Our Scenario

Our System

Our Service

Our Product

Our Identity

In-depth

1. Antartica melts during hottest day on record,
Joshua Steven, NASA Eearth Observatory, 2020.

climate changes

Today, we are facing increasingly extreme, frequent, and devastating climate phenomena.

According to the report released on August 9, 2021 by the Intergovern-mental Panel on Climate Change (IPCC), changes in Earth's climate are occurring in every region and throughout the system. Many of these are unprecedented, and some are already underway. The report's analysis shows that over the next few decades we can expect an increase in the number of heat waves, longer warm seasons, and shorter cold seasons: with global warming of 2°C by 2050 and 4°C by 2100, heat extremes would reach more critical thresholds for agriculture and health.
The inexorable melting of ice due to rising temperatures will bring with it system-wide repercussions: rising seas will erode coastlines and tsu-namis will submerge shores. Torrential rains will destroy fields and their absence will make them arid and at risk of fire. Volcanoes will awaken and earthquakes will multiply, destroying large urban agglomerations.

2. Global warming forecasts in 2100 in grades, Nature Communications, 2018

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Our Scenario
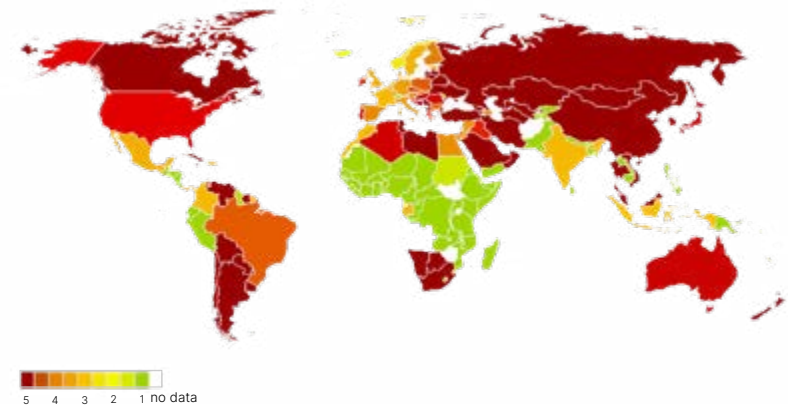
what about people

To date, there are almost 25 million climate refugees, i.e. victims of natural disasters. Forecasts by the IPCC, the World Bank, and the IOM estimate that by 2050 there could be between 150 and 200 million climate refugees, or even more. We are talking about a 750% increase. Despite this, the Geneva Convention (1951) does not recognize the figure of the "Climate Refugee", because the environment is not recognized as a cause of "persecution", as the number does not break the balance of nations. Moreover, of the 80 million forcibly displaced people in the world for the most diverse reasons, 57% do not leave the borders of their country in the hope of returning to their homes.

4. People are forced out of their villages, Cyclone Sidir in Bangaldesh, 2011.

3. People try to salvage what they can from the water, flood in Australia series, 2019.

act locally

This also gives us the figure of how the solution for these two reasons must be found locally, because it will not be possible and will not be wanted by the refugees themselves to manage new settlements elsewhere, far from home. It will be therefore necessary, for the survival of the different local communities, to be prepared to react quickly in the event of a natural disaster. This could be possible thanks to the acquisition of new skills that encourage community reconstruction through the philosophy of learning by doing.

our 2037

The scenario that is foreshadowed in 2037 is studded with natural di-
sasters due to Climate Change that humanity has not been able to stop,
as it has not been able to modify its actions to safeguard the planet. The
inexorable melting of ice due to rising temperatures has brought with its
repercussions on the entire system: the rising of the seas has corroded
coasts and submerged shores, torrential rains have mowed down fields
and their absence has made them arid, earthquakes have multiplied
affecting and destroying large urban agglomerations built in the past
without anti-seismic measures.
The number of climate refugees has reached around 150 million and it
is not possible to manage their relocation in other countries, it is, there-
fore, necessary to act locally to restore communities and allow them to
restart socially and economically.

regeneration

It is therefore important that schools transform their teaching model to
be more flexible and permeating: roles will change, students themsel-
ves will become in effect partners of the university, which will in turn
also welcome all those who are able and willing to collaborate. To face
the complex future, the goal of higher education will not only be aca-
demic excellence but equally important will be the emotional, sensory,
affective, and psychological side of learning and teaching.
Bringing people together and a sense of belonging to a community will
become paramount at a time when post-emergency bewilderment will
be a common feeling. Thanks to this union, people will be able to take
back their lives and those of the place and project themselves into the
future, rebuilding social and economic life piece by piece.

higher education

It's important that Higher Education intervenes quickly and effectively in the scenario that lies ahead, it's important that the training of new figures and the teaching of new skills essential to face the future is entrusted to the university, in this case, distributed to be present in a capillary way on the territory in order to cover vast areas.

Being local, the philosophy of the various partner universities will be similar, but the techniques taught, the materials used and the emergencies for which to work will be closely linked to the territory in order to take action at the local level.

Set up courses that can help students acquire new skills, but at the same time offer those who are outside the university environment, but competent and curious, to actively participate in the mission by proposing projects in line with the values of the new Higher Education.

5. School for wood worker, Almenno San Bartolomeo, Bergamo (Italy).

Manifesto

1. We use an open-source system to increase knowledge and awareness of climate change affecting our world.

We want that makers be aware of how we might live as climate refugees in a world devastated by natural disasters. Design must take action to create products that can help people in a very short time.

2. We develop from global knowledge.

Open source gives everyone a chance to help students by suggesting different solutions. Students can also learn how to select ideas, what is useless what is powerful, how doubt could be solved through testing prototypes.

3. We design for everyone and specific people, all needs are important.

There is no difference between a big disaster and a small one. Every climate refugee has significant needs, we want to create solutions for relevant situations. No one will be left behind.

4. Local materials are our fundamentals, efficient design is our goal, using less material as possible to limit waste is a must.

We use materials that people can collect locally, this is the basis for involving everyone. The shapes are shaped by the zero-waste goal and new solutions are always being developed.

5. Natural disasters bring radical consequences, they change society and people forever. The ear is one of our most important tools.

People are suffering. We want to listen to their needs and give them something real to build on. All products are developed to be a gift, not just a functional object.

6. Students are our designers.

In this course, students develop the ability to decide where an object might be placed to generate interaction. People need to feel someone close to them, to never feel alone. We create the environment around our products and people recognize it as a point of reference.

7. FabLabs are our partners, be local to be ready.

The FabLabs Network is the energy of the system. Local businesses generate a continuous flow of ideas and can react immediately when a natural disaster happens. They gain visibility and can be part of the largest network of makers and idea generators.

8. We regenerate communities, if they stay together they won't fall, they just need support to be able to react and start again.

We address emergencies with an immediate response thanks to our widespread distribution. We connect directly with people and give them the best solution we can offer to enable the regeneration of affected communities.

Our System

the 5 w

The service-system is developed through an open source platform where products designed to respond effectively to emergency climate situations are offered. On this platform are collected both projects made by students and by makers. Anyone can propose a personal project, which will be approved if it meets the values of wedesign4.

who? We are an open source community of designer.

We are students, teachers, universities, companies, makers, professionals, amateur. Basically anyone with a strong passion for both design and social help.

what? We are an online platform. And much more.

Skills are a precious resource and they can't be wasted.
On wedesign4 we connect people with skills from all over the world and support them through a network of virtuous companies to enable them to design products and services that alleviate the problems caused by natural disasters.
The designs and models of the products are then uploaded onto the platform: anyone can download and produce them locally, using the Fablab network affiliated with the wedesign4.

why? We want to face natural disasters, together.

Natural disasters are increasing and we have to face them.
It is time for us to act if we want to be ready for the challenges of the future. The products that can be found on wedesign4 platform refers to different natural disasters and cover the pre- during and post-emergency phase.

where? We design globally and act locally.

We take full advantage of the digital age we are living in.
We work remotely all over the world to develop solutions that will be produced locally thanks to the Fablab network. By doing so, the time and cost to produce these products will be significantly reduced.

when? We act pre, after and during a natural disaster.

Our efforts do not focus solely on the moment of the emergency.
We act to prevent natural disasters or at least contain them.
n addition to a number of products dedicated to this purpose, wedesign4 has set up a degree course within its partner universities to train the professionals of the future and is concerned with providing awareness through its activities.

Being a complex system to facilitate understanding it has been divided into two phases: the first tells the general operation of the platform, the second what happens locally in case of emergency.

general system

higer education - platform and academic course

wedesign4 is a project born from the collaboration between Universities of Design and Architecture distributed on the territory to cope with the increasing number of natural disasters. The final goal is to collect projects that share the same philosophy, aimed at the management and effective response pre, during and post emergency in a future where it will be necessary to have a strong awareness of the risk and an ability to manage it in case it occurs on the territory.
The platform therefore offers a pool of products that address different purposes and needs. Some with the goal of creating awareness before the event, others designed to deal with the disaster as it occurs, and still others for rapid and functional post-emergency management.

Through the establishment of the *wedesign4emergency course* based on the philosophy of Learning by Doing, students are trained and made aware of the climate emergency and are stimulated to use their skills to solve socially interesting and useful problems in the scenario to obtain valid projects to upload on the platform.

makers

The platform will also contain, and be available for everyone to consult, an enrichment section linked to effective examples of emergency products by well-known designers, a history of the Learning by Doing philosophy and maker culture, as well as the rich research carried out by students during the course.

