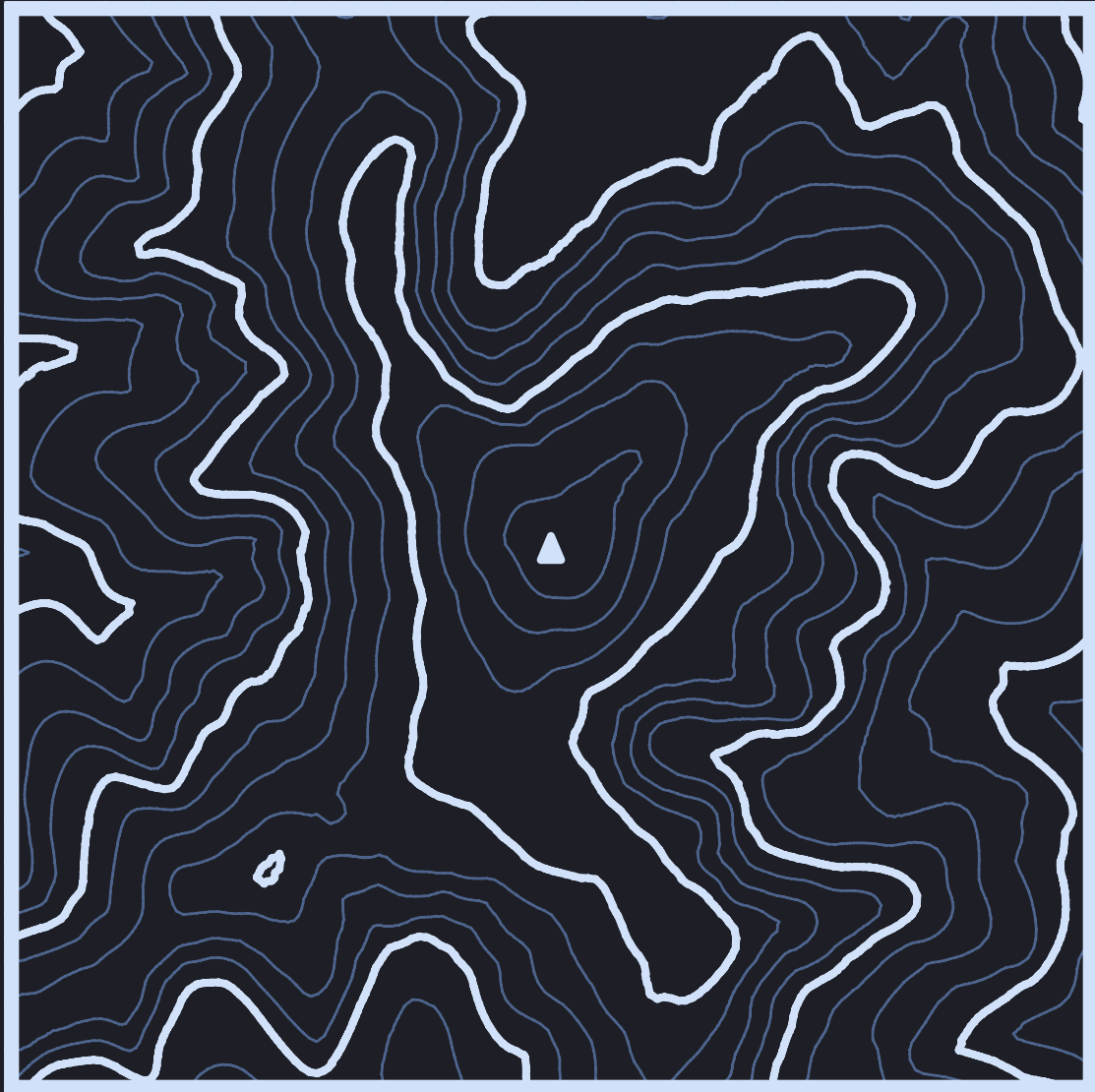


creative
PORTFOLIO



Danforth Kenerson

Selected Works

2019 - 2024

Curriculum Vitae



Hi! I'm Dan.

I am a graduate from Worcester Polytechnic Institute, holding a degree in Architectural Engineering, and more recently have completed a class in Computational Design and Fabrication.

During my academic journey in architectural engineering every system of the building was covered, from design to HVAC to structure. This diverse background has provided me with a well-rounded understanding of the field.

The Computational Design and Fabrication program honed my skills in coding and explored innovative approaches to architecture. This experience has transformed my perspective, emphasizing the integration of technology in design.

Beyond academia, my enjoyment of the outdoors has been a constant inspiration. Nature plays a crucial role in shaping my designs, contributing to a design philosophy that seeks harmony with the environment.

I am eager to embrace new concepts and ideas. My background in architecture, coupled with coding proficiency and a love for the outdoors, propels me towards a future where innovation and sustainability converge seamlessly in each design.

Personal Information

E-Mail: dfkenerson@gmail.com
 Phone: +1 (603) 616-1410

Education

Master Course in Computational Design and Fabrication

CONTROLMAD

OCT 2023 - FEB 2024

- Developed the AutoVisulaizer plugin in C# for easy AI generation inside of Grasshopper.
- Created a custom definition for complex GCode generation of 3D clay printers, including travels.
- Explored Python, C#, data structures and form finding within Grasshopper.

B.Sc Architectural Engineering

WORCESTER POLYTECHNIC UNIVERSITY

AUG 2019 - MAY 2023

- Graduated High Distinction (GPA 3.79/4.00)
- President, Photography Club
- Member, Archetectural Engineering Institute

Skills

Modeling/CAD:

Revit
 Rhino
 Grasshopper
 Blender
 Sketchup

Adobe:

Illustrator
 InDesign
 Photoshop
 Lightroom

Rendering:

Enscape
 Lumion

Programming:

C#
 Python
 Javascript
 PHP
 Git

Office:

Bluebeam
 Office Suite
 Google Suite
 Slack

Interpersonal:

Presenting
 Coordination

Experience

Architectural Consultant

APR 2022 - PRESENT

Creating architectural and engineering plans for tech demos, covering a broad spectrum of projects ranging from solar fields to structures like retail buildings and residential apartments.

