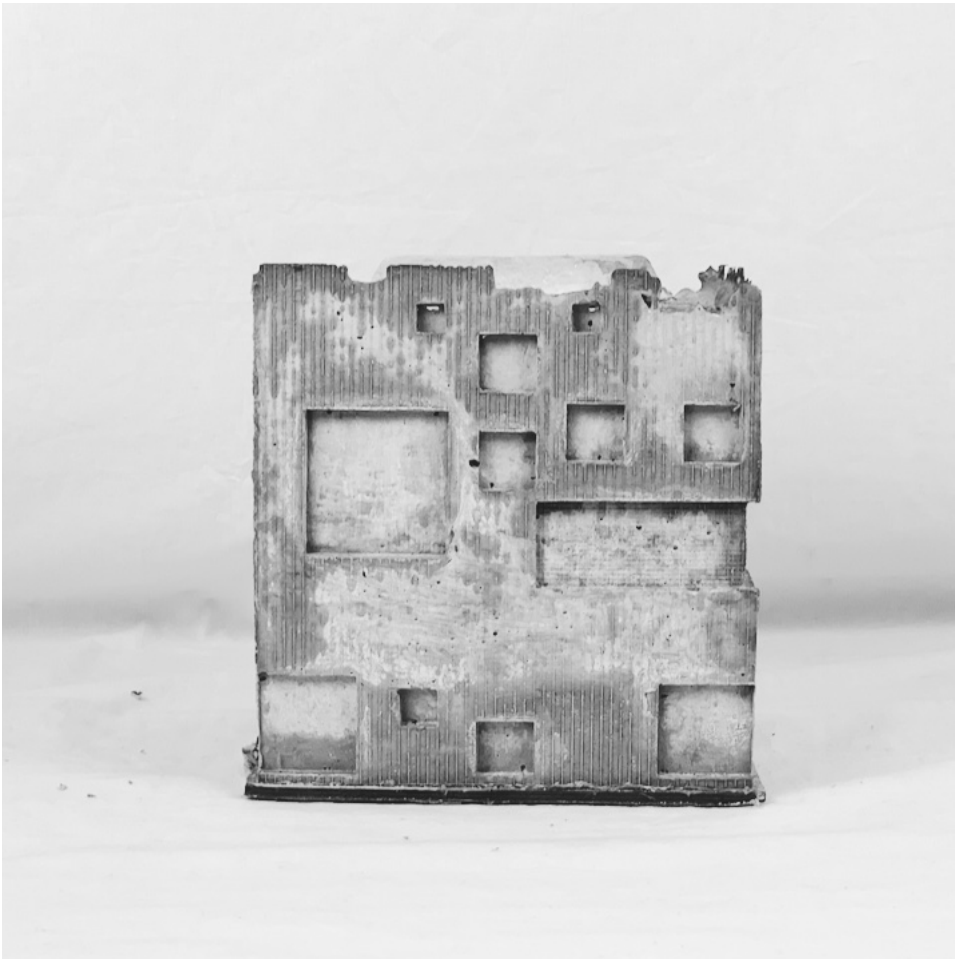


CUBE HOUSE



Yuan Wang

VIRGINIA TECH

THE COLLEGE OF ARCHITECTURE AND URBAN STUDIES

Master of Architecture Graduate 2019

Abstract

My thesis is about how to solve the social problem of lack of family communication. This problem happens to me, and I believe happens to some others as well. To solve the problem, I used architectural methods to build a residence for my family that encourages communication. These methods can help other families.

Approval

Approved by:

Committee Chairman

Committee Member

Committee Member

Dedication

This work is dedicated to my parents.

May you two be happy and healthy everyday.

Acknowledgements

I want to first thank my parents. At the beginning, I learned architecture under their pressure, not by my own interests. Thanks to them, I enjoyed my journey all the way here, and I am proud to be an architect. Without their funding, I could not finish my graduate study abroad.

My committee members, Bill Green, Dave Dugas, and Edward Becker, have constantly offered support for my thesis. Dr. Green is always being encouraging and offers information about classical architecture. Dr. Dugas has sharp insight for my project. His opinion on building an idealized cube instead of a generic mass produced house gave my thesis a new life. Dr. Becker has asked me many questions, and thanks to these questions, I was able to think about my thesis project more clearly.

My friends helped me on my thesis also. Shuhong gave straight opinions at the beginning. Zeyu offered useful information on how to make models with rockite, and he helped modify the thesis statement. Tony and Weiqi also helped me with the model. Luke helped with the photography. Chao's serious criticism helped me refine my thesis.

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Thesis Statement

Spaces in a traditional residence are separated by their different functions, and they are usually associated with different levels of openness both physically and socially.

As a result, in order to inhabit a space, as well as to access certain functions within the residence, one would also have to accept the social quality of the room, which does not always align with one's intention.

Living in such environments, people tend to isolate themselves in their own spaces, sacrificing personal interactions in exchange for moments of privacy.

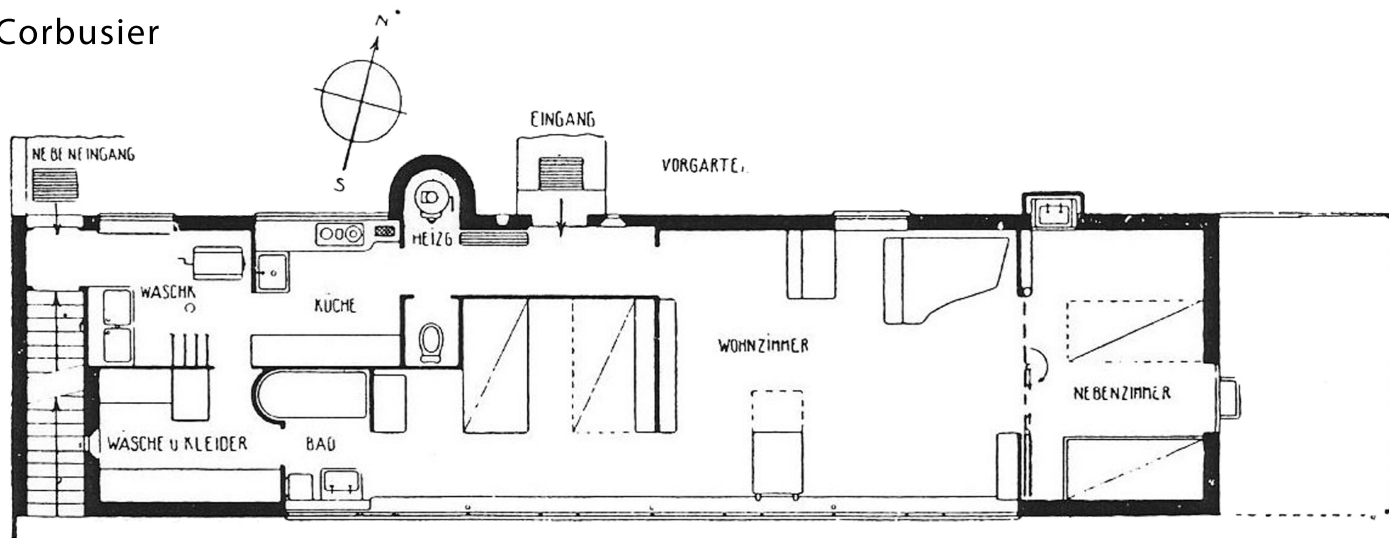
With such acknowledgment, in my thesis, I investigated ways to create residential spaces that allow the tenants to be connected, instead of separating them.

In this project, a series of open spaces were strategically placed in the house to allow better visual and acoustic connections between different spaces.

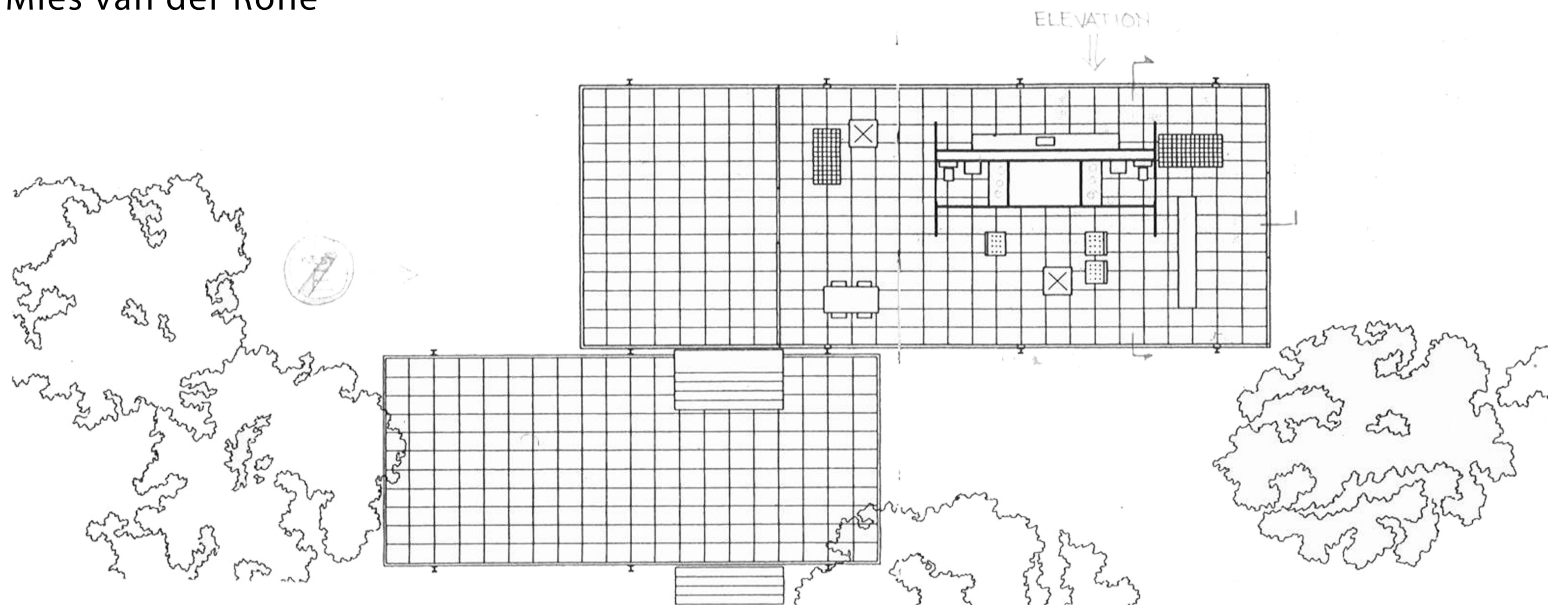


Openings spaces

Villa Le Lac
Le Corbusier



Farnsworth House
Mies van der Rohe



Totally opened spaces.

Walls do not separate any single room.

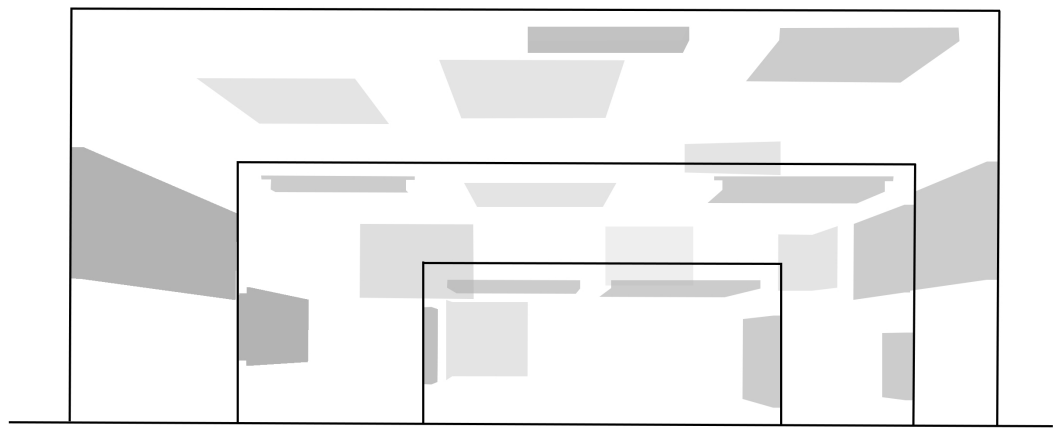
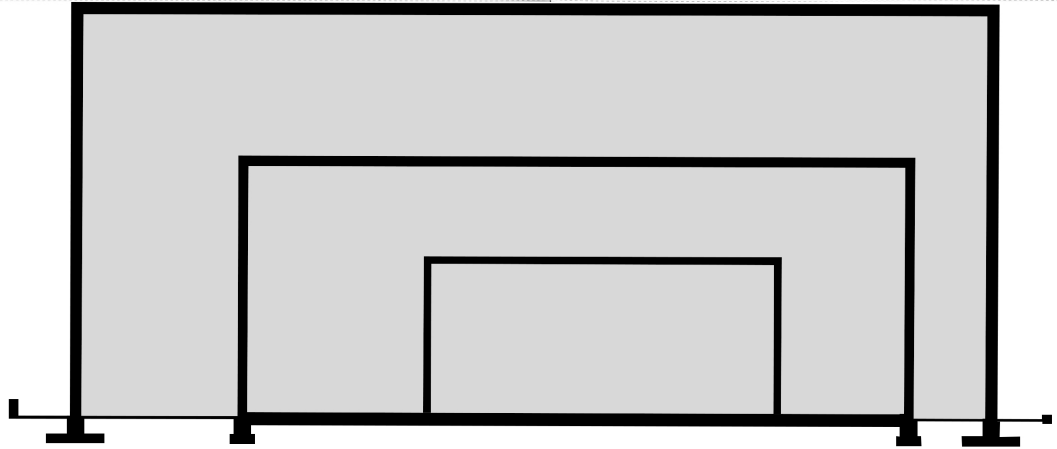
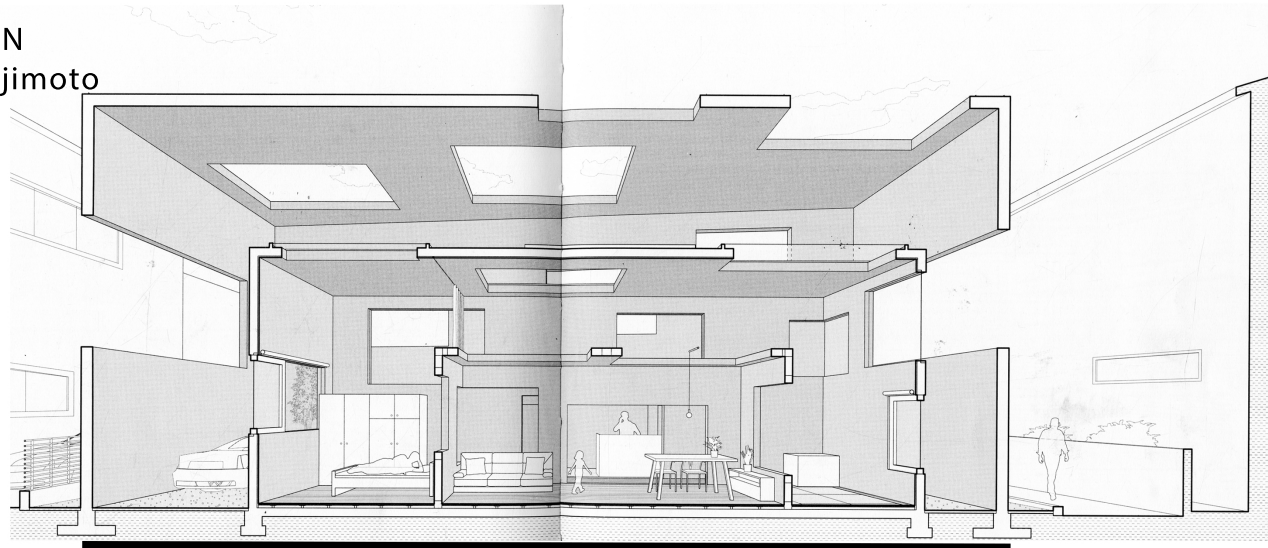
Best for a single person to live.

