



## 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).

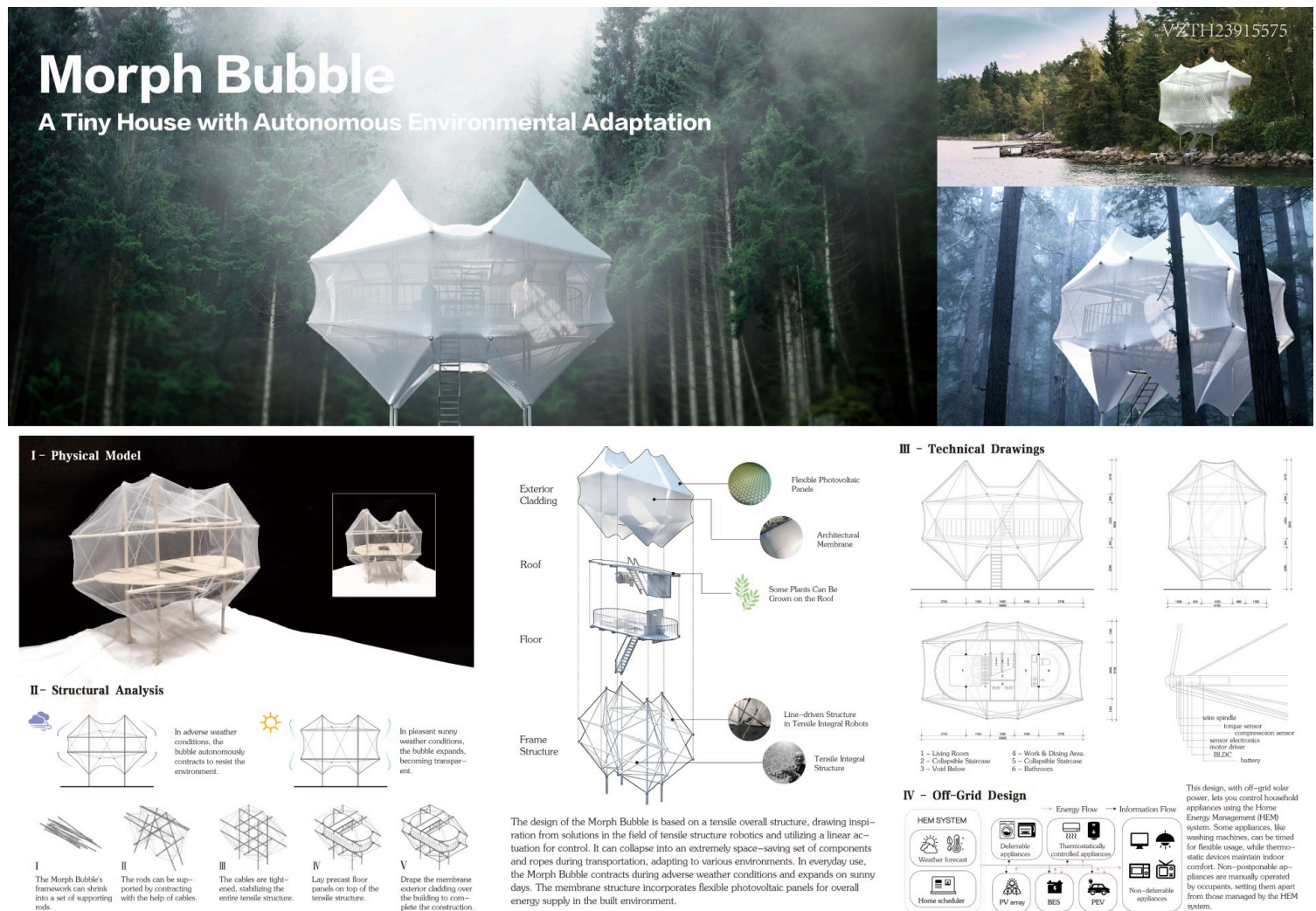
The top three winners and Best Student were awarded total prize money of \$4,500 while ten entries received Honorable Mentions. Here are the winning entries. The full result for the competition the **Tiny House 2023 Architecture Competition** can be found [here](#).

