



Winners Announced for “Tiny House 2023 Architecture Competition”

Archetype team - 09/04/2024

International design competition

International design competition platform Volume zero has announced the results of the **Tiny House 2023 Architecture Competition**. The Tiny House competition looked to celebrate individuality and sustainability through innovative designs redefining resourceful living. Through this platform, we explored the various avenues of mobile living spaces and the unbridled freedom they would offer.

In this architecture design competition, participants were tasked with designing a comfortable off-the-grid living accommodation for two people under 300 sq. ft. that not only caters to their present-day needs but also anticipates and fulfills needs from the unseen future. Participants from over 48 countries came up with their creative and sustainable design solutions to cater to this spatially challenging Architectural problem.

Volume Zero Competition thanks all the competitors for participating in this competition and for contributing to this competition's research.

The esteemed jury for judging this competition consisted of **Nicolás Viteri** (El Sindicato), **Paul Kariouk** (Kariouk Architects), **Arjun Malik** (Malik Architecture), **Marek Obtulovic** (ODDO Architects), **Sevince Bayrak** (SO? Architecture and Ideas), **Hoang Thuc Hao** (1+1>2 Architects), **Kraipol Jayanetra** (Alchemist Architects), **Jorge Arvizu** (Estudio MMX), **Luciano Kruk** (Luciano Kruk Arquitectos), **James Shen** (People's Architecture Office), **Stefan Antoni** (SAOTA), **Ngô Việt Khánh Duy** (23o5studio), **Md. Rafiq Azam** (Shatotto Architecture).

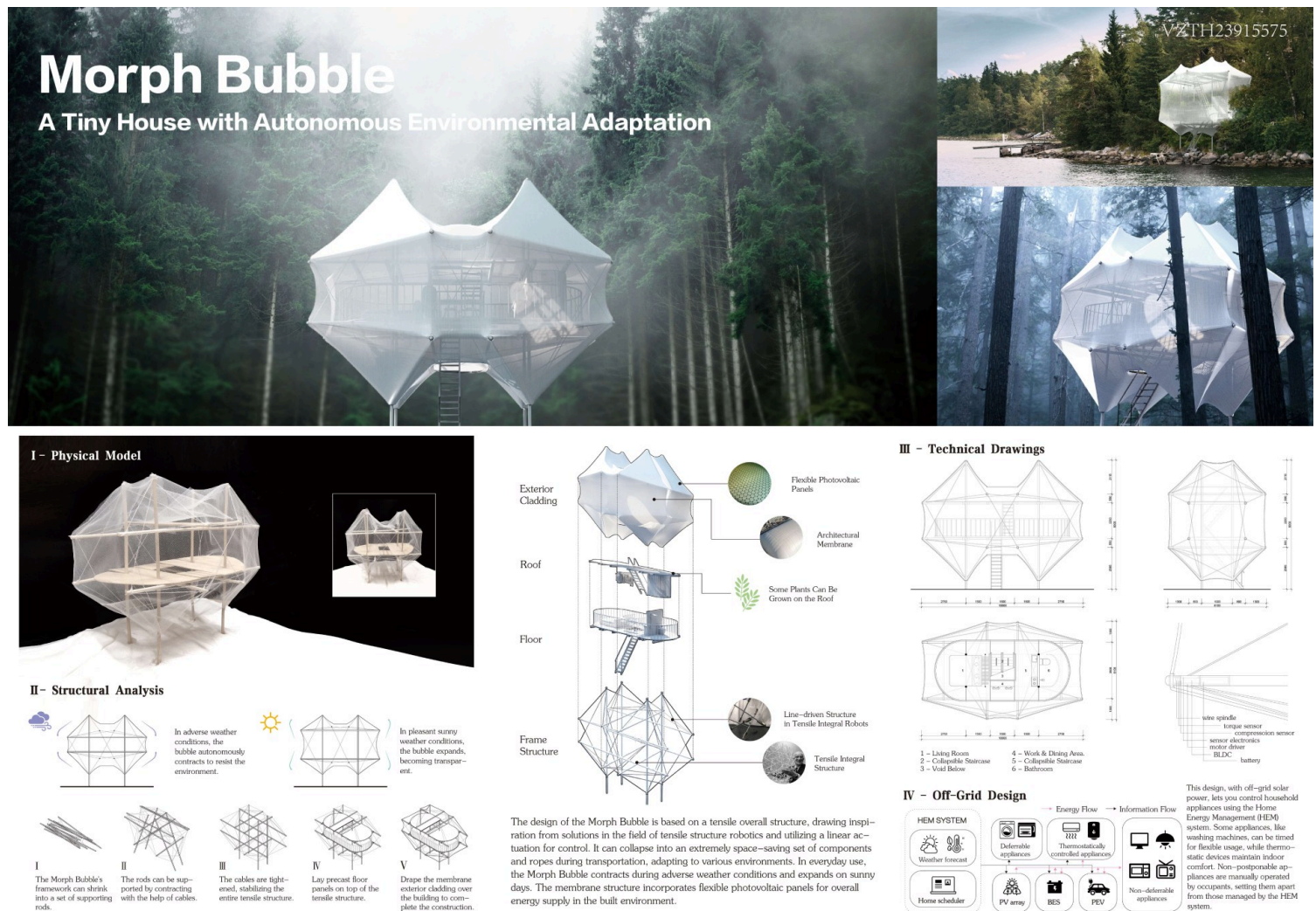
The top three winners and Best Student were awarded total prize money of \$4,500 while ten entries received Honorable Mentions. Here are the winning entries. The full result for the competition the **Tiny House 2023 Architecture Competition** can be found [here](#).

FIRST PLACE

Morph Bubble

Ruisi Sun and Jinyu Lu

China



Morph Bubble: A Tiny House with Autonomous Environmental Adaptation

The design of the Morph Bubble is based on a tensile overall structure, drawing inspiration from solutions in the field of tensile structure robotics and utilizing a linear actuation for control. It can collapse into an extremely space-saving set of components and ropes during transportation, adapting to various environments. In everyday use, the Morph Bubble contracts during adverse weather conditions and expands on sunny days.

The membrane structure incorporates flexible photovoltaic panels for overall energy supply in the built environment.

