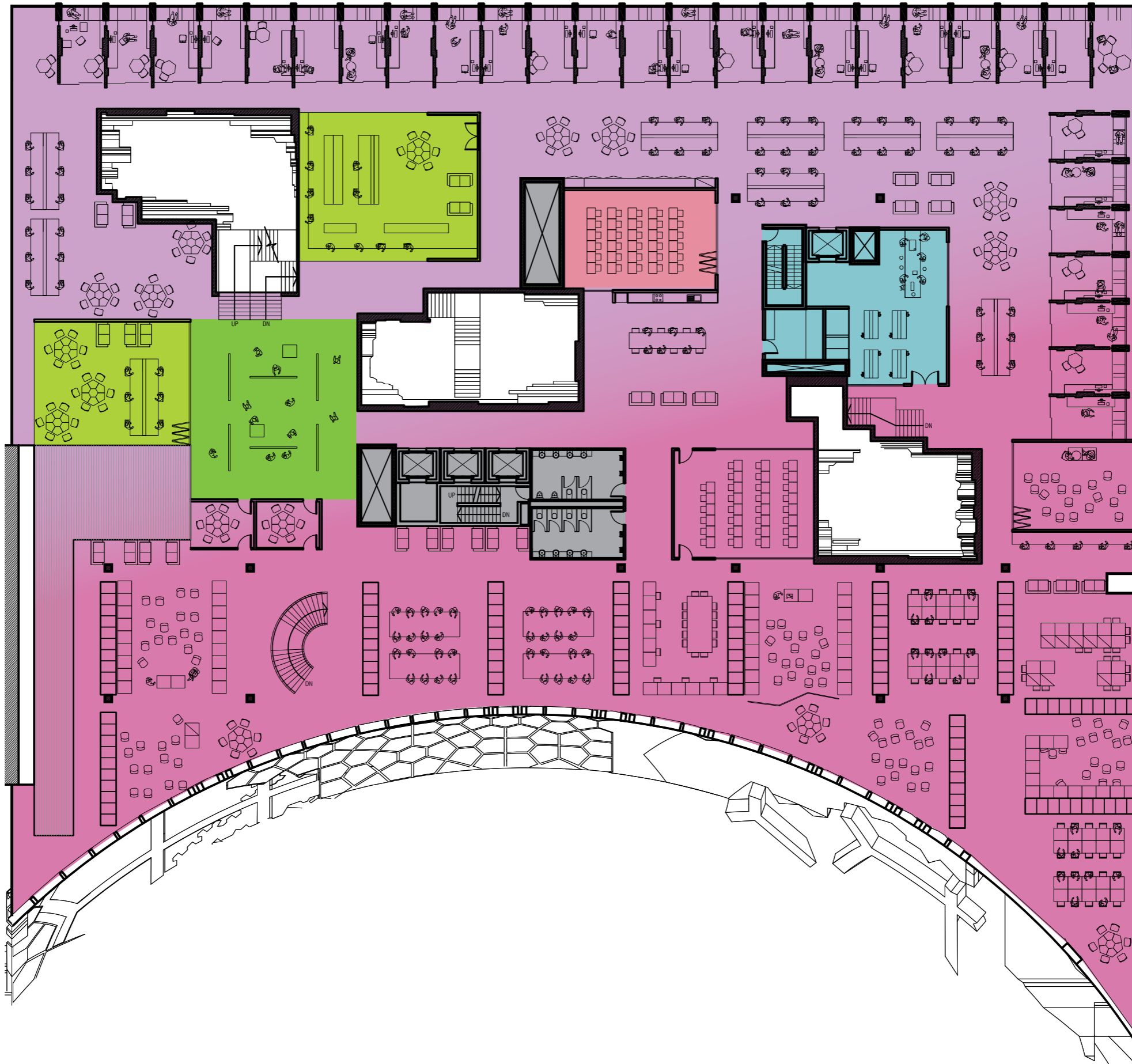


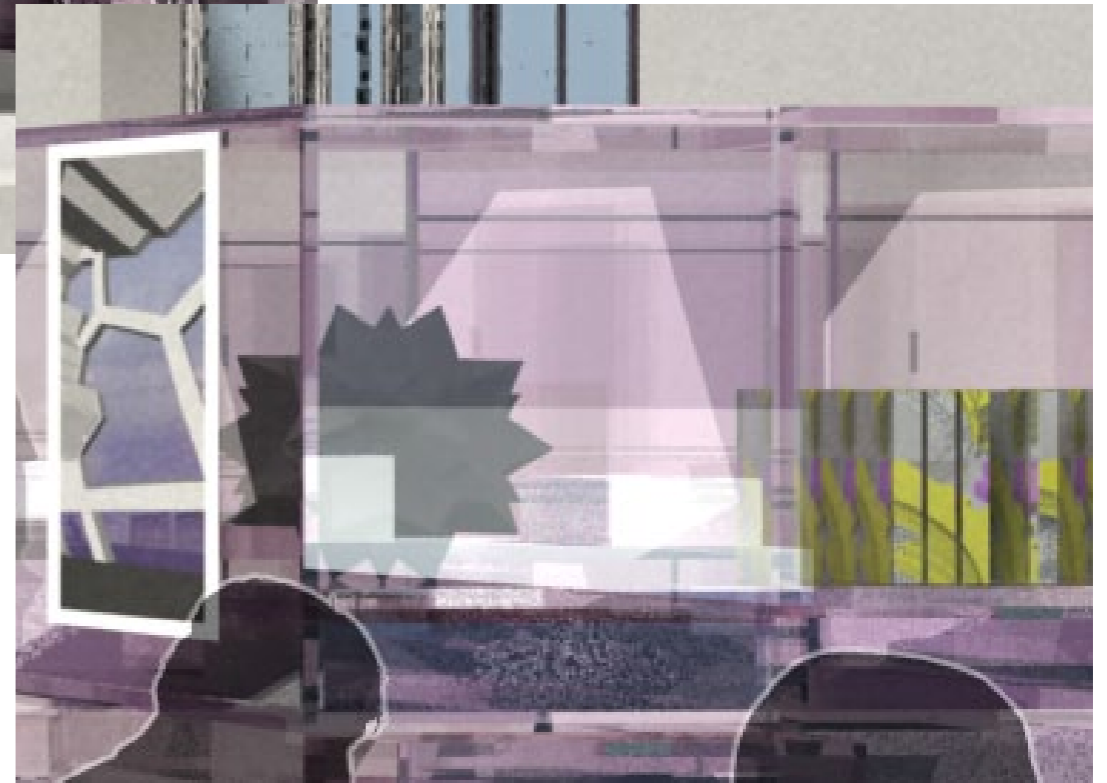


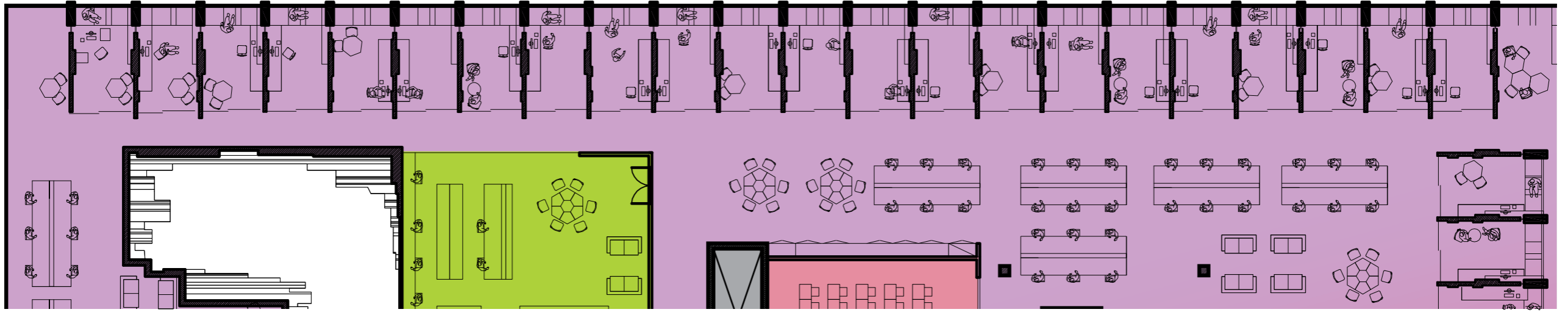




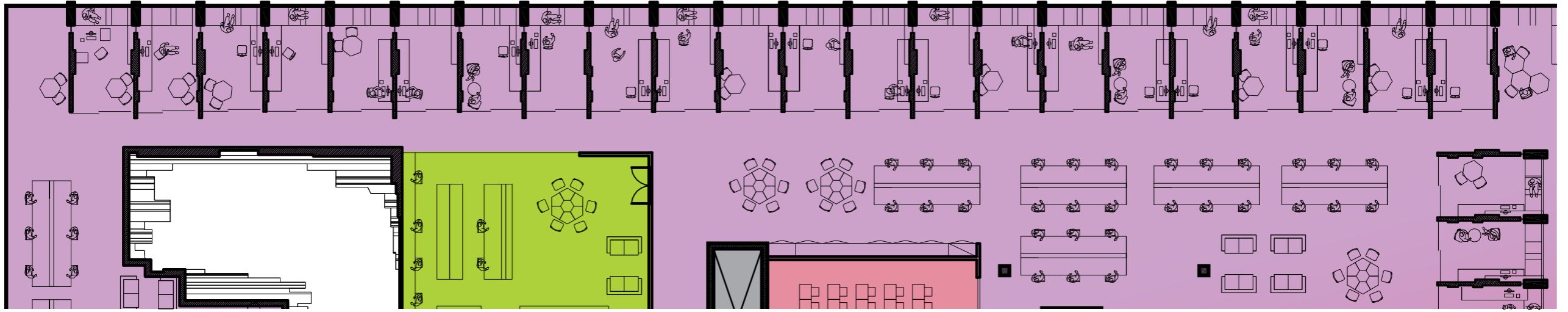




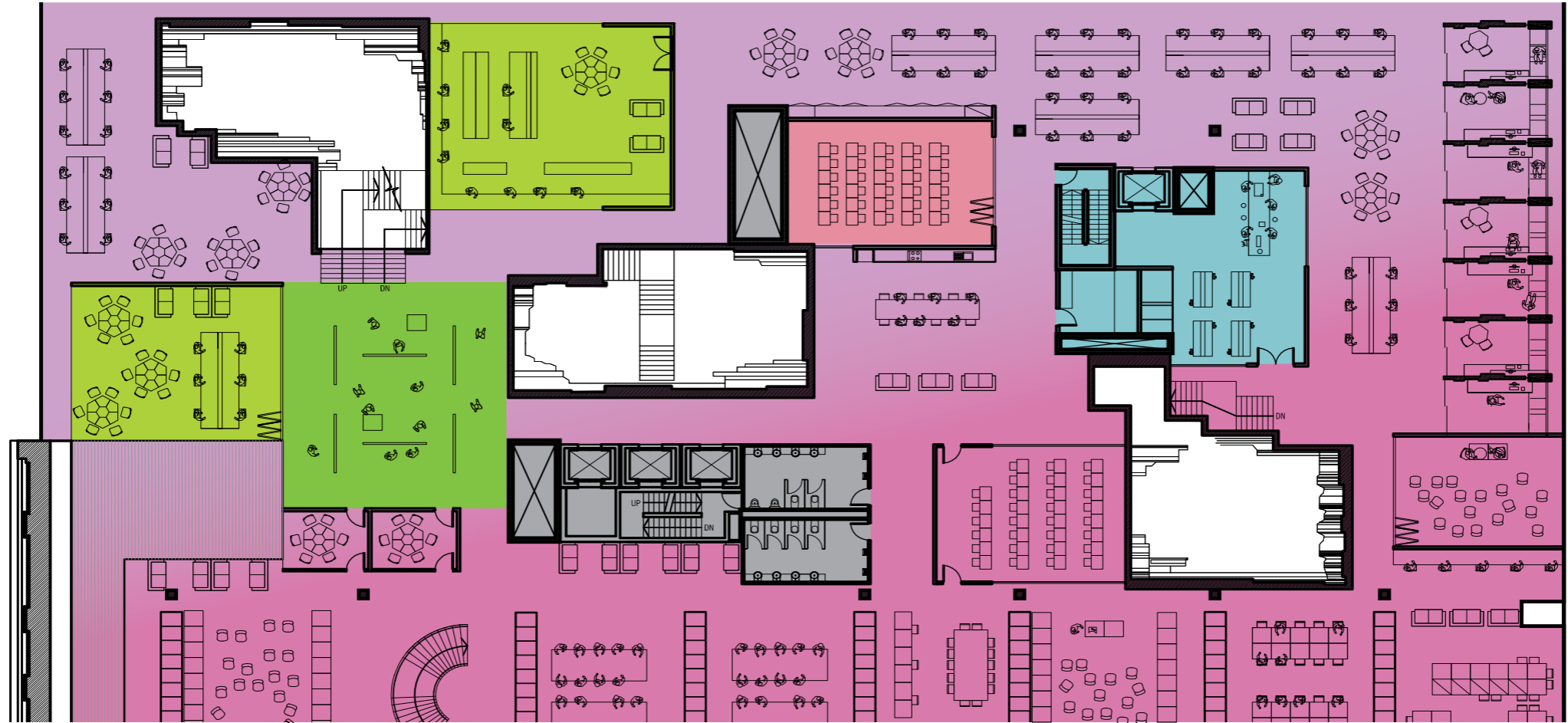




