

PRESS RELEASE
03/11/2014

#7

SOLAR DECATHLON EUROPE

2014, PARÍS

UNIVERSITAT POLITÈCNICA DE CATALUNYA
ESCOLA TÈCNICA SUPERIOR D'ARQUITECTURA DEL VALLÈS



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*"L'individu seul doit se prendre en charge dans **l'intérêt collectif**"*

*"The individual must take responsibility in the **collective interest**"*

Ressò Team

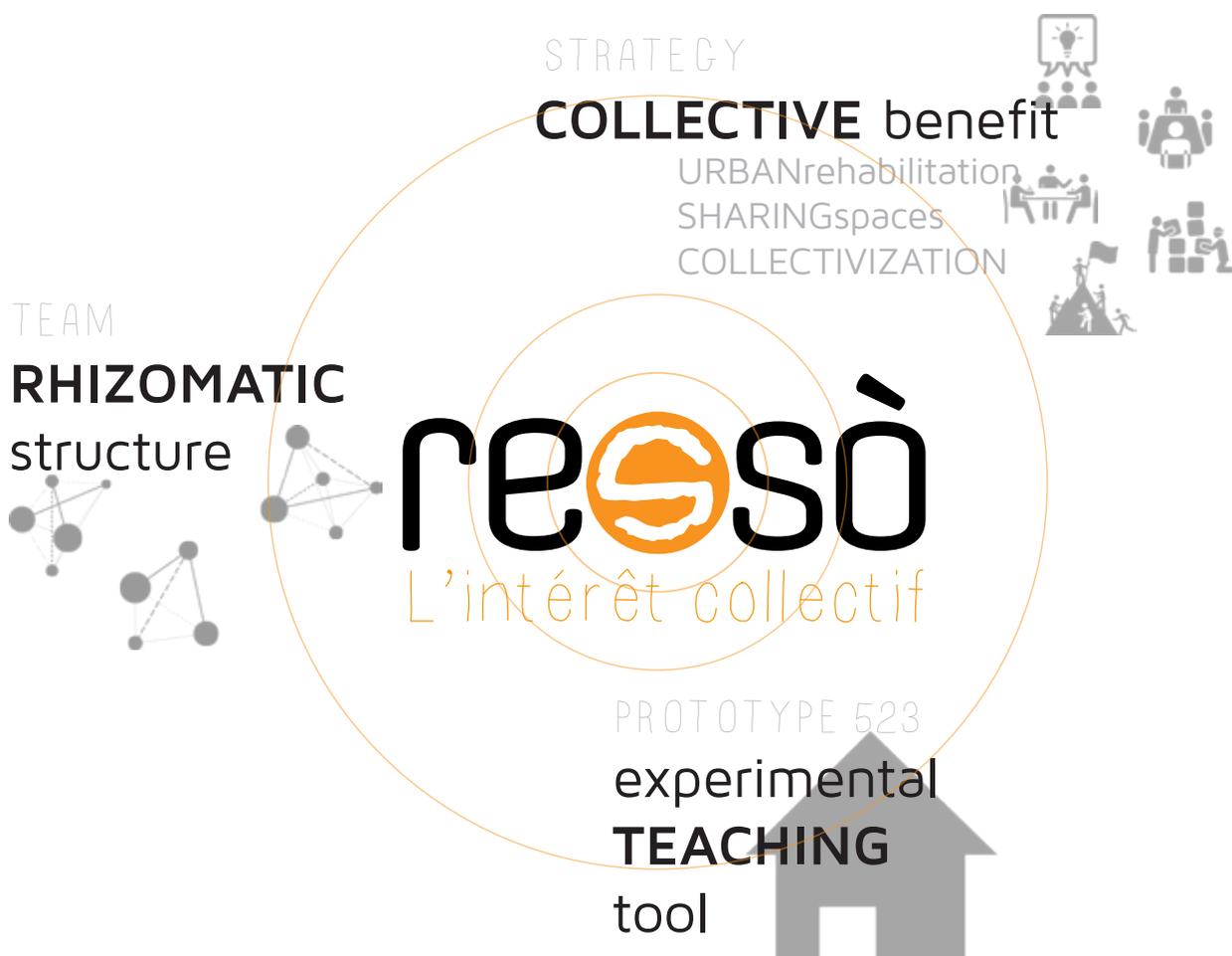
1 RESSÒ is...

RESSÒ is a **team**, RESSÒ is a **strategy**, RESSÒ is a **prototype**. RESSÒ is based on “**the collective interest**”.

The **rhizomatic network**, made from our participation in the competition, involves a team formed by students, professionals from the construction and communication field, city councils, universities, neighbourhoods and what it is the most important: **people**.

