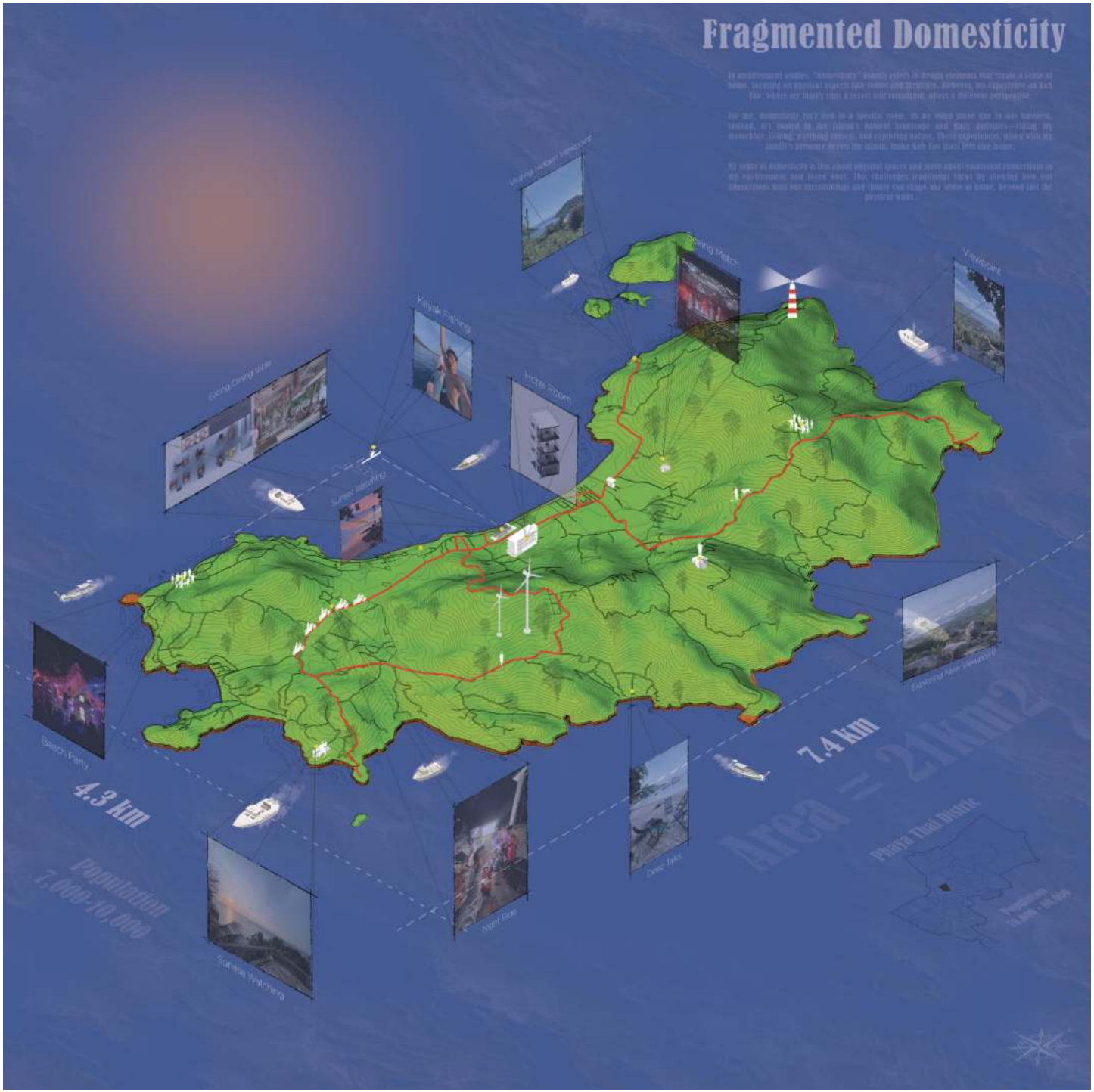

Fragmented Domesticity
Hidden Viewpoint
Kayak Fishing
Fishing Match
Viewpoint
Hotel Room
Sunset Watching
Beach Party
Night Ride
Sunrise Watching
Exploring New Viewpoint
4.3 km
7.4 km
Area = 21km2
Population
2,000-10,000
Phuket Thani District

Living in Layers

Fragmentation and Textures of Domesticity

Student: Suchakree Toovichien
Instructor: Jane Chongsuwat

This project reimagines concrete as a medium for fostering sustainability and biodiversity, inspired by Tadao Ando's Malibu House. Stripped to its raw concrete form by Kanye West, the house serves as a canvas for my exploration of textured, sustainable concrete slabs, each offering ecological benefits while preserving Ando's iconic design principles.