Architectural Engineering Intern

SUMMER 2022

Improved company Revit family light fixtures by optimizing variables and adapting mounting styles based on feedback from lighting specialists. Managed RFI queries efficiently, completed markups promptly in Revit and Bluebeam, and provided technical presentations to the team when required.

WPI Frontiers & Launch

SUMMER 2021

Created lesson plans and instructed CAD essentials, providing feedback on final project work.

NSF Research Project

SUMMER 2021

Managed research project on the impact of living environments on well-being, including data handling and team coordination.

Interests

Photography
 Printmaking
 Traveling
 Ceramics

Telemark Skiing
 Tea
 Mountain Biking
 Music



CONTENTS

One World Trade
 Digital - Sony α6000
 15 June 2019

- 1. Denholm Apartments 
- 2. AutoVisualizer Plugin 
- 3. Custom 3D Printer GCode 
- 4. Shenandoah Public Library 
- 5. Building Envelope Design 
- 6. Sketches 
- 7. Photography 

1. Denholm Apartments

Project Information

Type:	WPI Senior Thesis Project
Typology:	Mixed use development - Urban Revitalization
Size:	98,000 sq ft
Location:	Worcester, Massachusetts
Team:	Lucas Kamal, Talia Mamayek, Max Wojtas
Year:	2022-2023



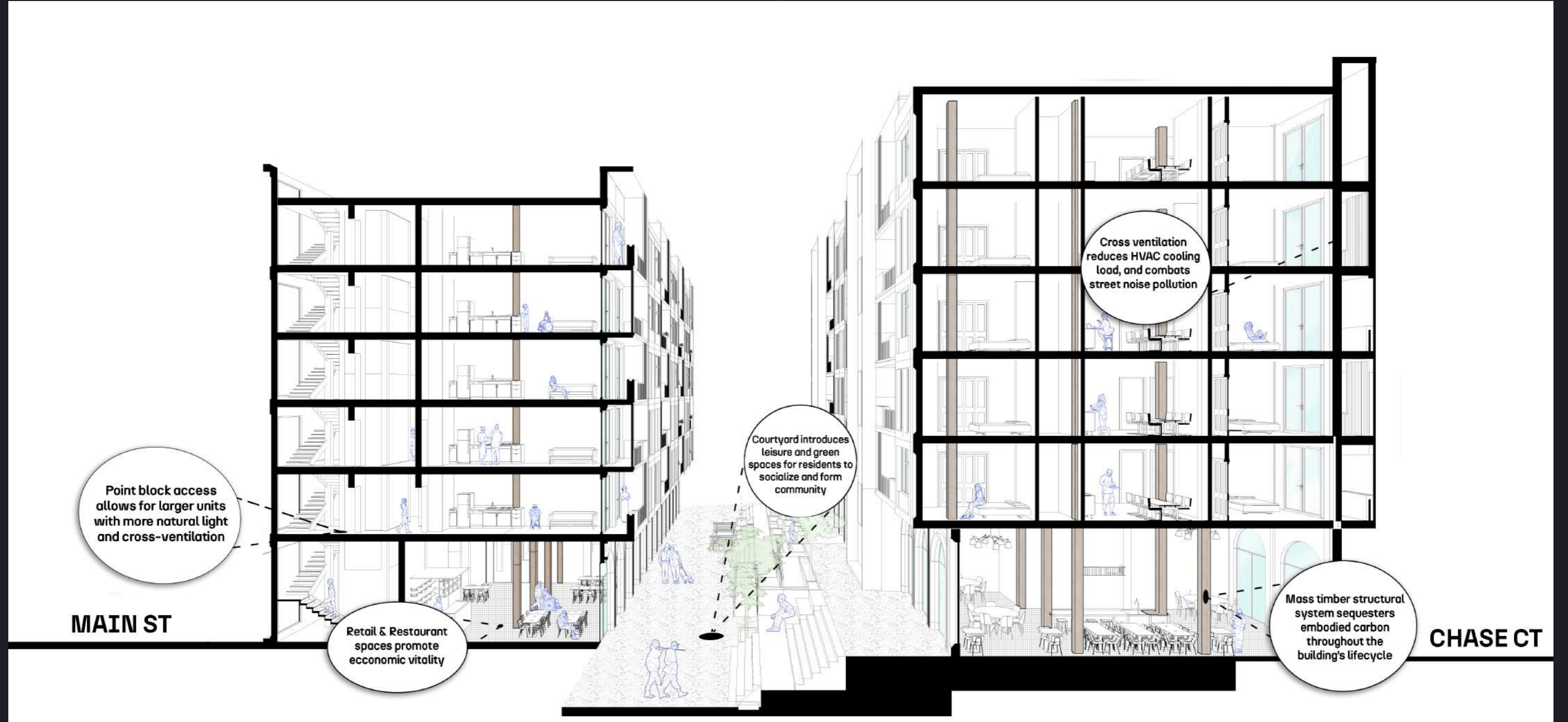
Our thesis project, "Revised Affordable Housing for the Modern Family," reimagines affordable housing in Worcester, Massachusetts, catering to the needs of modern families seeking flexible and affordable living spaces. Informed by participatory sessions with public housing residents and WPI students, the project considers Worcester's complex housing and political landscape, the growing trend of multigenerational housing, and the exploration of alternatives in public housing.

The outcome is a mixed-use development that aligns with Worcester's Downtown Urban Revitalization Plan, featuring residential and commercial spaces. The design incorporates diverse living arrangements, promotes social interaction and communal relationships through shared spaces, and integrates

commercial areas to foster a vibrant, walkable community that supports local businesses and neighborhood vitality.

By prioritizing flexibility, accessibility, and community, this design addresses the evolving needs of modern families while considering Worcester's unique environmental, housing, and political conditions.