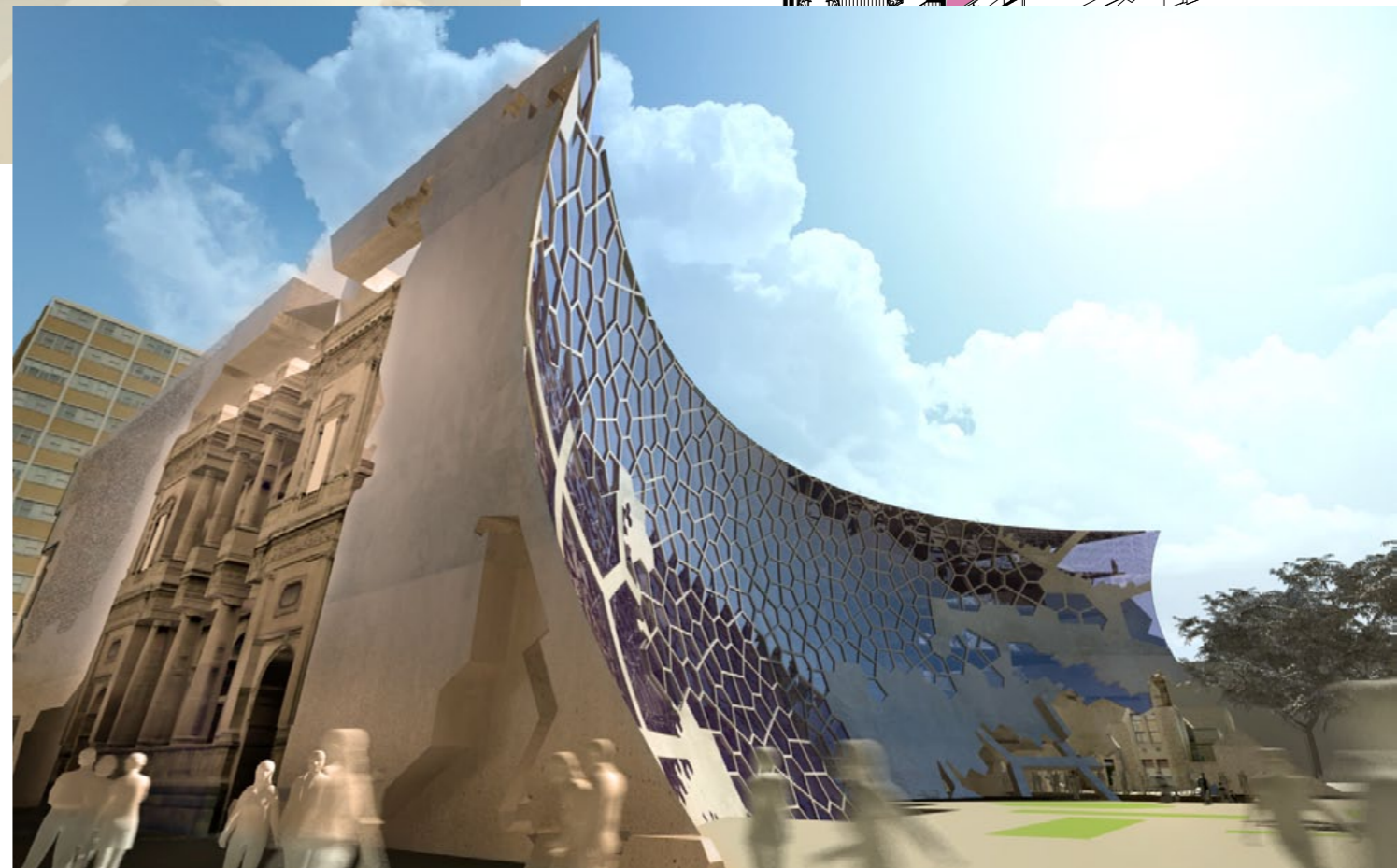
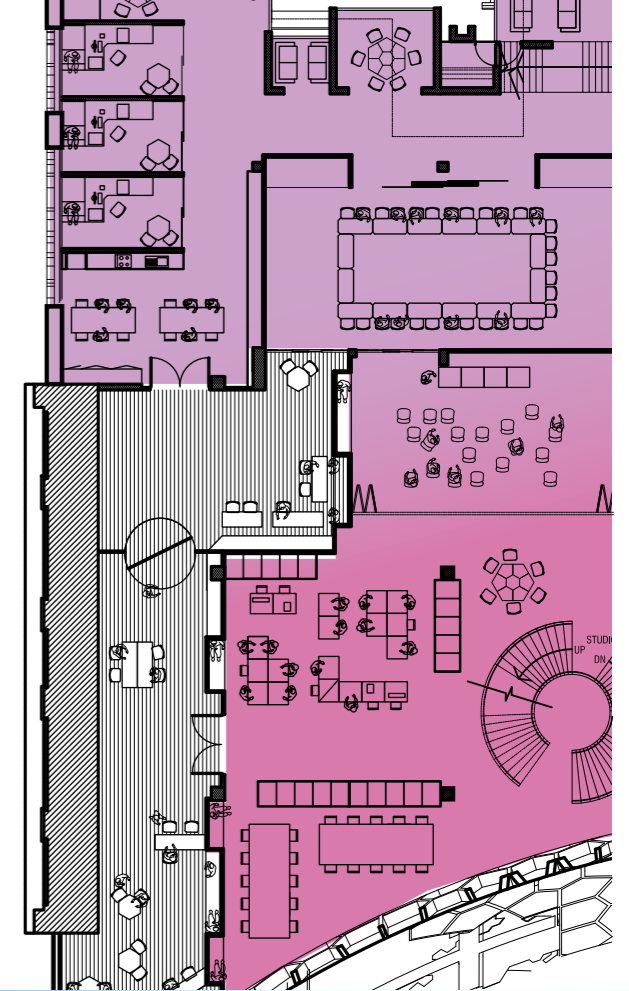
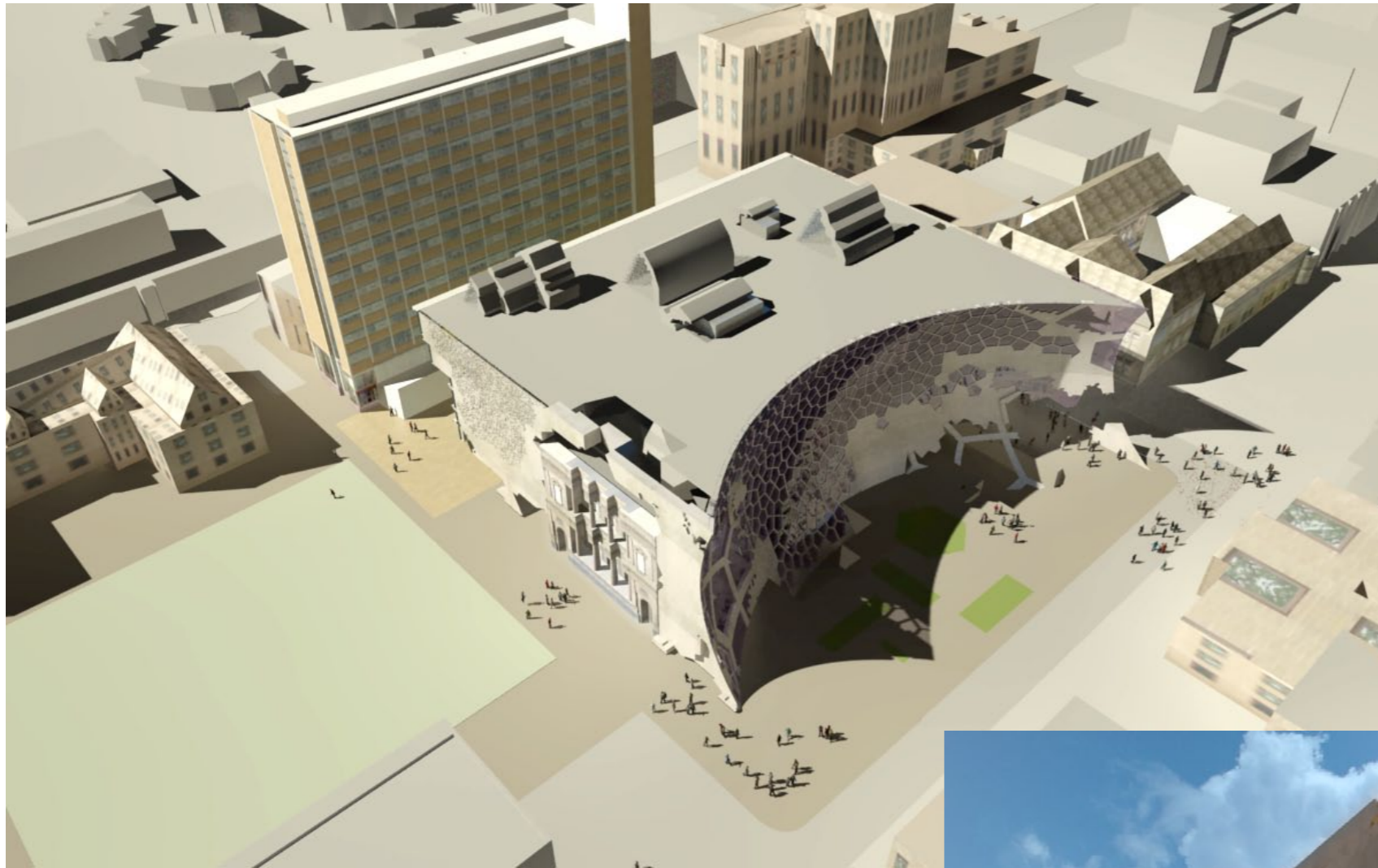
ACADEMIC ENVIRONMENT



ACADEMIC ENVIRONMENT

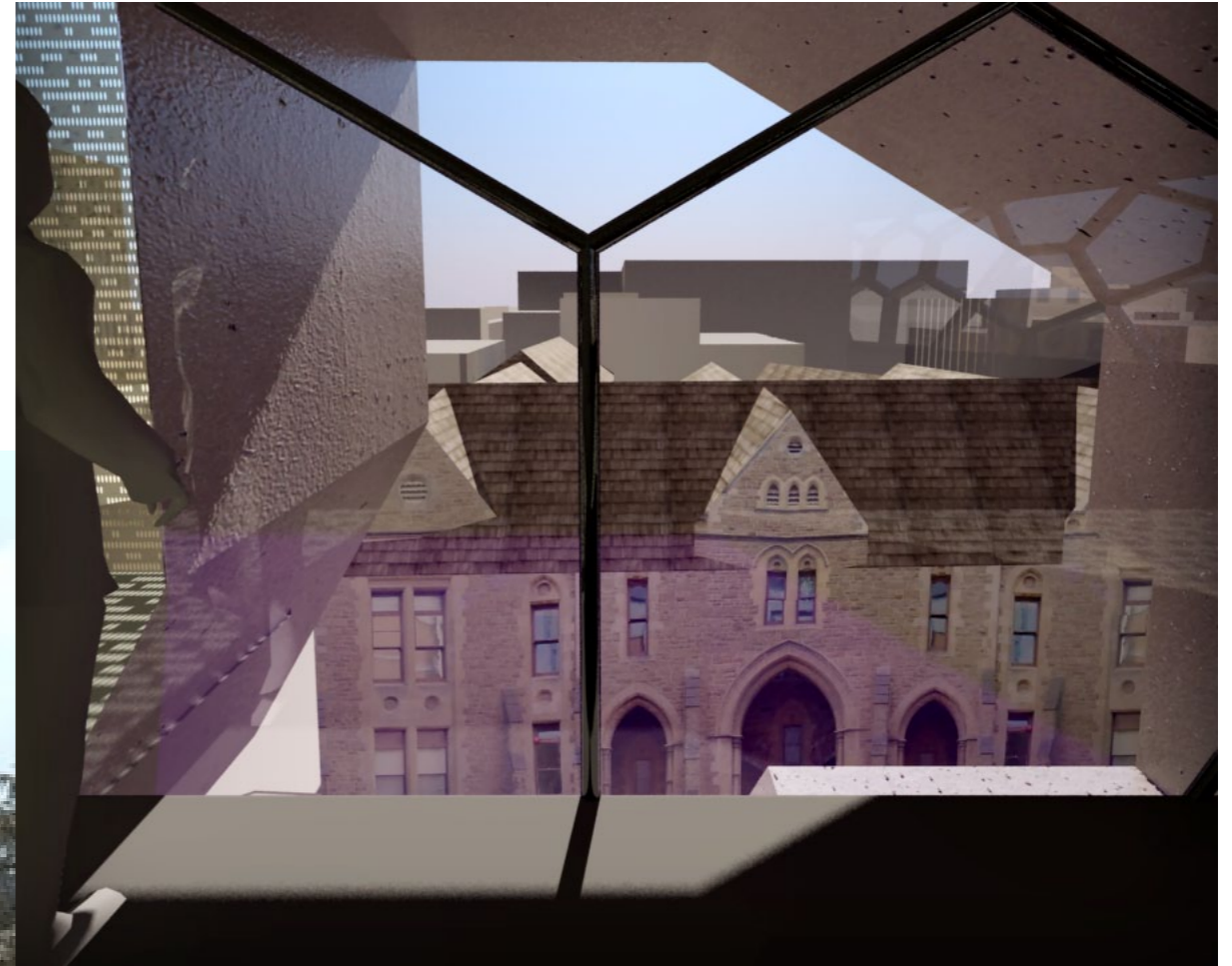
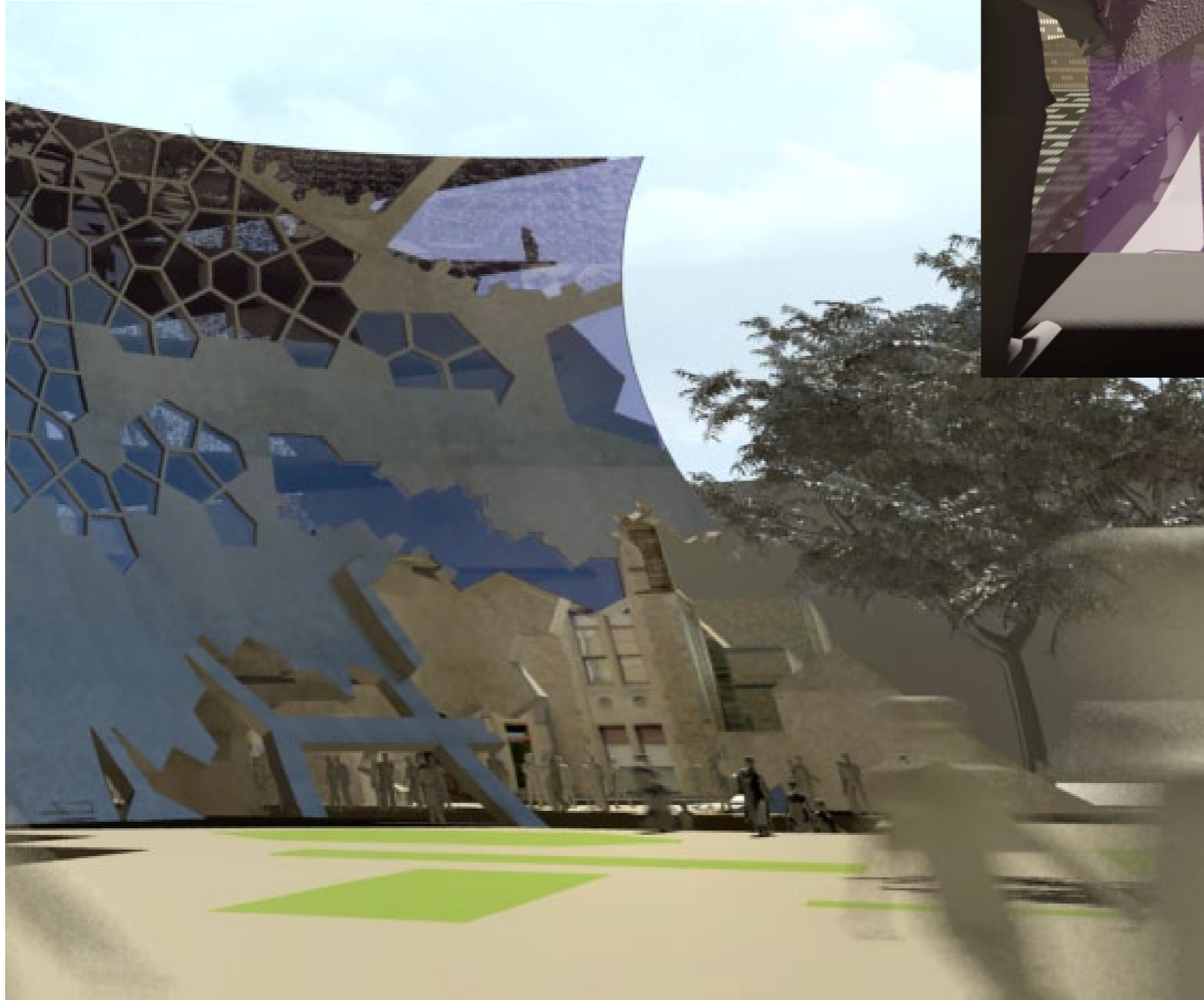


