

ENERGIA
Design for evolving
scenarios

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PLAN-B

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SURKUTWAR



01

WHO WE ARE

VISION

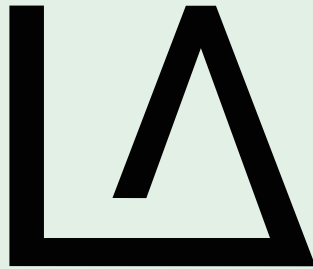
Our aim is to make Milan a city in which everyone can be a house dweller.

MISSION

PLAN-B is an Italian private organization based in Milan that provides temporary off-grid housing solutions to those members of the society struggling with their energy bills. Safety and independence are the essences of our innovative products that, from an Eco-friendly point of view, represent a new beginning within the metropolitan area.

Cr. Daniel Seßler





PICTOGRAM

PLAN-B

LOGO

345B3D

9FCCAA

E1F0E5

FFFFFF

PALETTE

VALUES

Independence: PLAN-B seeks to create solutions that enable the user to gain independence in terms of energy and from city conventions

Reappropriation of the urban space: PLAN-B wants to exploit the existing elements of the metropolitan area, which most of the time is not welcoming to citizens.

Affordability: PLAN-B tries to support citizens in economic hardship who cannot afford adequate housing condition.

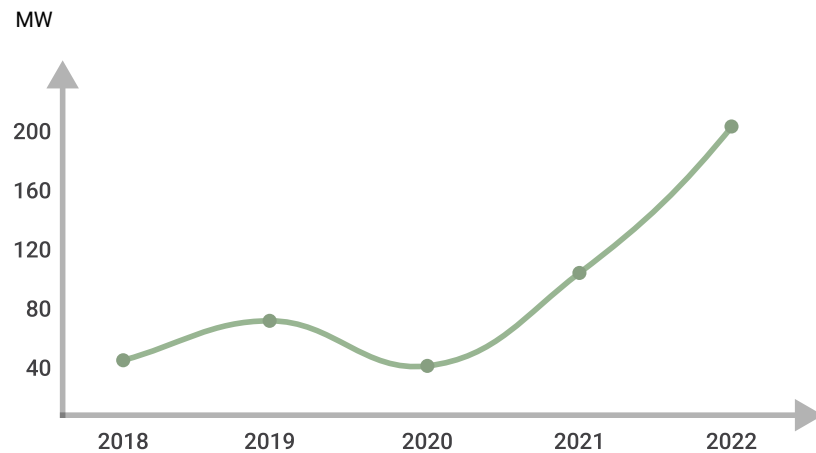
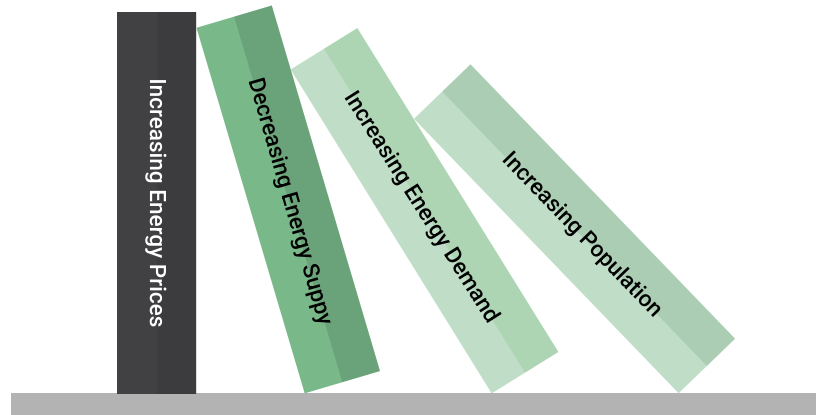
Awareness: PLAN-B seeks to create solutions that educate the user on a more responsible usage of resources.



02 INTRODUCTION

This section is an introduction to the problem our service aims to solve. We have gone through an extensive process to propose this solution. We have carefully summarised the content for this booklet out of all our outcomes from micro steps and design decisions.





[1] Italy electricity price 2023 data - 2004-2022 historical - 2024 forecast - quote [Internet]. Italy Electricity Price - 2023 Data - 2004-2022 Historical - 2024 Forecast - Quote. [cited 2023,Jan18]. Available from: <https://tradingeconomics.com/italy/electricity-price>

PROBLEM

How might we provide a sustainable living space to people in transition so that they can have all fundamental needs?

Energy in Italy is obtained chiefly from fossil fuels. With the decline in the availability of fossil fuels, energy prices are getting higher each year. It is observed that Italian wholesale electricity prices have almost tripled in the last year, and the majority of this increase can be attributed to soaring gas prices. According to IEA, the residential sector consumes the highest amount of natural gas [1].

Thousands of people move to Italy every year for work and study opportunities. Milan is one of the most densely populated areas of Italy. With the rising number of people, finding adequate accommodation is a huge struggle.

All of this results in people being unable to afford amenities as fundamental as housing and energy. Many of them end up living on the streets.

Thus, we recognize a need to provide people with transitional accommodation in Milan City. It is crucial to give people a sustainable, and sufficient living space.