However, we must not forget that the platform is Open Source, that is, open to all those who want to contribute by uploading useful projects to deal with emergencies. This openness to the outside world makes faith in the fact that in the future there will be more and more natural disasters and more designers, and in general figures capable of designing, who will live in the first person or will be stimulated by this situation with a consequent desire to participate. From now on we will call these figures makers, semi-professional figures who act as autonomous and spontaneous creators of projects.

platform - submission and approval

To streamline and standardize the presentation of projects, when a maker wants to upload a proposal there will be a guided template to fill out that will provide useful information for its verification. This takes place within the university laboratories through the functional and aesthetic test of the project, this in addition to working at the structural level must comply with the guidelines of the platform such as: cheap, easy and fast to implement, common machinery, do not exceed the waste of material, etc. Inside the university lab, there will be tutors thanks to which the makers can develop, improve and create the materials of their project so that it can be verified.

platform - download and discussion

Once the project has been verified and approved, it is uploaded to the Open Source platform and made available. The project is now downloadable online by anyone and for free, the download consists of a zip folder of 3 elements: a product sheet containing all the information useful for its construction, a digital file through which you can reproduce the pieces that make up the product and a video tutorial for its assembly. Each product will be linked to a discussion about it, forming a community where they will exchange suggestions for improvement, other uses or construction methods, and so on. This is what happens in maker communities like Arduino.

platform - expression of communities

On the platform there will also be a section where those who are living or have lived through a disaster can express their needs, so as to stimulate makers and students to meet them by designing products for them that are not yet on the platform.

fablabs network

The noblest purpose of the platform is to help people who are victims of disasters and to do this it is important to manage the emergency immediately. It is necessary that at the moment a catastrophic event occurs, the partners of the platform are ready to make themselves available to produce the necessary parts. For this reason, one of the main activities of the platform is to continuously map the partners available for collaboration - over time they will grow in number and type, the in-interlocutors will become different and could be both FabLabs and raw material companies. The University relies on the network of already existing FabLabs: in exchange for help in the moment of emergency, these are given fixed visibility on the platform, with the possibility of being recognized, increasing their awareness and popularity.

stakeholder map
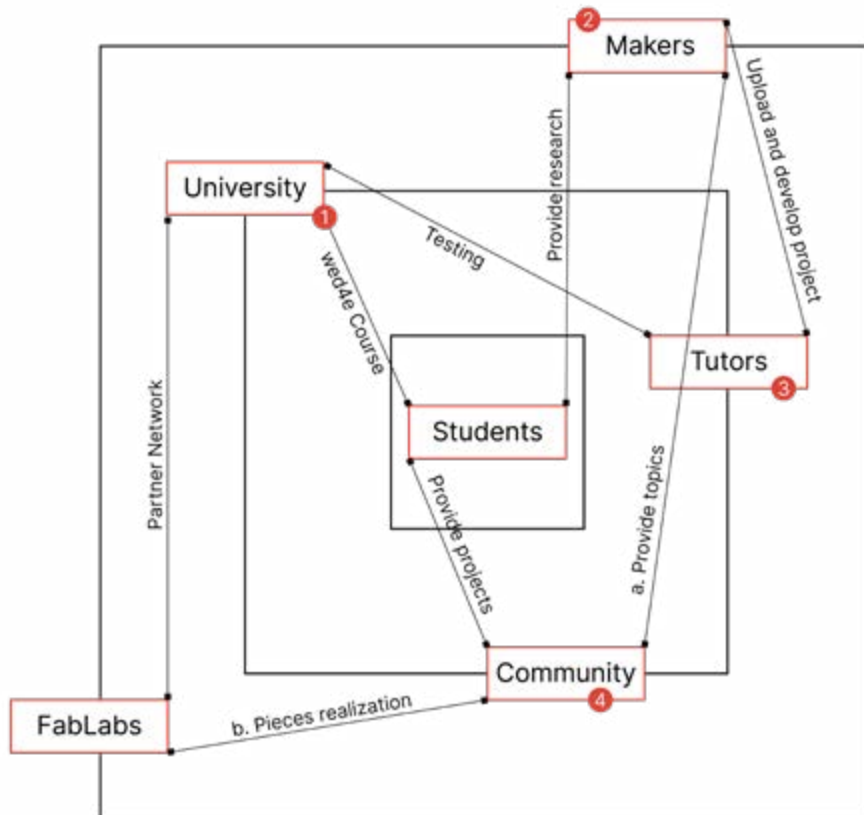
Students Learning by Doing practice skills in post-disaster scenario

1 University-Students
The University allowed students thanks to the wedesign4emergency course to use their skills in solving problem in the post-disaster reconstruction scenario and to obtain valid projects and research to upload on the platform.

2 Makers
Competent figures, outside the University environment, who want to help. Propose projects for the platform spontaneously, with the ability to design specifically for the needs of the communities because of the input they give.

3 Tutors
Support in university laboratories, become support for public makers testing, improving, validating their projects.

4 Community
a. Victim communities express their needs, projects that address these are sometimes not yet on the platform;
Those who want to produce the projects themselves go to Fablab
b. Partners for the realization of the pieces;

emergency system

When an emergency occurs it is necessary to act as quickly as possible, on our platform you can find different types of projects and useful in different situations: from those of first necessity such as tables and chairs up to items that meet secondary needs such as children's games, home furniture etc. So, according to the specific need you can find on the site the most suitable thing

context

We are in Amatrice, central Italy, and there is an earthquake of 6 point magnitude with epicenter Amatrice itself. The damage is considerable and we immediately move to help the victims.

service manager

A Service Manager affiliated with the platform is sent to the site to talk to people and understand their needs. Of the many emotional and functional needs he identifies, he wants to work on the following because they are the most felt: loss of reference points, community disintegration, and erasure of routine resulting in a lack of activities to do to pass the time and to think less about what just happened.
Given the time needed to produce the pieces - it will take a couple of days to get them to the field - the SM decides to work on the community assembly of a new common reference point, namely the tent reserved for meals inside the tent city. During the first two days, in fact, the meal is not a moment of aggregation, rather it is experienced exclusively as a biological necessity in order to continue to help in the relief efforts, then in the form of a packed lunch to be eaten on site. Moreover, the first things that are re-established are the primary needs such as electricity, water, and the assembly of the tents themselves.
Once the inspection is done, the SM selects from the wedesign4 platform the products and quantities to be made: in our case the bench, useful in the chosen space.

from the local fablab

At this point comes into play the mapping of FabLabs made earlier, to have a workforce ready to collaborate immediately. Are selected those who can contribute because they have the necessary technologies to produce the pieces of the selected product. To reduce subsequent delivery costs the network is limited to the local FabLab, however during an emergency all available resources can participate in the realization of the objects. The local partners then download the folder of the selected model from the platform.

through the delivery network

Universities are the promoters of the platform and guarantee the quality of the products, for this it is the government that finances the interventions: the financing is invested above all in the materials useful to the partners to realize the models.

Both for the delivery process from the raw material suppliers to the FabLabs and for the transportation of the cut pieces from the FabLabs to the emergency site, the distribution network created in the field by the relief agencies will be used, thus leveraging a local network.

Once the FabLabs receive the material, they will get to work cutting the panels into useful pieces. To facilitate the traceability of individual pieces and also to allow FabLabs to give their own recognition to what they produce, pieces are marked with a stamp to be affixed to their pieces. The first function, therefore, is to allow the Service Manager to better manage arrivals and orders by verifying the stamp, and secondly to ensure recognition of participation in FabLabs also by communities and make sure that ideally this piece is recognizable and traced in its path of life.These will then be delivered to the Service Manager in the field through the local delivery network.

to the community

Meanwhile at the camp, tents have been built, including the communal meals tent, but they are still empty. And this is where the pieces arrive at the camp and are distributed to the community according to the purpose for which they were designed and manufactured.
At this point the SM acts as coordinator and supervisor. The community is given the instructions needed to assemble the pieces, but they are left free to experiment and express themselves while keeping their heads occupied with other things, as well as learning by doing.

stakeholder map
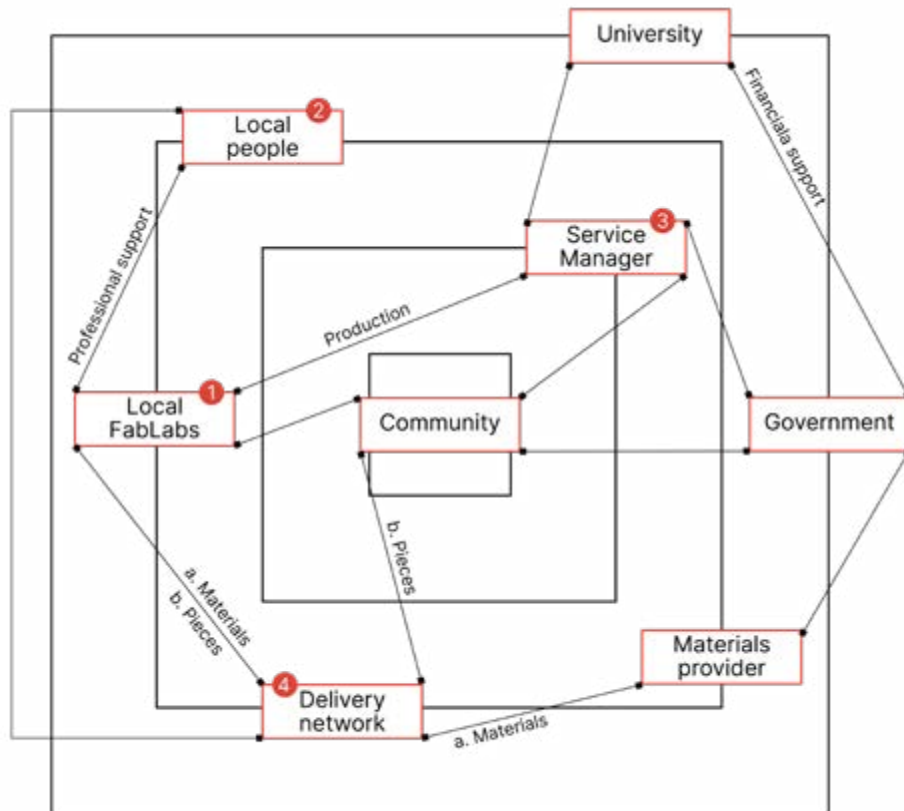
To help communities regenerate

① Local FabLabs
From project to a product; digital part: the open-source system allow a local fab lab to download projects and order materials; physical part: distribute co-working space near the disaster place, pieces realization, involving local people.

② Local people
Includes in addition to victims, even more broadly, people living in the local area. In the physical fab labs, they can work together and create the product they need. They can be also part of the delivery network.

③ Service Manager
Is a competent and trained figure, sent to the field for the community: point of reference in the field, listener, needs collector, and projects selector. Supervisor during the assembly part for the fab-lab: monitor and organization for production, supervisor for the delivery part.

④ Delivery Network
The locally established transport network is used for: materials for the projects to the local factory from the fab-lab pieces from the fab-lab to the community on the field.

system map

Through the system map, we want to relate all stakeholders highlighting the relationship they have with each other; in this one the whole system is considered in its complexity, integrating the two phases.

Relationships are established by the type of exchange that takes place between the parties at the time of contact. In our case, the four flows concern: money, information, material, understood as raw material and as pieces of the product, and production understood as the realization of the pieces.

Money flow
Information flow
Material flow
Production flow

product life map

PRE-SUPPORT	PRODUCTION	DELIVERY	ASSEMBLY	PRE-PROCESS

Project

The project will be proposed by the makers or students and will be in the university labs. Once the project is verified and approved, it is uploaded to the Open Source platform and made available.

Raw materials

Government financial support is used to order raw materials from local companies, which are shipped and processed by FabLabs according to the reservation.

Labor

At this point the mapping of FabLabs done earlier comes into play, to have a workforce ready to collaborate right away, those that can contribute are selected locally because they have the technology to produce the pieces.

Collect needs

Please tell me what can I help you ?

I would like a physical place to share mealtimes.

In addition, there is a section on the platform where the community can express their needs so that projects can be produced in response to these, if not yet on the platform.

Match

Select from the wedesign4 platform the products and the quantities to realize.