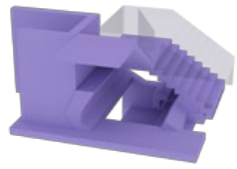
STAFF / STUDENT 'MIXING' ZONE



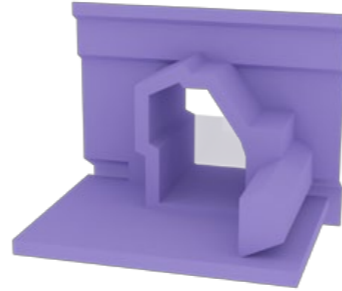
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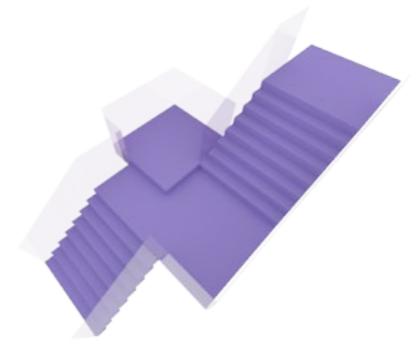
A: THE GROTTO



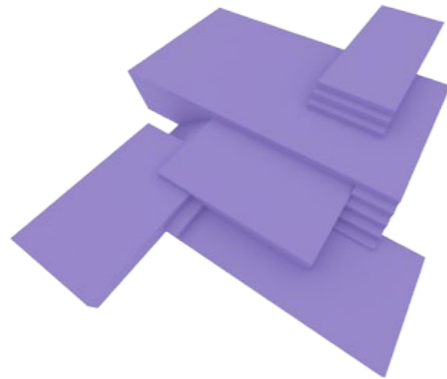
B: THE BEDOUIN TENT



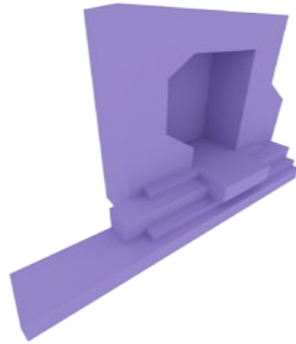
C: THE EDGE



D: THE PLATFORM



E: THE TERRACES



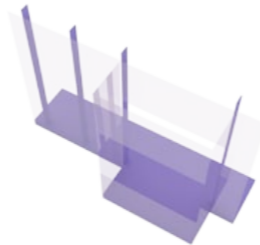
F: THE STAGE



G: THE FORUM



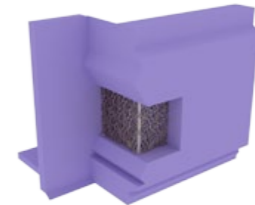
H: THE CRACK



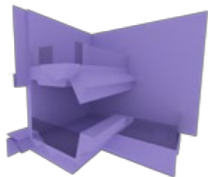
K: THE THEATRE BOOTH



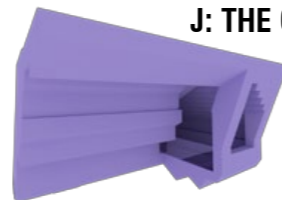
L: THE BALCONY



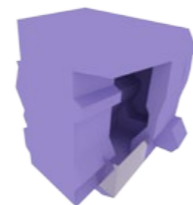
M: THE CONFESSIONAL



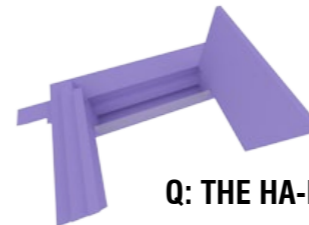
I: THE KITCHEN



J: THE CARRIAGE



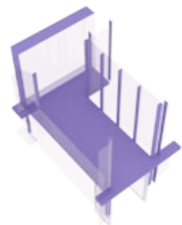
P: THE CONVERSATION BOOTH



Q: THE HA-HA

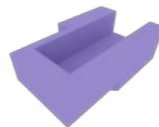


R: THE PARK BENCH

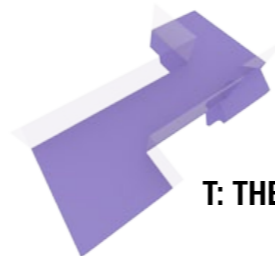


N: THE BRIDGE

O: THE MUSSOLINI BALCONY



S: THE LITTER



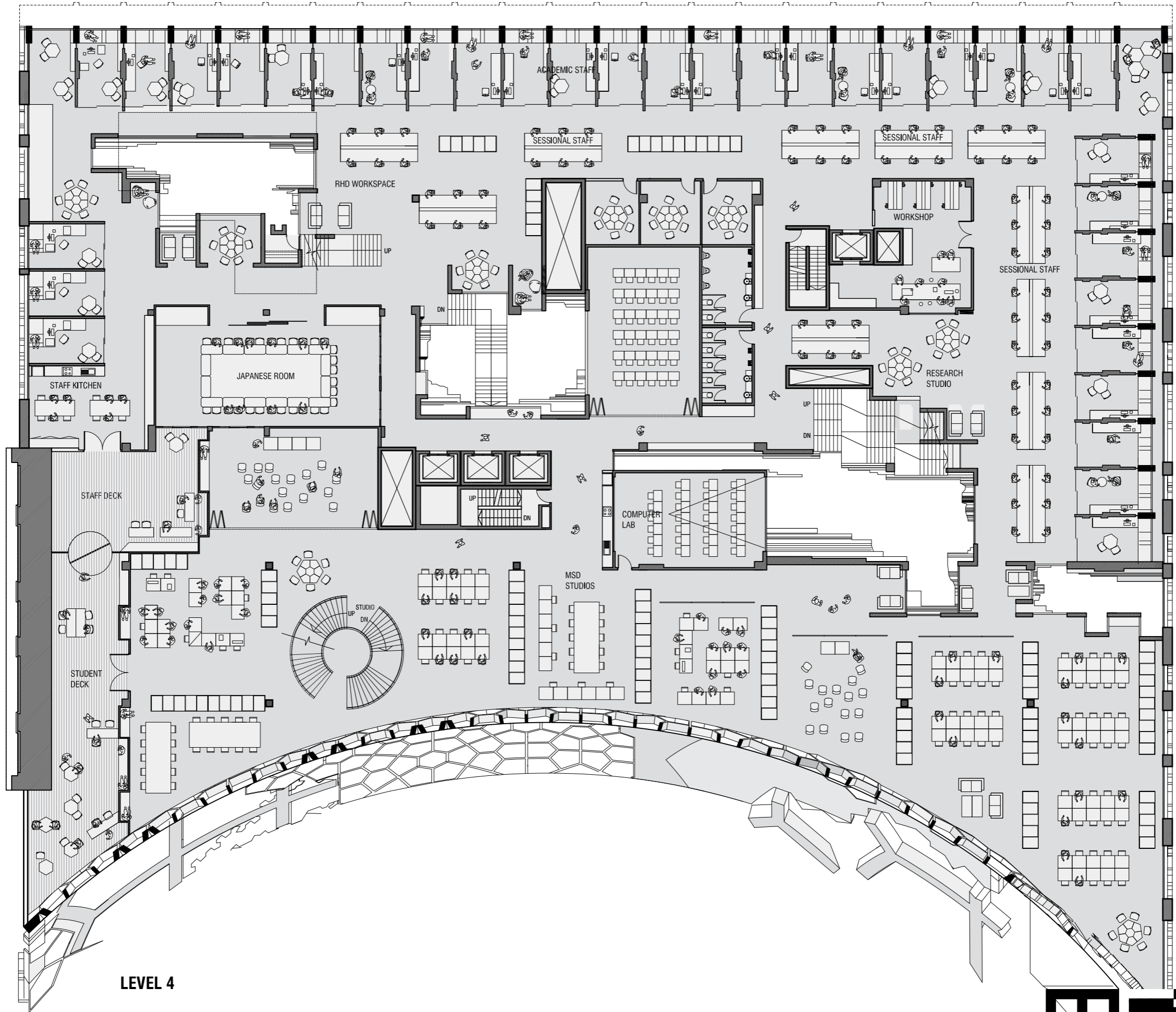
T: THE LEAP OF FAITH



U: THE BED

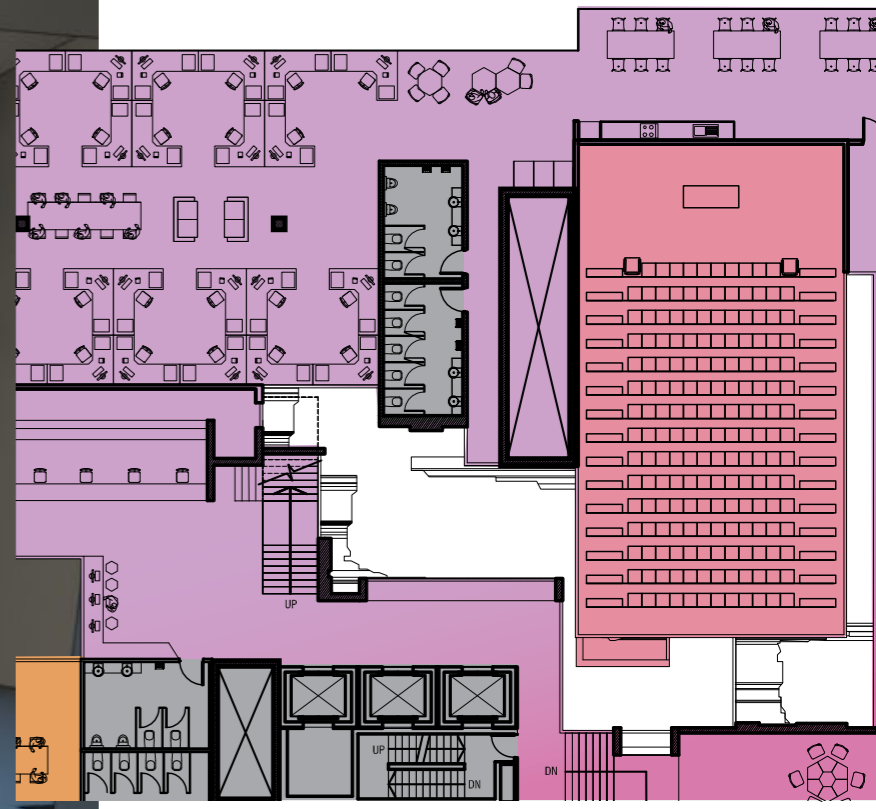
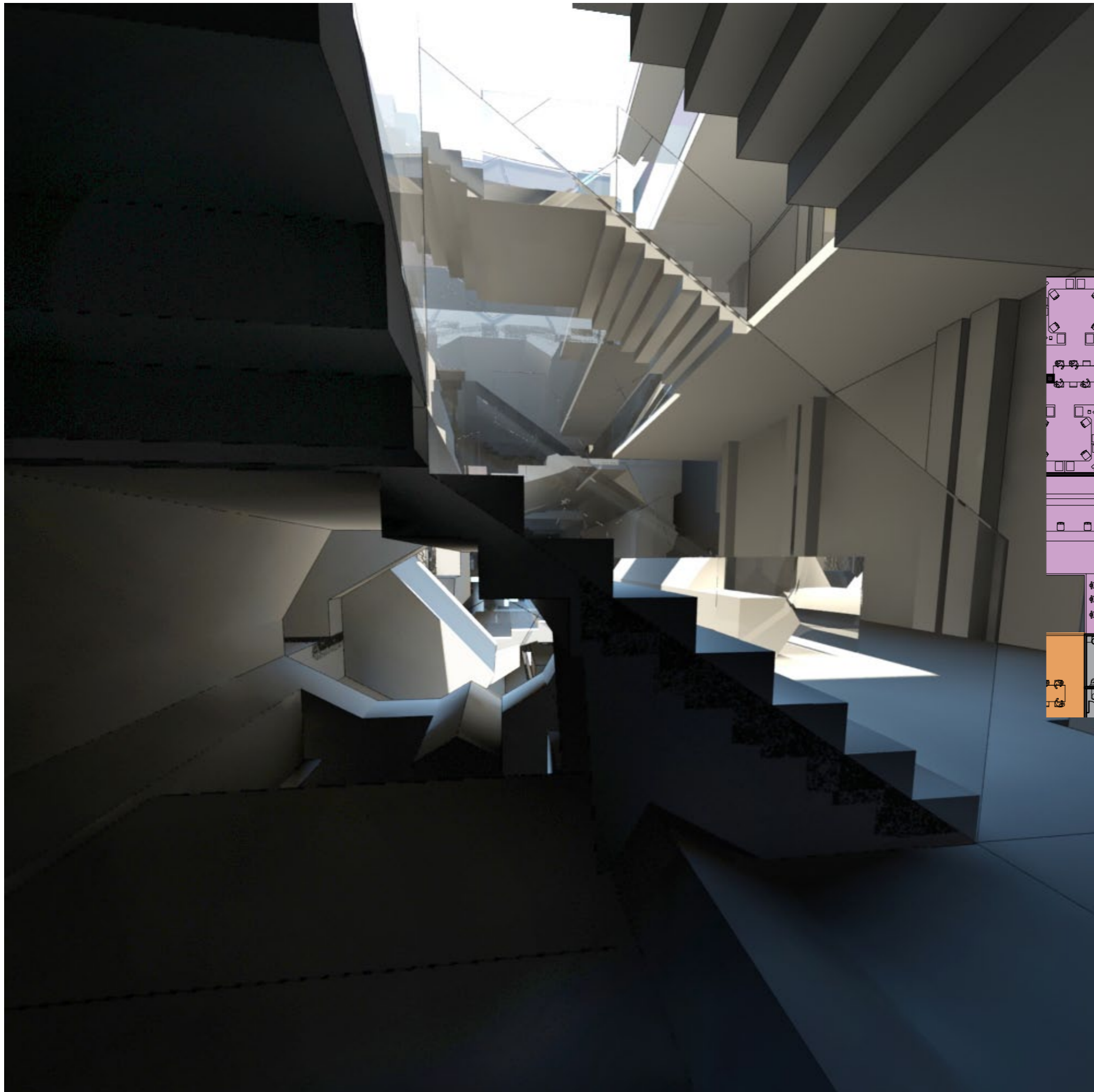
W, X, Y, Z.....



