SIAT
SOCIETÀ DEGLI INGEGNERI E DEGLI ARCHITETTI IN TORINO
FONDATA NEL 1866

A&RT

FINAL RANKING

SIAT_YOUNG_2018	40551708Z8	1st, ex aequo award 1.250,00 euro	Francesca TURNATURI, Valeria COMAZZI, Fabio VIGNOLO, Elena RUDIERO	TORINO
SIAT_YOUNG_2018	04350113U5	1st, ex aequo award 1.250,00 euro	Andrea CAPPELLARO, Stefano CLERICI	MENDRISIO
SIAT_YOUNG_2018	52370816C4	3rd, award 800,00 euro	Jassmin ALI, Chiara CESAREO, Chiara GERINI	GENOVA
SIAT_YOUNG_2018	51301811R7	4th, mention	Ivan ZITO, Antonio Filippo TANDOI, Maria Sofia GUARENTE	ROMA
SIAT_YOUNG_2018	23541710G5	5th	Francesco ROSA BRUSIN	TORINO
SIAT_YOUNG_2018	05591818A8	6th	Concetta TAVOLETTA, Fabio BARATTO, Antonio SORECA, Gianmaria RADICE, Kun PENG, Rosalia MEZZACAPO	AVERSA (CE)
SIAT_YOUNG_2018	22273018U5	7th	Alba PIZZORNI, Maria PIZZORNI	AVIGLIANA (TO)
SIAT_YOUNG_2018	58222114S4	8th	Leonardo CANFAILLA, Giulio GALASSO, Loris Luigi PERILLO, Silvio LUSSANA	NEGRAR (VR)
SIAT_YOUNG_2018	18022817G5	9th	Diana ALEKSOVA, Petya IVANOVA	BERLIN
SIAT_YOUNG_2018	0649141506	10th	Laura ROMANO', Sara FARZI	MILANO
SIAT_YOUNG_2018	3845261008	11th	Onur DEMIR	TORINO

Torino, 19.10.2018

SIAT_YOUNG_2018

custom code **40551708Z8**

1st ex aequo award

Francesca TURNATURI, Valeria COMAZZI, Fabio VIGNOLO, Elena RUDIERO

TORINO

WRITTEN ACCOUNT

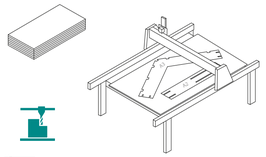
To Inform, to Communicate, to Share and to Participate, to Host and to Learn, one from the other: think about a message and bring people to meditate on.
It is the sequence of actions that we imagine for our project. Not a physical space, not a building but a process which to be mostly shared and which will prove to be successfully.
This reason why we chose to develop our idea in the middle of urban historical territory of Turin city, in the center of urban life, where inhabitants and turists crowd streets during all day.
Engagement of civil society (district inhabitants, students associations) starts first with the realization of the "infrastructure" where the tiny shelters are developed. It is a coloured overground area, which identifies and characterize project's external space and it will remain after disassemble for future reference.

Main aspect of our proposal is the constructive system, based on prefabrication of constituent elements of single dwellings: very dry technology made by elements of plywood link together by simple joints without screws and nails. This method aims to maximize the manufacturing cost reduction and it permits to be assembled by hosts. The idea is to purpose a cycle with generated additional social engagement and, as a consequence, social enpowerment.
Sandwich-insulated panels cover the structure. They are hook to the building through keystone and throught male-female junctions one to the other. These panels have two functions, the first one is to repare hosts from the cold temperature, the second one is to support the frame structure upwind, giving more stability and solidity to the shelters. Recycled tarpaulins, which as usual cover trucks, are recycled and sewes to form the external cover of the module. Like the famous glamour sack made by the same material, we guess that this idea can be valid and cheap solution, able to add to the material performances also the urban and colorful aspects to the shelters island.
All the structure components (including tarpauling which covers and protects from the atmospheric agents), are packed and transported into specifically defined wooden boxes able to be, as assembled structures, changed into temporary street furnitures.
The island becomes a SHELTER PATCHWORK, a physical space to trigger and mantain a system of social and functional relations according to a linear, simple and incisive scheme. The shelter are oriented to form microspace around a main building. Here there are the public functions: it is social relations space, where people eat, made conversation and exchange ideas, where people play games, read or learn italian language or watch tv. This room, with kitchen module and depot, is located side by side with a distribution corridor that connects common spaces with toilet, first aid room and reception.
The tiny shelters are located after a careful analysis of the project area, in the area with greatest solar exposition to guarantee the best comfort to the people.

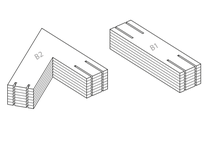
SYSTEMIC DESIGN APPROACH

Social inclusion, social empowerment are our project's key-words.

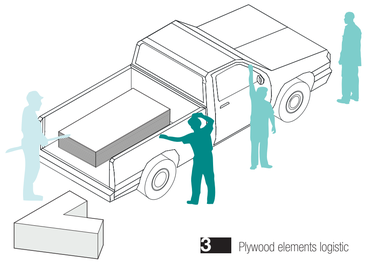
Direct partecipation means to include our guests in the design and construction phases, in order to create a deep sense of communty and delete the distance between designers, citizens and final users.
The nature of our wood structure gives the possibility to follow all the principles above.
Every people can easily assemble their tiny shelter following a smart manual, even without any abilities in construction.



1 Digital fabrication - CNC machine

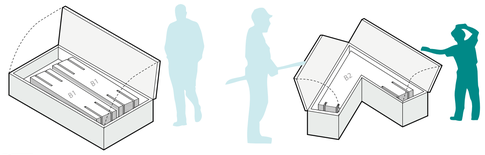


2 Modular standard plywood elements

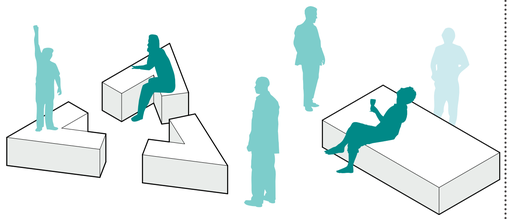


Plywood elements are optimized for trasportations and logistics. Easy to be moved, all the boxes contain components and are part of the design proposal: after their use as a containers, they become part of the street forniture for guests, citizens and tourists, in order to improve social engagement.

