RIO

PORTFOLIO

SELECTED WORKS

2021 - 2023

ARCHITECTURE

ISFAR SAIF

Hi!

I'm Isfar Saif, a **third** year student of architectural engineering at the **University of Waterloo.**

Architecture to me is a captivating blend of art, science, and functionality that deeply resonates with me. It goes beyond the mere construction of buildings; it embodies the essence of how civilizations maneuver through life. Interacting with architecture allows us to immerse ourselves in the physical manifestation of human imagination and innovation. The way buildings are designed and crafted has the power to shape our experiences, emotions, and perspectives. It is a testament to our creativity and a reflection of our values. Architecture has the ability to transform mundane spaces into exciting and awe-inspiring environments, stirring a sense of wonder and inspiration within us. It is a language that speaks volumes about the past, present, and future of our society, and for me, it represents the harmonious blend of functionality, beauty, and the endless possibilities of human expression.

I also have other **hobbies** and **interests**. I am a huge fan of **soccer**, and love playing **badminton** & **table tennis**. I also like to **travel, sketch,** and learn about **other cultures** and **architecture**.

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Isfar Saif (LinkedIn)

ISFAR SAIF

ARCHITECTURAL ENGINEERING

CONTACT

+1 (437) 995 3748

Imsaif@uwaterloo.ca

IsfarSaif

Toronto, ON, Canada

DRAFTING & MODELING SKILLS

- AutoCAD
- Revit
- Rhino3D
- SketchUp

RENDERING SKILLS

- Enscape
- Photoshop

OFFICE SKILLS

- Office
- Google Suite
- Indesign

ACHIEVEMENTS & CERTIFICATION

- Building Code
- Timber Code
- WHMIS Certified
- Excellent Post Co-op Rating

RELEVANT COURSES

- *Environmental Building Studio*
- *Architectural Graphic Studio*
- *Enclosure Design Studio*
- *Architectural Engineering Studio*
- *Structural Analysis*
- *Structural Timber Design*
- *Soil Mechanics & Foundations*

EDUCATION

University of Waterloo

Bachelors of Applied Science - Architectural Engineering

2020 - Present

WORK EXPERIENCE

Project Engineer — North York
EASTERN CONSTRUCTION LTD. — Winter 2023

- Conducted **weekly site inspections**, assessing trades and site conditions.
- Generated reports on inspections, focusing on **gutters**, **gravel bed**, and site cleanliness.
- Ensured **safety compliance** by inspecting workers' safety measures and marking hazardous areas.
- Conducted **site surveying** and **360° mapping** for virtual reality plans.
- Performed **moisture tests** on roof tarp to meet wood quality standards.
- Compiled comprehensive **submittal documents** for the project.

Architecture / Engineering Support — Scarborough
SUMMERWOOD PRODUCTS INC. — Summer 2022

- Drafted **4 AutoCAD permit drawings** per week, ensuring **Ontario Building Code** compliance for city approval.
- Calculated a minimum of **10 engineering assessments** daily for multiple projects.
- Created **15 preliminary drawings** weekly for customer approval.
- Processed **quantity take-offs** for accurate material estimation.
- Designed **detail drawings** for job-specific foundations.
- Conducted frequent **client meetings** for drawing approval and clarifications.

Jr Project Coordinator — Scarborough
CM DESIGNERS & ENGINEERS INC. — Fall 2021

- Led **site visits**, conducting measurements to gather accurate data for design.
- Conducted **client meetings** to understand preferences and vision.
- Designed **AutoCAD drawings for permits**, ensuring compliance and accuracy.
- Created **detailed structural drawings** and calculations for safety.
- Ensured compliance with **Ontario Building Code** in drawings.
- Coordinated with **city examiners** to address concerns and comply with regulations.
- Conducted **quantity take-offs** and coordinated with subcontractors.
- Prepared **sedimentation report** to comply with regulations and assess environmental impact.

PROJECTS

Public Library
Environmental Building Studio | **Winter 2022**

- Used **AutoCAD** to create details & elevations for a public library.
- Used **Revit** to create a mechanical model of the building with an HVAC system, also created a structural truss to support the load of the roof.

Wood Pavilion
Architectural Graphic Studio | **Spring 2022**

- Used **Rhino3D** to create a 3D model for a wood pavilion for a public park.
- Used **AutoCAD** to create site plans & used Rhino3D to create sections & elevation.
- Used **Enscape** to create renders.

Bridge Renovation
Environmental Building Studio | **Winter 2022**

- Used **AutoCAD** to create elevations for a bridge.
- Used **SketchUp** to create 3D model.
- Used **Enscape** to create realistic renders.

Building Reclad
Enclosure Design Studio | **Fall 2022**

- Used **Therm** to find areas in old student residential building where heat losses occur.
- Used **AutoCAD** to create building connection details & foundation to roof sections.

Projects

The EDGE Community Center

LOCATION:
Cambridge, Ontario

COURSE:
Environmental Building Studio

SKILLS:
REVIT, Enscape, AutoCAD, Photoshop

COLLABORATORS:
Nathan Allen, Ali Mirza

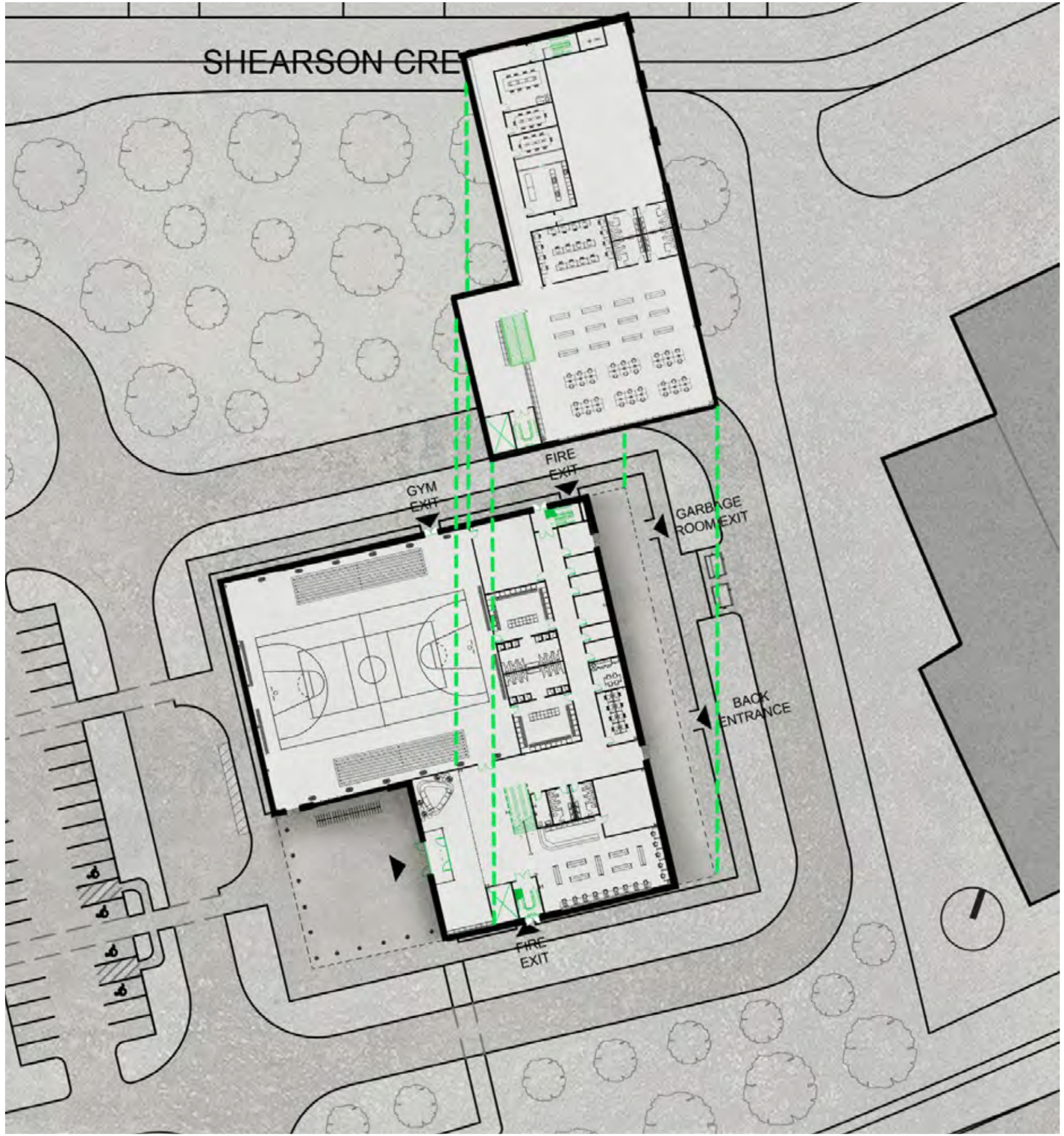
The Edge Community Center

Year: 2023

The Edge Community Center stands as a testament to innovative architecture's potential to transform vacant spaces into thriving hubs of community activity. This visionary project takes an empty lot and breathes life into it by meticulously designing a versatile space that caters to a myriad of needs. The heart of the center is the expansive gymnasium, where people of all ages gather to engage in sports and exercise, promoting physical well-being and camaraderie. Its open layout invites movement and connection, fostering a sense of unity among community members.

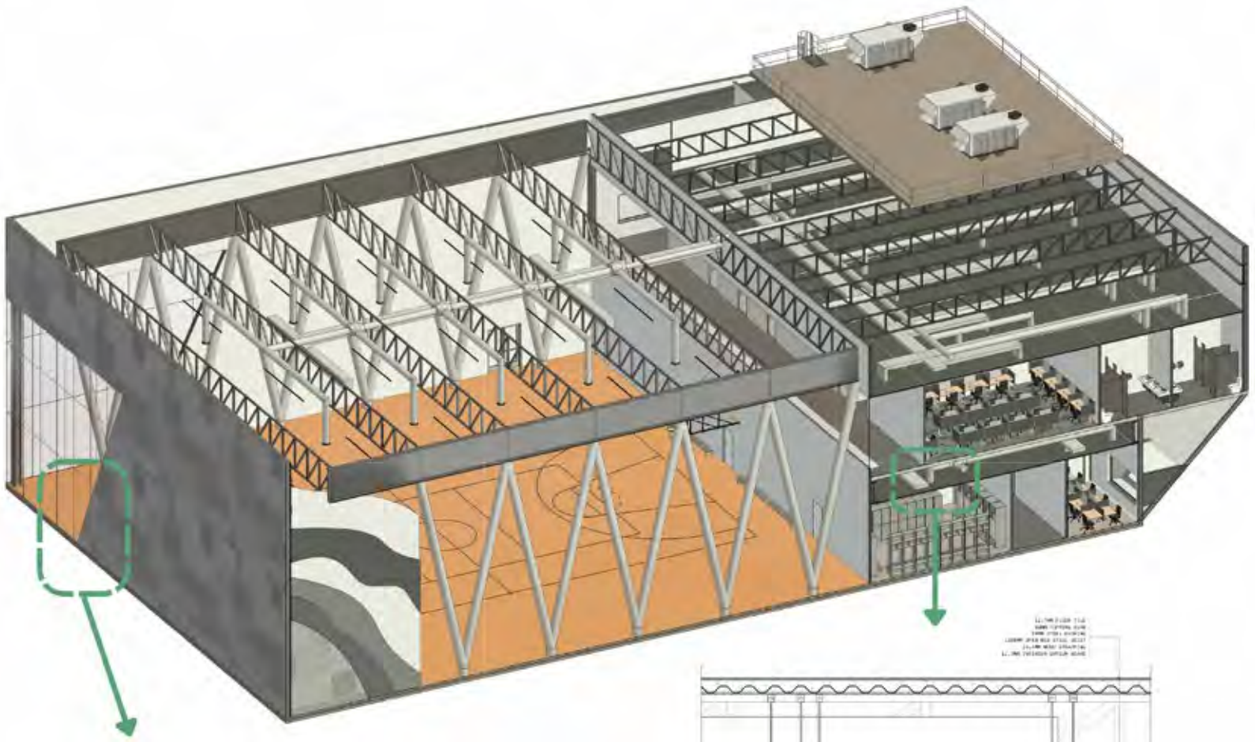
Central to the Edge Community Center's ethos is the inclusion of a library, reflecting a commitment to knowledge-sharing and lifelong learning. The library offers a serene retreat for book enthusiasts and researchers, fostering a love for reading and intellectual exploration. To ensure year-round comfort, the building features state-of-the-art heating, ventilation, and air conditioning (HVAC) systems, creating a pleasant atmosphere regardless of the weather outside. The structure's integrity and safety are upheld by using innovative materials like Open Web Steel Joists (OWSJ), providing a robust framework that supports the facility's various functions.