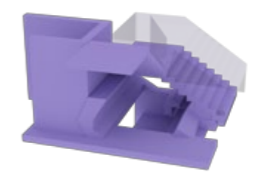


LEVEL 4



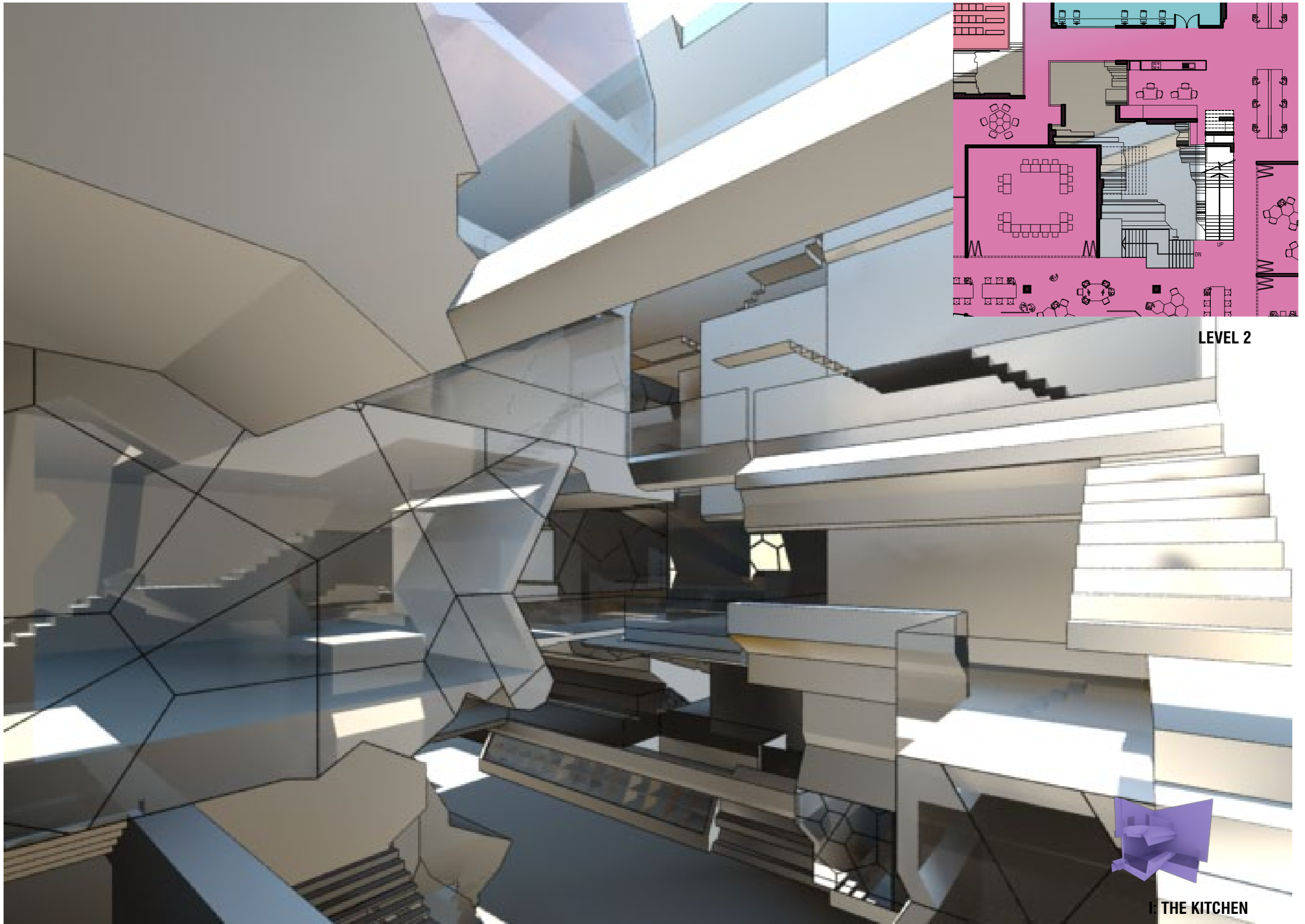


LEVEL 2



A: THE GROTTO

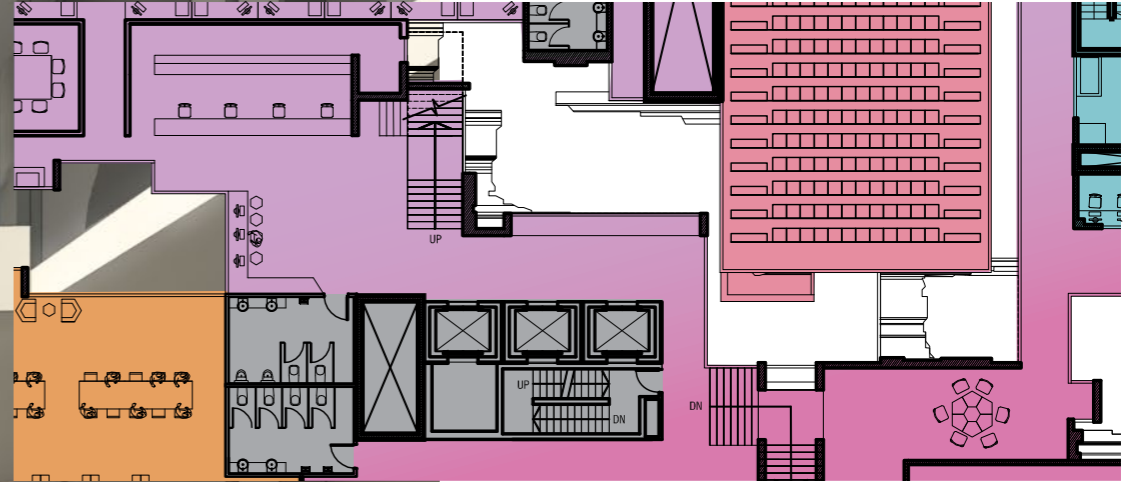
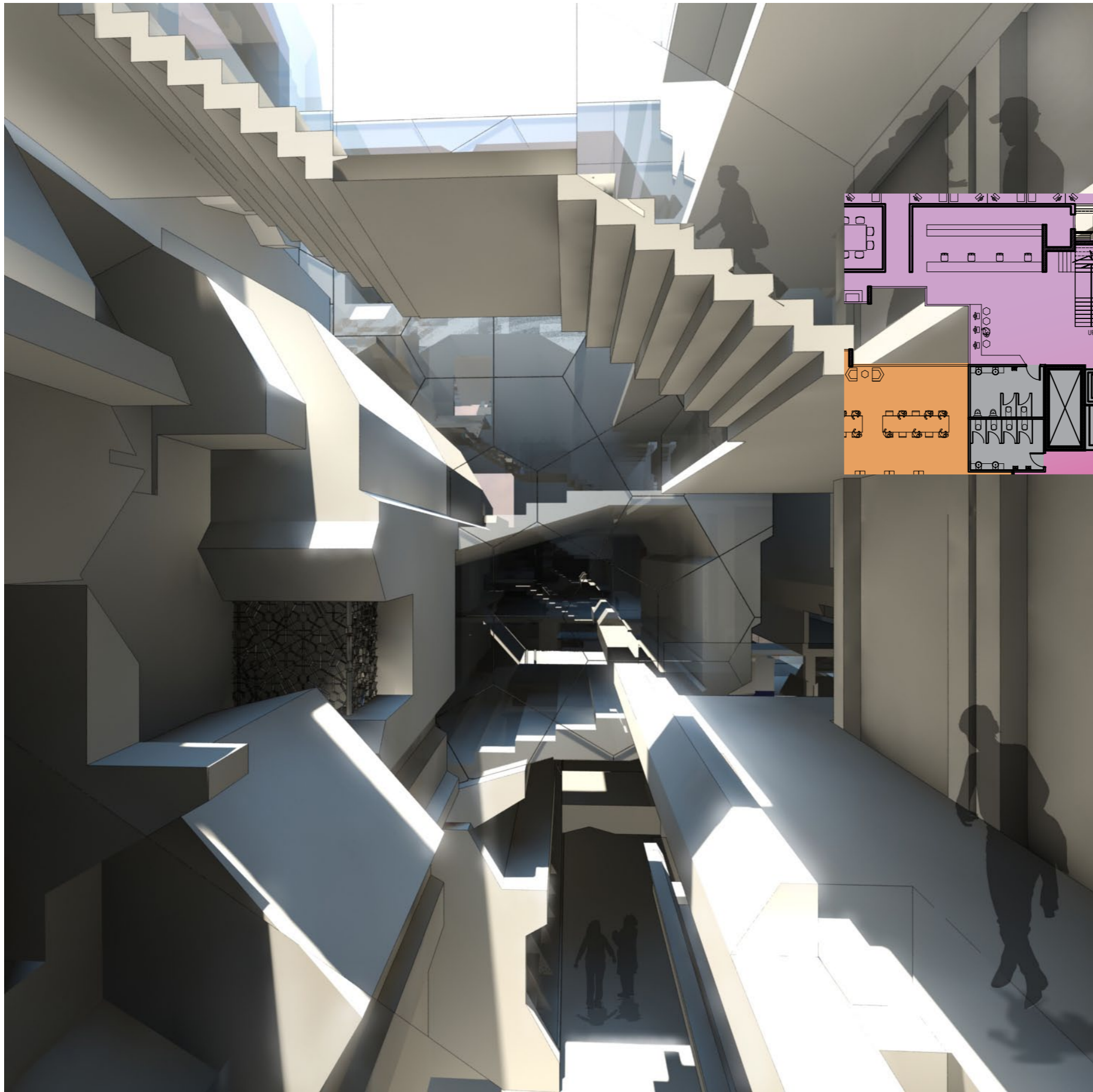




LEVEL 2



THE KITCHEN

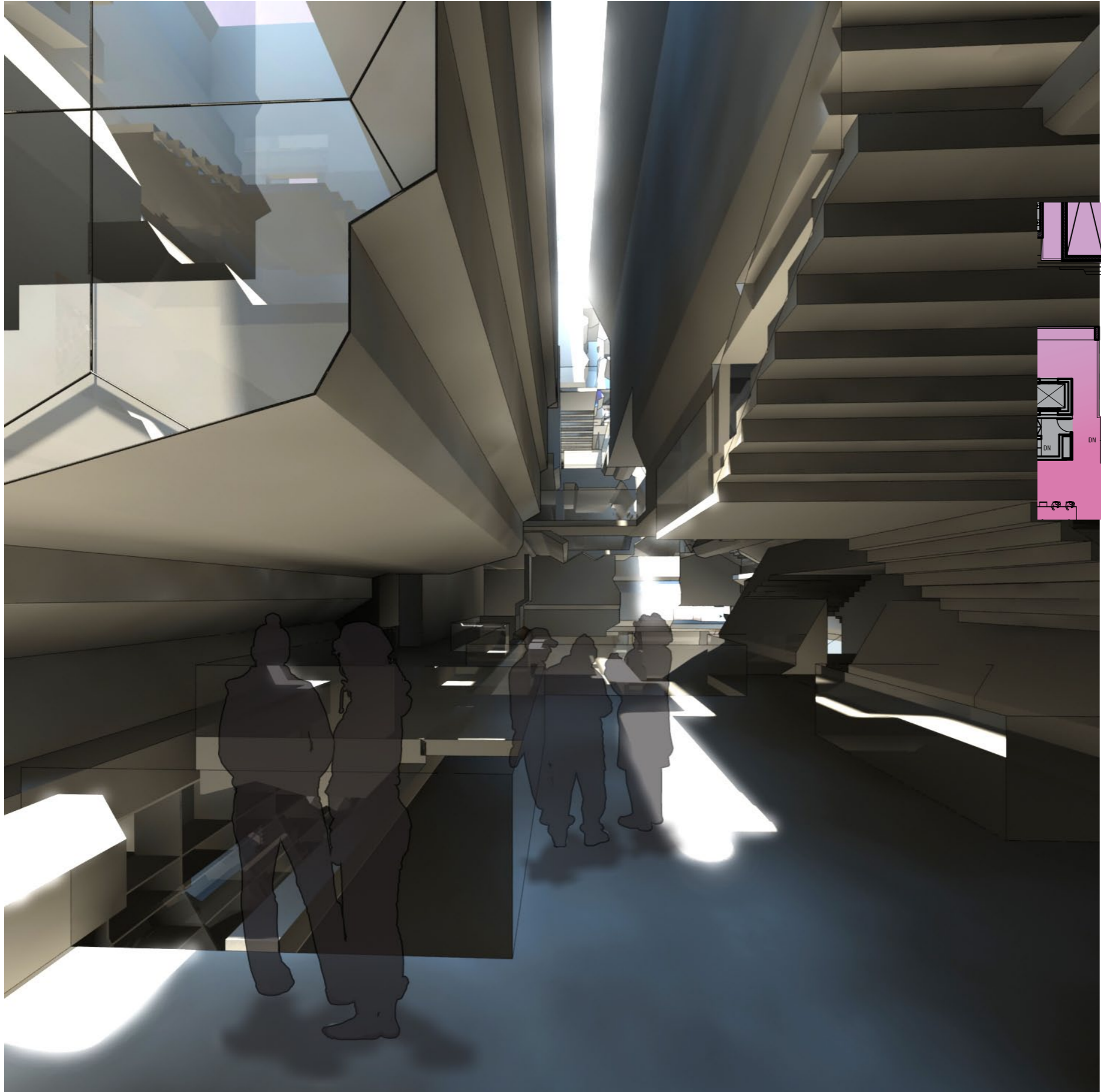


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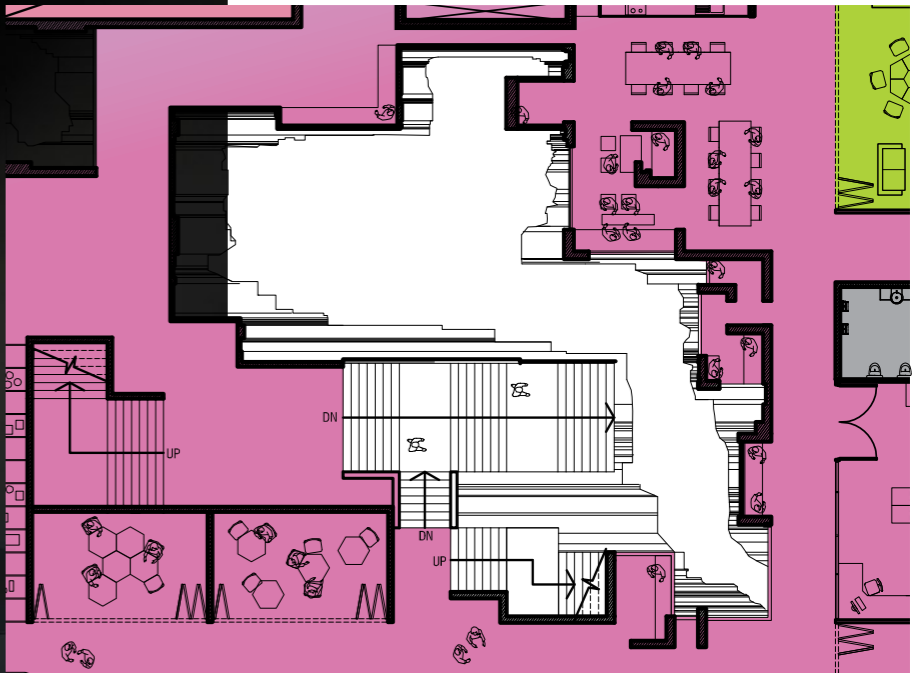
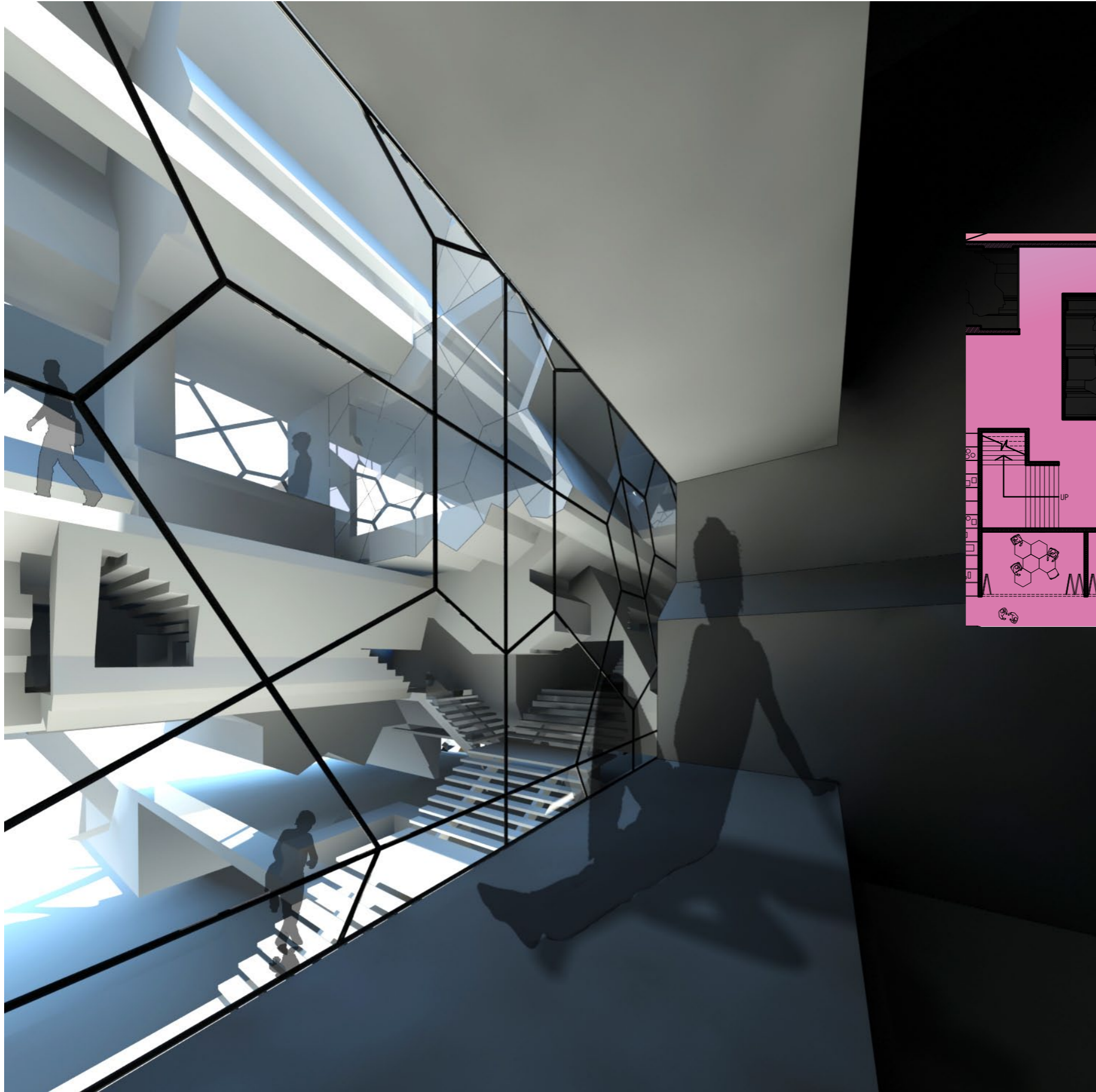