I created four experimental textures: coconut husk, rice hull, clay pebbles, and crushed glass by casting concrete with alternative molds and materials. Additionally, I replaced sand with crushed glass powder to reduce environmental damage caused by sand mining while promoting recycling within communities. Each slab texture is tailored to serve a specific function:

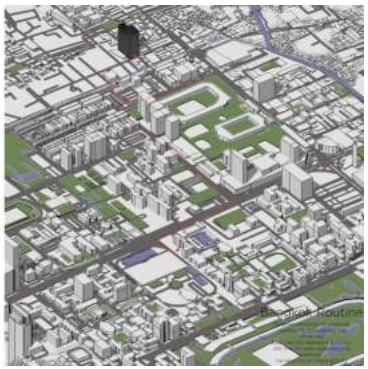
Coconut husk: encourages moss and plant growth, supporting fungi and nutrient cycling.
Rice hull: attract birds like pigeons and seagulls, offering nesting material.
Clay pebbles: provide habitats for insects, which sustain predators like lizards.
Crushed glass: enhances natural illuminance, reducing energy needs.

In the Malibu House, these slabs transform the space into a self-sustaining ecosystem. Moss-covered coconut husk slabs line outdoor areas; rice hull slabs attract birds to ledges; clay pebble slabs foster insect activity near the ground; and glass slabs brighten interiors with reflected light. Together, these elements create a balanced ecological loop where plants, insects, birds, and lizards coexist without human intervention.

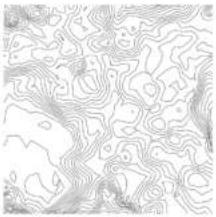
This project redefines concrete, shifting its role from a static building material to a dynamic, life-supporting system. It challenges the narrative of minimalist architecture by infusing character, functionality, and sustainability into its design. By integrating recycled materials and promoting ecological harmony, the project envisions architecture as a catalyst for environmental innovation and a bridge between the built and natural worlds.

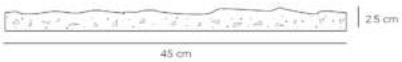

Koh Tao Routine


Koh Tao Routine
Bangkok Routine

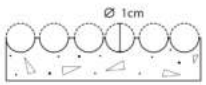


Using coconut coir as a mold creates an uneven surface yet abstract. Since coconut coir comes in uneven size, this create variation of terrain for the surface. Morover, some pieces of coconut coir are intergrated into the concrete, to resemble man made object (concrete) and nature (coconut coir) together.