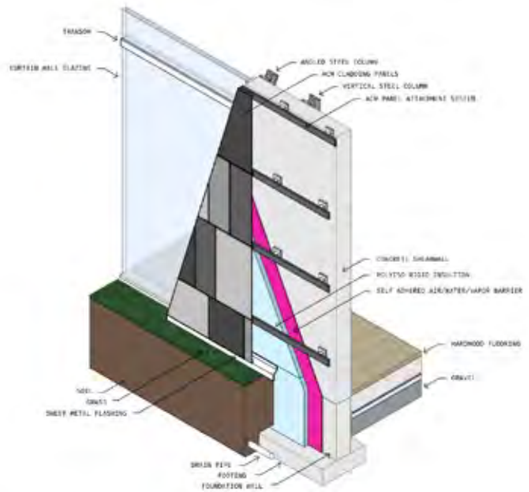
The Edge Community Center stands not just as an architectural marvel but as a symbol of how thoughtful design can uplift communities, enrich lives, and provide a space where individuals come together to learn, grow, and thrive.the sun path and lighting considerations with the constrained dimensions of the building. By leveraging our expertise and utilizing tools like Revit, we were able to overcome these challenges and create a library space that beautifully merges natural light, functionality, and structural integrity.



SOUTH ELEVATION

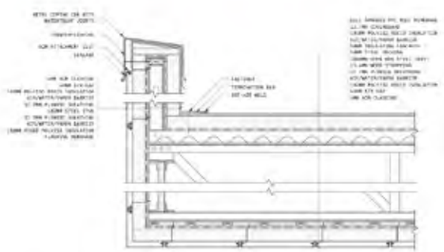
SOUTH SECTION (PERSPECTIVE)



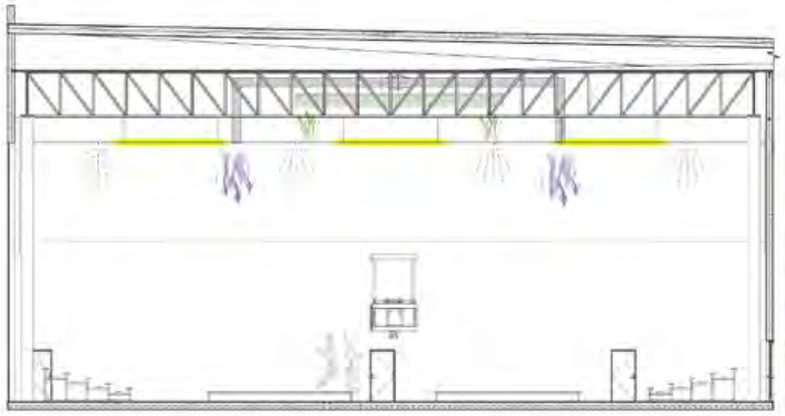


WALL ASSEMBLY

FLOOR SANDWICH



PARAPET AT CANTILEVER

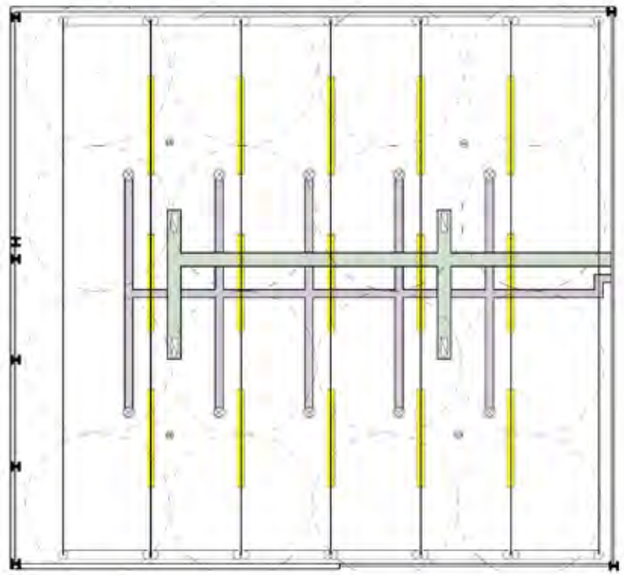


INTEGRATION SECTION - GYMNASIUM

LEGEND

- SD SMOKE DETECTOR
- PENDANT LIGHTING
- SUPPLY DIFFUSER
- SUPPLY DUCTS
- RETURN GRILL
- RETURN DUCTS
- SPRINKLER RADIUS

REFLECTED CEILING PLAN - GYMNASIUM



Exterior renders at the dusk looking in from the parking lot.

Renders of the gymnasium as seen through the curtain wall on the west corner

Renders of the gymnasium looking down from the second floor window

Renders of the library inside the community center

Waterloo Public Library

LOCATION:
Cambridge, Ontario

COURSE:
Environmental Building Studio

SKILLS:
REVIT, SketchUp, Enscape, AutoCAD, Photoshop

COLLABORATORS:
Vinum Khan, Amal Mohamed, Ali Mirza

Waterloo Public Library

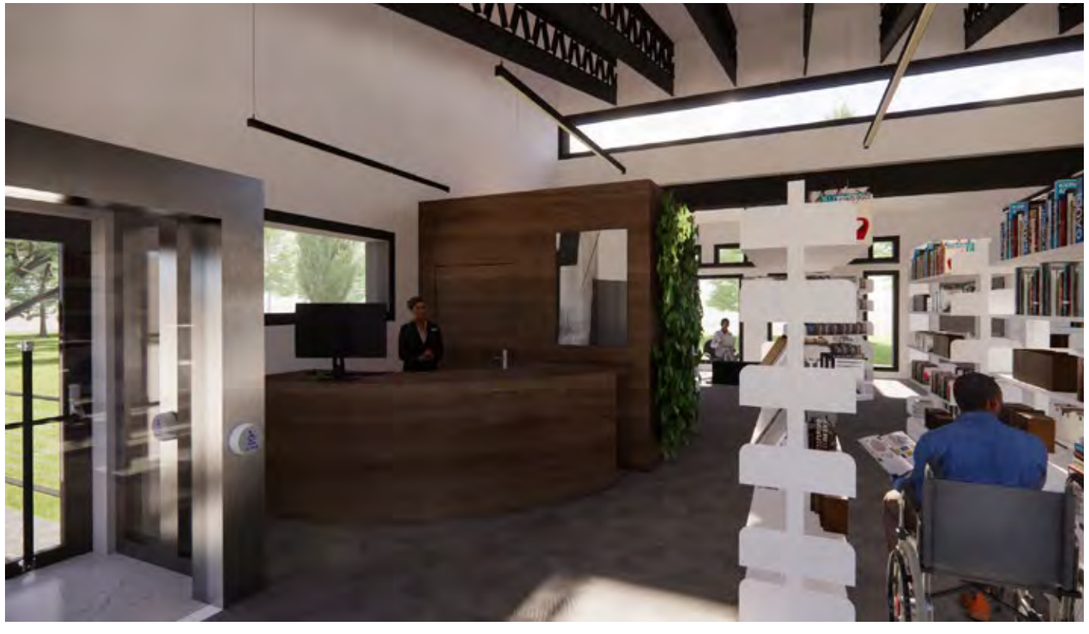
Year: 2022

The Waterloo Public Library project placed great emphasis on incorporating the sun path and lighting aspects into the building's design. Understanding the significant impact of natural light on the ambiance and functionality of a space, our team conducted meticulous studies of the sun's trajectory throughout the year. This data analysis allowed us to strategically position windows, skylights, and light shelves in order to optimize the penetration of daylight while minimizing issues like glare and heat gain.

The outcome was a design that flawlessly merged the external surroundings with the interior spaces, resulting in a harmonious and welcoming atmosphere for library visitors. The abundant natural light not only enhanced the library's aesthetics but also substantially reduced the reliance on artificial lighting during daylight hours, contributing to improved energy efficiency.

One of the project's distinctive challenges arose from the restricted dimensions of the building. With limited space available, we had to think creatively and efficiently to maximize the use of every square inch. To address this, we implemented specific structural elements, utilizing tools such as Revit to great advantage. Through careful design and engineering in Revit, we created custom trusses that provided the necessary structural support while adhering to the overall aesthetic vision of the building. These trusses were seamlessly integrated into the design, imparting a touch of elegance and visual interest to the space. The collaboration between various design disciplines was pivotal in ensuring that the trusses not only fulfilled their functional requirements but also blended harmoniously with the overall design concept.

The Waterloo Public Library project challenged us to harmonize the sun path and lighting considerations with the constrained dimensions of the building. By leveraging our expertise and utilizing tools like Revit, we were able to overcome these challenges and create a library space that beautifully merges natural light, functionality, and structural integrity.