LEVEL 2



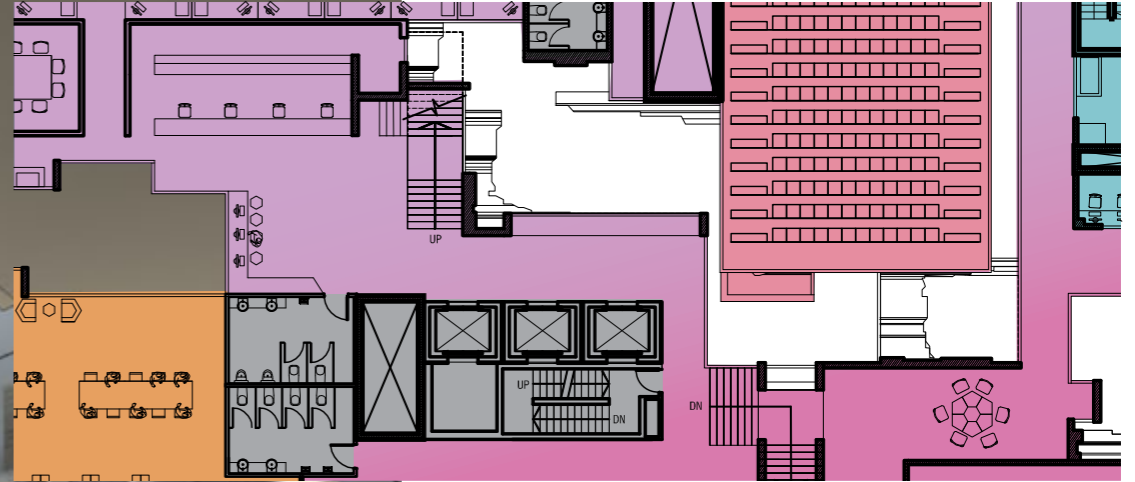
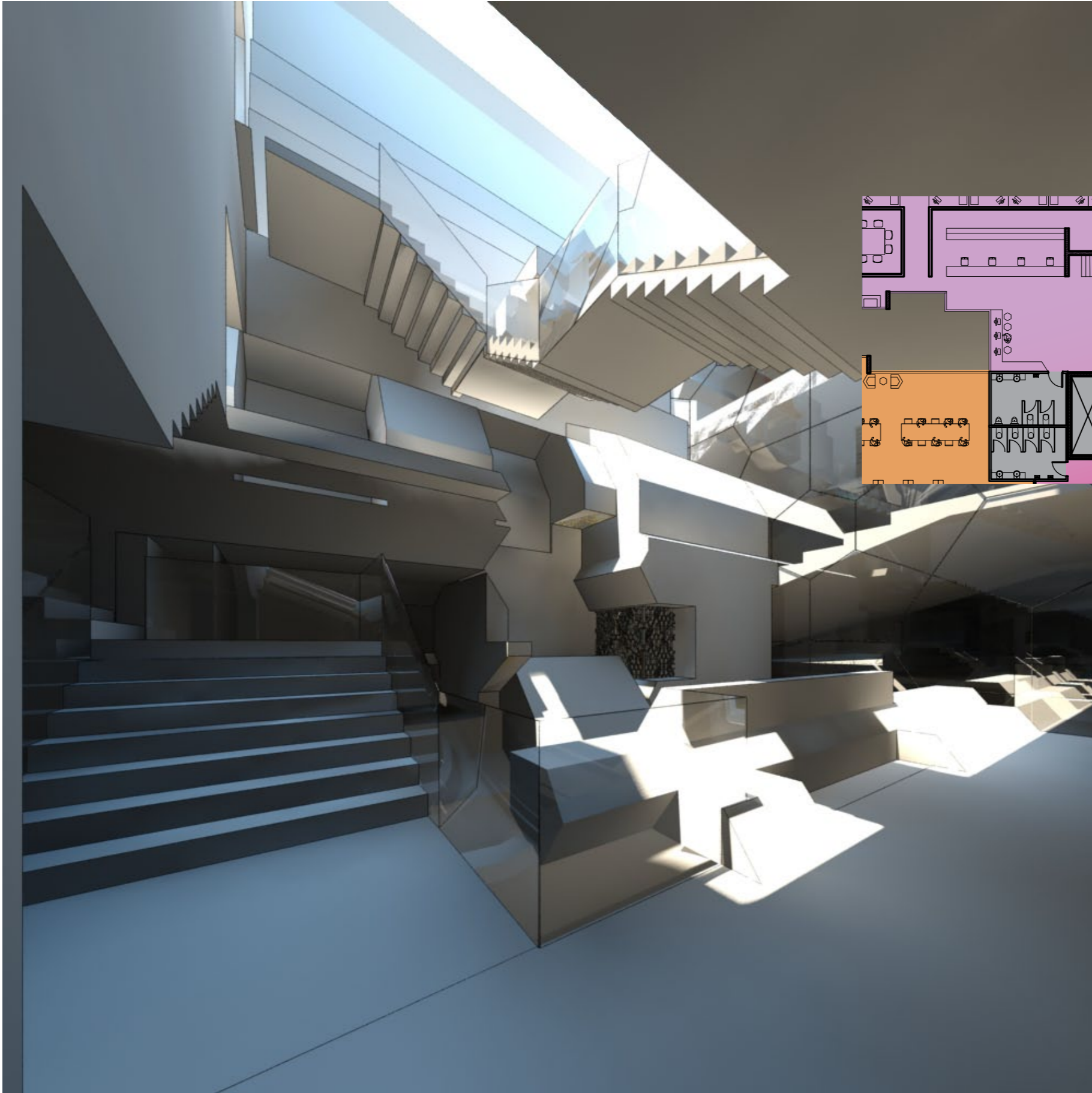
H: THE CRACK



LEVEL 1

W: THE LEDGE



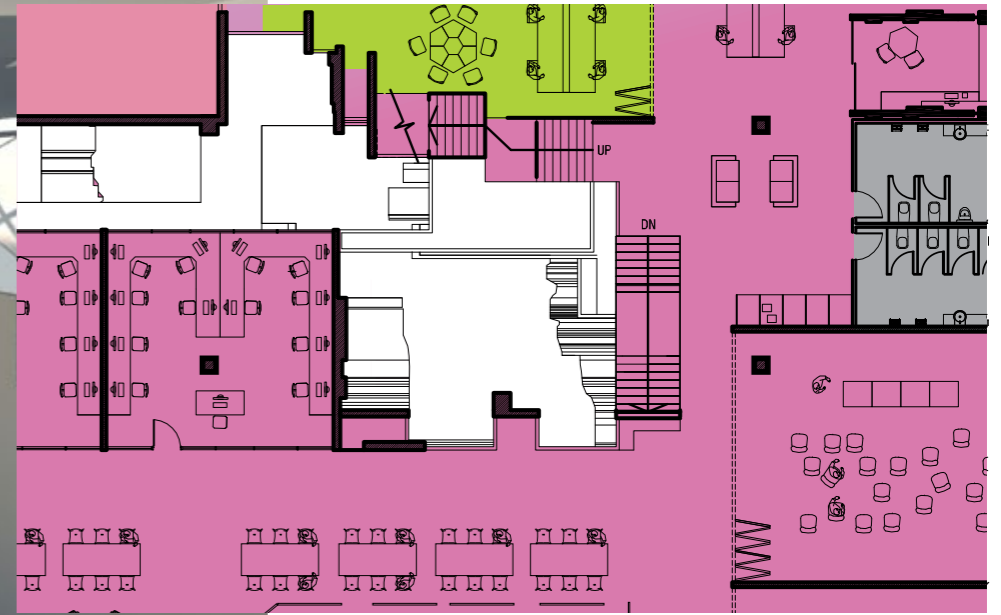
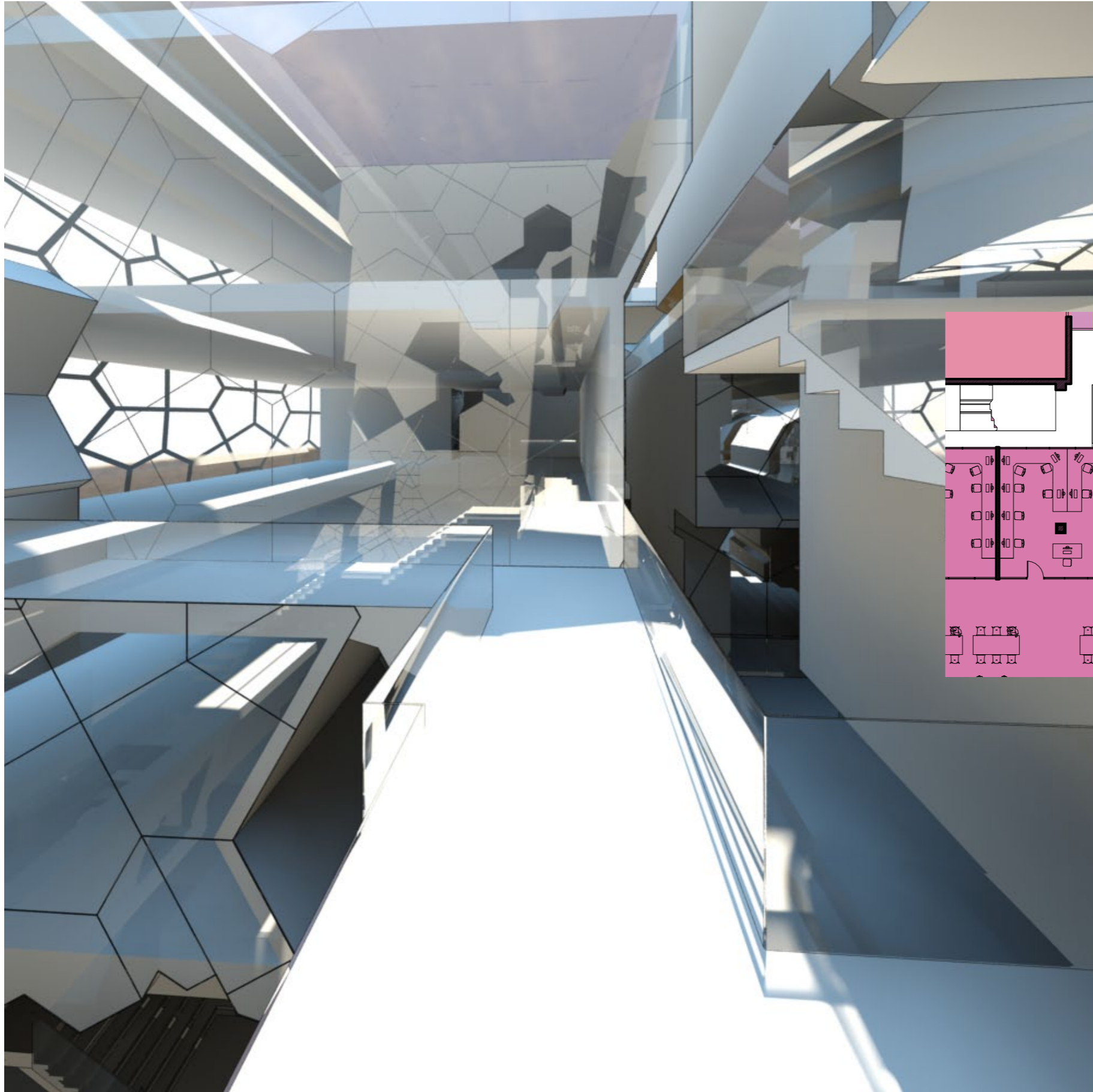


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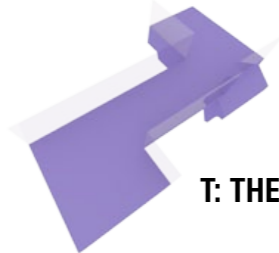