The prototype offers **free energy** from solar panel energy systems and it is directly **beneficial to the user**, who has a comfortable space with enough energy to develop its activities in disposal. It is, thus, a direct benefit to the user and, besides, all the parts previously involved in the project make profit out of it.

The **collectivization of the activities** offers the possibility of dispose of a useful infrastructure in a social and energetic level.



2 PROJECT INFORMATION



ETSAV campus

Presentation and context

The **Escola Tècnica Superior d'Arquitectura del Vallès** (ETSAV), from **Universitat Politècnica de Catalunya** (UPC | BarcelonaTECH) Campus Sant Cugat, is a school that has been selected for the third time to participate in the **Solar Decathlon Europe** (SDE).

Solar Decathlon (SD) is an award-winning competition which reunites the **greatest universities from all over the world** promoted by the U.S. Department of Energy in 2002. It came to Europe in 2010, and it was celebrated in **Paris, Versailles, in summer 2014**, and organized by the French Government.

The competition's goals are focused in **investigation, innovation, design**, and the following **construction of energetically self-sufficient projects** that work only by solar power. Moreover, the competition is framed in a context in which the study and the research on the **sustainability and efficiency** limits are the main bases within the framework of **architecture, engineering, and construction**.

It becomes a great showcase for the companies of the sector.

LOW 3

Solar Decathlon Europe 2010

ETSAV Teams is one of the teams with **most history and experience** within all the participants, after six years of study and **three SDE competitions**.

ETSAV was accepted in the SDE first edition with the **Low3 Project** with its three paradigms: **Low Impact, Low Cost and Low Energy**. Due to its high conceptual level, its firm commitment with sustainability and environment and its accurate construction, the Low3 Project was **rewarded with the Architecture First Prize** by three renowned architects: Glenn Murcutt, Louisa Hutton and Francisco Mangado.



Low3, SDE 2010

(e)co

Solar Decathlon Europe 2012

In 2012, the ETSAV presented the **(e)co Project**. It was a prototype which believed in the **sustainability as equilibrium** between the social, economic and environmental fields **through the cooperation** with different work groups. The (e)co's main strategies were similar to the ones that Low3 had. Among them, can be distinguished the energy demand decrease through passive systems, the minimal environment impact and the low cost of the prototype.



(e)co, SDE 2012

RESSÒ

Solar Decathlon Europe 2014

The current economic, social and environmental **crisis** has taken us into a complex and **unsustainable situation** from which we must **reconsider our lifestyle**. In front of an energy inefficient building stock without demand, we think that it makes no sense to build more housing. As future architects we suggest **rehabilitation**; understood as a **social** rehabilitation and promoting the **energetic** rehabilitation of the houses.

Our project is based on the idea of **collectivization of resources, uses and services**. Our concerns are: encourage social links and strengthen the ties between people

in this period of individualism, raise awareness of the importance of resources to change their attitude towards a **more responsible life-model**, ensure people's comfort, and finally, promote an energy rehabilitation of housing.

So, Resso is defined as an **urban rehabilitation strategy** that reinterprets our way of living and that aims to address the weaknesses of a **particular urban fabric** in a social and an energetic level.



RESSÒ, SDE 2014

Team organization and objectives

Resso team's main goal is to generate a **cooperative environment** in a way to achieve not only the competition requirements but also to establish a **working method** that allows us to cope with a set of problems in our society. Resso team is formed by **students and professionals** from different areas working side by side in a **rhizomatic structure organization** as a main tool regarding knowledge transference. Every single decathlete and other team constituents maintain a high level of participation in the development of the project.

We are now organized in eight groups: management, communication, design, urbanism, sustainability, building systems, construction and building execution.

2. Project Information

Throughout this year until the day of the competition there has been **constant evolution** and new subgroups have been appearing to deal with all the needs that we have faced to.

Beyond the competition, the whole team work with the idea in mind of a **real project that will help real people**, many of them under very unfavourable conditions. We want to improve their living conditions but also to **communicate concepts**, ideas and values that will help them to **live in a more sustainable way**.

That's why online and offline activities have been organized to increase Resso and Solar Decathlon's sustainability network as much as possible: social activities, conferences, workshops, social networking and broadcasting.

Resso is a urban strategy that uses a **COLLECTIVE INFRASTRUCTURE** in order to catalyse a process of social and urban rehabilitation

USER is an essential factor to carry out the rehabilitation process and his/her attitude is decisive

Materialization must be **SELF-EFFICIENT AND ADAPTABLE** to different urban fabrics and must ensure adaptive comfort

Collectivization and optimization of resources

The first step of an **urban rehabilitation** has to be the **modification in the users' attitude** in order to unchain the process inside the neighbourhood that must imply a **new management of the resources**: water, heat, food, electricity, mobility, waste products...