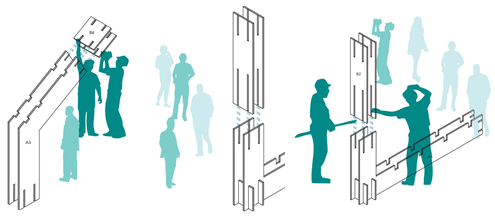
3 Plywood elements logistic



4 Plywood boxes before construction phases



5 Plywood boxes after construction phases as street furniture

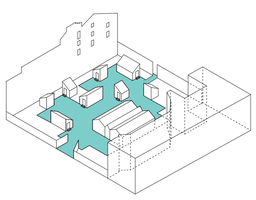


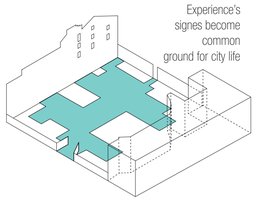
6 Social engagement, social empowerment & team building during the construction phases

SOCIAL FOOTPRINT

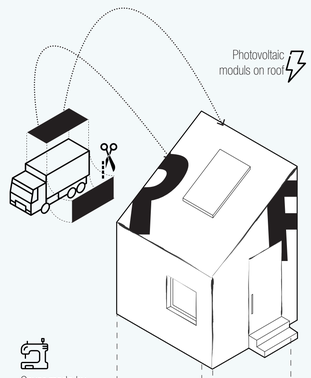
DURING
Street art as engagement tool

AFTER
Experience's signes become common ground for city life

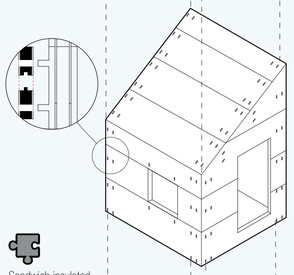




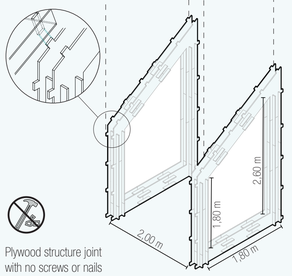
TINY SHELTER



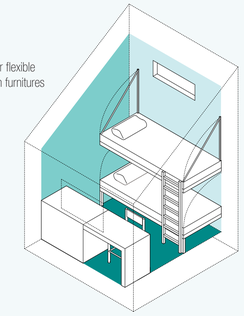
Cover made by recycled truck tarpaulins



Sandwich insulated wooden panels



Plywood structure joint with no screws or nails



Modular flexible wooden furnitures

All the design process is supported by LCA: very cheap construction materials combined with high performances are, at the end, easily recyclables in order to follow circular economy approach. Every tiny shelter contains flexible wooden furnitures to maximize inner space. The choise of a minimal furniture equipment stimulates guests to live outside during the day and socialize throught common spaces.

Urban art sharing experience is an important strategy to envolve citizens and guests to the development of their archipelago. This kind of partecipation create a strong sense of community and social inclusion.

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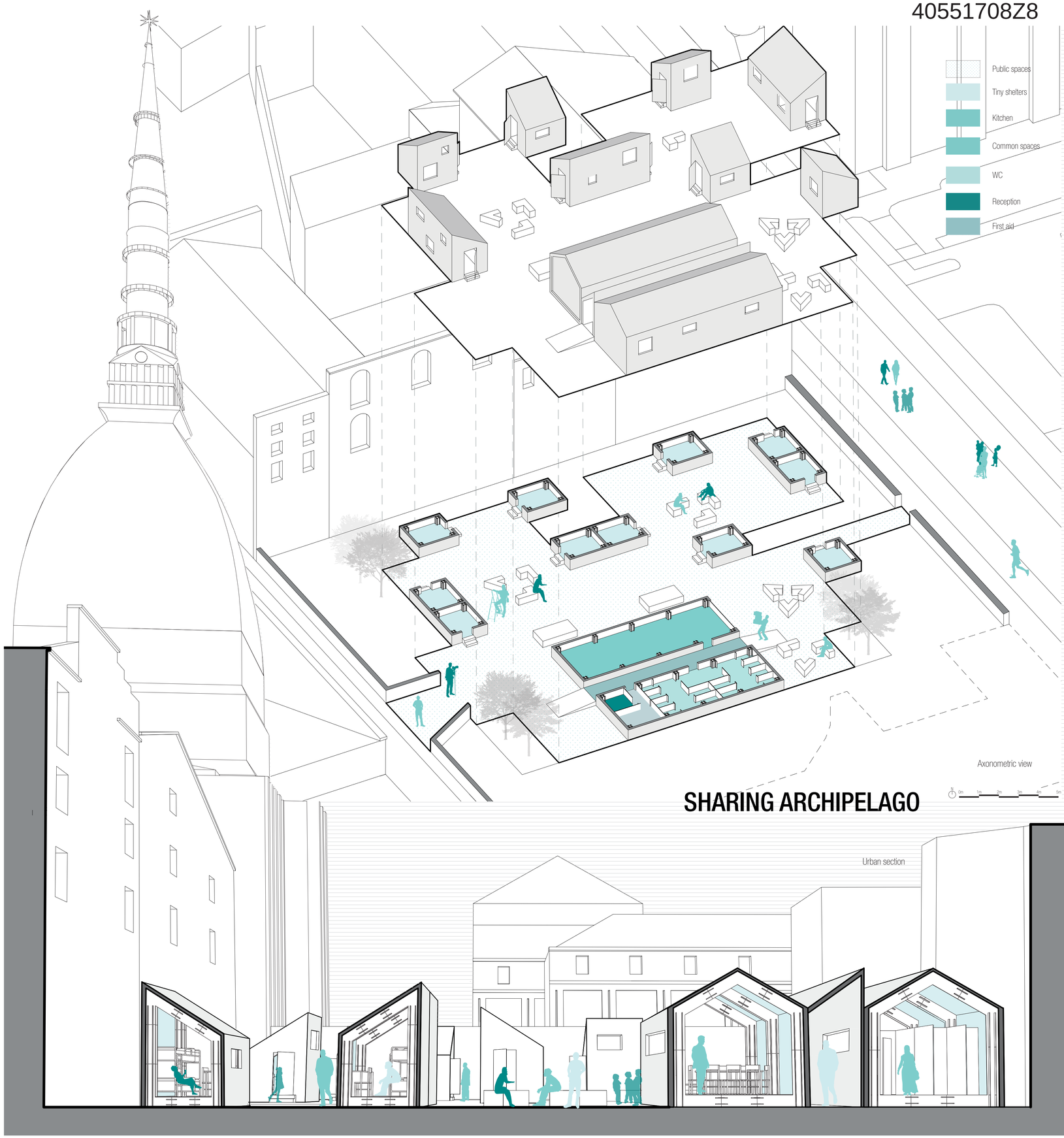