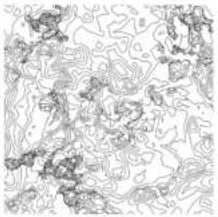




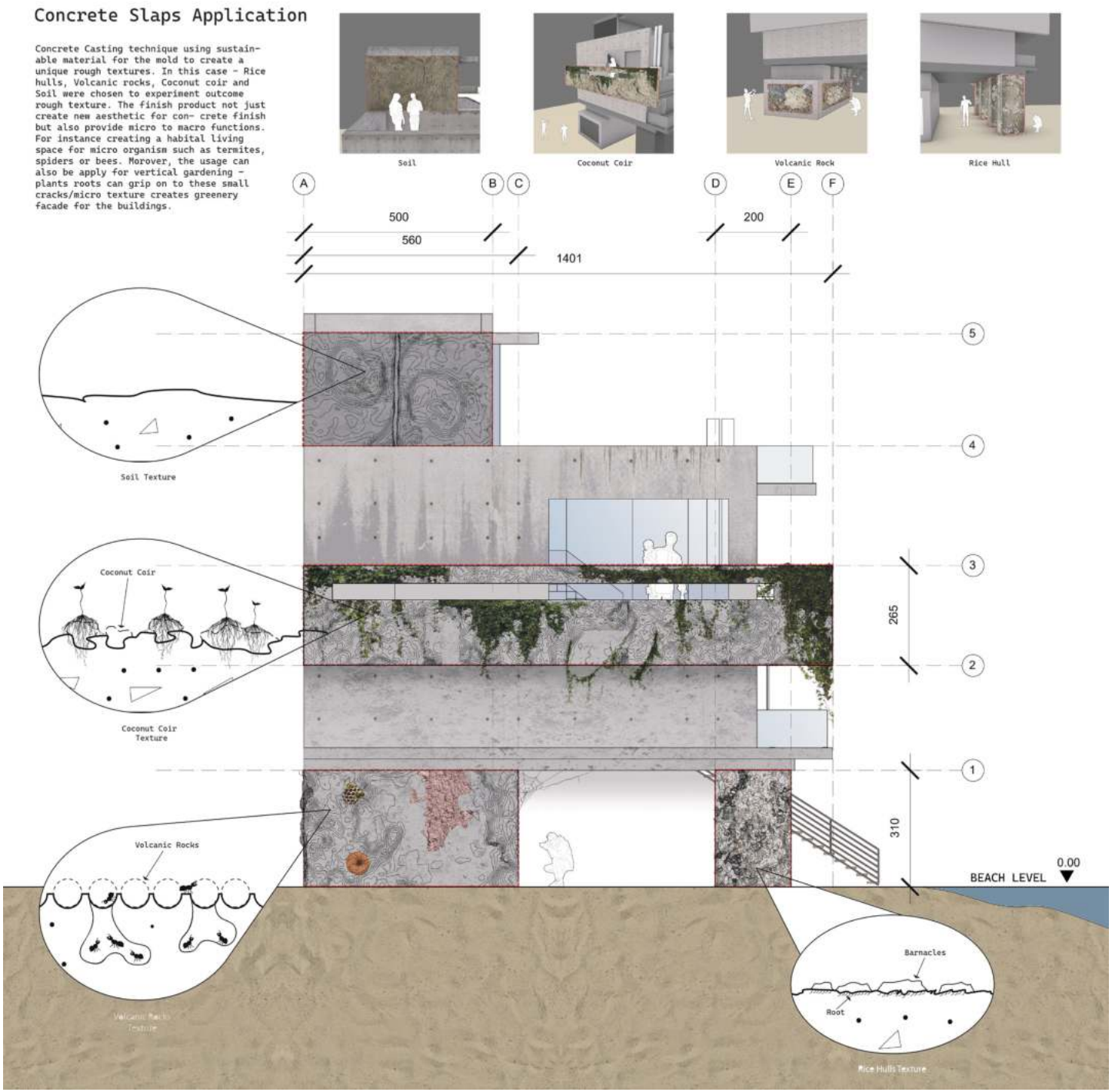
Using soil texture as a mold for casting concrete , which create a smoother yet rough surface for the finished concrete. Since soil also contain other natural material such as small twigs, this element play a key role to create a rough and uneven texture.



Using gardening colcanic rock as the mold to create patterns of the concrete. As the concrete dries, I removed the majority of the rocks, which results in a semi-circular pattern. However some of the pieces could not be removed, this create another set of pattern and terran for the concrete.

