



CONTROLLED

AND

STAIRWAYS

STAIRWAYS

CHUNG-YING HOR

Water is everywhere, it is the most universal material on earth. Gap between our Limited physical perception and the scientific fact.

MOMWP: THE MUSEUM OF MODERN WATER & THE MODERN WATER PARK

AN HYBRID OF INTERTEXTUALITY

2022 Summer

Advanced Architecture Tutorial: Septic Studio

Critic: Dan Wood

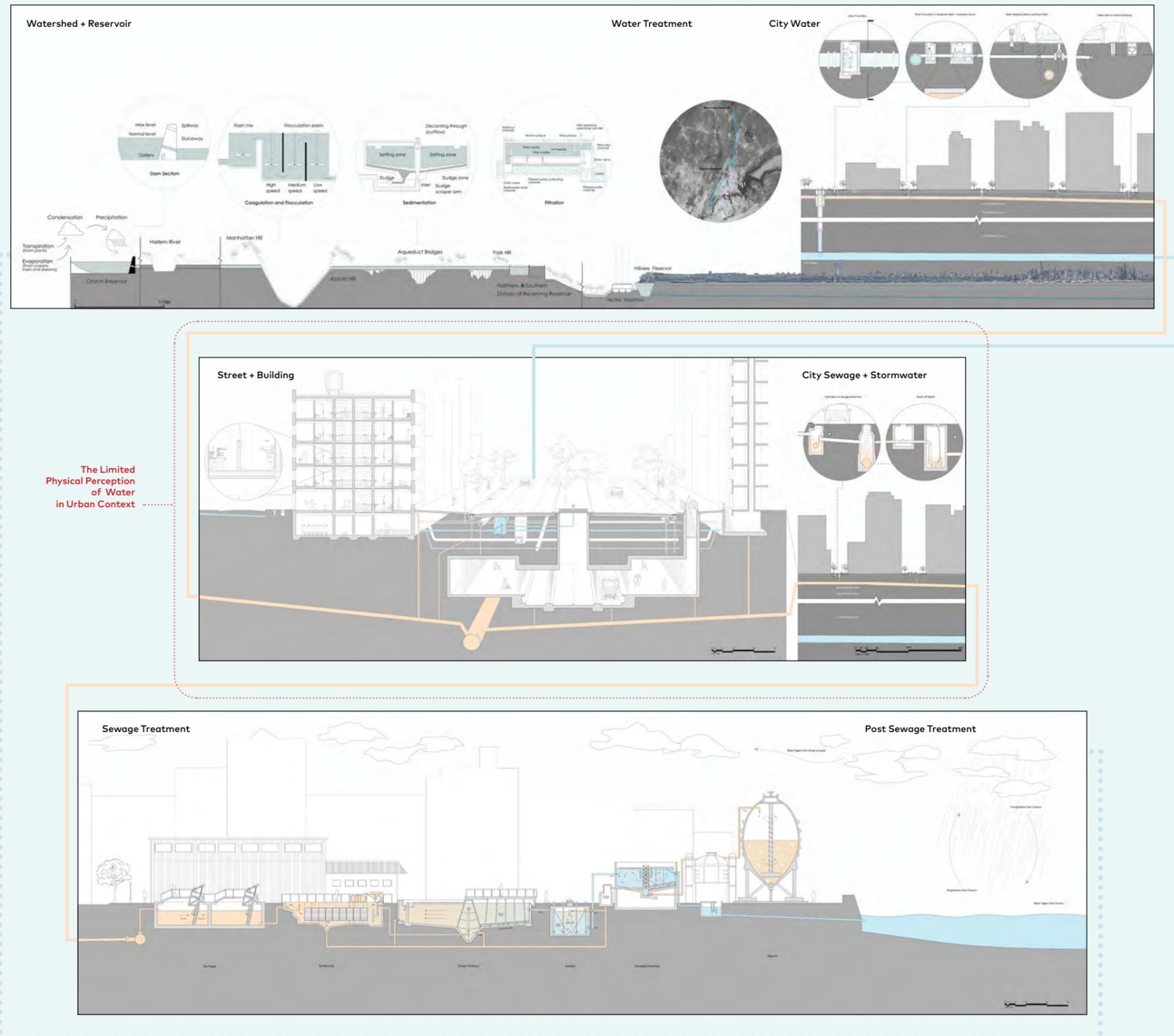
Site: Manhattan, NY

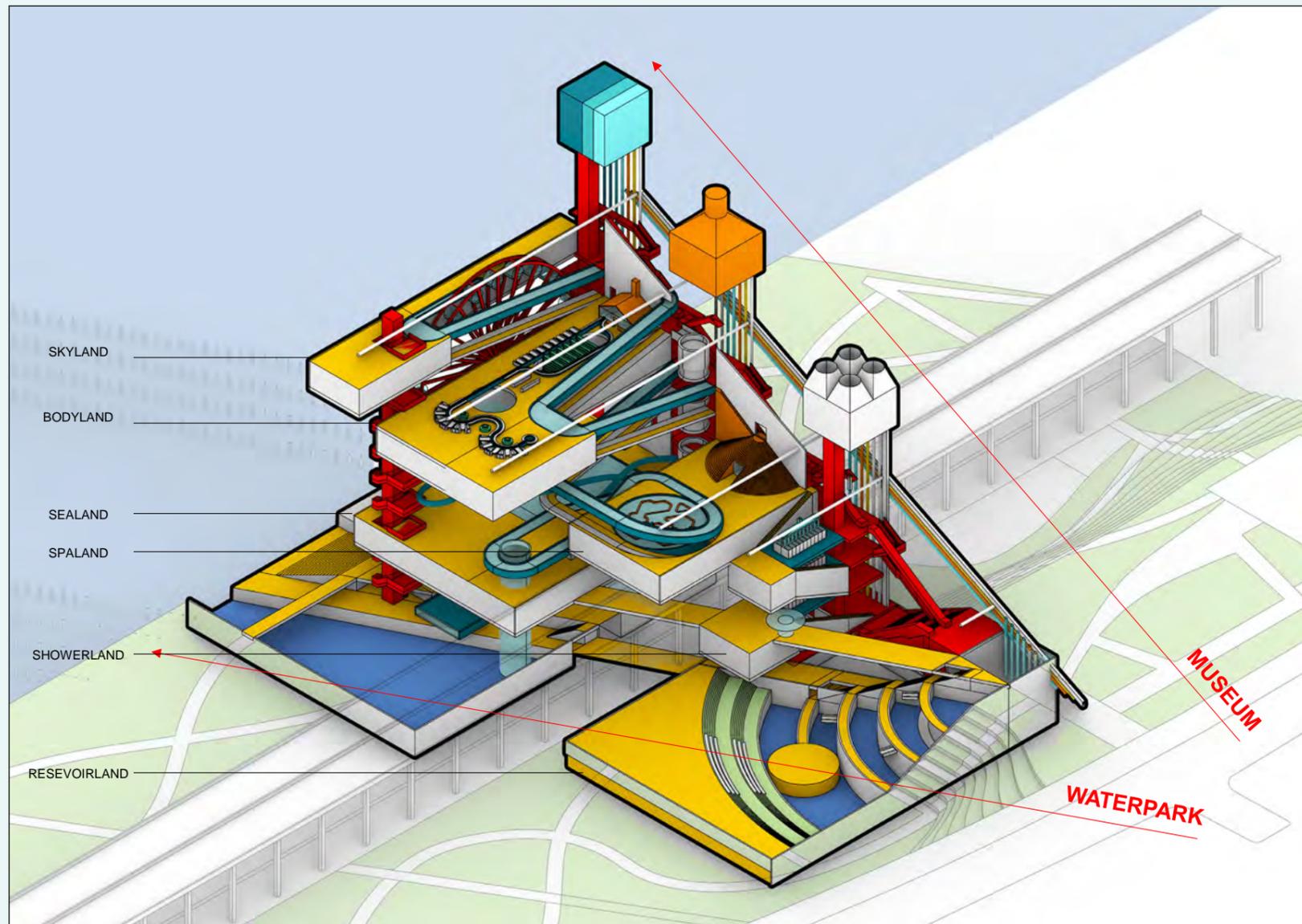
Type: Museum, Water Park

Water is borderless.
Water is trans-scalar.
Water is trans-material.
Water is transcultural.

This project explores the multifacetedness of water, its interaction with architecture, and its role as a medium for humanity in the hybrid process of understanding and perceiving the world. Starting with the analysis of the similarities and contrasts between theme waterparks and theme museums, these two are fused into a new building type, creating two intertextual and immersive sequences of scenarios of amplified, sampled, and reinterpreted alternative reality.

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its endless, visualized, and touchable flow.



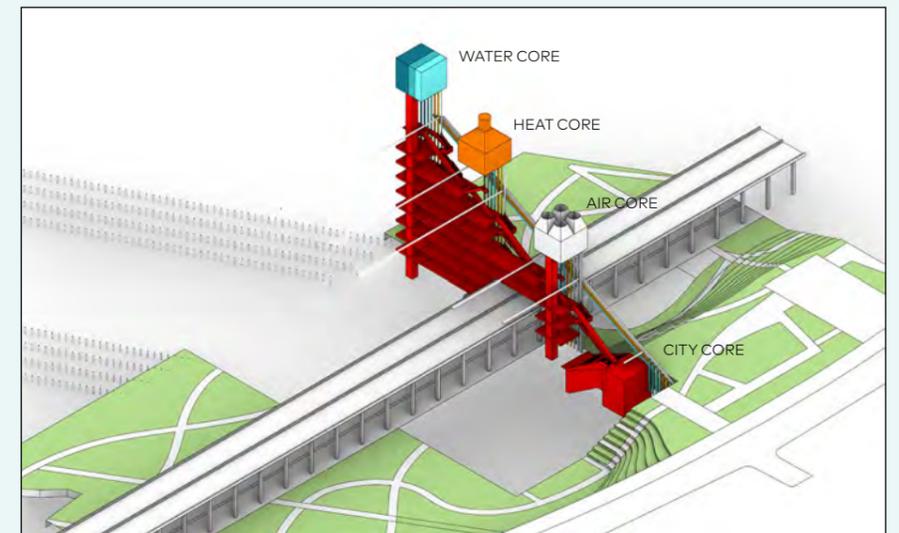


2 Faces, 1 Hybrid: The Waterpark (Lands) + The Museum (Galleries)

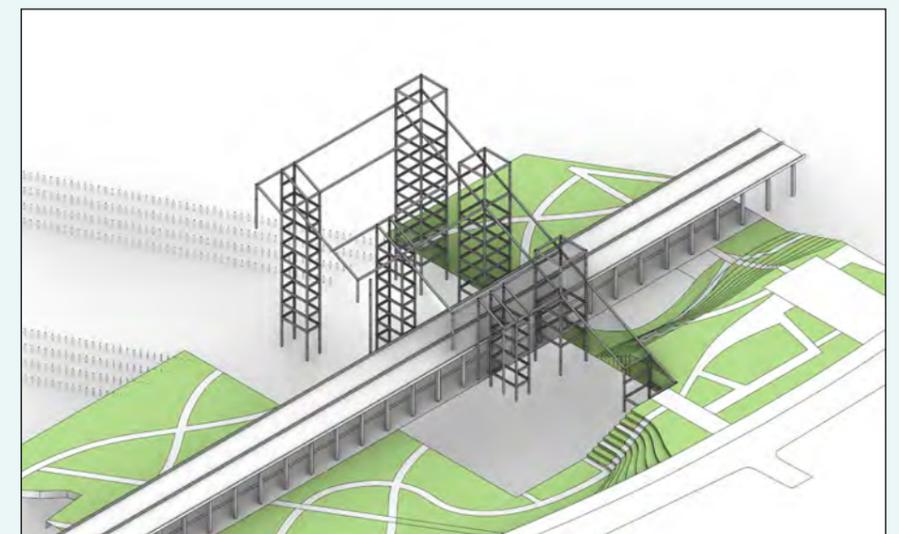
Programming : Two Programs Interlocked as an Intertextual Scope Of Water

The waterpark and the museum, consist of the lands and the Galleries respectively, interlocked with each other as one building. The backstage, consists of four cores, is the circulation of the museum with escalators ascending to the highest point, and fire staircase, rather than enclosed core, unfolded like the ones on NYC old buildings.

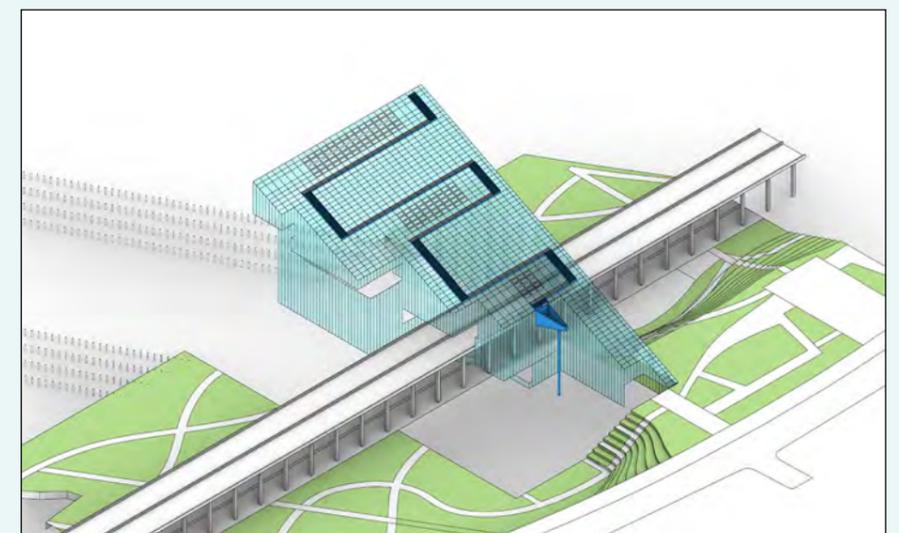
The thickness of the galleries is also the truss space supporting the lands which are linked by rapid river and the ramp below it as the museum circulation. Through the subtracted voids on the galleries blocks, certain point of views to see the other side are created for visitors on both programs.