R: THE PARK BENCH



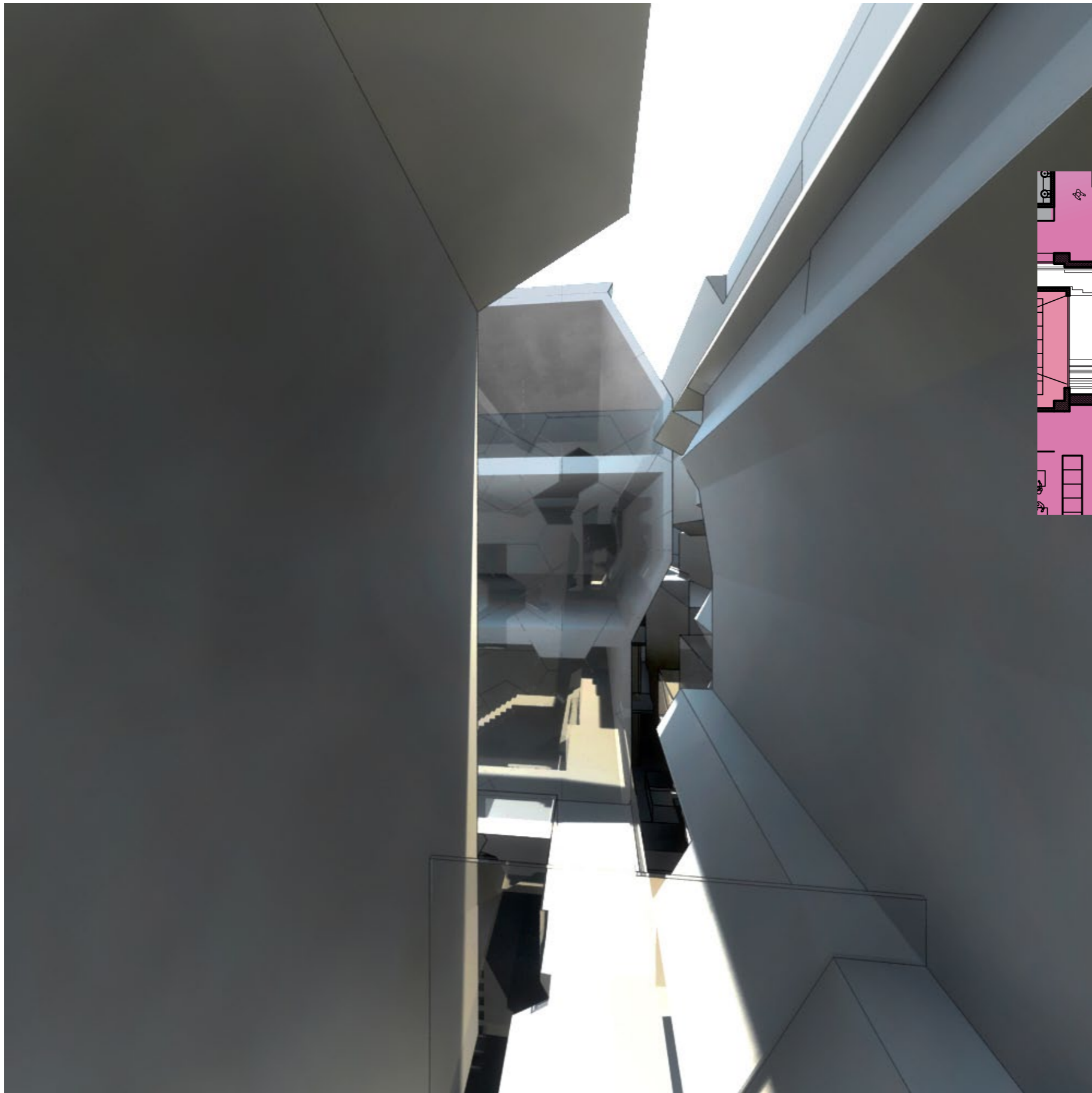


LEVEL 3



T: THE LEAP OF FAITH

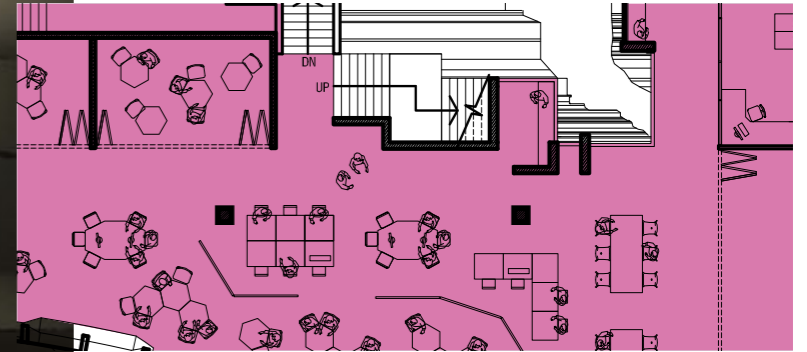




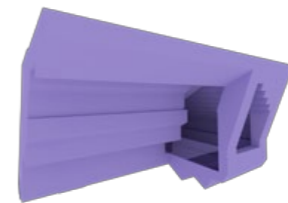
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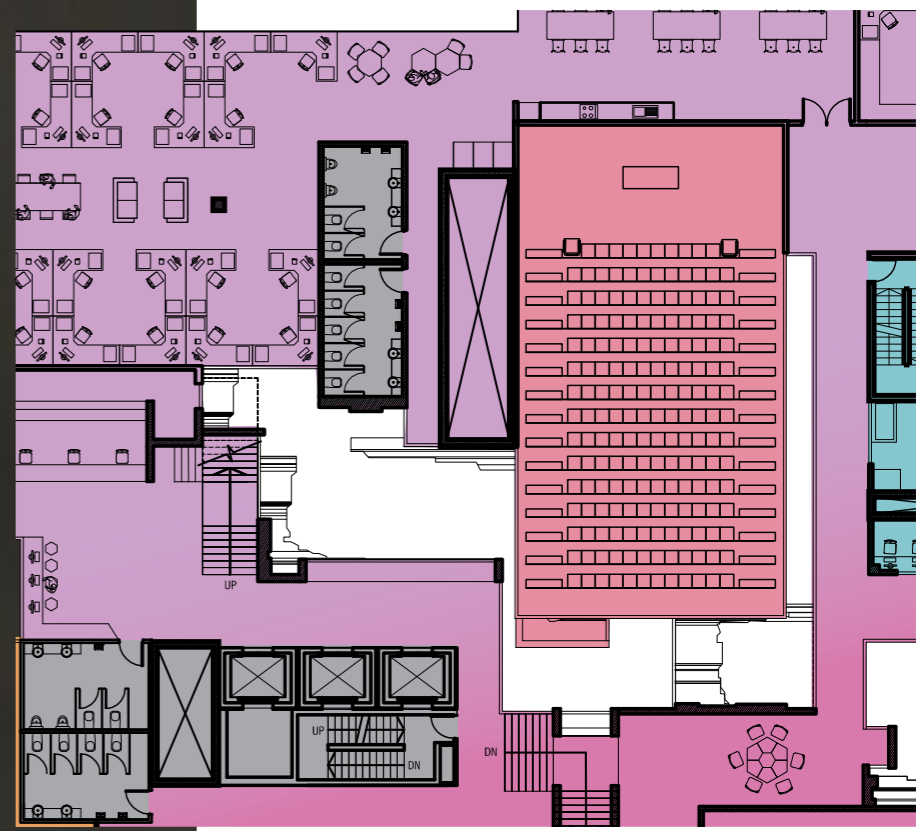
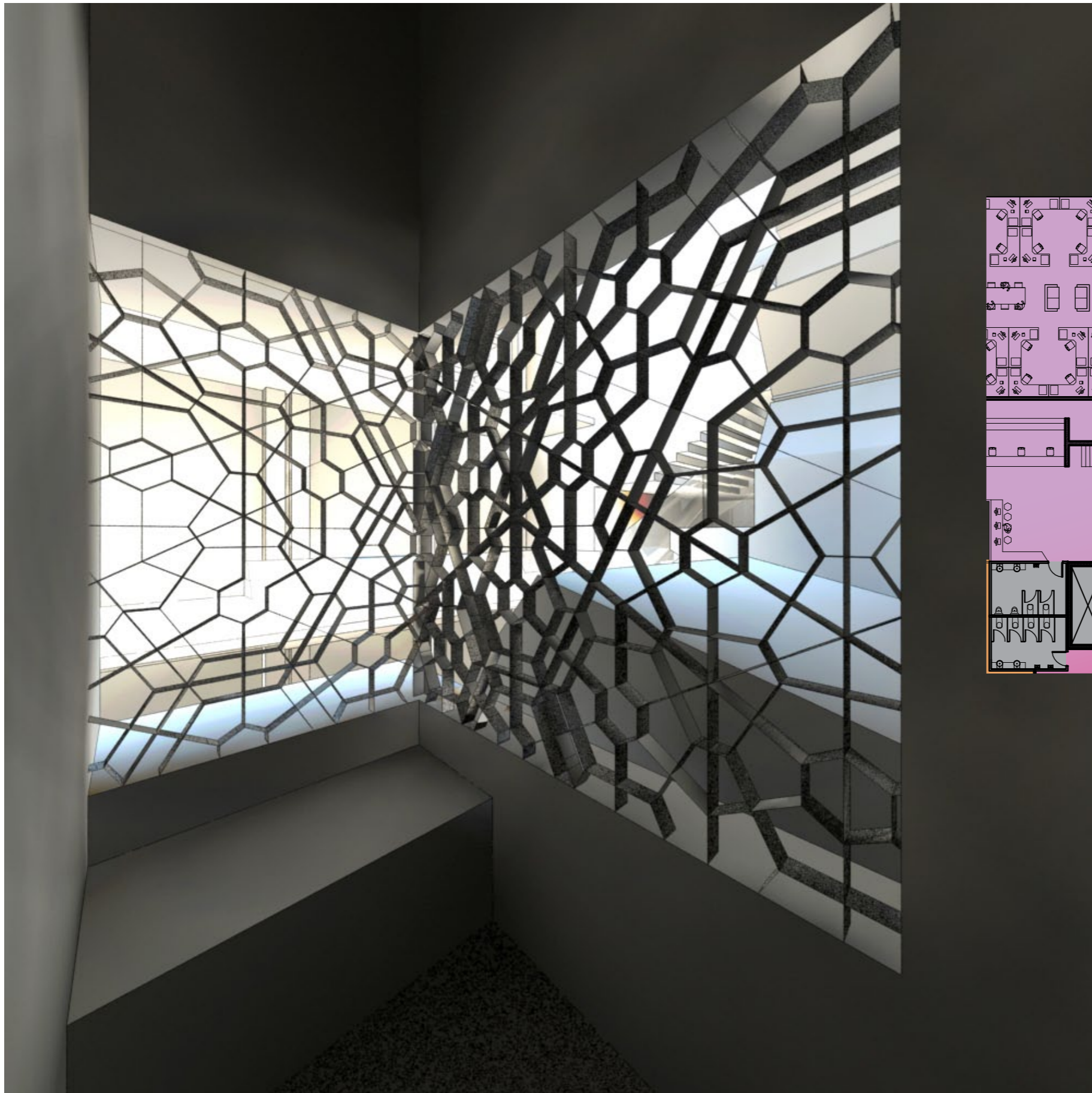
H: THE CRACK



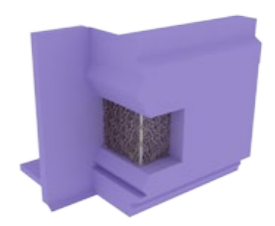
LEVEL 1



J: THE CARRIAGE

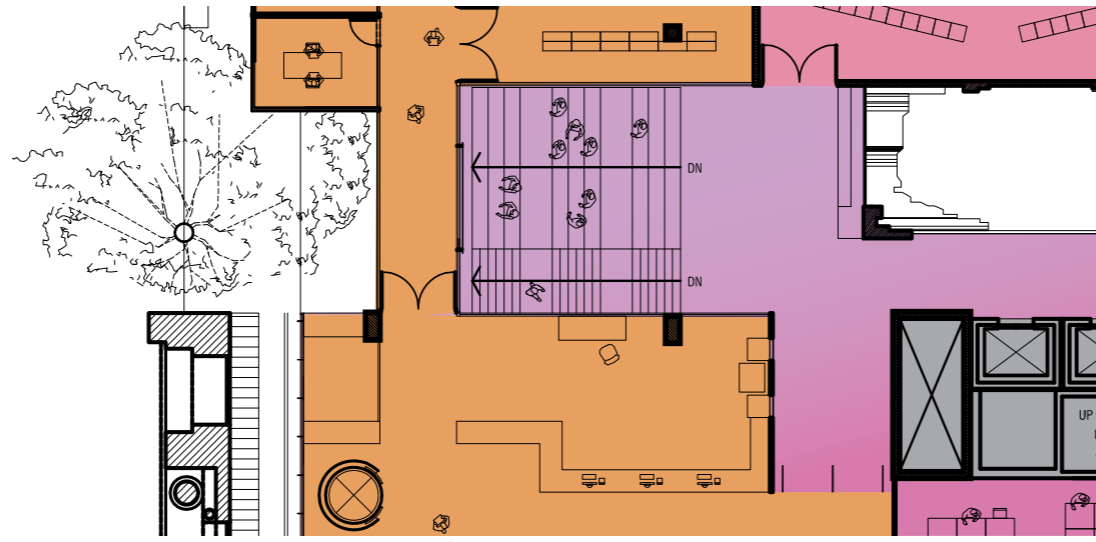
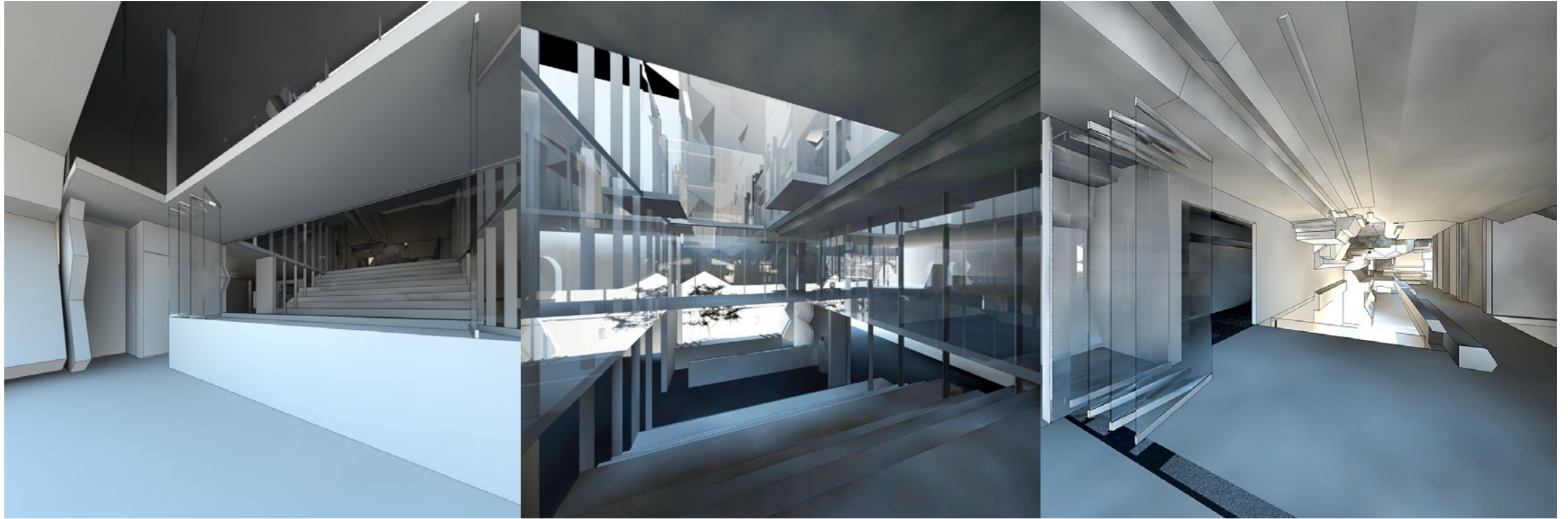


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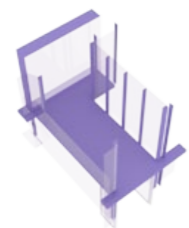