## FIRST PLACE

### Morph Bubble

Ruisi Sun and Jinyu Lu

China



### Morph Bubble: A Tiny House with Autonomous Environmental Adaption

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

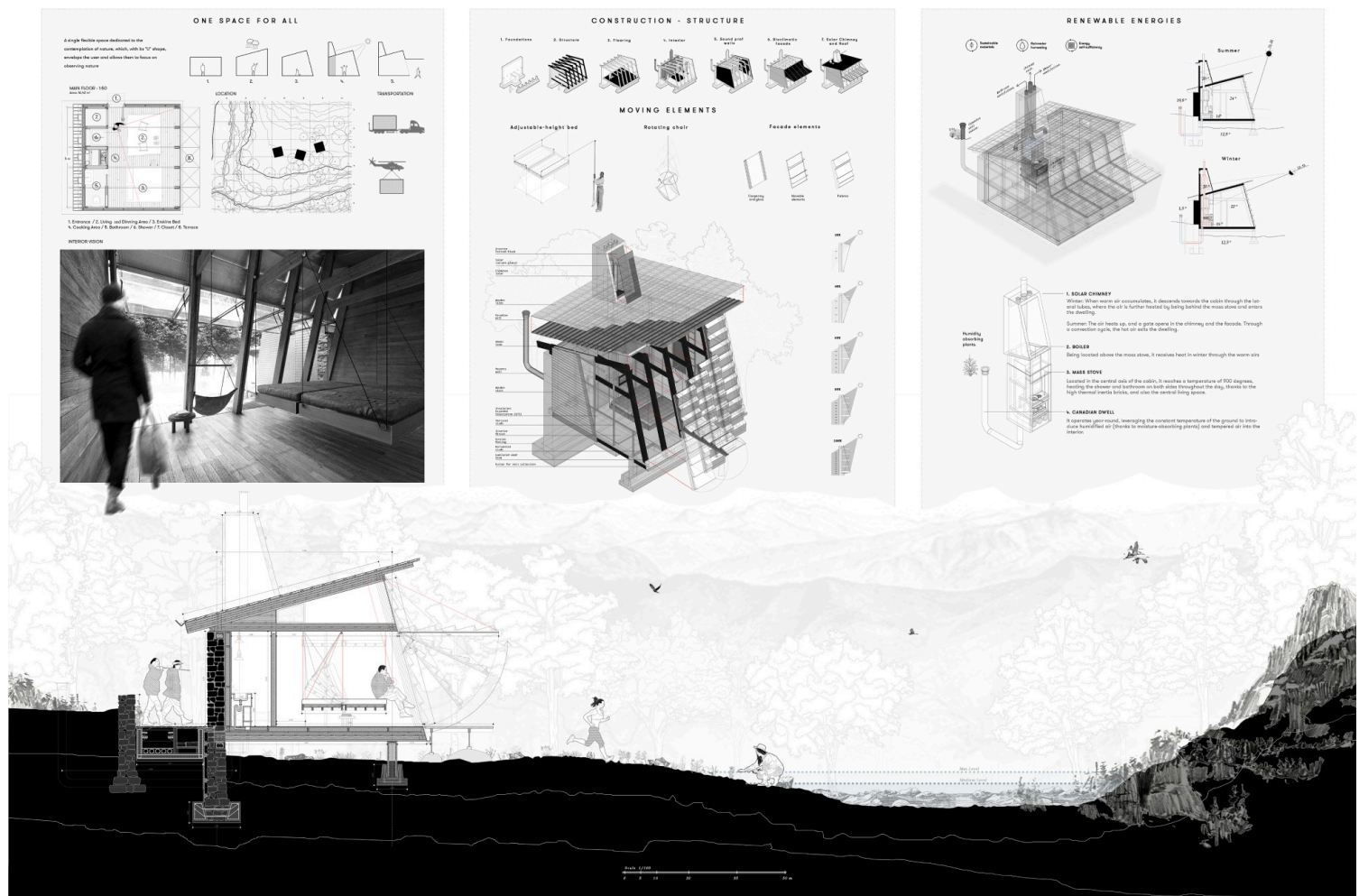
### Contemplation Spaces

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

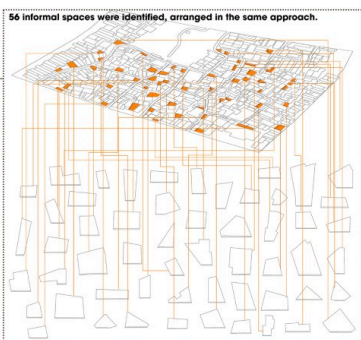
Vietnam

#### 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.

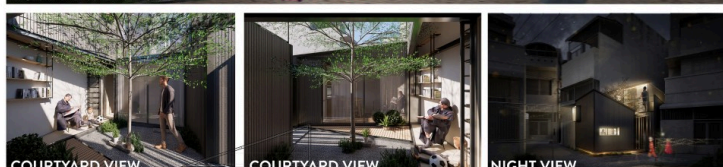
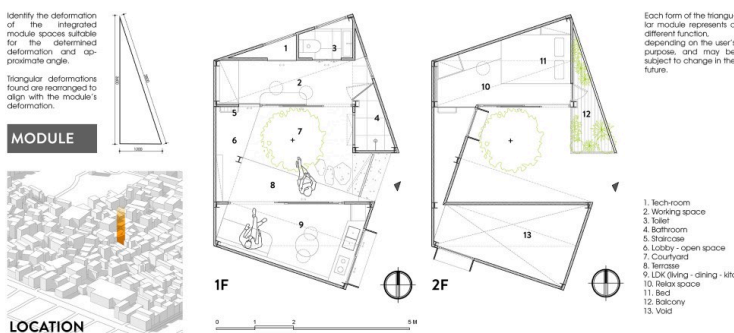
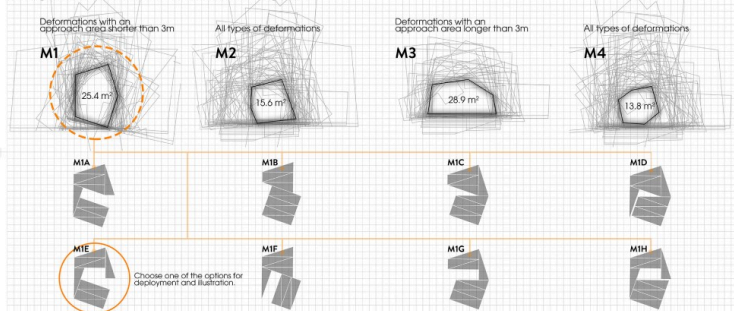