This design, with off-grid solar power, lets you control household appliances using the Home Energy Management (HEM) system. Some appliances, like washing machines, can be timed for flexible usage, while thermostatic devices maintain indoor comfort. Non-postponable appliances are manually operated by occupants, setting them apart from those managed by the HEM system.

SECOND PLACE

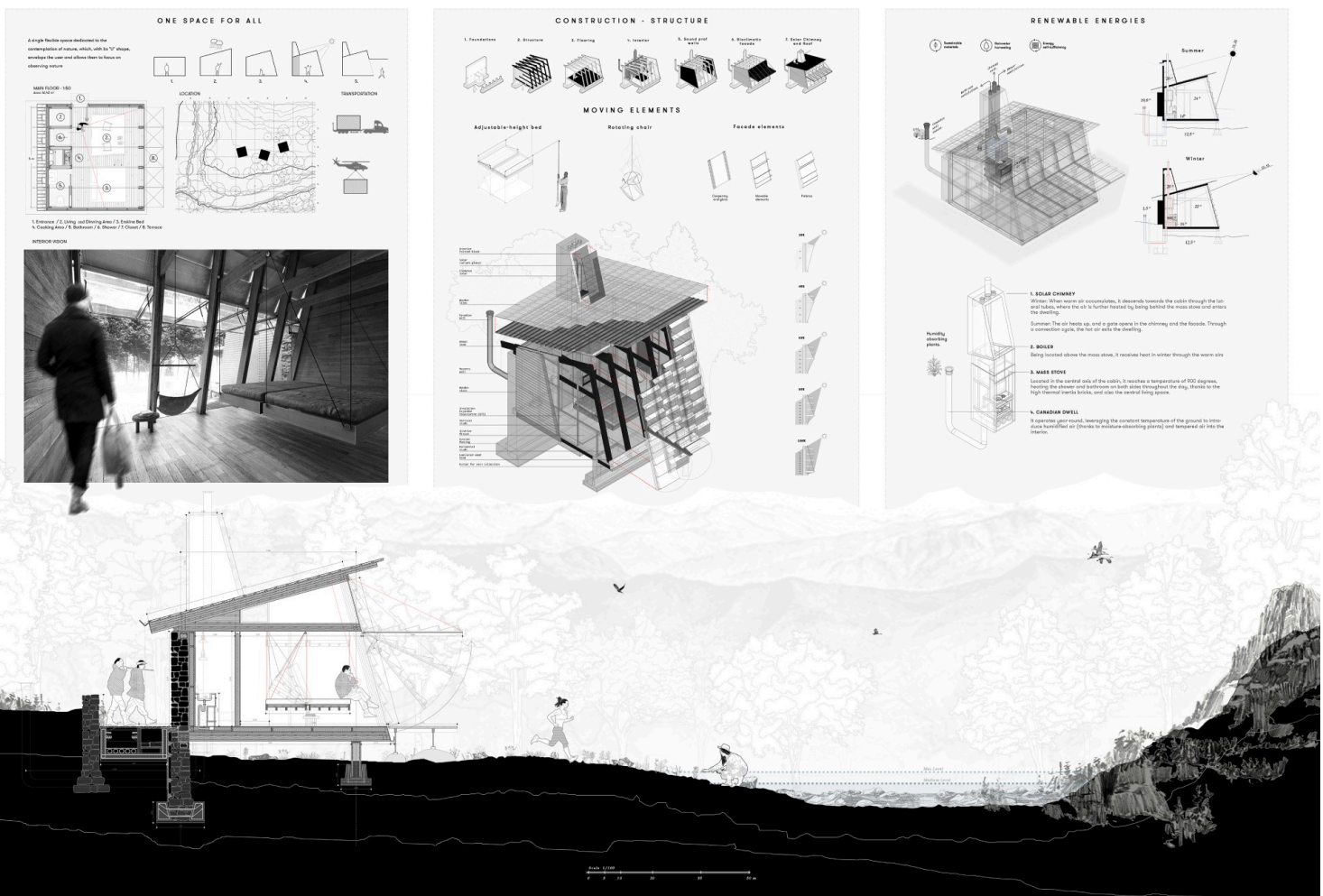
Contemplation Spaces

Fernando Frank

Spain

CONTEMPLATION SPACES

VZTH23684371



A single flexible space dedicated to the contemplation of nature, which its “U” shape, envelops the user and allows them to focus on observing nature.

Renewable energies are harnessed in various ways within this sustainable dwelling. A solar chimney facilitates both winter and summer climate control. In winter, as warm air gathers, it descends through lateral tubes, further heating behind a mass stove before entering the cabin. Conversely, in summer, the chimney and facade gates open, allowing hot air to escape via convection.

A boiler positioned above the mass stove receives winter warmth from rising air. The mass stove itself, situated centrally, maintains a temperature of 900 degrees, providing consistent heat to the shower,

bathroom, and central living space thanks to its high thermal inertia bricks. A Canadian wall operates throughout the year, utilizing the stable ground temperature to introduce humidified and tempered air into the interior, facilitated by moisture-absorbing plants.

THIRD PLACE

Cellule Of Urban

Duong Pham Ngoc Hoai, Uyen Nguyen Nha and Canh Nguyen Duc

Vietnam

CELLULE OF URBAN

INFORMAL SPACES OF VERNACULAR URBAN



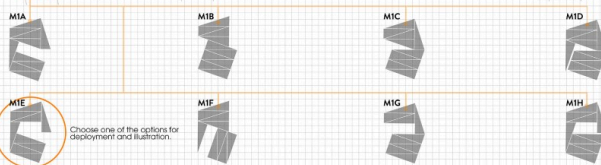
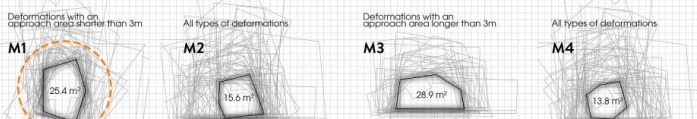
Choose a ward unit in Da Nang city of Viet Nam to study the deformation of informal spaces.