Backstage: 4 Cores + Unfolded Staircases as The Museum Circulation

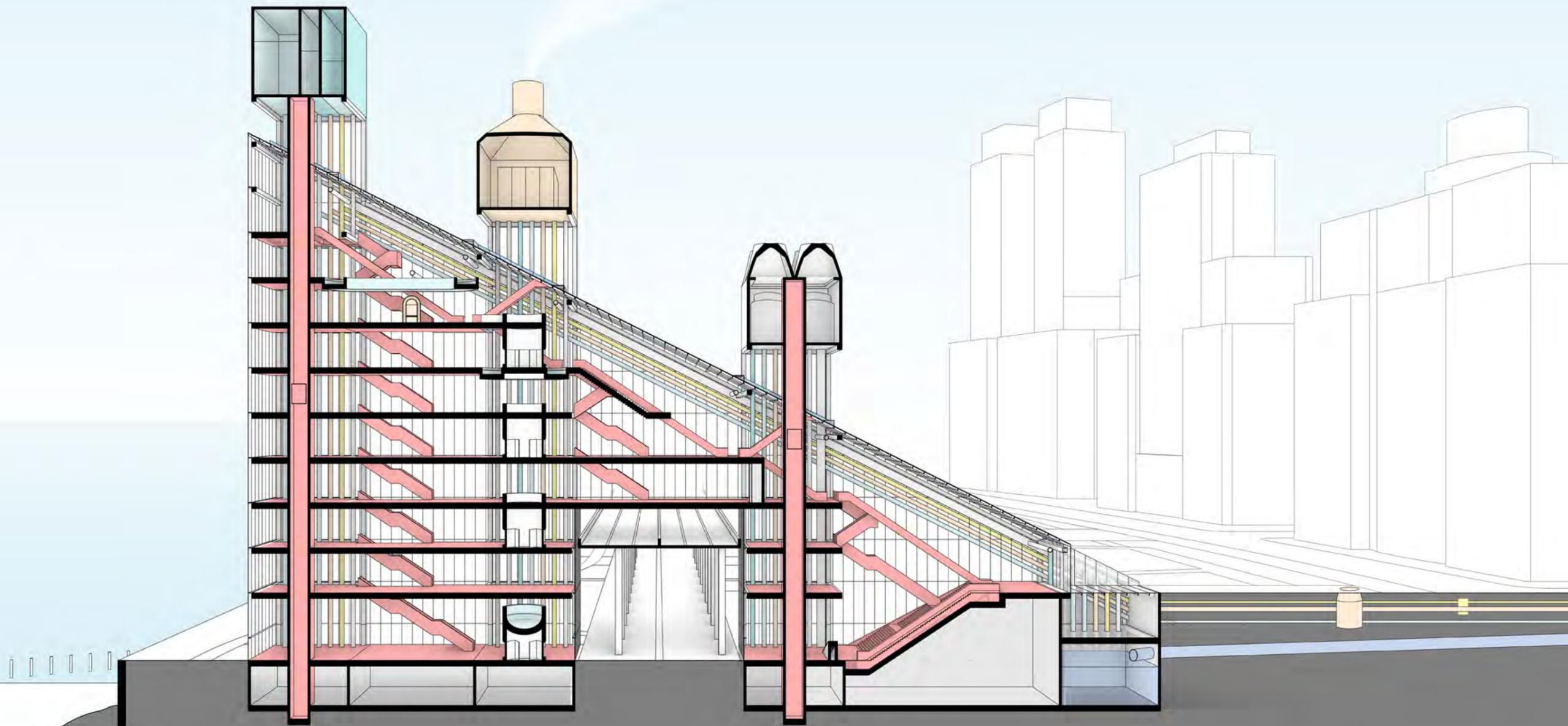


Structure: The Megacolumns



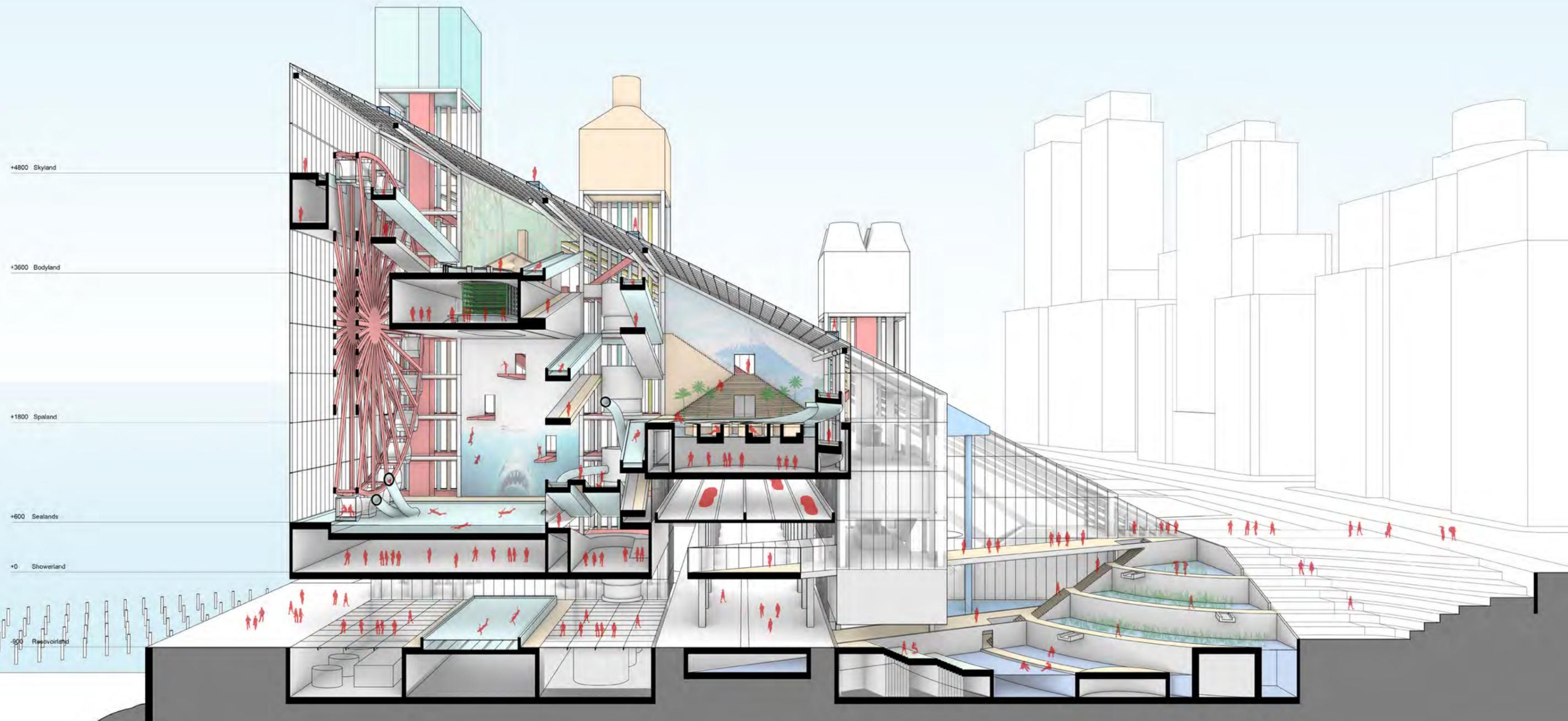
Envelope: The Greenhouse Façade + Roof + Rain Gutter (Rain Collecting)

Longitudinal Section Perspective North: The Backstage

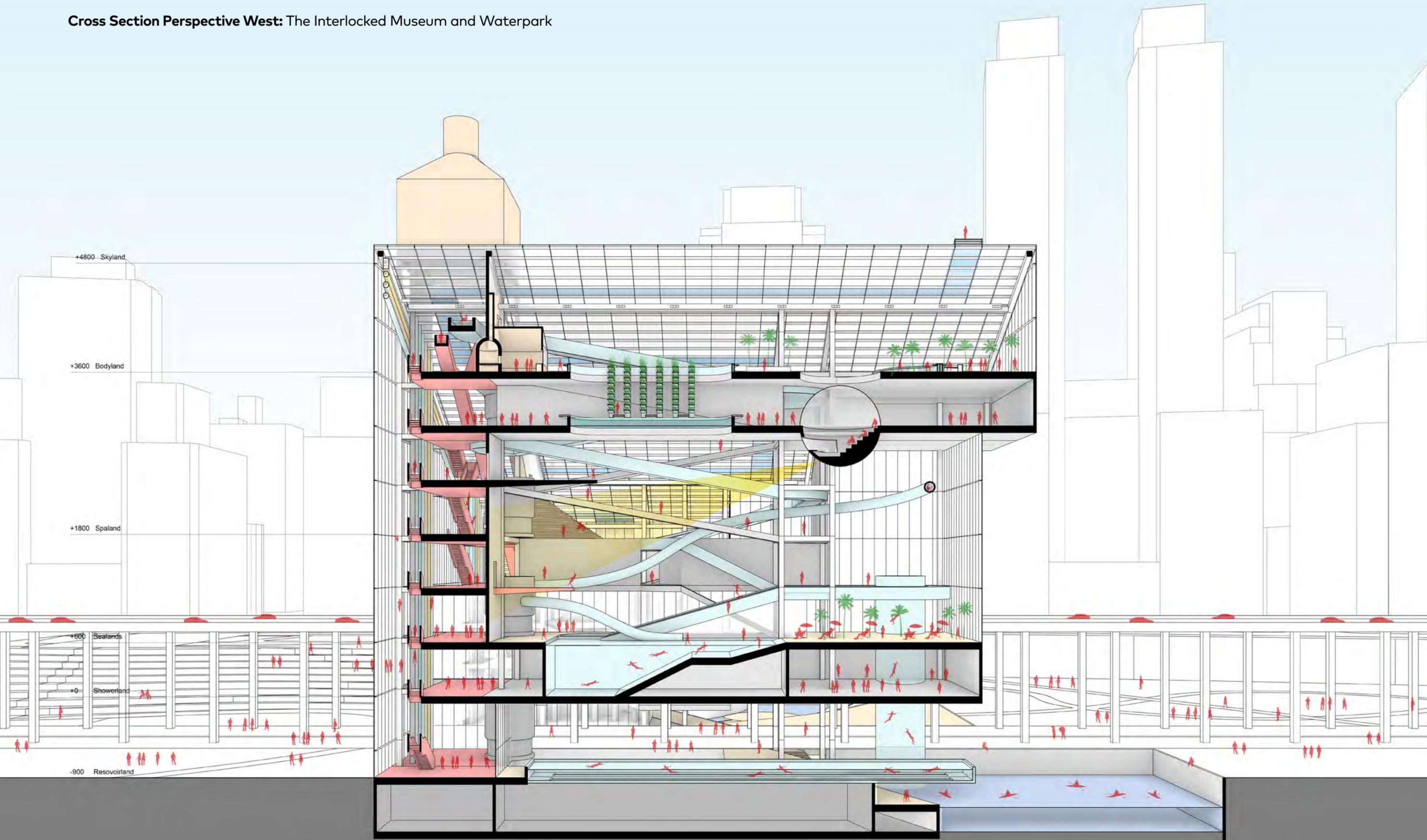


0 5 10 20m

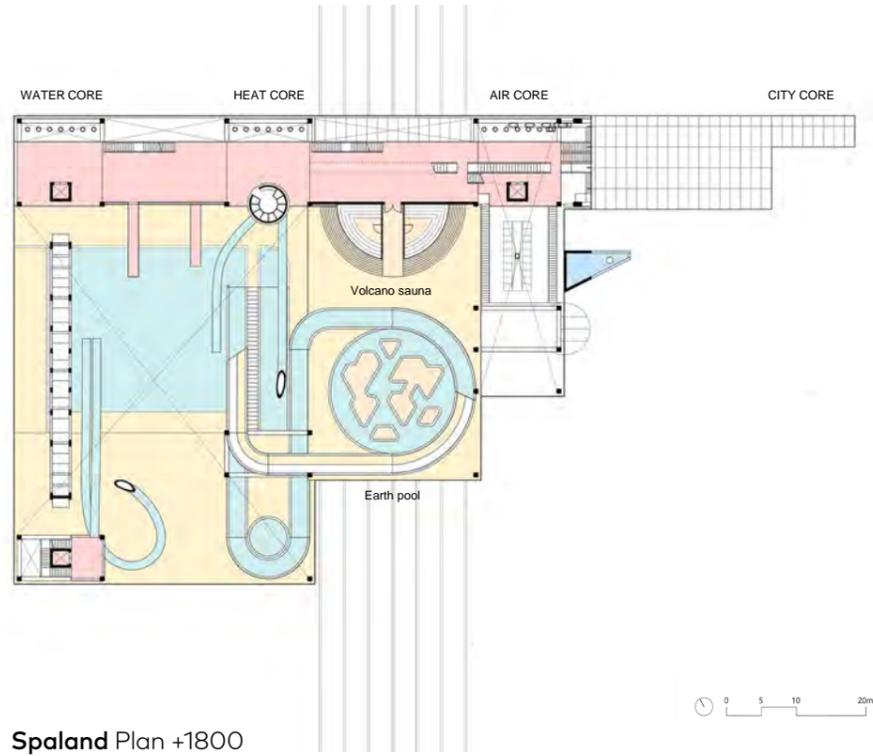
Longitudinal Section Perspective South: The Lands and the Galleries



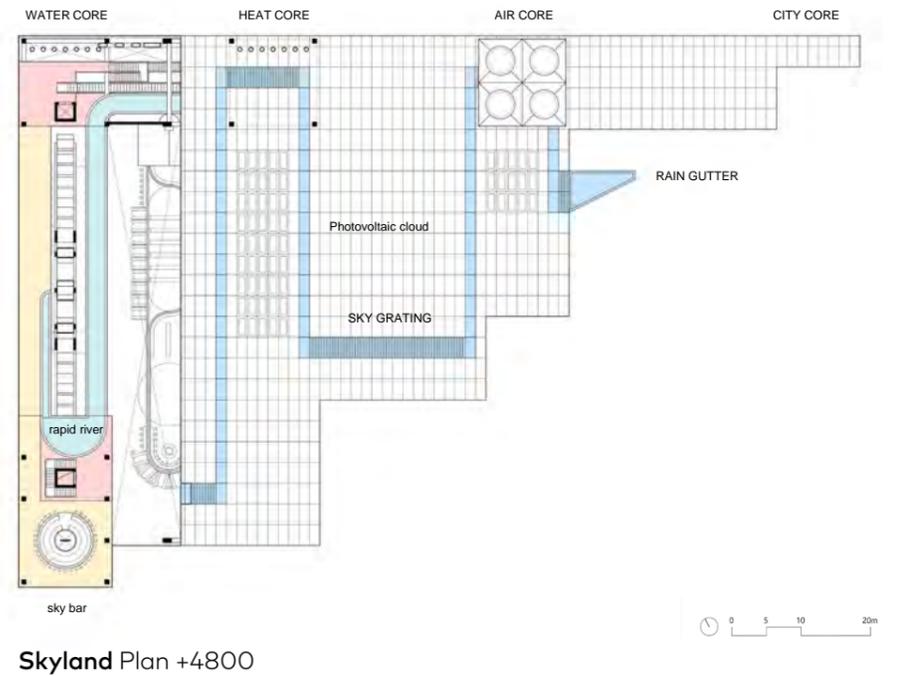
Cross Section Perspective West: The Interlocked Museum and Waterpark