Transparent box on all sides except floor and roof.

Minimalist plan.

Better to use as a retreat place rather than a residence.

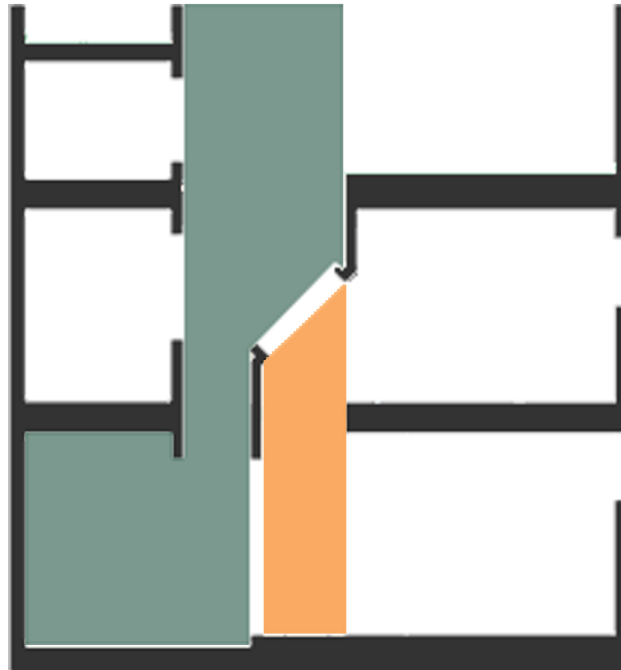
House N
Sou Fujimoto



Three shells of progressive sizes nested inside one another.

Different sized openings on the three shells allow people to look through both vertically and horizontally.

3 Way House
NAF architect & design



Climbing Wall Ladder Stairs

The three ways not only increase the ways to go up and down but also enrich the spaces and let the family enjoy living here.¹

1

Openings continue the spaces



CASE
Jun Igarashi Architects

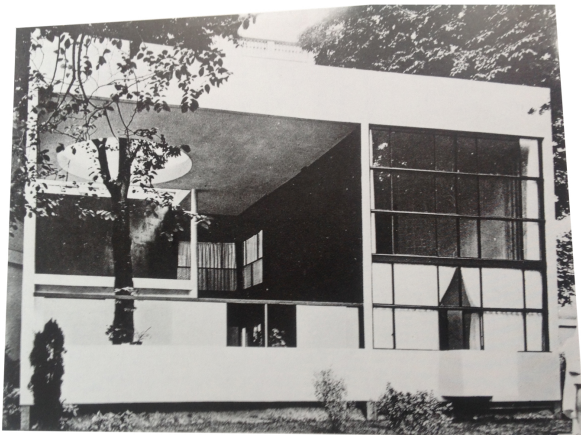
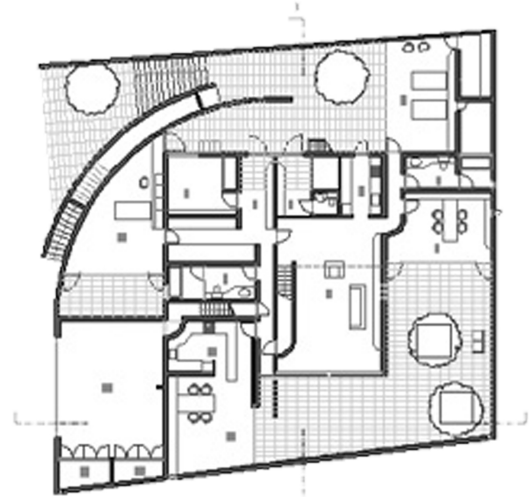
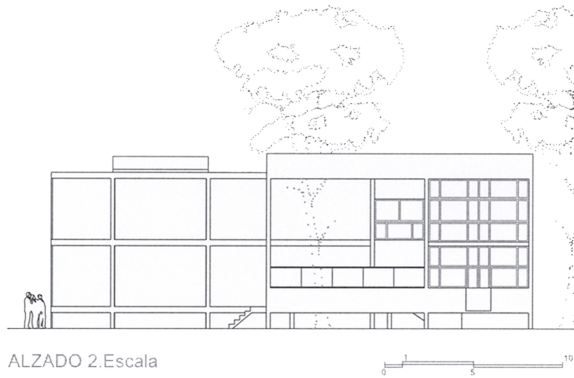


Cien House
PVE

Cien House is more orderly and concise.

The house CASE deals with spaces by making openings in different sizes and places, which is much more interesting.

Houses with trees



L'Esprit Nouveau Pavilion
Le Corbusier
Paris, France, 1924

Kidosaki House
Tadao Ando
Tokyo, Japan, 1985-1986

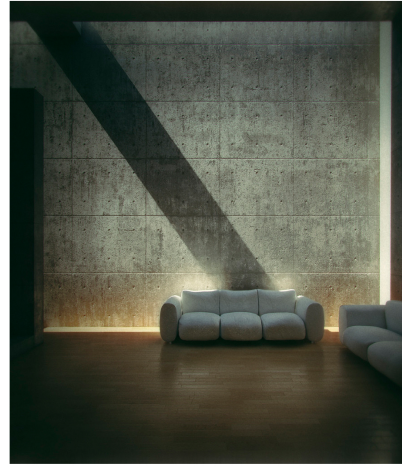
L 'Esprit Nouveau Pavillion encircles the tree at its corner. The tree can be seen both from the inside and outside to provide vitality for this house.

Four trees in the Kidosaki house provide vigor for this bald concrete garden.

Concrete



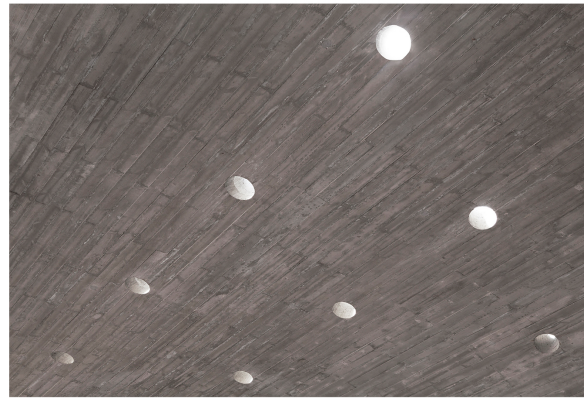
Mill Owners' Association Building
Le Corbusier



Koshino House
Tadao Ando



Crematorio Uitzicht
Souto De Moura



Seashore Library
Vertical Architects

Le Corbusier uses huge concrete panels with vertical textures.

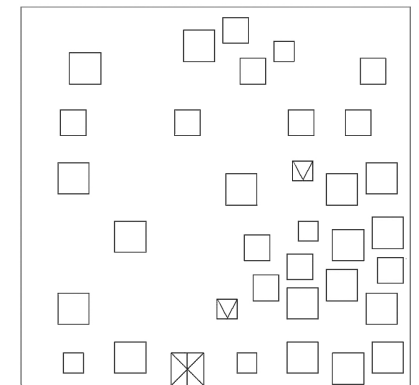
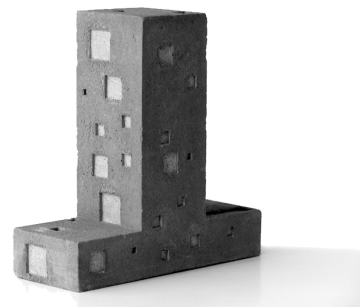
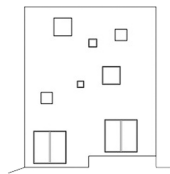
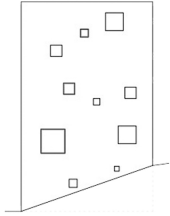
Koshino House has Tadao Ando's smooth concrete with six little holes on each of the concrete blocks.

Souto De Moura uses vertical textures of concrete.

The Sea Shore Library uses horizontal textures of concrete.

I would like to use cast-in-place concrete with vertical textures like Souto De Moura's project.

Elevation
Square Openings



Gago House
PVE

Cien House
PVE

Zollverein School of
Management and Design
SANNA

PVE's projects have random square openings on the elevations.

SANNA's project is a school, so it has more functions than a residence.

All three projects show quite a sense of beauty.

Karesansui
Japanese Rock Garden



Fort Worth Japanese Garden
Texas



Ryoan-ji
Kyoto, Japan



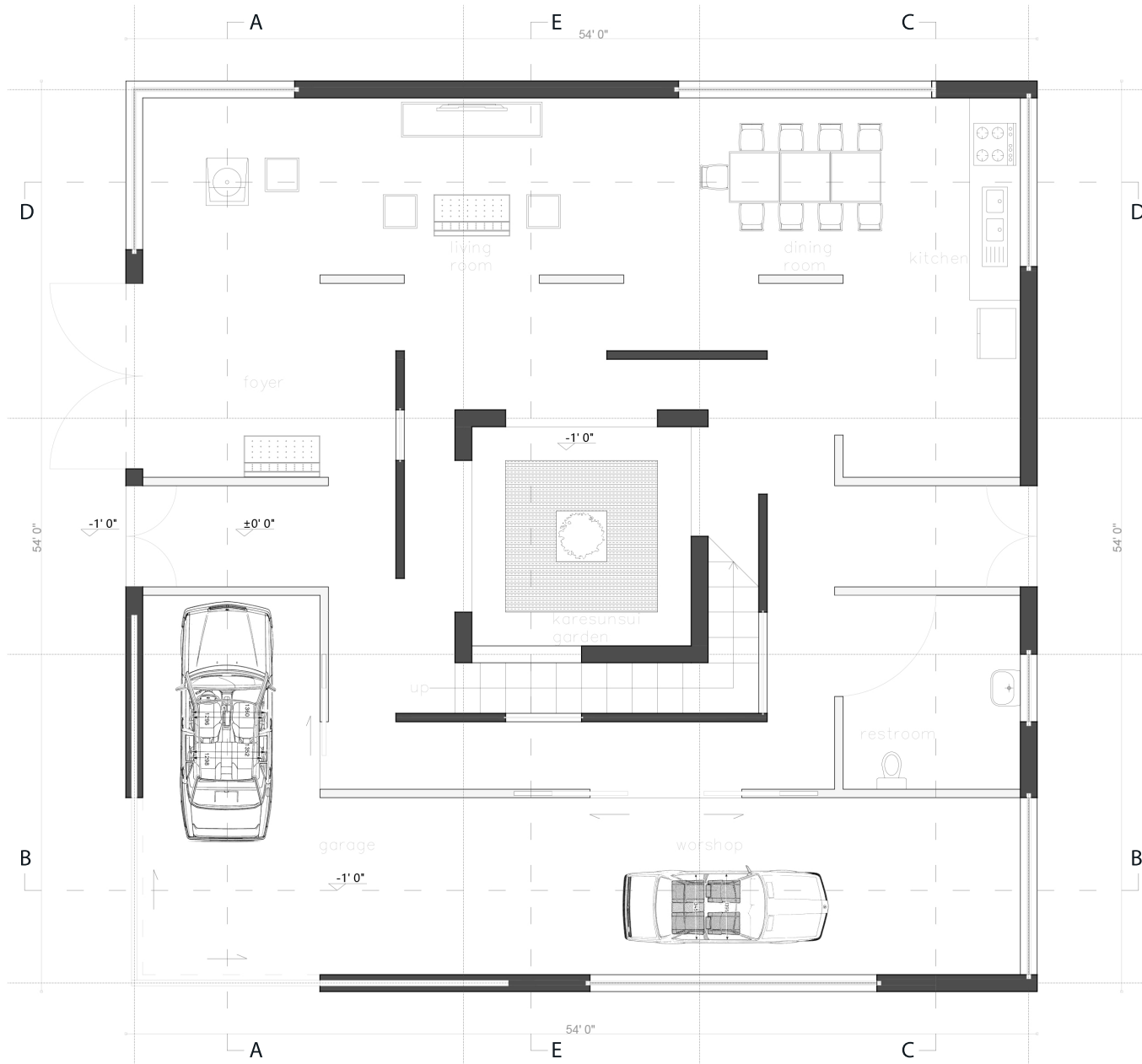
The Sand and Stone Garden
Portland



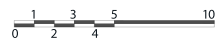
Nanzen-ji
Kyoto, Japan

Karesansui, also known as a Japanese rock garden or dry landscape garden, is a kind of Japanese traditional garden.