The usage of a **community space** through time implies an **economic saving** that can be converted in the future into a rehabilitation of the urban space.

Putting together people in the same space for them to share and make profit of the resources that this infrastructure offers them is what we call **collectivization**. This guarantees the comfort of the users with a **less consumption** and the **improvement of the social interactions**, bringing a space of **free comfort**.



Collectivization diagram

Sant Muç implementation

In a theoretical level the prototype must be **adaptable to different locations** in different urban fabrics. So, not to generate a waste, the building taken to the contest will be located in **Sant Muç neighbourhood** in Rubí. It is a **low density area**, and as such, it has social and economic characteristics which make it much **less energy-efficient**. Moreover, being an unplanned area it has a **lack of equipment**

and facilities. So, Resso will act as a **collective centre** that will host activities and will **benefit relationship between neighbours**.

Architectonic proposal

The project understands the rehabilitation beyond the constructive or technical meaning. Resso thinks about a more **social and communitarian meaning**. The rehabilitation is used as a **tool and strategy for achieving an energy saving and an urban regeneration**, following the duality between the concept of **social refuge and energy refuge**.

The use and the user become into fundamental pillars of the project without which it could not work; because it is not a housing as we used to know, but a **community space**. It is important to understand that the proposal **Resso is a methodology** and, thus, the prototype appears as a direct consequence from this new way of understanding **collective living**.

The community space in which every use takes place in has to be the **biggest** in order to admit the **maxim number of people**. This is the reason why we use the maximum area in floor that the contest Solar Decathlon Europe allows: more or less **150 sq meters**.

Thus, the **cubic form** of the prototype comes from the decision made beforehand wanting to adjust the volume to the gauge restrictions of the contest.



Scaffolding structure

For generating a community centric space we move all of the **technical areas to the perimeter**, leaving the **centre free of facilities and fixed elements**. It will only be the **sectorization system** what will allow differentiation between the spaces according to the different usage demands.

The **scaffolding system** allows us to make a **flexible internal** sectorization system. Because the usage adapts itself to the reality of every land and at the same time it **can be changing**, the proposal of sectorization has to be **easily reversible and implanted**.

The flexibility that offers the prototype is essential, because the space has to be able to be a unique space destined to just one and only activity and at the same time become easily into multiple environments for different activities.



Interior perspective

The user will be the one who determine the usage that the prototype will have, because of this we have to maintain open all the future possibilities. In order to achieve this, and at the keeping with the same systematic logic of the scaffold's structure on, the user can **add different supplements to the fixed perimeter ring to divide the space**. Thus, we propitiate **the user to take the space** and adapt it to their own necessities.

The reality is constantly changing and

2. Project Information

thereby the prototype also has to offer these possibilities.

It is a project for and by the people. **Ressò adapts to these diverse and complex human realities** with which we work nowadays to offer a tangible or intangible **improvement in the lives of the users**.

Constructive proposal

The structure is formed by a **metallic tubular system of scaffolds**. This system is used conventionally as an auxiliary structure during the construction, but in our case it becomes into the **main structure system**. This allows us to work with a **system adaptable** to different geographical realities and formal necessities. The structure consists of a **perimeter ring** with a thickness of 0.72 meters which conforms the main structure. The perimeter ring contains the different technological, electric and plumbing systems and at the same time it is used as a storage space.



Roof structure

Also, the scaffold system allows the materialization of **different façade systems**. In this case, the **southern façade** consists of a **double skin** that works as a **solar captor** and feeds the prototype's heat demand. The **northern façade**, however, because of higher thermic requirements has one polycarbonate

layer, another one of insulation and the last one has a finished wood interior. This insulation layer, made of **recycled textiles**, allows us to reduce the enclosing transmittance, decreasing thus the thermic loss.