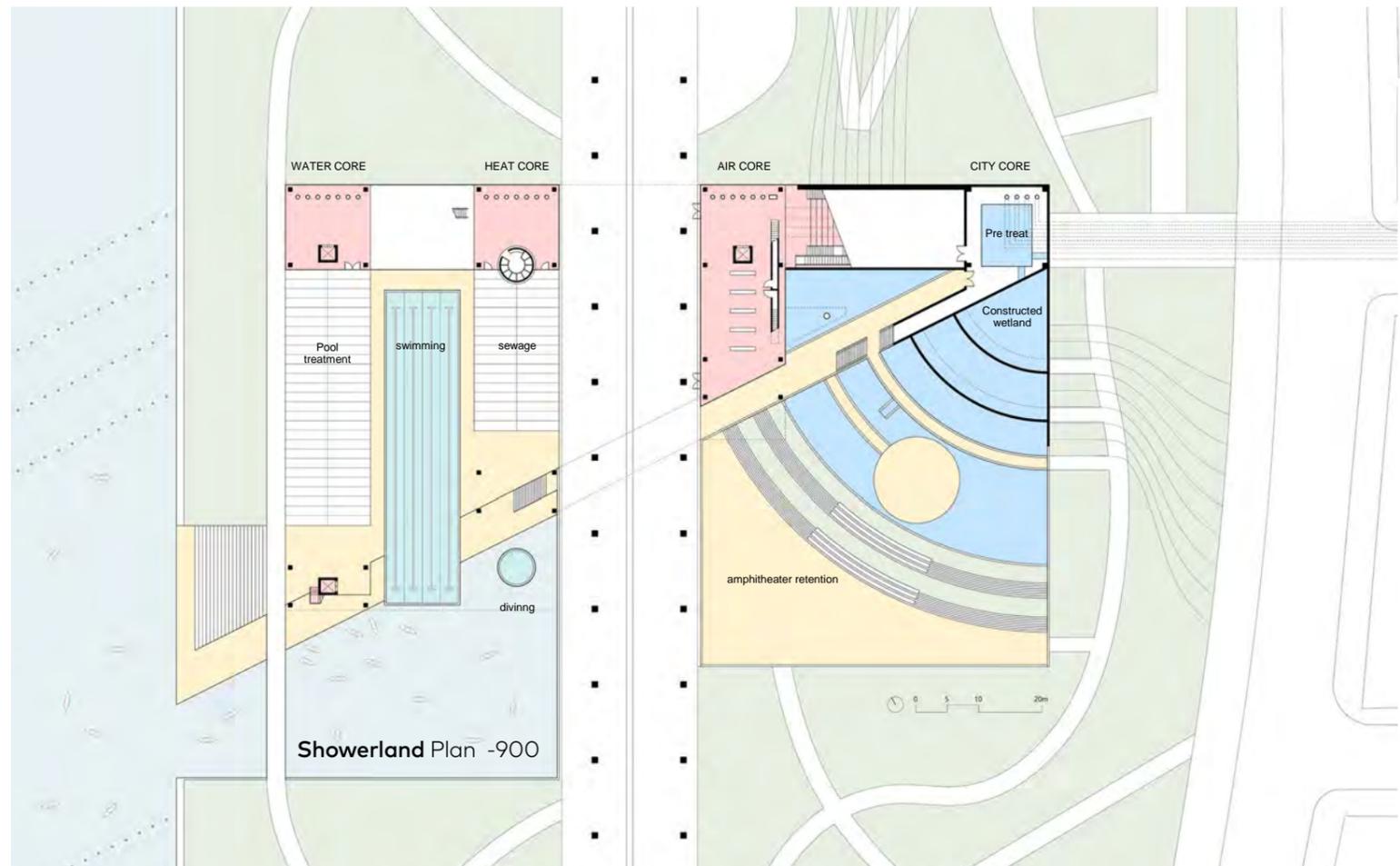
0 5 10 20m



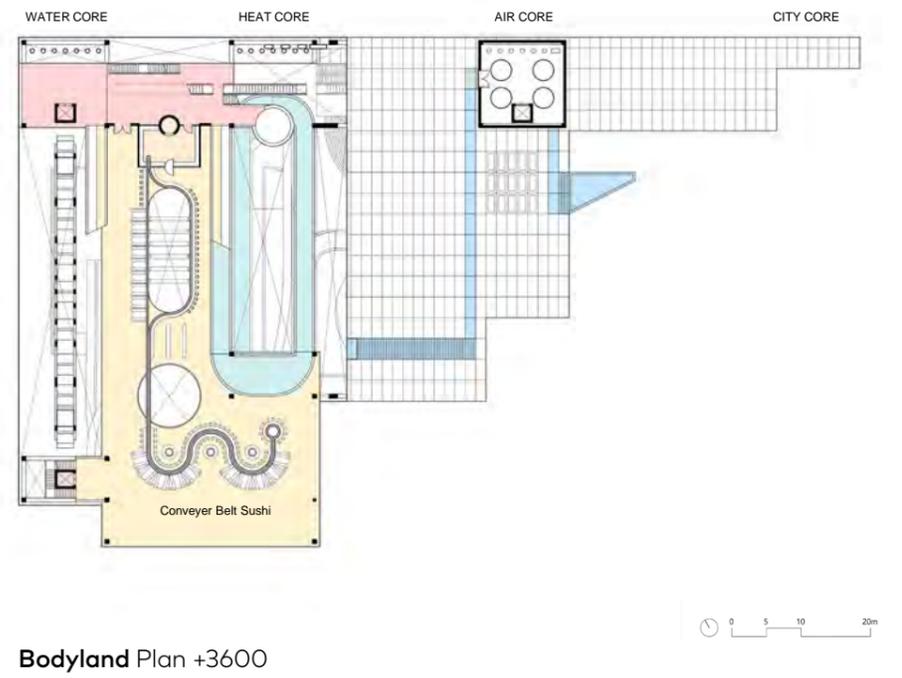
Spaland Plan +1800



Skyland Plan +4800



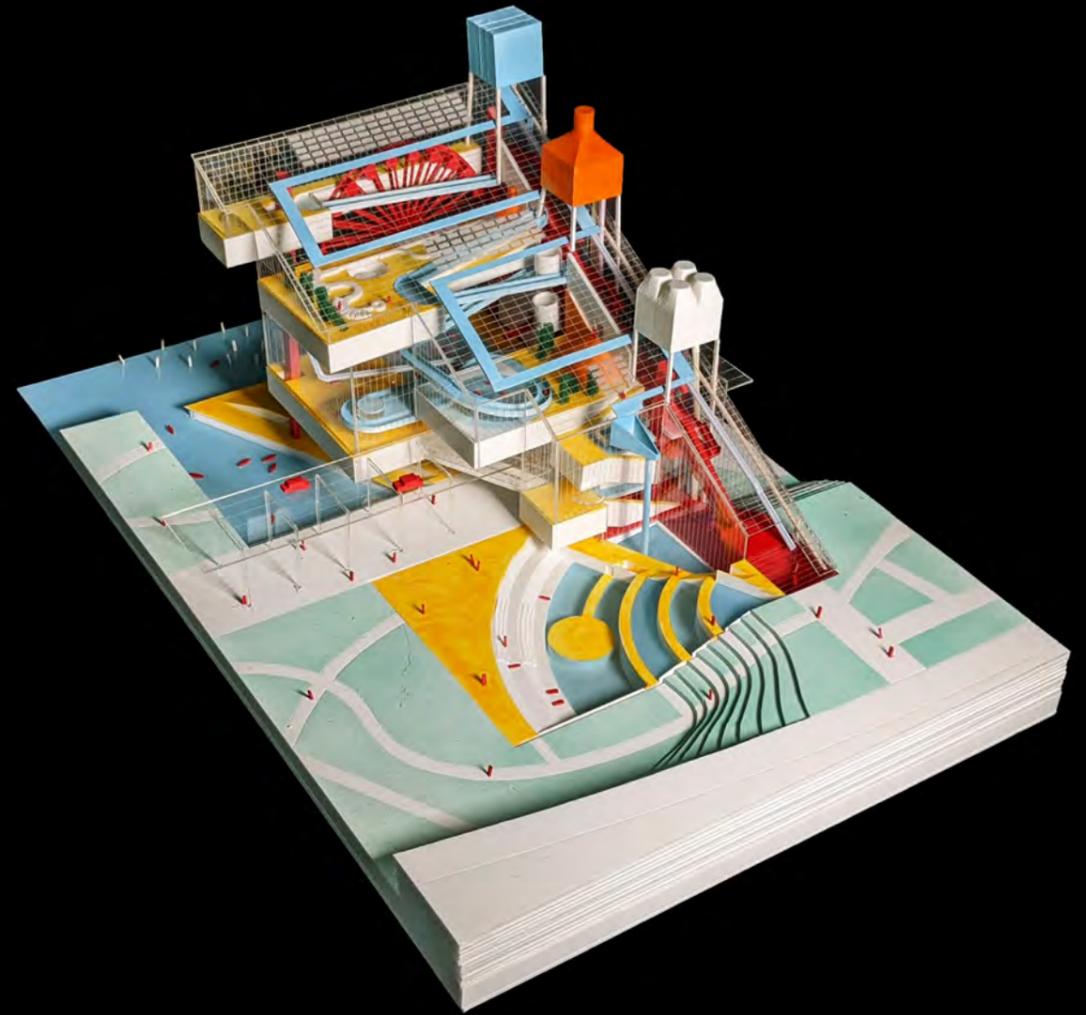
Showerland Plan -900



Bodyland Plan +3600



Perspective of The Spaland



Perspective of The Sealand



THE CASTLE OF CABINETS

A VERTICAL MONTESSORI SCHOOL AS A STUDY OF "ROOM AS WALL"

2022 Fall

Advanced Studio V:

Mass Effect: Reinhabiting Thickness: Biogenic Materials and Spaces of Refuge in an Age of Radical Uncertainty

Critic: Marc Tsurumaki

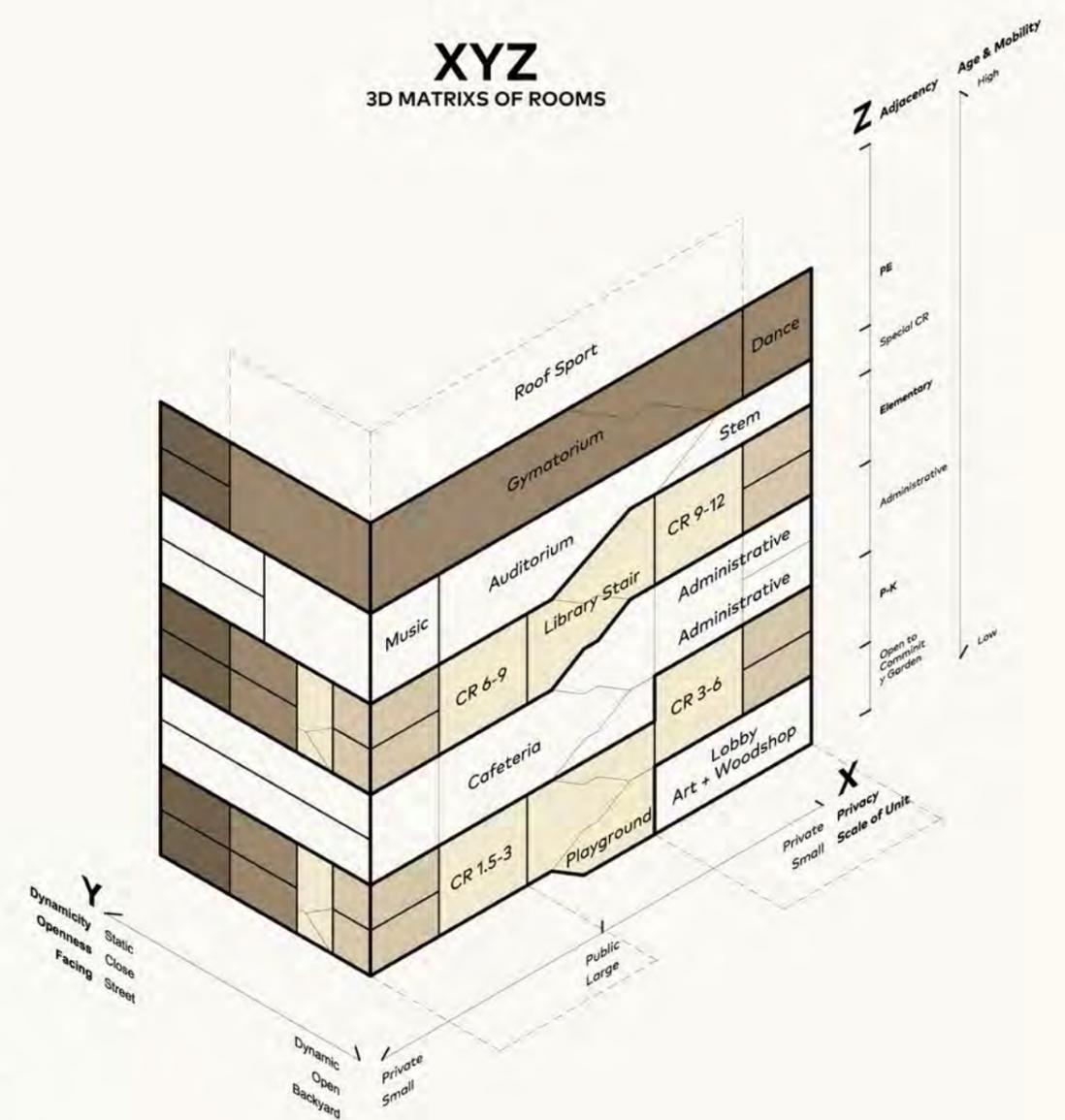
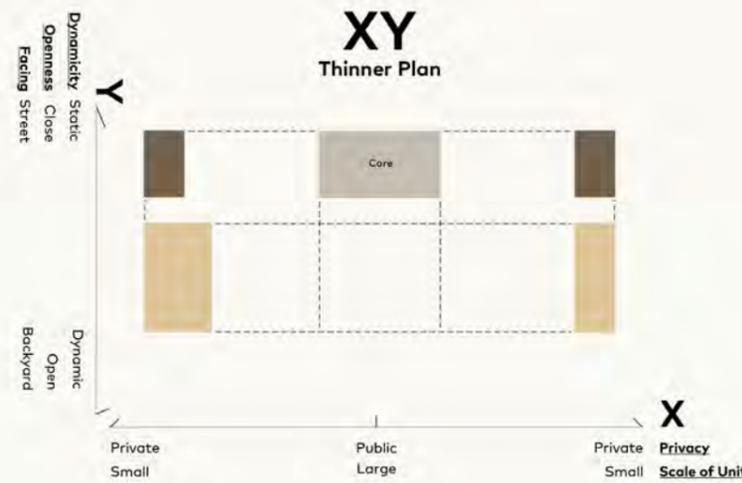
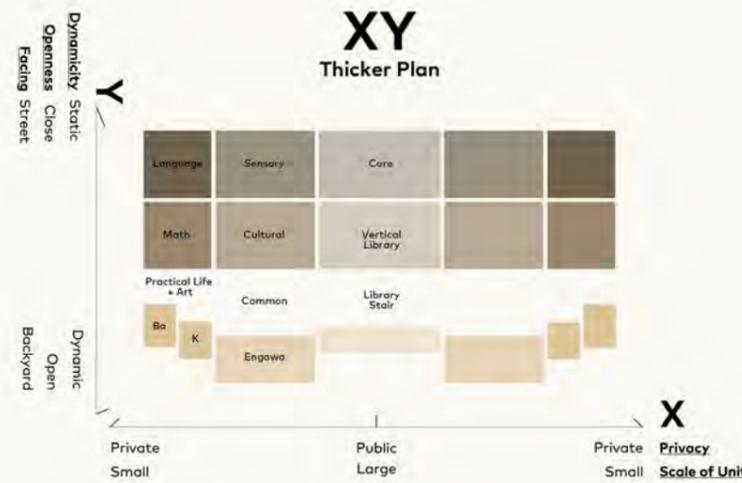
Site: Manhattan, NY

Type: Montessori Elementary School

Today, it has become clear that there is indeed such a thing as too thin. The attenuation of architecture came at the price of exponential increases in energy consumption, the proliferation of mechanical space, and devastating climatic consequences. An array of technical systems required to compensate for the resulting environmental exposure colonized our buildings, replacing them with a kind of architectural dark matter.

Materials like steel and glass, among the most carbon intensive to extract and produce, have had catastrophic impacts on landscapes, natural systems and human populations. The dominance of the curtain wall also ushered in an era of overexposure, where privacy and interiority were sacrificed on the altar of transparency.

While a consideration of thermal performance and operational carbon has resulted in increasingly high performance envelopes and contemporary energy codes now mitigate the ubiquity of glass, this studio will examine a more basic question: how can architectural thickness itself be leveraged to create new spatial, performative, programmatic, social and environmental benefits?