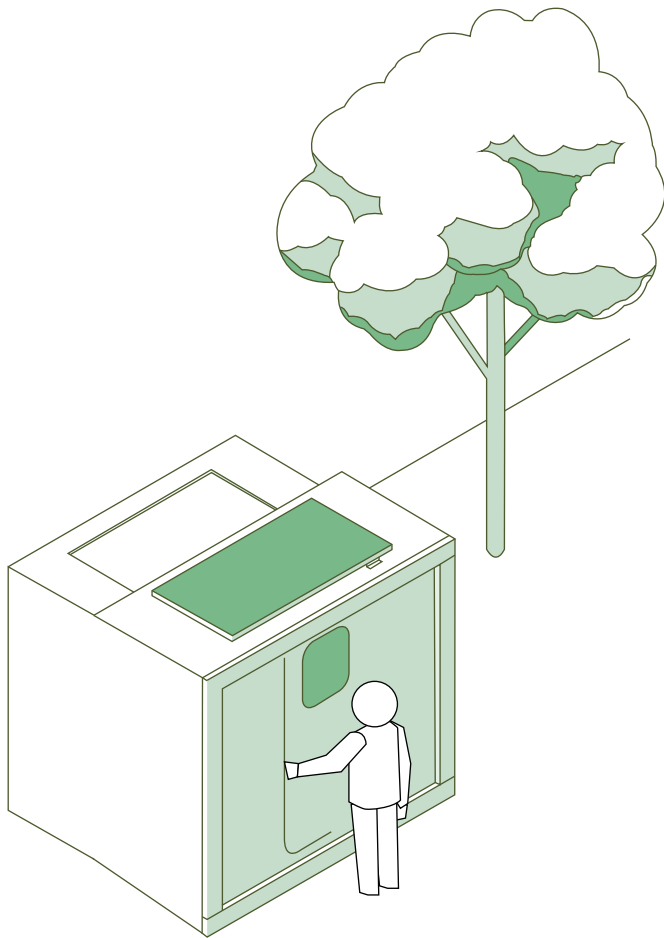


Cr. Clay Banks



INSPIRATION

In the process of research, nomadic living inspired us. Being nomadic is more about the challenges of living off the grid than just traveling. This lifestyle is the ultimate way of being minimalistic and taking responsibility for your consumption on earth. One of the most inspiring steps in this process was realizing how human need is minimal. We body stormed living in a tiny space and figured out a person's fundamental needs.