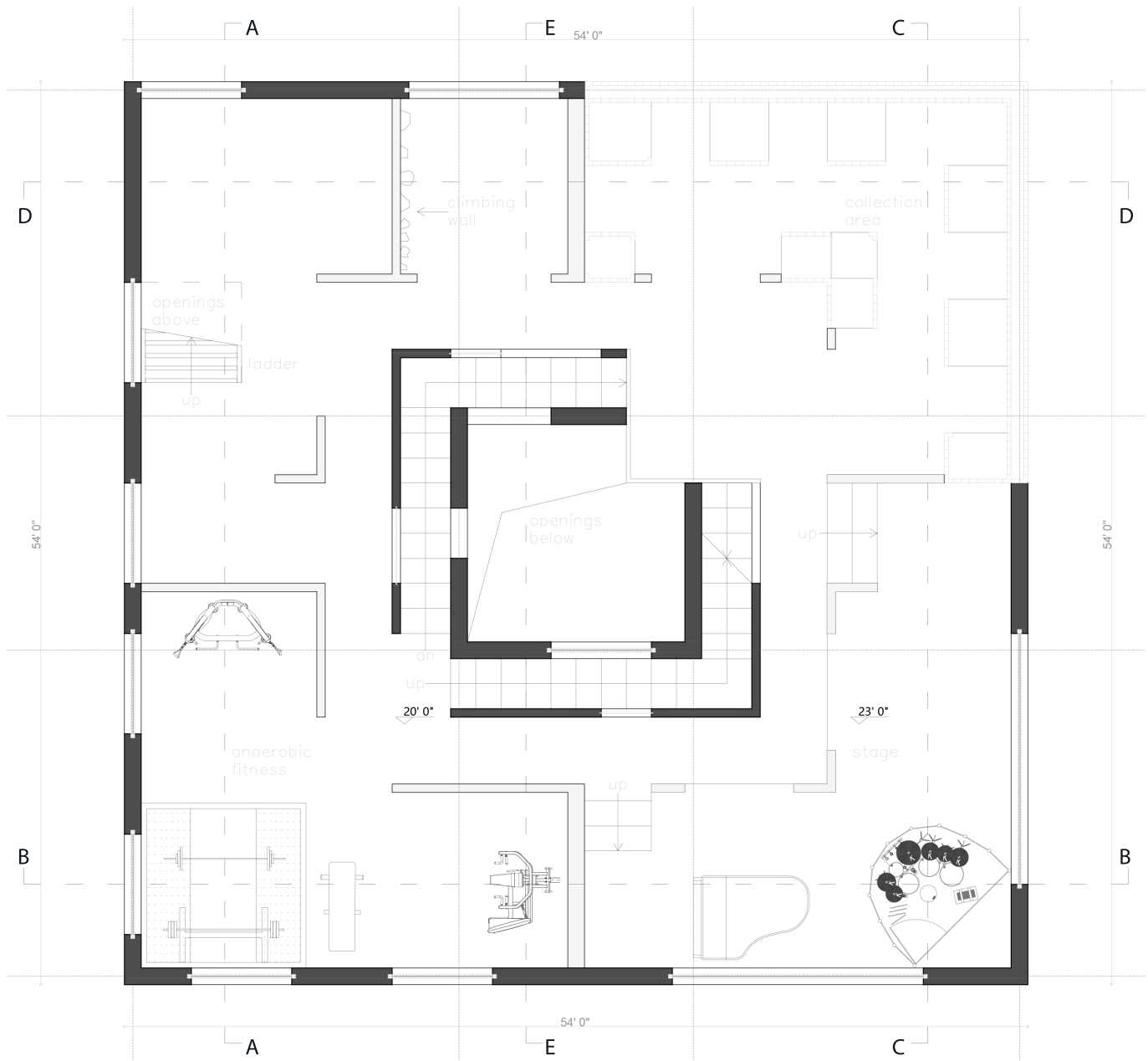
It is a miniature stylized landscape to imitate the intimate essence of nature, not its actual appearance, and to serve as an aid to meditation about the true meaning of life.



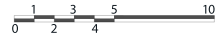
Ground Floor Plan



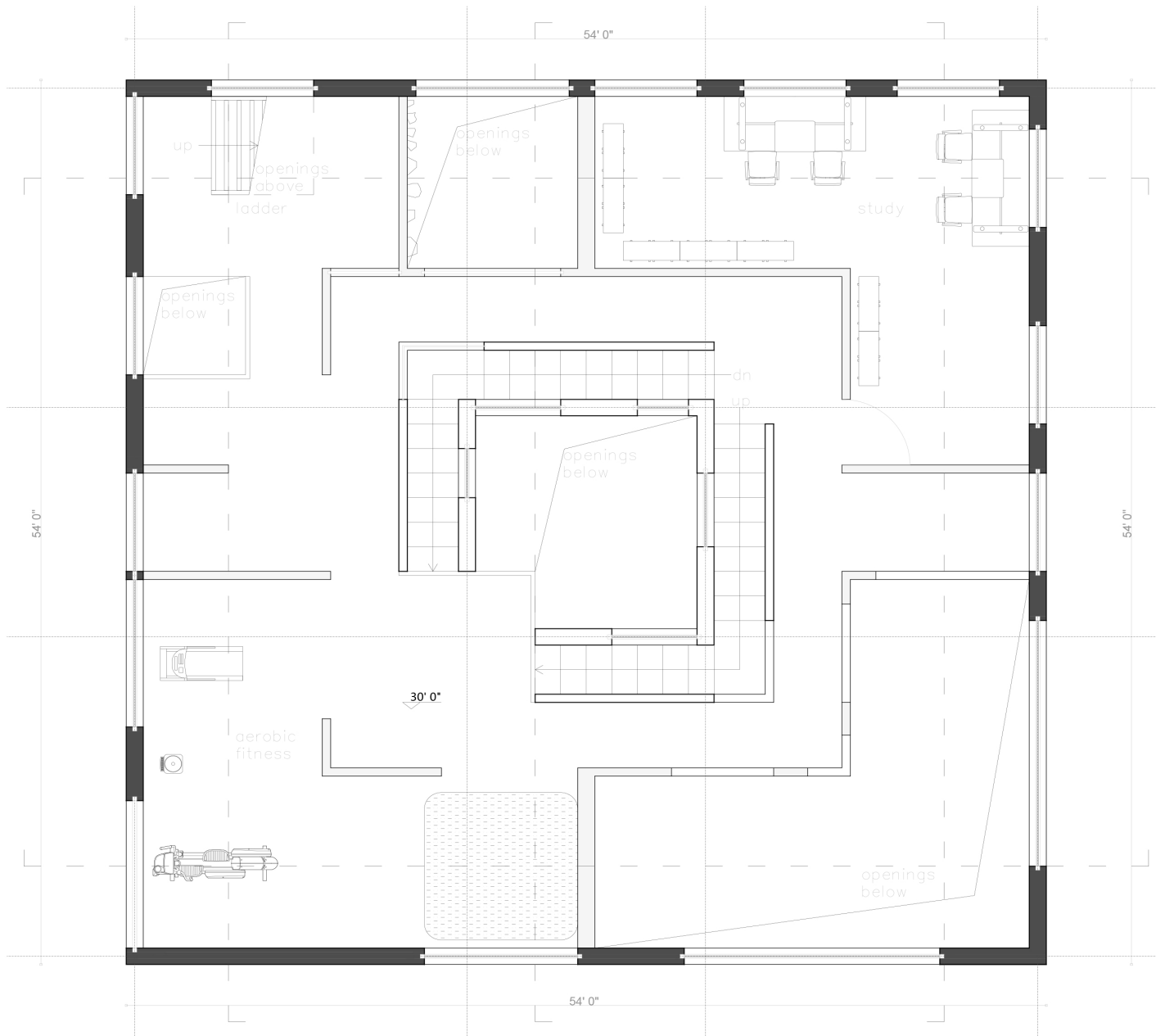
On the first floor, there is a garage and a workshop connected to each other. I wish I could have two classic cars, a 190E Evolution and a 635 CSI. Of course, they need to be taken care of, so there is reason to let the two spaces connect to each other. The two sliding doors of the garage meet at the corner and open to the two sides parallel to the walls. There are three entrances on the first floor. Two smaller ones are 6ft wide by 6ft high square openings, only letting children go through them. There is another bigger 11x11ft opening as the main entrance of the house. After walking into this house, there is a Barcelona chair on the right side to sit and change shoes. On the left side of the foyer, there is a coach and a tea table facing the river outside the house. In the center of the living room, there stands another Barcelona chair and TV set to watch. Walking through the living room, we come to the dining room and the kitchen. The dining table has its long side facing the river. Also, there is a half bathroom for guests to use on the first floor.



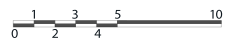
Second Floor Plan



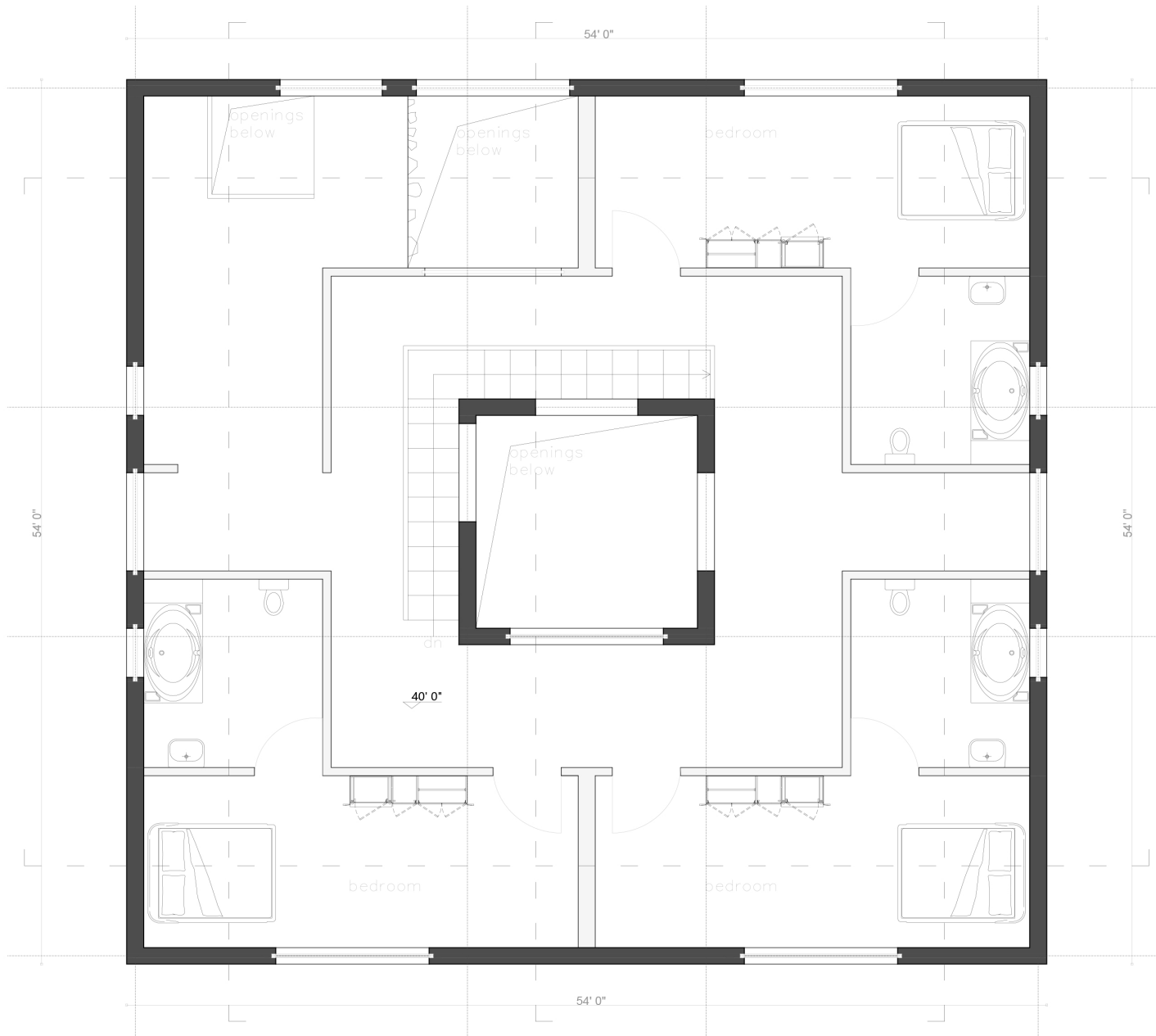
At the south-west area of the second floor, it's an free weight area and on the same area on the third floor is for cardio, the openings have good views to look outside. At the north-east area, there is a collection area assembly by pieces of glass blocks. The blocks form some hollow spaces to put the collections in and they can be seen both from inside and outside. At the north-west area, the spaces go through three floors, there is a climbing wall and two ladders to go up through the two floors. This space with the stairs in the center can let three people to play games in it. At the south-east of the second floor, there is a stage that has two floors height. My friends and I will play music here and sometimes my family can also taste wines and dance here.



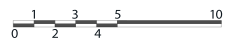
Third Floor Plan



As the walls around the stage go up to the roof of third floor, people can also enjoy the performance on the stage through the openings on the interior walls. The north-east L-shape area of the third floor is a relatively enclosed quiet room for us to study and reading books.