Constructive diagram

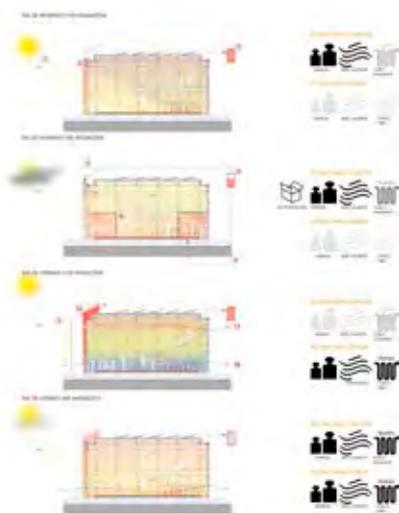
Bioclimatic proposal

The aim of Resso is to have an **energy consumption equal to zero**. For this, we tried to **reduce the demand to a maximum level** by a correct design of the envelope, which is **adaptable to the external climatic changing factors**, protecting or extracting the maximum profit out of it, just as needed. Thus, Resso's enclosure is composed by three types of skin according to different requirements: the northern façades and the cover are insulated to avoid thermic loss; the southern façade manage the solar radiation, and the ground slab has high inertia which means that it can adjust the internal space.

Resso uses mainly **passive systems** and it is based in the **thermic inertia**, which adjusts and equilibrates the internal temperature. With its passive operation we achieve a **60% of comfort days per year**, with which we reduce at a maximum level the use of active systems and their consumption.

In summer, we avoid solar radiation by using the **protection systems** in the southern façades and, also, the **space is aired out** to generate comfort. The double skin airs out by itself acting like a **solar chimney** that benefits from its flue to suckle the hot air accumulated on top of the prototype.

In winter, we tried to take advantage of the direct **solar radiation** to warm the inertia. When there is no enough radiation, this inertia is activated by a **radiant floor system** with thermo solar panels. The prototype promotes the **adaptive comfort through the space's sectorization**. This division of the total volume allow us to reduce the energetic demand to a point where the **internal charge** produced by the user's activity is **enough to guarantee the comfort**.



Bioclimatic diagram

Current state

At this point of the project, the strategy, the basis and the objectives are clearly defined. We are doing dissemination activities as conferences or exhibitions in diferents places. Also Rubi City Council is working on the constructor selection phase for the reassembly. In the coming months the construction company will build

up the prototype in the final location. After that, there will be activities related with the prototype performance, PhD investigations and neighborhood meetings. It's important to monitoring the building and assure the correct prototype functioning, and also improve things that doesn't work as we expect.



Ground floor assembly



Façade assembly

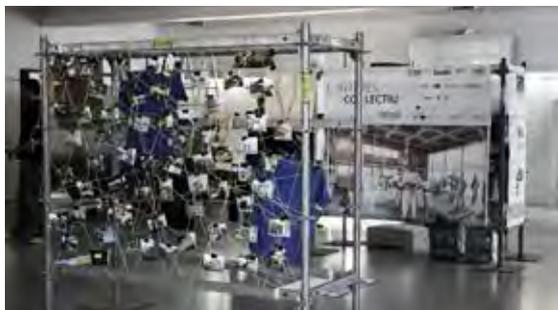
Dissemination activities

One of the main aspects of the project is to **disseminate information** about sustainability, **generate awareness** among the general public, **inform professionals** about alternative more efficient practice and **create a network of cooperation** to reach together the goal of zero energy balance in our communities.

Because of that we have organized **differents activities addressed to different targets**. We have done public presentations in our school for let our project know inside the **students community**, we have done exhibitions in public places to let the **neighbours** know our urban

2. Project Information

rehabilitation intentions and we have done conferences to let the **professionals** know our strategies.



School project presentation



Rubi's exhibition

Current impact

Since we started with the RESSO project, the impact of our social networks has always been **increasing**.

Official RESSO webpage received 1.006 visits last month. Since the first day we have received 32.689 visits.

RESSO Facebook page has a total of 1.328 followers. At the moment, we have an average of 1.030 visits per week; it means 147 visits per day approximately, we reach 7.100 people last week.

The other media platforms **win more followers day by day**.

In all of our media platforms, we have seen that most of the visitors are **people between 18 and 25 years old**, probably from the university community. Also, the majority of them are from

our home country, Spain. Anyway, we are having a lot of visits from all the participants' countries in the competition. Everyday more students know that we are doing, more companies know what we want to achieve and **more people learn that a new way of living is possible**.

You could find more information about us in our... **MEDIA PLATFORMS**

OFFICIAL WEBPAGE



www.resso.upc.edu

FACEBOOK WEBPAGE



www.facebook.com/resso.sde2014

TWITTER PROFILE



www.twitter.com/ressosde14

INSTAGRAM PROFILE



[@ressosde14](https://www.instagram.com/ressosde14)

YOUTUBE CHANNEL



www.youtube.com/user/RESSOsde14

UPC CHANNEL



<http://tv.upc.edu/>

360° VIEW



<https://www.google.es/maps/place/Ressò>

3 BRAND PROJECT



Name

RESSÒ comes from "echo", in catalan. It refers to something that has "echo", which is much commented, disclosed. For example: "it was a story that has a lot of echo". It also refers to when a person echoes something, it server as a disseminator of ideas.