Informal spaces are those not planned or regulated by governing authorities, where people engage in various activities for different purposes. Predominantly manifesting in narrow Viet Nam urban alleys, these spaces surreptitiously navigate and engender a network typified. While acknowledging the ecological significance of informal spaces, promoting biodiversity, mitigating air quality concerns, and fostering social dynamics, our emphasis pivots towards the detrimental facet. These spaces often serve as refuge for socioeconomically disadvantaged individuals and the homeless.

Moreover, the current juncture marks the concluding phase of the life cycle for dwellings constructed during the construction boom of the early 2000s. A significant portion of residences nestled within these alleys necessitates refurbishment and new construction in the future.

Our proposed resolution entails deciphering the structural complexities inherent in irregular spaces and instituting a modular framework tailored to their idiosyncrasies. With cost-effective construction and rapid implementation, this approach stands poised to ameliorate the quality of life for low-income and homeless populations, ensuring the safety of these locales and augmenting social interactions in Viet Nam urban.

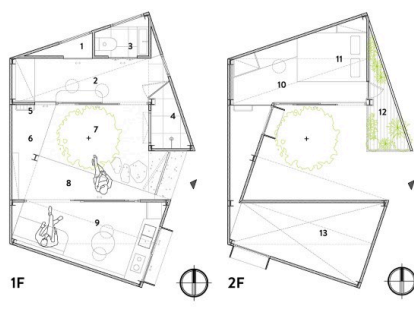
Layering the deformations of land areas yields the following results



Choose one of the options for deployment and illustration.

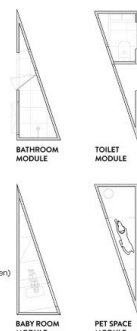
Identify the deformation of the integrated module spaces suitable for the determined deformation and approximate angle.

MODULE

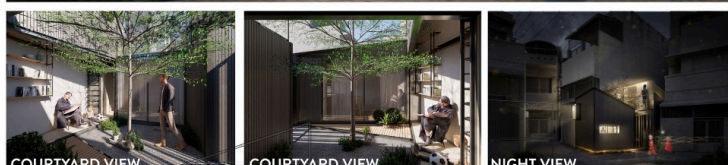


Each form of the triangular module represents a different function, depending on the user's purpose, and may be subject to change in the future.

1. Bathroom
2. Working space
3. Toilet
4. Bedroom
5. Staircase
6. Lobby - open space
7. Courtyard
8. Terrace
9. LDK (Living - dining - kitchen)
10. Relax space
11. Bed
12. Balcony
13. Void



STRUCTURE DETAIL



Cellule of Urban: Informal Spaces of Vernacular Urban

Informal spaces, are those not planned or regulated by governing authorities, where people engage in various activities for different purposes. Predominantly manifesting in narrow Vietnam urban alleys, these spaces surreptitiously navigate and engender a network typified. While acknowledging the ecological significance of informal spaces, promoting biodiversity, mitigating air quality concerns, and fostering social dynamics, our emphasis pivots towards the detrimental facet. These spaces often serve as refuge for socioeconomically disadvantaged individuals and the homeless.

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STUDENT AWARD - FLOATING LENS HOUSE

Jeonguk Jang and Taeho Kim

Korea South



Floating Lense House - Harmonizing modern housing with nature

Rapid urbanization and the expansion of residential areas have had serious environmental consequences, including deforestation, loss of biodiversity, and increased carbon emissions. In response, we set out to design a home that would minimize its impact on the environment and integrate with nature.

First, we used only two pillars to float the building, allowing it to adapt to nature's varied terrain while minimizing its land footprint, which in turn reduces its impact on nature. The building is divided into two spaces where the user's main life takes place, with glass connecting them.

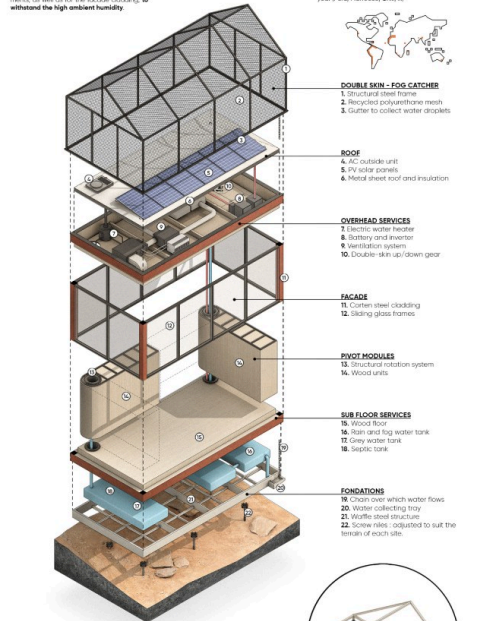
In front of the bedroom windows, eye-level perforated blinds are installed to allow the user to control the view outside. In the central space, transparent walls, floors, and ceilings create an environment surrounded by nature, and a birdhouse on the elevation façade supports the local birds by providing habitat for them. Users can move between the spaces to enjoy the large and small views of nature, while a rainwater collection system and solar energy ensure a certain level of self-sufficiency.

Honourable Mentions:

Honourable Mention 1 - on cloud nine

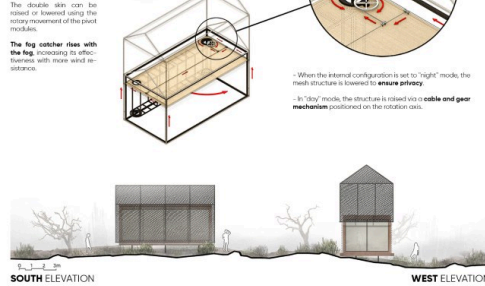


EXPLODED AXONOMETRIC
Steel was chosen for the main structural elements, as well as for the facade cladding, to withstand the high ambient humidity.



Locations where fog collection has a high potential for success are **regions with no water resources**, but which experience **dense fog** for most of the year (Peru, Morocco, Chile, ...)

UP/DOWN AXONOMETRIC



VZTH233190023

LARGE SECTION / Fog catcher
Total water storage: 2000 l
Daily water consumption: 100 l
Daily water collection: 20-400 l/day

The mesh (1) captures water through condensation of the droplets present in the fog. These droplets then flow into a gutter (2) that is led by a chain (3) to a water tank placed in the sub-floor (4).