M: THE CONFESSIONAL

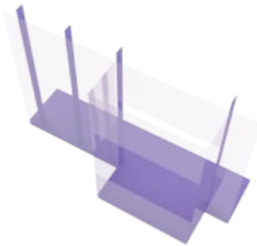




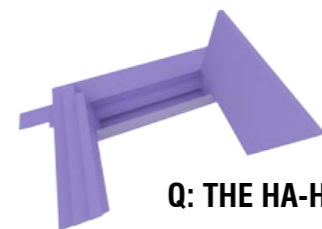
LEVEL 1



N: THE BRIDGE

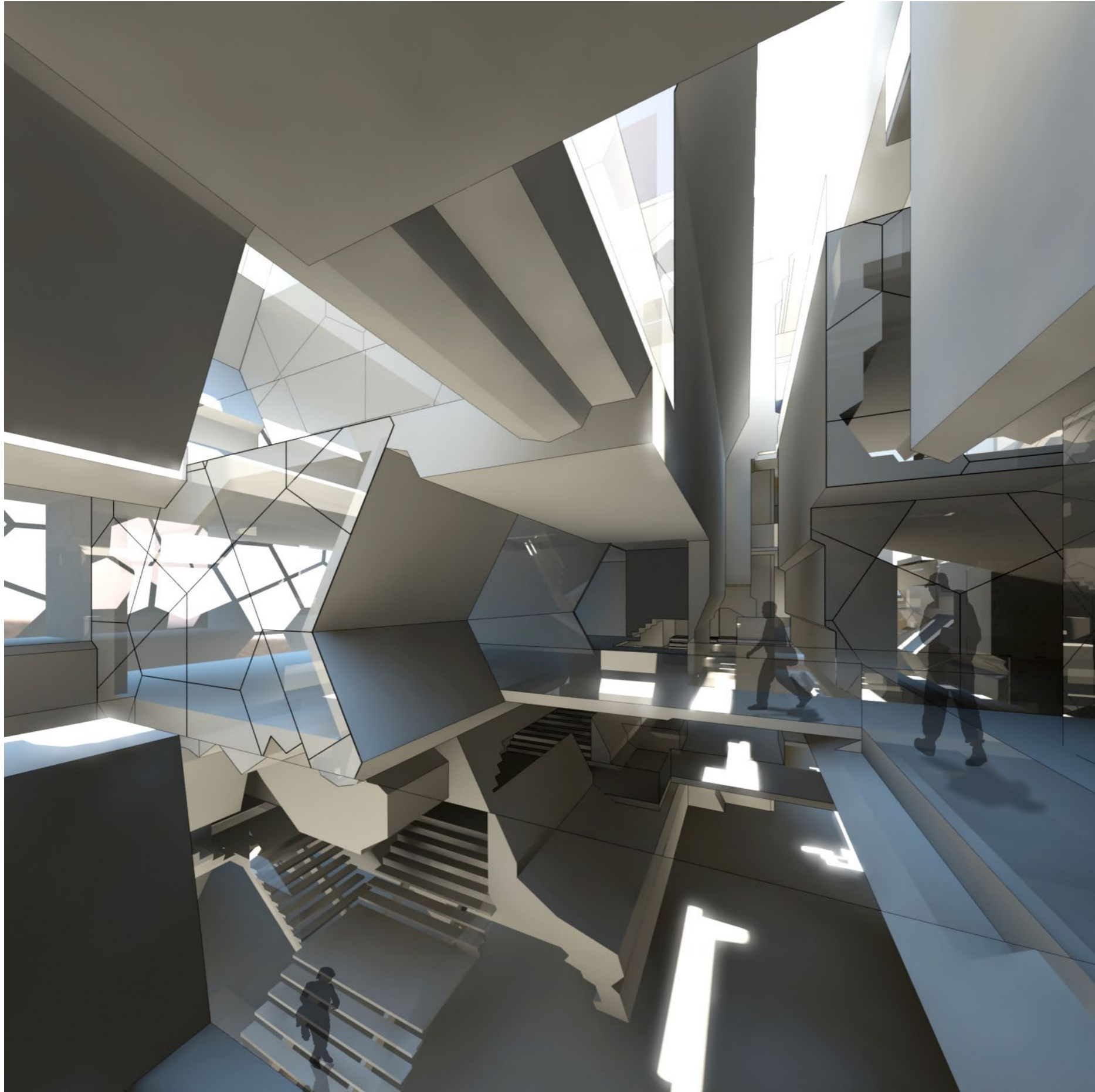


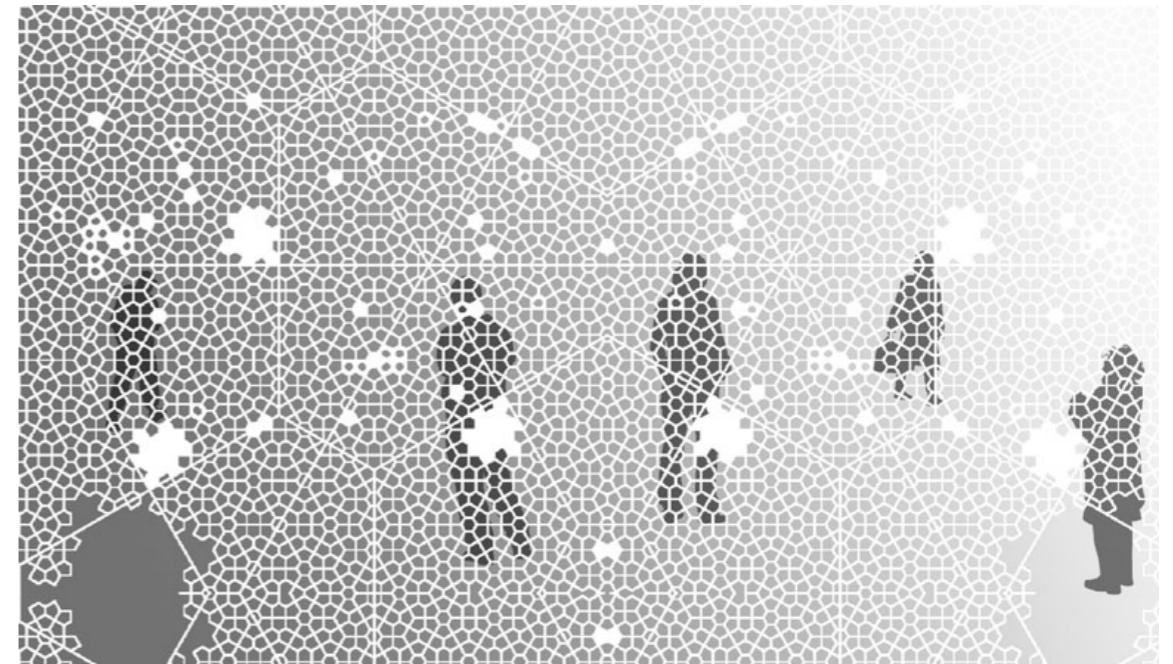
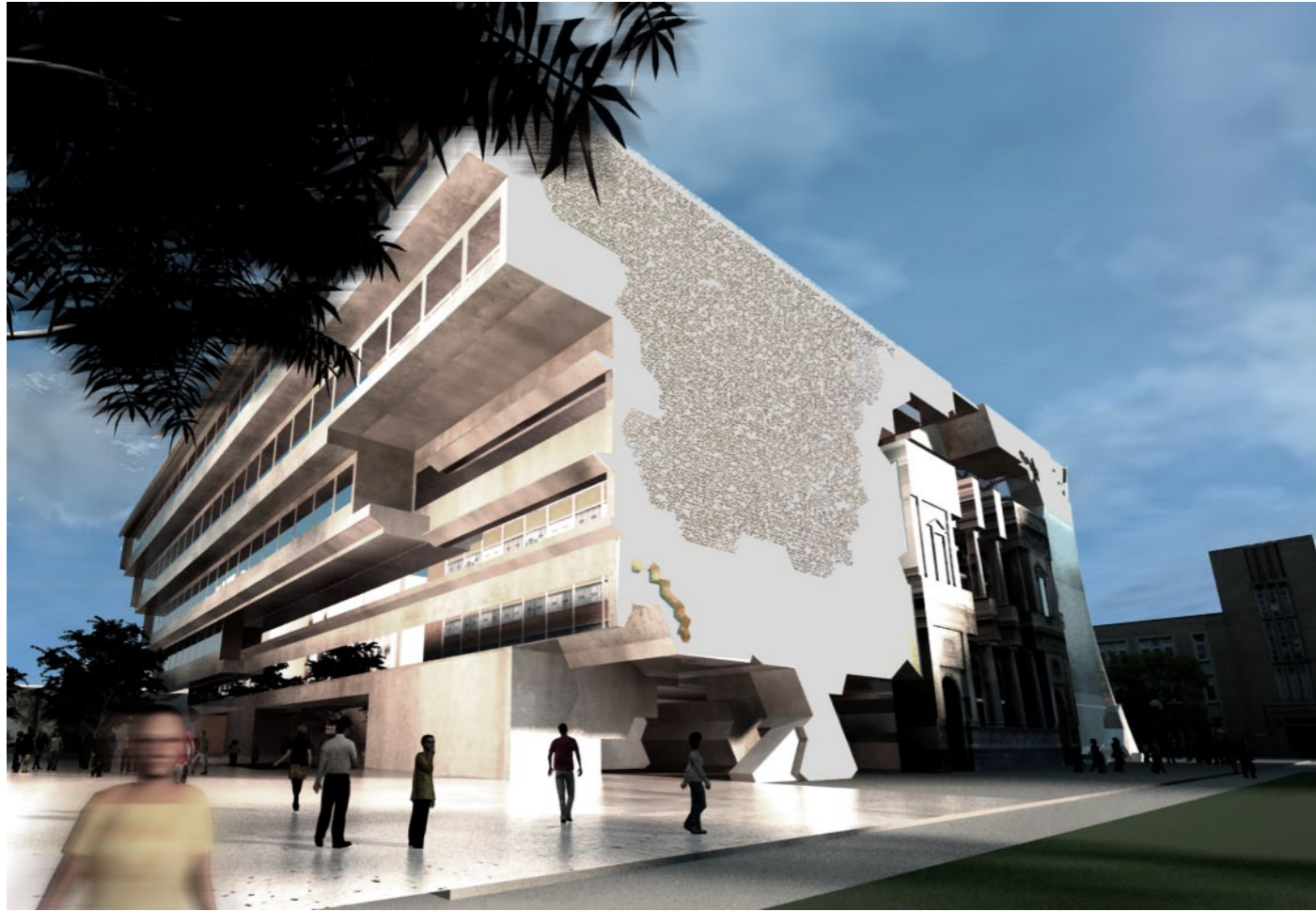
K: THE THEATRE BOOTH



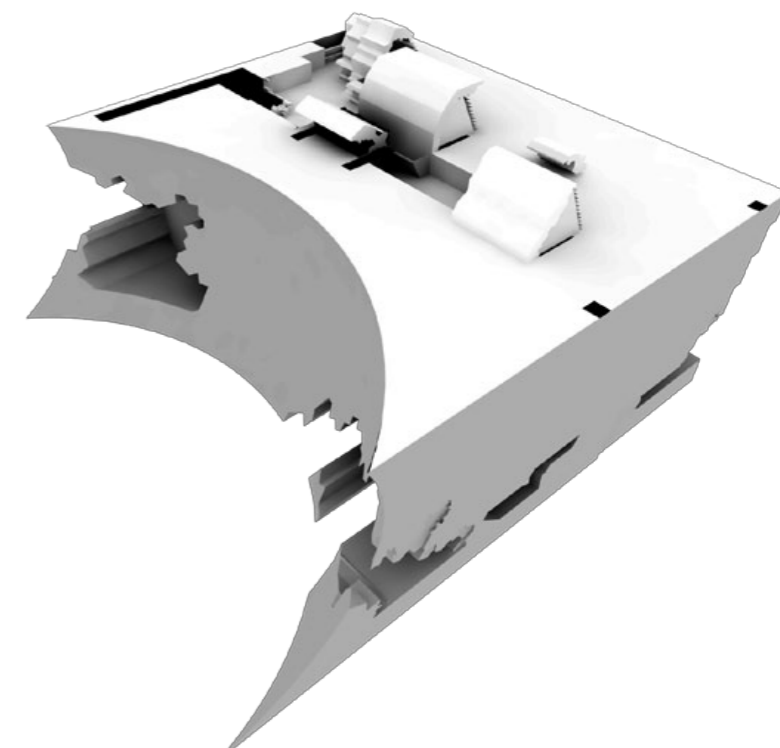
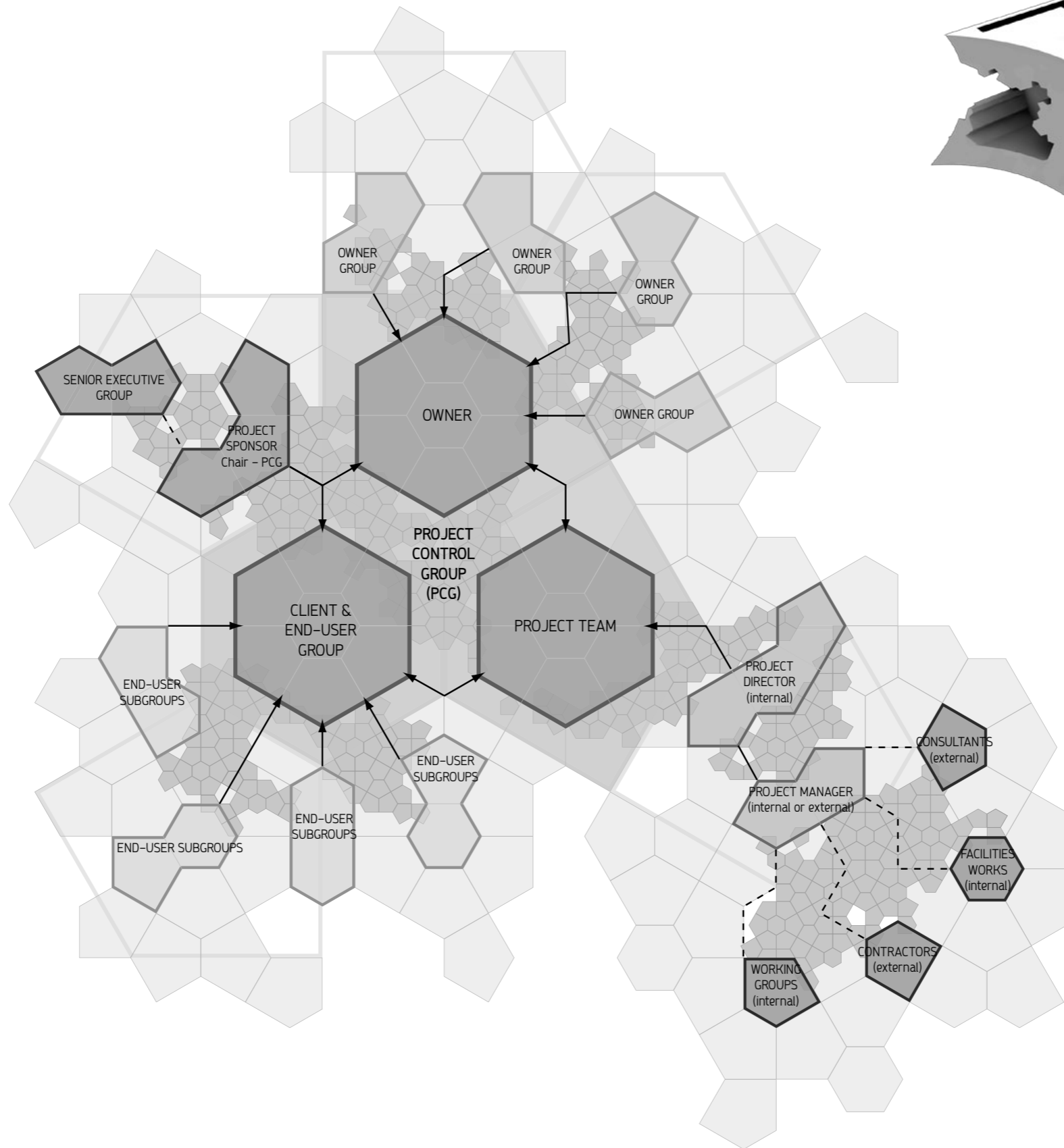
Q: THE HA-HA











University of Melbourne Faculty of Architecture Building and Planning

DESIGN AND DELIVERY CAPACITY

The methodology for providing timely, complete and correct services for the project including coordination of the consultant team suitable for the complex nature of this brief and client.