Axonometric view

SHARING ARCHIPELAGO

Urban section

SIAT_YOUNG_2018

custom code **04350113U5**

1st ex aequo award

Andrea CAPPELLARO, Stefano CLERICI MENDRISIO

04350113U5

Air Shelter

The basic module guarantees a closed, pleasant, sheltered space for homeless during the cold winter nights, it can accommodate single or double beds and it's completely free-standing, with all the systems required already installed under the floor panels. It's compact and lightweight, so it can be moved and placed by few people, easy to assemble and extremely functional and flexible, able to adapt to any terrain and requirement. More modules can be joined internally and externally in order to meet the needs of the functions that require more space, such as sanitary assistance, store, refreshment and common rooms.

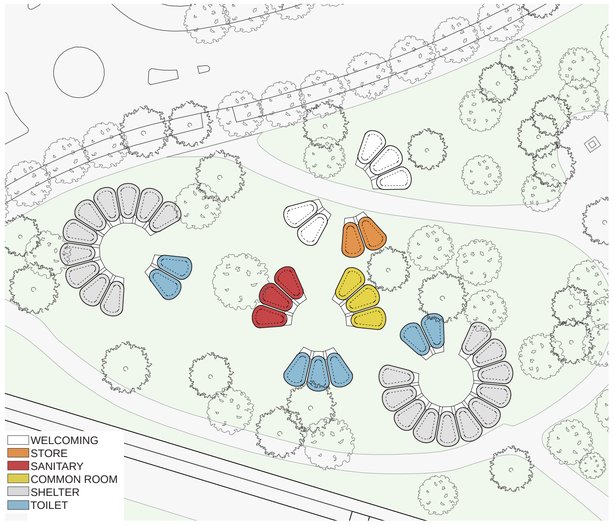
The use of a drop-shaped profile allows you to easily connect the modules and create compact complexes that are developed a sunburst. This geometry ensures considerable spatial comfort, air and lighting; it also creates a geometric center that serves as a square, a meeting point for the community.

The module is essentially composed of two basic elements, a rigid fiberglass shell and an inflatable cover.

The fiberglass shell is composed of two symmetrical hulls, connected by mechanical joints; it creates a teardrop plant of 8 m2, lifted from the ground by adjustable legs, already arranged inside the shell.
In order to stiffen the hulls and make space for storage and technical equipment, structural partitions are placed within them. The height of the shell of 60cm lets you accommodate all the plant that allows it to remain self-sufficient.
The floor is fitted inside the upper perimeter, it is composed of aluminum honeycomb panels with vinyl coating; the division is given by the fiberglass septa and they can be raised and lowered in order to obtain the necessary internal furniture. The elements, once lifted, are supported by foldaway legs that lies on the structural partitions.
Fiberglass is the most appropriate material because it combines lightness, low costs, and resistance to mechanical elements and bad weather.

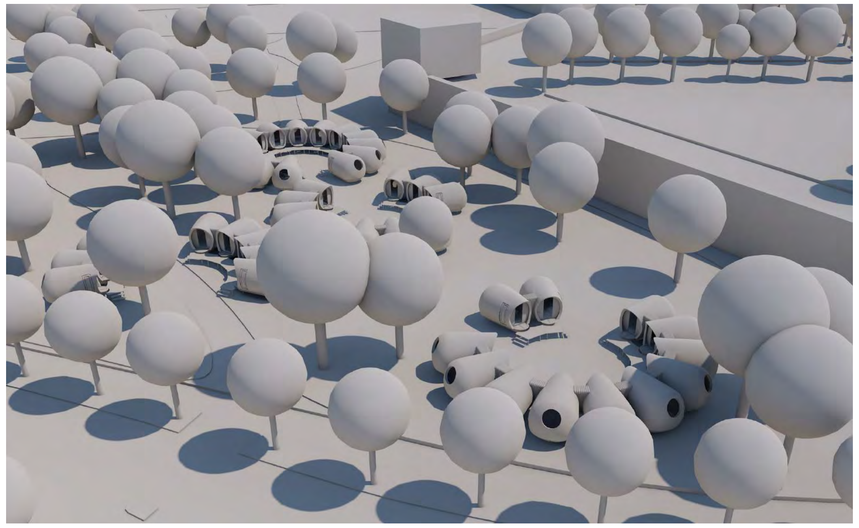
The inflatable cover is anchored to the rigid shell through waterproof zippers, it's composed of two separated air chambers, the external one, 20cm of thickness, acts both as structure and insulation, and the internal one thinner, around 5cm, works as insulation and heating sytem, is connected to an electrical heating pump and inflated with heated air.
The structural chamber consists of two separate chambers one inside the other; the inner one has a ball geometry in which the air is inflated, once inflated, the air is drawn in from the outer chamber. The result is an extremely rigid geometry in which the spheres take on hexagonal shapes and work together. With this vacuum system, an incredible mechanical resistance and durability is guaranteed. A double-layer canvas door is attached to the inflatable structure and gives access to the warm indoor space.