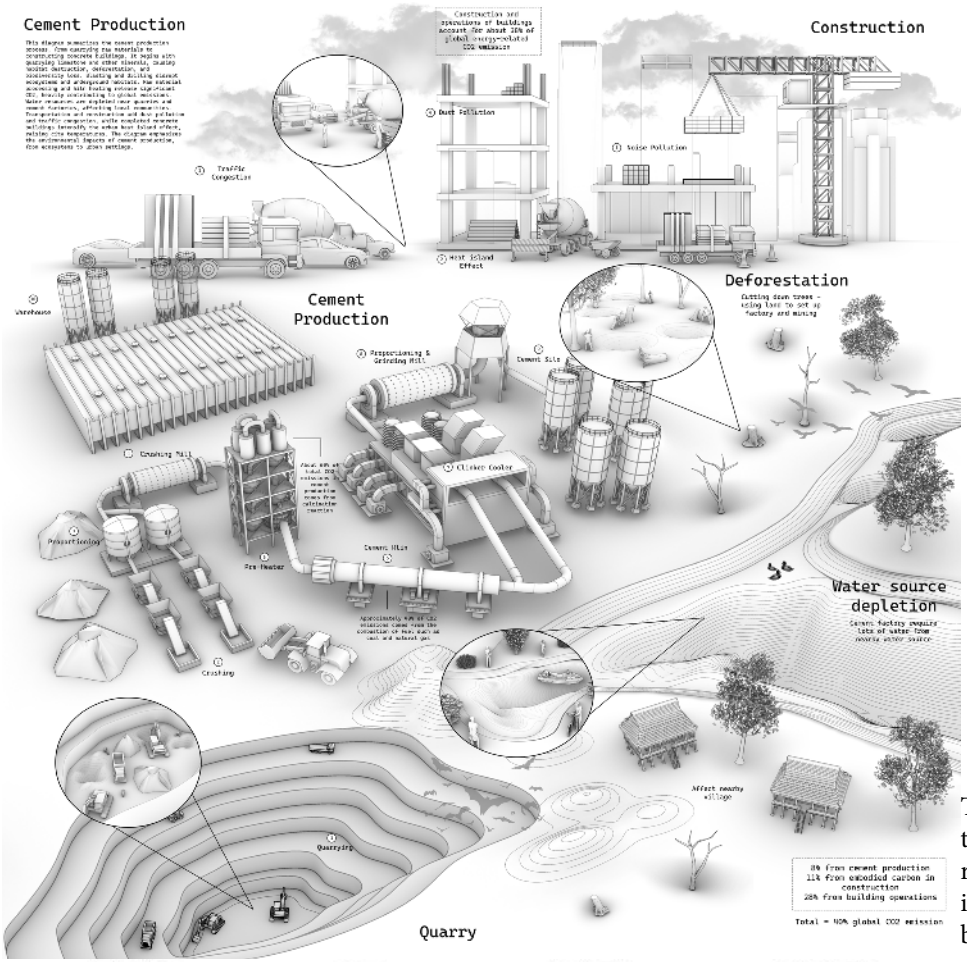


Using rice hull as a mold for casting concrete creates a micro texture. For further distance, the concrete appears flat and no terran, but close up it exposes more texture. Rice hull itself contain a sharp texture at the end of the hull and the majory and intergrated within the concrete, results in rough texture.


Concrete Slaps Application
Concrete Casting technique using sustain- able material for the mold to create a unique rough textures. In this case - Rice hulls, Volcanic rocks, Coconut coir and Soil were chosen to experiment outcome rough texture. The finish product not just create new aesthetic for con- crete finish but also provide micro to macro functions. For instance creating a habital living space for micro organism such as termites, spiders or bees. Morover, the usage can also be apply for vertical gardening - plants roots can grip on to these small cracks/micro texture creates greenery facade for the buildings.
Soil
Coconut Coir
Volcanic Rock
Rice Hull
A
B
C
D
E
F
500
560
1401
200
5
4
3
2
1
265
310
0.00
BEACH LEVEL
Soil Texture
Coconut Coir
Coconut Coir Texture
Volcanic Rocks
Barnacles
Root
Rice Hulls Texture

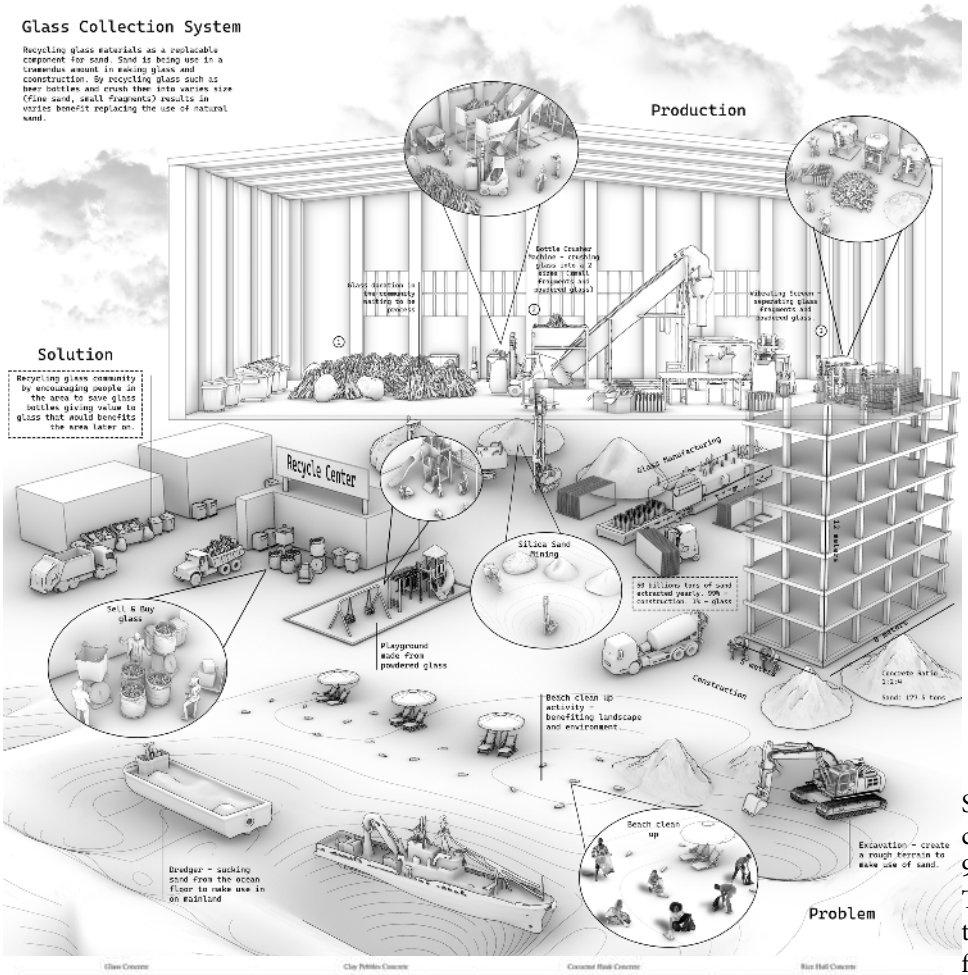
This panel explores the application possibilities of my concrete textures, integrating them into various parts of the house to serve unique ecological purposes. Each texture is designed to foster specific interactions between the built environment and local wildlife.