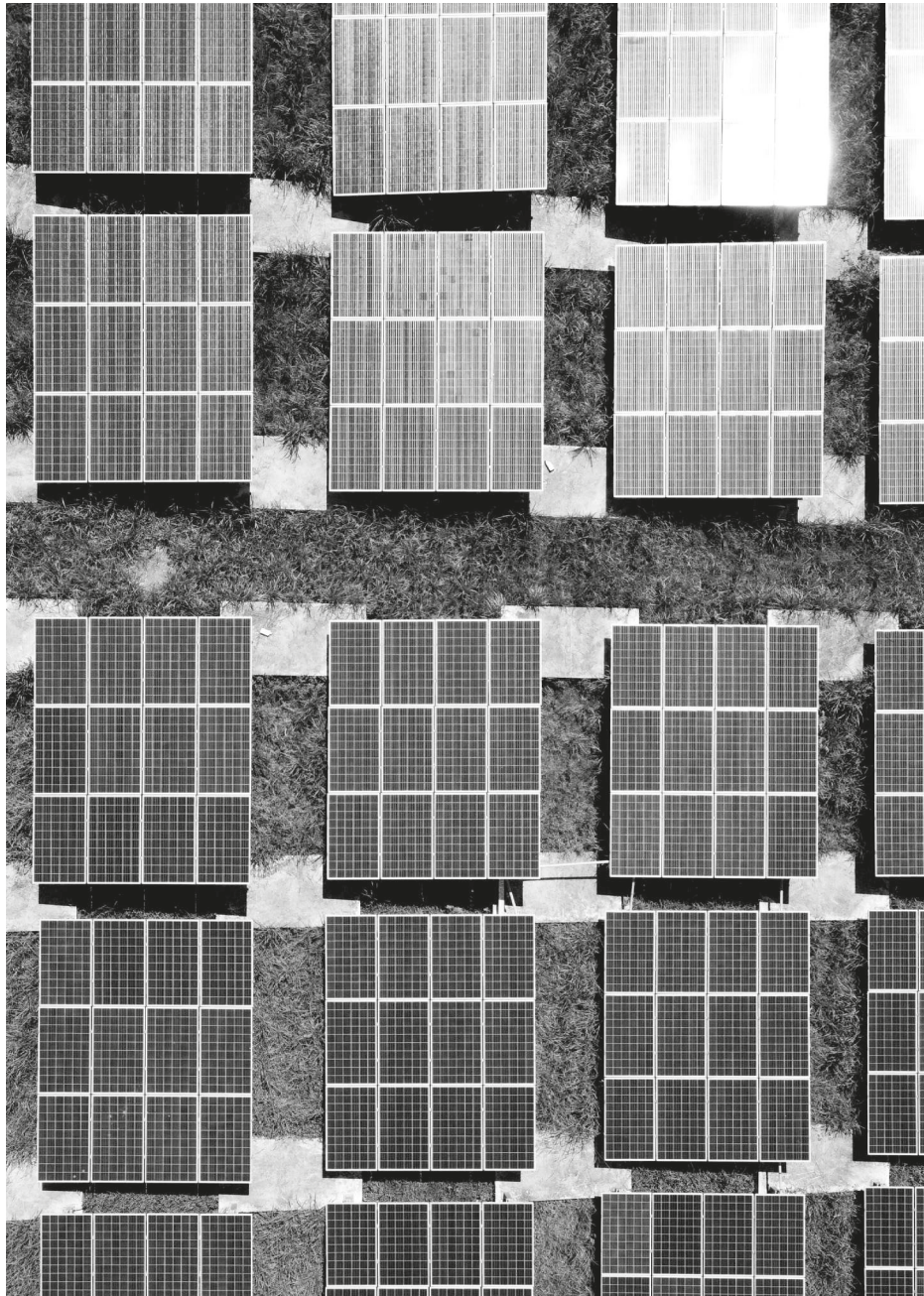
SOLUTION

Our team at 'PLAN-B' focuses on creating sustainable living solutions for students in Milan. We identified the need to develop a sustainable off-grid living solution for students who need accommodation support.

Thus, we propose a PLAN-B service. This service aims to solve the problem of the unavailability of adequate housing in Milan. The primary offering of this service is a PLAN-B house. It is a convertible off-grid tiny house designed for students needing low-cost housing.

The product is primarily a public bench that people can use in the parks. However, when a student books a PLAN-B service, he gets access to convert this bench into a house. This little house uses solar energy to provide a charging source inside the house.

In addition to giving accommodation, PLAN-B offers students free access to public washrooms, showers, lockers, and discounted meals during their stay.