EXIT

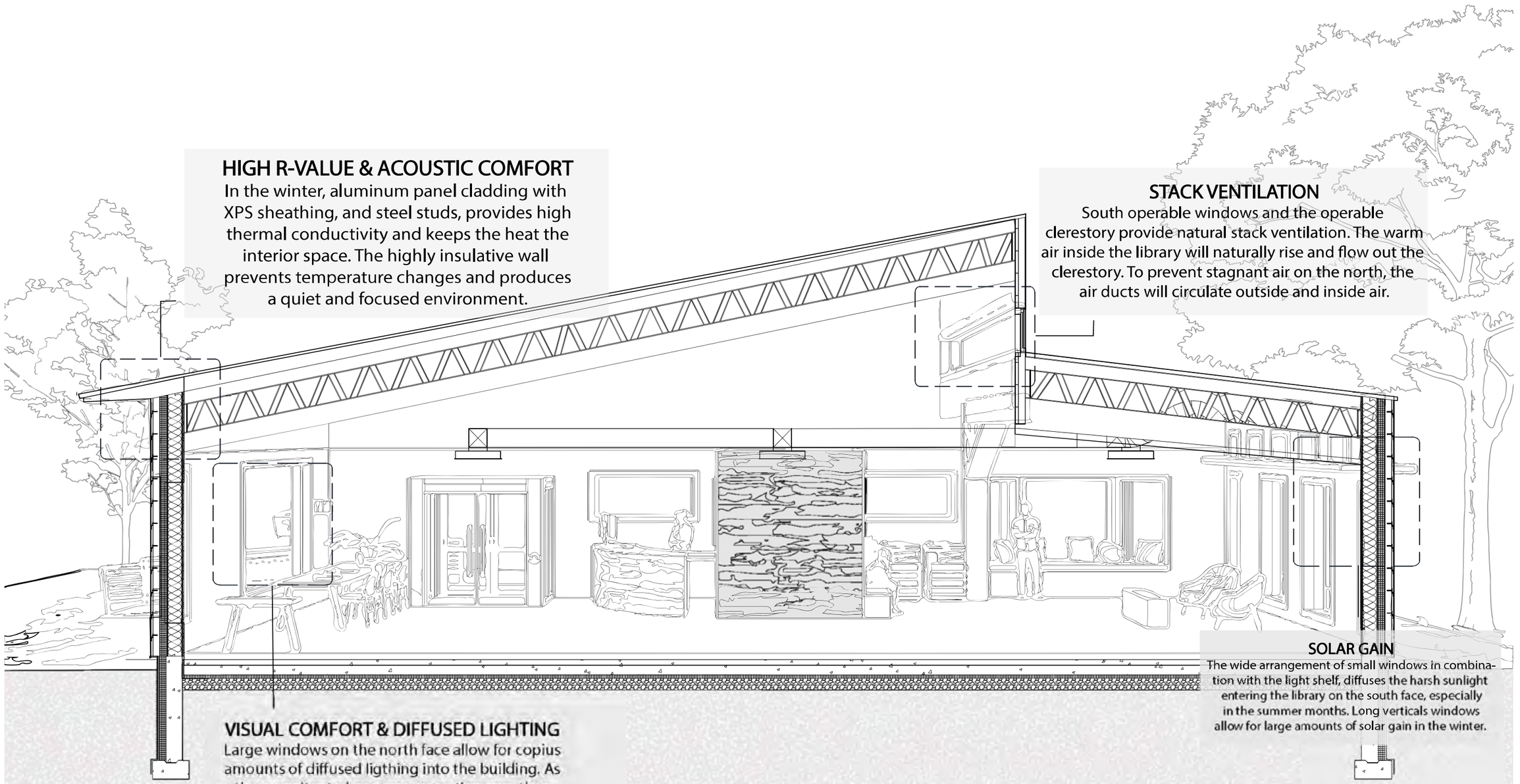

LEGEND
Library
Trees
Houses
Wind
Sun Path
1:1,100
0 0.01 0.01 0.03 mi
0 0.01 0.03 0.05 km

HIGH R-VALUE & ACOUSTIC COMFORT

In the winter, aluminum panel cladding with XPS sheathing, and steel studs, provides high thermal conductivity and keeps the heat the interior space. The highly insulative wall prevents temperature changes and produces a quiet and focused environment.

STACK VENTILATION

South operable windows and the operable clerestory provide natural stack ventilation. The warm air inside the library will naturally rise and flow out the clerestory. To prevent stagnant air on the north, the air ducts will circulate outside and inside air.

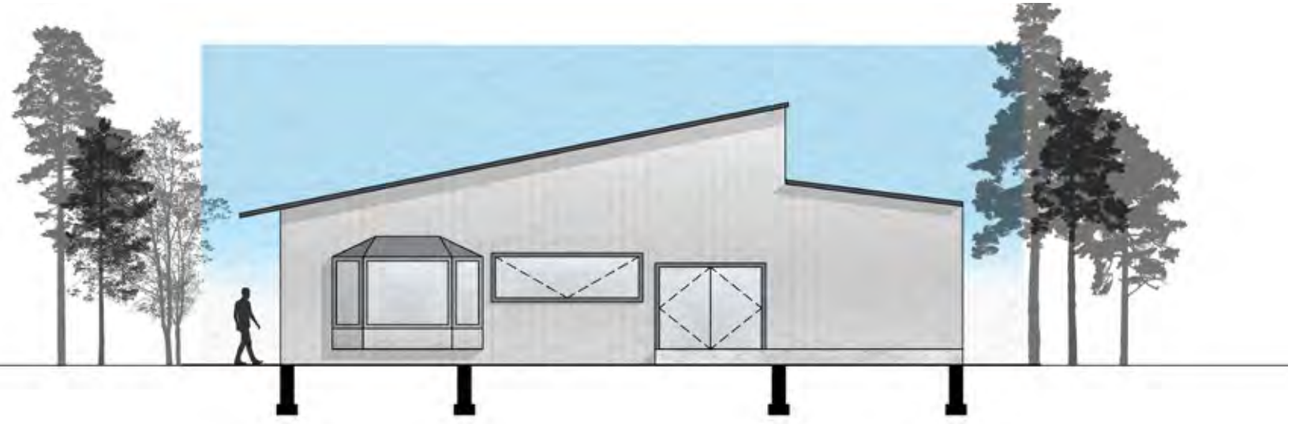


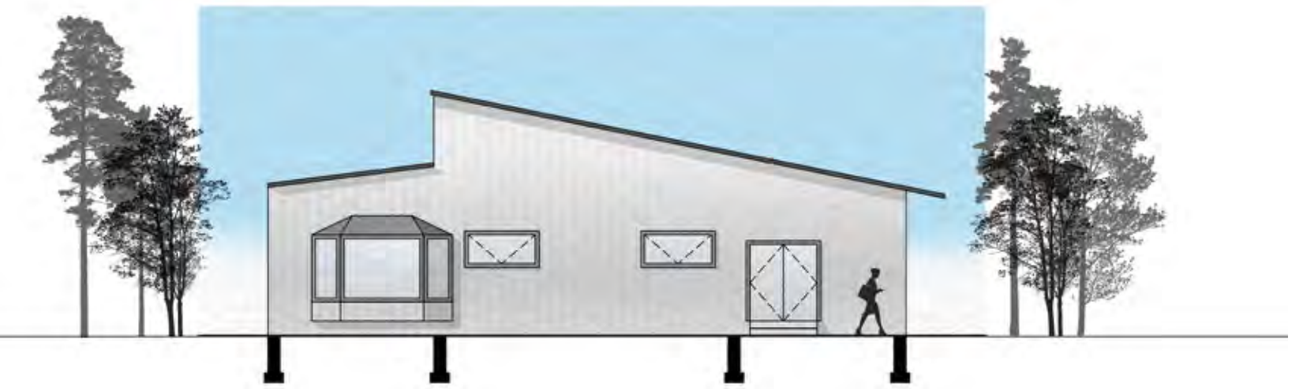
VISUAL COMFORT & DIFFUSED LIGHTING

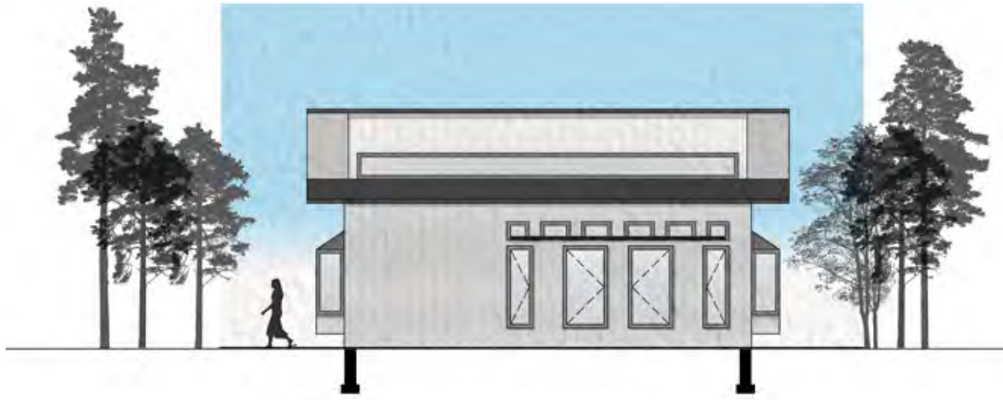
Large windows on the north face allow for copius amounts of diffused ligthing into the building. As they are situated near group seating area they provide a study space less eye-straining for occupants as well as a calming look of the front street view.