We want our project to have huge "echo", we want it to get to people and make people talk about it.

It also comes from:

REhabilitar + **SO**stenibilitat

Refurbishment + Sustainability: The two major issues that concern us and we work about.

Slogan

Ressò means to share space with people, to collectivize uses, resources and services, to share knowledge in order to give some benefits to everyone involved here.

This is why the best tool to convey these values in through our slogan: "*L'INTÉRÊT COLLECTIF*".

ressò
l'intérêt collectif

Logotype

ressò

Isotype



The logo expresses the fusion between singularity and technique.

Singularity is the existent with a unique personality, represented by central S printed with an organic craft stamp, with an own texture and shape, not reproducible.

However, the technique is what is necessary to carry out the execution, considering standardization, technology and efficiency.

Key words

Collective strength

Urban rehabilitation

Intérêt collectif

Sharing uses, resources and services

4. Team Members

4 LIST OF TEAM MEMBERS

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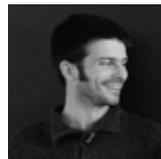
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5 ORGANIZERS, COLLABORATORS & SPONSORING COMPANIES

Organizers Institutions

The highest organ of support of the Project is the Escola Tècnica Superior d'Arquitectura del Vallès (ETSAV), our school.

Most of the students of the team and most of the teachers of the Technical Committee are from the school. Also, the Director of the school is our Faculty Advisor. Furthermore, the infrastructure where we are working is assigned by the school, we are using its resources to carry out the project.



The Universitat Politècnica de Catalunya is the institutional collaboration where our project is supported. It helps us in contacting other companies and its prestige provides us many opportunities. On the other hand, being a technical project it needs of other professionals such as engineers, the UPC allows us to resort to students of other of its faculties.



Collaborators Institutions

The Rubí local government strongly supports our project. They allow us to do the real project in Rubí and is the one who facilitate us the second life of the prototype. They also assume all the costs and the financing of the real execution after the competition.



5. Institutions & sponsors

Sponsoring Companies

For Resso project developing we have the support of 52 companies/institutions moreover the organizers and collaborators companies. In the list below you can find all Resso supporting companies. They bring us financial, material and/or consulting support.

Depending on the value of their contribution they are classified as:

- Platinum Sponsors.
- Gold Sponsors.
- Silver Sponsors.
- Bronze Sponsors.

PLATINIUM SPONSORS



ESCOFET 1886 S.A.

Escofet is a Barcelona-based industry that designs and manufactures quality, high-class products in architectural concrete and cast stone.



CARRÉ-FURNITURE S.A.

CARRÉ is a huge industry of contemporary furniture and industrial metal that remains true to its functional principles: quality and service.



AISLUX S.A.

Distributor and producer of polyester skylights, methacrylates and polycarbonate cellular systems



PERI S.A.

Multinational, manufacturer and supplier of Formwork and Scaffolding, Rental, Sales, formwork systems.

GOLD SPONSORS



SCHNEIDER - ELECTRIC S.A.

Global specialist in energy management, offers integrated solutions across multiple market segments.



FUSTERIA SANT ISCLE, S.L

Iscletec is a company dedicated to the manufacture and sale of wooden windows, laminated and mixed (wood and aluminum).



ACV Spain

Design, manufacture and distribute engineering solutions for hot water generation and for commercial and residential heating application.

AJUNTAMENT DE BARCELONA

Barcelona city council.



DESIGN BUILDER SOFTWARE Ltd.

Building simulation software for engineers, architects and energy assessors.



DEWALT Industrial Tool Co.

Motorized global brand for the industries of construction and carpentry tools.



SMEG

Brand of appliances designed for decorative, able to unite technology and style.



ARMACELL

World leader in flexible insulation foams for the equipment insulation market and also a leading provider of engineered foams.



SILVER SPONSORS

GENERALITAT DE CATALUNYA

Catalonia government.



SERGE FERRARI

Manufacturing group, leader in the flexible composite material sector.



SOMFY

Industry of automatic controls and motors for openings and closures.



RMT S.A.

Industry devoted to the manufacturing and sale of sheep wool as insulation.



Lightermy

Innovative energy recovery system for LED lighting installations.



Jinko Solar Holding Co.

JinkoSolar is a global leader in the solar PV industry.



ITeC

Independent non-profit-making organisation that carries out its work in the area of operations intended to further the progress of construction.



Giscosa

Specialists in the distribution and manufacture of the best EPDM membranes.



5. Institutions & sponsors



Hewlett-Packard

Multinational technology corporation that provides hardware and software.