Informal spaces are those not planned or regulated by governing authorities, where people engage in various activities for different purposes. Predominantly manifesting in narrow Viet Nam urban alleys, these spaces surreptitiously navigate and engender a network typified. While acknowledging the ecological 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



### 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.

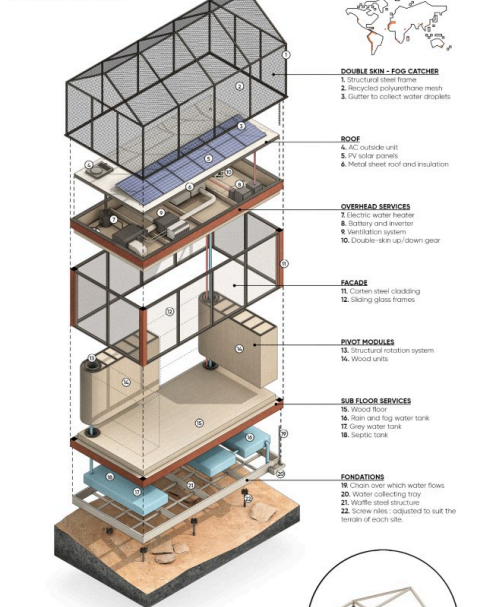
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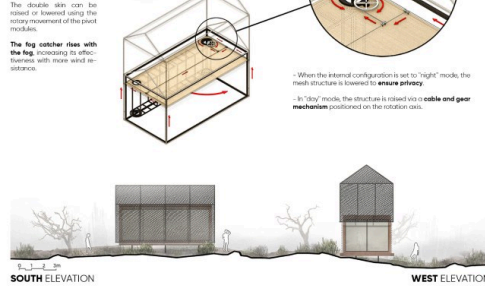


**EXPLODED AXONOMETRIC**

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



**UP/DOWN AXONOMETRIC**



VZTH233190023

**LARGE SECTION / Fog catcher**

Total water storage: 2000 l  
Daily water consumption: 100 l  
Daily water collection: 30-400 l/day

The mesh (2) captures water through condensation of the droplets present in the fog. These droplets then flow into a gutter (3) that is led by a chain (5) to a water tank placed in the sub-floor (16).

**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 levels (1) that provide flexibility by organizing the space into four distinct sequences, offering a variety of combinations. The structural spaces are most neutral, offering generous living areas with different viewpoints, all orchestrated by the path of the sun.

**WOMEN'S KITCHEN**  
**MOVIE ROOM**

**MEALS**  
DINING: Eat in the heat of the day to relax and watch the sunset.  
EVENING: Work or meditate, while you get some views and air.