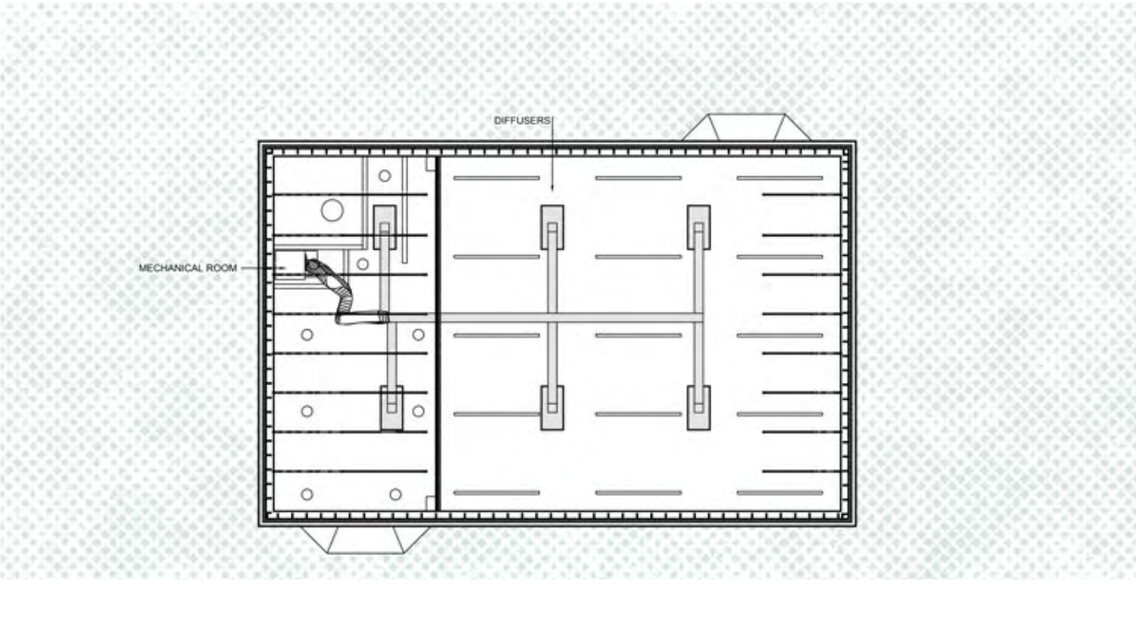
SOLAR GAIN

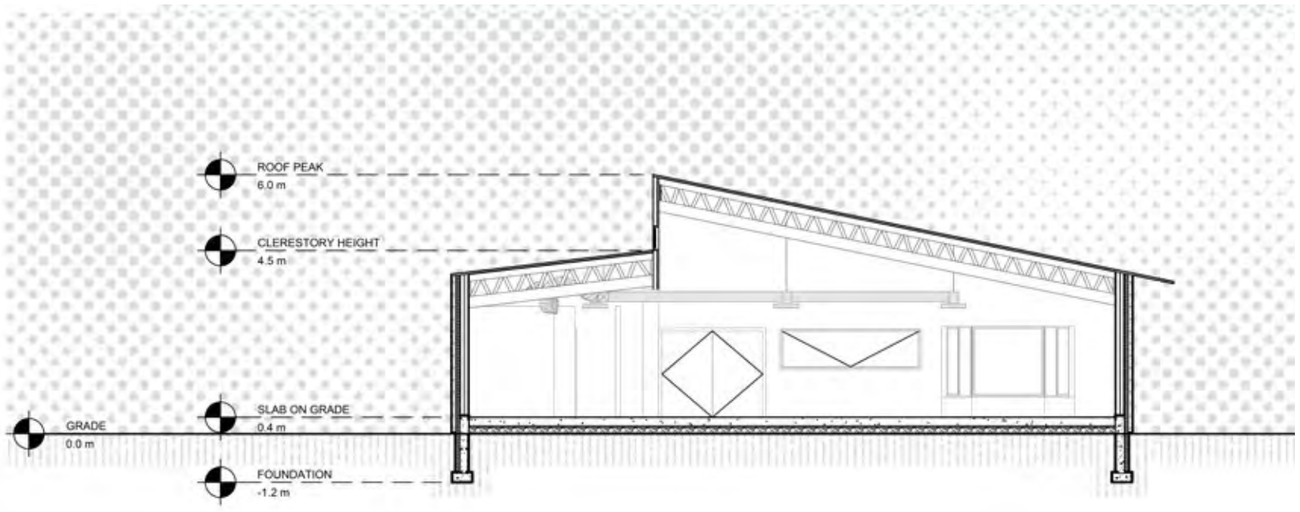
The wide arrangement of small windows in combination with the light shelf, diffuses the harsh sunlight entering the library on the south face, especially in the summer months. Long verticals windows allow for large amounts of solar gain in the winter.