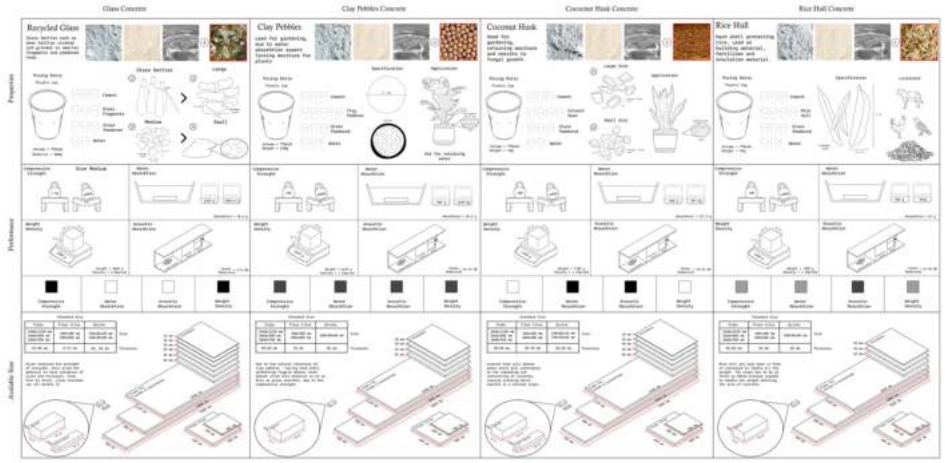
For example, the rice hull texture is applied to columns, encouraging barnacles and similar organisms to attach over time, blending architecture with natural growth. Meanwhile, the clay pebble texture is utilized in the foundation, creating habitats for small insects like ants and spiders. This thoughtful integration separates human spaces from animal habitats, promoting coexistence and minimizing disruption between the two.



These panels delve into the environmental impact of cement production and reinforced concrete usage, highlighting issues like deforestation and the urban heat island effect. While concrete is a cornerstone of modern construction, its production comes with significant environmental costs that demand innovative solutions.

The lower panel explores experimental approaches to reimagining concrete by substituting traditional raw materials. For example, crushed glass replaces sand, and broken concrete debris serves as aggregate. Each variation underwent performance testing against standard reinforced concrete to assess its viability. Additionally, the experiments explored the unique textural possibilities of these alternative mixes, envisioning new applications for sustainable and expressive concrete.