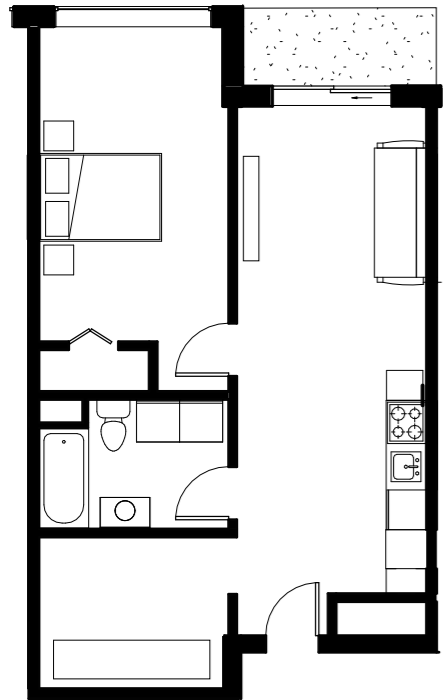




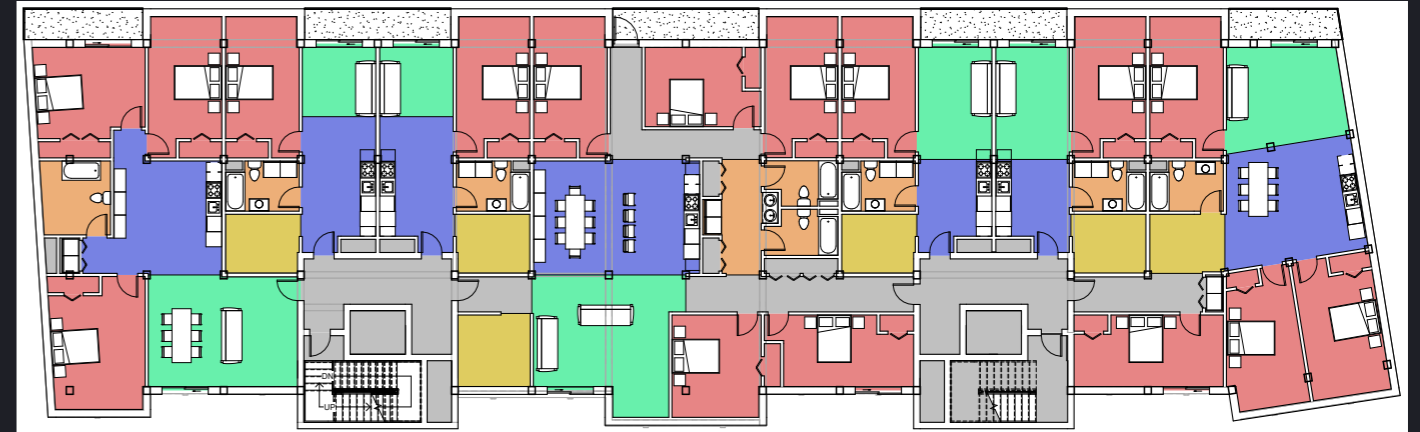
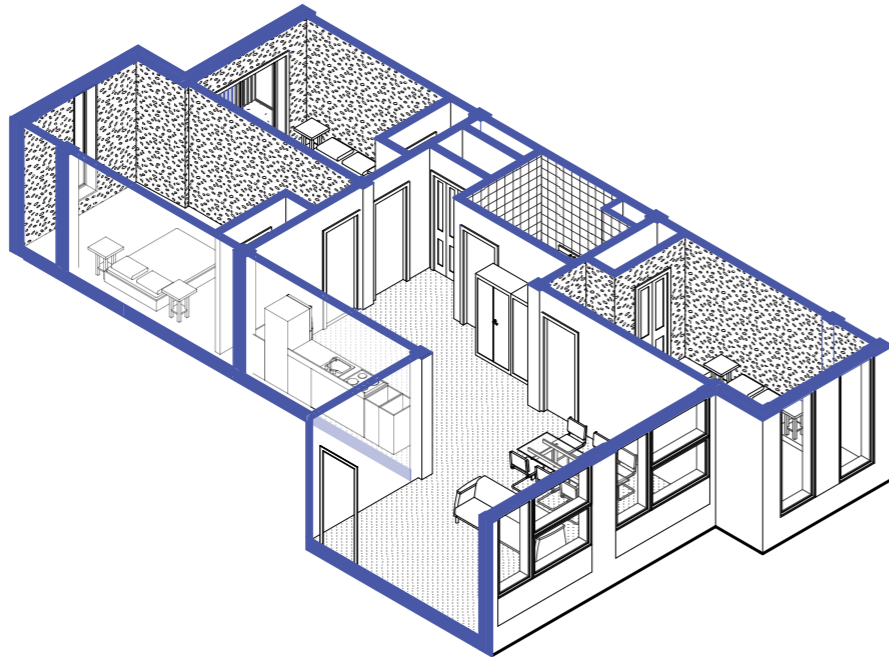


Typical building floorplan, colored by apartment type: **Single bed**, **Three bed**, **Co-Living (5 bed)**

Single bed apartment for early professionals or those living alone.



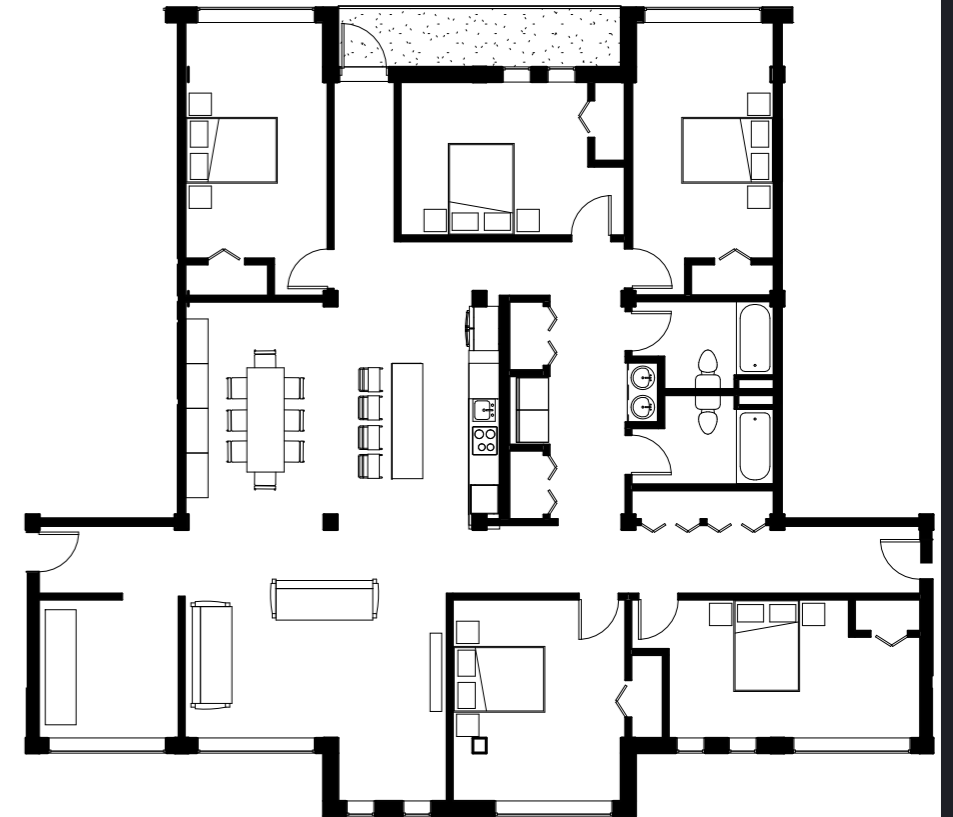
Three bed apartment for families or living with roommates.