Make it

Fablabs can download the file and produce the kits. The single pieces are recognizable and traceable in their life path thanks to the stamp affixed by the fablab.

Transportation

I will transport the pieces to the field, ready to be assembled.

Delivery to people

Package includes everything needed to make a bench where I can sit and eat with the community.

To reduce subsequent costs of delivery, the network is limited to the local FabLab, but during the emergency all available resources can participate in the realization of objects.

Download

The project is downloadable online by anyone and for free.

The zipped folder contains everything I need to build the bench.

Assemble

following the instructions I can assemble the pieces in a simple way.

Disassemble

Users can choose to dismantle the product and return it to the local fablab or riassemble them in an other area when they move.

Recycle

Returned products can then be packaged and used again to assemble products for new users, or degraded into raw materials for secondary production.

Comments/share

At the end of the service, users can evaluate the product and its components and the platform will collect comments to improve the product or create new requirements

business model canvas

Key partnerships

- Universities of Design and
- Architecture
- Students
- Service manager
- Makers
- Government
- FabLabs Network
- Raw materials companies

Key activities

- Stimulate students during the *wed4e* course
- Campaigns to get makers to collaborate with us
- Update platform content
- mapping FabLabs to cover more and more areas

Key resources

- Trained staff
- Effective products
- Organization of the chain of intervention in the emergency
- Excellent reputation

Value proposition

- Concrete help in case of climate emergency
- Give everyone the chance to collaborate and help others
- Open source
- Collaborations useful for immediate action

Customer Relation

- Support in case of emergency
- Assistance development and validation of the project
- Visibility on the platform in exchange for collaboration

Channels

- Web, internet
- Social media, Instagram
- Billboards

Customer Segments

- People subject to natural disasters
- Makers
- FabLabs

Cost structure

- Salaries
- Platform domain
- Marketing and Campaigning
- Machinery maintenance
- Materials for project validation

Revenue streams

- Student tuition
- Government funding
- Donations to support the open source project

Our Service

offering map

This map shows what our service offers to the main stakeholders involved in the process. Interesting is the figure of the maker, a figure in line with the values of the service-system, which spontaneously participates to enrich the platform with its projects, considerations and that at the same time is enriched by the materials made available on the site.
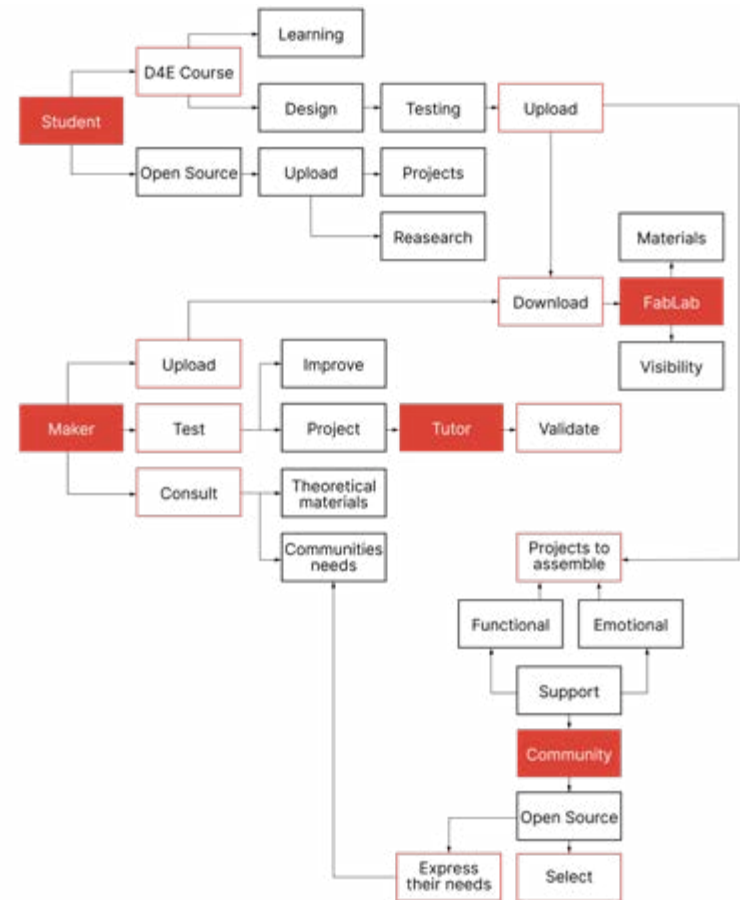
the maker

Marco
Milan, Italy
Architect
33 years-old
Male

Bio

Moved to Milan for the job opportunities that it offers, he lives with his best friend with whom he shares the passion for bricolage; he usually attends fab-lab and creative environments thanks to which he improved his manual skills and design technique. His work as an architect is the way he expresses his personality and his sensitivity: what led him to study architecture is the desire to build safe places for people.

Goals and Expetations

- Be part of a larger community;
- Helping those affected by natural disasters;
- Develop its projects and validate them with competent people;

Needs

- Solving problems with his skills;
- Share his ideas.

experience map

	PRE-SERVICE		SERVICE			POST-SERVICE
Stages	Awerness & Interest	→	Decision Making & Feedback	→	Using the Service-System	→ Output

Actions	1. Continuously reads news about natural disasters in the world.	1. Fill in the template provided by the platform.	1. Receives a call from the University assigning him a	1. The appointment day he receives the link to connect with the tutor.	1. Visiting the platform and he can find his project offi-cially downloadable.
	2. Search the internet for ways he can help with his maker skills.	2. Awaits response from platform to evaluate its proposal.	2. Schedule an online appoint-ment with the tutor.	2. Together verify and implement the project.	
	3. Finds the wedesign4 platform and decides to sign up as a	3. He receives a notification from the platform where he is told that his project has been taken into consideration.		3. Helped by the tutor, it creates the zipper folder.	
				4. The tutor uploads the validated project.	

Touchpoints	Google	wedesign4 platform	University reception	Tutor appointment	wedesign4 platform

Mindset and Emotions

Excited. His product is uploaded to the platform and free to download.

Surprised. The university assigns him a tutor with whom he can talk about the project, improve and test it.

Satisfied. His project was taken into consideration because it is in line with the values of the platform.

Busy. He goes to the appointment with the tutor and together they realize the materials for the zipper folder.

Somewhat relieved. He discovers the wedesign4 platform realizing that he can share his projects.

Bored. He has to fill in all the required template to be able to upload his project.

Useless. He searches the internet for ways to help people who are experien-cing an emergency, because he doesn't know how to do it.

Our Product

our opportunity

the planet is shaking

Bill McGuire, professor of geophysics at University College London and volcanologists, theories about the link between climate change and catastrophic events. The Earth is a large ecosystem whose spheres are interconnected and live in equilibrium: a change in one of them can cause even deep changes in the others.

The increasing concentration of CO_2 in the atmosphere leads to a rise in temperature and consequently the melting of glaciers. Reducing the Cryosphere and influencing the Hydrosphere causes the sea level to rise. This alters the weight pressure of those glaciers and creates a rebound; scientifically this is called "isostatic rebound" or isostasy. This means that on the one hand there is less pressure on the earth's crust, the pressure of the glaciers that have melted and were a 'weight' until recently, and on the other hand, there is more pressure, the pressure of the rising water in the seas. It is as if a spring has been activated. The main consequences are the appearance of seismic faults and an increase in eruptions.
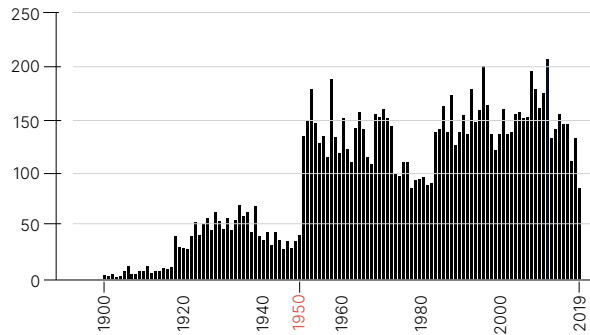
6. USGS catalog 1950-2019, M6+ Number of earthquakes per year from 1900 to 2019 at a world scale of magnitude 6 or greater.
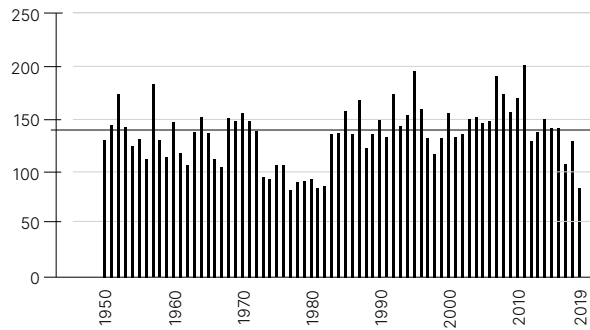
7. USGS catalog 1950-2019, M6+ Number of earthquakes per year from 1950 to 2019 at a world scale of magnitude 6 or greater.

are earthquakes increasing?

To answer this question we can use the data made available by the world catalog managed by the USGS (United States Geological Survey). It is compiled with homogeneous criteria and sufficiently complete concerning earthquakes with a high magnitude value.
In 1931, there were approximately 350 stations, today there are more than 4000 worldwide. The graphs besides shows that measurements are more homogeneous from 1950 onwards. In this case, a more regular trend can be observed, some years show negative or positive peaks, but overall the trend can be considered constant, demonstrating that there is no annual cyclicity in the occurrence of seismic events.

Shaking things up is the University of Chile's Seismological Center, which has recorded anomalous seismic activity since late August 2020. The World Standardized Seismographic Network (WWSSN) points out that the area is used for research as it has always been the largest earthquake-free zone on Earth.
In 2020, from August to December, more than 30,000 earthquake tremors were recorded in the Bransfield Strait, an ocean channel between the South Shetland Islands and the Antarctic Peninsula that is expanding six inches per year, nearly 20 times faster than before. The numbers in question came about as a result of extraordinarily high temperatures in the area that caused the ice to melt rapidly.
Now, as a result of this event, the energy stored in the Earth's core is likely to be released over time through major seismic zones around the world, causing an increase in earthquakes.