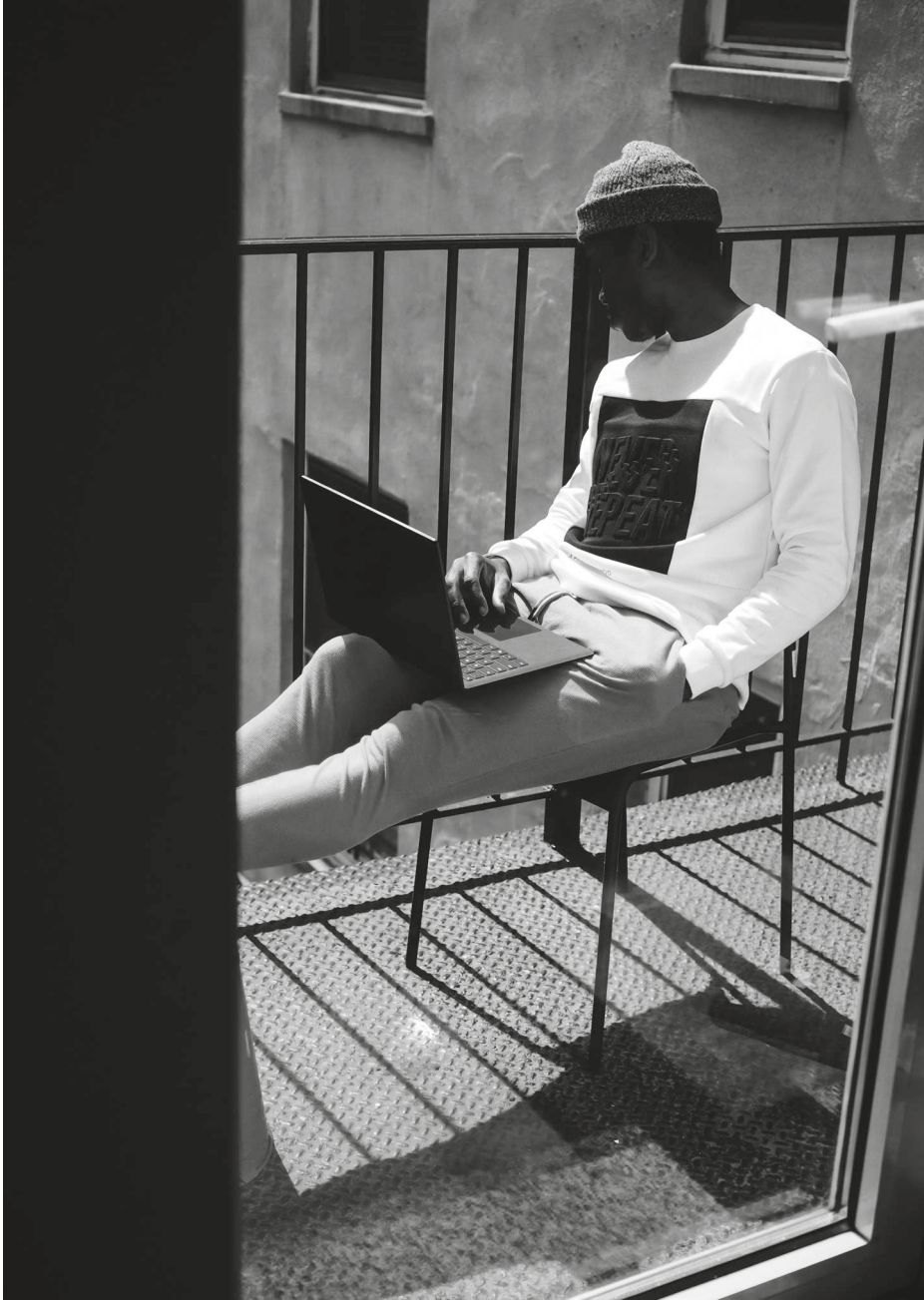
Cr. Anders J

03 SCENARIO

This section describes a scenario predicted to occur in the year 2025. We have made this prediction by referring to the available data and its fluctuation patterns. The scenario illustrates how energy can be unbearably expensive in Milan. As the previous section described the problem, our scenario takes it forward with a specific context in future with the supporting data.



Cr. Francesco Zivoli



Cr. Surface

DATA

As a result of skyrocketing gas prices, electricity prices in Italy have almost tripled in the last year. According to the trending econometric models, electricity prices will increase by five times in 2025. [1]

Every year, 20 thousand students come to Milan from over 100 countries, including Italy. These students struggle a lot to find affordable living space. The demand for cheap houses is high. Thus, students have to make a booking 7-8 months earlier. If they are late in booking accommodation, it is a bigger problem as all places get sold out, and university housing has inadequate capacity. This problem is worth addressing as energy prices are highly associated with the kind of accommodation a student lives in.

Students find it unaffordable to pay high rent, including increased energy bills. They desperately look for affordable accommodation options and could sometimes end up on the streets in extreme cases.

In this scenario, our product is accurate as it provides students with a modern off-grid living solution.

Cr. Idanthyrs

Ancient Nomadic lifestyle

Mobile communities who traveled in search of food & suitable weather conditions.

Cr. Orlando Florin Rosu

Travel to Explore

People traveled to different parts of the earth to explore unknown counties & continents, sometimes to find valuable resources.

Cr. predragmilos

Mobile Off-Grid living after Covid

People entirely disconnect from conventional city life and keep traveling to different places, living a minimal, safer, and responsible lifestyle.



Modern Off-Grid living in the city

People stay connected to city life while living off-grid. They live in PLAB-B houses that run completely on clean and green energy and use amenities that the city offers.