**FOURNITURE MODULE**

**KITCHEN MODULE**

1. Table & chairs
2. Churn
3. Garbage
4. Storage
5. Fridge

**BEDROOM MODULE**

6. Mattresses
7. Bed
8. Washing machine
9. Cup's basket

**WORK MODULE**

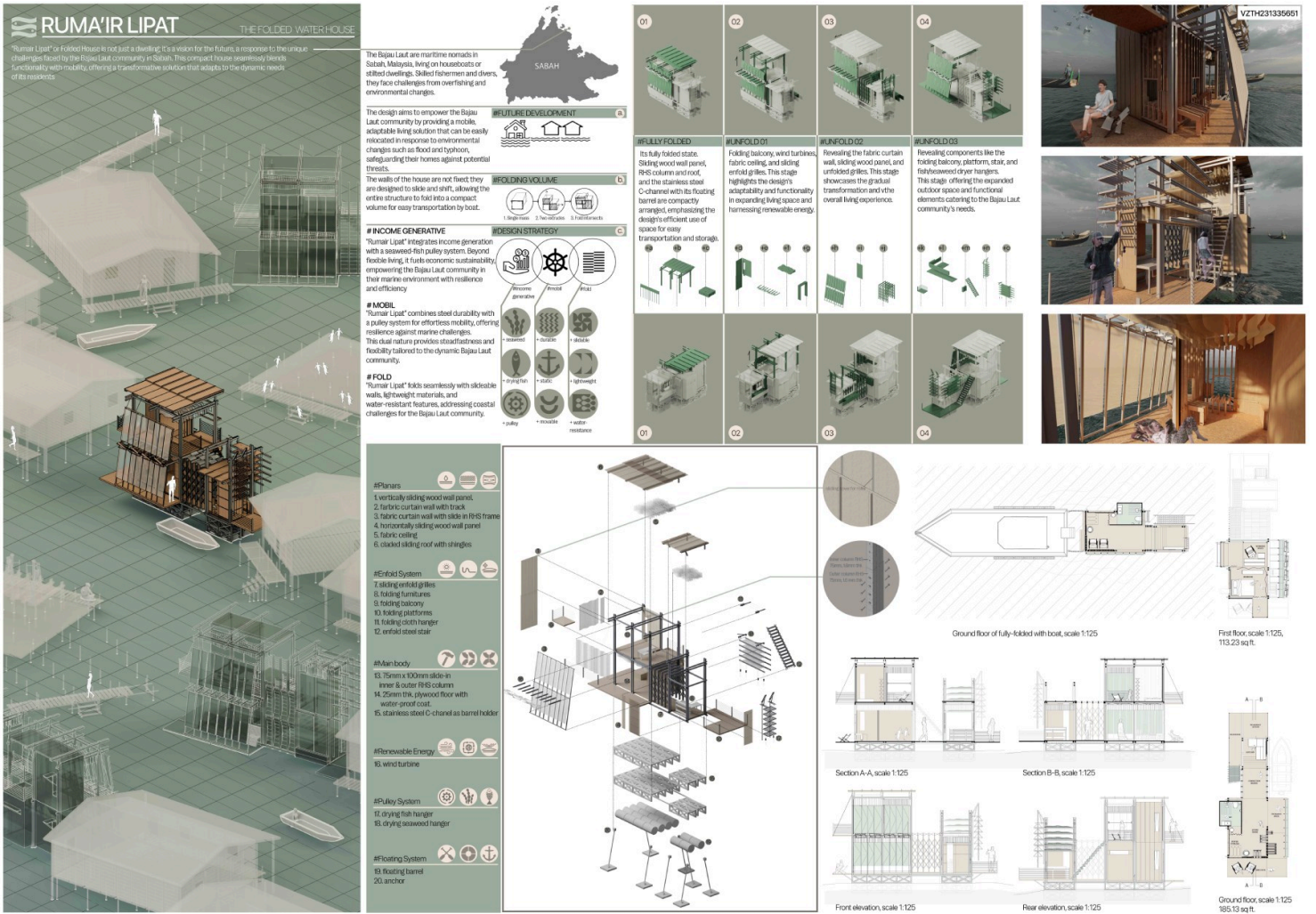
10. Bathroom
11. Desk for homework
12. Sports equipment

**LIVING MODULE**

13. Sofa and armchairs
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

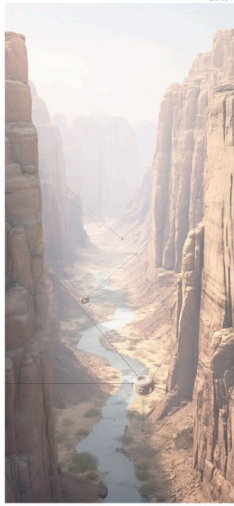
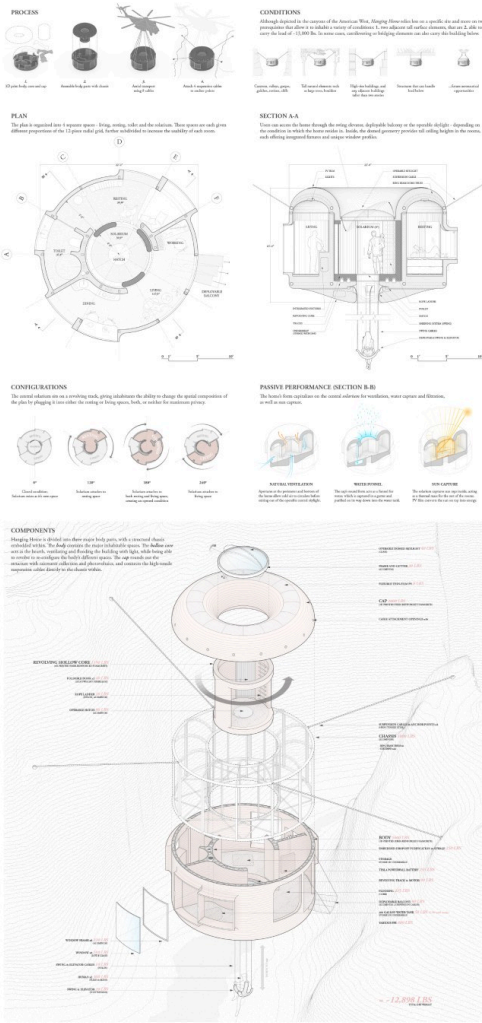
United States



**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 to move the residence and serve as the means of transportation to hard-to-reach areas.