DIFFUSERS
MECHANICAL ROOM


ROOF PEAK
6.0 m
CLERESTORY HEIGHT
4.5 m
SLAB ON GRADE
0.4 m
GRADE
0.0 m
FOUNDATION
-1.2 m

Kitchener Banyan

LOCATION:
Cambridge, Ontario

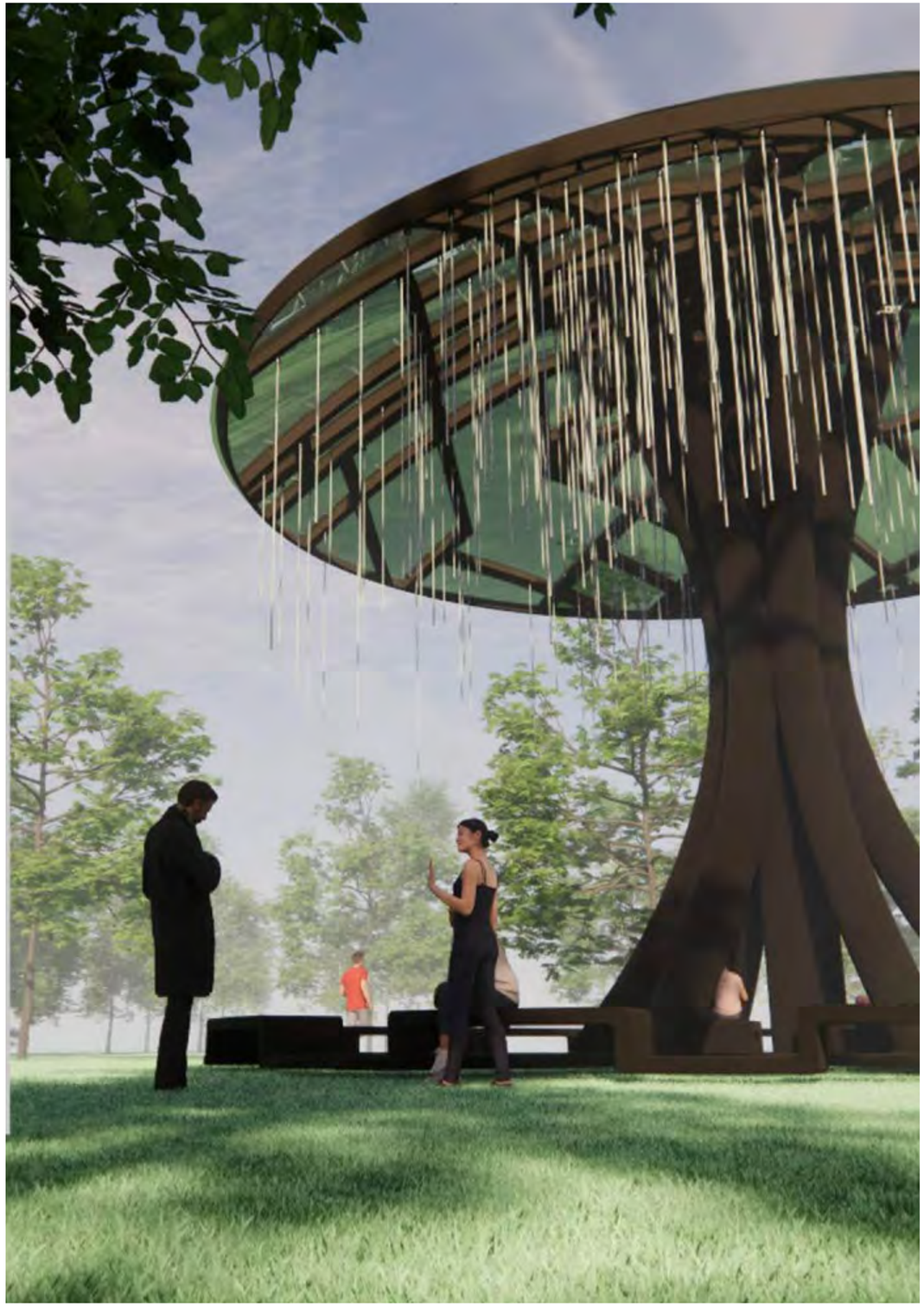
COURSE:
Environmental Building Studio

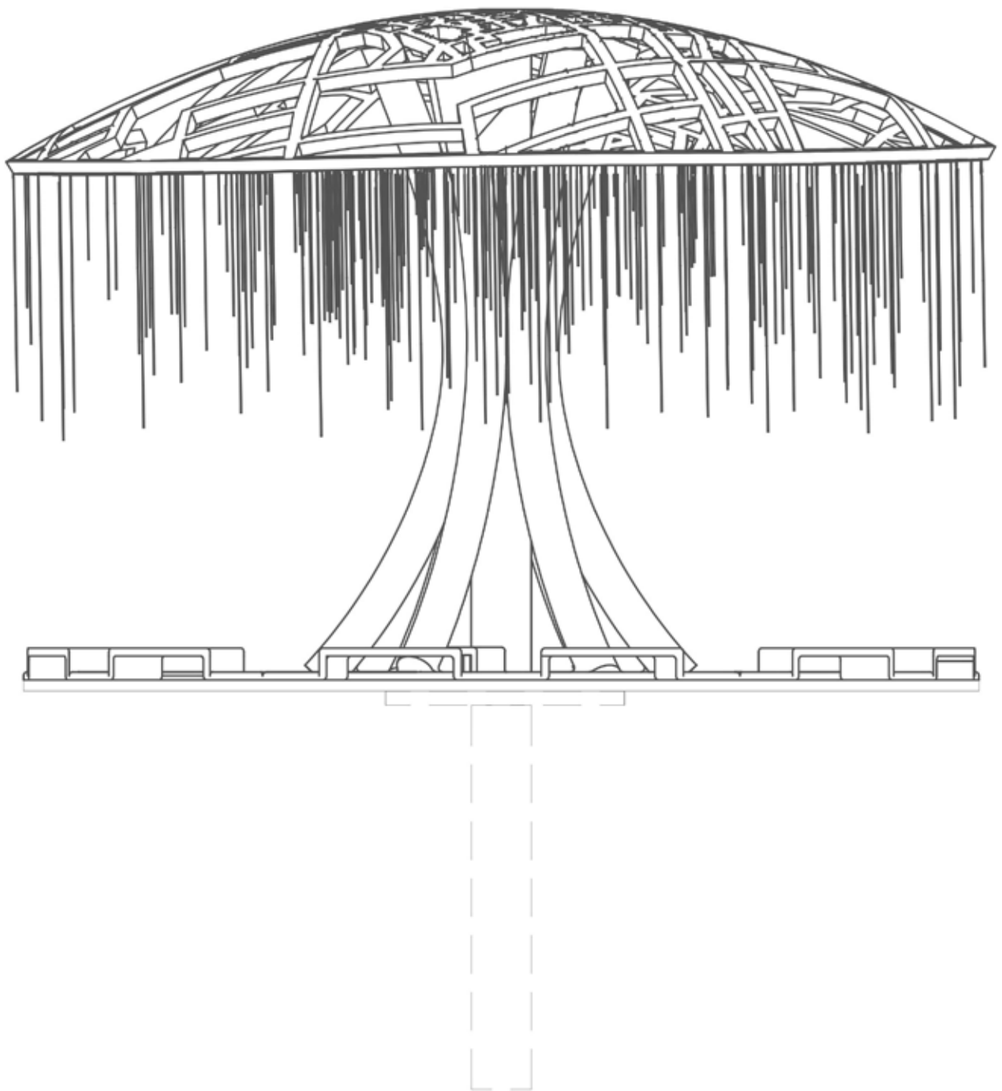
SKILLS:
Rhino3D, Enscape, AutoCAD

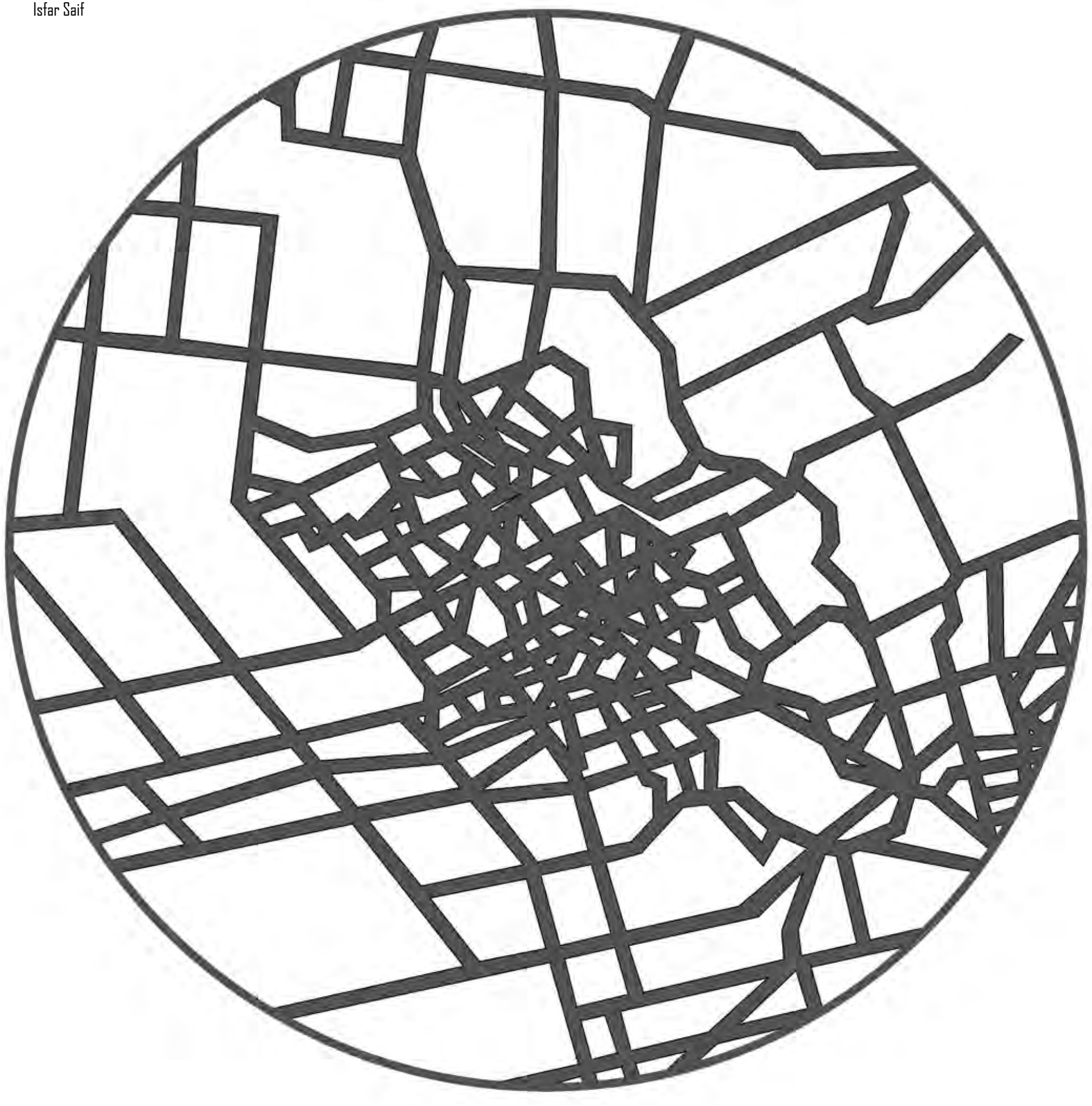
COLLABORATORS:
Nathan Allen, Cameron Lawrence, Shayna Panthee

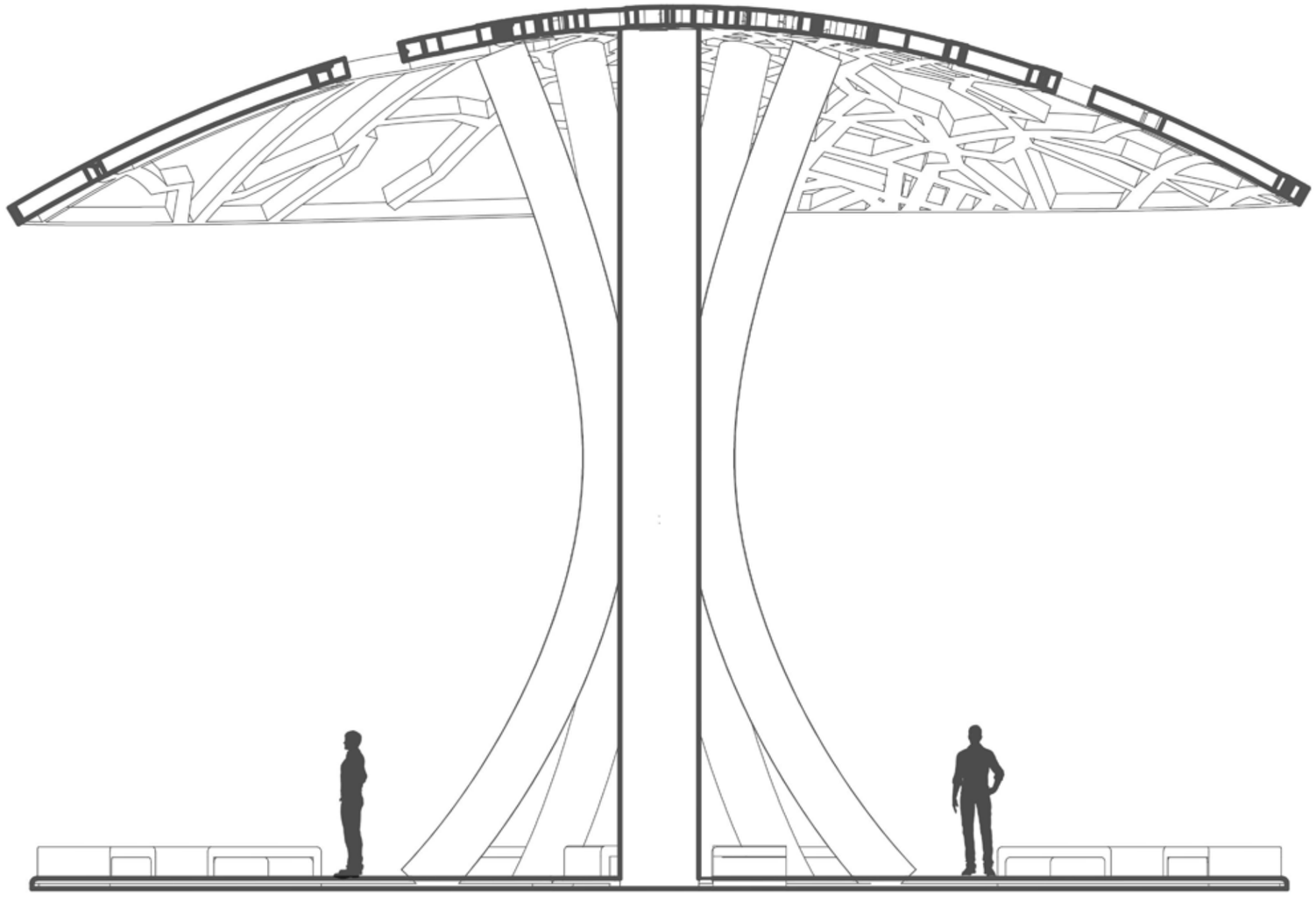
Kitchener Banyan
Year: 2021

The Kitchener Banyan is an architectural marvel that seamlessly blends nature and urbanity. This park pavilion features a large timber dome in the shape of the city's map, topped with a transparent glass dome for shade and natural light. The roots of the Banyan serve as benches, providing seating for visitors. Adding to the ambiance, delicate acrylic rods hang from the branches, swaying in the wind and producing soothing sounds like wind chimes. The Banyan creates a tranquil space for relaxation and appreciation of Kitchener's beauty.
The Waterloo Public Library project challenged us to harmonize the sun path and lighting considerations with the constrained dimensions of the building. By leveraging our expertise and utilizing tools like Revit, we were able to overcome these challenges and create a library space that beautifully merges natural light, functionality, and structural integrity.