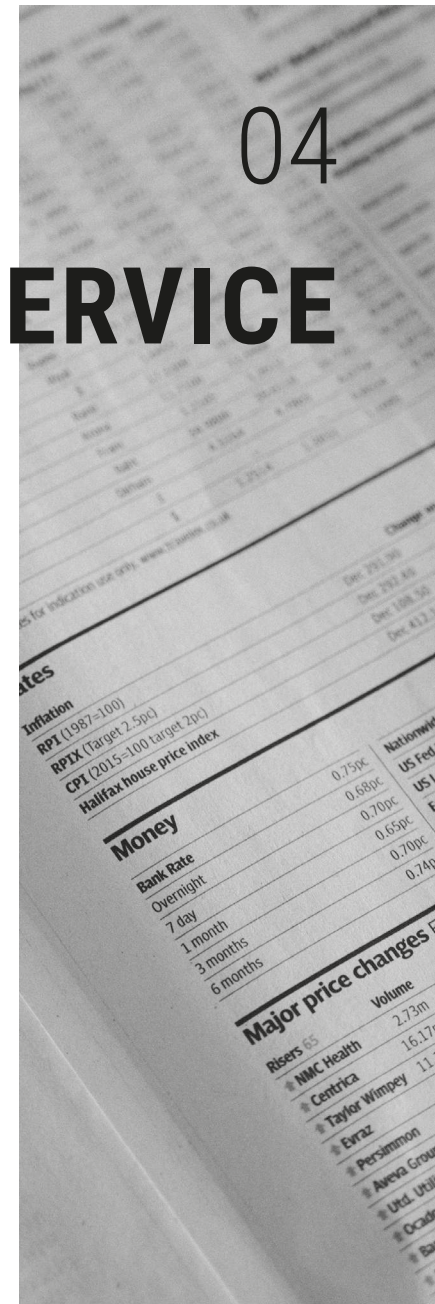
YEAR 2025



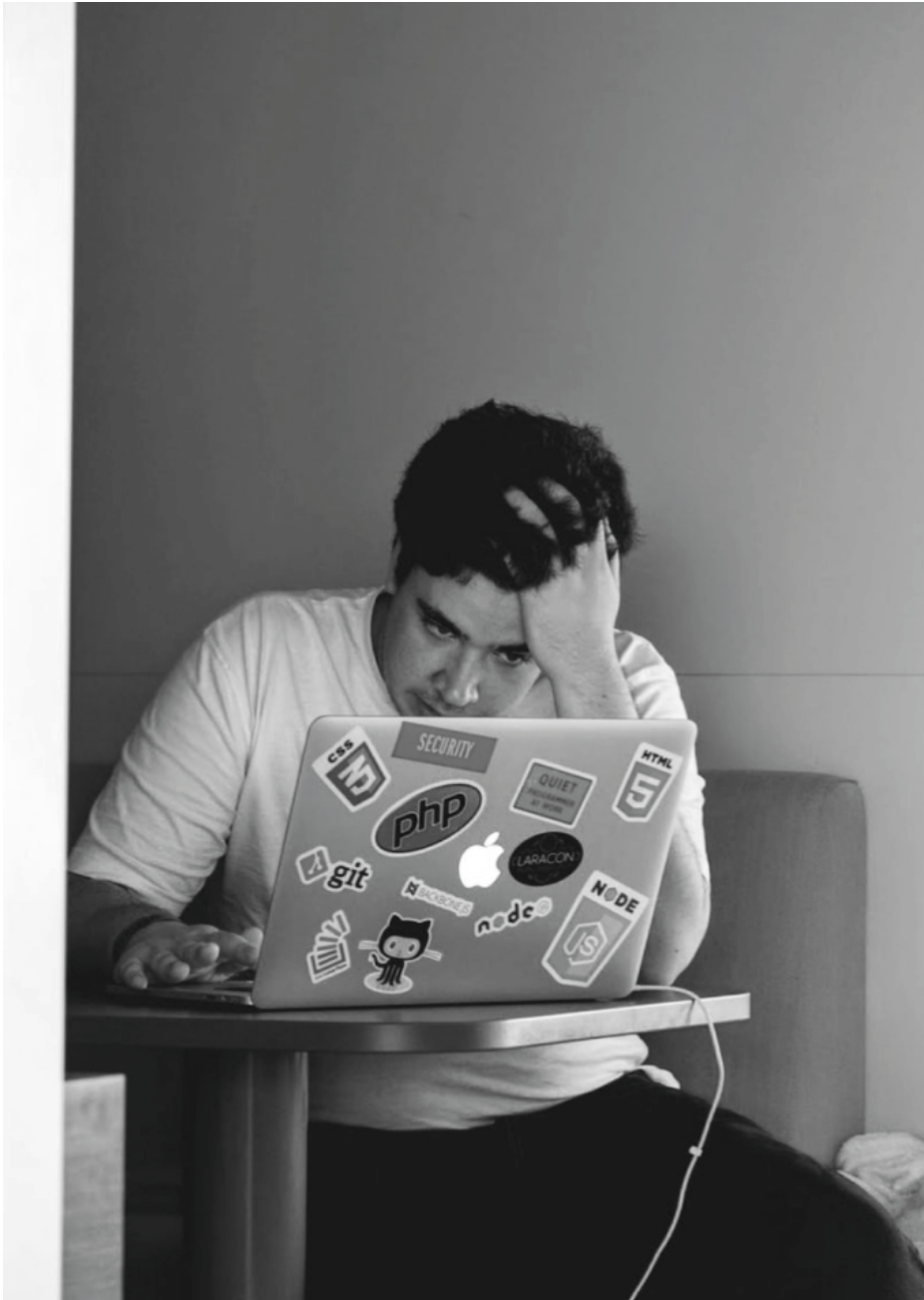
Cr. Restuccia Giancarlo

04 SERVICE

PLAN-B is a temporary accommodation service for non-Lombardy resident students moving to Milan. Just a living space is not enough to stay comfortable. Hence, the PLAN-B service focuses on providing an overall comfortable living experience. This section describes how this service shields the customer's daily routine.



Cr. Annie Spratt



Cr. Tim Gouw

USER'S STORY

Santiago is a foreign college student from Honduras that recently arrived in Milan. He came with a very tight budget and he was looking for an affordable place to live.

Now, he lives in a studio apartment near his school. But, after receiving his gas bill in the middle of 2024 he found that the monthly expenses that were within his budget were more than he could afford due to the shortage of energy supply, and he was desperately looking for an affordable place to live, so renting an AirBnb was out of the question, as was a hotel room.

APPLICATION CRITERION



Students have a **legal visa or Italian residency**



Students do not have a residence in his/her name in the **Lombardy Region** that can meet the needs of a nuclear family.



Low ISEE score.



Unaffordability due to rising prices following energy shortages.