PLAN LAYOUTS / TOTAL AREA: 2334sqm

LAYOUT A / Work and sleep **LAYOUT B / Meditation and yoga**

LAYOUT C / Dinner party **LAYOUT D / Movie time**

FLEXIBILITY
The internal organization is based on two wheel units that provide flexibility by organizing the space into **four distinct sequences**, offering a **variety of combinations**. The structural spaces are **modular**, offering **generous living areas** with different viewpoints, all orchestrated by the **path of the sun**.

W/CHINA KITCHEN
MOVING BEDROOM

DINING Eat in the heat of the day to relax and watch the sunset.

WORK Work in a relaxing, active yet spacious environment.

MORNING Wake up and start your engagement with the sun.

FOURNITURE MODULE

KITCHEN MODULE
1. Table & chairs
2. Chair
3. Garbage
4. Storage
5. Fridge

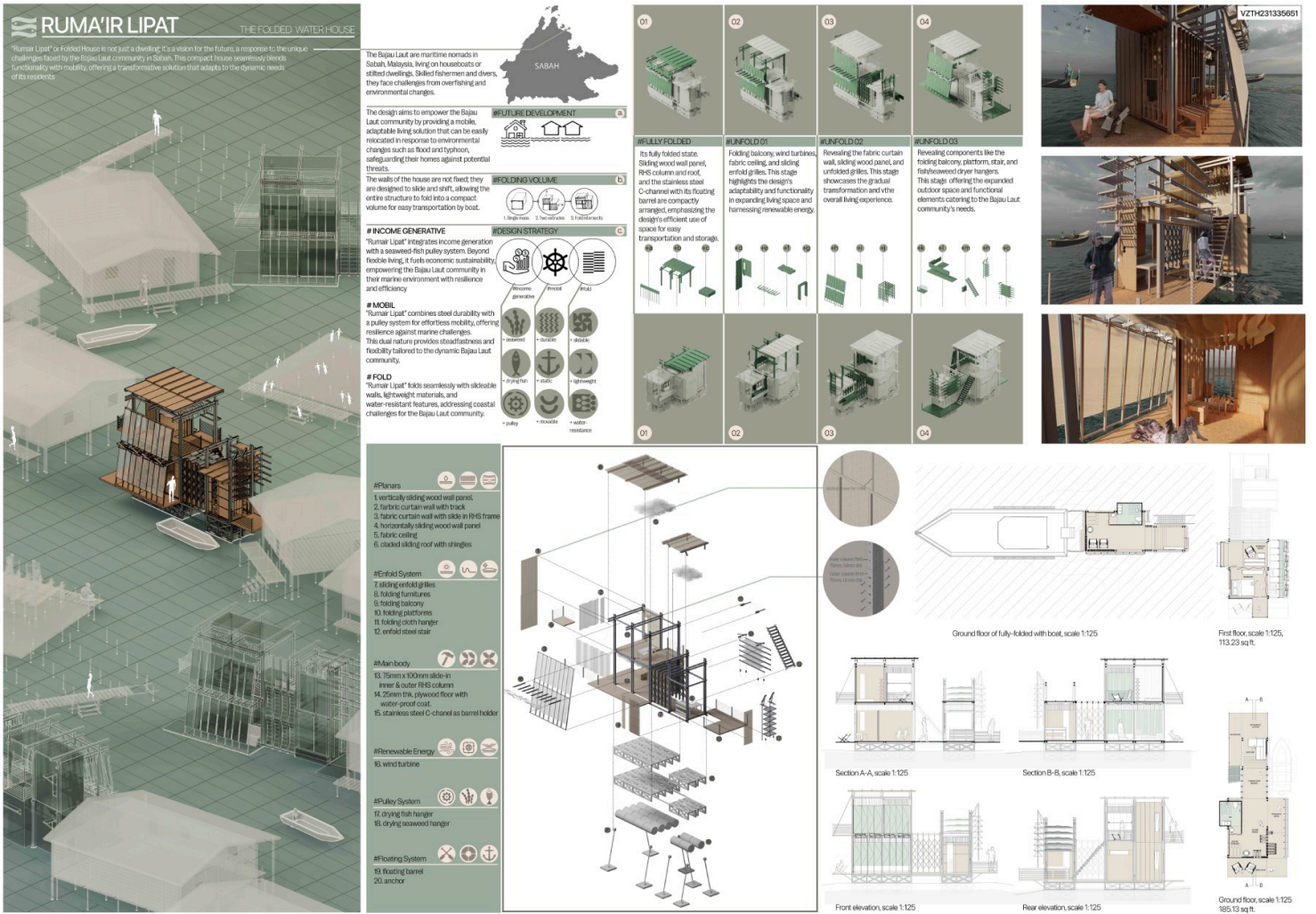
BEDROOM MODULE
6. Mattress
7. Bed
8. Washing machine
9. Cup's basket

WORK MODULE
10. Bathroom
11. Desk for homework
12. Sports equipment

LIVING MODULE
13. Sofa and cushions
14. Sofa
15. Book shelf
16. Video projector
17. Bicycle