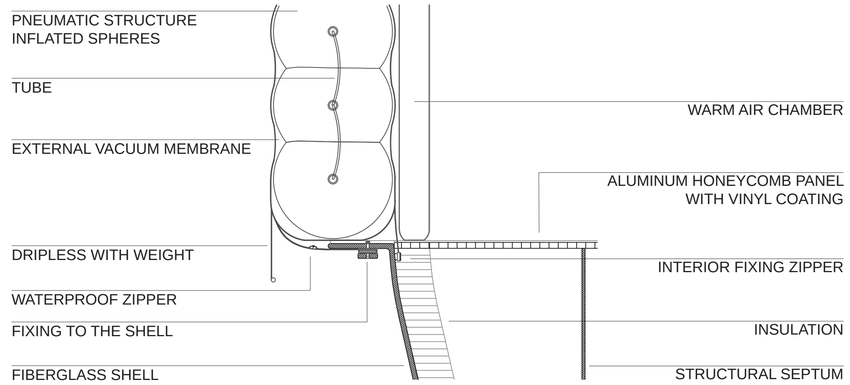
In the design of this unit, particular attention was given to the dimensions, packging, ease of transport and assembly. The entire house, including all its components, is presented as a Kit enclosed within the two hulls. The dimensions and weights are on a human scale, assembly can be done without the use of machinery. The result of these guidelines is a minimal living machine, in which all the elements that compose it interact with each other, completing themselves to form unity.