Typical building floorplan, colored by area use type:

- » Bedroom ■
- » Kitchen/Dining ■
- » Bathroom ■
- » Living Room ■
- » Flex space ■
- » Circulation ■

Five bed co-living apartment for multi-generational families.



2. AutoVisualizer Plugin

Project Information

Type: Personal Interest Project
 Language: C#, JSON
 Year: 2024

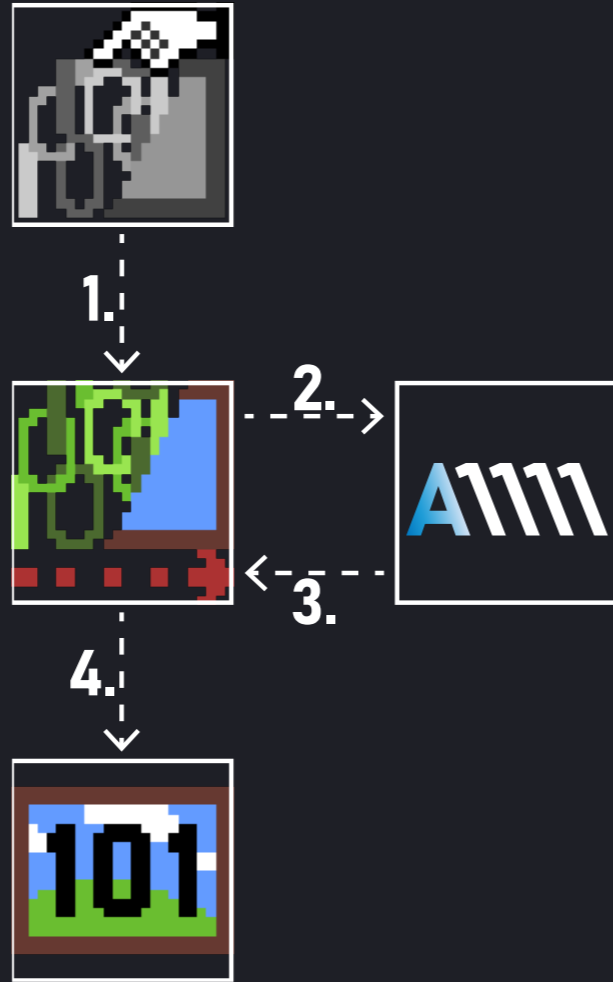
About:

AutoVisualizer is a plugin designed for Grasshopper, providing seamless integration with the Automatic1111 Stable Diffusion API.

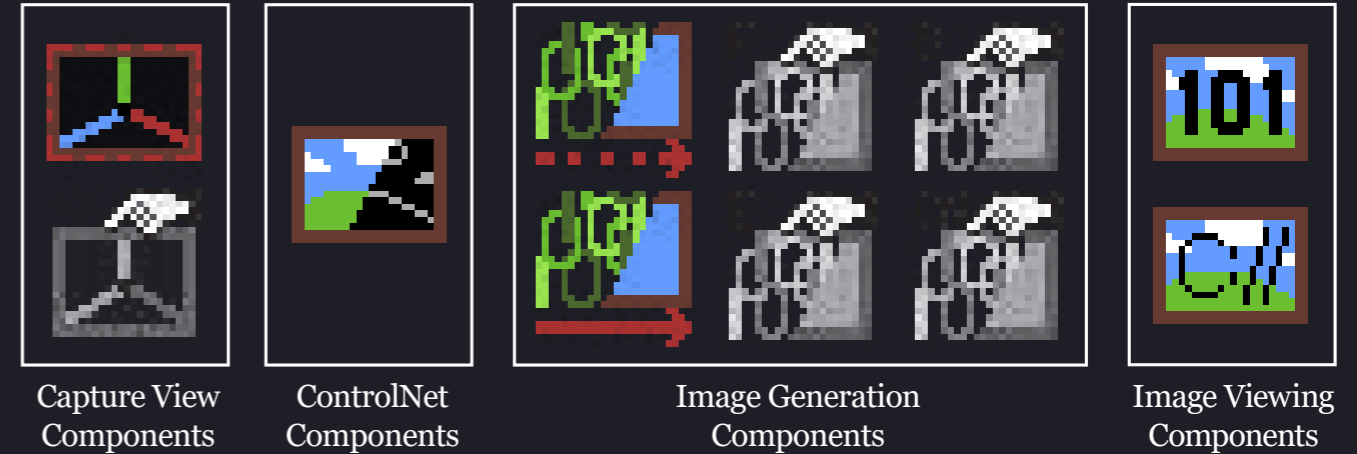
The plugin provides a user friendly way to generate AI images directly within Grasshopper while also giving varying levels of fine control on the final output image.