Honourable Mention 2 - RUMA'IR LIPAT

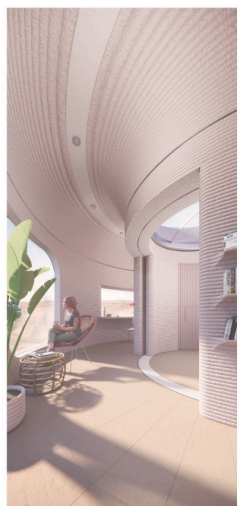
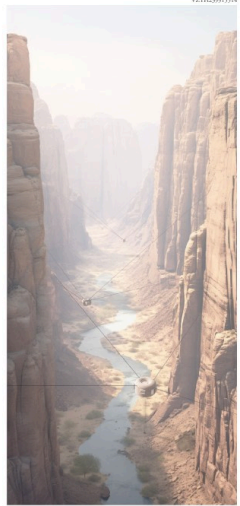
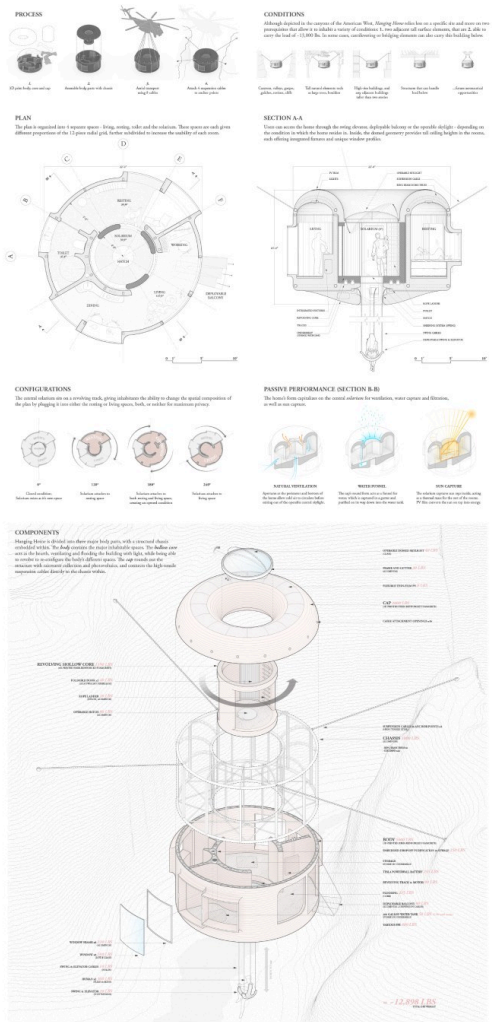
Shahrulqmal Shahrulzamri, Muhamad Lukman Bin Isma'il and Mohd Hazriq Aiman Bin Hazahar



Honourable Mention 3 - HANGING HOME

Gary Polk

United States



Honourable Mention 4 - CASOCA

Henrique Trapaga Goncalves, Leonardo Fernandes Lourenco and Carolina Rodrigues Serafim

Brazil

CASOCA

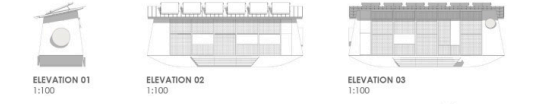
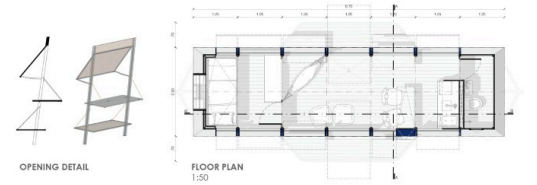
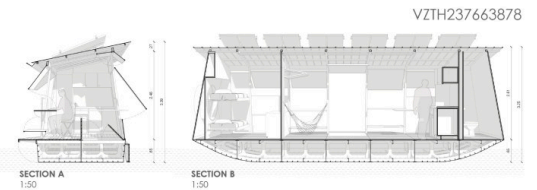
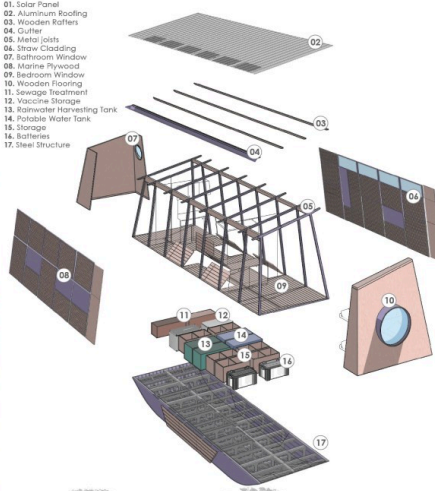
and multifunctional spaces for work and leisure, secure vaccine storage, and comfortable accommodations. For autonomy in remote areas, we have incorporated renewable energy solutions, such as solar panels and rainwater harvesting. Transportation will be carried out by a motorized canoe, ensuring the necessary mobility for indigenous people to move the residence and serve as the means of transportation to hard-to-reach areas.

Using sustainable materials and eco-efficient construction techniques, we aim to minimize environmental impact and preserve the integrity of the local ecosystem. Our project reflects a commitment to innovation and sustainability. By providing a practical solution for healthcare delivery in remote communities, we aspire to enhance the health of the most distant populations.

The modular and versatile design of the house allows for placement in different aquatic environments, providing flexibility to address similar challenges in other regions. The interior has been optimized with flexible



EXPLODED AXONOMETRIC



Honourable Mention 5 - MISTY DUNE DRIFTER

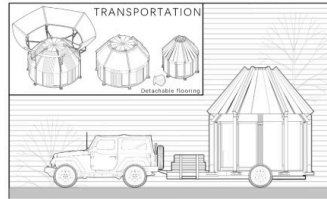
Jingyi Gao, Xinyuan Kong and Junjie Lu

China

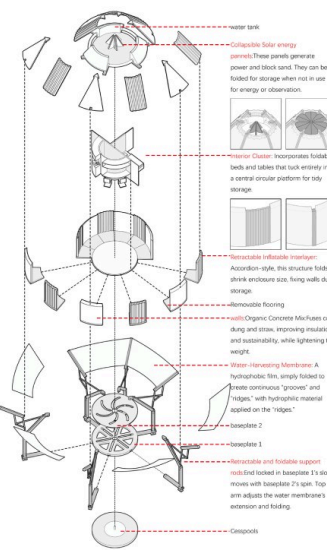


MISTY DUNE DRIFTER

How to have a portable, self-sustaining small home in the desert, maybe this design can provide a possible solution. It is well known that deserts are characterized by long-term drought and little rainfall, with harsh climate. Rangers in the Reserves located in the Namib Desert, for example, are working under such challenging condition. Their duties include patrolling, monitoring wildlife, preventing poaching, and monitoring fire risks. Living in the desert for a long period makes water resources a primary concern. Unlike other deserts, the Namib Desert is influenced by the Benguela Cold Current, leading to thick and stable morning fog. Taking inspiration from the water-collecting structure on the abdomen of the local Namib beetle and its dynamic fog-collecting behavior in the morning, this design proposes a unique mist-catching system. It caters to the frequent need for base transitions in the patrol officers' work, providing them with a sturdy, reliable, and comfortable home in the crucial Namib Desert environment. This concept aims to address the increasingly severe water scarcity problem in the future.