SITE PLAN 1:500

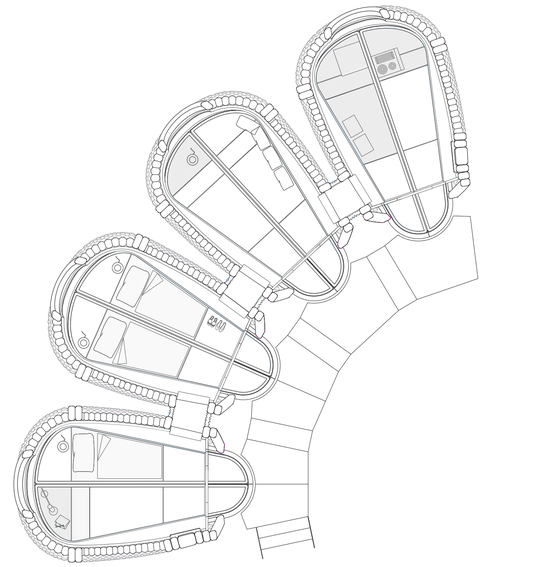
0 5 10 20 30 m

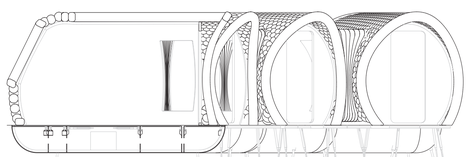


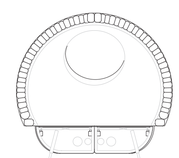


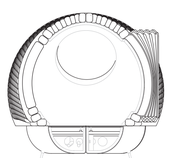
DETAIL 1:10

0 10 20 40 60 cm



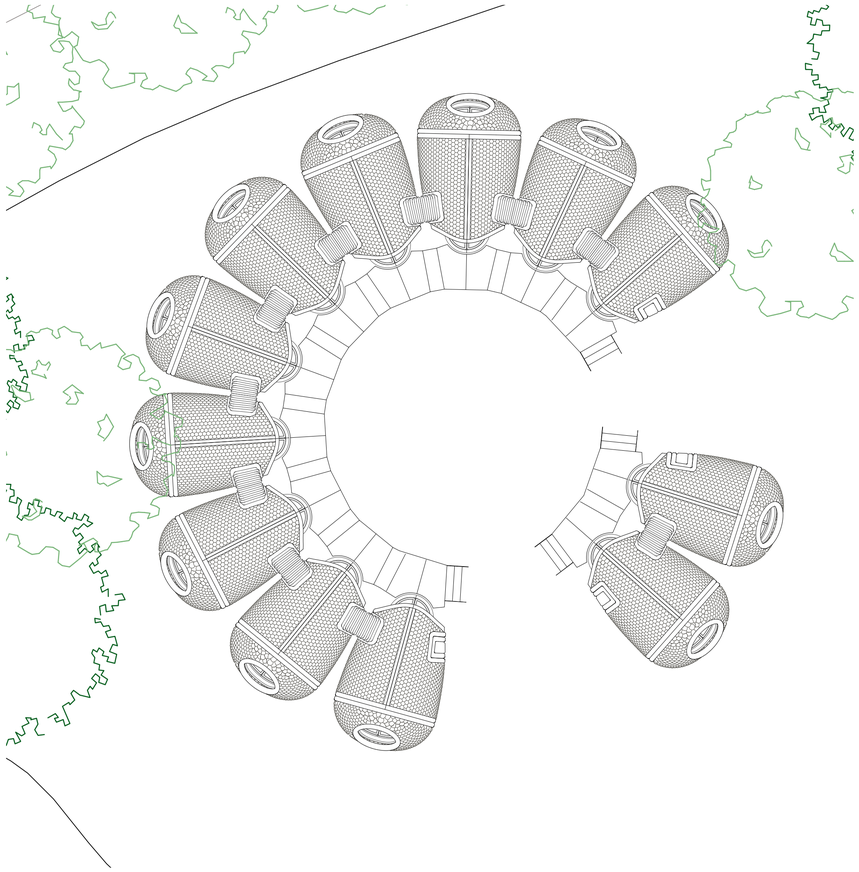






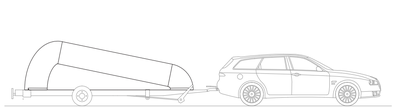
INDOOR FLOOR - SECTIONS 1:50

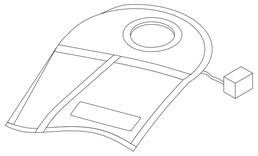
0 0,5 1 2 3 m

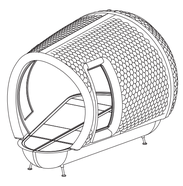


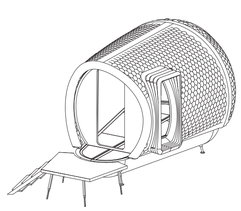
SITE PLAN 1:100

0 1 2 4 6 m









ASSEMBLY PROCEDURE

REMOVABLE WALL SECTION
- CONNECTING MLTIPLE UNITS
- FIXING IN PLACE WITH WATERPROOF ZIPPERS

PNEUMATIC STRUCTURE
- CONTINUOUS PERIMETRAL ELEMENTS
- FILLING WITH PNEUMATIC SPHERES IN VACUUM CHAMBER
- FIXING IN PLACE WITH WATERPROOF ZIPPERS

ENTRANCE
- DOUBLE DOOR IN ZIPPED FABRIC

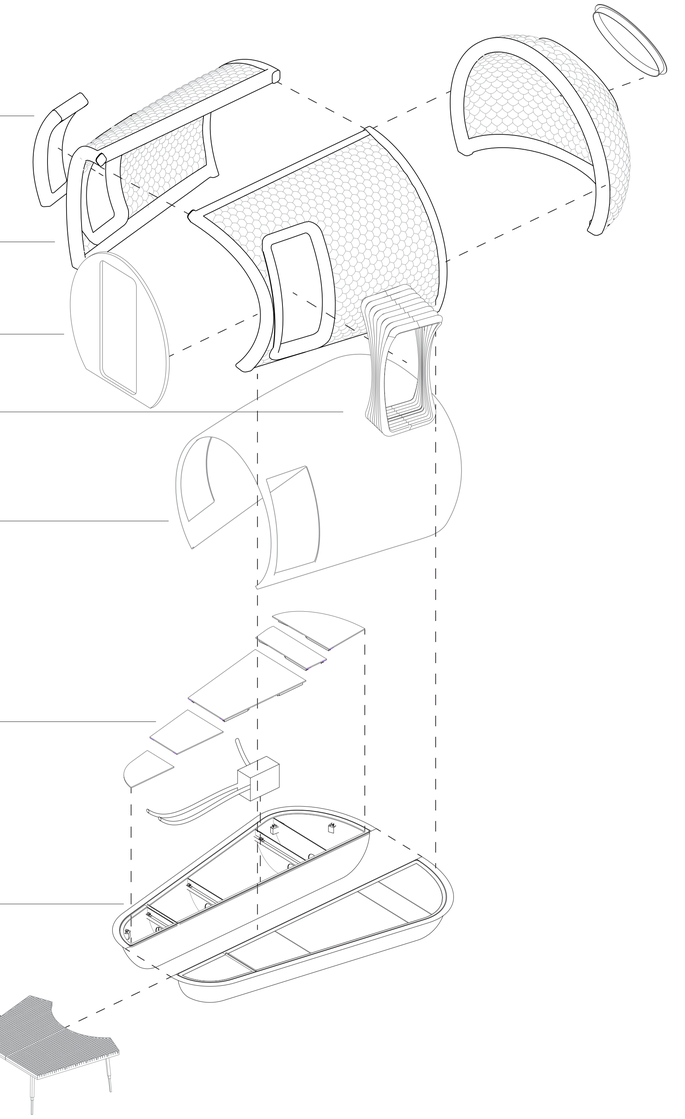
FOLDING ELEMENT
- CONNECTING MLTIPLE UNITS
- FIXING IN PLACE WITH WATERPROOF ZIPPERS