Architectural team structure and resourcing

- McBride Charles Ryan (MCR) will joint venture with Architectus, providing more than 150 staff in Melbourne and Sydney including 15 Building Information Modelling (BIM) specialists
- MCR and Architectus will jointly manage the project briefing, design, documentation and construction phases. MCR will lead the design development supported by Architectus educational expertise, delivery capacity and quality management processes

Time management

- Comply with University of Melbourne Project Management and Design Standards
- Complete Project Initiation Workshop and identify brief and sustainability objectives early
- Implement Building Information Modelling (BIM) to maintain design and programme in real time to client, cost planner, consultants and contractors and to reduce time required for design and documentation
- Implement Architectus/MCR Management System Procedures to provide timely reviews and approvals and reduce likelihood of abortive work
- Register project early with Green Building Council of Australia for Green Star rating and use of in house accredited professional
- Architect to report progress monthly to PCG
- Sub-consultants to report progress fortnightly to architects
- Architect to report progress regularly to Project Manager (if appointed)
- Review all procurement strategy options early to balance time, cost quality outcomes
- Implement Construction and Phasing Plan to ensure university continues to operate normally during construction period

Cost Management

- Comply with University of Melbourne Project Management and Design Standards
- Complete Project Initiation Workshop and identify brief and sustainability objectives early
- Implement BIM to maintain design and costs in real time to client, cost planner, consultants and contractors. Material quantities and cost information can be dynamically derived from the model, replacing 'rules of thumb' with accurate information. Construction costs are reduced by providing precise documentation and quantities to tenderers and reducing risk. Contractors and subcontractors can measure directly from the model
- Implement Architectus/MCR Management System Procedures to provide timely reviews of costs and hold points pending client approvals
- Architect to report progress monthly to PCG
- Sub-consultants to report progress fortnightly to architects
- Architect to report progress regularly to Project Manager (if appointed)
- Implement Change Proposal and Variation Approvals Registers during construction phase to manage contract sum
- Architect to present progress to PCG at key milestones for approval
- Review all procurement strategy options early to balance time, cost quality outcomes

Proposed methodology Quality Management

- Comply with University of Melbourne Project Management and Design Standards
- Complete Project Initiation Workshop and identify brief objectives and priorities
- Implement BIM to maintain design and quality in real time and allow auditing of design against brief at any time. Quality is improved by providing precise documentation and sophisticated analysis of lighting, energy and other aspects related to environmental sustainability. Construction quality is enhanced through capturing of sequencing and logistics information. The building model can be used for ongoing building management in areas such as leasing and maintenance
- Implement Architectus/MCR Management System Procedures based on AS/NZS ISO 9001:2000 to provide timely reviews of design against brief requirements and hold points pending client approvals
- Complete regular consultation with wide group of users to identify all quality requirements
- Architect to report progress monthly to PCG
- Sub-consultants to report progress fortnightly to architects
- Architect to report progress regularly to Project Manager (if appointed)
- Architect to present progress to PCG at key milestones for approval
- Implement Project Web system and intranet knowledge based system such as iKconnect
- Implement Integrated Environmental, Health and Safety System for Contractors
- Review all procurement strategy options early to balance time, cost quality outcomes

Coordination of consultant team

- Comply with University of Melbourne Project Management and Design Standards
- Implement BIUM to maintain all consultant designs in real time allowing total coordination of consultants and sub-contractor inputs. Feedback on building metrics allows informed decision making by the project team. Clash detection and coordination between disciplines is an intrinsic part of the BIM toolset.
- Implement Architectus/MCR Management System Procedures to provide timely reviews of consultant deliverables
- Architect to report progress monthly to PCG
- Sub-consultants to report progress fortnightly to architects
- Architect to report progress regularly to Project Manager (if appointed)
- Implement Project Web system and intranet knowledge based system such as iKconnect
- Provide dedicated architect team member to co-ordinate and monitor consultants inputs and performance

University of Melbourne Faculty of Architecture Building and Planning

METHODOLOGY 1

A proposed methodology for working with the faculty and University to support the strategic ambitions for this project.

Summary of strategic ambitions

(sourced from Concept Brief & Architectural Design Competition document)

- Furthering tradition of excellence in teaching and research in the Asia Pacific Region and internationally
- Realisation of the Melbourne Model and alignment with international best practice and traditions
- Foster ongoing relationships with the profession, government, associations and the community and extend linkages between education, research and practice
- Activate the Centre Precinct, develop a north south pedestrian link and provide a public interface. Develop linkages with Baldwin Spencer Building
- Foster an active and collegial work environment
- Develop an innovative building that sets a new standard for campus facilities in the region
- Opportunity to position the ABP and MSD with a commitment to innovation
- The project will be used to demonstrate the best possible processes of design, collaboration, procurement and construction
- The building will demonstrate the best practices of engineering, fabrication, construction and servicing
- Provide outstanding accommodation for research, formal and informal learning, student/staff collaboration and a studio teaching culture
- Provide a responsive building using the best technologies and techniques for sustainable design and serve as a laboratory and research opportunity for environmental systems
- The project will provide a new learning environment and demonstrate the best that that each profession has to offer
- Provide flexibility and adaptability for future change in teaching programme
- Attract the best academic, research and professional staff locally and internationally

Proposed activities to support strategic ambitions

- Development of functional and aspirational brief
- Pre-design research programme
- Develop a life cycle business case based upon improved occupant health and productivity considering cases studies such as Council House 2 (Paevere and Brown 2008).
- Consider models such as MIT Media Laboratory as a flexible planning module for studio space
- Review all procurement strategy options early to balance time, cost quality
- Inter-disciplinary team approach
- Precinct micro-climate analysis
- Precinct mapping and pedestrian studies
- Urban design analysis
- Indoor pedestrian movement modelling
- Building performance modelling including lighting, thermal and acoustic studies and modelling
- Green Star rating under GBCA Education Tool Rating System
- In house Green Star accredited professional
- Integration of building environmental performance into student coursework
- BIM provides integration with industry and a management tool for Property and Campus Services
- Project Web system and intranet knowledge based system such as iKconnect
- Integrate sub-contractor advice during the design development phase
- Integrate sustainable materials selections and sub-contractor supply chains
- Construction and Phasing Plan ensures university continues to operate normally during construction period.
- Integrated Contractor's Environmental, Health and Safety System
- Contractor's Traffic Management Plan
- Construction waste recycling

Proposed consultation to support strategic ambitions

(see also Proposed Consultation Framework and PCG Organisational Diagram)

- Project Control Group provides strategic over view, represents the interests of the client, end-user group and owner and provides project team with directions. Ensures project governance is provided such as time, cost and quality outcomes.
- Faculty staff consultation established as Working Parties to examine briefing and planning issues
- Property and Campus Services consultation established as Special Working Parties to examine cross campus and engineering services issues
- Interactive engagement between faculty, design team and contractor
- Student Surveys
- Student presentation forums
- Community consultation established to provide inclusive, proactive, clear, responsive and consistent input and information

University of Melbourne Faculty of Architecture Building and Planning
METHODOLOGY 2
proposed consultation framework

A PROJECT CONTROL GROUP

ROLE SUMMARY:

1. Represent the interests of the client, end-user group and owner
2. Provide the Project Team with directions where requested
3. Approve recommendations of the Working Party Groups
4. Monitor the progress of the project against brief, cost and programme requirements
5. Ensure the minimum governance requirements of the University are established and maintained including brief approval, community/campus consultation and reporting structures
6. Meeting monthly

TYPICAL MEMBERSHIP:

- Dean of School
- University or School Financial Officer
- Project Manager (in house, if appointed)
- Quantity Surveyor (in house or project consultant)
- Working Party representative
- Architect (lead consultant)
- Project Manager (if appointed)
- Project consultants (as required to suit agenda)

B WORKING PARTY GROUPS

ROLE SUMMARY:

1. Functional brief development
2. Compliance with University design standards
3. Compliance with TEFMA and legislative requirements
4. Internal planning
5. External common areas
6. Accessibility
7. Parking
8. Meeting frequency as required (weekly/fortnightly)

TYPICAL MEMBERSHIP:

- Manager level nominee for each
- Staff nominees
- Project Manager (in house, if appointed)
- Architect (lead consultant)
- Project Manager (if appointed)
- Project consultants (as required to suit agenda)

C SPECIAL WORKING PARTY GROUPS

ROLE SUMMARY:

1. Engineering functional brief development
2. Compliance with University design and engineering standards
3. Compliance with TEFMA and legislative requirements
4. Mechanical, electrical, hydraulic, fire, IT and communications design
5. Building Management Systems and environmental controls
6. Security
7. External services access
8. Life cycle costs and maintenance
9. Plant room layouts
10. Commissioning
11. Meeting frequency as required (fortnightly/monthly)

TYPICAL MEMBERSHIP:

- Property and Campus Services Manager level nominee
- Property and Campus Services engineers (as required to suit agenda)
- Architect (lead consultant)
- Project Manager (if appointed)
- Project consultants (as required to suit agenda)



Void extensions reflect northern sun into the building voids and provide a sculptural roof garden

Metallic panelling to the 'canyon' surfaces form an integrated solar chandelier

High performance optimised facade assists with the penetration of daylight while minimising solar heat load

Provision of outside air to be modulated via realtime monitoring of space-carbon-dioxide quantity, integrated into the building monitoring and controls system (BMCS)

Self-shading design to northern facade

Materials are selected according to their environmental impact, resource use and effect on indoor environmental quality

Light is refracted and reflected into void providing increased light levels and drama with height and shade contrasts

Air conditioning provision through a mixture of active and passive chilled beam systems

The 'canyon' void acts as a heliostat, reflecting daylight deep into the building form and minimising glare

External solar shading optimised for each facade orientation

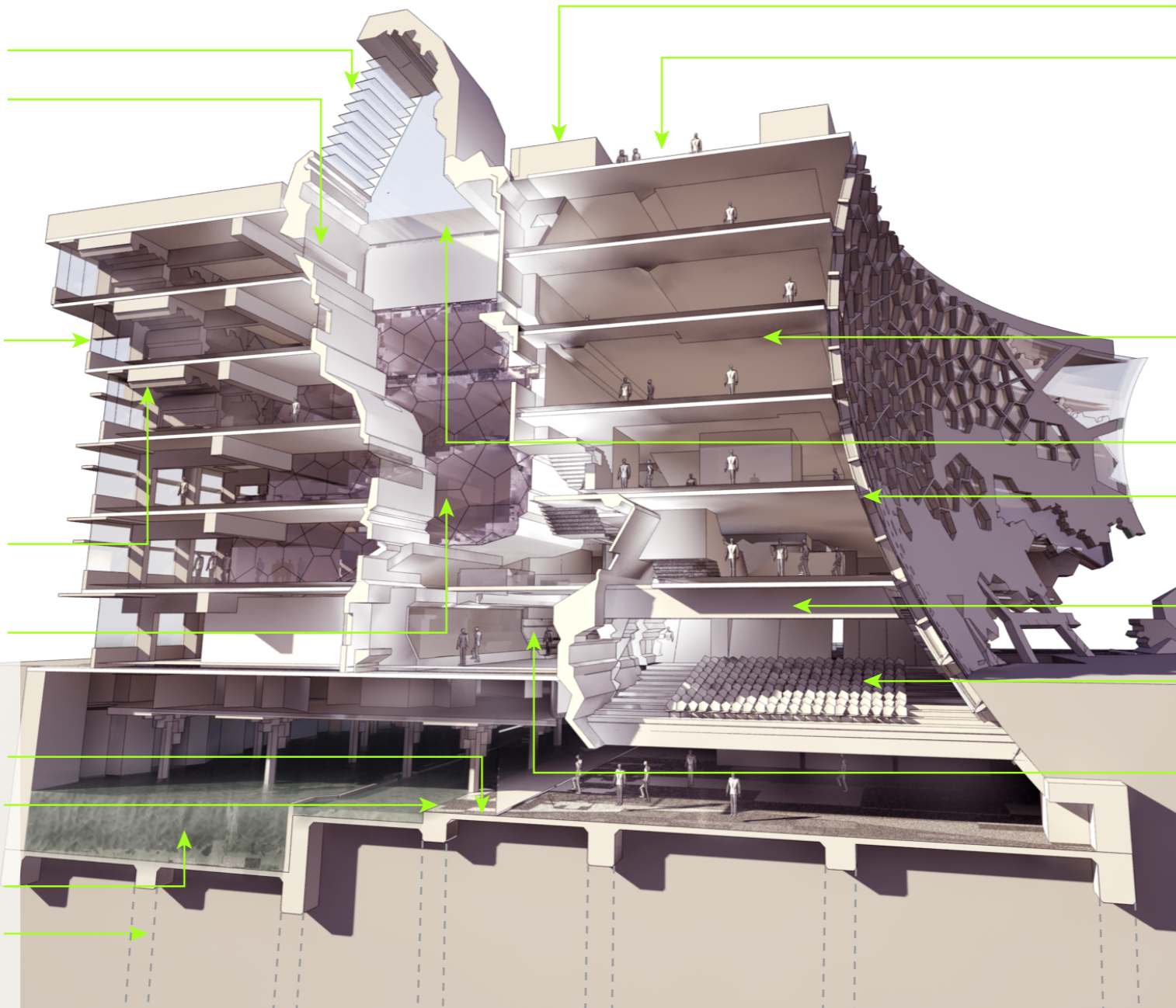
Tempered air is conditioned by the in-ground thermal labyrinth

Labyrinth constructed from demolished bulk from current ABP Building stored in gabion cages

Storm water collection reservoir

Heat rejection through geothermal loops embedded in structural piling

Waste water recycling through black water treatment / 'sewer mining' technology' for irrigation and reuse in cooling plant



Rooftop renewable energy sources include photovoltaic panels and solar hot water
Roof garden assists with storm water attenuation

X-CO2 windmills to be retro-fitted for future energy generation following the reduction of the Redmond Barry building (as per Masterplan)

Western 'active' facade allows natural ventilation in mid-season, a thermal barrier in winter increasing heating efficiency and comfort while optimising solar control in summer

High efficiency lighting and controls including daylight dimming of external and streetscape perimeter lighting and motion detectors in infrequently used spaces and cellular offices

Atrium void flues hot air, encouraging ventilation, cooling and acting as a smoke reservoir

High level thermal insulation within perimeter walls, roof and exposed floors

Air supplied via labyrinth with return path at high level (atrium) for internal zone ventilation

Mechanically activated windows provide cross ventilation, night purging and oxygen replacement

Delivery of conditioned air through low velocity floor mounted air outlets (displacement system) with return air picked up at high level of all lecture theatres

Rainwater harvesting and stormwater management is celebrated within the building

Base building air-conditioning is the mass of the building (passive)

On-site energy generation through a central energy centre comprising Air Engine and Tri-Generation technologies

Chilled water storage in basement minimises energy requirements for cooling

Centralised chillers and boilers offering high-level efficiency performances (COP's) at part load

WITH THANKS TO CUNDALL