How it Works:

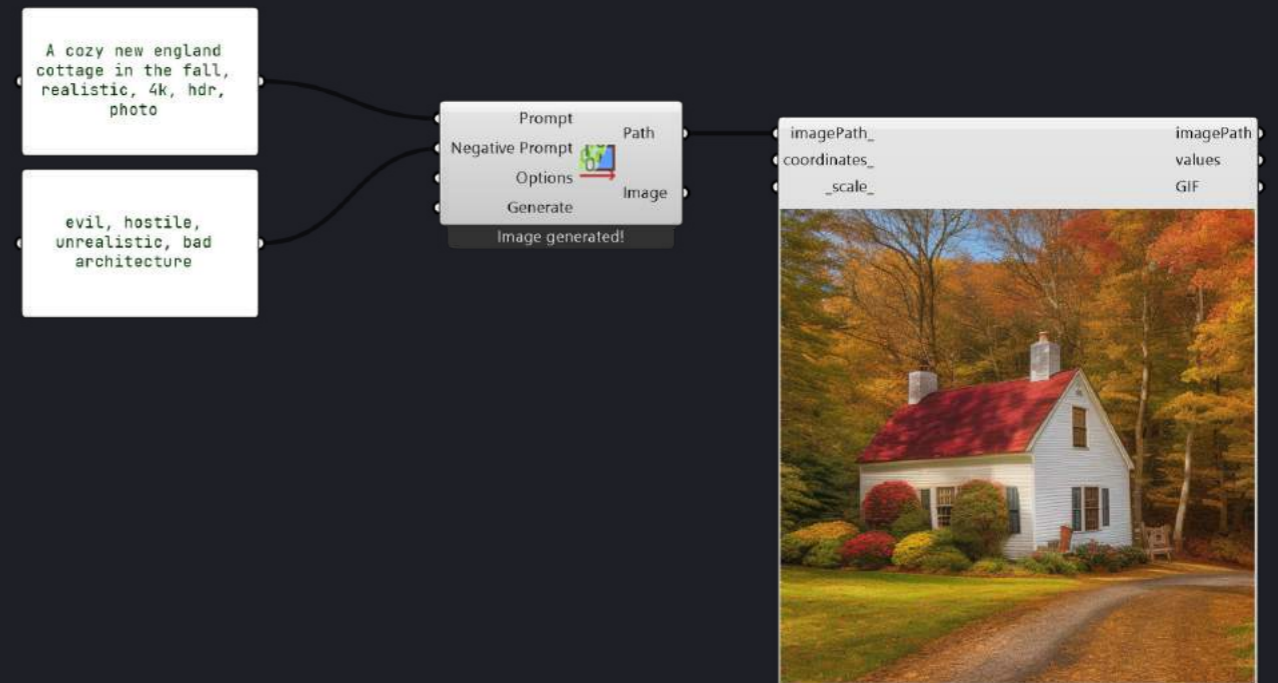
1. User input is gathered and sent to a generation component.
2. User input is formatted correctly and sent to Automatic1111 from the generation component.
3. Automatic1111 generates an image using Stable Diffusion, and sends it back to the generation component.
4. The image save location or raw data is sent to be modified as seen fit.