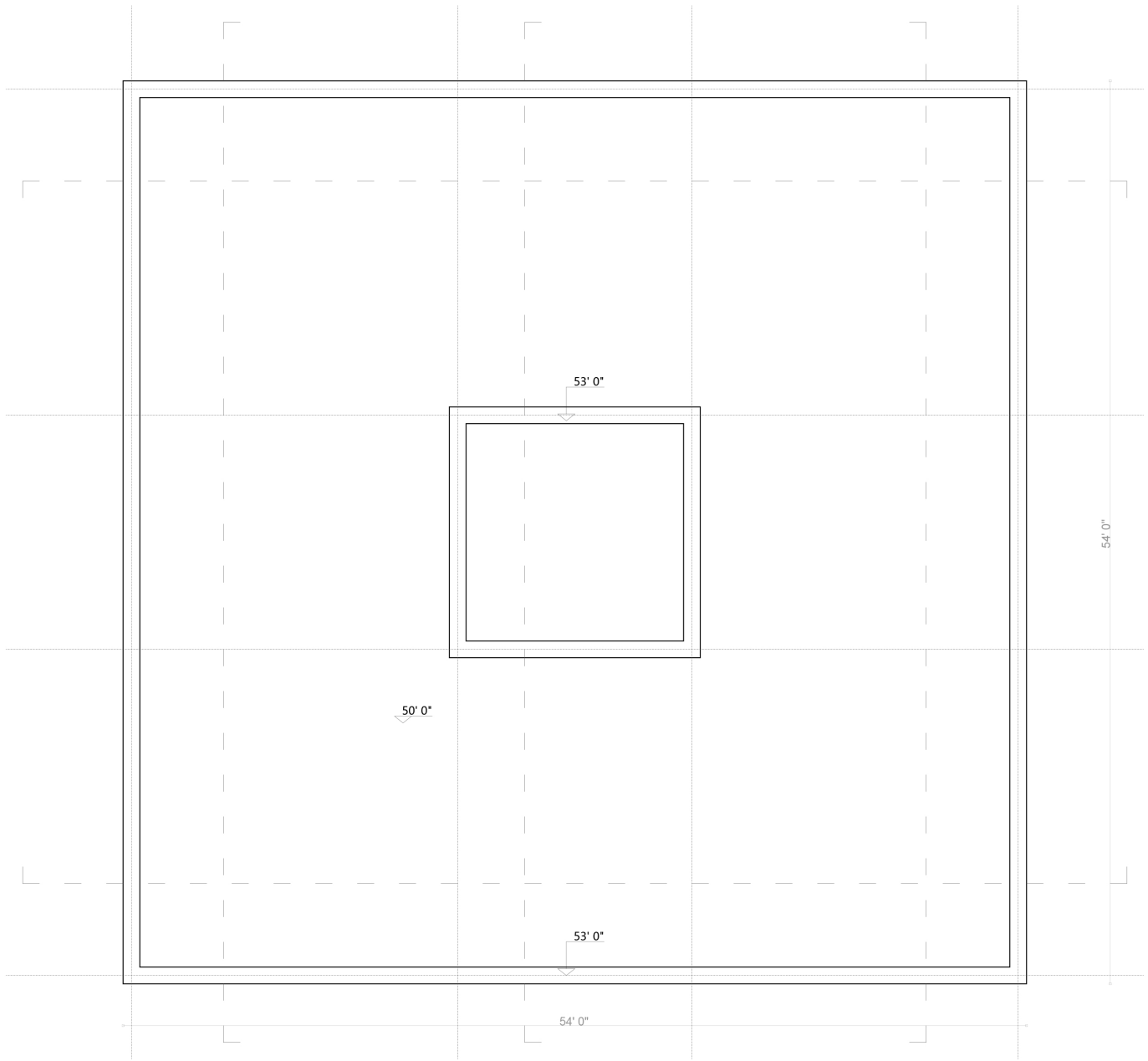


Fourth Floor Plan



There are three bedrooms on the fourth floor except for the playing area at the north-east.

Those three bedrooms are completely private rooms; every bedroom has its own bathroom.



Roof Plan

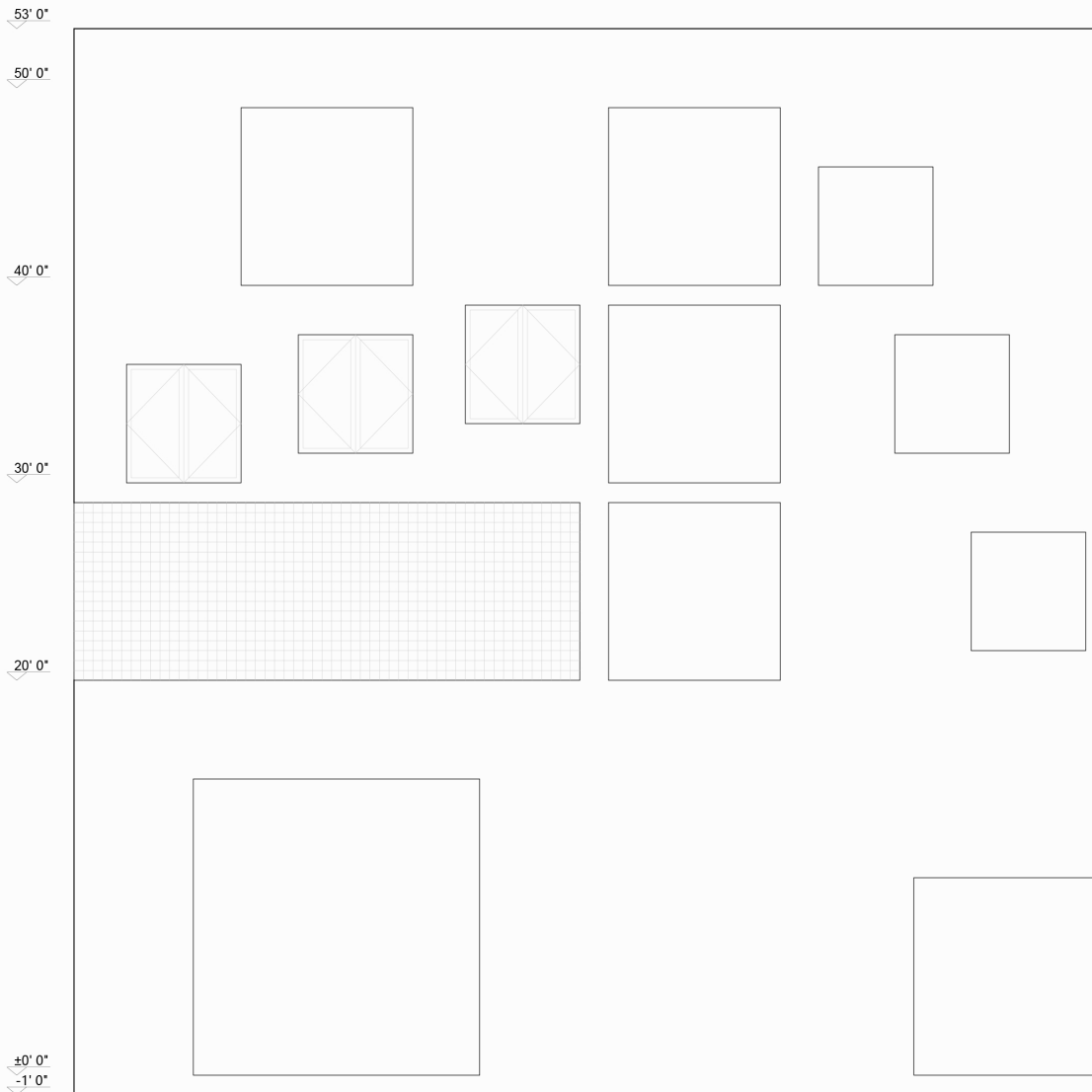


On the top of the house, the skylight lets the natural light come through.