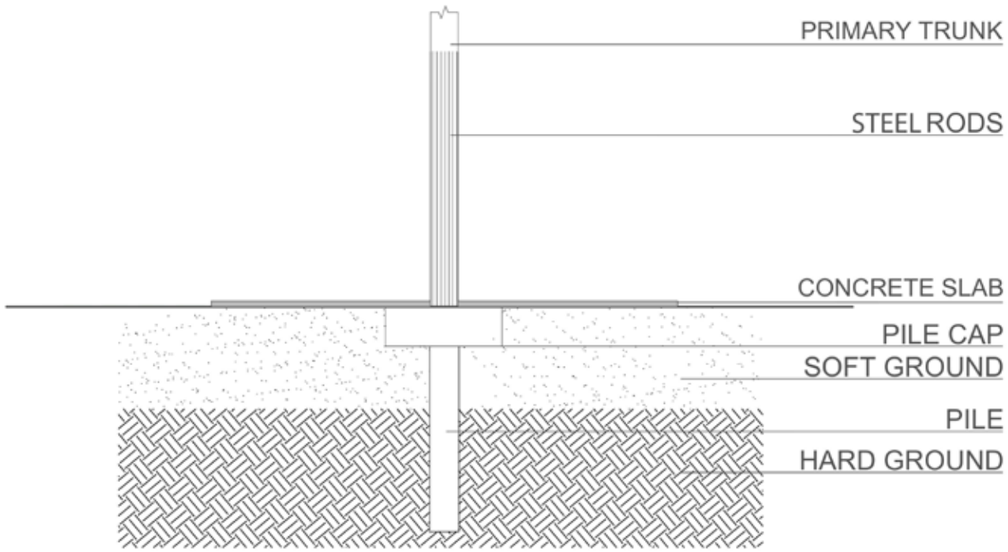


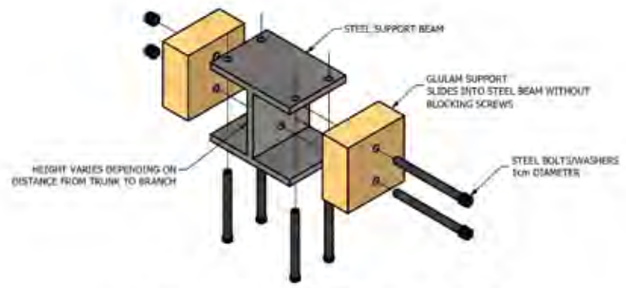




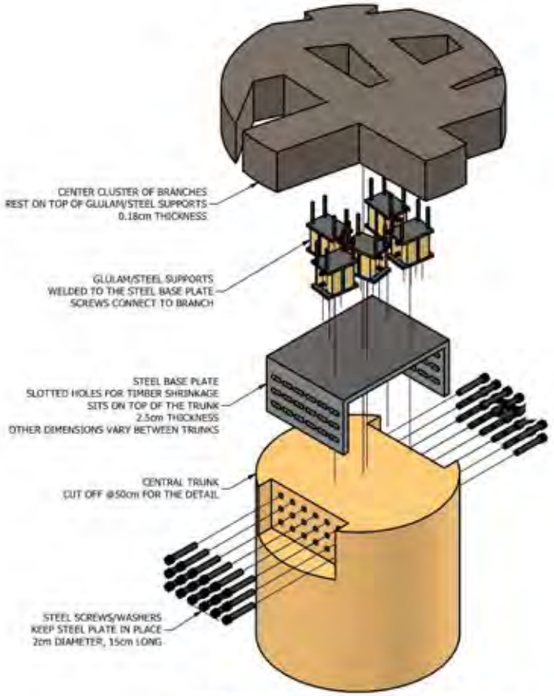


Connections Details

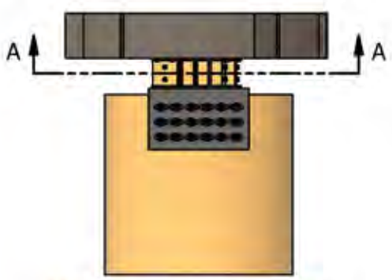




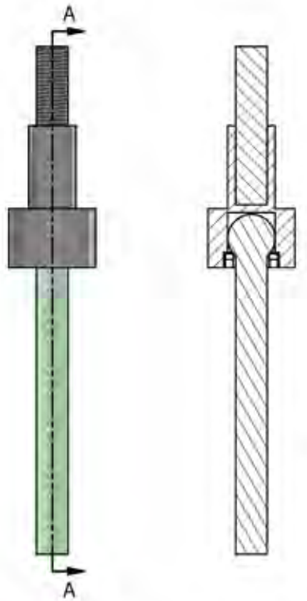
GLULAM/STEEL SUPPORT EXPLODED VIEW



BRANCH TO TREE EXPLODED VIEW

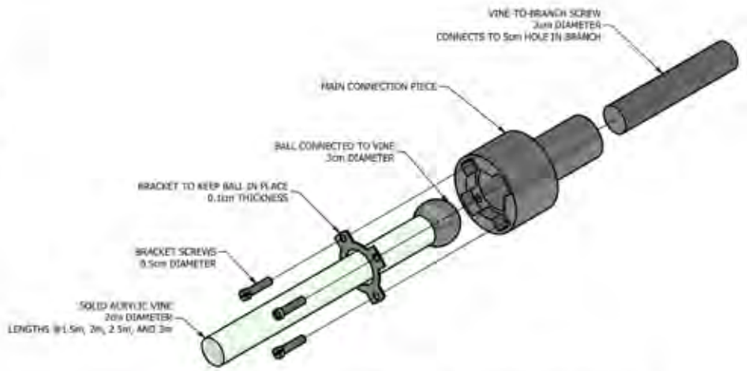


CENTRAL TRUNK ELEVATION



VINE DETAIL

SECTION A-A



EXPLODED VINE CONNECTION DETAIL

VINE MOVEMENT DIAGRAM

Pfaffenholz Sports Center

LOCATION:
Saint-Louise, France

COURSE:
Enclosure Design Studio

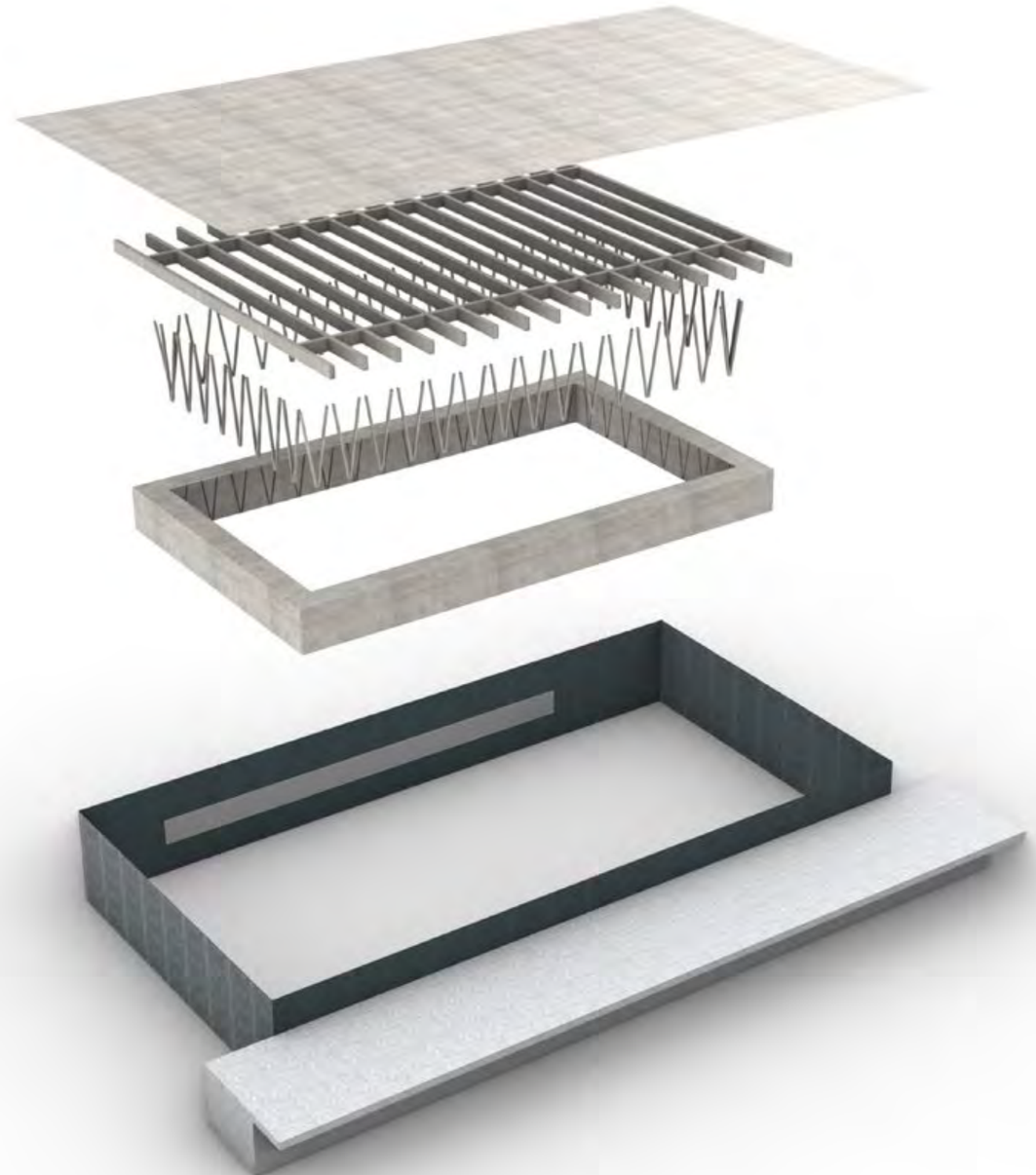
SKILLS:
AutoCAD, Model Making, Photoshop

COLLABORATORS:
Edward Lee, Amanda Loujie, Hania El-Shobokshy

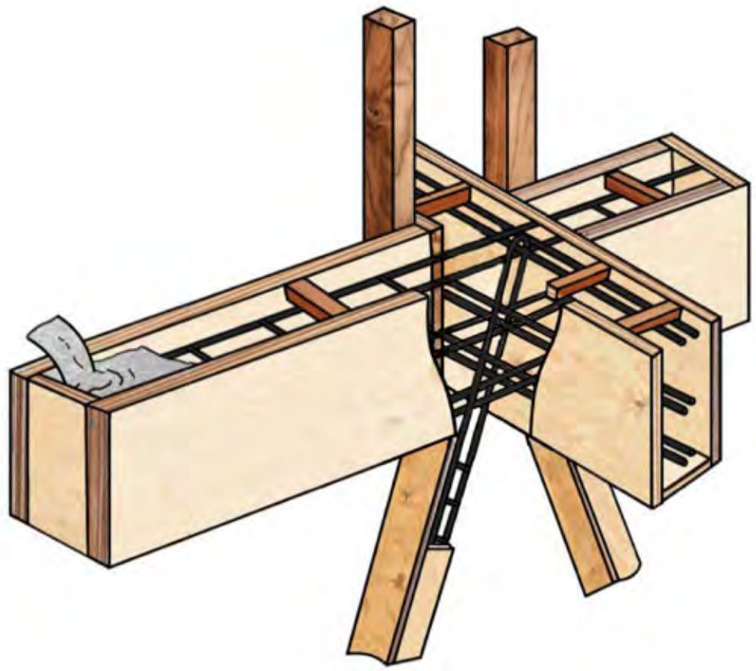
Study Model

Pfaffenholz Sports Center | Case Study
Year: 2023

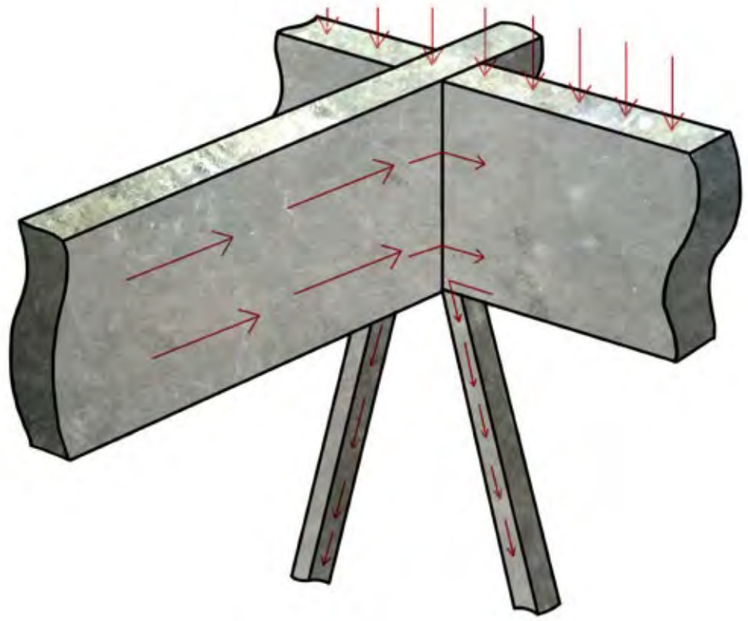
The Pfaffenholz Sports Center is an intriguing case study, particularly when examining its unique building structure. The center's architecture boasts precast V-shaped columns that stand independently from the building facade, forming a distinctive visual aesthetic. This design choice not only adds an element of visual interest but also serves a functional purpose. The separate placement of these columns allows for a clear distinction between the structural elements and the enclosing walls, providing flexibility and adaptability to the building. This configuration enables efficient load distribution while accommodating various interior layouts and future modifications. The precast V-shaped columns exhibit a harmonious blend of form and function, embodying both structural stability and architectural innovation in the Pfaffenholz Sports Center.