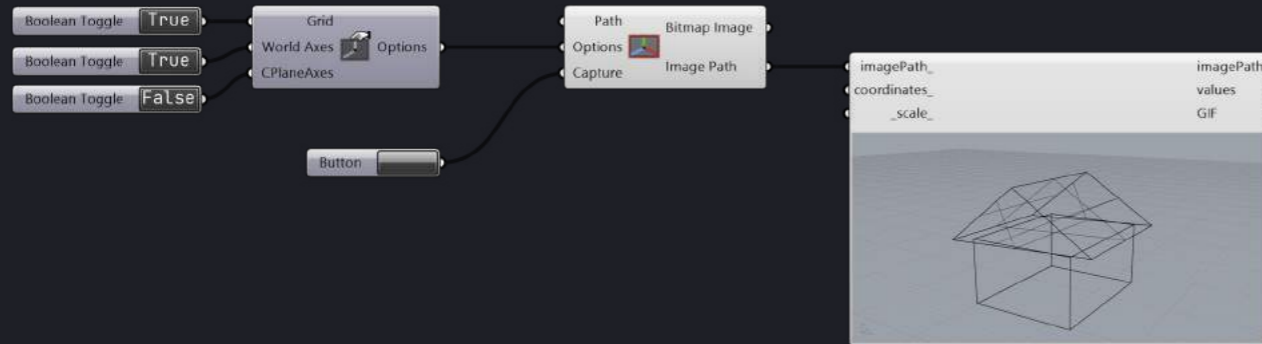
Current Plugin Components



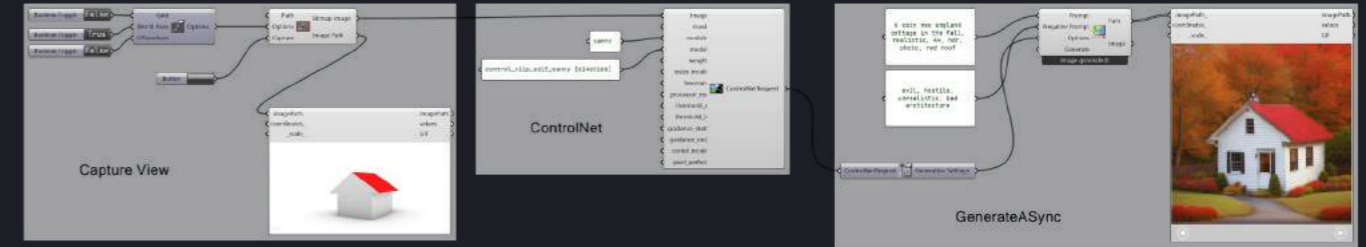
Components In Use



Capture View

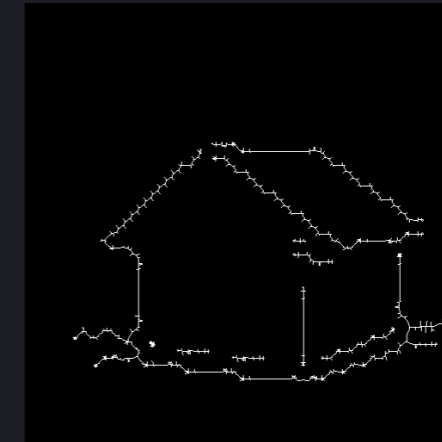
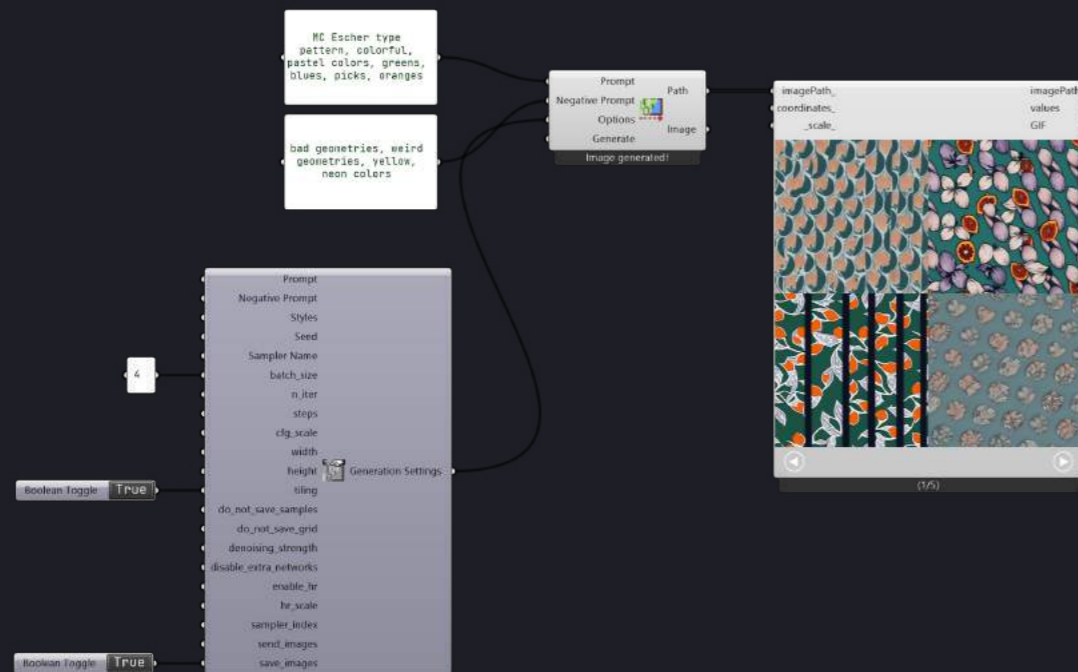


All Together (With ControlNet)



ControlNet is a way of influencing a final image based on an input image. A method of image interpretation is needed for ControlNet, then it is used as a part of the generation options. In this example a simple model in Rhino can be visualized with only a few nodes.

Image Generation With Extra Options



The viewport as captured by the component, and what is passed into the ControlNet component.

ControlNet processed image. The processor used, Canny, finds the edges of items and colors in an image, and uses those as influence points.

Final output image, based on the ControlNet influence, and the prompts provided.

3. Custom 3D Printer GCode

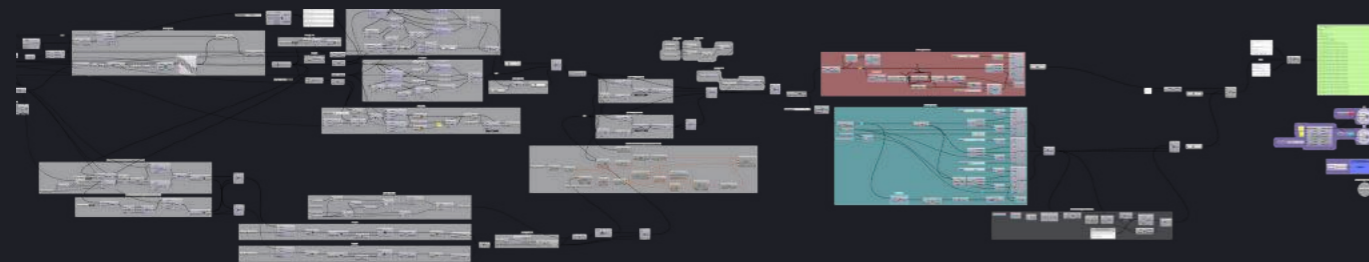
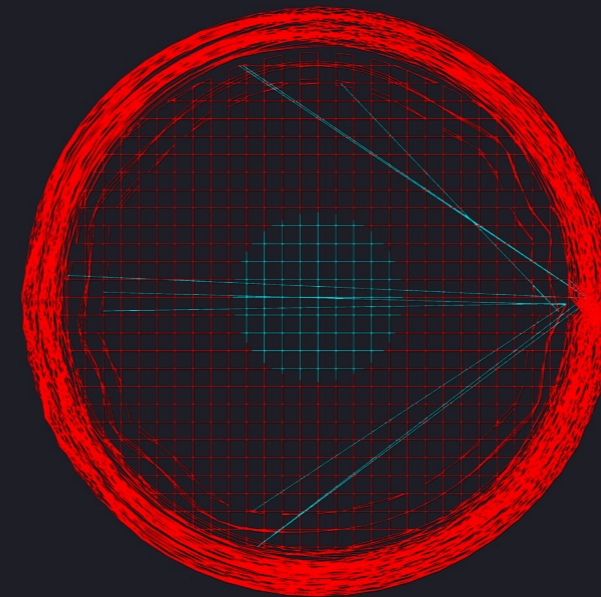
Project Information

Type: Course Project
Language: Grasshopper Components + Python
Year: 2024

About:

Using a combination of Grasshopper components and Python scripting custom GCode can be created to control a variety of 3D printers. Those tested were used for clay and plastic printing. Another benefit of custom GCode is non-planar printing, or avoiding the normal "slices" a slicer like cura makes. This allows for more freedom in design.

The code developed also managed data in trees to facilitate a robust travel system when not printing a material.