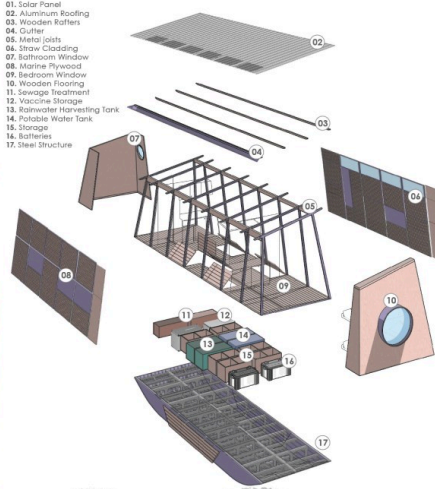
Using sustainable materials and eco-efficient construction techniques, we aim to minimize environmental impact and preserve the integrity of the local ecosystem. Our project reflects a commitment to innovation and sustainability. By providing a practical solution for healthcare delivery in remote communities,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



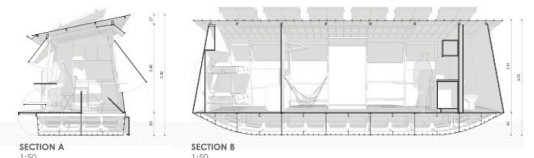
ON ROAD ON THE RIVER  
The modularity has been planned to allow transportation by a trailer on conventional roads.

## EXPLODED AXONOMETRIC



- 01. Solar Panel
- 02. Aluminum Roofing
- 03. Wooden Rafters
- 04. Gutter
- 05. Metal Joists
- 06. Straw Cladding
- 07. Bathroom Window
- 08. Marine Plywood
- 09. Bedroom Window
- 10. Wooden Flooring
- 11. Sewage Treatment
- 12. Vaccine Storage
- 13. Rainwater Harvesting Tank
- 14. Potable Water Tank
- 15. Storage
- 16. Batteries
- 17. Steel Structure

VZTH237663878



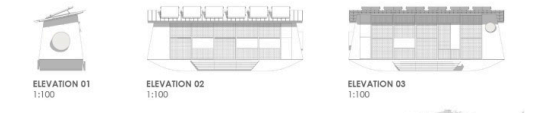
SECTION A  
1:50

SECTION B  
1:50



OPENING DETAIL

FLOOR PLAN  
1:50



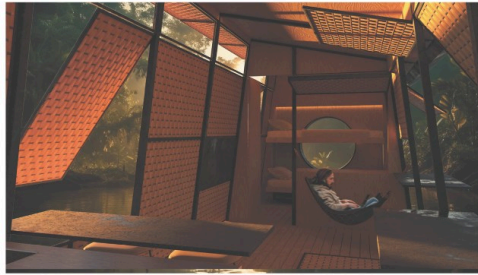
ELEVATION 01  
1:100

ELEVATION 02  
1:100

ELEVATION 03  
1:100



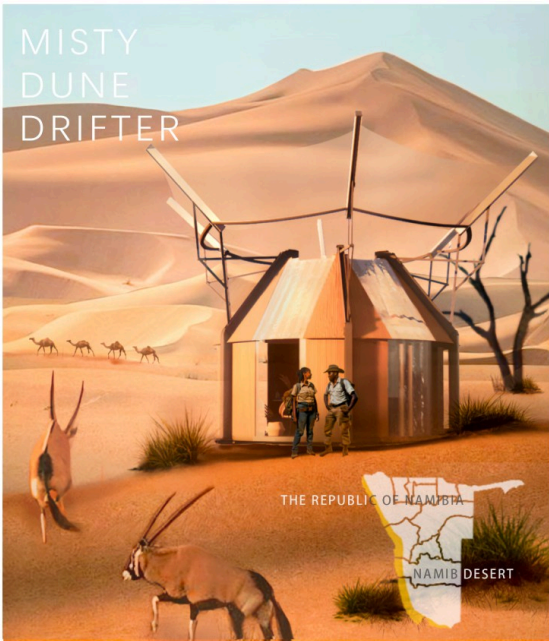
OPENINGS



## Honourable Mention 5 - MISTY DUNE DRIFTER

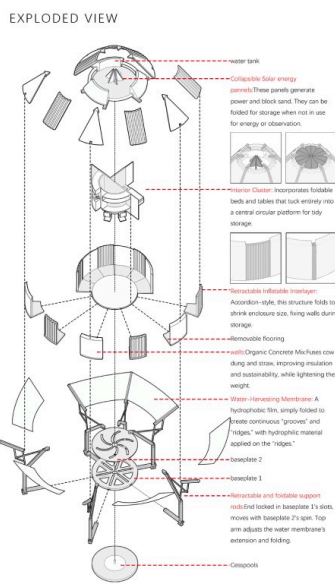
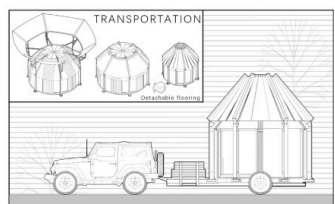
Jingyi Gao, Xinyuan Kong and Junjie Lu