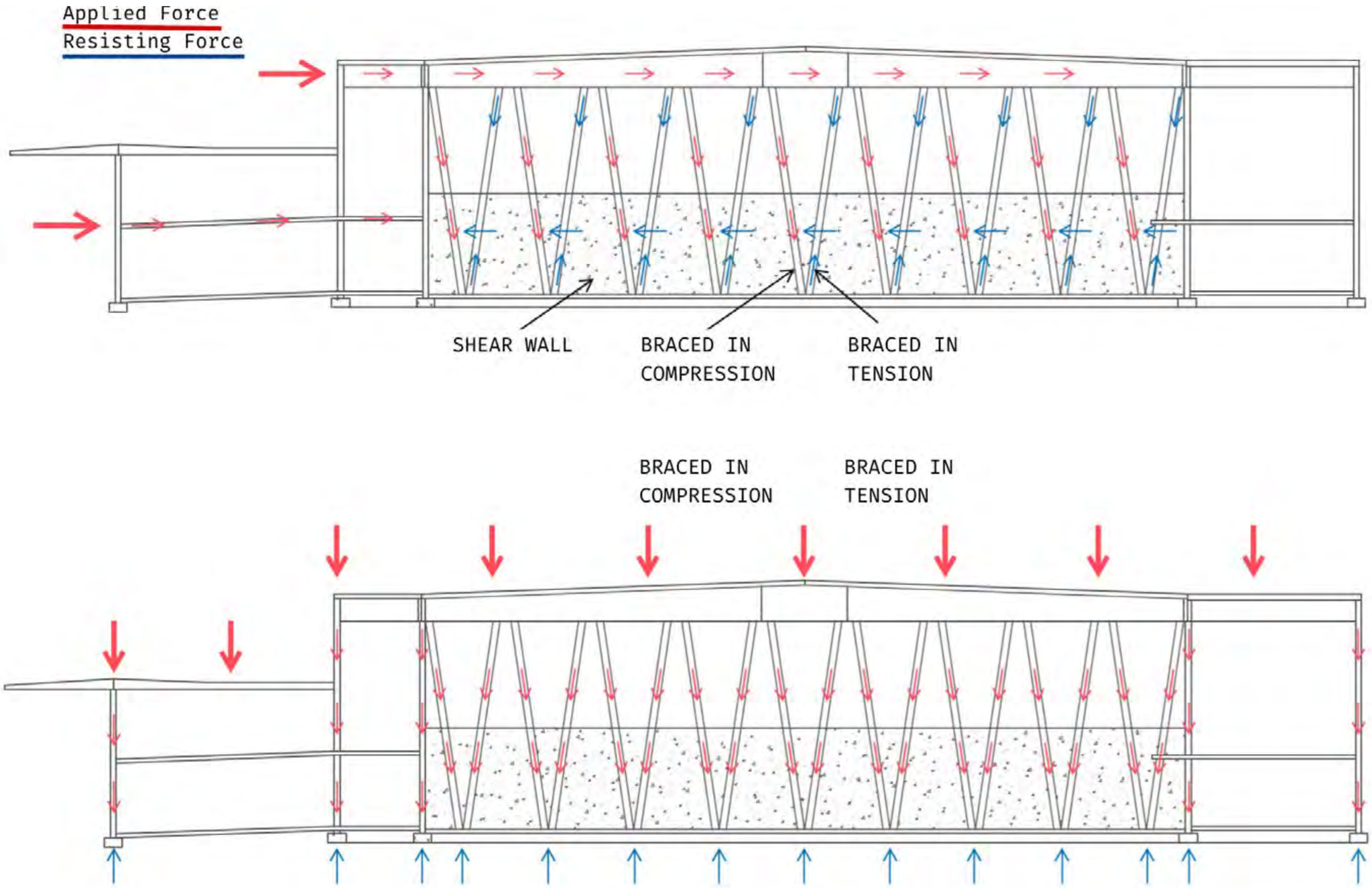


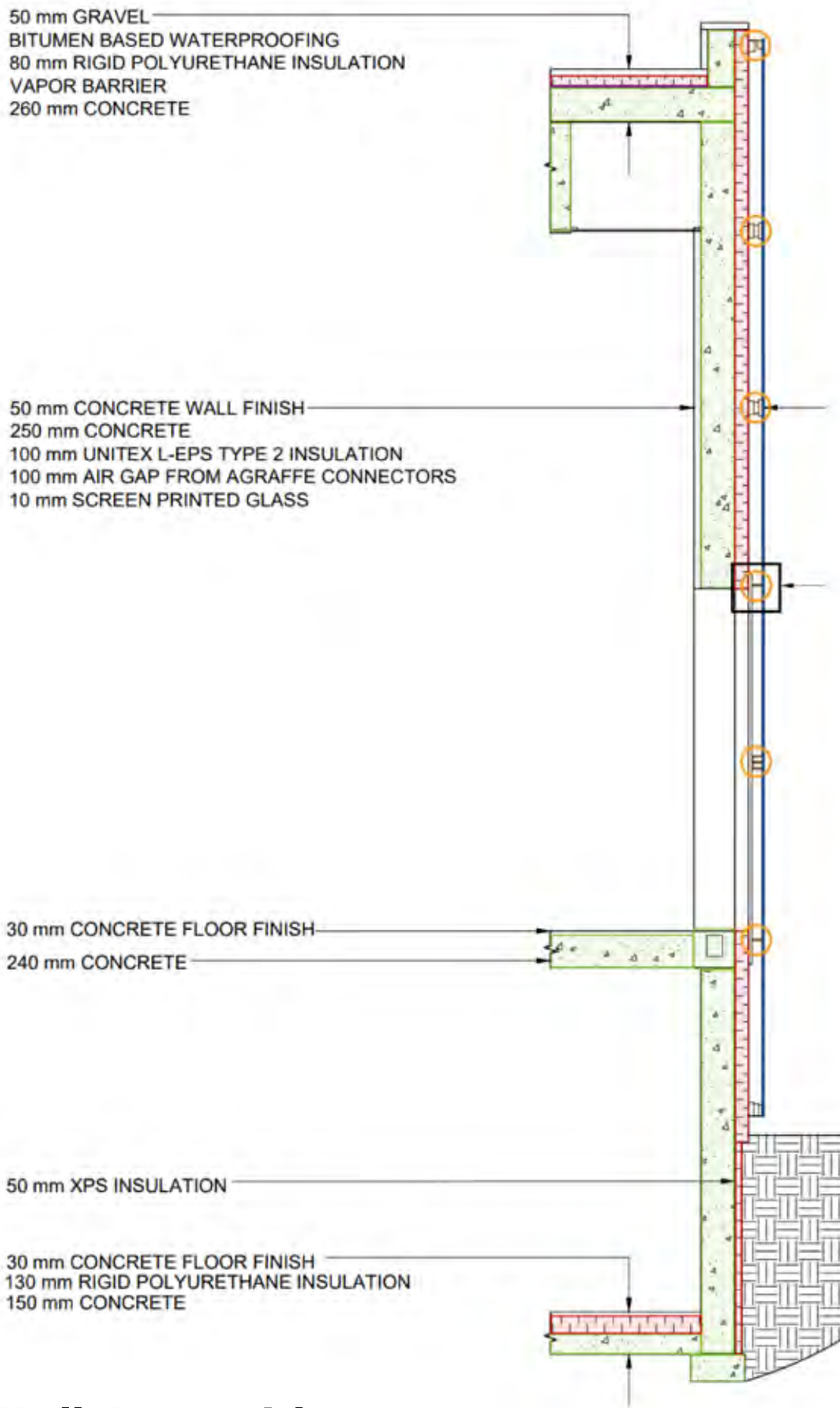
Concrete Prefab Connection

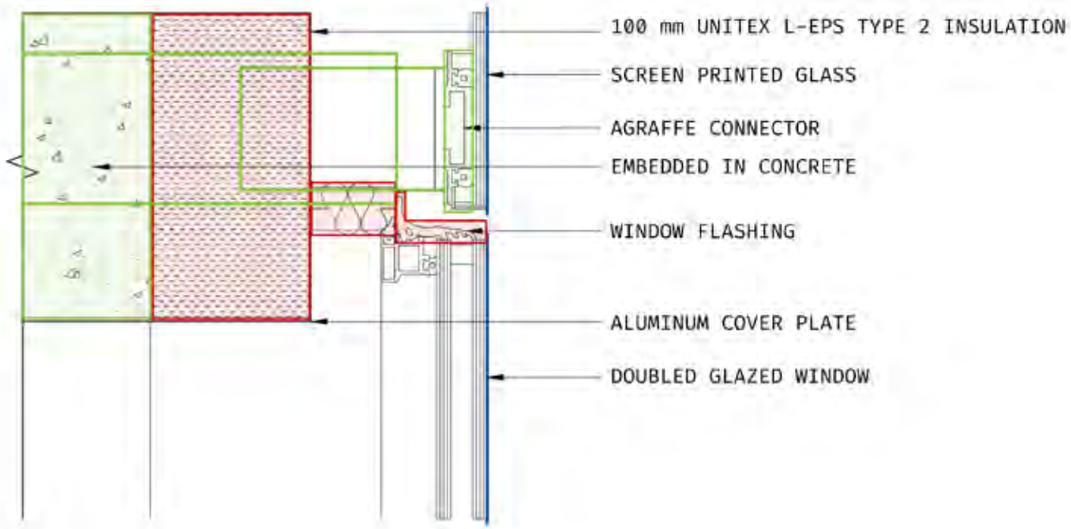


Concrete Connection Load Path

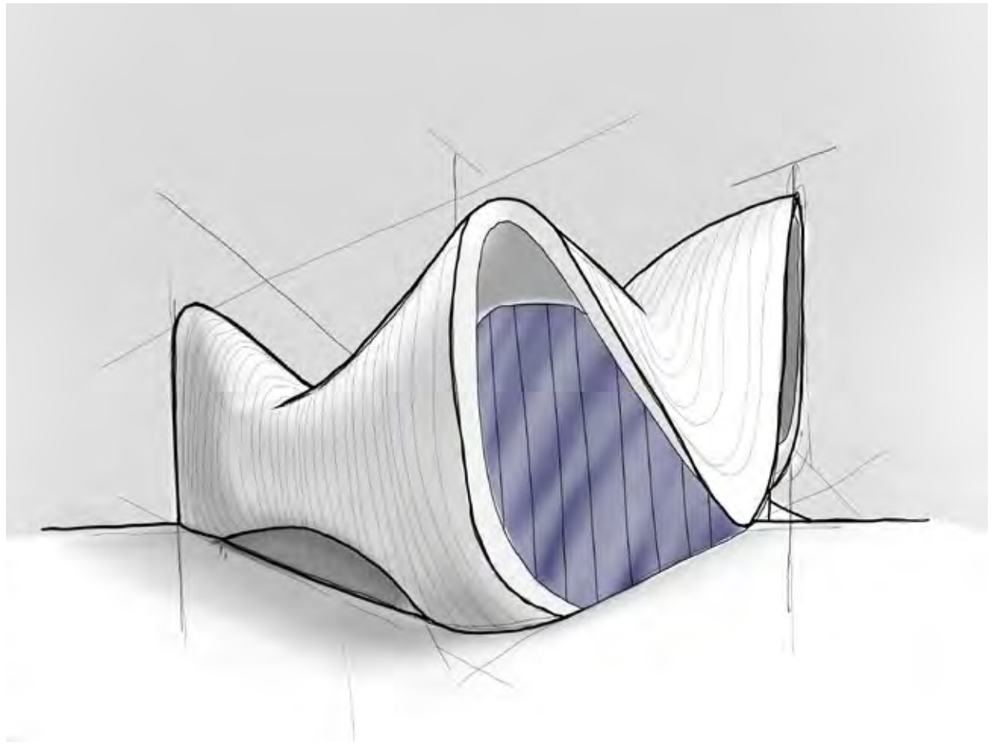



Applied Force
Resisting Force
SHEAR WALL
BRACED IN COMPRESSION
BRACED IN TENSION
BRACED IN COMPRESSION
BRACED IN TENSION