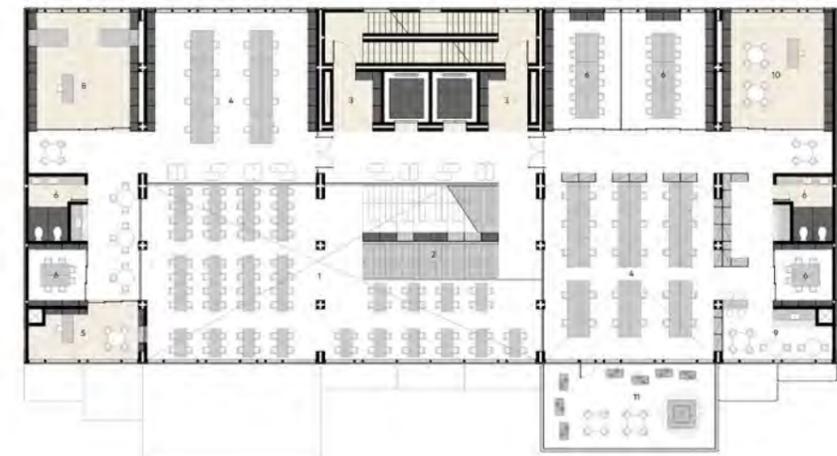
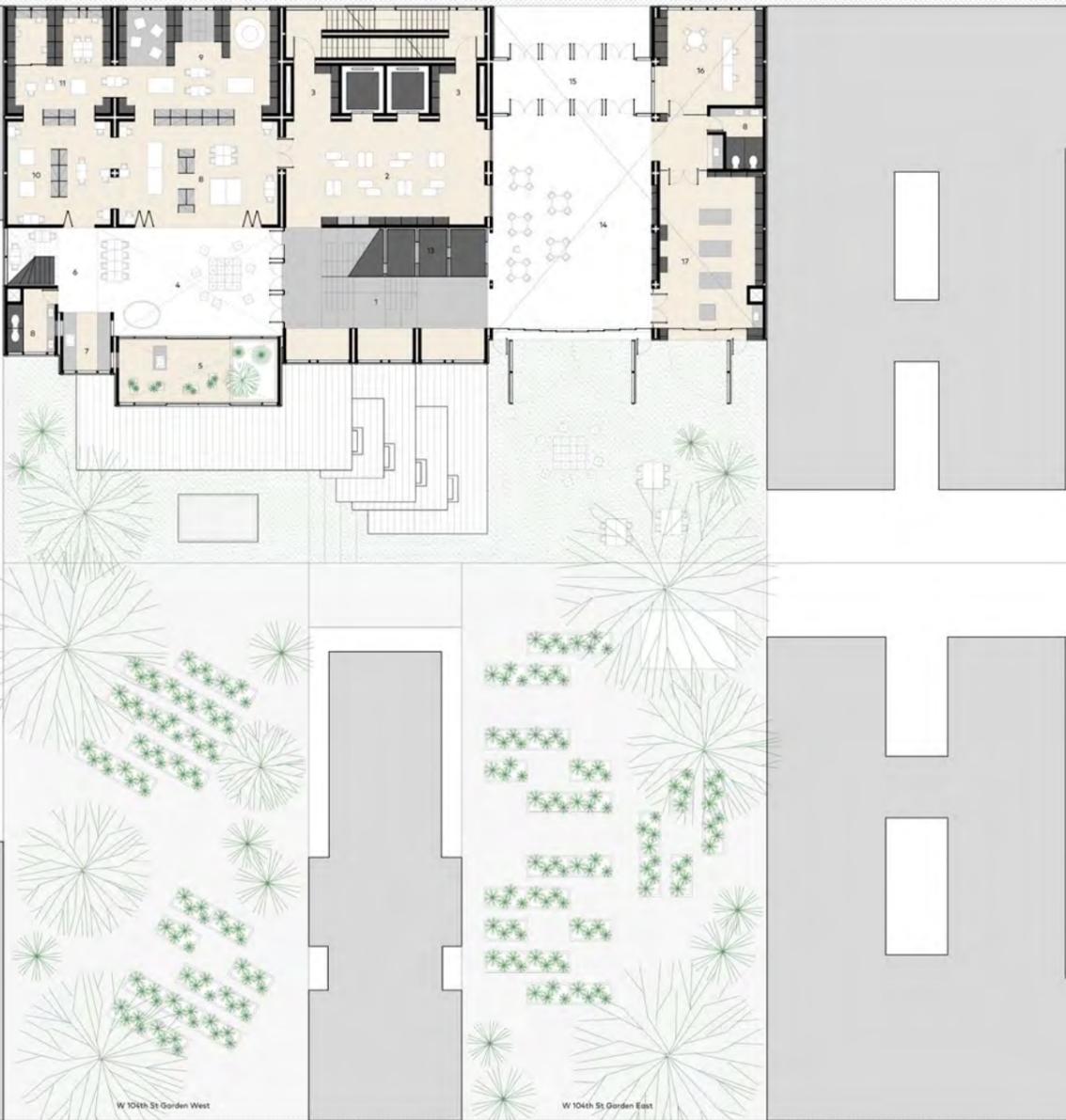


GF PLAN



W 105th St

- | | | |
|------------------------|-------------|--------------------|
| 1 TOY STAIR | 7 KITCHEN | 13 PLAYGROUND |
| 2 LIBRARY (1.5-3) | 8 BATHROOM | 14 LOBBY + GALLERY |
| 3 CLOAK | 9 CULTURAL | 15 VESTIBULE |
| 4 COMMON | 10 SENSORY | 16 SECURITY |
| 5 ENGAWA | 11 MATH | 17 ART + WOODSHOP |
| 6 PRACTICAL LIFE + ART | 12 LANGUAGE | |



4F PLAN



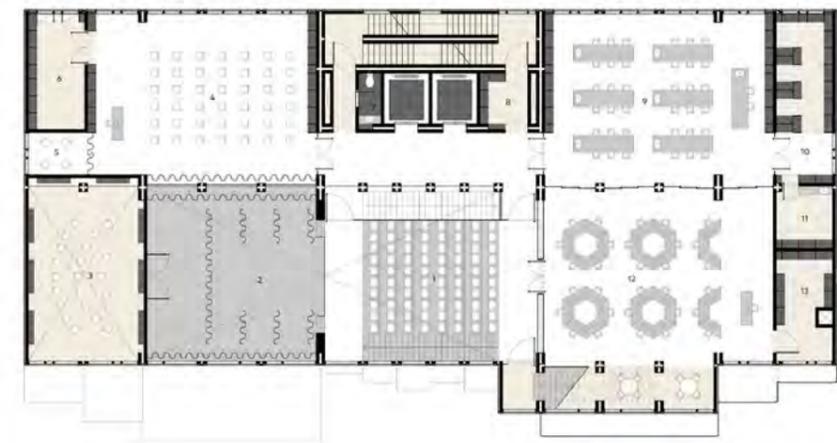
- | | |
|---------------------------|--------------|
| 1 CAFETERIA | 7 BATHROOM |
| 2 LIBRARY STAIR (TEACHER) | 8 NURSE |
| 3 CLOAK | 9 PANTRY |
| 4 ADMINISTRATIVE | 10 PRINCIPLE |
| 5 PUPIL SERVICE | 11 TERRACE |
| 6 MEETING | |



6F PLAN



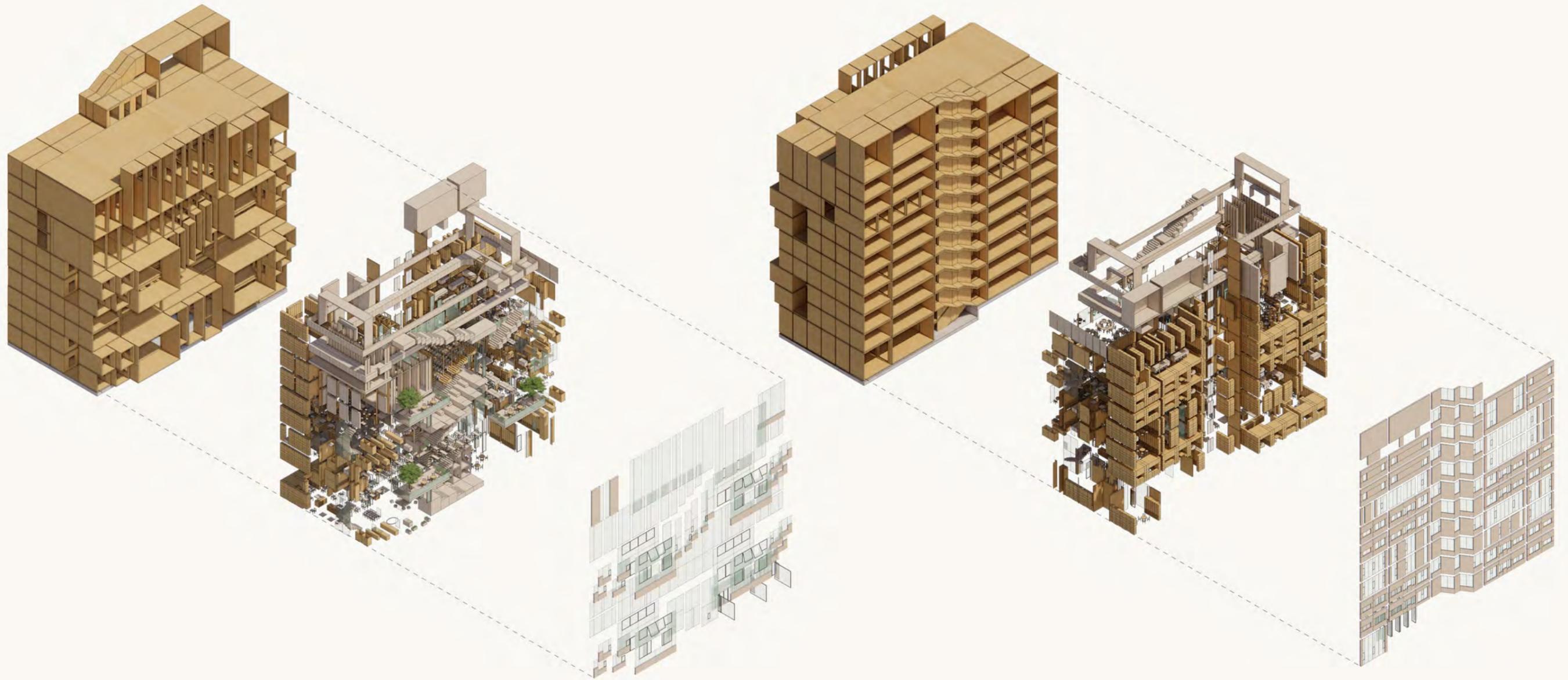
- | | |
|------------------------|-------------|
| 1 TOY STAIR | 7 KITCHEN |
| 2 LIBRARY STAIR | 8 BATHROOM |
| 3 CLOAK | 9 CULTURAL |
| 4 COMMON | 10 SENSORY |
| 5 ENGAWA | 11 MATH |
| 6 PRACTICAL LIFE + ART | 12 LANGUAGE |



8F Plan



- | | |
|----------------------|---------------------|
| 1 AUDITORIUM | 7 BATHROOM |
| 2 STAGE | 8 STORAGE |
| 3 REHEARSAL | 9 SCIENCE LAB |
| 4 MUSIC | 10 CHEMICAL STORAGE |
| 5 PRACTICE | 11 RECYCLING |
| 6 INSTRUMENT STORAGE | 12 TECHNOLOGY |
| | 13 MECHANICAL |



Connected & Identifiable Rooms as Tectonic System:
 CLT Modules, Cabinets, Facade Units

Starting constructing from the smallest furniture, some of them are independent in the space, like the kitchen set. Some of them become bricks of larger element, forming bigger and specific cabinets rooms. The CLT modules has a limited dimension due to transportation. Each module has its own

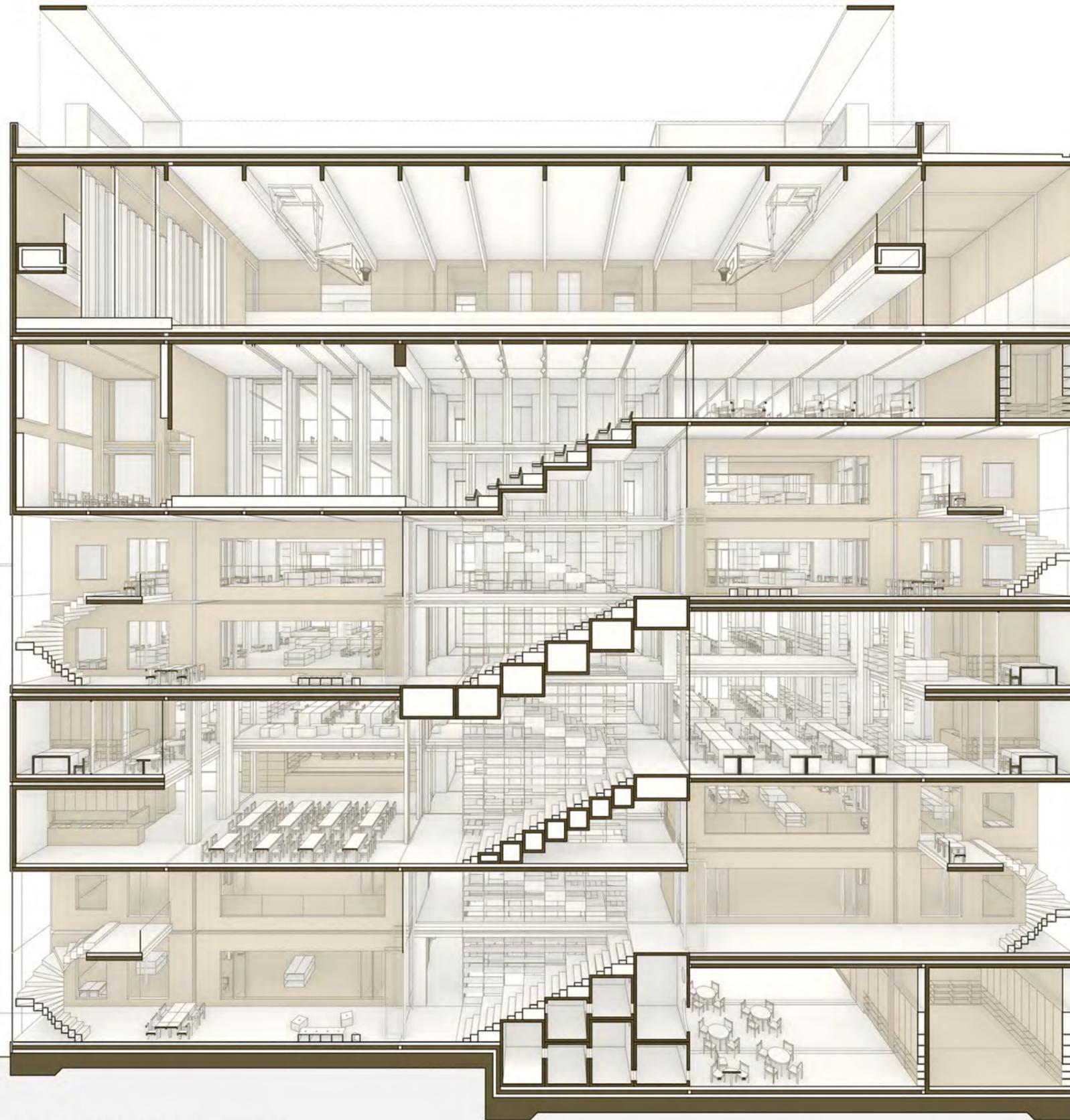
floor and ceiling, forming a larger hierarchy of cabinets. In some occasion some floor plates can be mounted between the boxes, in the void between columns.



Perspective of South Facade



Perspective of North Facade



SECTION PERSPECTIVE B

0 2 4 8m



SECTION PERSPECTIVE A

0 2 4 8m



Perspective of Classroom Common



Perspective of Classroom Common



MADE OF FIRE

METAMORPHOSIS ON THE UNCERTAIN PALIMPSEST

2023 Spring

Advanced Studio VI: Scripting Islands / Storying the Ocean

Critic: Patricia Anahory

Site: Fogo, Cabo Verde

Type: Bottom-up Disaster Resilient Tectonic System

Chã das Caldeiras is a settlement located in the caldera of the only active volcano, Pico do Fogo, in the Cabo Verde Archipelago.

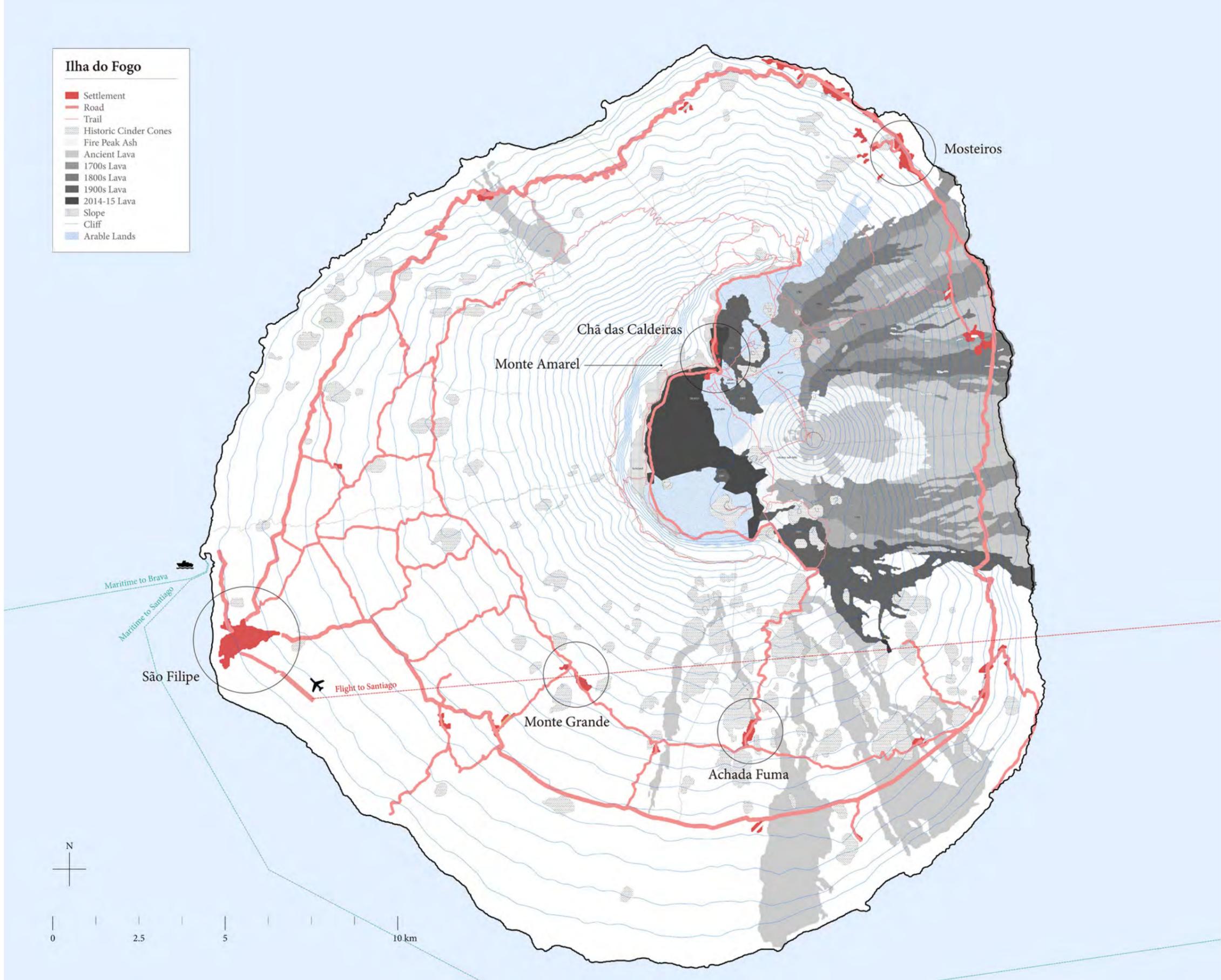
Giving both hazards and benefits, the lava flows during the frequent eruptions of the volcano pose great threats to the infrastructures, buildings, and precious arable lands including a massive inundation during the last eruption in 2014. The ash flow, however, provides great fertility for local agriculture. Therefore, while the residents have resided here for merely a century since the settlement was first established in 1917, they have developed a strong economic, social, and cultural attachment to the volcano and the caldera which drives them to return to this ground, a palimpsest of uncertainty, again and again after each eruption.