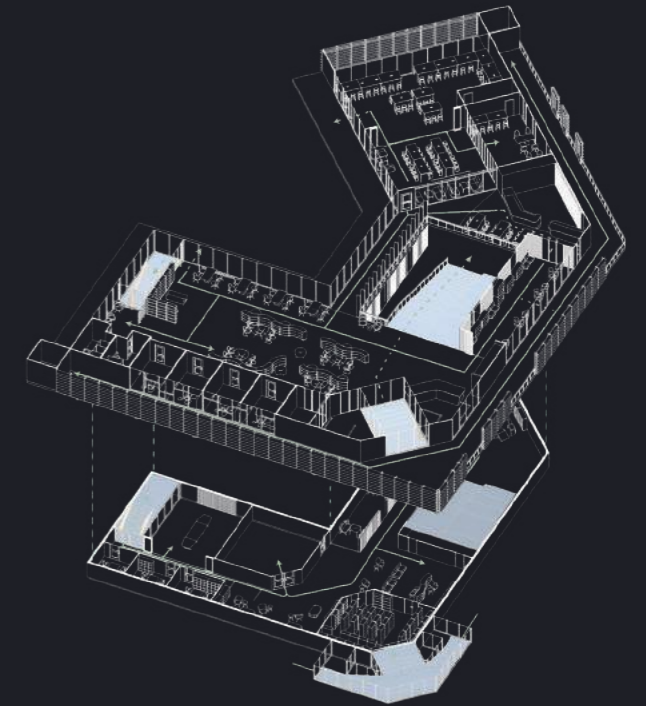
4. Shenandoah Public Library

Project Information

Type: Studio 4 Final Project
 Typology: "Library of the future"
 Size: 25,000 sq ft
 Location: Miami, Florida
 Team: Lucas Kamal,
 Talia Mamayek
 Year: 2021

The city of Miami has long been known for its beaches and vibrant culture. As a city on the coast, the ocean is synonymous with the city, but in current years so is global warming. A modern library in Miami must not only re-imagine how a library will play a role in future communities, it must also be able to stand the test of time and rising water. The Shenandoah Community, in the center of which our library is positioned, is largely suburban with no space for the community to gather. We wanted to create a space where the community could gather and exchange ideas and culture.

Resilience in our design was the ultimate goal. Entrances on the second floor allow the library to weather the rising waters of Miami in future years. Implementation of green building strategies produced a net positive building, all while meeting certain outlined LBC and WELL Standards.



5. Building Envelope Design

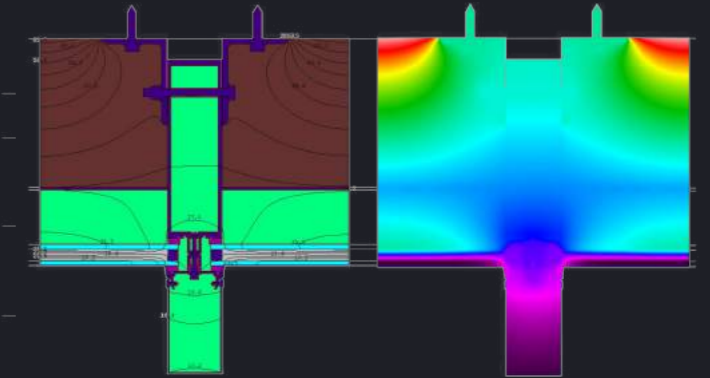
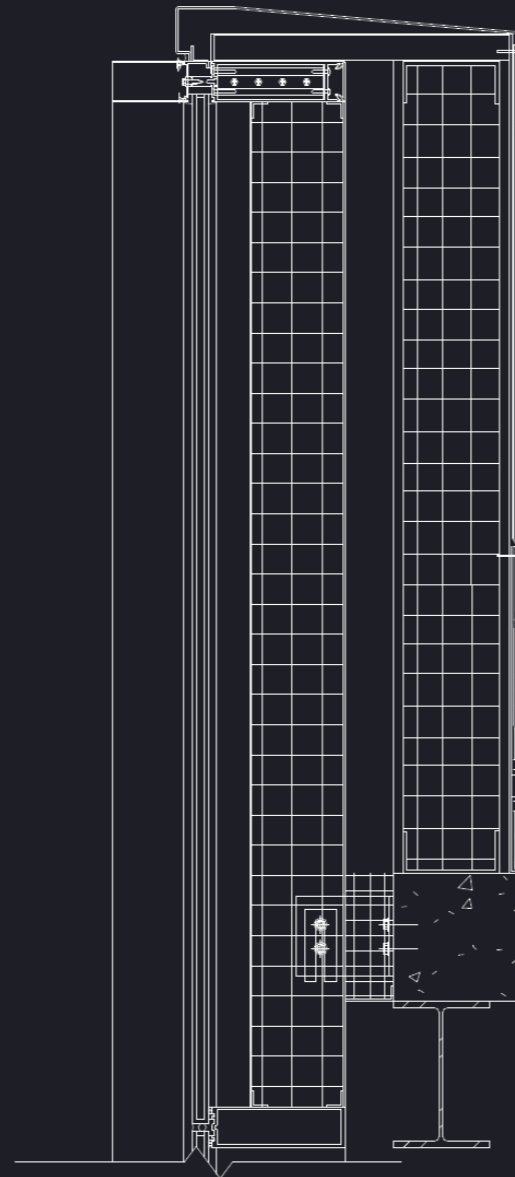
Project Information

Type: Studio 5 Final Project
 Typology: Community Center
 Size: 17,500 sq ft
 Location: Milan, Italy
 Team: Lucas Kamal,
 Talia Mamayek
 Year: 2022