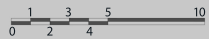


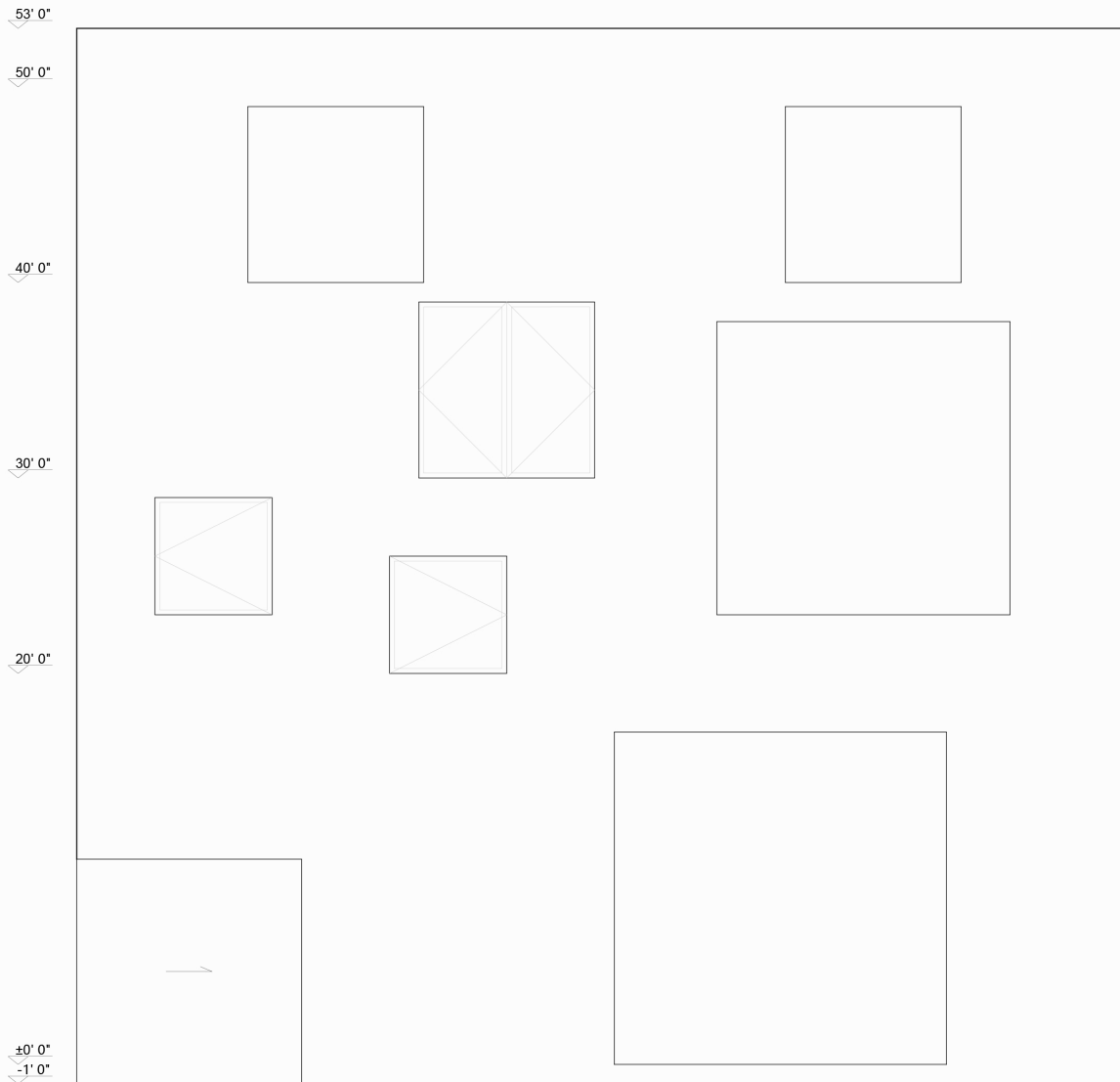
Master Plan



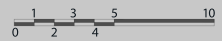


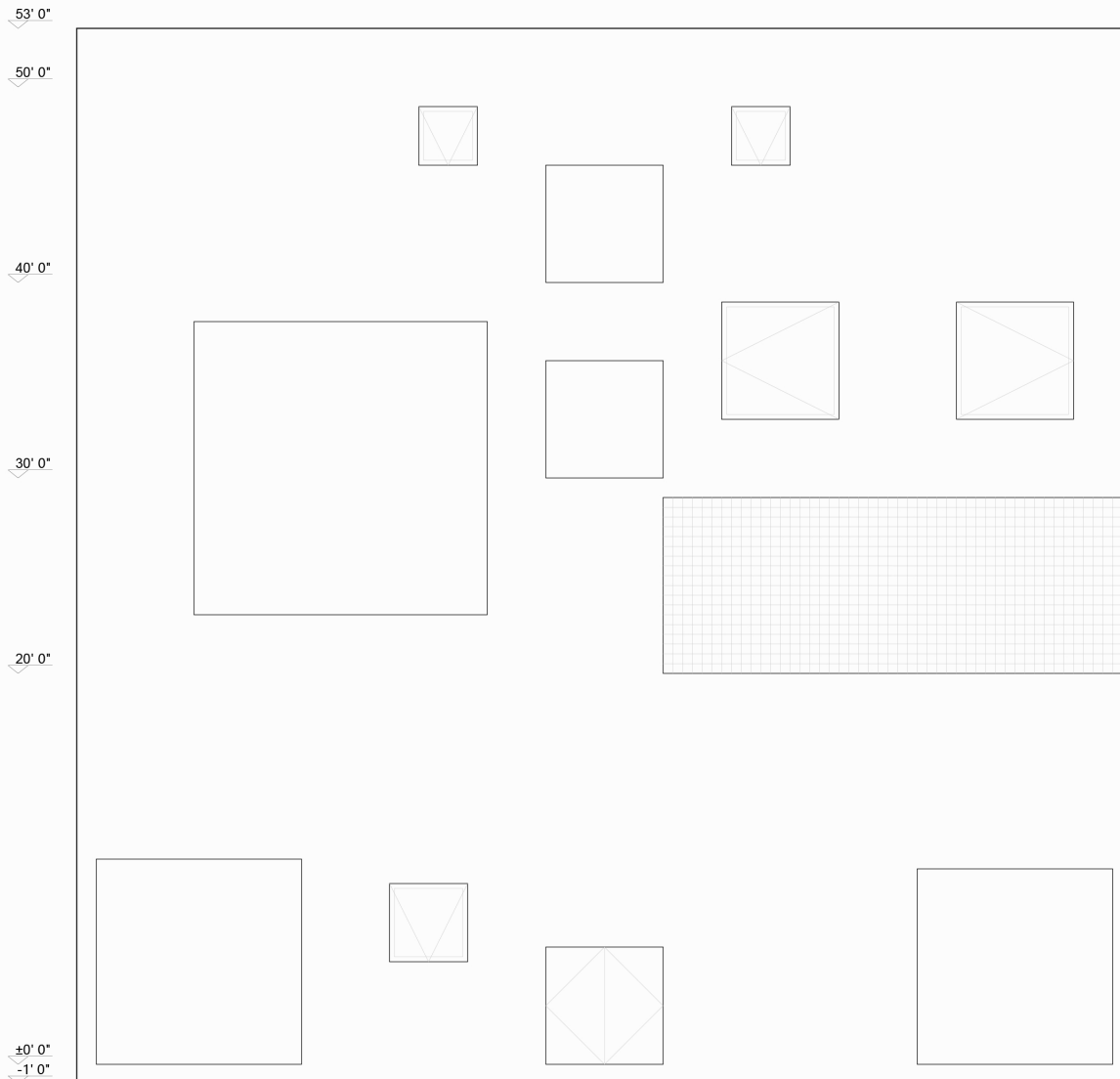
North Elevation



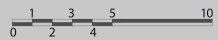


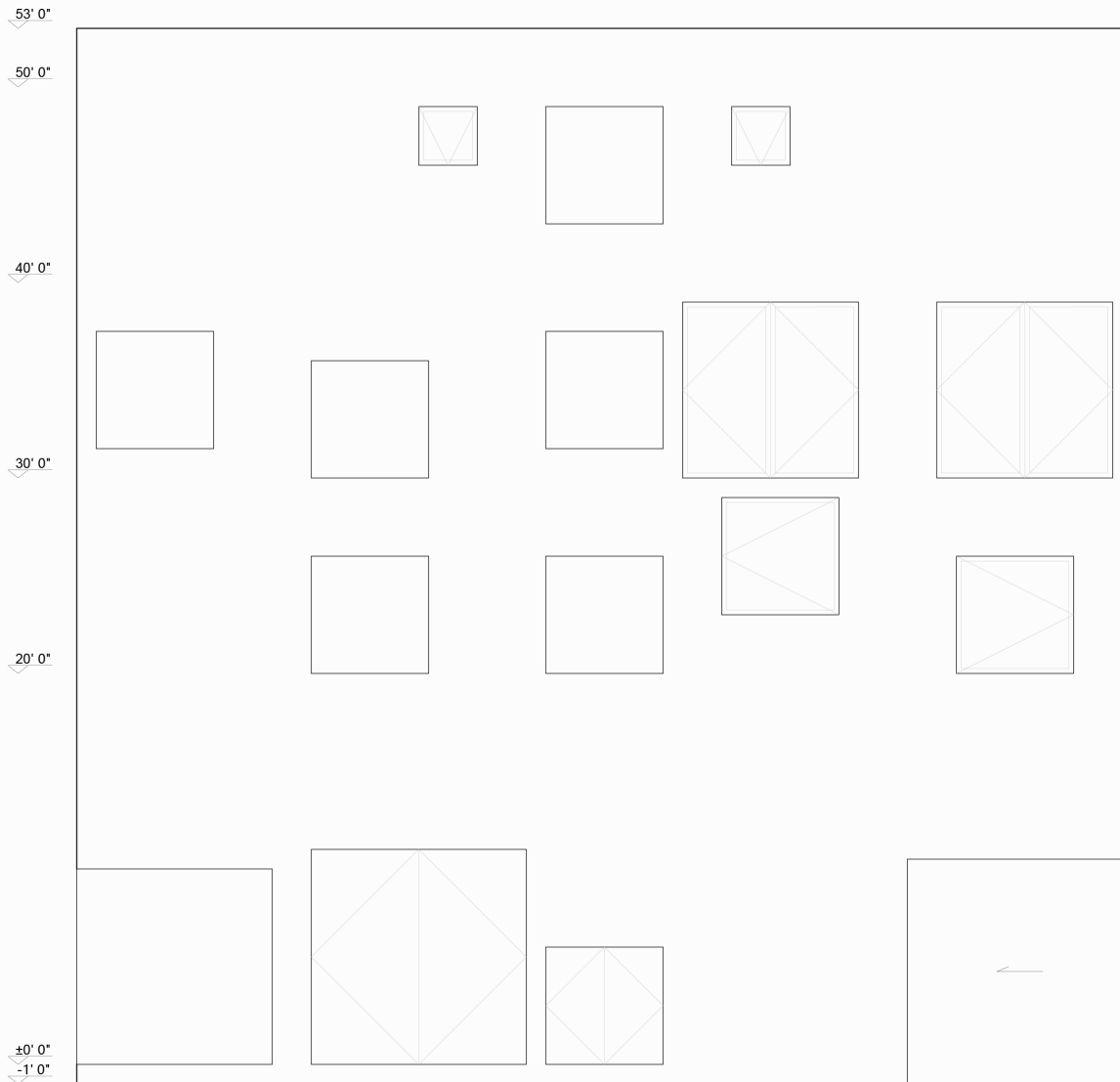
South Elevation



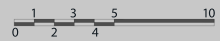


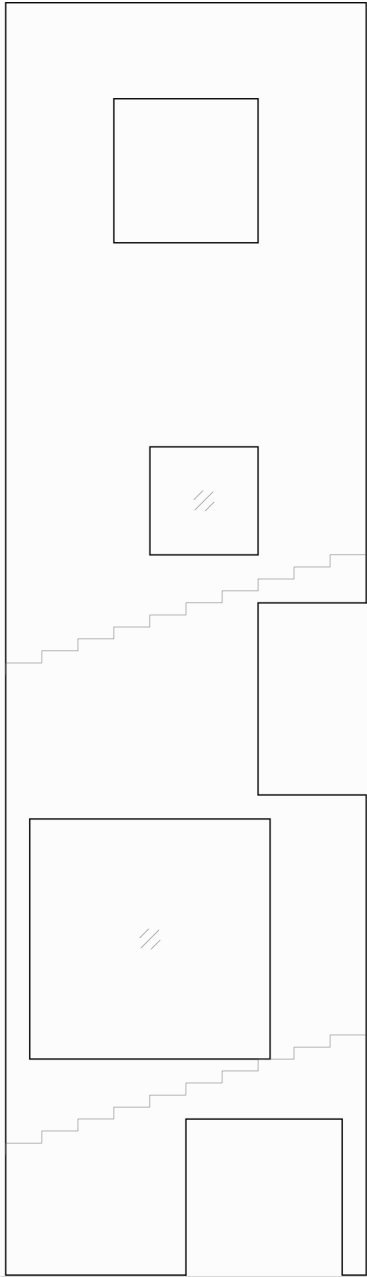
East Elevation



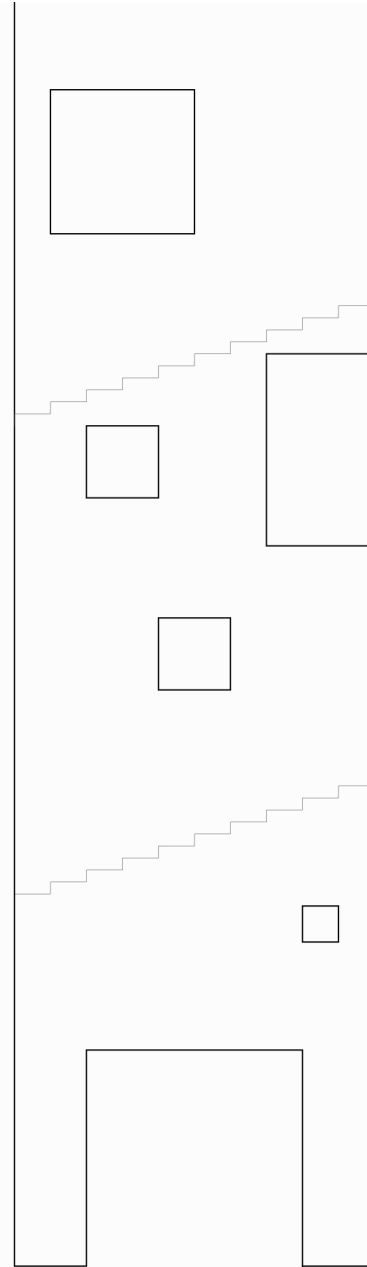
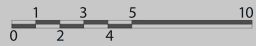


West Elevation

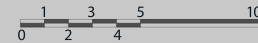


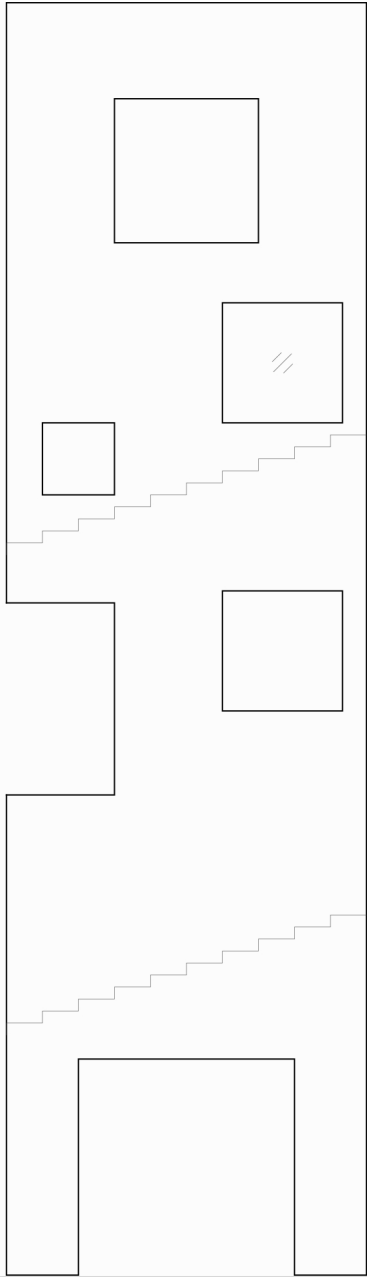


East Interior Elevation

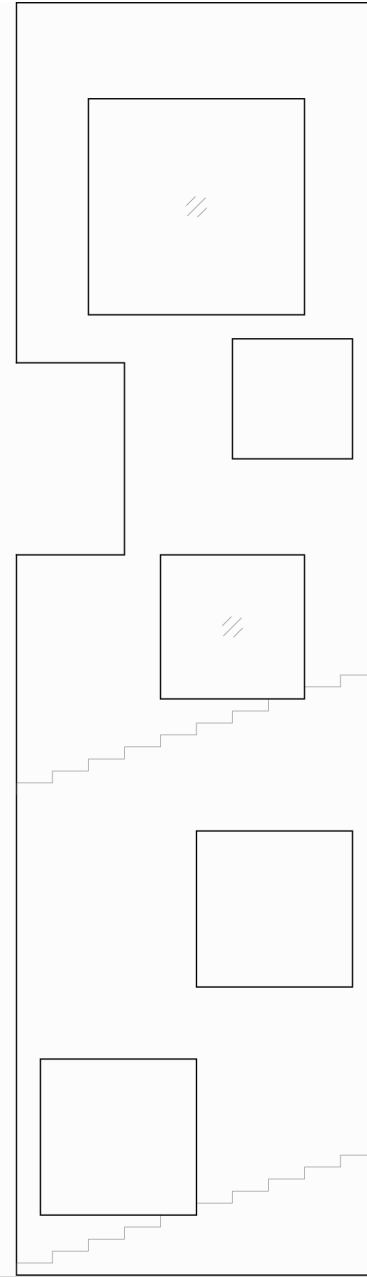
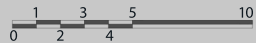