8. Antarctic ice melt, February 4 - February 13, NASA Eearth Observatory, 2020.
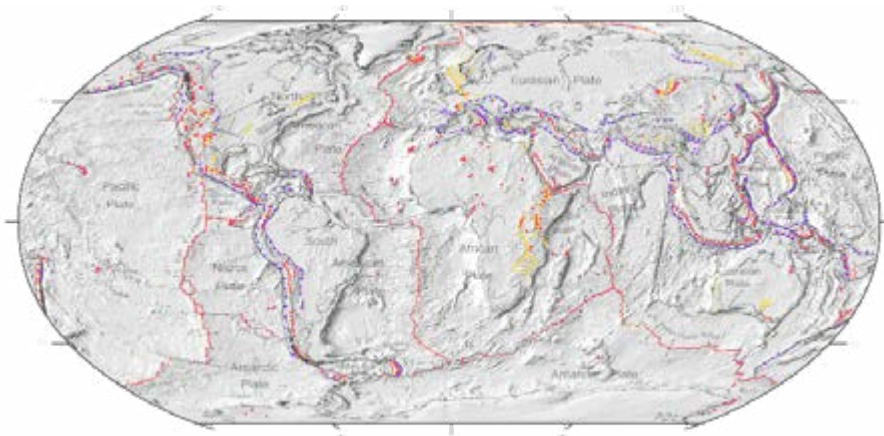
9. Distribution of tectonic plates and volcanic activity map of the last One Million years.
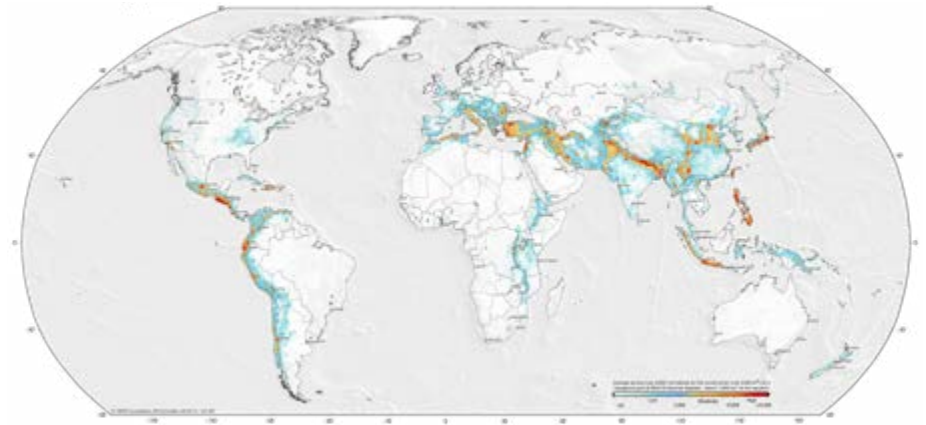
10. Global seismic risk map, GEM (Global Earthquake Model) Foundation, 2018.

italian context

The high geomorphological and tectonic complexity of Italy with its complex cultural stratification, the persistence of large 'grey' areas between legality and illegality, the impact of exogenous phenomena of global reaches, such as climate changes and mutate environmentan regularities; are a cluster of issues that return the fragility of the Italian territory, a fragility that requires a wise, transdisciplinary approach.

The two 2016 earthquakes, which struck the Marche, Umbria, Lazio, and Abruzzo regions, brought about an irreversible transformation of countless dimensions of space and has made fragile the existing relationships within the communities residing in most of the territories affected by the earthquake.

12. Destroyed San Benedetto Church, Norcia (Italy), Norcia earthquakes, October 2016.

11. Destroyed private house, Pescara del Tronto (Italy), Amatrice earthquakes, August 2016.

The difference between this earthquake and older reconstruction interventions, where 'community resilience' was not the focus of specific attention, is clear. In more recent post-disaster interventions, and especially coinciding with the 2016 Amatrice earthquake, the emphasis has been placed, from the immediacy of the first tremors, precisely on the need to 'rebuild communities'. Concerning the theme of community, it would be preferable to speak, more than of 'reconstruction', of regeneration processes, in the double meaning of neo-rooting of inhabitants (community regeneration) but also of 'new' forms of community (community generation).

In territorial and socially critical contexts such as those generated by the post-disaster, the desire for participation on the part of grassroots organizations to respond to the emergency is evident. It is interesting to note the degree of awareness of these social aggregations and their ability to position themselves as autonomous subjects who think in a post-emergency perspective.

facing an eathquake

When we speak of an earthquake action plan, we are referring to initiatives taken before, during, and after the earthquake. Focusing on the post-earthquake, we refer to the phases proposed by Robert W. Ketes, American geographer and emeritus professor at Brown University, which identity, through a *formal approach*, four linearly consequential phases to be implemented post-disaster.
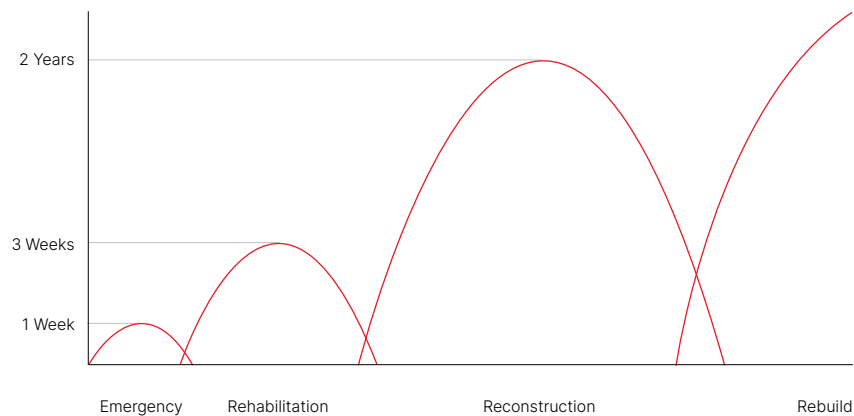
This approach is countered by a more *substantial* one, according to which the transitions are not linear, but are a set of dynamic and uncertain processes. In the rehabilitation phase, for example, not only the structural level is to be considered, but also psychological and collective rehabilitation. Disregarding these risks inhibiting, if not nullifying the communities' capacity for self-recovery and affecting the sense of place and local identity. The debate is therefore gradually shifting towards this type of approach, which presupposes an important step, namely the ability to include the local context in planning.

The intrinsic characteristics of earthquakes also lead to the loss of spatial references and the need to rethink oneself, the community, and the territory. The earthquake causes serious damage to buildings, precluding access to many structures, even to entire neighborhoods. This produces individual and collective disorientation, because of the sudden loss of two environments. The familiar one is understood as home, workplace, and neighborhood, and the one concerning structures dedicated to daily life, such as primary public services, places of commerce, and meetings.

In this context, earthquake victims find themselves having to live in anonymous places that limit social relations to a few moments in a day. The main sensation experienced in this space is estrangement and discomfort, especially because this new community is composed of people who do not necessarily know each other, despite living in close contact with each other and sharing the same dramatic experience.

our placement

Our product follows the substantive approach and is inserted at a time when the community, united by the same feelings of isolation and disorientation, feels the need to regenerate itself by carrying out unification activities to begin to rebuild, physically and psychologically, its daily life.

Specifically, we focus on the meal, building a common point of reference in which to share a moment that for Italian culture represents unity. In the first two days, the meal is no longer experienced as a moment of aggregation, but as a biological necessity to continue to contribute to relief efforts, in the form of a packed lunch to be eaten on site. In addition, the first things that are re-established are basic needs such as electricity, water and the assembly of the tents themselves.

13. Setting up of tent cities by the Civil Protection, Amatrice (Italy), 2016.

14. Moment of aggregation at lunch time, Amatrice (Italy), 2016

Twist Bench

concept

The *Twist bench* responds to the need of communities affected by an earthquake to share moments and emotions with those who have experienced the same. Conceived as a seat, it can accommodate from one to three people, facilitating in a simple way a complex practice. Dedicated to common places, the community united by assembling the object has the opportunity to recreate a place dedicated to a convivial and meaningful moment: the meal.

twist bench

key features

Fast to produce
4 pieces 100% Plywood
Easy to assembly
Stable on uneven ground

twist bench

specifications

Little material waste
the material is widespread and easily available, it is possible to realize single pieces also from waste of other productions.

Diffuse processing machinery
CNC is one of the most common machines in FabLabs and woodworking labs.

Essential packaging
consists only of a rope that holds it all together, the same rope is reusable on site.

Easy transportation
when disassembled, the product takes up little space and is stackable.

Everything is functional. With the rope used to hold the pieces of each bench together, the earthquake victims can make their own clotheslines.

twist bench

how to assemble

1.

Lay all the pieces on the ground with the joint on the seat facing up.
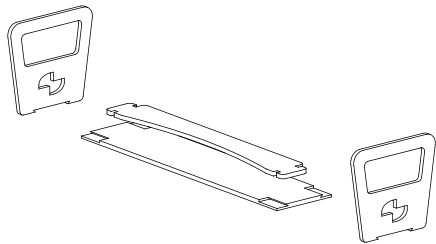
2.

Insert both legs into the seat joint and at the same time fit the plank, positioned parallel to the ground, into the leg slot.

3.
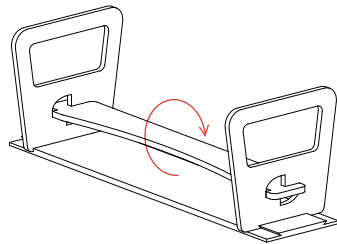
Twist the plank so that the interlock is perpendicular to the ground.
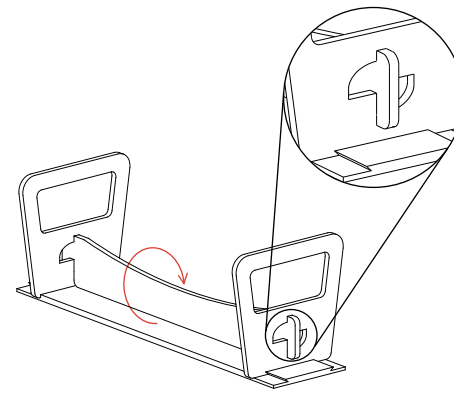
4.

Flip the bench over, and enjoy the meal!
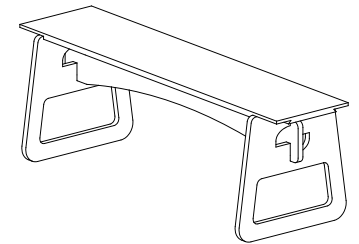
twist table

With the same philosophy and construction technique the table was also made. The Twist product line, consisting of a table and a bench, allows the complete construction of a common place to eat.

twist table

how to assemble

1.

Lay all the pieces on the ground with the joint on the seat facing up.
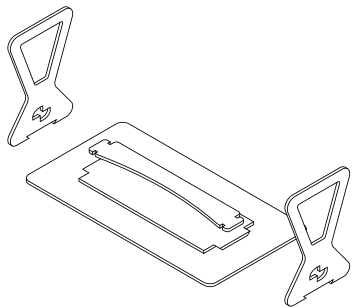
2.

Insert both legs into the seat joint and at the same time fit the plank, positioned parallel to the ground, into the leg slot.