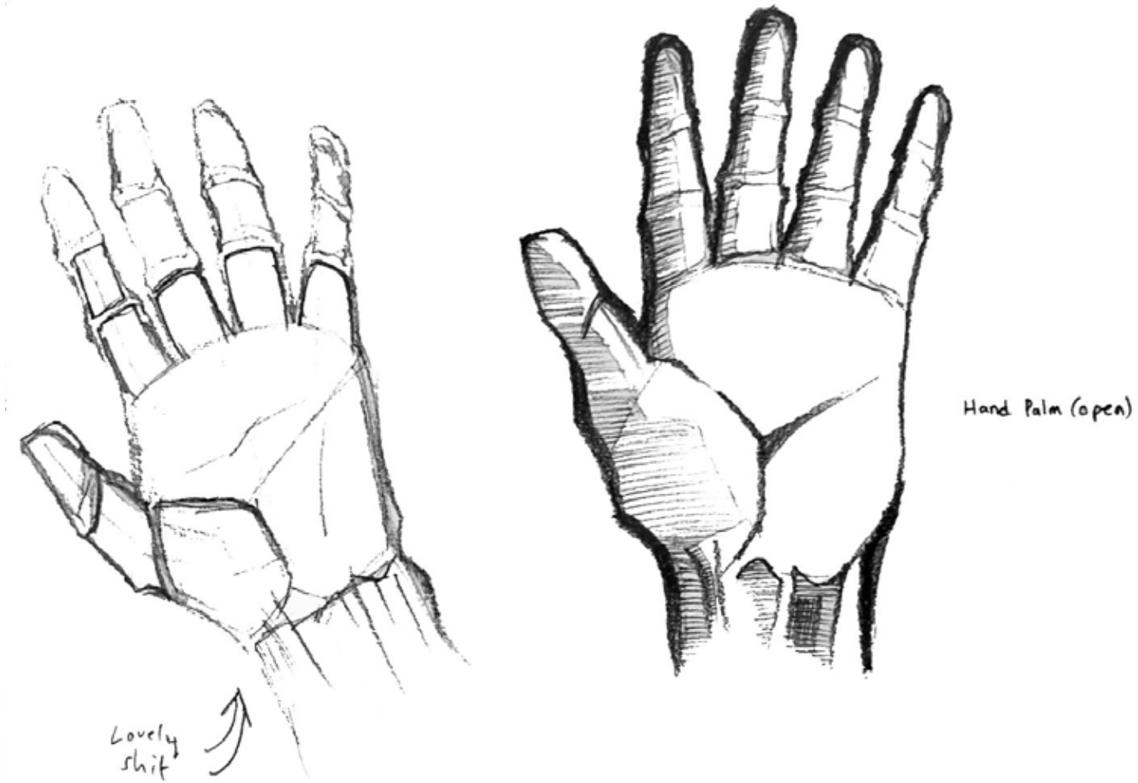
Wall Assembly



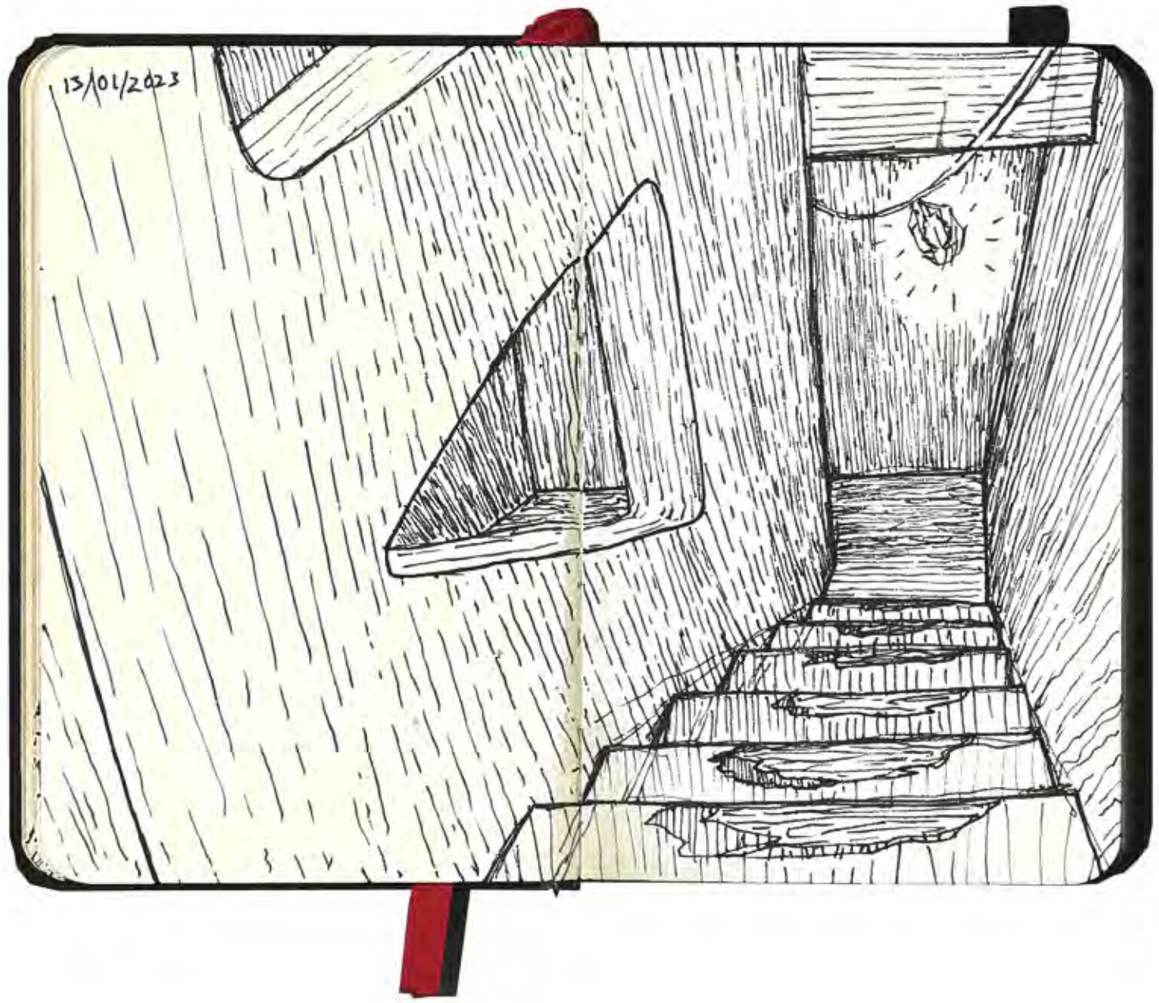
Digital Sketch of Zaha Hadid's Heydar Aliyev

Understanding hatching and shading

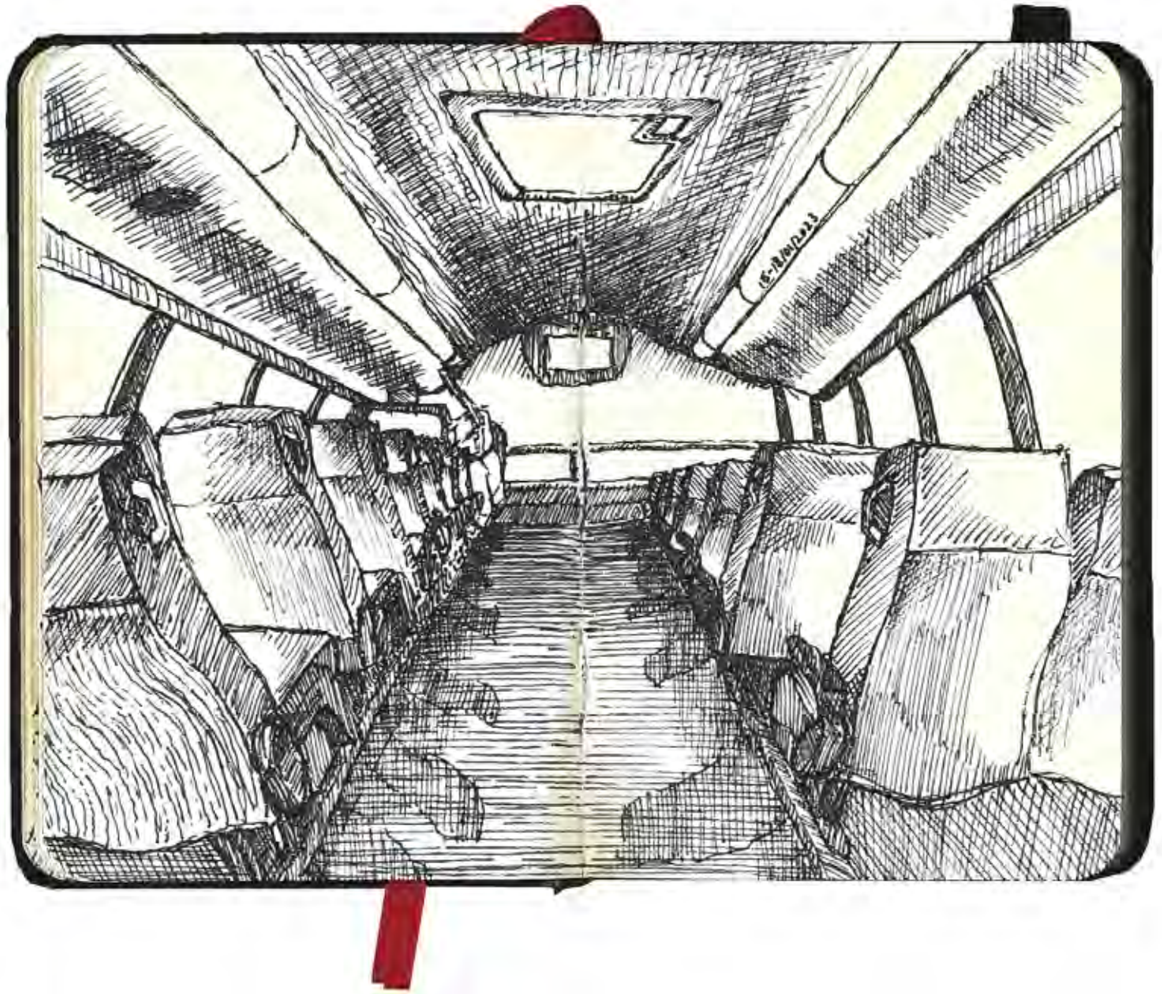
Understanding anantomy and hatching



Painting depicting the Universe as the ocean and the ship as the Earth



Sketch of a mass timber construction site stairs



A view from the back of the bus

Sculpture work

THANK YOU FOR REVIEWING MY PORTFOLIO!

Contact Information:

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+1 (437)-995-3748

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