Grupo Climasol

Building system consultancy.

BRONZE SPONSORS



Proclima

Provides complete sealing systems for inside and out with intelligent membranes, sealants, quality assurance and comprehensive service.



Ascable-Recael

Company specialized in manufacturing electrical cables



Domoticus

Domoticus is a company qualified for integrating home and building automation.



Maranges

Family business of industrial supplies, hardware and DIY sector.



Interflex

Provide products designed for the fixation and protection of electrical wires.



Festo

Worldwide leading supplier of pneumatic and electrical automation technology.



Simpson Strong-Tie

Worldwide suppliers of structural building products.



iGuzzini

Manufactures lighting systems for both indoors and outdoor



TechnoSun

Wholesale distribution of professional solar photovoltaic (PV) equipment.



Soler&Palau

global market leader in ventilation solutions.



Greenstorm

Building systems consultant



Irestal Group

Irestal Group

Specialized in supplying stainless steel in its various forms.



Ingeenious

onsulting firm specialized in development through Advanced Engineering.

Knauf

Producer of building materials and construction systems.



WITS Institute

WITS is an organization that, from understanding what happens “today” in society [...], acts through training and education to transform people.



Ecodomeo

Producer and commercializer of dry toilets.



SJ12 Enginyers

Building systems consultancy.



Fustes Sebastià

Mechanized wood and processed wood.



Comsa Emte

Activity in the areas of Infrastructure and Engineering, and Technology Services



Izar

Manufactures and distributes cutting tools



Ingalsa

hot dipped galvanized



Sucade

Industrial supply of technical products.



Cedrià

Brand of products specialized in the care and treatment of wood.



ALB

Heating specialists in HVAC systems and Multilayer Pipe.



Gabarró

Wood products distributor



Octocam vision

Innovative technology start-up that provides multiple services by drones



fotomedia3

Audiovisual editor.



Santin

Design and construction of gardens.



Unihabit

Lodging enterprise.