3.
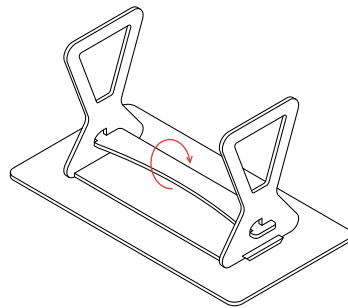
Twist the plank so that the interlock is perpendicular to the ground.
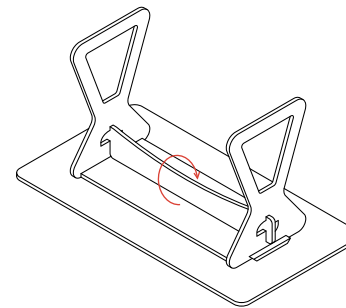
4.

Flip the table over, and enjoy!

persona
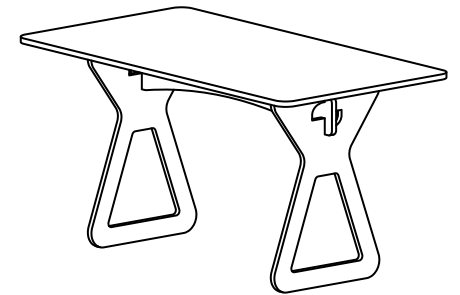
the local

Silvia
Macerata, Italy
Studend
21 years-old
Female

Bio

Silvia lives in a small town near Macerata, where she attends the "Cultural Heritage and Tourism" course at the University. She is passionate about art in all its forms and can not stay with his hands in his hands, has experienced disciplines ranging from painting to theater. She is very empathetic and often feels the need to share her feelings and to feel understood, as much as she is willing to listen.

Goals and Expectations

- Connecting with her community;
- Rebuild missing common spaces;

Needs

- Spend her free time doing something useful;
- Share her state of mind with someone who understands her;

experience map

	PRE-SERVICE			SERVICE			POST-SERVICE

Stages	Awerness & Interest	→	Decision Making & Feedback	→	Using the Service-System		→	Output

Actions

1. She wanders around the camp looking for something to do to help.

2. The civil protection directs her to the Service Manager of wedesign4, informing her of the activity offered.

3. She goes to the service manager's tent to inquire.

1. Engages with the rest of the community by talking to them about how they feel.

2. She communicates with the Service Manager expressing their needs.

3. She consults the platform selecting some products of her liking

1. She goes to the tent to be set up with the rest of the community.

2. The benches to be assembled are distributed to the community.

1. She unties the rope that holds the pieces together.

2. She reads the assembly instructions.

3. With the rest of the community she assembles all assigned products for the common area set-up

1. Shares the meal with the rest of the community by recreating bonds in the common area rebuilt all together.

Touchpoints

Civil protection   Community   Service Manager   wedesign4 platform   Service Manager   Instruction   Twist Bench   Twist product line

Mindset and Emotions

Grateful. She finally has a place to share meaningfull moments with her community.

Capable. the instructions are easy to understand and assembly is within everyone's reach

Amused. Feels useful and spends time with her community in the process.

Listened to. She expresses her needs to the Service Manager who is there to help her as part of a community affected by an emergency.

Pleased. Products to assemble have arrived, but need to be distributed and organized.

Somewhat relieved. She is advised to participate in the initiative of wedesign4.

Impatient. She has to wait for the pieces to be made by FabLabs.

Struggling. She wants to help her community and share her emotions with it, but she doesn't know how.

Our Identity

positioning map

The positioning map was constructed by assuming the point of view of a person who wants to participate in the activity of a particular NGO, studying how the most relevant competitors operate. The positioning of our brand falls in the red quadrant of the map and is the result of an analysis of the activities we propose to support the cause.
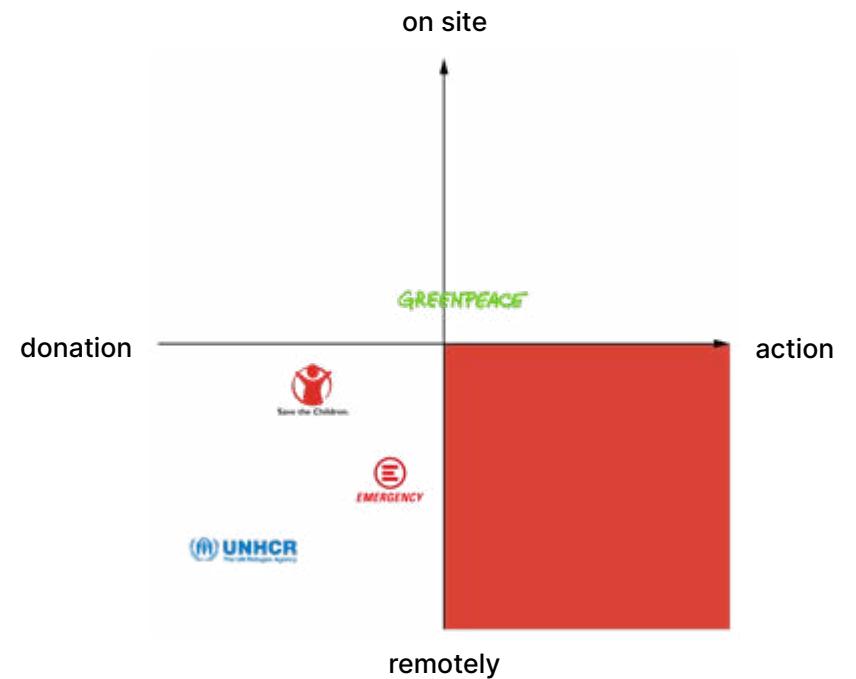
values

Education
build the future of tomorrow by educating people.

Empowerment
of students, local producers and natural disaster's victims.

Community
is the pillar of brand and service. Everyone should partecipate to make the change.

We give practical help to victims of a natural disaster;
We educate students to put what they learn to use for a social purpose;
We create communities of people who offer their skills to help others;
We stimulate a dialogue around the topic of natural disasters.

tone of voice

The claims designed for the advertising campaigns and payoffs are exhortative: they aim at pushing the user to take concrete actions; it's time to act, but together, collaborating with us.

The pronoun "we" is widely used to mean that the touchpoint is the platform itself and value is created through it. It also emphasizes that wedesign4 is first and foremost a community.

At any point regarding branding, however, don't forget that you are dealing with a sensitive and relevant topic and that the people involved are very sensitive to the issue. Therefore, it is important not to exaggerate the frivolous and/or tragic side of these emergency situations in order not to make it sensationalistic and unrealistic.

our words

We
Together
Maker
Design
Develop
Improve
Empowered
Communities
Regeneration
Face
Action
Education

mission

Provide a service with two main aims:
- Create awareness and culture around the problem of natural disasters;
- Help victims of natural disasters through locally created products.

vision

Create the biggest designer community for mutual help, bridging global skills and local resources.

logotipo

Naming represents the goal of the service system, which is to design for: for people, for natural disasters, for educate and for helping each other. The payoff energetically calls for collaboration to effectively ad-dress the climate emergency.

The logo references the maker philosophy being promoted through the wedesign4 platform. The result is an inverted "W" constructed from a folding ruler that serves as a symbol of craftsmanship and manual labor.

construction grid

Let's face it together
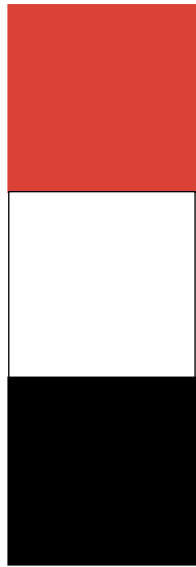
palette

HEX #DB4236
RGB 219 66 54
CMYK 7 85 79 1

HEX #FFFFFF
RGB 255 255 255
CMYK 0 0 0 0

HEX #000000
RGB 0 0 0
CMYK 0 0 0 100

The palette used for the entire Brand Identity and through which the online and offline communication is declined, is composed of three colors: red, white and black.

The black and white colors are basic, this is because the accent and immediacy of the palette wants to be given by red. The red color is the color of the emergency and emphasizes the urgency of the the topic we deal with, however, it is slightly off to facilitate readability when superimposed on black.

typography

Aa
Space Grotesk
Medium

The primary font, Space Grotesk, is also used in the logotype and recalls the shapes of the logo. The angularity and geometry of the font refers to the world of maker in its meaning of *do it by yourself* from which craftsmanship emerges.

Aa
Inter
Regular

The second font, Inter, was chosen because it is designed for excellent readability on User Interface. The main service we offer in fact, is through the platform, the primary touchpoint of the whole wedesign4 experience. In addition, visually, compared to the first font, it is simpler, balancing the combination.

In addition, both selected fonts are open source, a feature in line with the philosophy of the whole project.

highlight details

The crop mask used in image manipulation represents the enlargement of a detail of the logo, made with the red color of the palette. In this way it is possible to highlight elements of the photograph, without distracting the eye from other less important elements.
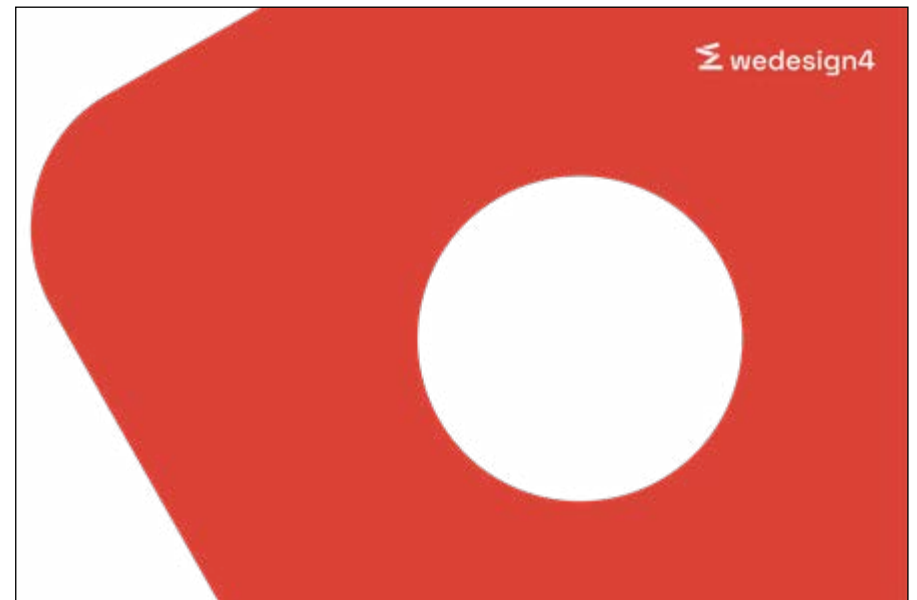
advertising campaign

Regarding the online platform and pre-emergency communication, the target audience is the maker community of volunteer students and designers who upload their projects online.

It is crucial that the projects are uploaded on the platform. Students are a guarantee because they have to make the project for educational purposes. However, it is important that they do it by putting in as much effort as possible; therefore, it is important that the brand inspires them, pushing them to do their best.
The Maker community is another stakeholder we pay special attention to because they are the ones who can expand the project outside of the university. It is essential for them to have a strong and efficient community to rely on. To convince them to design for emergencies, the campaign towards them is set up as a challenge to appeal to their "competitive" side.