HEATING
- WARM AIR CHAMBER WITH ELECTRIC HEAT PUMP

FLOOR
- ALUMINUM HONEYCOMB PANELS
- VINYL COATING
- ADJUSTABLE RETRACTABLE LEGS

FIBERGLASS SHELL
- THERMALLY INSULATED
- TECHNICAL SPACE FOR HEATING AND ELECTRICAL SYSTEM

FOOTBRIDGE
- FOLDING RESIN GRILL
- ADJUSTABLE RETRACTABLE LEGS



SIAT_YOUNG_2018

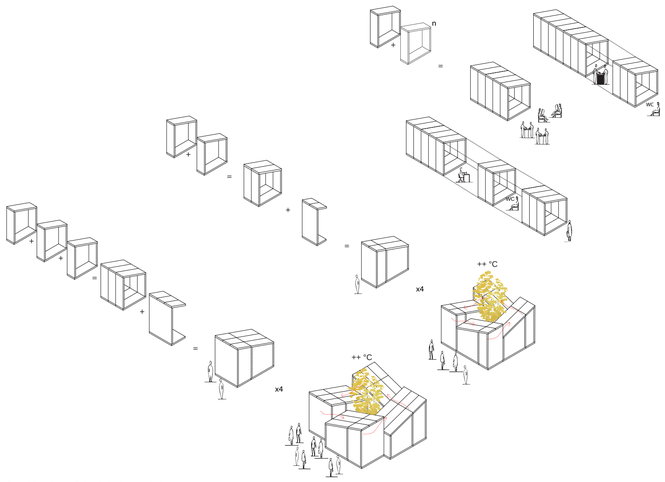
custom code **52370816C4**

3rd award

Jassmin ALI, Chiara CESAREO, Chiara GERINI

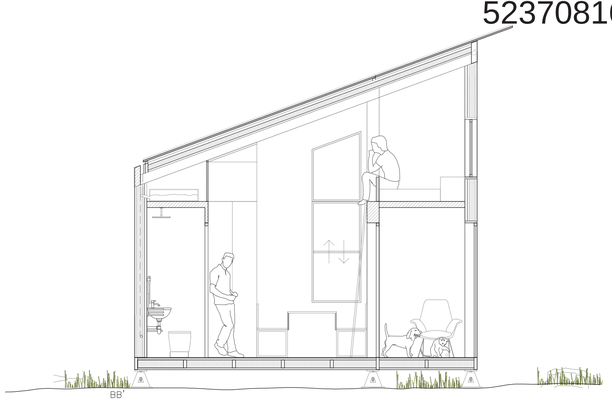
GENOVA

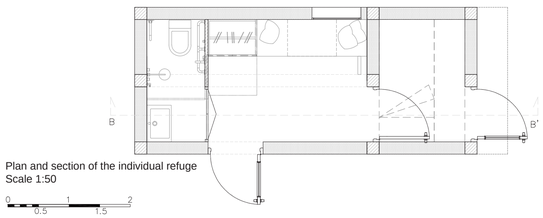
The project base consists of a construction module of 1,30x4m, which can be assembled in different ways: two of them form a single shelter, three of them form a double one and more of them as required create the shared areas.
The structure consists of a wooden conformation composed of: a slab, four columns and two beams; walls with wooden bracing and insulation with natural and recyclable materials, ventilated roof covered in polycarbonate and a rainwater collection system.
The components can be easily transported and assembled through traditional techniques: the wooden columns, the slab and the roof fit together with male and female joints, with the help of metal brackets and nails. The cladding panels are nailed to the wooden columns, while the insulation, a layer of stone wool and one of cork, is placed inside. Compactability and durability are guaranteed. Insulating materials ensure efficient thermal and acoustic insulation and the ventilated polycarbonate roof can withstand the weight of snow and prevent humidity problems. Once the minimum 1,30x4m unit is mounted, other units are spatially combined in order to reduce the heat loss and to create private areas that are harmoniously alternated with shared spaces, integrated in the general system of the “island”.
The first visible unit from Via Montebello, is the one related to the primary reception, a space divided into a reception desk, where the most expensive items may be deposited, and a closed room dedicated to orientation interviews, aimed at drawing up a personalized project or simply as a private listening area. Connected to this unit there is a small "toilets unit" and the infirmary, considered as a primary service during emergency situations.
The unit visible from via Benevello is another shared space (also opened to the public), intended as "hot drinks distribution unit"; it has been intended mainly as a kitchen, designed to give guests the opportunity to cook their own dishes as a path towards self-assertion. This area has its own bathroom.
Other shared areas are placed in the centre of the “island”: "the common room unit" and a second identical space set up for possible laboratory activities, for example, for the construction of some parts of the “island” furniture.
The shelters are designed to be able to contain all the personal effects and to accommodate basic activities such as reading, consuming food, etc. In addition, an entry gap has been added, connected to the primary modular structure, customizable for example in a small "living room", in a space for pets or simply in an additional storage space.
Although the project needs to be an immediate response to emergencies, it should also offer the possibility for the guests to live with dignity and to additionally rebuild their future. This justify the choice to provide each single and double shelter with a private toilet which has the intention to improve the guests’ quality of life and at the same time to empower them through the self-management of their own house.
All the shared modules and the double shelters have been designed providing accessibility for the disabled, except for the single shelter which can be made accessible through small modifications of the internal furniture.
The planimetric conformation designed for area 1 leaves open the discussion on a possible redevelopment and reuse of the front part of the theater, which becomes a square/transit area. In any case, all the modules can be adapted to any location and type of terrain, thanks to the adjustable foundation plinths.



Combination of the “shelter units”

Perspective section AA'