Application page

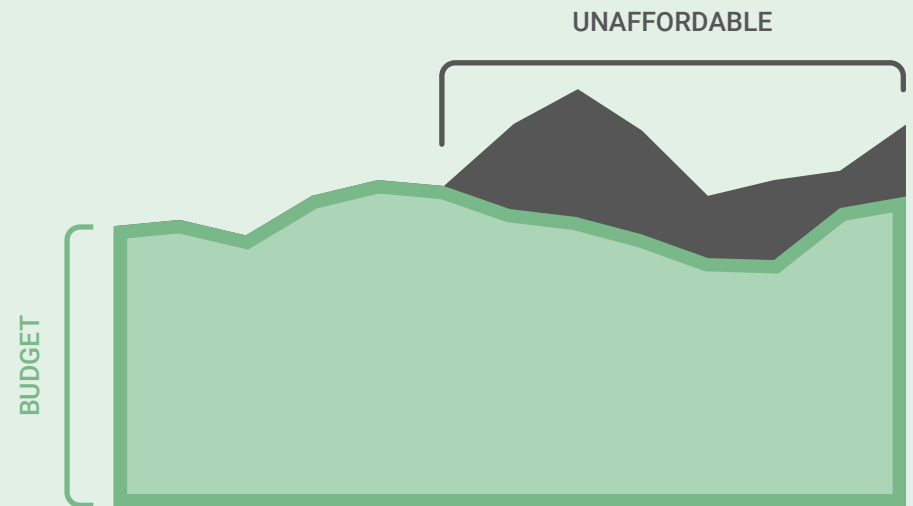
The application page features a vertical sidebar on the left with the following steps: Personal Information, Education, Economic Status, Declarations, Preferred Areas, Duration of Stay, Terms and Conditions, and Pay and Confirm. The main form area contains the following fields: University Name (dropdown), Study Level (dropdown), Programme (dropdown), Year (dropdown), Person Code from University (dropdown), and an 'Upload Your student ID card (Proof of student status)' button. A 'Next' button is located at the bottom of the form.

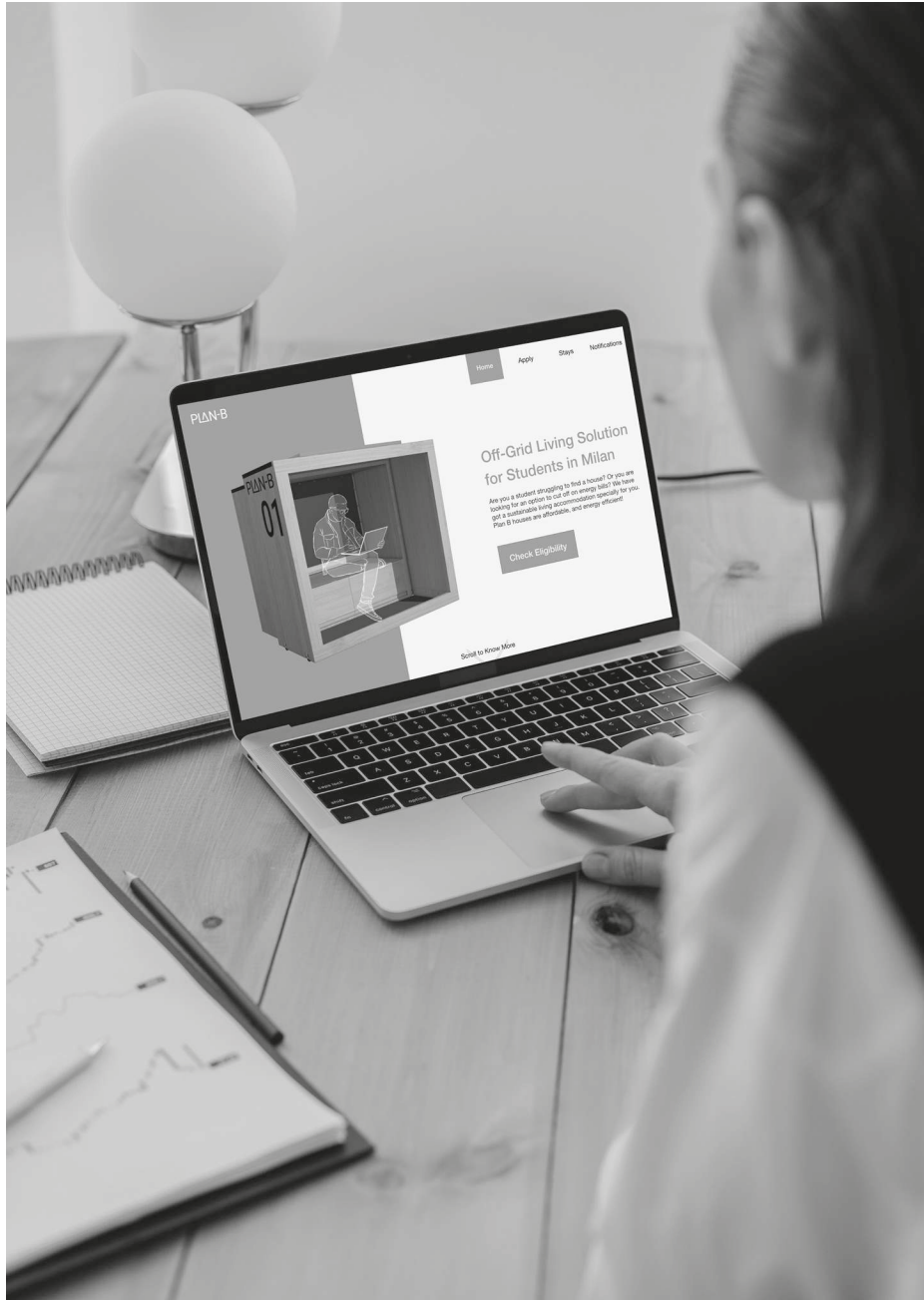


STUDENT

Name	Nationality
Santiago Lopez	Honduras
Education	ISEE
Politecnico di Milano	1st bracket