≤ wedesign4

We design for
natural disater

We are an online platform that
empower students, makers and
local communities.

≤ wedesign4

Let's get through
these hard times.
Together.

We are building a worldwide
community of makers and
designers to to cope with
natural disasters.

online platform

The online platform is accessible from all devices. The menu is divided into sections to facilitate and organize the navigation.

The first section is *the project*, through the 5 w and the explanation of the values, the project and its mission are presented. The second section is dedicated to *higher education* where student research, case studies and information aimed at education are made available. The third section is dedicated to the *products*, here are displayed and downloadable all the projects made for the platform with their specifications and are divided in turn into pre, during and after disaster. The last two sections are dedicated to external stakeholders or the *makers*, where they can upload their projects and open discussion topics, and the *fablabs* whose section presents a mapping of partners, also to allow the end-user to find the one nearest to him/her.
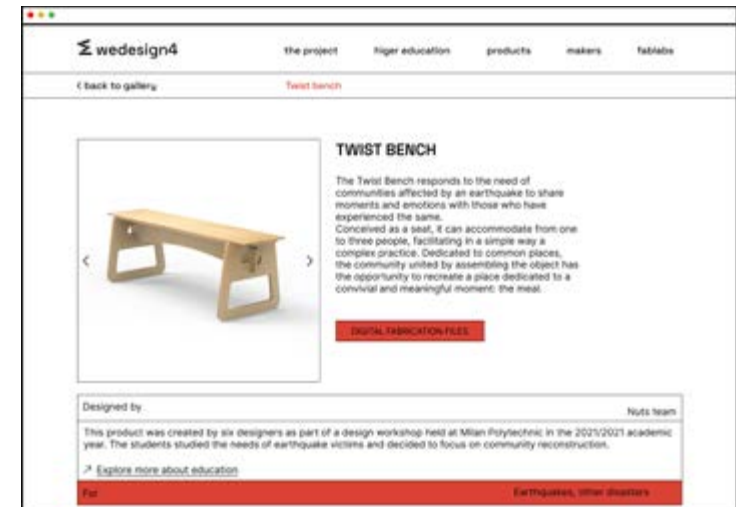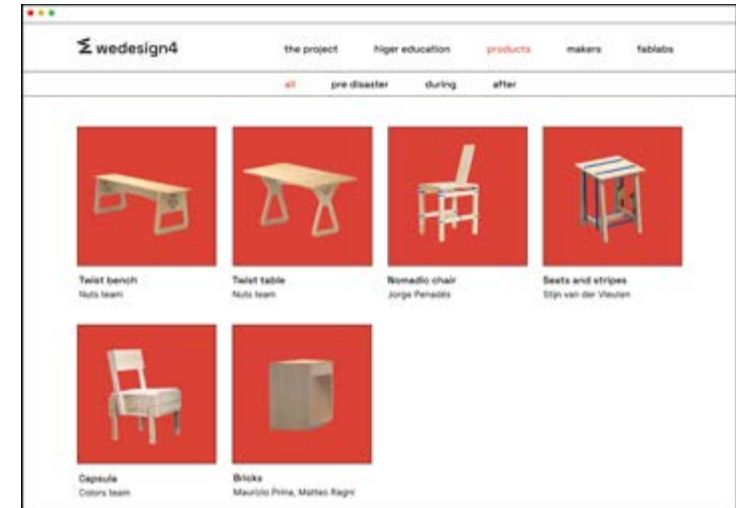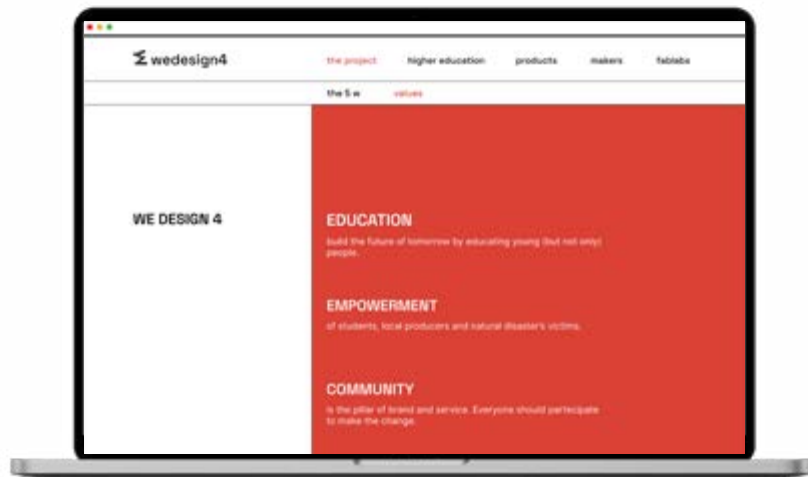
video teaser

The video has three main steps: the first concerns the scenario in which the service system is inserted, in the second part the key points of the project are highlighted and finally the *twist bench*, emblematic product of wedesign4, is presented.
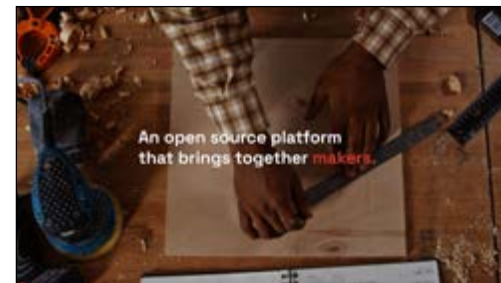
In-depth

voice to people

After defining our scenario, we needed to better understand real people, using the power of empathy to put ourselves in people's shoes, to think outside the designer box. So, we invited 3 people, who suffered an earthquake in Italy, to talk to us and express themselves freely respecting the pain they felt.

To make the conversation more natural, we designed the structure and canvas of the questions according to the timeline from past to future, consistent with the way people think when they remember and reconstruct past events. Thus, our interview was based on three main strands: memory, present situation, and ideas for the future.

During the process, we tried to explore their true feeling, pain point and gain insights, this helped us to go deeper in our direction and understand what are the triggers, and the still open wounds that victims are not yet able to share, the ones they feel they share only with those who have experienced the same tragedy and the small doors left open for strangers to enter the tragedy.

	Situation	Feeling	Pain Point	Insight
Earthquake	Late night/badroom; Searching for family; Scream and cry; Close doors and windows.	My head was pounding; I thought I was dying; Unbelievable; Unconscious.	Get injured; Lack of awereness; Everything had changed in an instant; No more reference points.	Helping people in the moment of escape; Need to improve awareness to respond in case of emergency; The reaction of others remains deeply etched in the mind.
Emergency	Basic necessities; Take refuge in schools; Rubble, screams and dust; Looking for survivors; Lost the city connection.	Couldn't sleep that night; Helpless; Powerless; Totally panicked; Upset.	No one gave us support for the first few nights; No place to settle down; We wanted to react but didn't know how to do it; Loss of personal affections.	Earthquake happens in people's hearts too; Locals want to fight back and get involved; The ruins bring the moment back to memory, as a common point; Being alone worsens mood, connection between people is needed.
Rehabilitation	Fire brigade service.	The feeling of emptying my home was killing me.	Limited space and time; Wait for a long time; Looters robbed homes.	Making it possible for people to secure the things they care about most right away.
Reconstruction	Building SAE and tents; Move people; Psychological support; Gathering places.	Bad living experience, Readjustment is difficult; Trying to be useful; Comforted for the help; No sense of belonging; Attachment to old places.	Very hot summer; Disorganization; Constant displacement; So many people who needed even just to talk.	Settling in quickly is crucial; Some people need to do someting to feel better, like join an organized activities; People need accompany and psychological support.
Rebuild	Meeting places; Rebuild the community; Dealing with trauma.	Sense of disorientation; Fear of the memory.	No enter in public place; Haven't had chance to recreate the previous community; Contact has been lost; Can not get anything back.	Reconnect people is important but not in the earthquake place; Gathering, listen ,comfort them will be helpful; Trauma lasts for a long time.

the testimony of Silvia

Silvia lived in Pieve Torina. The epicenter of the earthquake was in Visso on October 26, 2016. She was 16 at the time and is 21 now.

"It all started on 26 October 2016, I remember there was the first tremor around 7:30pm. I wasn't at home, I was with a friend of mine, we were going to her house for a pizza. We had arrived at the bus stop when the pole holding the sign with the bus times started to move. As soon as we arrived at her house my mother came to pick me up and told me that there had been some damage and that we should go home and check it out. At 9.30 p.m., while we were having a bite to eat, I heard the roar."

At the exact moment the earthquake happened, did you think to take anything with you? something with you? Did you have a chance to come back later?

Absolutely not. At that moment we ran away from home. I remember that two hours later, almost two hours after the earthquake, my father went into the house to get the basic necessities: blankets, pillows, bottles of water, things that were needed immediately. I didn't have the chance to get my belongings from home immediately. However, I remember that there was a fire brigade service. Upon request, they could accompany you to your house for 15-20 minutes and you could retrieve the most precious or necessary things. There was this possibility, but in the early days only my father took advantage of it and took away what my mother, grandmother and aunt needed.
It took me a little longer to get my things. For the first ten days I couldn't even go in, I couldn't do it. Then with my father's help I went home and managed to take some things. I didn't know what to bring, I had little space, and although the desire to bring something with me was growing, the feeling of emptying my house was killing me.

I know that you are now in Matelica, a small village near Pieve Torina, where you used to live. Do you feel safer now in your new home?

As soon as the earthquake happened we were given the chance to live in a hotel near the coast. Later I moved to Matelica. My grandmother and my aunt, however, needed to return to normality in our country, so they went to live in the SAE, back close to home, so to speak, and that upset me a lot. In Matelica, where I live now, there was little damage. Despite this, I don't feel safer here than at home. In fact, I don't feel safe anywhere. It's in my head now, I think about it all the time. Even when the man who lives upstairs moves his chair, I break down. It's something that stays with you. I've had a lot of problems.
I've lost weight, and it's been a real problem to accept. I would have preferred to move to another area, but my father's job and my studies don't allow it.

Since you are in an area at high seismic risk, did you carry out any pre-earthquake activities to sensitise yourself to the subject?