5. Institutions & sponsors



ORGANIZERS



COLABORATORS



PLATINIUM SPONSORS



GOLD SPONSORS



SILVER SPONSORS



BRONZE SPONSORS



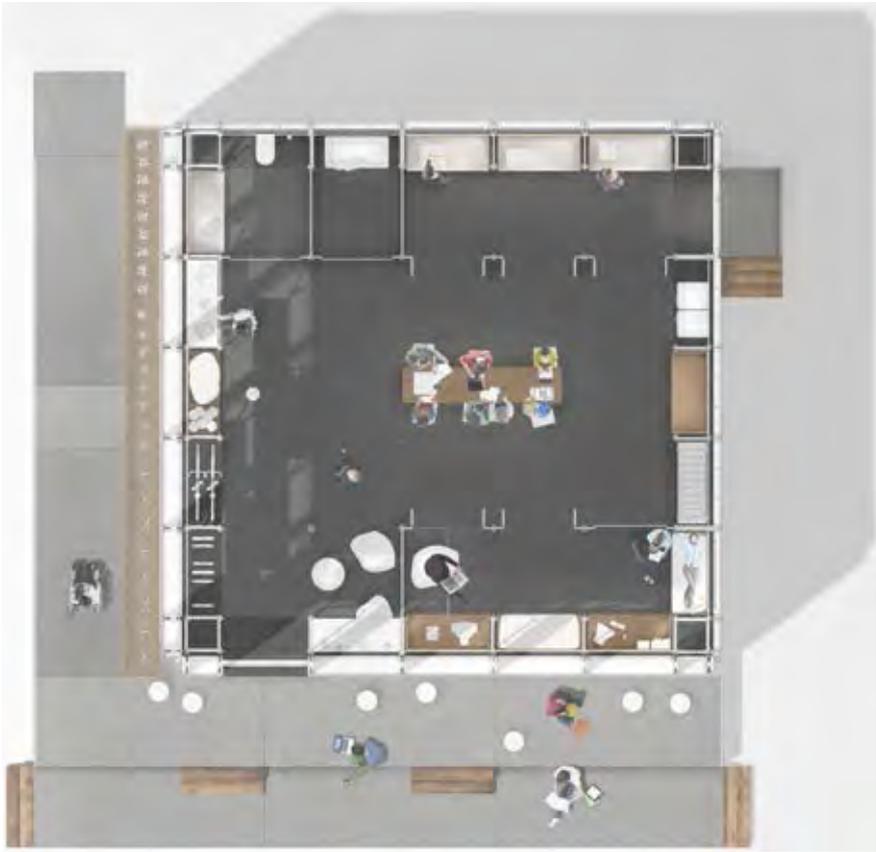
COMPETITION



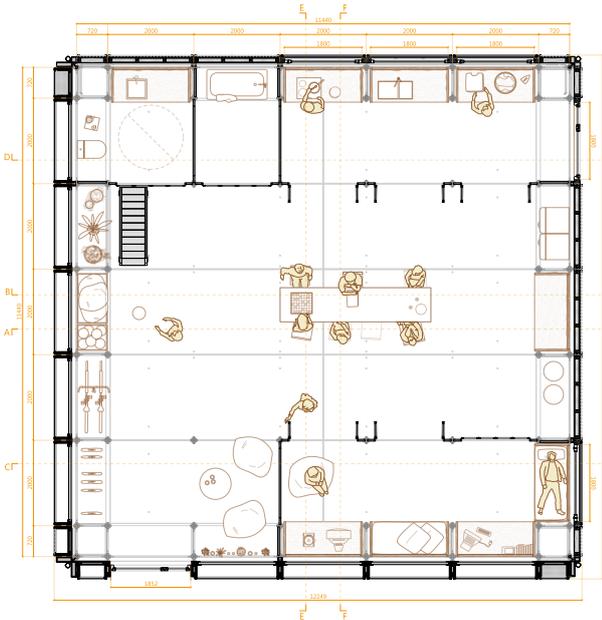
COMPETITION ORGANIZERS



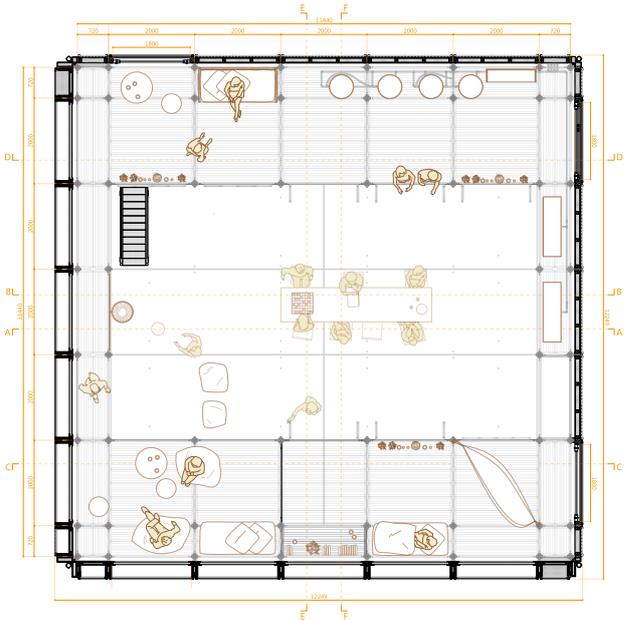
6 PROJECT IMAGES



Drawing _ Ground Floor Render

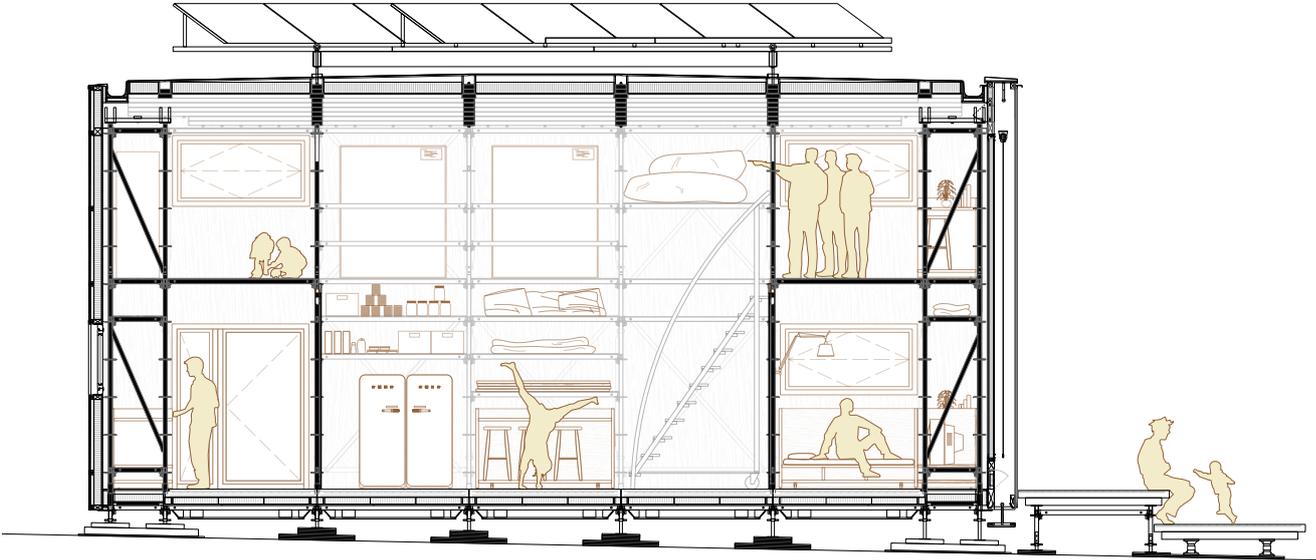