This project probes into the underlying unsustainability of the repetitive reconstruction mode and its implication on the resiliency of the settlement's environment, economy, and culture. By mapping the impact, the movement of people, and the government's reaction during the last two eruptions, I found conflicts between the bottom-up mode of the residents by self-build and organic expansion and the top-down policy of the government that attempted to regulate the landscape to apply for UNESCO world heritage under the "natural" category.

While the challenged durability of architecture on this land is a major factor that makes the government reluctant to invest in infrastructure and housing and keeps the residents from accumulating wealth, this project rethinks the currently predominant "modern" tectonic system which is ubiquitous across all the islands of the country, and, furthermore, rather than providing arbitrary solutions, rethinks the role of architects by providing a toolkit of strategies for disaster-resilient, low-tech tectonic, organically growing, and collaborative construction and reimagining possible living scenarios in the endless timeline of eruption cycles.



- Ilha do Fogo**
- Settlement
 - Road
 - Trail
 - Historic Cinder Cones
 - Fire Peak Ash
 - Ancient Lava
 - 1700s Lava
 - 1800s Lava
 - 1900s Lava
 - 2014-15 Lava
 - Slope
 - Cliff
 - Arable Lands



A TOOLKIT

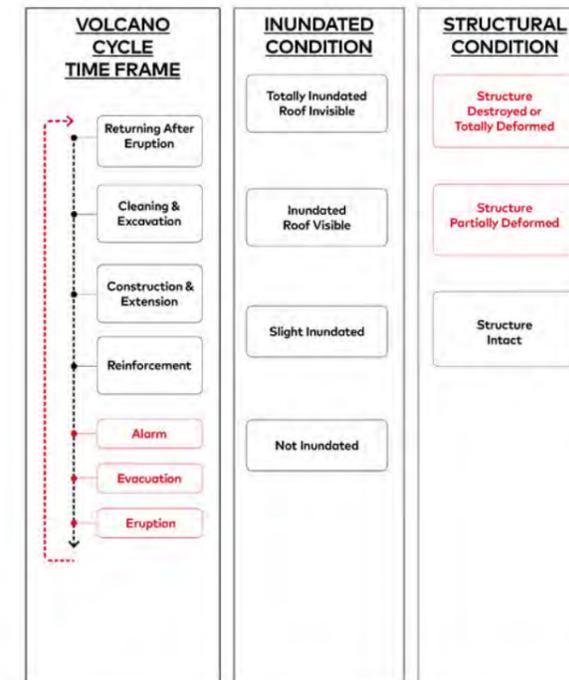
of POSSIBLE STRATEGIES

for VOLCANIC DISASTER-RESILIENT ARCHITECTURE

in CHÃ DAS CALDEIRAS, FOGO, CABO VERDE

Anghory Studio
Chung-Yang Hor

SITUATIONS



ACTIONS



STRATEGIES



CHAPTER 1 SITE SELECTION AND CONDITION

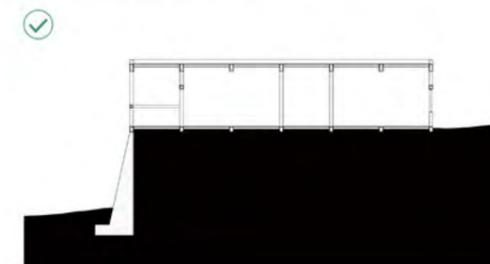
1-1 RELATIVE ELEVATION TO PERIMETER AREA

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its



1-2 STEEPNESS OF SITE TOPOGRAPHY

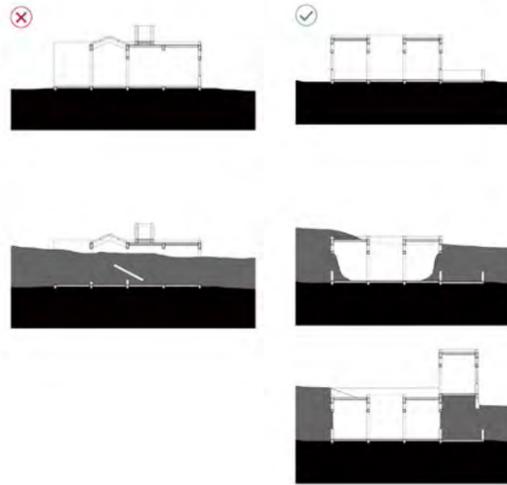


CHAPTER 2 MASSING & LAYOUT

2-1 COURTYARD LAYOUT

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its

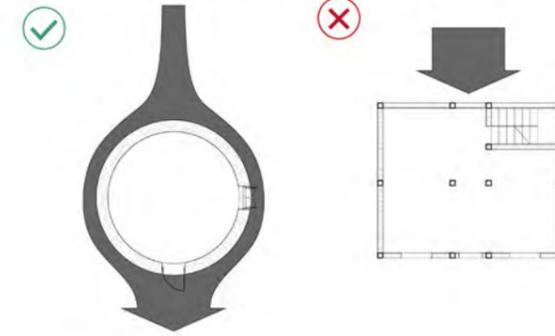


2-2 MASSING FORM

2-2-1 CONVEX & STREAMLINE MASSING

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its

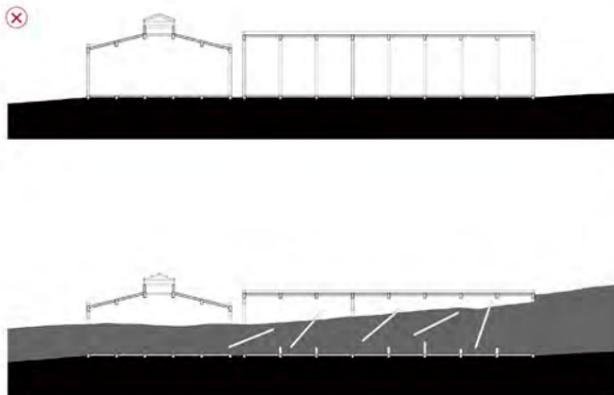


2-3 STRUCTURAL SPAN & PARTITION WALL

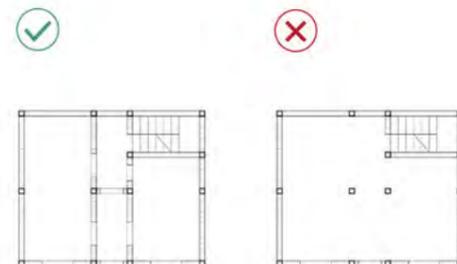
2-3-1 SHORTER SPAN

understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial structures of perception and knowledge through its



2-3-2 PARTITION WALL AS LATERAL BUTTRISS



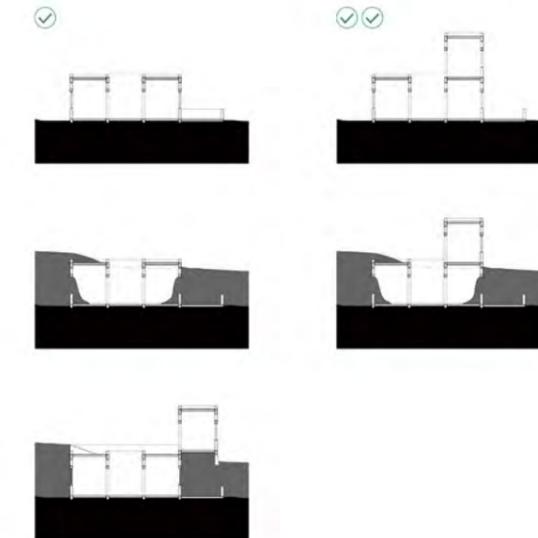
2-4 VERTICAL EXTENSION

2-4-1 VERTICAL EXTENSION AFTER DISASTER

understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial

2-4-2 VERTICAL EXTENSION BEFORE DISASTER

understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial

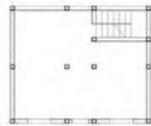


CHAPTER 3
BUILDING ENVELOPE

3-1 EXTERIOR WALL THICKNESS & WEIGHT

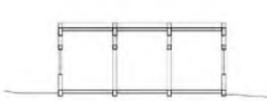
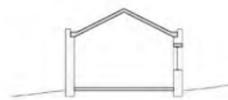
3-1-1 THICKWALL & HEAVY WALL

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads



3-1-2 GABION WALL

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads



3-2 EXTERIOR WALL OPENING

3-2-1 SMALL & LESS OPENING

The architecture here becomes a scope for understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads



adadadwaa



adadadwaa



adadadwaa

3-3 ROOF STRUCTURE

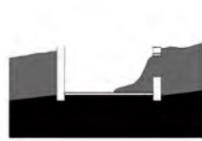
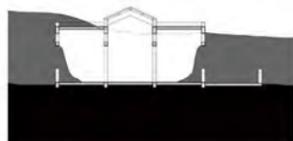
3-2-1 PREPARED ROOF OPENING

understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial



3-2-2 DESIGN FOR DISASSEMBLY ROOF

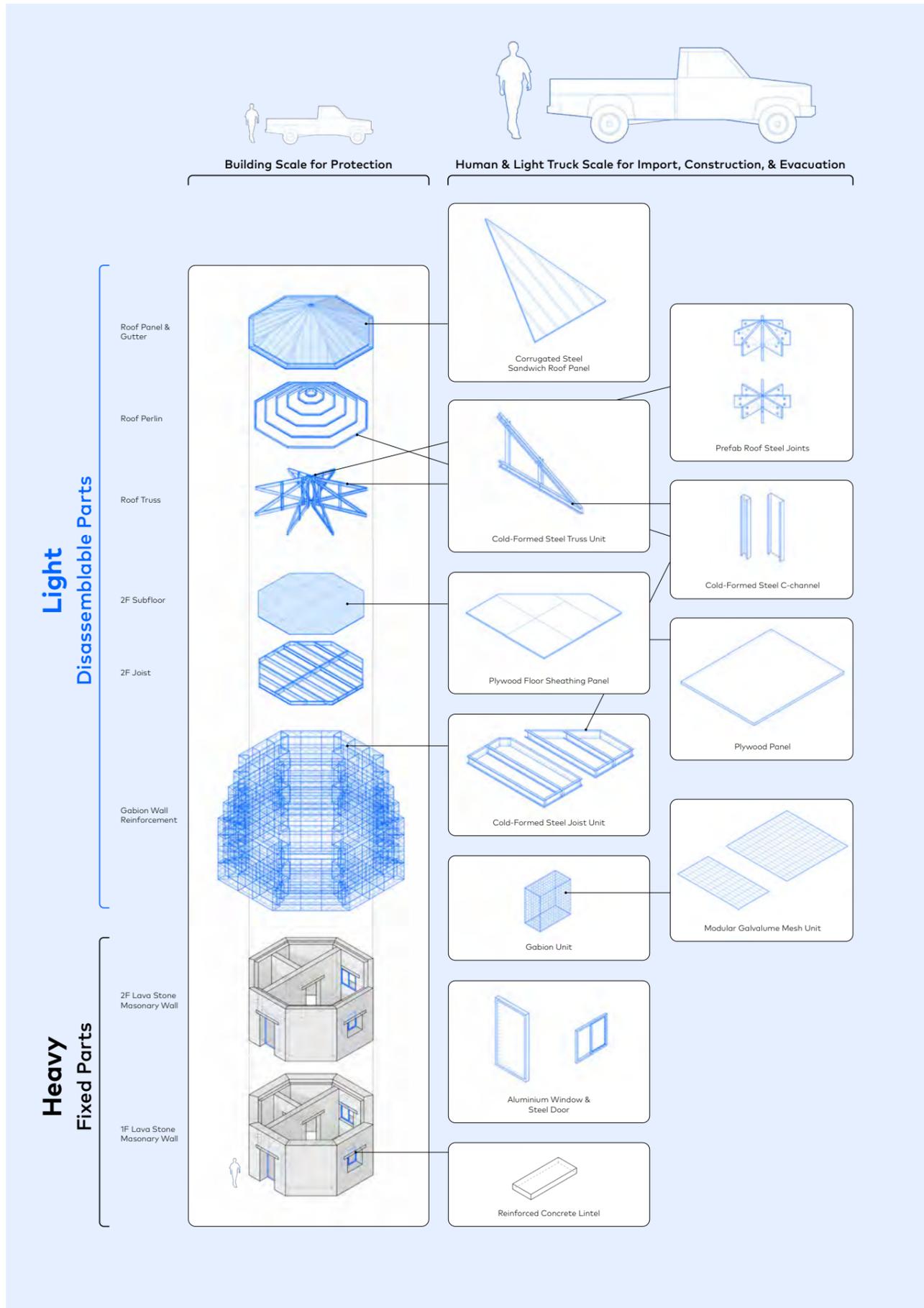
understanding the relationship between modern urban infrastructures and the bodies living within them. The modern water in new york city, as the theme of both the waterpark and the museum, and as both a physical and a psychological medium, leads the visitors to experience these two interlocked spatial