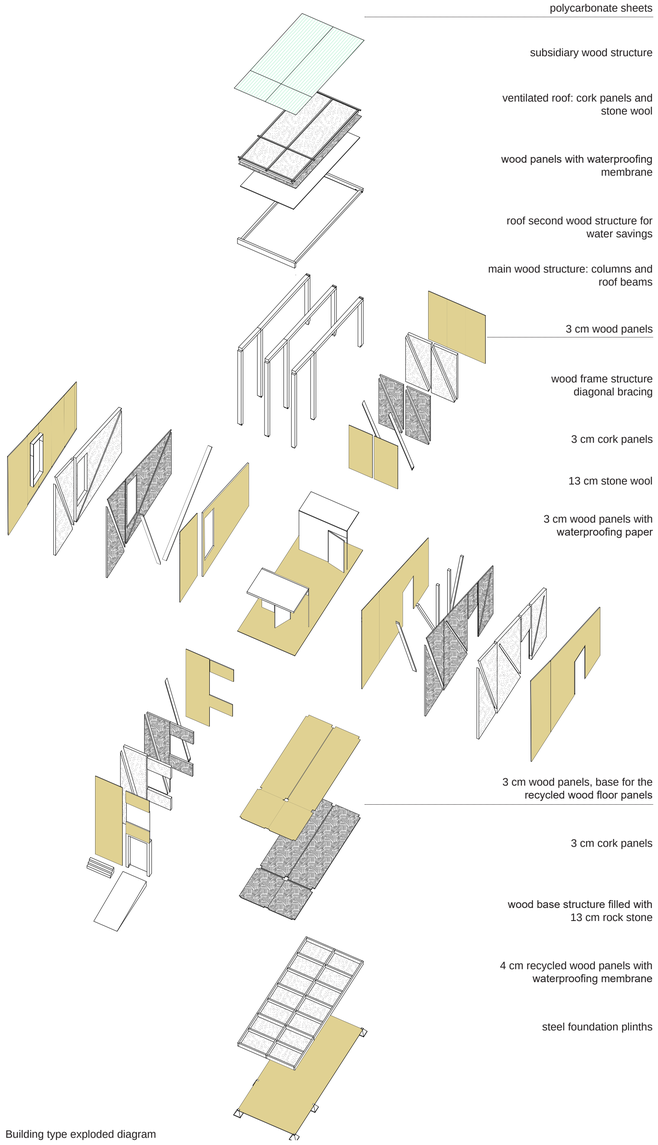


Plan and section of the individual refuge
Scale 1:50

Overall plan of the “shelter island”
Scale 1:100

Masterplan
Theatre of Turin

Individual refuges perspective view



Building type exploded diagram

SIAT_YOUNG_2018

custom code **51301811R7**

special mention

Ivan ZITO, Antonio Filippo TANDOI, Maria Sofia GUARENTE

ROMA

Home+

Tiny Shelter

HomePlus Tiny Shelter wants to load architecture of the meaning of “humanitarian”. HomePlus is the perfect place for the **homeless**. It has the responsibility makes the new space become a scenario of life, that flows inside, and it s a symbol of sharing and kindness. The project is placed as a host island in the garden of **"Giardini Reali Inferiori"** and is extremely **flexible** and adaptable in natural or urban context (as "**Turin theatre area**") and represents a really **eco-friendly future home**. The small elementary units is a hexagon. The **tiny hexagon** is assembled in two steps. The first phase consists in **interlocking** the basic pieces (horizontal closing hexagons, wall and angular hexagons). The second step is the junction between two or more modules to build the aggregate. It works through a **male-female system and mechanical fixing**. The system is versatile and adaptable to any orographic context (mountain or flat). In order to be adaptable to any kind of weather conditions, the roof could be: flat, inclined by **30%** and by **60%**, that is perfect for snow condition. The continuous module surfaces ensure heat insulation and no thermal bridge. The composition of modules create even an unique space and **optimal thermal condition** especially for the cold and long. The polyhedron system is **anti-seismic.** Aggregation on a single level is the fastest and **most usable** alternative. Each module is a **functional unit** that allows you to build a system with **self-sufficient modules.** The modules are easy to build and transport, because they are made up of three basic **elements pre-assembled,** thermally insulated and equipped with cavities for facilities. They are linked on site through a system of joints and mechanical connections, which ensures easy assembly and disassembly without damage and the possibility of **re-use** of constituents at the end of the life cycle. The chosen insulation is based on lime and **hemp**, which is a completely natural, lightweight, breathable, fire resistant and above all able to **lower the CO2** levels of the environment. In addition, the modules are raised from the ground with **natural ventilation**, which helps to isolate the system from the ground . On the base there is a tank of water connected to a boiler. The water is used for the sinks, flush, shower and for the heating floor system. On the base there is a sewage hunk, in the same way as the camper. The horizontal and vertical curtain wall are built in **recycled wood**. The host island of tiny shelter has different functions: the hospitality shelter, where homeless can get information and be accepted; the common shelter as a space for sharing experiences and do activities together; the **listening and infirmary** shelter to confront the homeless and take care of him; **kitchen** with a big table, storage and services for men and women. The shelter for bedrooms can be single room or double. Some **double rooms** has the possibilities to add beds into **bunk beds**. Each module can be used by **disabled** people by the **ramp** at the entrance. Every module for kitchen and bathrooms has an independent water system, heating system and electricity system. Panels are useful for **users** and even for **citizens**. Their **colors**, their **shapes** and **logos** are very catchy for common people that will be curious about what it is going on inside the tiny shelter and this flow may help the cause to have more resonance. Panels help to **identify the functions** of each module. Since modules aggregation has to be adaptable to different places, the combination of the modules could change and the panels could easily orient the customers.