China

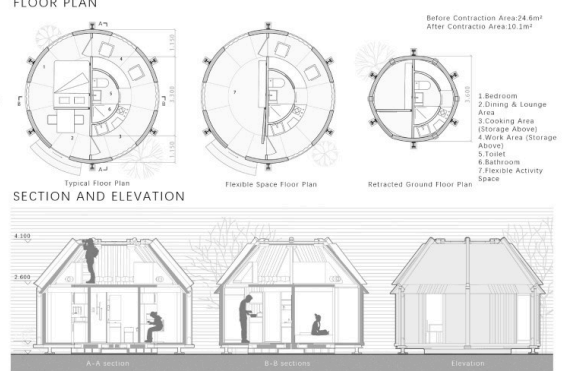
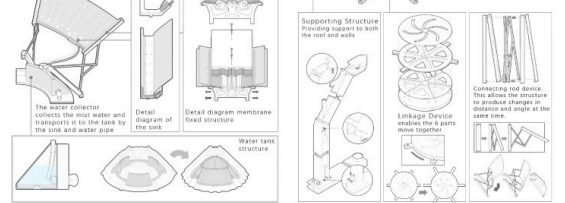
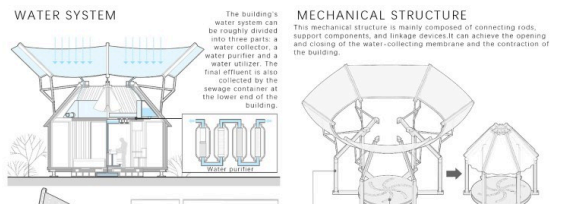
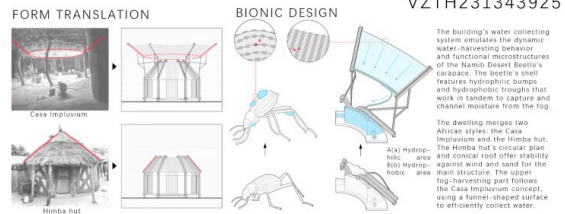


# MISTY DUNE DRIFTER

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.



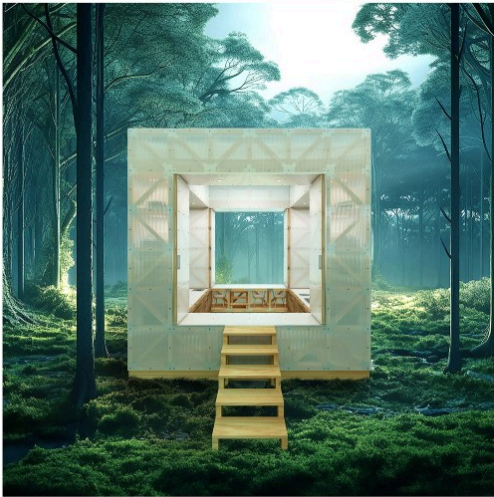
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## Honourable Mention 6: FRAME HOUSE

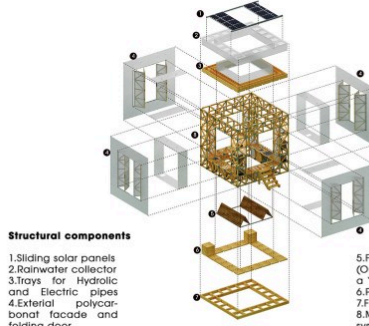
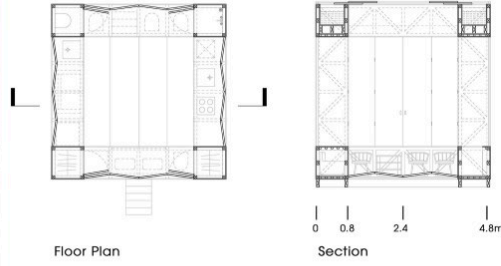
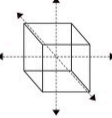
Hung Nguyen and Nguyen Thi To Uyen

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.Exterial 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



Toilet, bathroom in two back columns, and lavabo | Wardrobes in two front columns | Chair, tables, sofa, folding sofa-bed, kitchen, mini stairs, pet house and storages



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

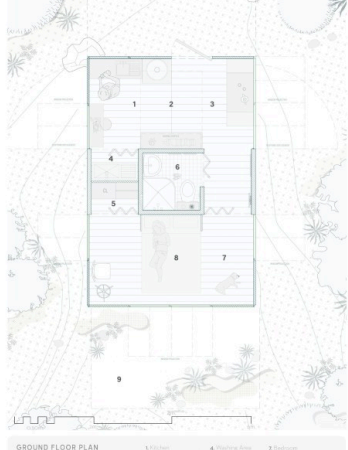
Mariana Arias De Fex and Tomas Zuluaga Arango

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, wind, and water. 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

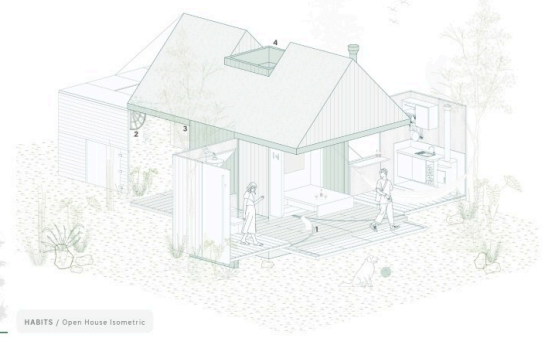
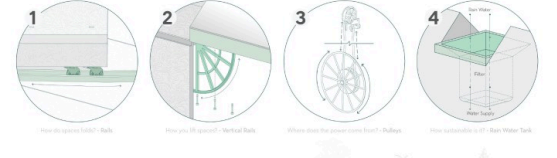