Monthly Energy Bills





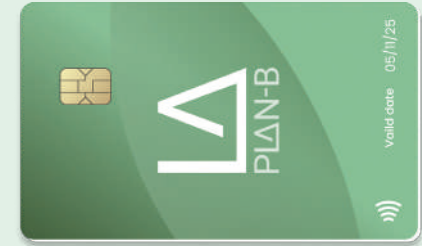
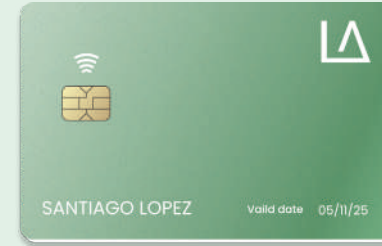
OUR OFFERING

The primary offering of PLAN-B service is the PLAN-B minimal accommodation. However, to make life more comfortable inside them, we have secondary offerings that can be accessed with a digital card. This card will provide discounted laundry, showers, lockers, and groceries. Customers can also request housekeeping and repair assistance.

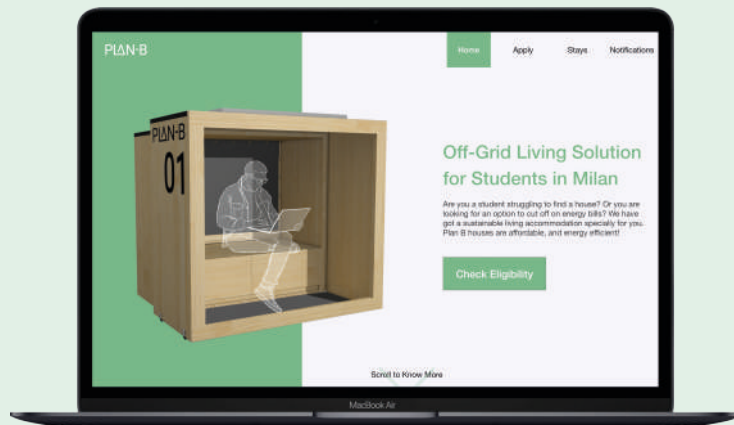


**PRIMARY OFFERING - PLAN-B
ACCOMODATION**

Place to sleep, storage, toilet, security
clean energy



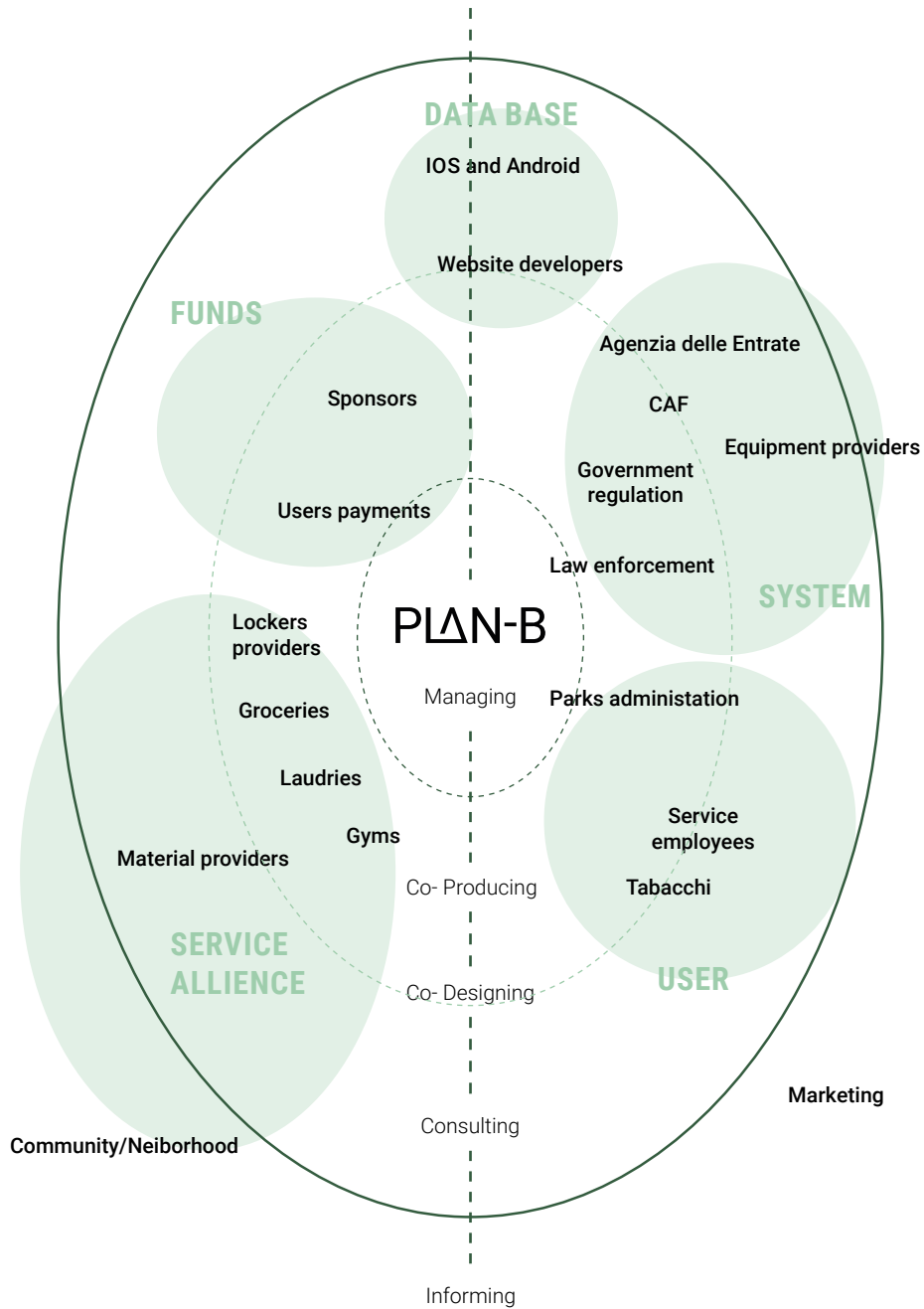
SECONDARY OFFERING - CARD
laundry, grocery, gym bathrooms and
lockers discont