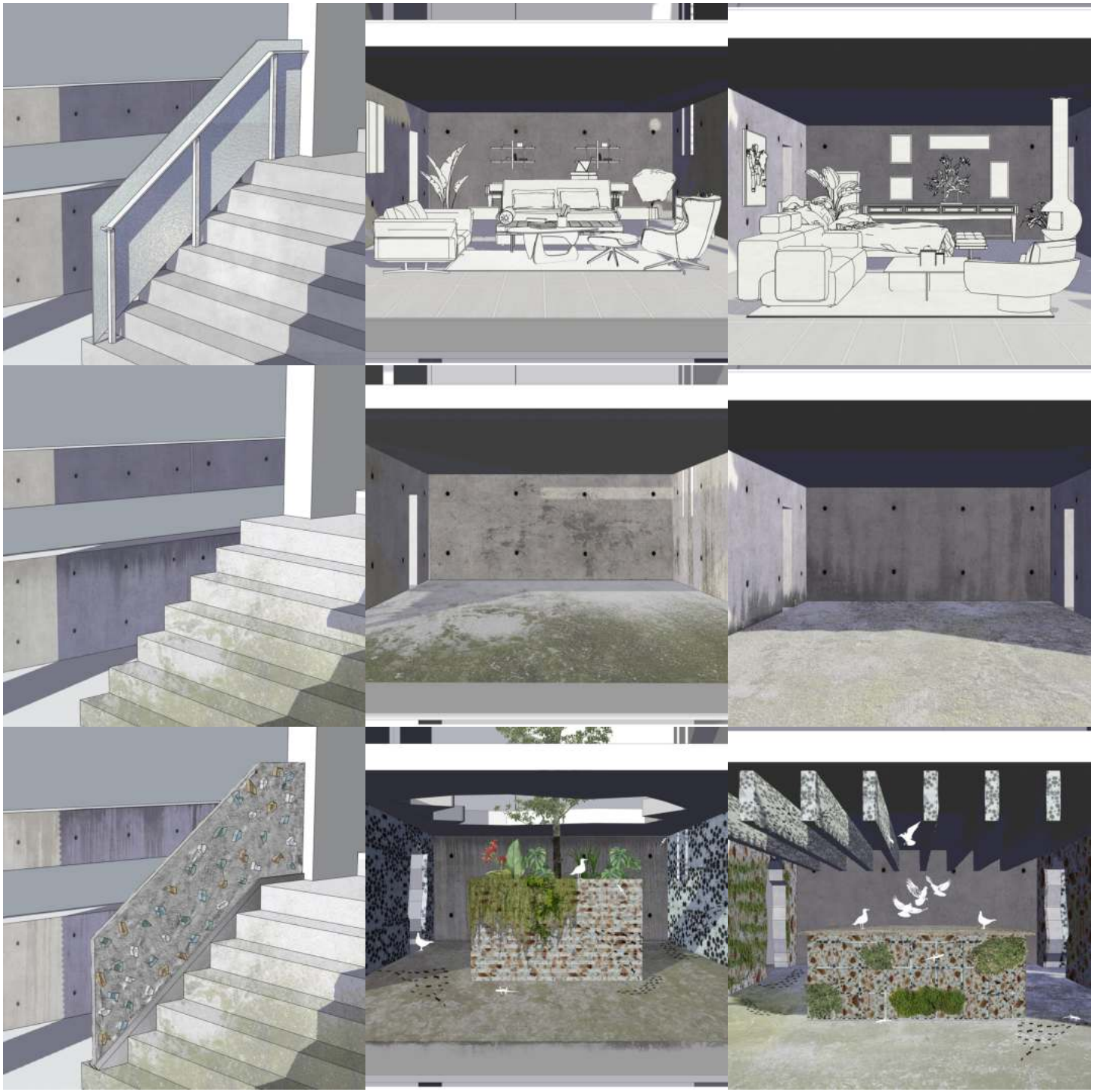


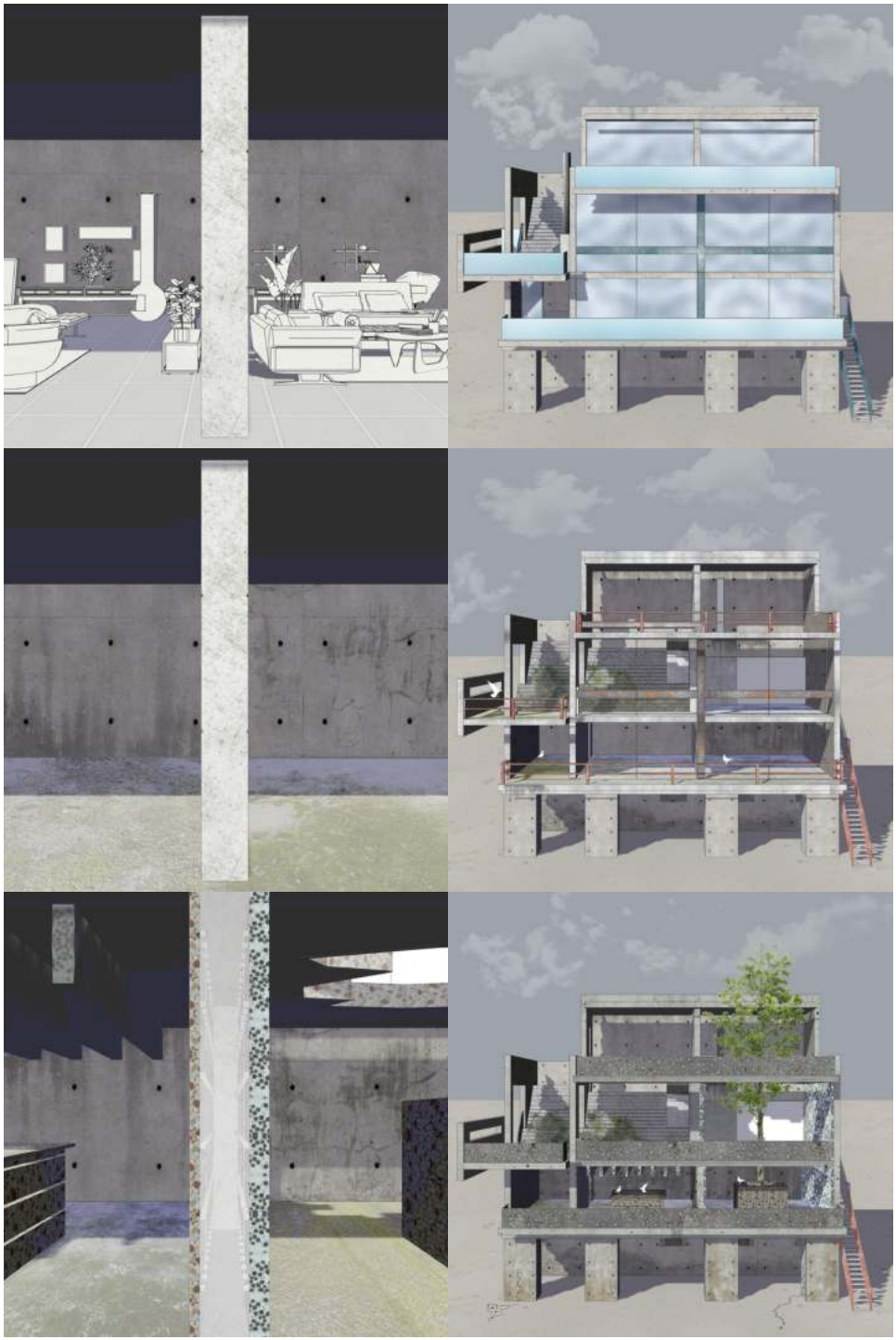


Sand, a crucial component of reinforced concrete, dominates construction, with 99% of 50 billion tons consumed annually. These panels propose an innovative solution: replacing sand with recycled glass. By focusing on glass recycling, we can foster community-driven environmental efforts while reducing the ecological footprint of construction.

Crushed glass can be processed into fine powder for concrete mixing or larger fragments for materials like terrazzo flooring. The lower panel presents an experiment with four concrete slabs using glass powder as a sand substitute. Additionally, natural aggregates like clay pebbles and coconut coir were incorporated, showcasing the textural possibilities and sustainability of these materials.