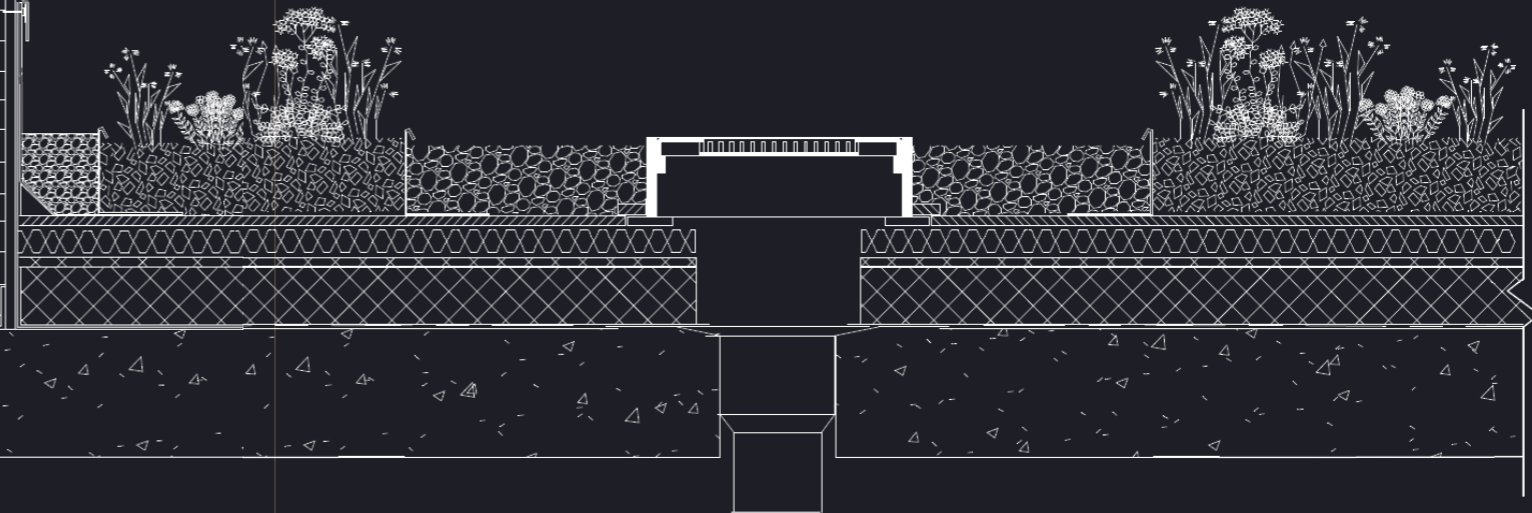
Studio 5 focused on some of the more technical aspects of architecture. Topics covered the aspects of building envelope design. Specifically these topics were external and internal materials, vapor and water barriers, flashings and the techniques used in both new construction and restoration.

We proposed a brick veneer facade in combination with Kawneer curtain walls. Details were prepared for green roof sections, walls and foundation footings, as well at connections. The work produced was then collected in a set of drawings.

Our team developed an enclosure based on a competition submission for the Isola District Civic Center in Milan, designed by Alhadeff Architects.

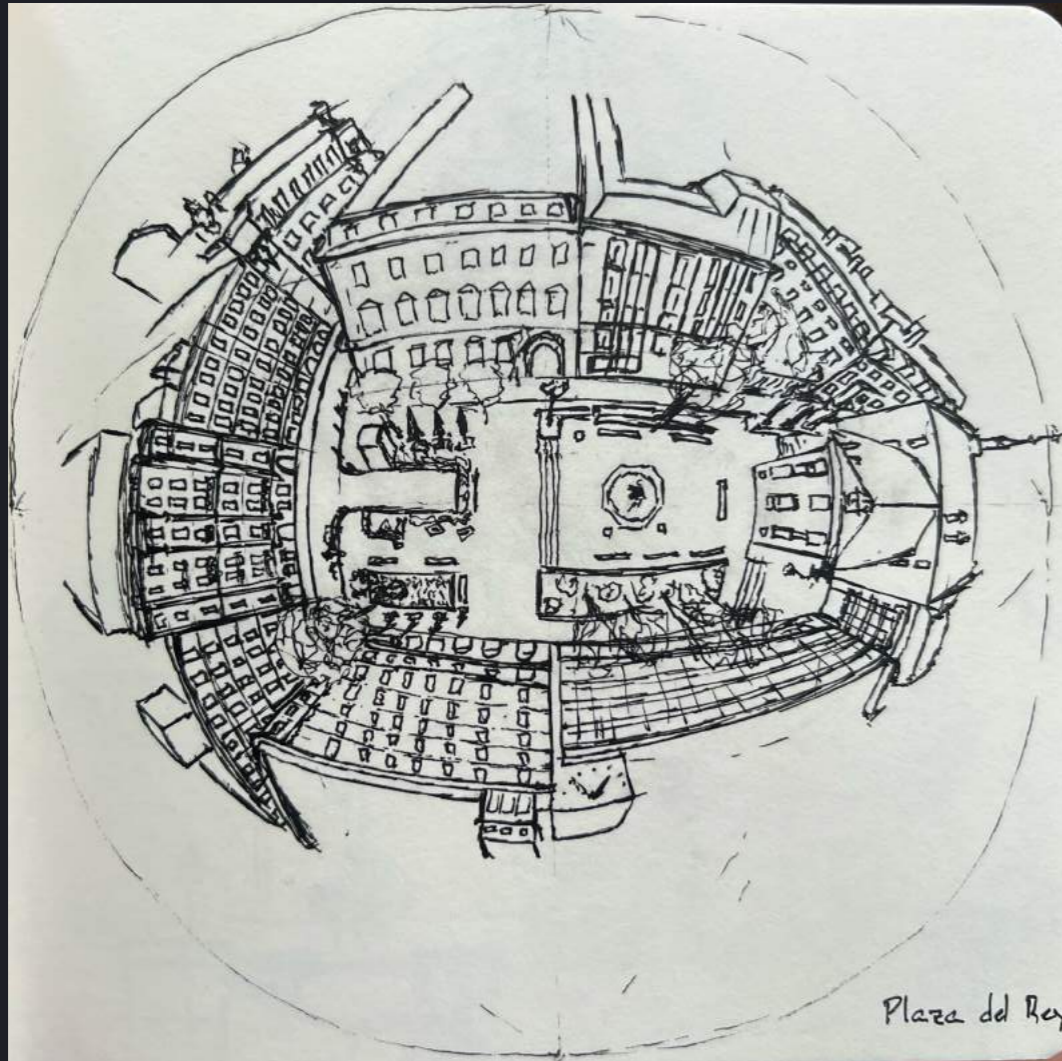


Hygrothermal models were run for each exterior facing section to test performance.



Callouts and annotations have been removed for the sake of display.

6. Sketches



Plaza del Rey

Plaza Del Rey
Pen
Madrid, 2024



Betevé Scaffolding
Pen and Watercolor
Barcelona, 2024

7. Photography



Lunar Eclipse | Totality
Sony A7III
November 2022



“Consumer Value Stores”
B&W Film - Minolta X-700
July 2019



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