West Interior Elevation

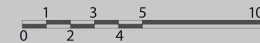


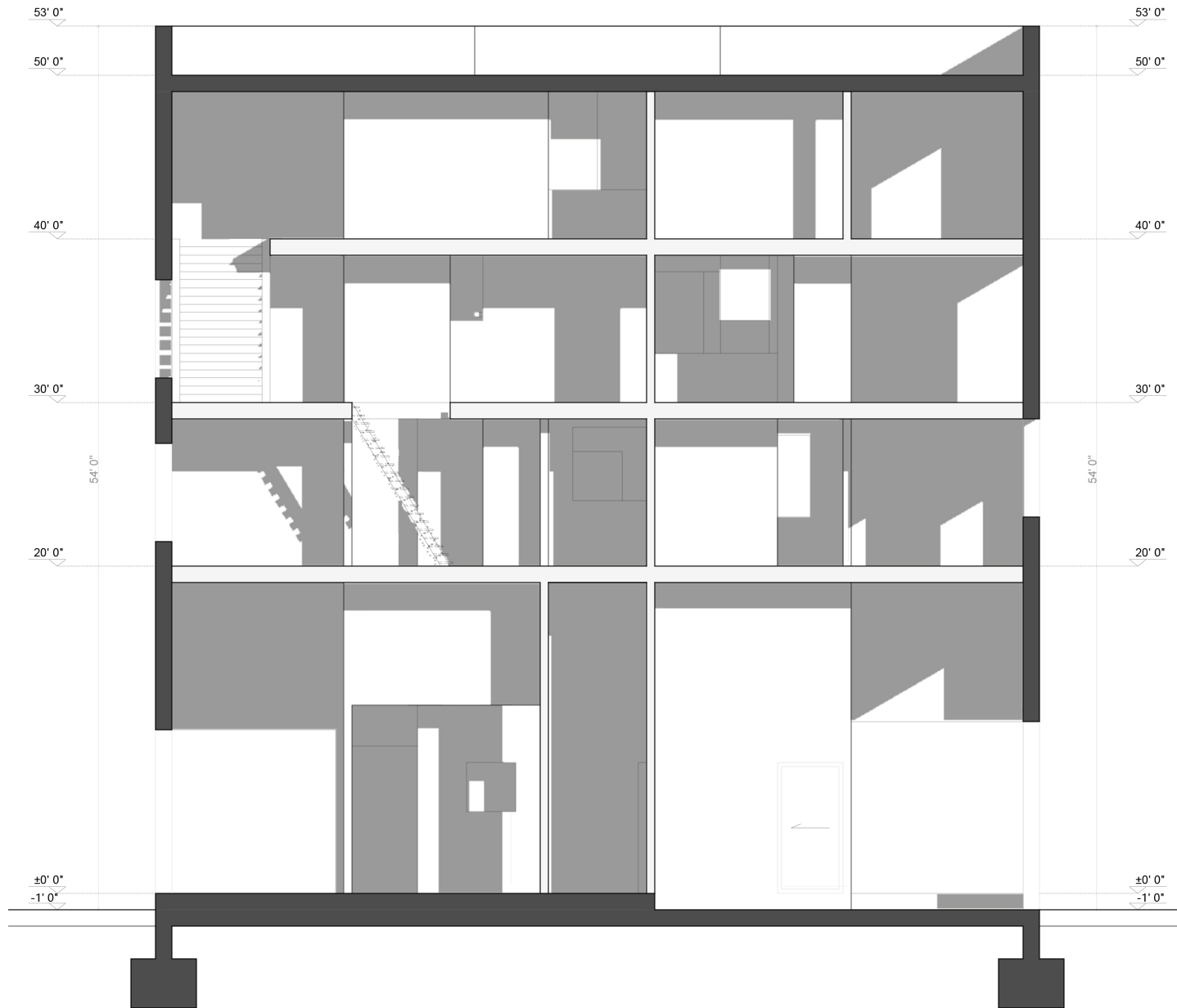


North Interior Elevation

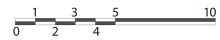


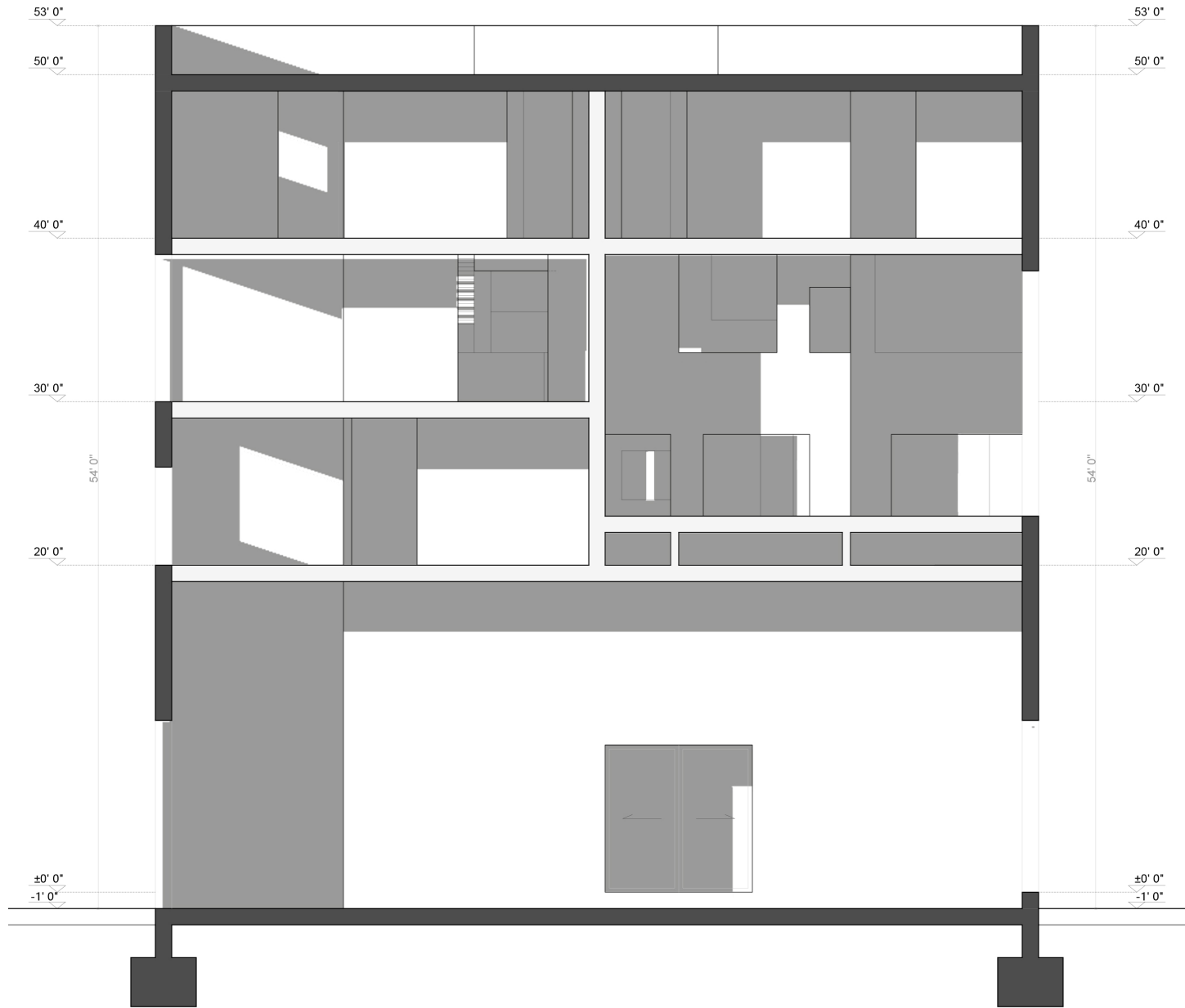
South Interior Elevation



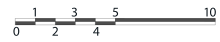


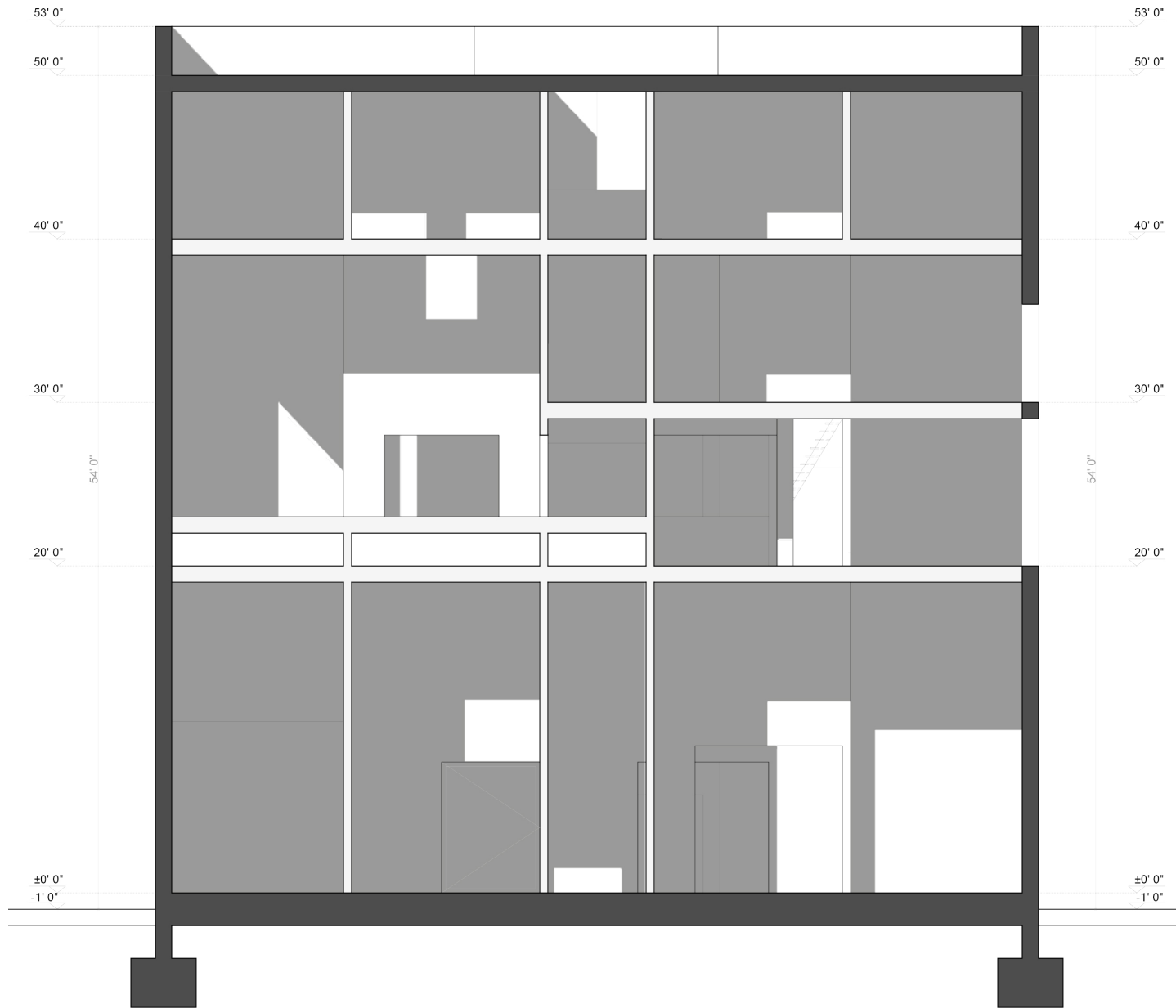
A-A Section



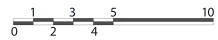


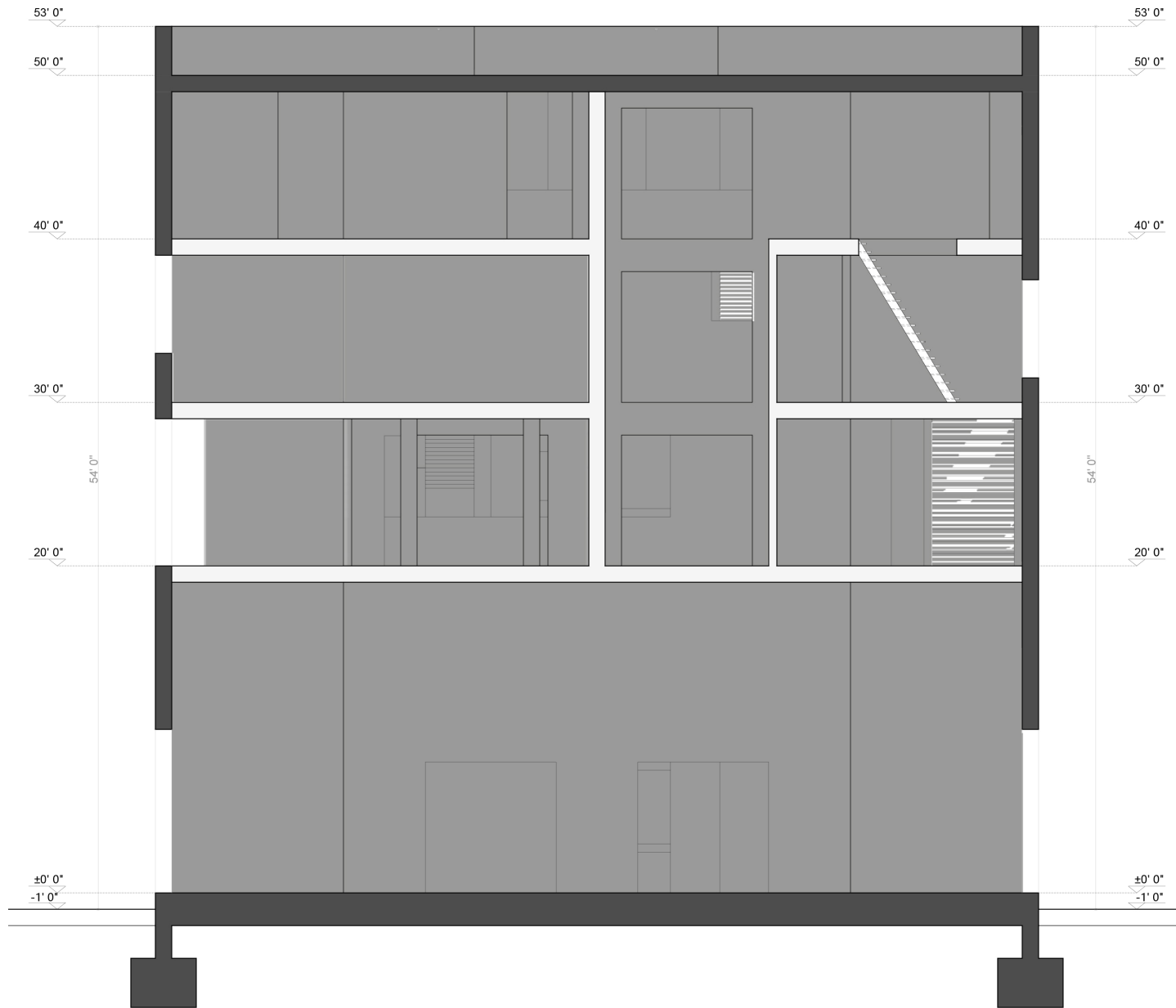
B-B Section



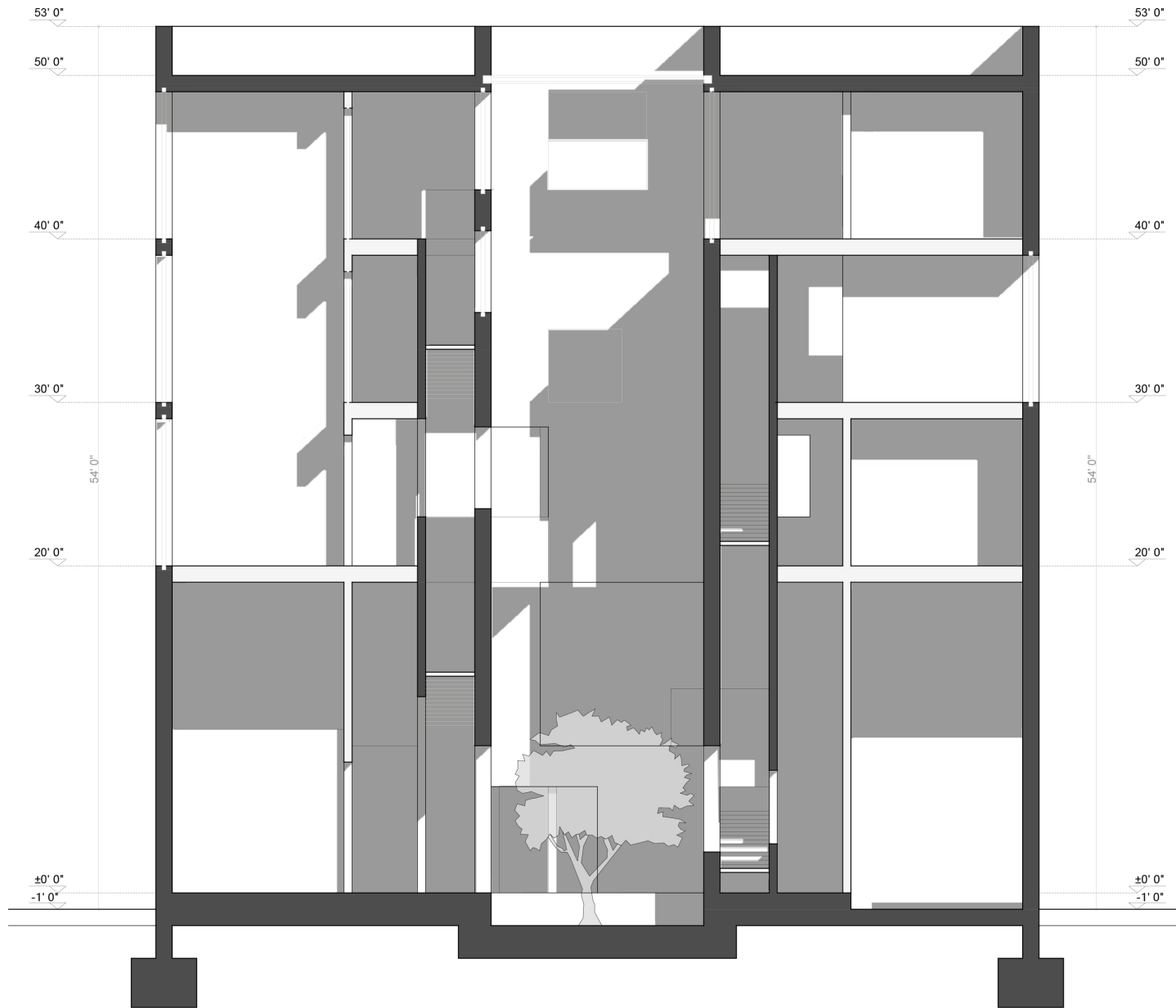