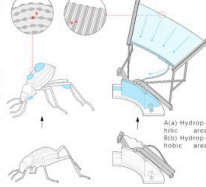
EXPLODED VIEW



FORM TRANSLATION



BIONIC DESIGN

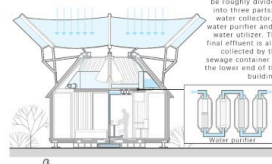


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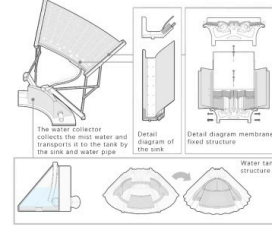
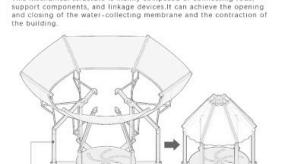
The building's water collecting system emulates the dynamic water-harvesting behavior and functional microstructure of the Namib Desert Beetle's carapace. The beetle's shell features hydrophilic bumps and hydrophobic troughs that work in tandem to capture and channel moisture from the fog.

The dwelling merges two African styles: the Casa Impulvium and the Himba hut. The Himba hut's circular plan and conical roof offer stability against wind and sand for the main structure. The upper fog-harvesting part follows the Casa Impulvium concept, using a funnel-shaped surface to efficiently collect water.

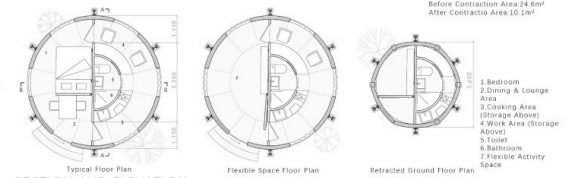
WATER SYSTEM



MECHANICAL STRUCTURE



FLOOR PLAN



SECTION AND ELEVATION



Honourable Mention 6: FRAME HOUSE

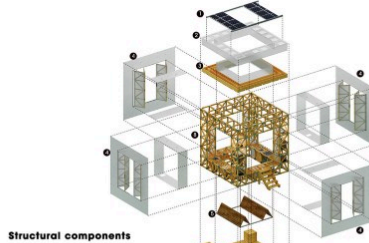
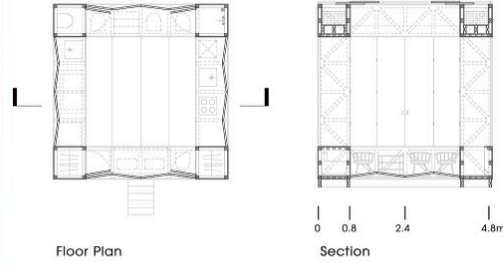
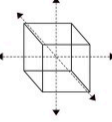
Hung Nguyen and Nguyen Thi To Uyen

Vietnam



FRAME HOUSE

Nestled in the forest, FRAME HOUSE is a vision of simplicity and sustainability. The cube frame concept is a minimal intervention but can fully interact with the surrounding nature on all 6 directions. The design is basically made of wooden beams and columns, the most basic structural elements of architecture, coated with semi-transparent polycarbonate facade. The beams, columns are hollow and thicker than normal to contain furniture, bathroom, kitchen, chairs, tables, sofa-bed, pethouse, etc. It marks a shift from "XL beams, columns" to "XS rooms", redefining the conventional use of structural components. The big void in the middle of the house offers dynamic flexibility that allows all functional transformation. It can be fully enclosed or open thanks to large folding doors, folding floor and sliding solar roof. FRAME HOUSE fosters an intimate connection with nature, utilizing sliding solar panels, rainwater collectors for an eco-conscious living space.



Structural components

- 1.Sliding solar panels
- 2.Rainwater collector
- 3.Trays for Hydraulic and Electric pipes
- 4.Exterior polycarbonat facade and folding door
- 5.Folding wood floor (Open to transform into a "grass floor" below)
- 6.Perimeter wood floor
- 7.Foundation
- 8.Main wood frame system

Furniture distribution



A space for yoga or meditation in the full embrace of nature (6 sides open)

An inner courtyard for gathering (6 sides open)

Living room dining room transformation (Roof panels and folding floor are closed)

Bedroom transformation (6 sides closed)



Honourable Mention 7 - FOLD : SCAPE SHELTERS

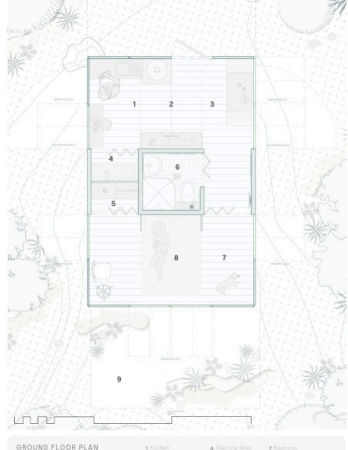
Mariana Arias De Fex and Tomas Zuluaga Arango

Canada

WHAT DOES THE FUTURE HOLD?

Disaster-prone cities, rapidly reduced air pollution, and constant high-rise construction are a challenge for the future of housing. The design team has created a solution in the form of a portable, foldable shelter that can be deployed in minutes. The shelter is designed to be a temporary solution for people who are displaced by natural disasters, such as hurricanes, earthquakes, and wildfires. The key focus of the design is to create a shelter that is easy to transport, set up, and use, and that can be used in a variety of environments.

The shelter is made of a lightweight, durable material that is resistant to fire, water, and wind. It is designed to be a temporary solution for people who are displaced by natural disasters, such as hurricanes, earthquakes, and wildfires. The key focus of the design is to create a shelter that is easy to transport, set up, and use, and that can be used in a variety of environments.