## SECTIONS



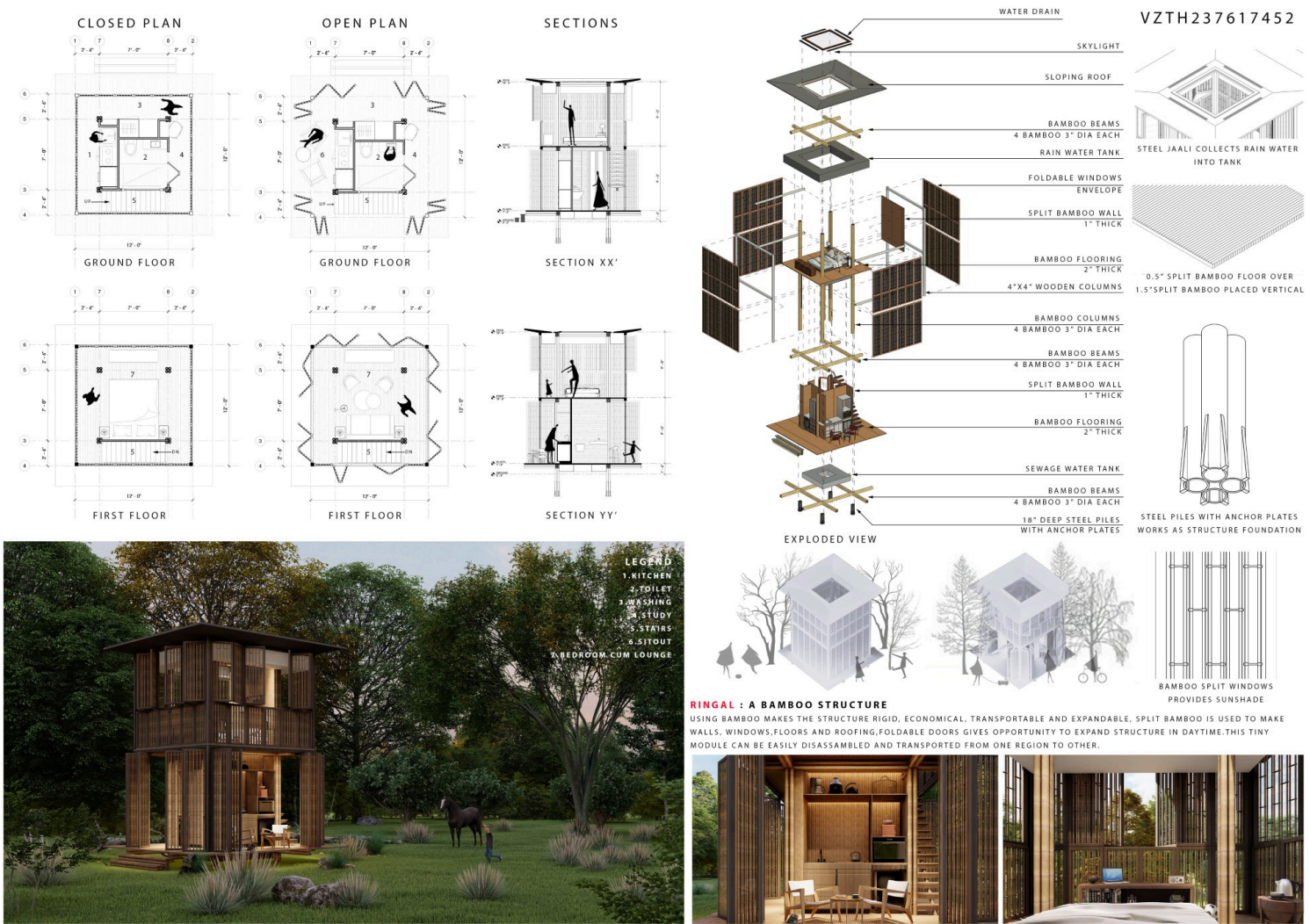
# FOLD - SCAPE SHELTERS

"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

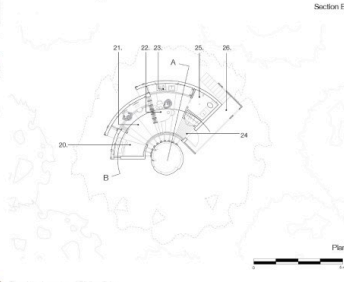
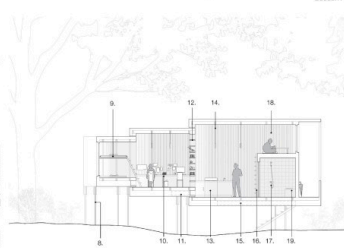
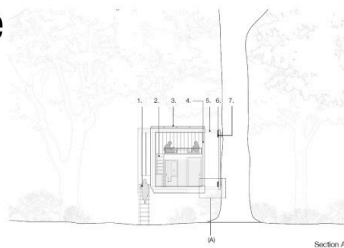
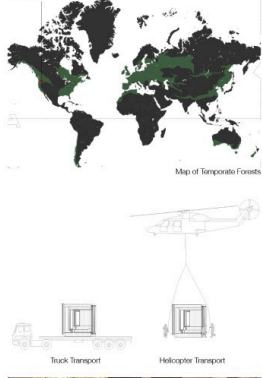
Nestled harmoniously within a temperate old-growth forest, this outpost explores the synergy between structure and nature. The design utilizes trees as primary structural elements, creating a symbiotic relationship between architecture and ecosystem. Intended as a home for ecological researchers or nature 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.

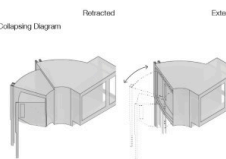
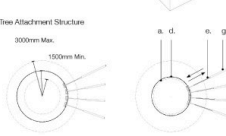
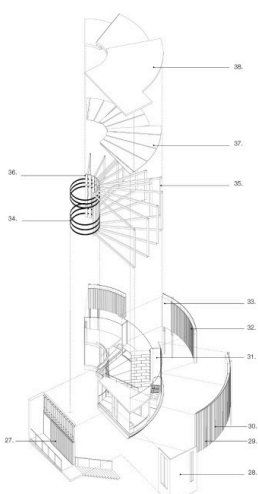
The design explores how a portable structure can become a transformative space where research, contemplation, and communion with nature. In this act of reciprocity, the researcher is envisioned as a guardian, committed to protecting the tree, and in return, the forest provides shelter, fostering a bond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