C-C Section

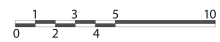




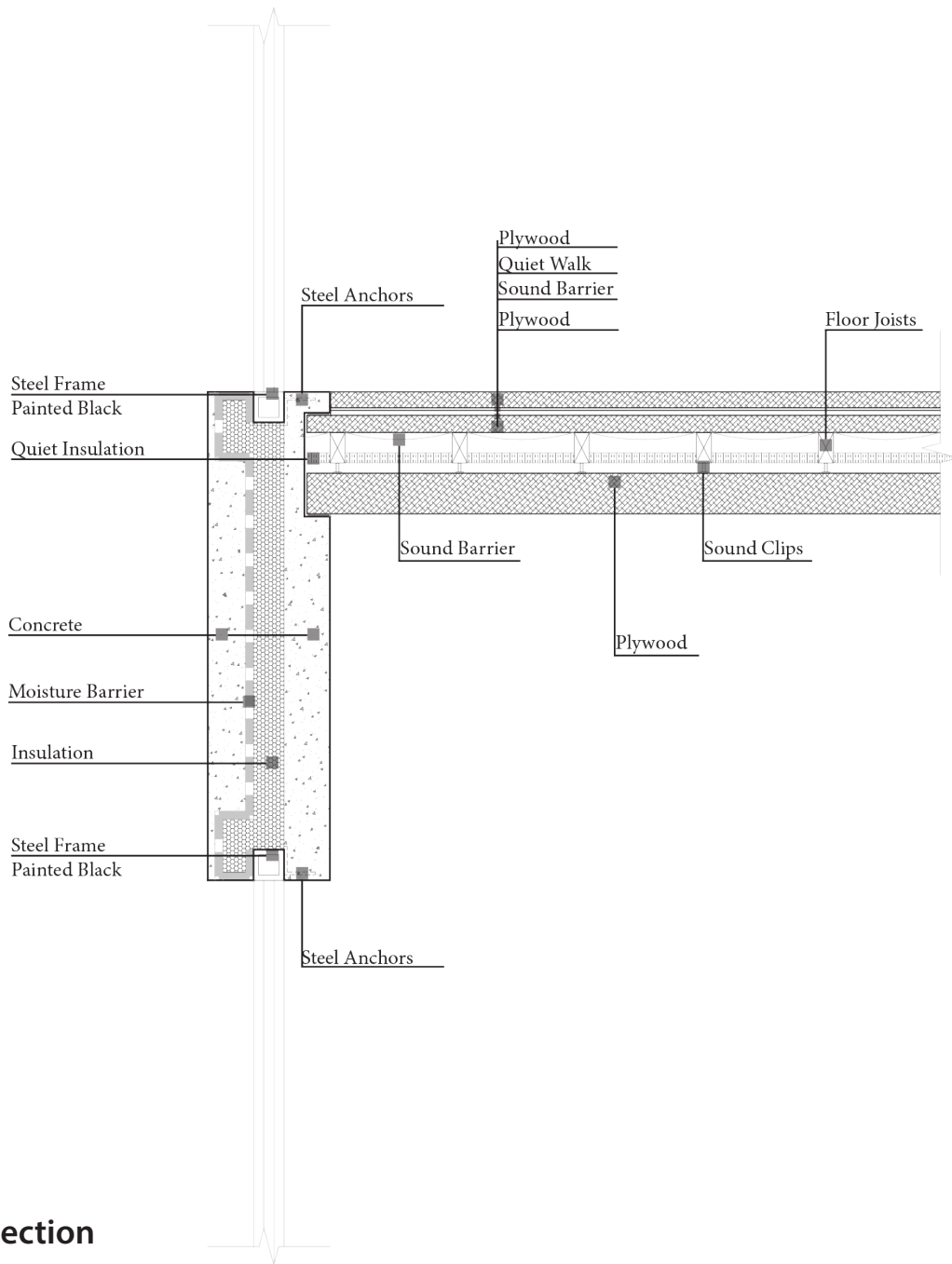
D-D Section
 0 1 2 3 4 5 10

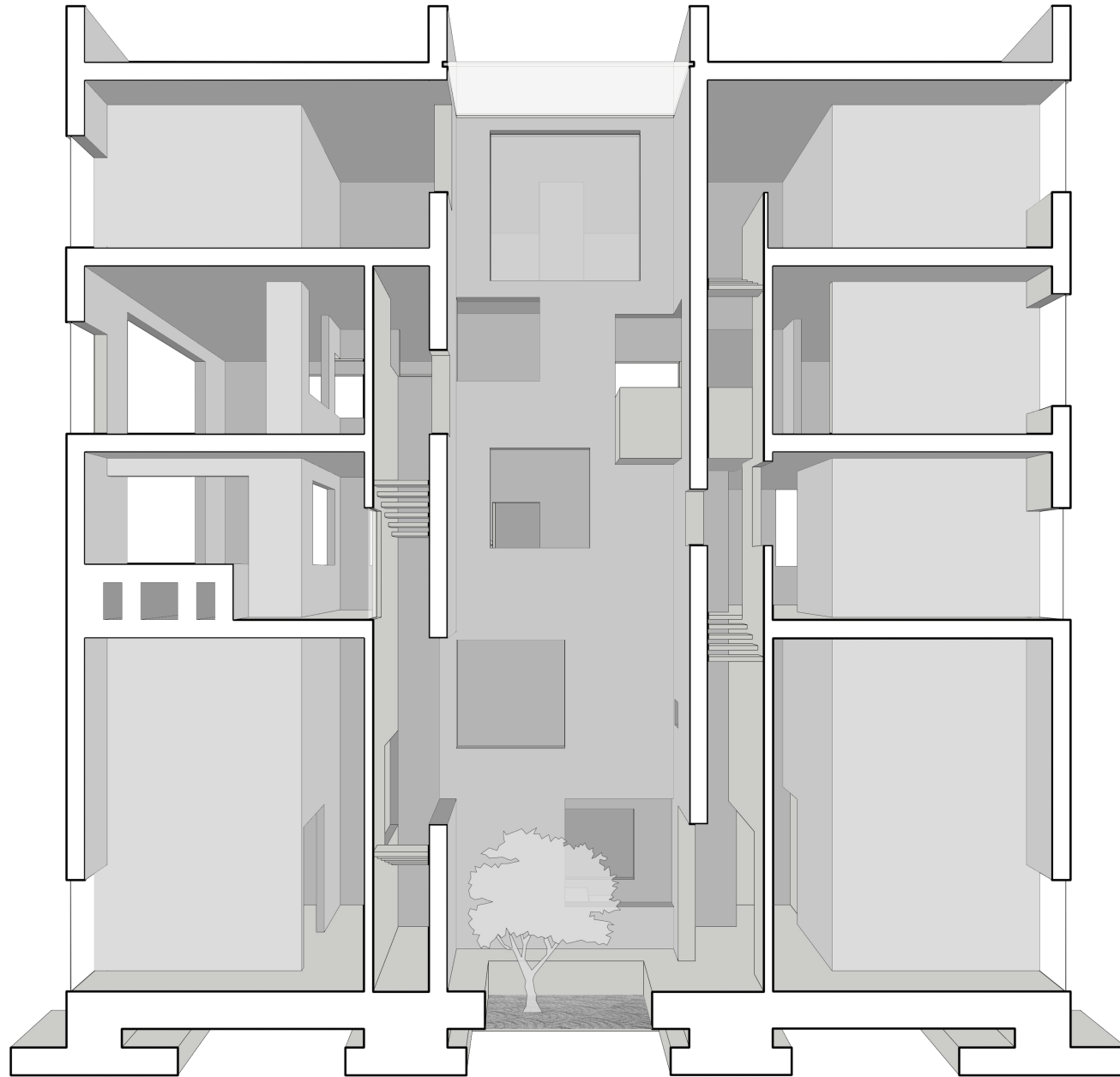


E-E Section



Wall Section

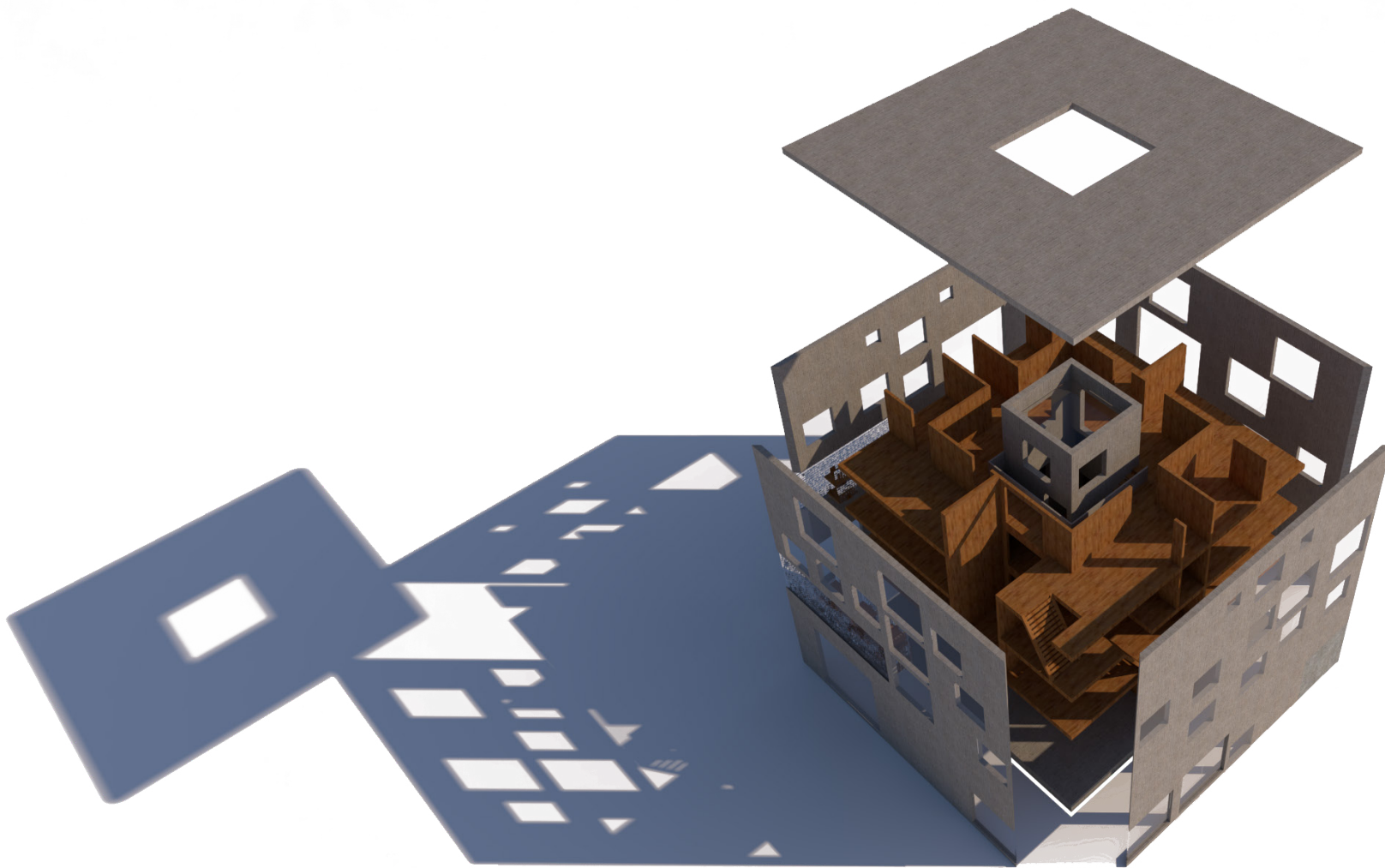




Section Perspective

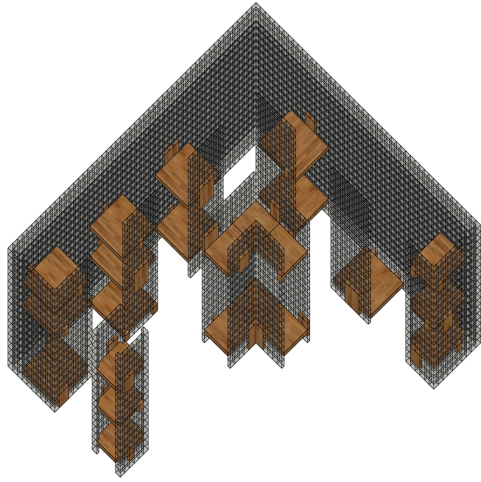


Section Perspective

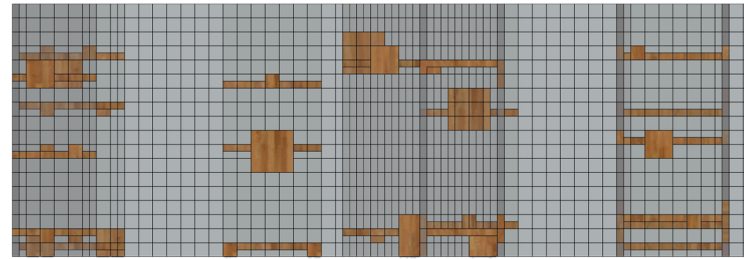


Exploded View Drawing

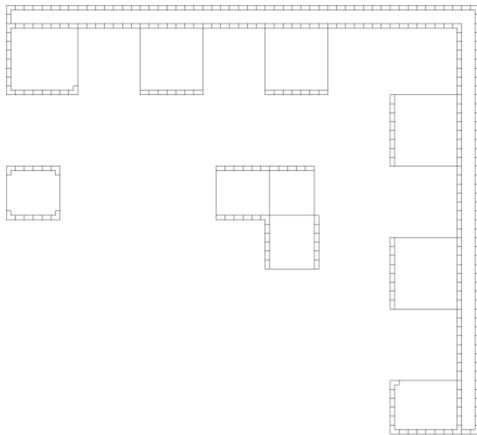
Exhibition area for collections