adadadwaa



adadadwaa



Eruption

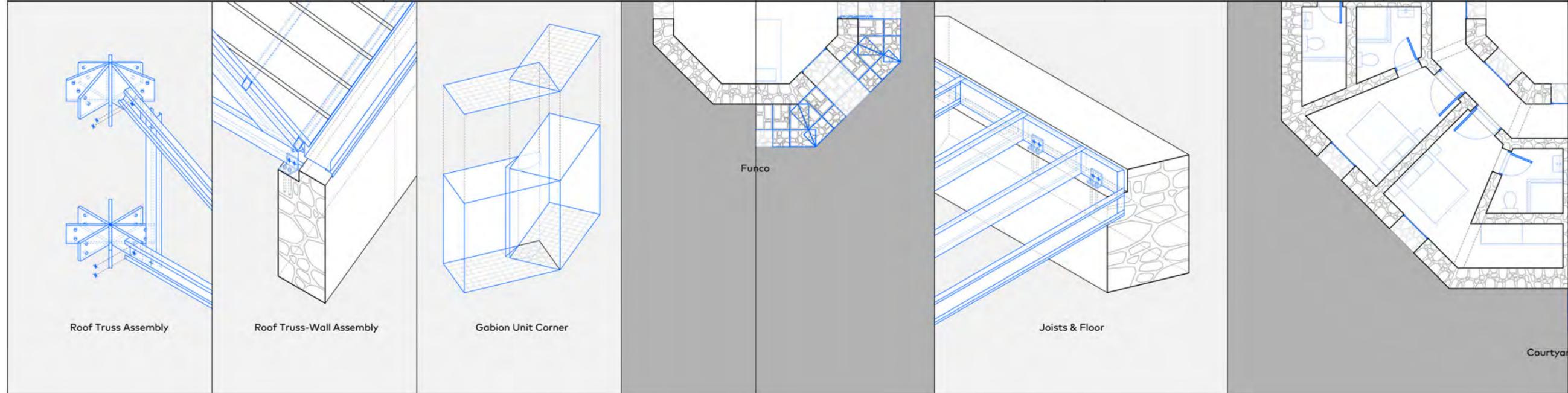
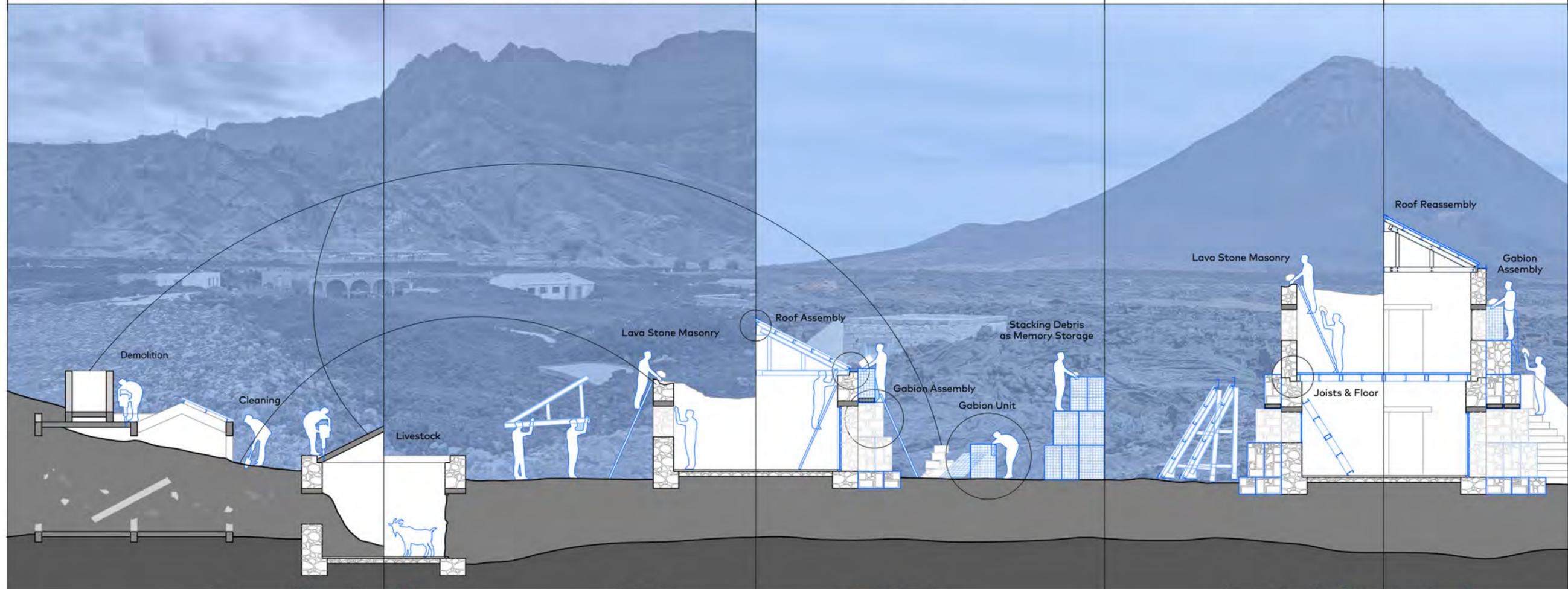
Post-Eruption

Repair & Construction

Reinforcement

Vertical Extension

Reinforcement



Roof Truss Assembly

Roof Truss-Wall Assembly

Gabion Unit Corner

Funco

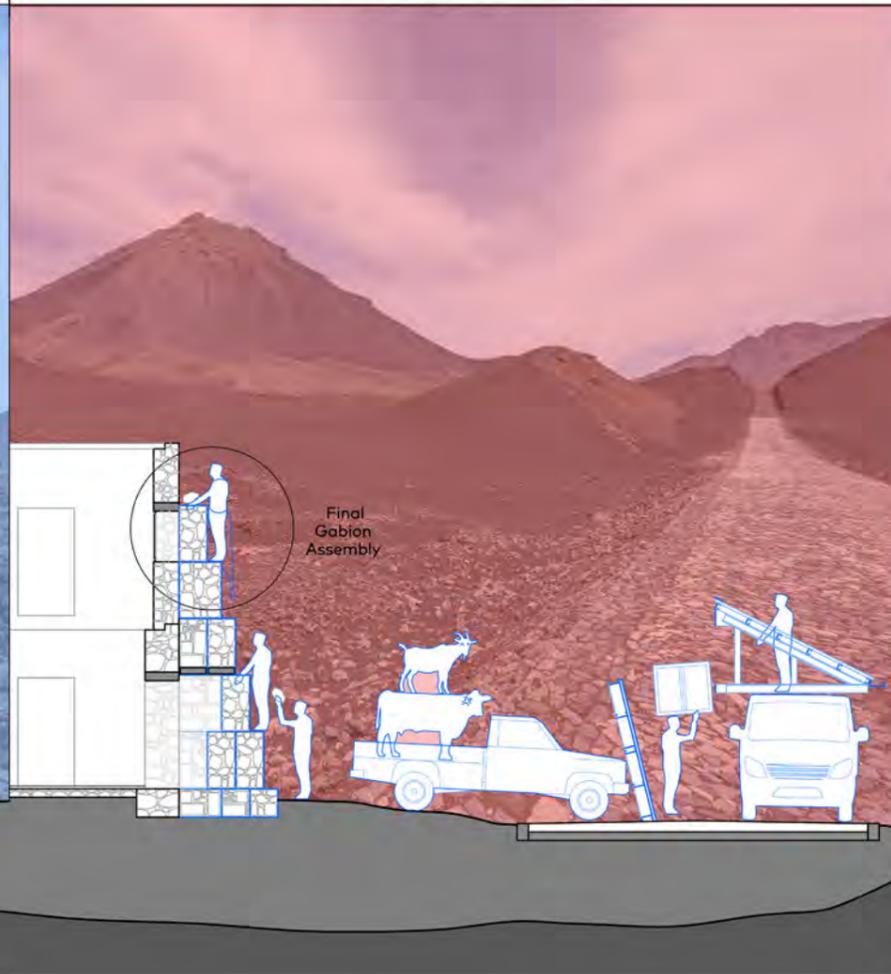
Joists & Floor

Courtyard

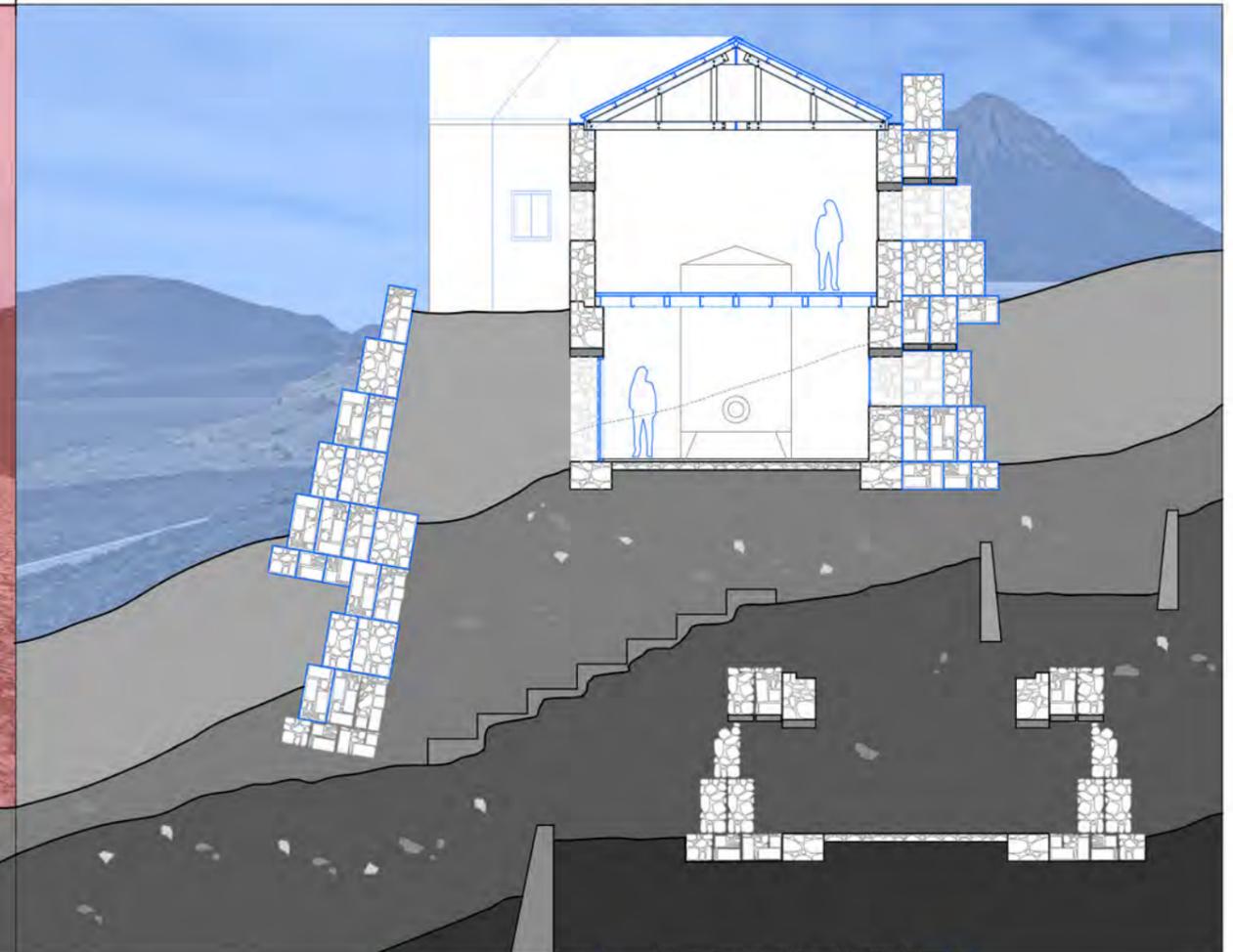
Horizontal Extension



Alarm



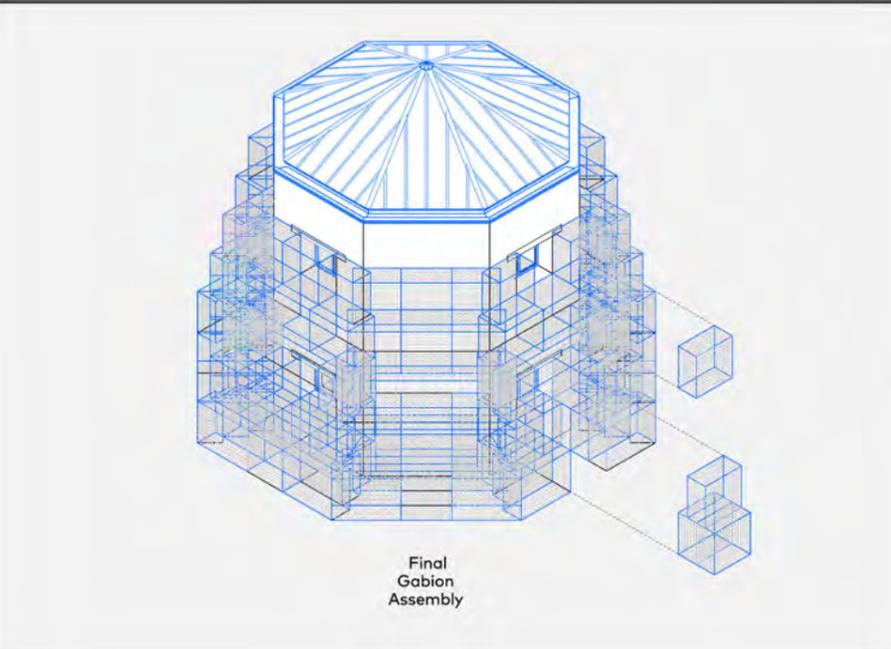
Eruption



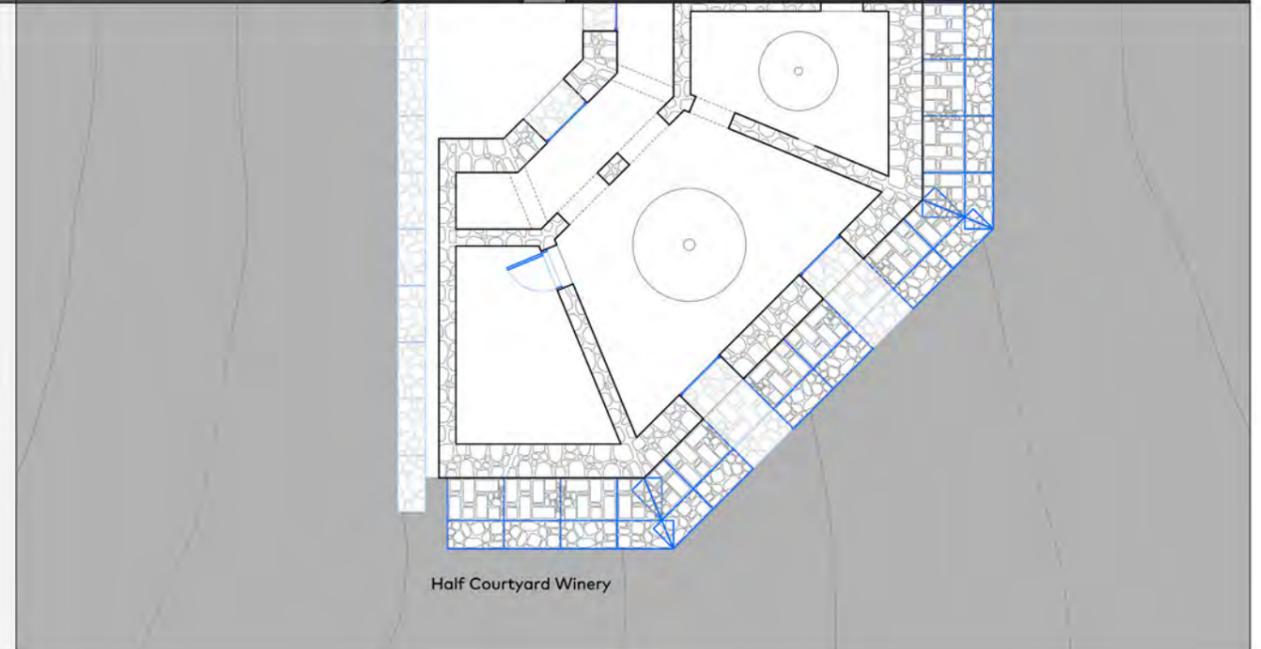
New Cycles ...