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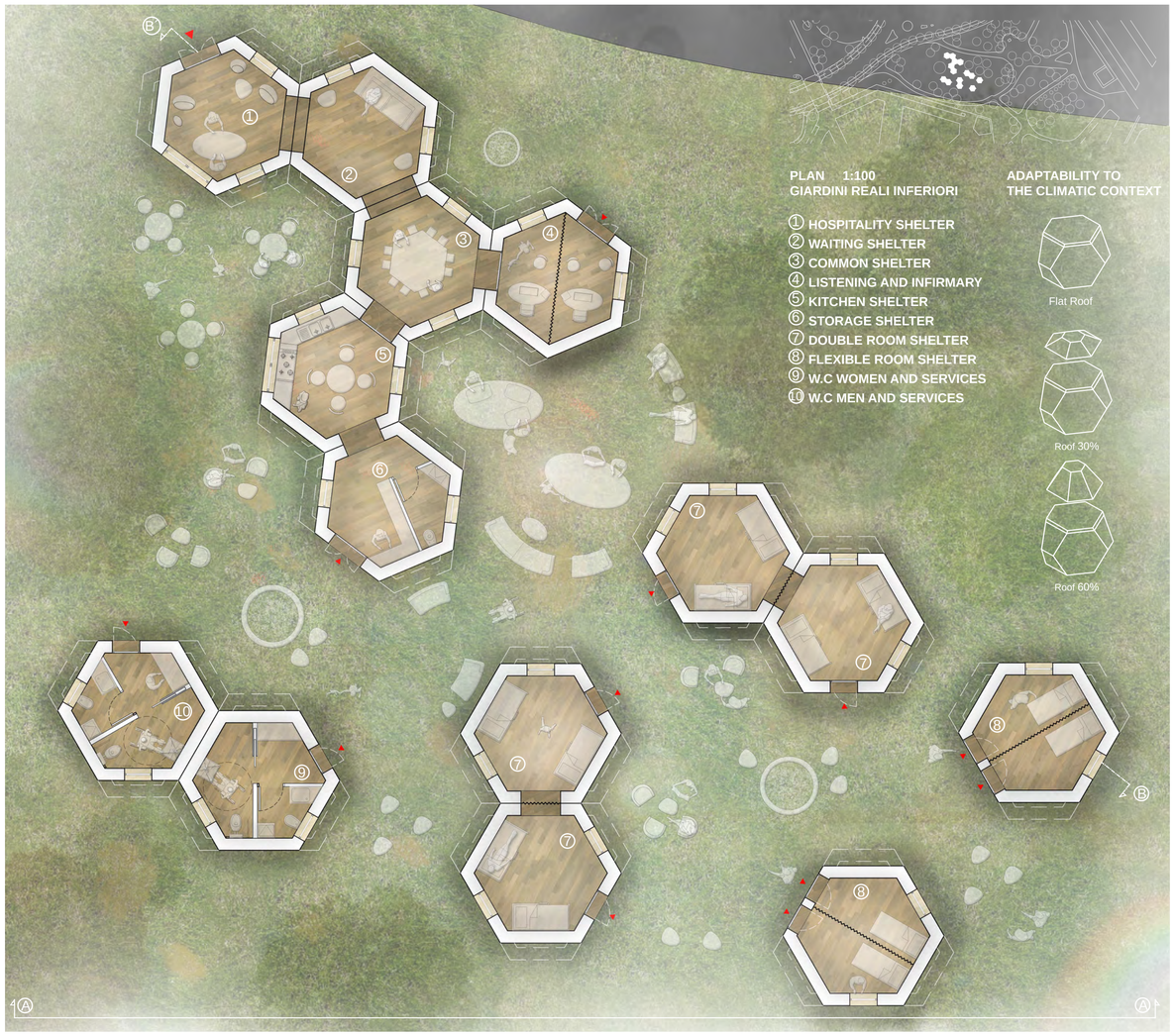
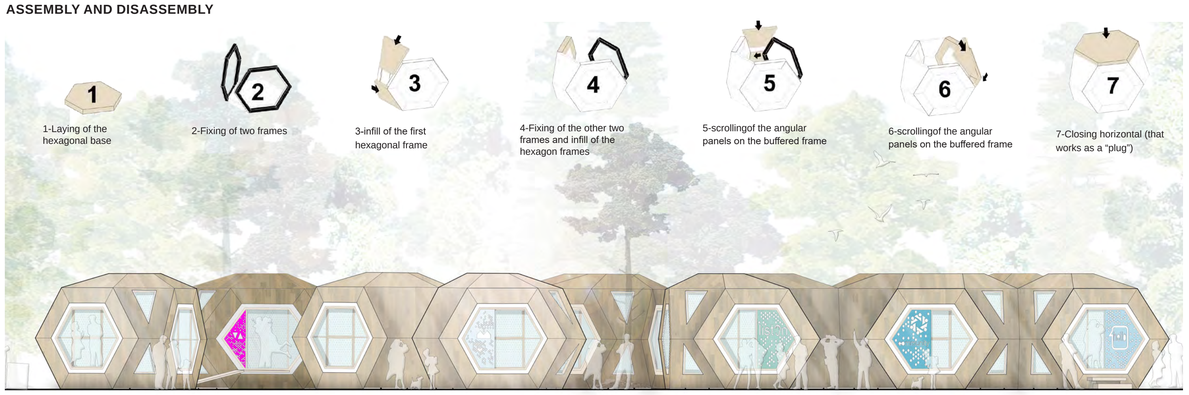
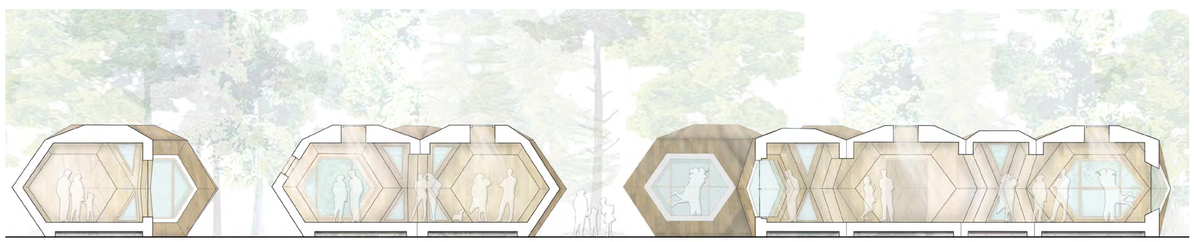


GIARDINI REALI INFERIORI VIEW

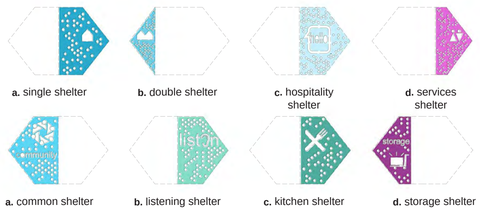
ASSEMBLY AND DISASSEMBLY



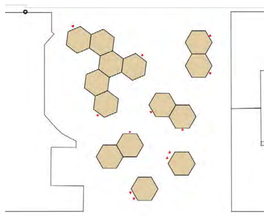
ELEVATION AA 1:100



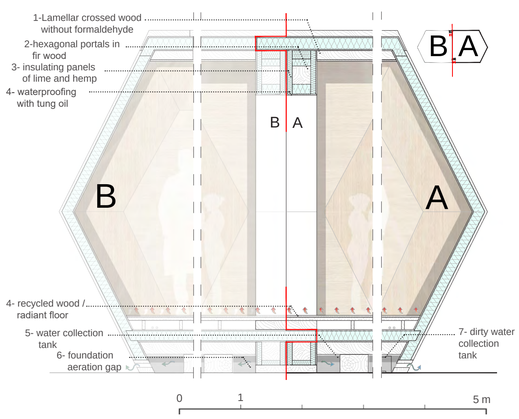
SECTION BB´ 1:100



PANELS AND FUNCTIONS



ADAPTABILITY TO AREA 1 : TEATRO DI TORINO



DETAIL OF TWO JOINED MODULES 1:50

INTERIOR VIEW - ONE OF THE OPTION FOR DOUBLE ROOM

INTERIOR VIEW - COMMON SPACE