Although there was another earthquake near my home in 1997, we were never informed or prepared for the subject. Nothing specific was done. I expected more, even from the school. They had an obligation to prepare us more. We didn't do anything except for the classic evacuation tests at school, but as you can imagine, they weren't enough.
After the earthquake, were there any initiatives to try to rebuild your community? Were the meeting places rebuilt?
We didn't receive any support, neither at a psychological nor at a physical level. I think the only place of community was the church. People would go there for any reason, and there were always people there to help them, to listen to them, to comfort them. For the rest, nothing, not even meetings organised between a few people, just to recover relationships. I am convinced that it would have helped someone, it would have helped me too, I could have taken less time to do everything, who knows. I felt uprooted from my routine. Within a year I lost all my friends. We were scattered all over the place, so much so that of the many friends I had, I only managed to keep two contacts, and that changed me a lot as a person.

the testimony of Stefano

Stefano lived in Libertino. The Epicenter of the earthquake was in Accumuli on August 24, 2016. He was 50 at the time and is 55 now.

"There was a festival in the village, it was the festival of the patron Saint Bartho-lomew. We had parties, we ate, played games, danced, all the children and fami-lies were there. It was a very popular event, and many of us - myself included - went to bed late. The party went on until late into the night, and I remember that night we went to bed at 2.30am. We had been to the village, we had been drin-king together and fortunately many were still enjoying the party on the village fo-otball pitch and were saved because of that. I was at home with my wife. At 3:36 a.m. I remember I was on the bed without my pyjamas on and I heard the roar."

Did you take anything with you at that moment or did you go back for something?

You can't go back to the village, the military is watching. We haven't recovered anything from the houses, I've lost everything, practically everything.
Jewellery, valuables, and things I cared about most. They didn't let us get anything back after all those years of sacrifice. In the beginning I went to the house every day just to check that nothing had been stolen. Then over time I got over it, I gave up everything and tried to get on with my life by detaching myself from that context.

Immediately after the earthquake, did you run to safety or participate in the rescue effort?

I think I was one of the many who rescued other people that night.
I was naked and vulnerable but at that moment you don't think about the con-sequences. There were too many people to save and help never seemed to arrive. That's why I rescued my aunt and her 7 year-old nephew first. I smashed the window, cut my whole arm but helped her out. Later I heard another boy screaming, he had been crushed by a cupboard on the second floor. Five of us went to dig with our bare hands, risking death because we didn't know what was underneath. We were wrong, but we wanted to save another life. It wasn't like that, the fire brigade pulled us away and couldn't extract the boy until 5pm.

Have your meeting places remained the same after the earthquake? Have they been rebuilt?

I remember vividly that there was an abandoned primary school when I was young. We kids used to meet there and spend time together. The school itself changed over the years and became a meeting place for many young people.

This was also the case for my daughters and granddaughters who, before the earthquake, used to spend the whole summer there. After the earthquake, my daughters didn't want to return to the village for a while. When they came back and saw everything destroyed, it was very sad. They promised us that they would rebuild everything: a square, a garden for each family. Practically a new village. They gave us nothing. Today you can't even enter the village, let alone think about rebuilding a common place. They said they would rebuild, but five years have passed and, unfortunately, with the Italian bureaucracy, not even the procedures have been started.

House of Stefano after the earthquake, Libertino (Italy), Accuculi earthquake, August 2016.

the testimony of Lorenzo

Lorenzo lived in Bussi. The Epicenter of the earthquake was in Aquila on the April 6, 2009. He was 23 at the time and is 35 now.

"That night I was late, I had gone out with my friends, it was three o'clock and when I got home I just thought it was late, I wanted to sleep because the next day I was going to school. It wasn't like that, I couldn't sleep, I could feel the heat, then the roar, then the commotion. There were many tremors, some more and some less strong. It was thought that they were aftershocks. Then came the fatal one."

Since you are in an area at high seismic risk, did you carry out any pre-earthquake activities to raise awareness of the issue?

I remember that year, the school and I took a trip to Rome to learn more about seismographs and how to certify and prevent an earthquake.
It was very strange, I didn't know anything before that experience, it was like a sort of warning for me.

After the earthquake, were there any initiatives to rebuild the community? Were there any meetings, or were the meeting places rebuilt?

No, in terms of initiatives, there was nothing organised. It was precisely this that prompted me to become a volunteer. I had little free time before the earthquake, I didn't have this desire. After the earthquake, I changed my way of seeing things. I rearranged the priorities in my life and changed my lifestyle.

Have your meeting places remained the same after the earthquake? Have they been rebuilt?

The meeting places have not been touched. Luckily the squares and main streets were not destroyed. As I am very attached to my village, I went back to live there, trying to rebuild my life with my lifelong friends and my family.

Immediately after the earthquake, did you run for safety or did you participate in the rescue effort?

At first, I only thought about saving myself. I could hear the shouting, the crying, but I felt stuck. I was traumatised. Then they moved us. The first few days they didn't know where to put us and we took refuge in the village primary school. I felt very useless. I didn't know what to do, I wanted to react, I wanted to take control of the situation and not just stay there. At first I helped build tents, I helped people move in. Then I started wandering around, listening to people's stories, consoling them, offering my psychological support. There were so many people who just needed to talk. I realised that I could and wanted to contribute to that situation without receiving anything in return. I changed my life.

understand people needs

survay

Next, we developed an online survey so that we could ask targeted questions about the insights received in the interviews. This allowed us to get more specific and functional responses that were useful for concrete concept development. The survey was again aimed at people who had experienced an emergency situation due to an earthquake.

Composed of 13 questions related to three main themes, we received an average of 54 responses, in fact, due to sensitivity, each question had the option of not answering since they were not mandatory.

main themes

How daily actions changed after earthquakes

Points of refernce before and after earthquake

Objects or actions to process what happened

what they miss

Point of references, places they used to frequent no longer exist: tends and/or shopping mall become the new centre of everything;

Daily actions like drink a coffee at the bar, go out for a walk, go to the supermaket;

Sense of community;

The privacy of their homes.

what helped them

Doing activities together in tend;

Meet and talk with other people, socialize;

Read books;

Be involved in planning the future.

the conclusions we have drawn

They are devastated by the earthquakes consequence and have a lot of free time because their previous routine no longer exists;

People live in tents for several weeks and then usually move into SAEs, the new point of references become community places;

They feel understood by the people who lived through the disaster with them, sharing their emotions and time with them helps them.

needs

We categorized all of the needs collected from the interviews and survey by dividing them into 4 main categories: emotional, functional, economic, and health. For our project, we decided to focus on the first two categories of needs.

Points of reference

Daily actions

Sense of community

Commemorate

Distractions

Functional

Comfort

Privacy

Public spaces

Eating room

Emotional

Needs

Health

PTSD

Mental disorders

Sleep problems

Economic

Destroyed Building

Tourism

Agricolture

Schools

" I don't feel at home anymore "

" It destroyed my house and stucked my family by sorrow "

" I want to be helpful offering my contribution to the community "

" The screams and cries were very impressive "

" I don't have the opportunity to go back to my country "

previous bench hypothesis

1. During firtst approach we started thinking about how create a bench without screws or any other type of additional element. So we defined some legs that can be used to block the seat compnent.

2. In a second step we arrage different shapes of the legs adding a vertical support for the seat. In this cases we understood that legs can't reach the surface to avoid problems when people seat.
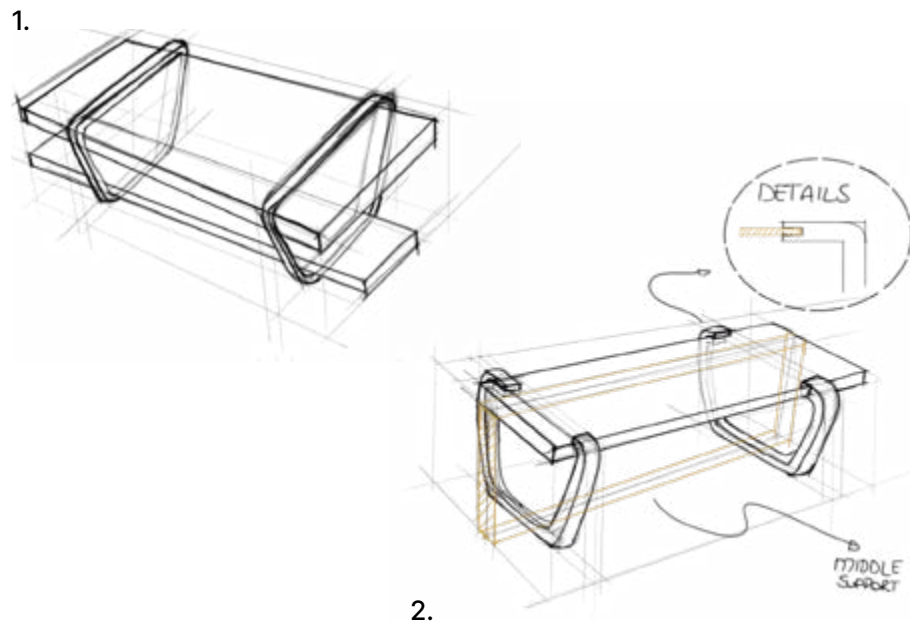
3. At the end we changed our point of view moving from legs to seat component. We thought about a common shape for the joint that can involve also the support.

4. So we defined a system interlock that can block all the elements in single and simple movement.

1.

DETAILS

MIDDLE SUPPORT

2.

3.

4.
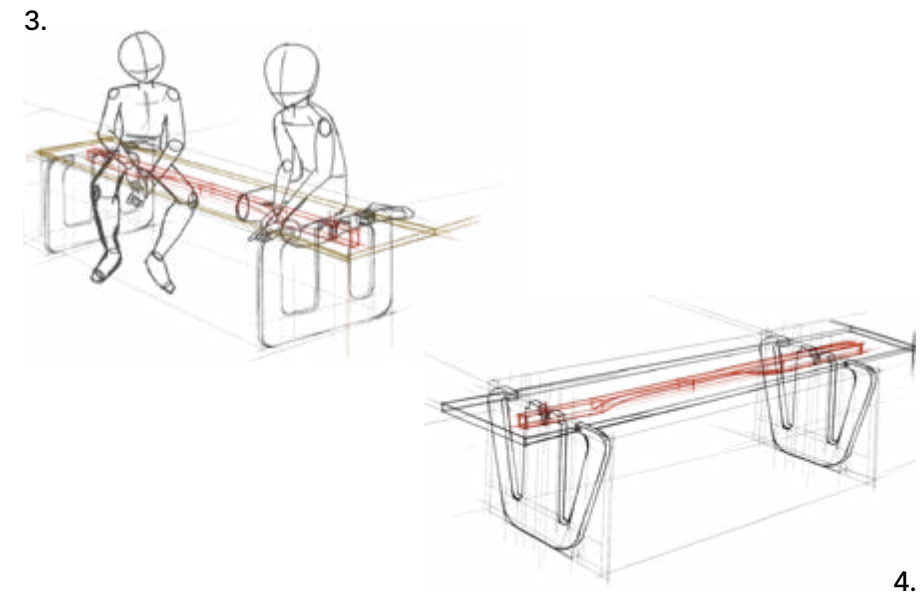
prototyping

As for the realization of the physical mockups, first they were made in cardboard in scale 1:1 to understand the real rendering of the size of the object and its feasibility.