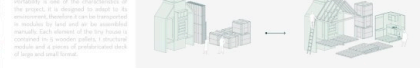


GROUND FLOOR PLAN

TRANSPORTATION



ASSEMBLY



OPEN FLOOR PLAN

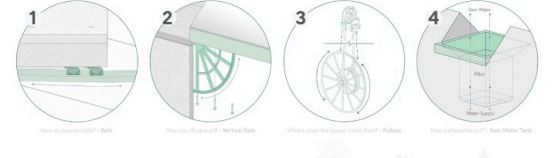


SECTIONS



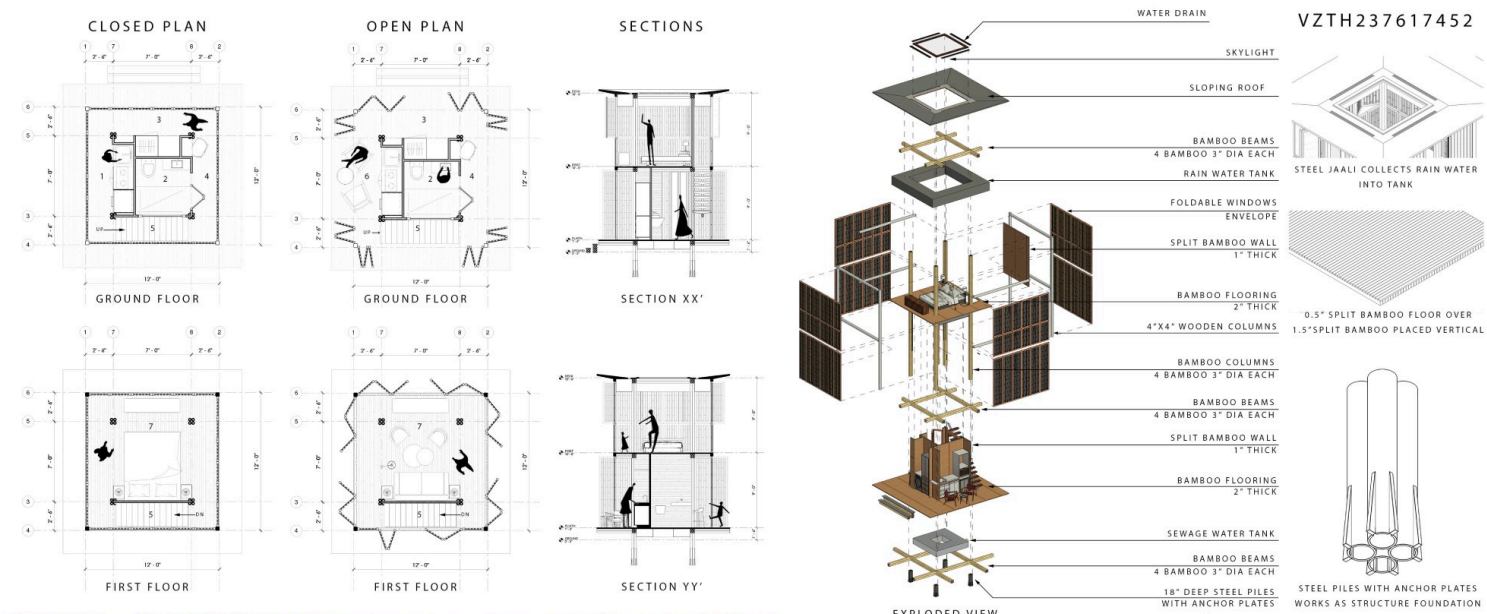
FOLD - SCAPE SHELTERS

"A house is a machine for living in" - Le Corbusier



Honourable Mention 8 - RINGAL : A BAMBOO STRUCTURE

Aditya Gupta
India



Honourable Mention 9 - Rhytidome Lodge

Kevin Hong and John Chan

Canada

Rhytidome Lodge

Portable Forest Outpost

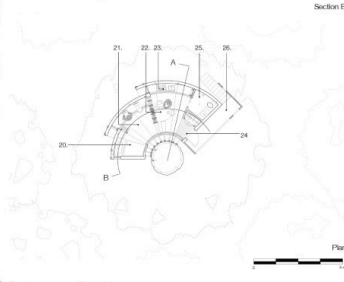
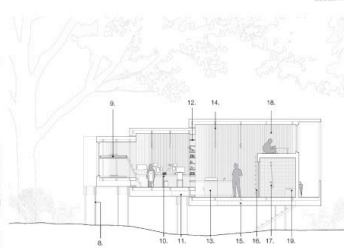
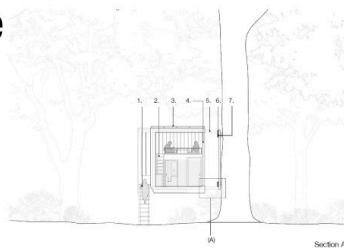
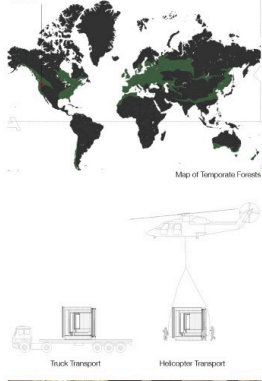
Nestled harmoniously within a temperate old-growth forest, this outpost explores the synergy between structure and nature. The design utilizes trees as primary structural elements, creating a symbiotic relationship between architecture and ecosystem. Intended as a home for ecological researchers or nature explorers on long-term expeditions, the Rhytidome Lodge (as its name implies) brings its occupants into an intimate connection with their host tree.

The structure's key feature is its collapsible design. Attached to the tree with non-invasive structures, the building unfolds in three nested segments, facilitating portability without compromising its inhabitable space. The outpost immerses the researchers in nature by strategically directing attention to the surrounding flora. However, it also serves as a refuge in the wilderness, isolating occupants from the broader context to forge a more intimate connection with a single tree.

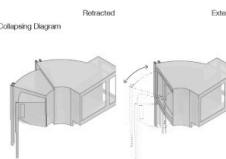
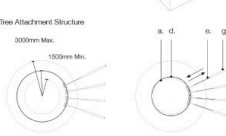
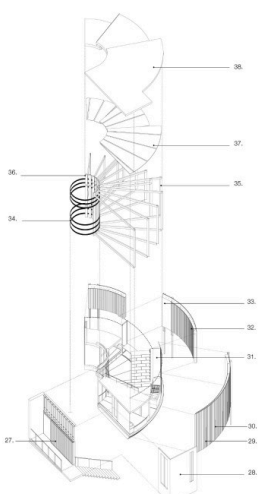
The design explores how a portable structure can become a transformative space where research, contemplation, and communion with nature. In this act of reconnection, the researcher is envisioned as a guardian, committed to protecting the tree, and in return, the forest provides shelter, fostering a bond that adds a deeper appreciation to an ecological expedition.