House



Final Gabion Assembly



Half Courtyard Winery

COURTYARD CLUSTER HOUSING

METAMORPHOSIS ON THE UNCERTAIN PALIMPSEST

2023 Spring

Generative Design

Critic: Danil Nagy

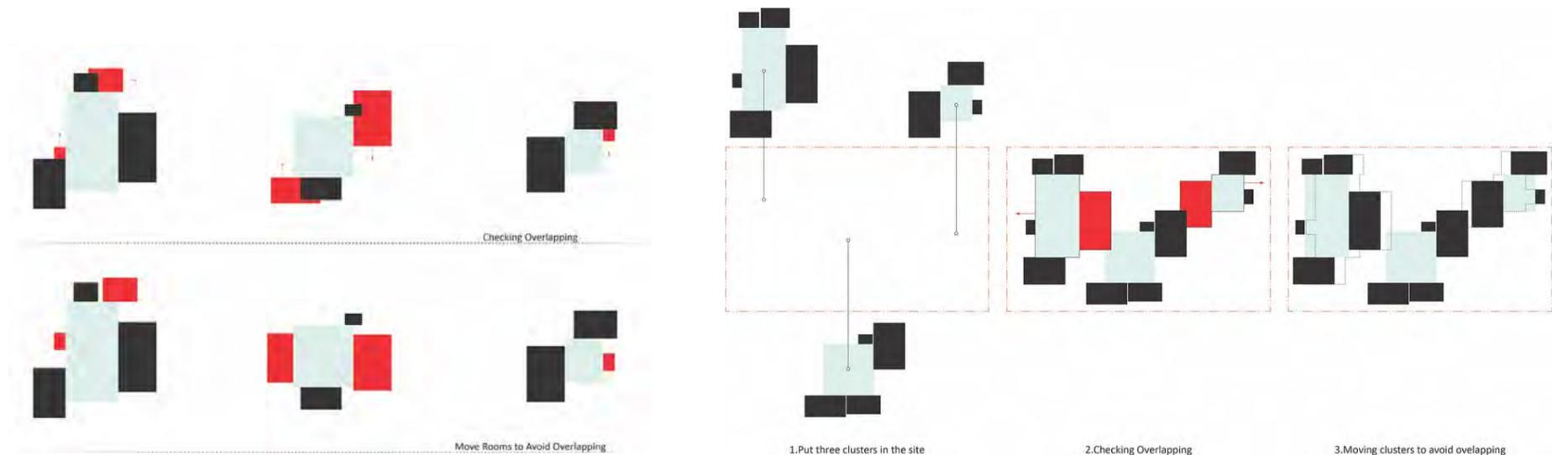
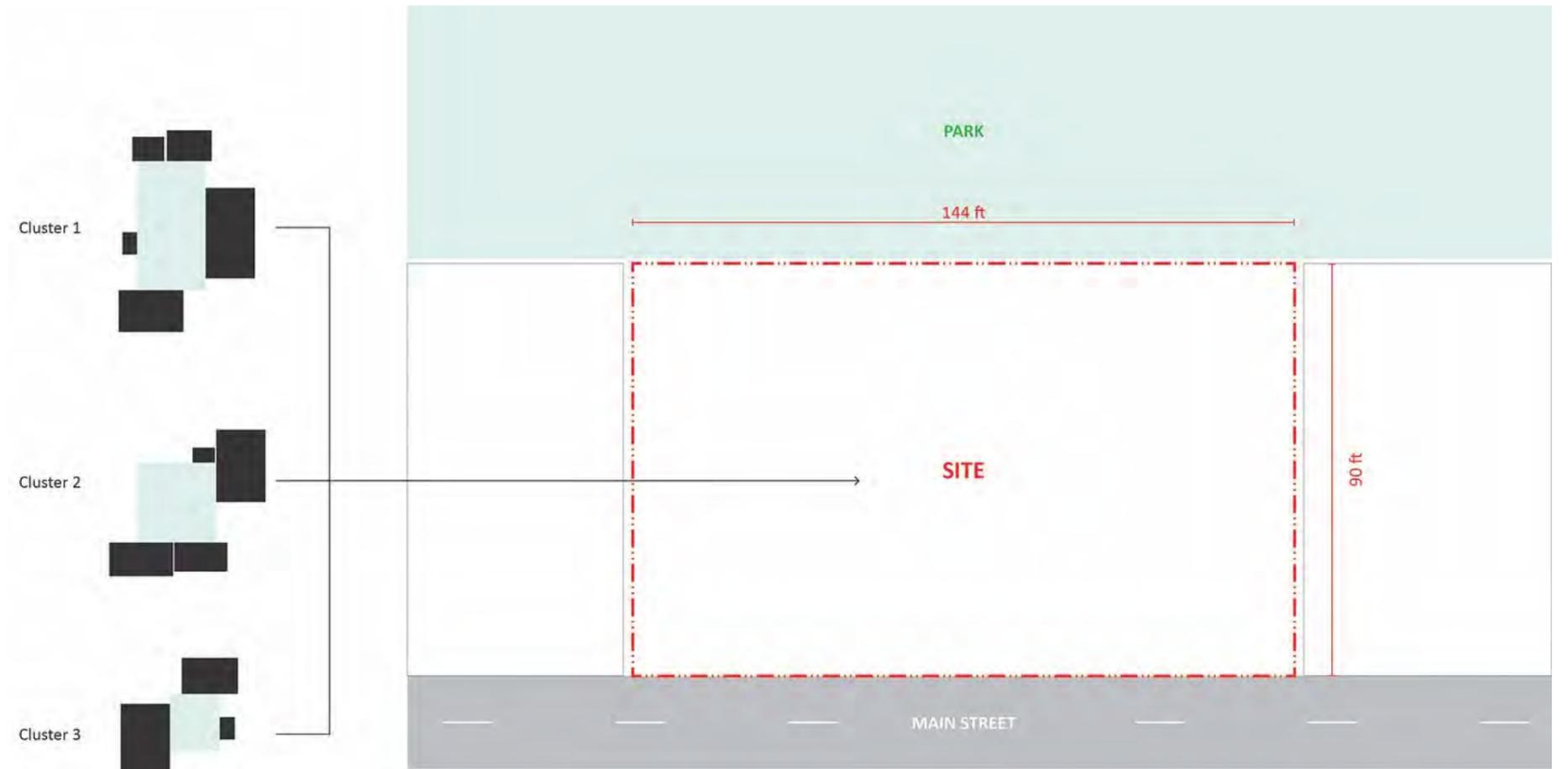
Team: Chung-Ying Hor, Ting-Wei Shih, Weiheng Zhao, Joe Mihanovic, Sixue Chen

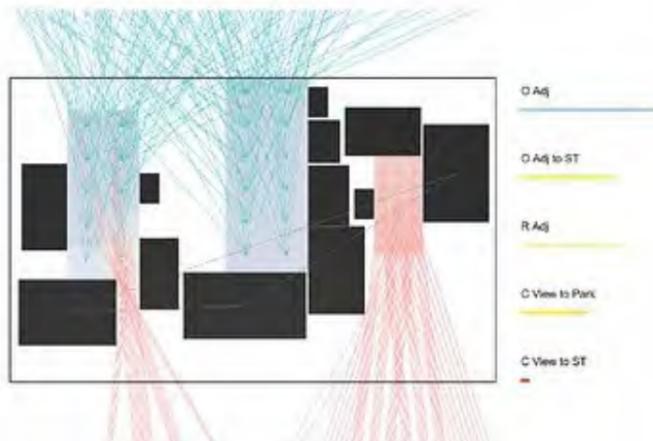
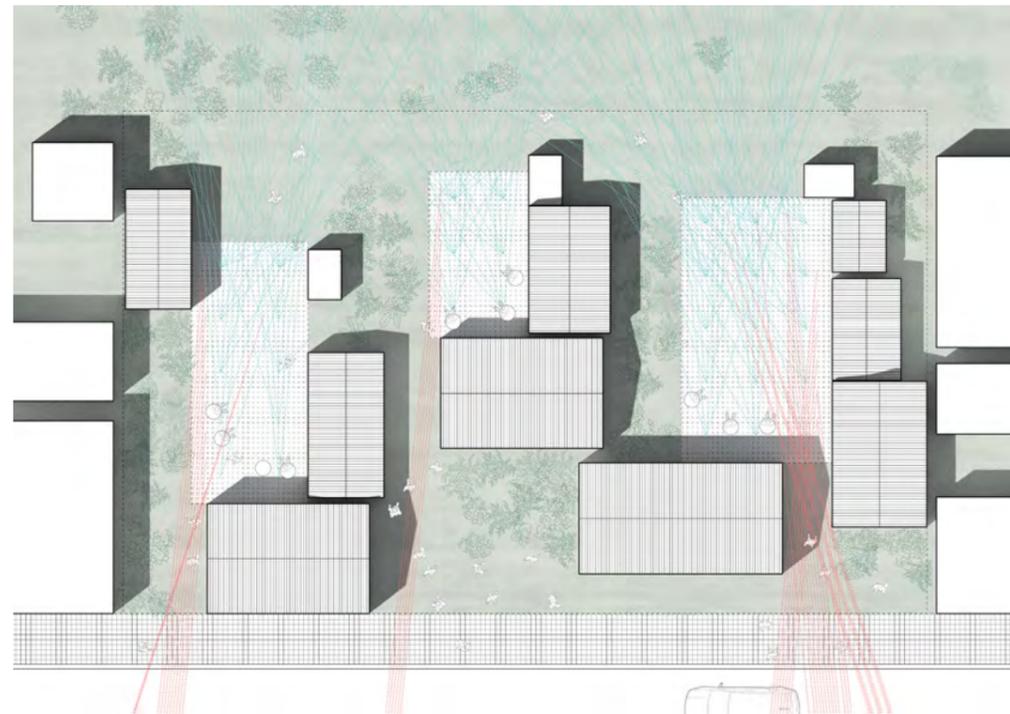
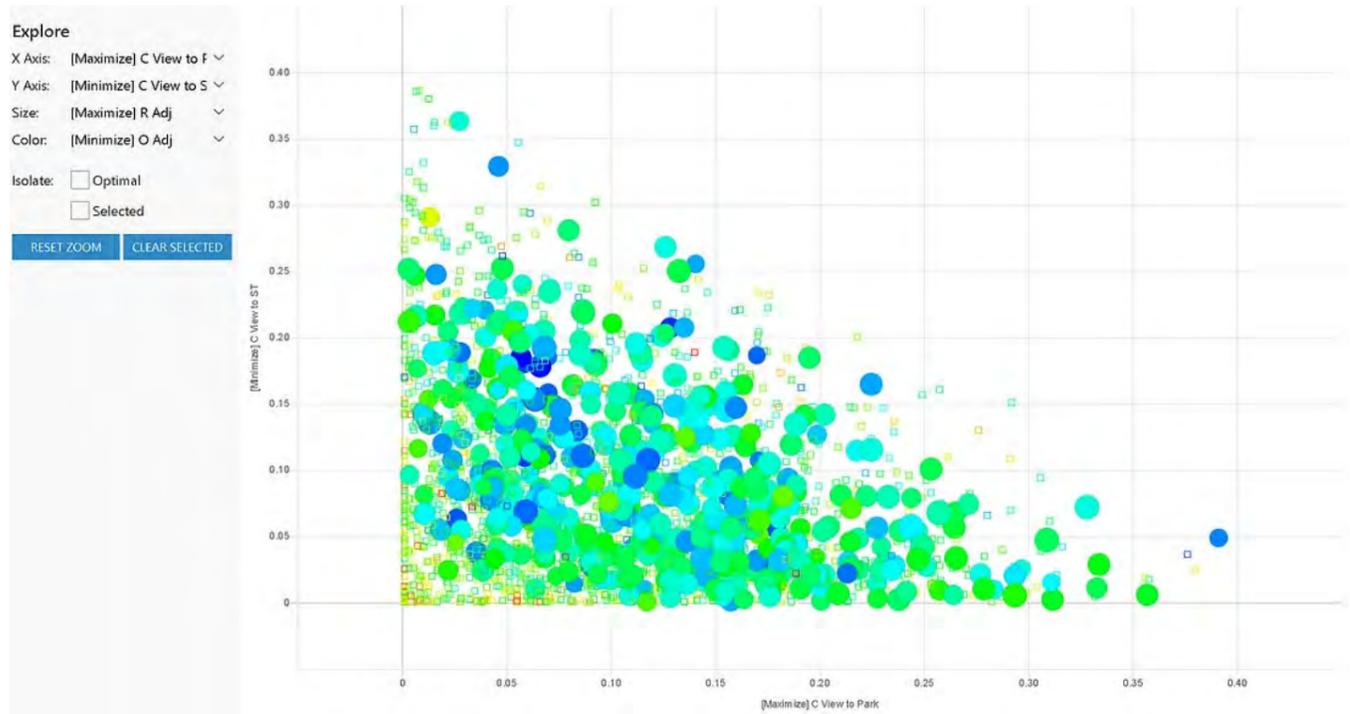
Special Thanks: Haojun Wang, Ziyao Gao

Tools: Rhinoceros 3D, Grasshopper, GHpython, Discover

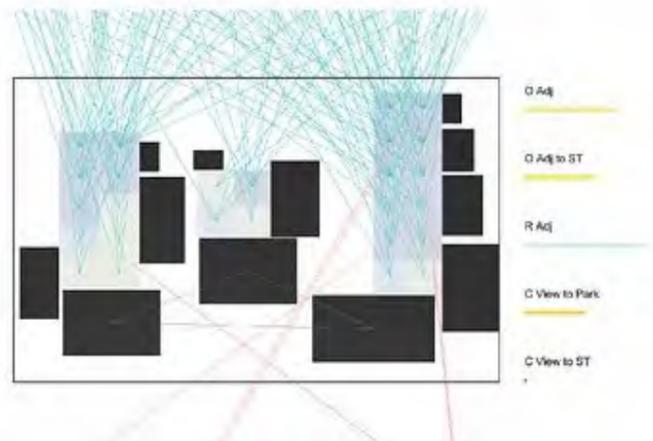
Addressing the growing need for sustainable and community-oriented living spaces, this design concept seeks to foster a harmonious balance between private and communal areas. By segregating the spaces, each individual room benefits from natural light streaming in from all four facades. Furthermore, the site is divided into a series of small courtyards organized based on their proximity to specific rooms.

In this architectural typology, the courtyards are regarded as outdoor rooms, with designated primary ones allocated for specific functions, such as outdoor dining areas or compact basketball courts. These shared spaces encourage social interaction and promote a sense of community among residents. Consequently, our aim is to devise a layout that optimizes not only the adjacency between interior rooms but also the connectivity between select interior spaces and their corresponding courtyards, fostering both ecological and social sustainability.