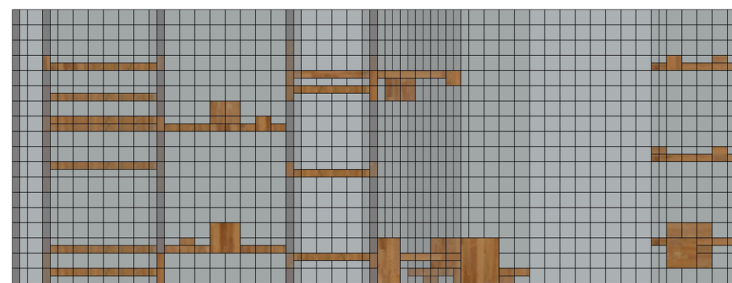
Axonometric



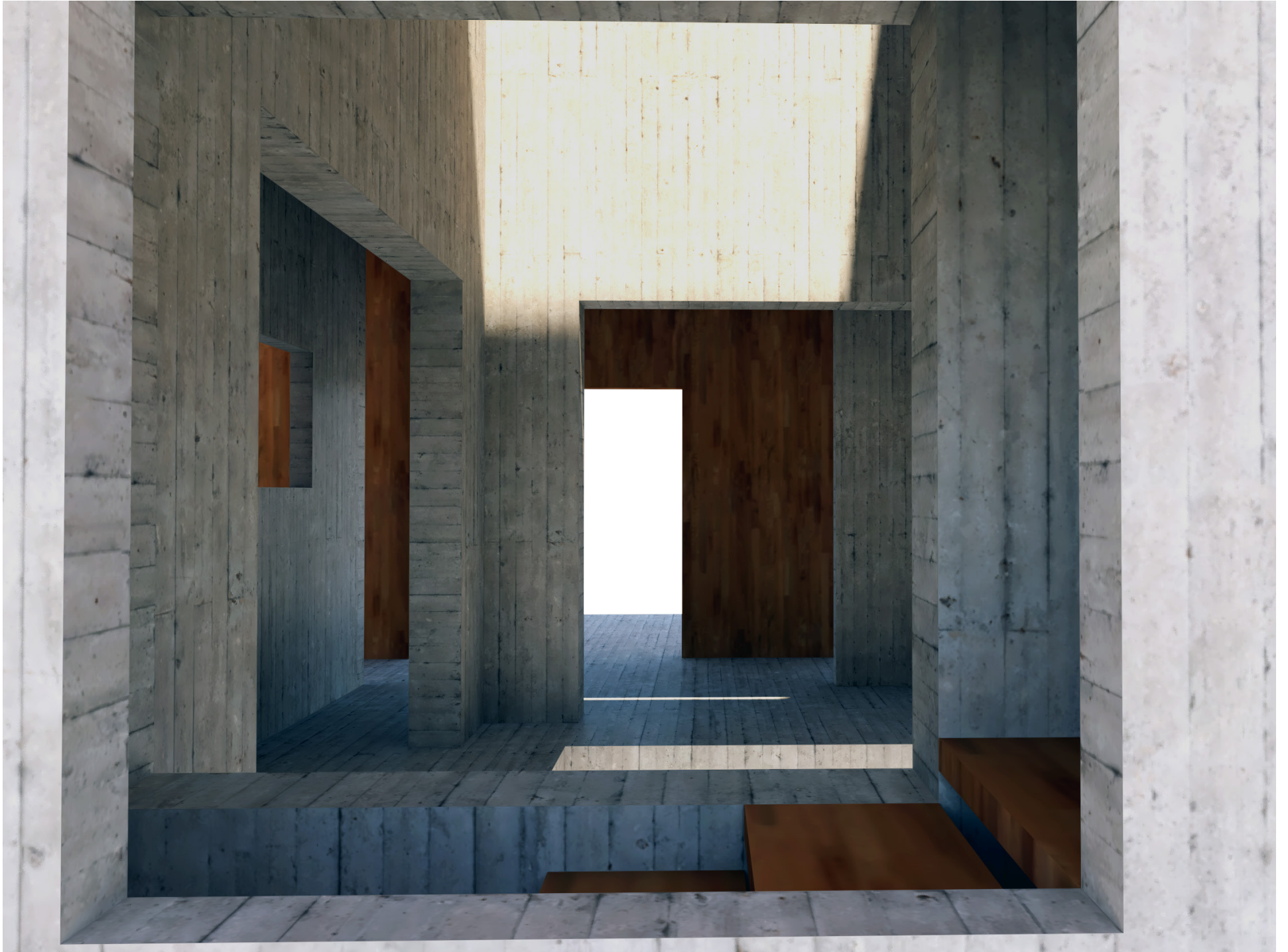
Front Elevation



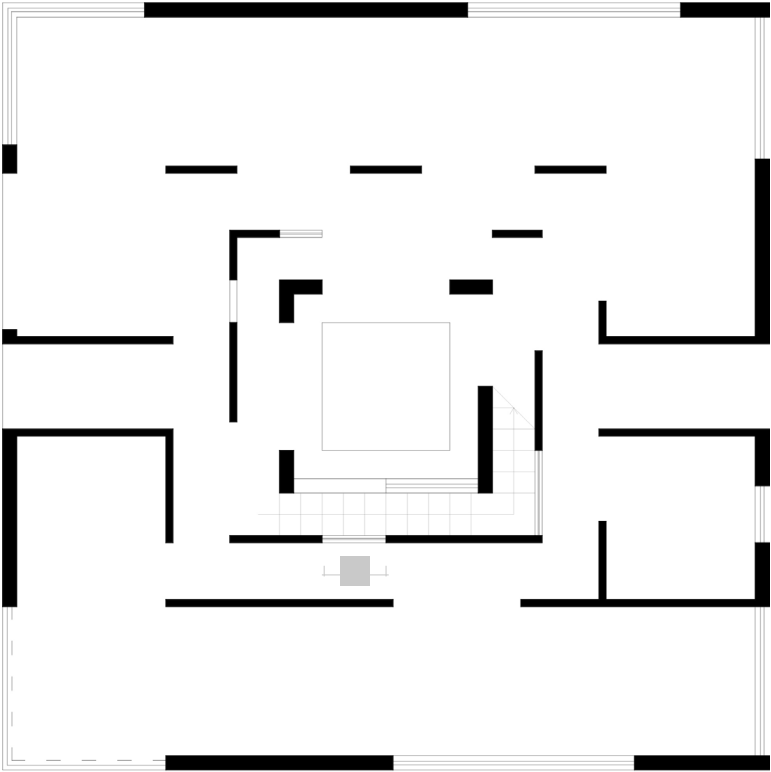
Plan



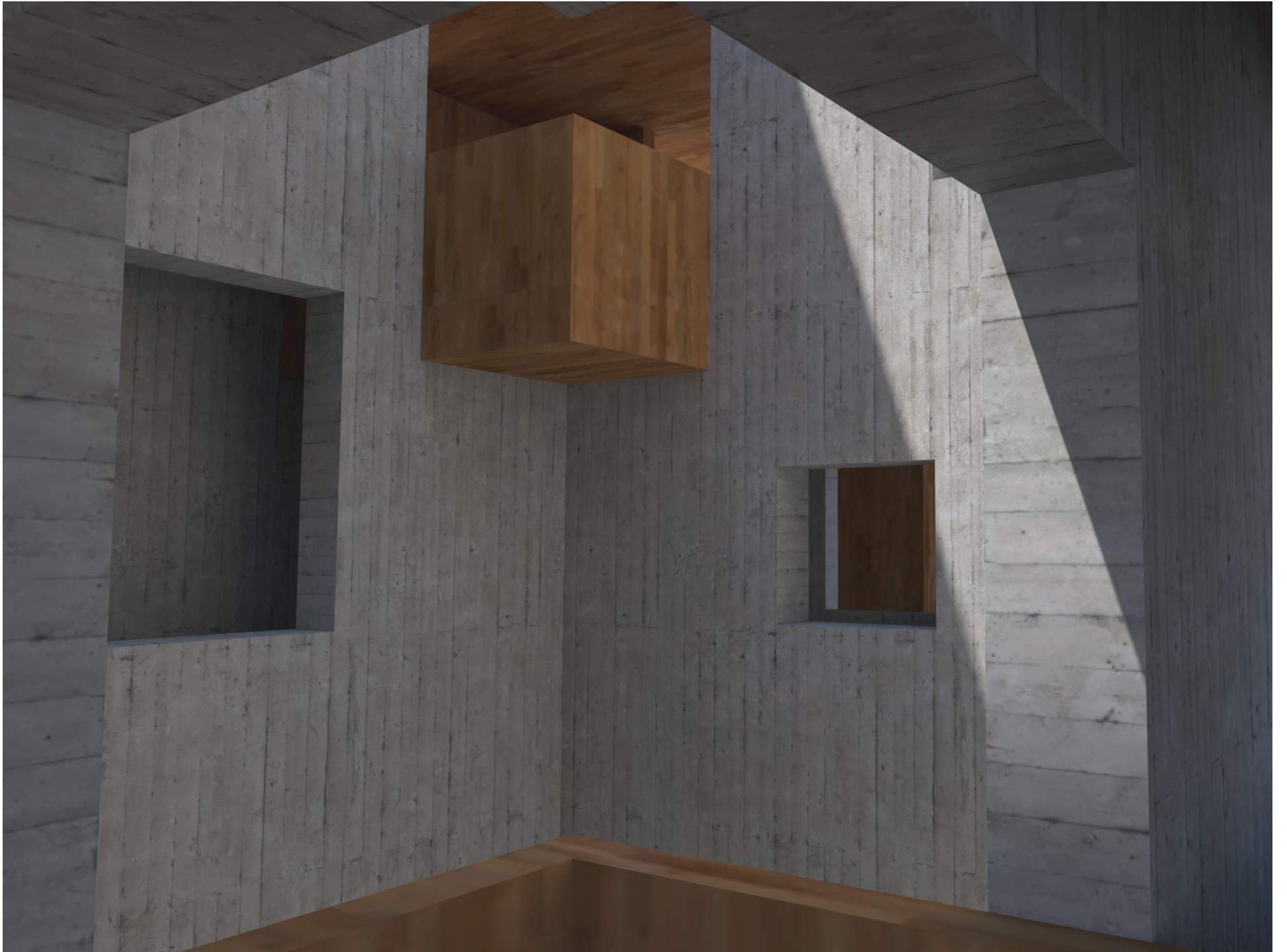
Side Elevation



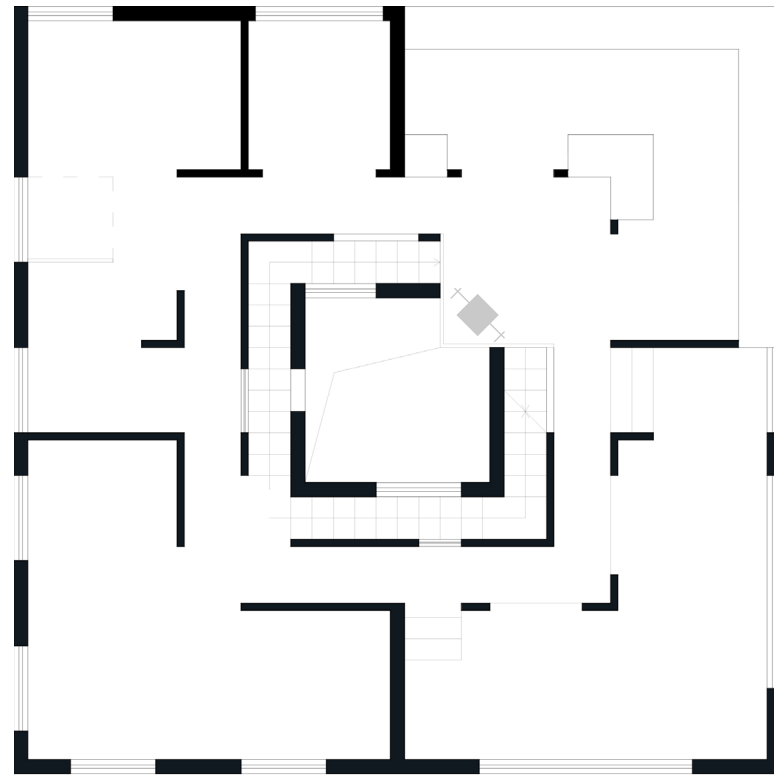
Interior Rendering



Ground Floor Plan



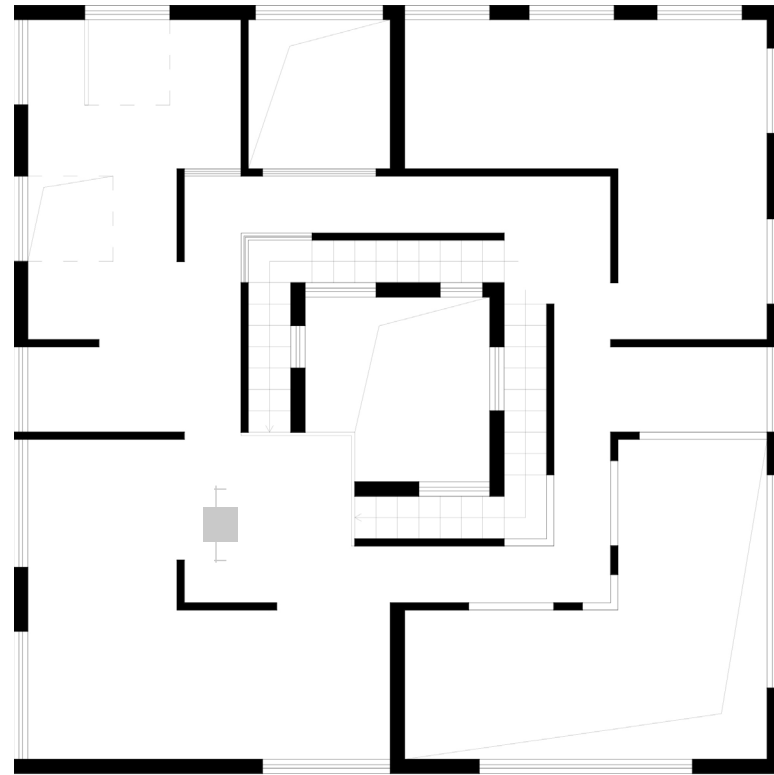
Interior Rendering



Second Floor Plan



Interior Rendering



Third Floor Plan



Rendering with Context