Floor Area: 207 sqft

Old Growth Ridge, OR, USA

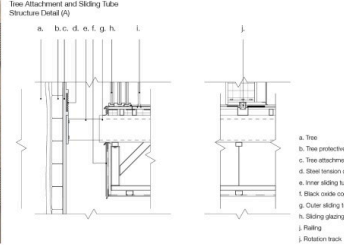
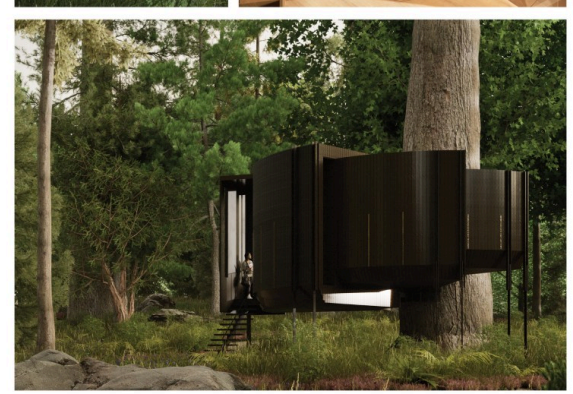


Exploded Axo



Un-foldd / Foldd

- 1. Retractable stairs
- 2. Fixed ladder
- 3. Side panels
- 4. Sliding glazing
- 5. Sealer
- 6. Attachment structure
- 7. Sensor area
- 8. Retractable structural piles
- 9. Sleeping bunk beds
- 10. Fixed desk
- 11. Power battery
- 12. Open shelving
- 13. Kitchen
- 14. Water tank
- 15. Pendant lights
- 16. Shower head
- 17. Shower locker
- 18. Covered multi-purpose space
- 19. Composting stack
- 20. Sleeping area
- 21. Work area
- 22. Fold-up table/life space
- 23. Cooking area
- 24. Mainroom
- 25. Shower/headroom
- 26. Entry balcony
- 27. Black oxidized copper lining
- 28. Black oxidized copper panel
- 29. Black oxidized copper cladding
- 30. Electric copper accent cladding
- 31. Glazing
- 32. Slit wood interior finish
- 33. Zinc cladding
- 34. Sensor cable
- 35. Structural steel
- 36. Tree attachment structure
- 37. Wood panel with steel gaps
- 38. Floor assembly



Honourable Mention 10 - The Perks

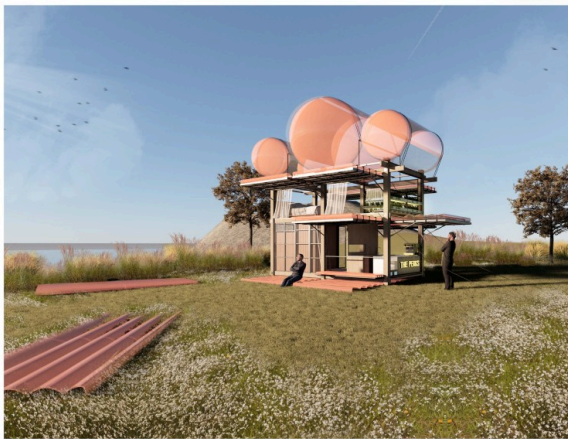
Kelven Tian Zi Hao

Malaysia

THE PERKS



THE PERKS



Issue Encountered

In Asia, the older generation will care for the next generation in their own way, especially future plans or life plans for the next generation. This traditional approach is characterized by a belief in life unfolding in distinct stages with each age carrying specific responsibilities, such as the societal readiness to engage in matrimony before reaching the age of 30. However, this well-intentioned guidance often results in the next generation experiencing a stress-laden environment, as they find themselves living under the predetermined plans of their elders. Consequently, the reality emerges that many Asians may not fully embrace the aesthetic and appreciable nature of life, remaining confined to the scripted paths laid out by others.

Why?

Why Asian has to be live their own life under the planned lifestyle? Any possible to live without caring the stereotype of 'each age carrying specific responsibilities'? We live here, cherish the moment.

Design Concept / Vision

The concept for 'The Perks' arose from the desire of a couple to break away from the conventional Asian living lifestyle. The overarching idea revolves around creating a lightweight and transparent structure that defies traditional boundaries and stereotypes. The house is envisioned as a versatile space that transcends geographical limits, allowing it to exist in the sky, on land, or even float on the sea yet it escapes from restrictions.

At its core, 'The Perks' is not just a home but also a Coffee & Bakery Shop, seamlessly blending the couple's diverse passions and lifestyles. The users, a couple with a specific goal, seek to explore the world while avoiding the stereotypical Asian expectations of settling down and conforming to societal norms.

TINY HOUSE MODE



01 Normal Mode
The Normal Mode of 'The Perks' is on land on ground. A tiny house of capsules and a small coffee kiosk serving the community.



01 - WATER MODE
The PVC Capsules underneath being used to float 'The Perks' and ropes to settle down.



03 - FLOAT MODE
The Sphere PVC Capsules provide the floating ability to 'The Perks'.

PLAN LAYOUT SCALE 1:100



Private Mode - Ground Floor Layout / 12.50 sqm



Private Mode - First Floor Layout / 8.00 sqm



Open Mode/Business Mode - Ground Floor Layout / 12.50 sqm

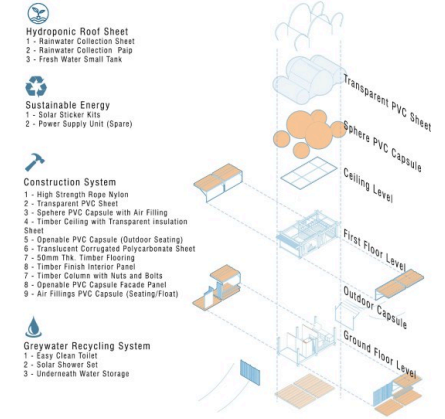


Open Mode/Business Mode - First Floor Layout / 8.00 sqm

Section X-X (Private Mode)

Section Y-Y (Section Mode)

EXPLODED AXONOMETRIC



Operation Mode



Gathering Mode
All the PVC Facade Capsule could be used as a seating bench, flexible and easy to modify.



Business Mode
The transparent design fosters a connection with the surroundings, creating an inviting and open atmosphere for customers to engage with the bakery.



Private Mode
Escape from the hectic life, enjoy the moment in the own space without any restrictions.