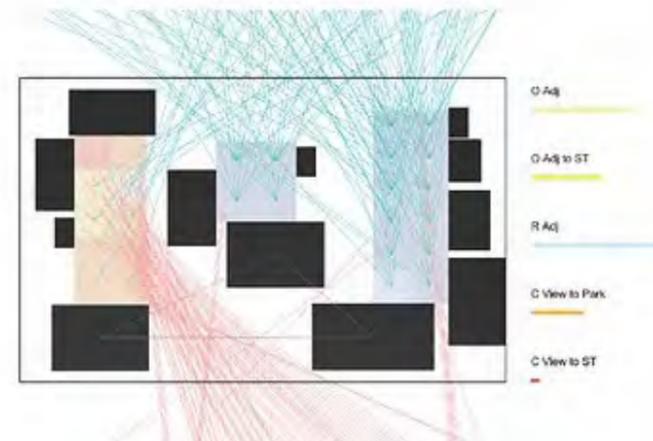




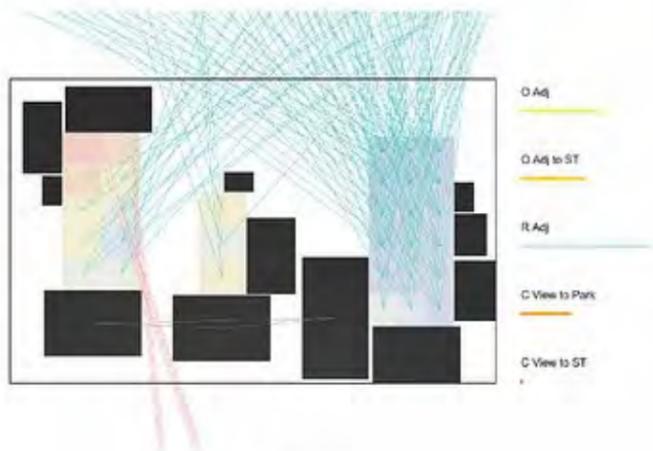
#1966



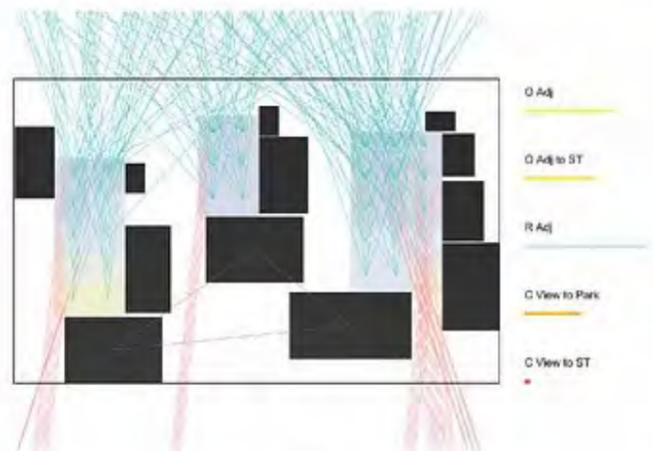
#1951



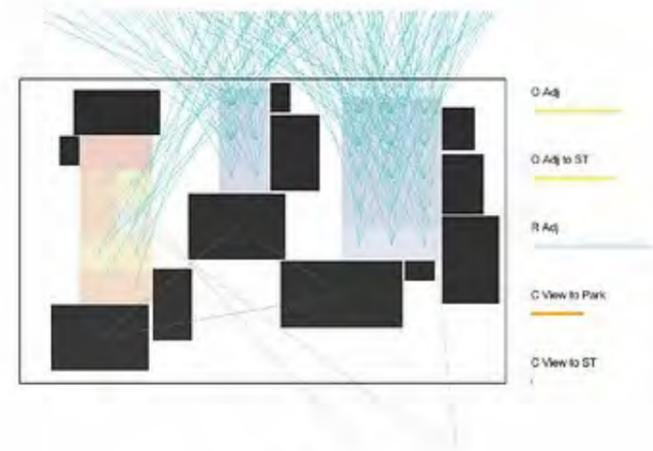
#1939



#1834



#1628



#1419

05

2 GROUND LEVELS

RETHINKING PODIUM TYPOLOGY AS MULTI-LAYERED GROUND LEVELS

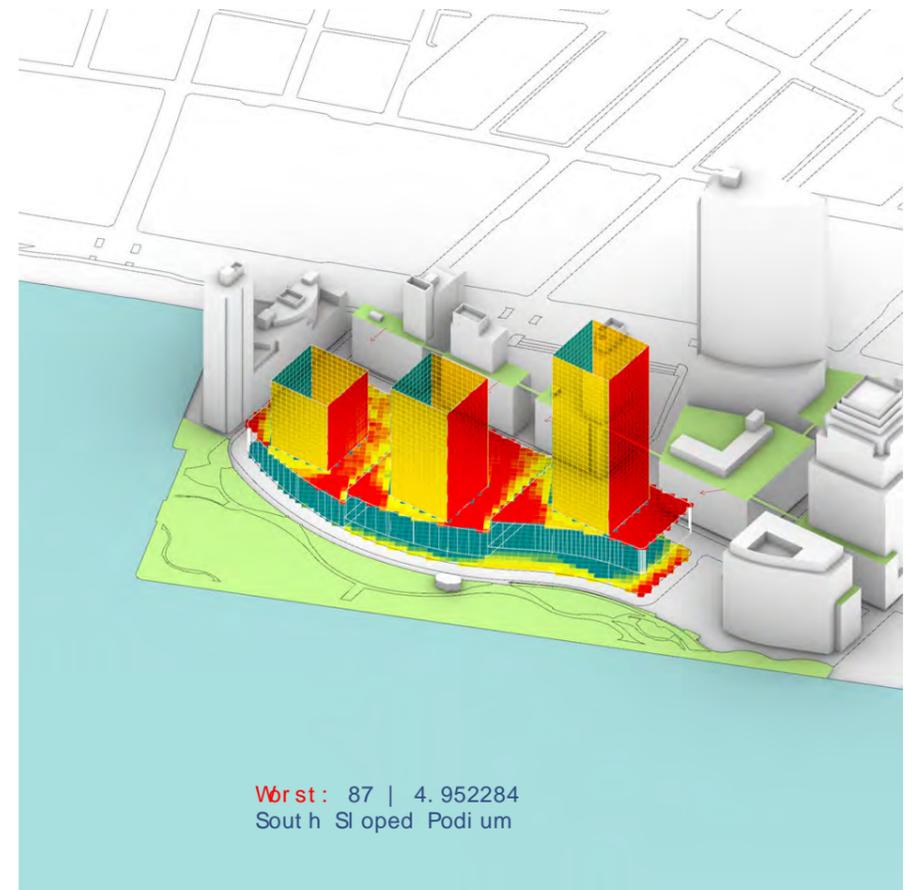
2023 Spring

X INFORMATION MODELING

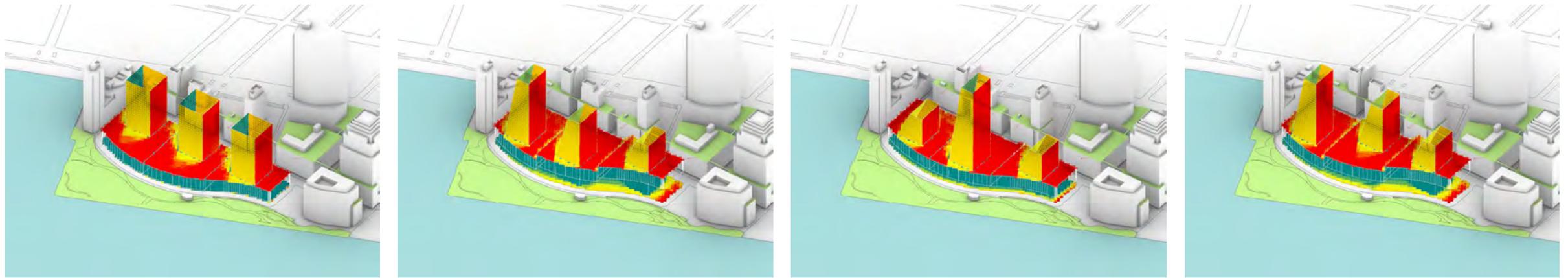
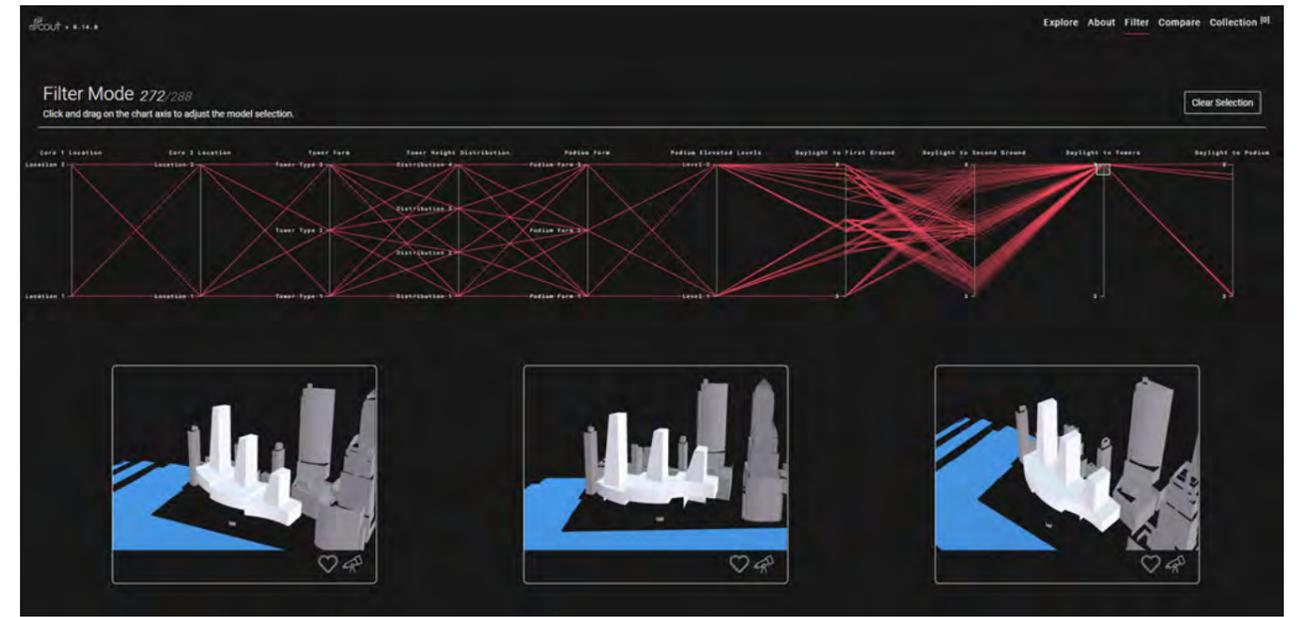
Critic: Showeria Zhang

Team: Chung-Ying Hor, Zixiao Huang

Tools: Rhinoceros 3D, Grasshopper, GHpython, Scout



Iteration	in: Core Location 1	in: Core Location 2	in: Tower Form	in: Tower Height Distribution	in: Podium Form	in: Podium Elevated Levels	out: Daylight: First Ground	out: Daylight: Second Ground	out: Daylight: Tower	out: Views at First Ground	out: Views at Second Ground
192	0	0	0	0	1	1	2.281963	5.29308	5.371813	321.02855	480.206748
196	0	0	1	0	1	1	2.281963	5.534826	5.622733	322.261327	503.600699
200	0	0	2	0	1	1	2.281963	5.831976	5.735427	322.631042	505.318683
204	0	0	0	1	1	1	2.281963	5.335821	5.366667	321.652502	490.591959
208	0	0	1	1	1	1	2.281963	5.56332	5.556773	321.934342	516.764483
212	0	0	2	1	1	1	2.281963	5.916327	5.711087	322.33104	516.42836
272	0	0	2	2	2	1	2.130365	6.430348	5.784956	315.528589	513.608781
260	0	0	2	2	1	2	2.130365	6.404116	5.73494	314.508368	513.425308
273	1	0	2	2	2	1	2.015982	6.402307	5.794207	341.585148	536.87464
176	0	0	2	2	0	1	1.578311	6.372456	5.762687	314.373378	537.059689
284	0	0	2	3	2	1	2.130365	6.368305	5.754655	315.19324	506.008159
128	0	0	2	2	2	0	1.306393	6.358887	5.769624	296.722382	544.978547
273	1	0	2	2	2	1	2.015982	6.402307	5.794207	341.585148	536.87464
225	1	0	2	2	1	1	2.216895	5.845319	5.790678	345.363952	539.237838
275	1	1	2	2	2	1	1.865060	6.241972	5.789704	355.76832	584.301373
272	0	0	2	2	2	1	2.130365	6.430348	5.784956	315.528589	513.608781
177	1	0	2	2	0	1	1.512557	6.316373	5.784471	337.567622	571.203631
131	1	1	2	2	2	0	1.113014	6.15242	5.78435	333.382946	623.139118
215	1	1	2	1	1	1	2.077169	5.603335	5.730559	359.554921	589.687906
227	1	1	2	2	1	1	2.077169	5.715513	5.781916	359.497757	582.39171
239	1	1	2	3	1	1	2.077169	5.555857	5.754412	359.287744	588.29162
203	1	1	2	0	1	1	2.077169	5.581637	5.765121	359.105934	579.613943
211	1	1	1	1	1	1	2.077169	5.321348	5.581234	358.052479	589.073872
223	1	1	1	2	1	1	2.077169	5.382058	5.629062	358.777632	578.665763
19	1	1	1	1	0	0	0.487671	5.556309	5.555535	316.135064	638.586069
23	1	1	2	1	0	0	0.487671	5.929218	5.721309	318.857872	637.782842
119	1	1	2	1	2	0	0.487671	6.049073	5.731897	333.74022	628.526984
115	1	1	1	1	2	0	1.113014	5.685889	5.573932	333.570047	628.258577
31	1	1	1	2	0	0	0.487671	5.636364	5.617744	314.608007	628.133556
35	1	1	2	2	0	0	0.487671	6.018091	5.773275	318.141337	627.98724



Iteration	0	227	167	225
Daylight: First Ground	0.487671	2.077169	1.428767	2.216895
Daylight: Second Ground	5.60493	5.715513	6.047716	5.845319
Daylight: Tower	5.350168	5.781916	5.730194	5.790678
Views at First Ground	282.35247	359.497757	353.980376	345.363952
Views at Second Ground	502.322763	582.39171	624.918619	539.237838

06

SURREAL RUINS

RENDERING AS A STUDY OF
ATMOSPHERE & LIGHT

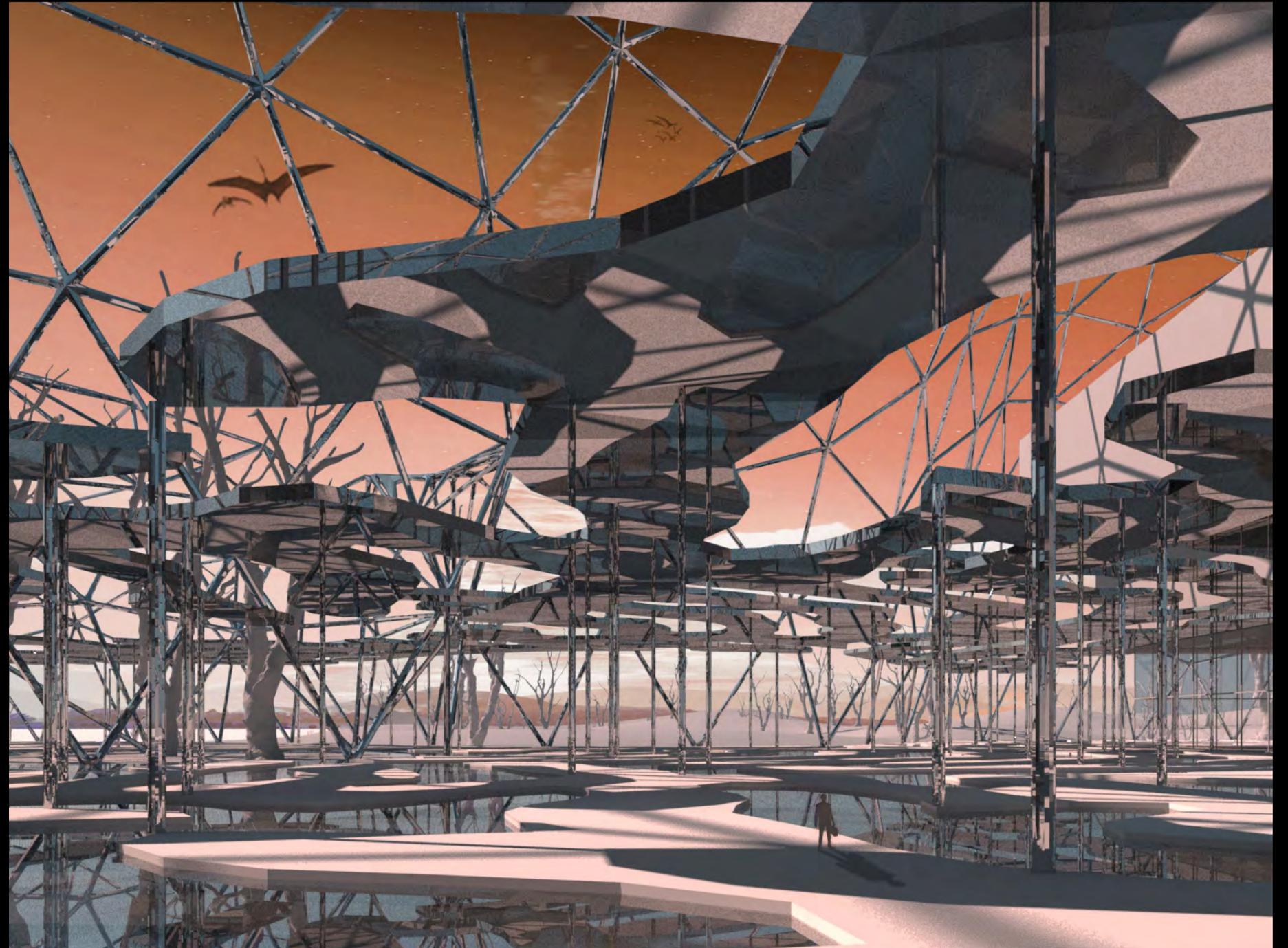
2022 Fall

Techniques Of The Ultrareal

Team: Tingwei Shih, Thomas Lee, Xu Cheng

Instructor: Phillip Crupi

Software: 3DXMAX + VRAY





07

NEON DRIFT

A DREAM OF GRAVITY CYBERPUNK

2023 Spring
VIRTUAL ARCHITECTURE

Team: Thomas Guan, Zhikang Liu, Chung-Ying Hor

Instructor: Nitzan Bartov

Tool: Unreal 5