Drawing _ Ground Floor Plan



Drawing _ First Floor Plan

6. Project Images



Drawing _ Section



Implementation Render



Exterior view



Team photo

6. Project Images



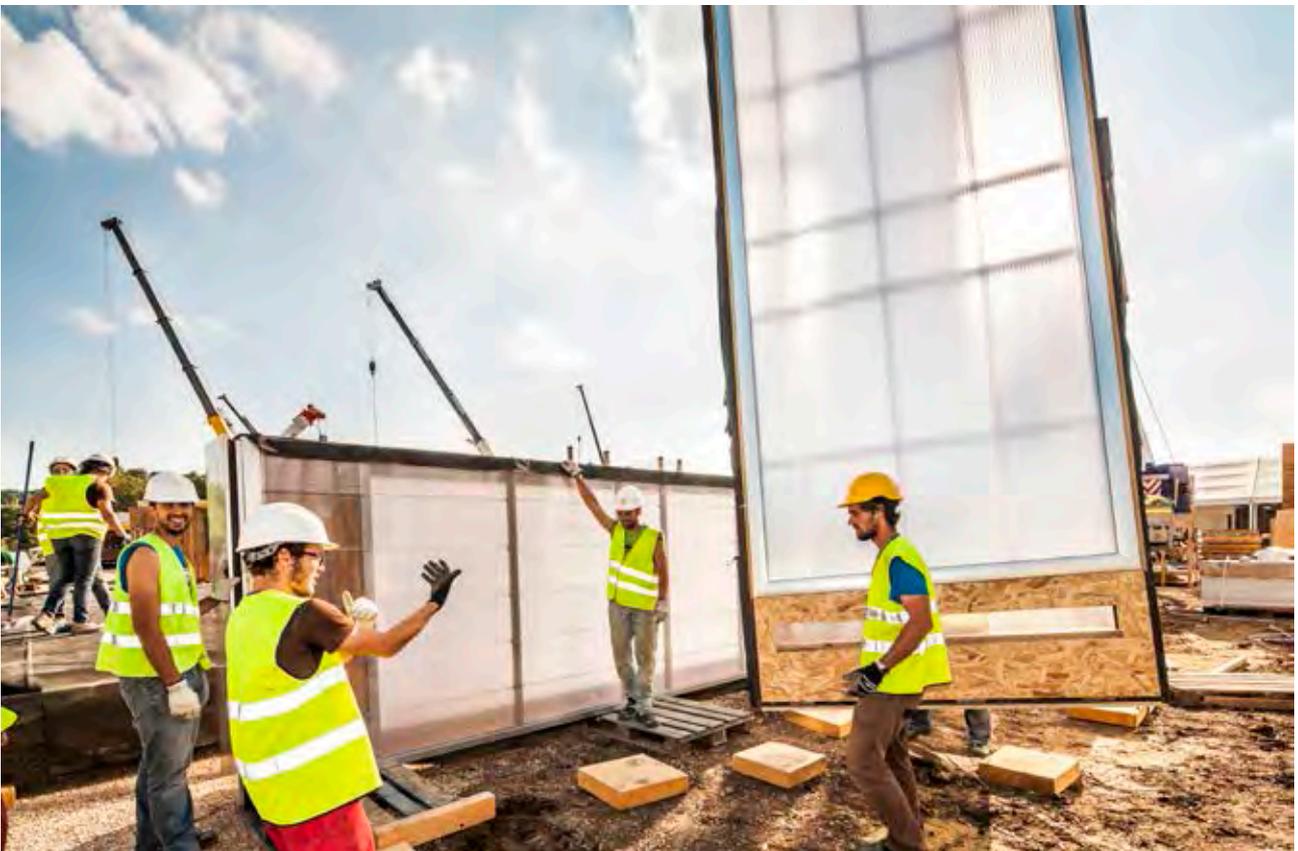
Roof assembly



Roof assembly



Façades and scaffolding assembly



Façades assembly

6. Project Images



Exterior view



Exterior view



Interior view of the prototype



Interior view of the prototype

