MOMWP: THE MUSEUM OF MODERN WATER & THE MODERN WATER PARK
AN HYBRID OF INTERTEXTUALITY

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.
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 an the ramp below it as the museum circulation. Through the substracted voids on the galleries blocks, certain point of views to see the other side are created for visitors on both programs.
Longitudinal Section Perspective South: The Lands and the Galleries
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?
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.
MADE OF FIRE

METAMORPHOSIS ON THE UNCERTAIN PALIMPSEST

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.
A TOOLKIT of POSSIBLE STRATEGIES for VOLCANIC DISASTER-RESILIENT ARCHITECTURE in CHÂ DAS CALDEIRAS, FOGO, CABO VERDE

CHAPTER 1
SITE SELECTION AND CONDITION

The architecture here is driven as much by climatic conditions and the psychological impact of the volcanic landscape as it is by the exploration of material and environmental change. The approach is one of re-use and, in some cases, re-creation, with a focus on the integration of vernacular design and contemporary construction techniques. The site is characterized by a steep, rocky terrain with a mix of dense forests and open clearings, offering a unique opportunity to explore the interplay between natural and built environments.

1.1. RELATIVE ELEVATION TO PERIMETER AREA

1.2. STEEPNESS OF SITE TOPOGRAPHY

The steepness of the site topography is crucial for the design of the structures, as it influences the orientation and the materials used. The site selection process takes into account the relationship between the building and the landscape, ensuring that the structures are integrated into the natural environment and respond to the specific challenges presented by the site.
CHAPTER 2
MASSING & LAYOUT

2.1. STRUCTURAL SPAN & DETRITION WALL

The architecture here becomes a series for the perception and interaction with the surrounding place. The exercise itself is one of understanding the relationship between place and perception, both in two and three dimensions.

2.2. VERTICAL EXTENSION

2.2.1. VERTICAL EXTENSION: STRUCTURAL SPAN

The architecture here becomes a series for the exploration of perception and interaction with the surrounding place. The exercises itself is one of understanding the relationship between place and perception, both in two and three dimensions.
CHAPTER 3
BUILDING ENVELOPE

3.2. EXTERIOR WALL OPENINGS

3.2.2. ROOF STRUCTURE

Understanding the relationship between rainwater runoff and the roof structure. The diagram depicts the flow of rainwater from the roof to the gutters and then to the ground through the use of a downspout. This helps to prevent water accumulation on the roof, which can lead to structural damage and erosion.
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.
05

2 GROUND LEVELS

RETHINKING PODIUM TYPOLOGY AS MULTI-LAYERED GROUND LEVELS
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
NEON DRIFT
A DREAM OF GRAVITY CYBERPUNK