Living in Layers, Kree Suchakree Toovichien



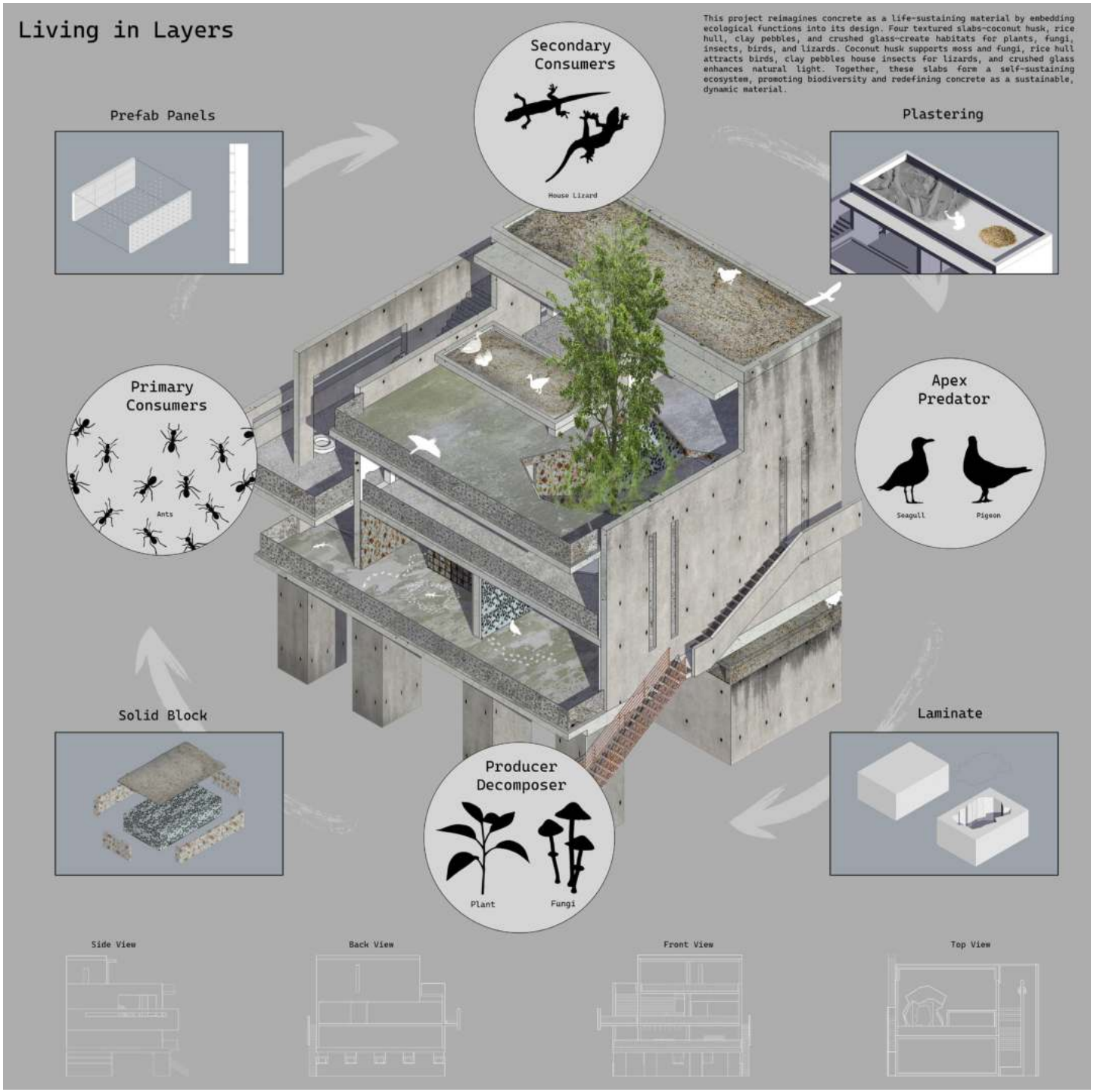


This drawing illustrates the temporal evolution and sequential transformation of the Malibu House, from Tadao Ando's original design to Kanye West's reinterpretation, and finally to my proposal.

The Malibu House, a luxury mansion on Malibu Beach, showcases Tadao Ando's minimalist mastery, featuring expansive empty spaces and a profound interplay of natural light and shadow. Shortly after its completion, Kanye West purchased the property but dramatically altered it, stripping the house down to its bare concrete in pursuit of a "retro bomb shelter" or "Batcave" aesthetic.

Seizing this opportunity, I reimagined the house with a focus on fostering ecosystems rather than human habitation. My design integrates four experimental concrete slab textures, each serving a unique ecological purpose: clay pebbles attract ants, coconut coir supports vegetation and fungi, rice hulls provide for pigeons and seagulls, and crushed glass illuminates the interior.

Through innovative techniques like plastering, solid blocks, and prefab slabs, these materials reshape the purpose of the house into a habitat for nearby creatures. The result is a self-sustaining ecosystem that reflects the concept of post-anthropocene architecture, where domesticity is redefined for the coexistence of humans, animals, and nature.


Living in Layers
This project reimagines concrete as a life-sustaining material by embedding ecological functions into its design. Four textured slabs-coconut husk, rice hull, clay pebbles, and crushed glass-create habitats for plants, fungi, insects, birds, and lizards. Coconut husk supports moss and fungi, rice hull attracts birds, clay pebbles house insects for lizards, and crushed glass enhances natural light. Together, these slabs form a self-sustaining ecosystem, promoting biodiversity and redefining concrete as a sustainable, dynamic material.
Secondary Consumers
House Lizard
Prefab Panels
Plastering
Primary Consumers
Ants
Apex Predator
Seagull
Pigeon
Solid Block
Laminate
Producer Decomposer
Plant
Fungi
Side View
Back View
Front View
Top View