Floor Area: 207 sqft

Old Growth Ridge, OR, USA

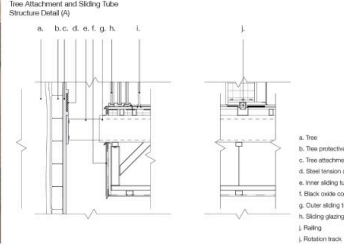
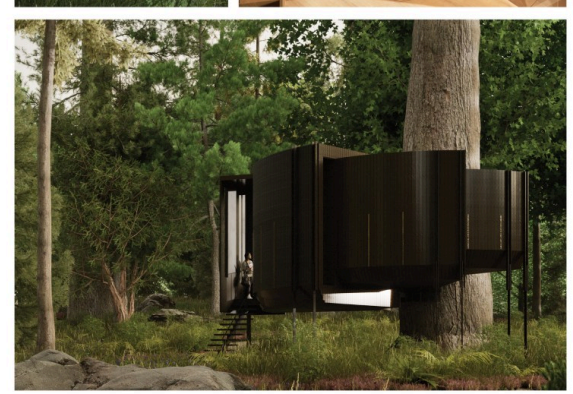


Exploded Axo



Un-foldd / Foldd

- 1. Retractable stairs
- 2. Fixed ladder
- 3. Side panels
- 4. Sliding glazing
- 5. Seams
- 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 dock
- 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

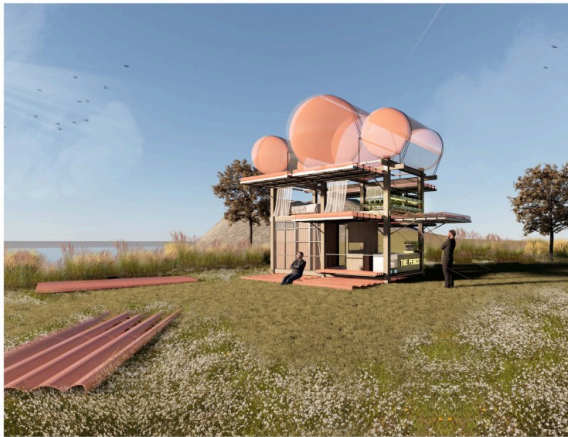
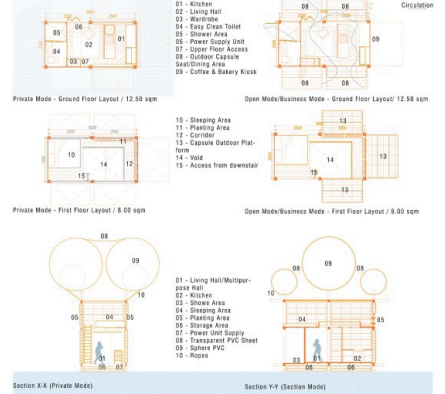
The concept for 'The Perks' arose from the desire of a couple to break away from the conventional Asian living lifestyle. The overarching idea revolves around creating a lightweight and transparent structure that defies traditional boundaries and stereotypes. The house is envisioned as a versatile space 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 dynamic spirit, seek to explore the world while avoiding the stereotypical Asian expectations of settling down and conforming to societal norms.

## TINY HOUSE MODE



## PLAN LAYOUT SCALE 1:100



## Operation Mode



## EXPLODED AXONOMETRIC