At first we realized that by making the legs of the bench at 90° angles, stability was guaranteed on flat ground, but flexibility is lost at uneven ones, such as those found in seismic zones.

interlock exploration

The interlock system, is the system designed for our product, so that no additional materials are needed to assemble it. Everything is based on the interlocking of the legs to the seat held together by the central axis that acts as a block.
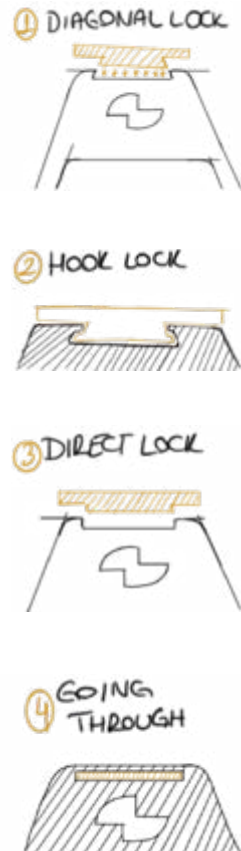
final bench sketch
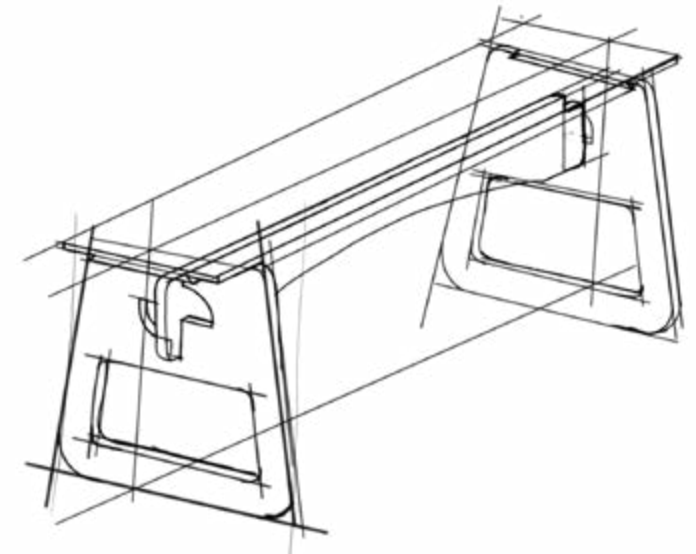
technical drawings
twist bench

Seat
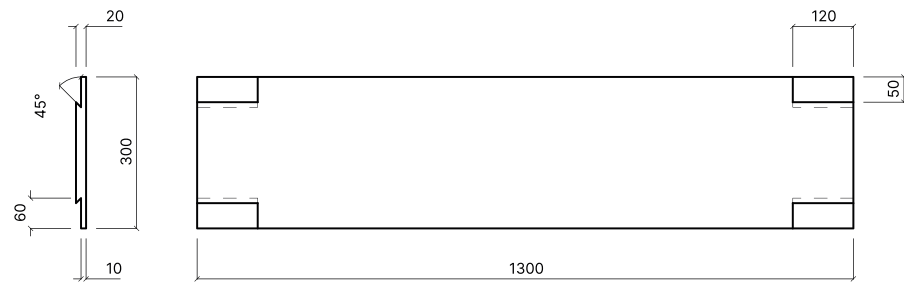
Central plank

Legs

sezione A-A'
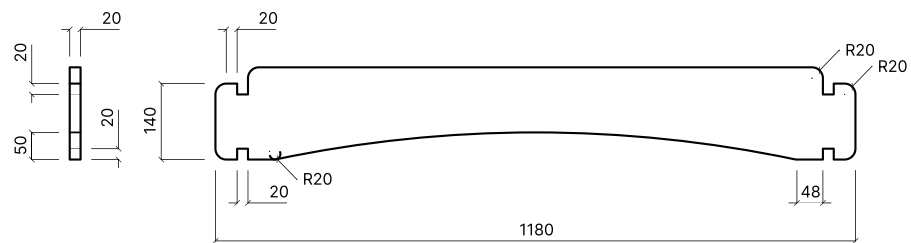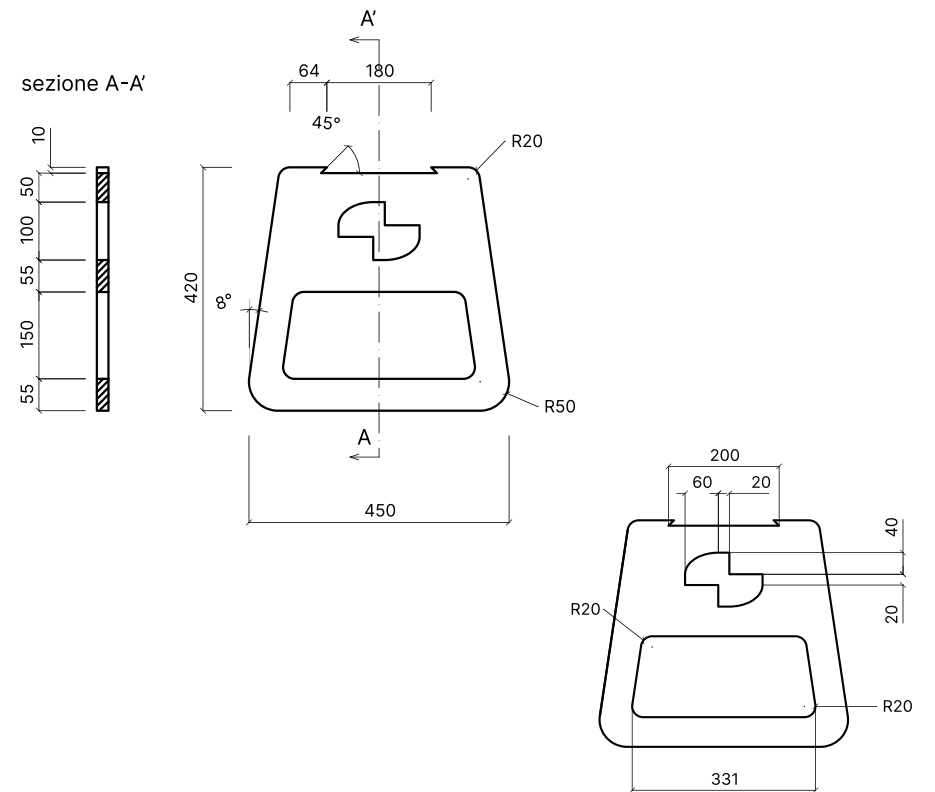
technical drawings
twist table
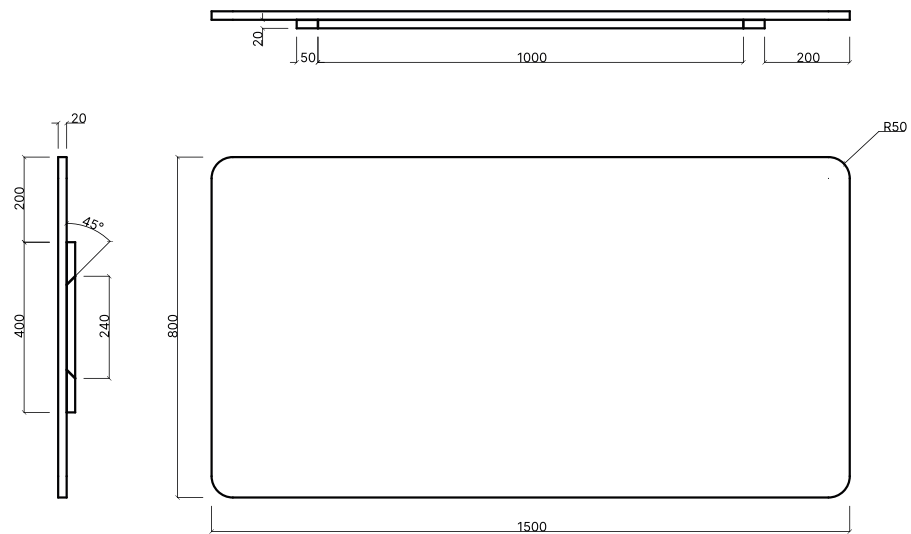
Central plank
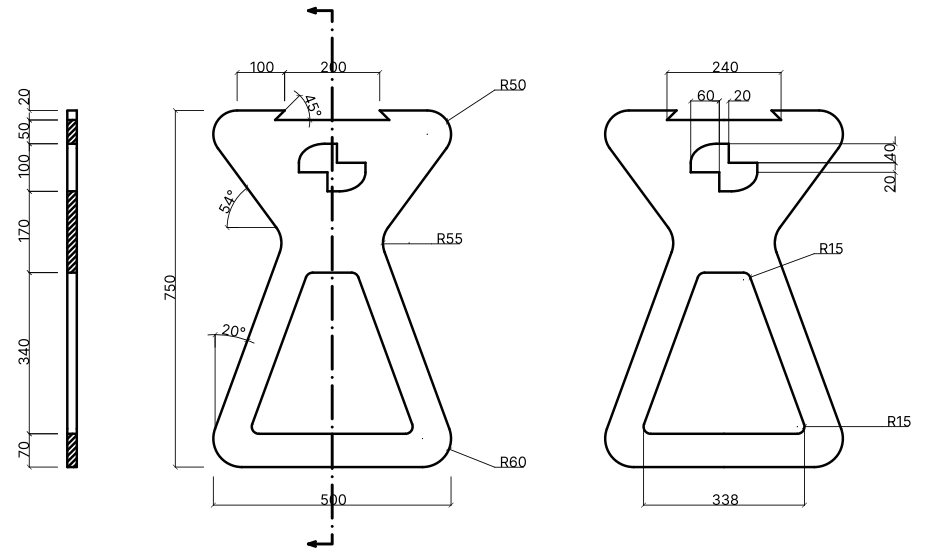
Seat

Legs

prototyping

1. Making legs
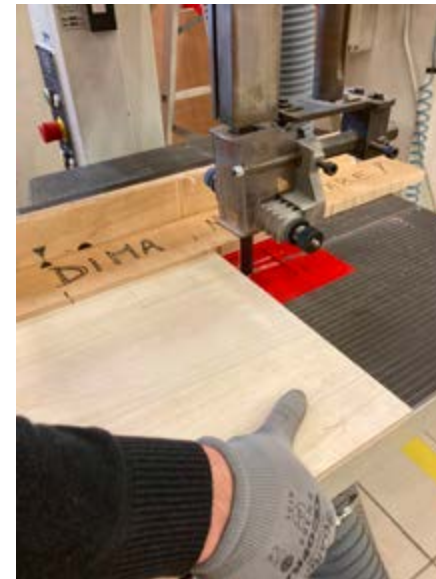
2. Making seat and cutting interlocks

3. Assembly

4. Sanding and giving protective oil

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