PRIMARY OFFERING - WEBSITE
Payment, Application, Assistance

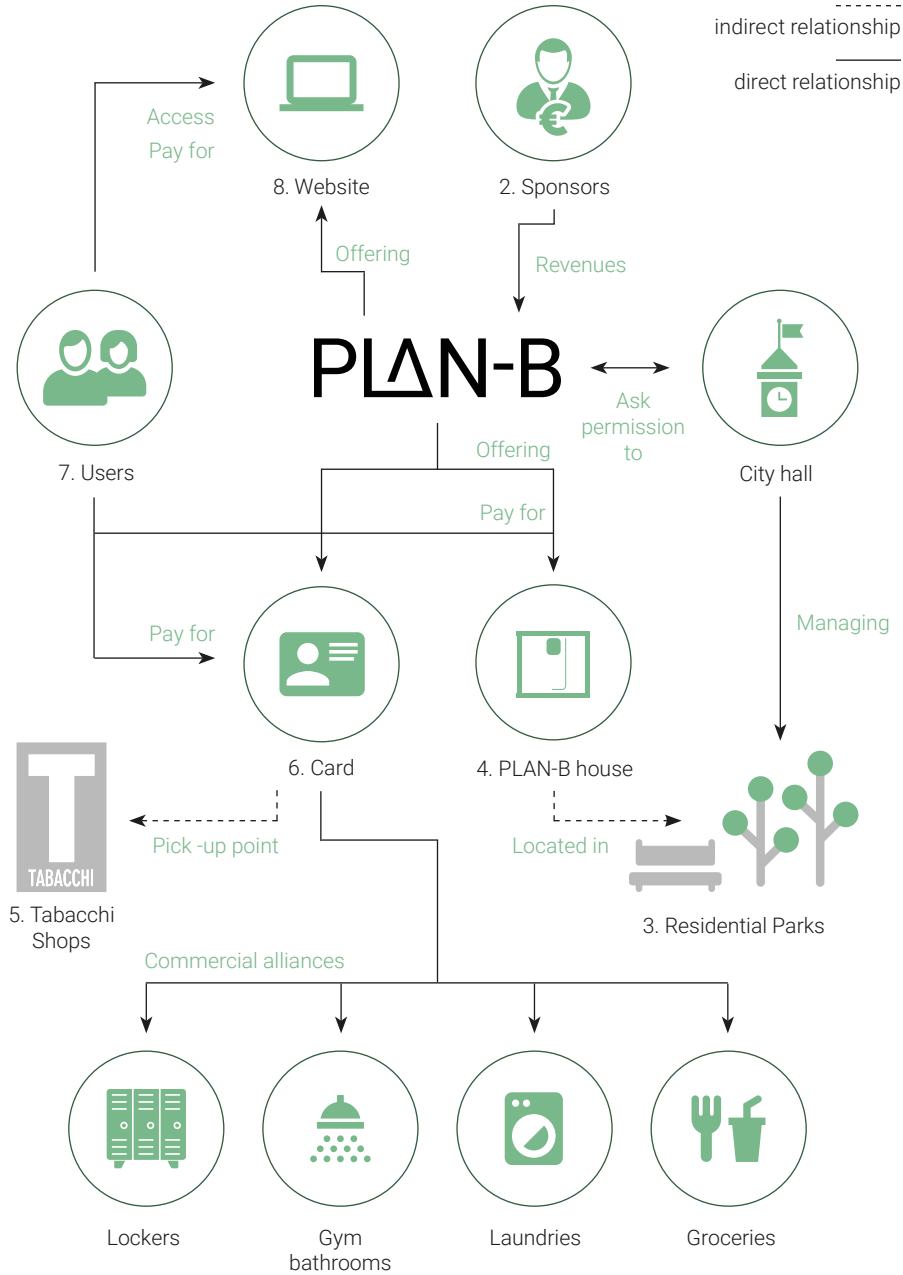


**SECONDARY OFFERING -
MANTAINENCE**
Housekeeping and repairing



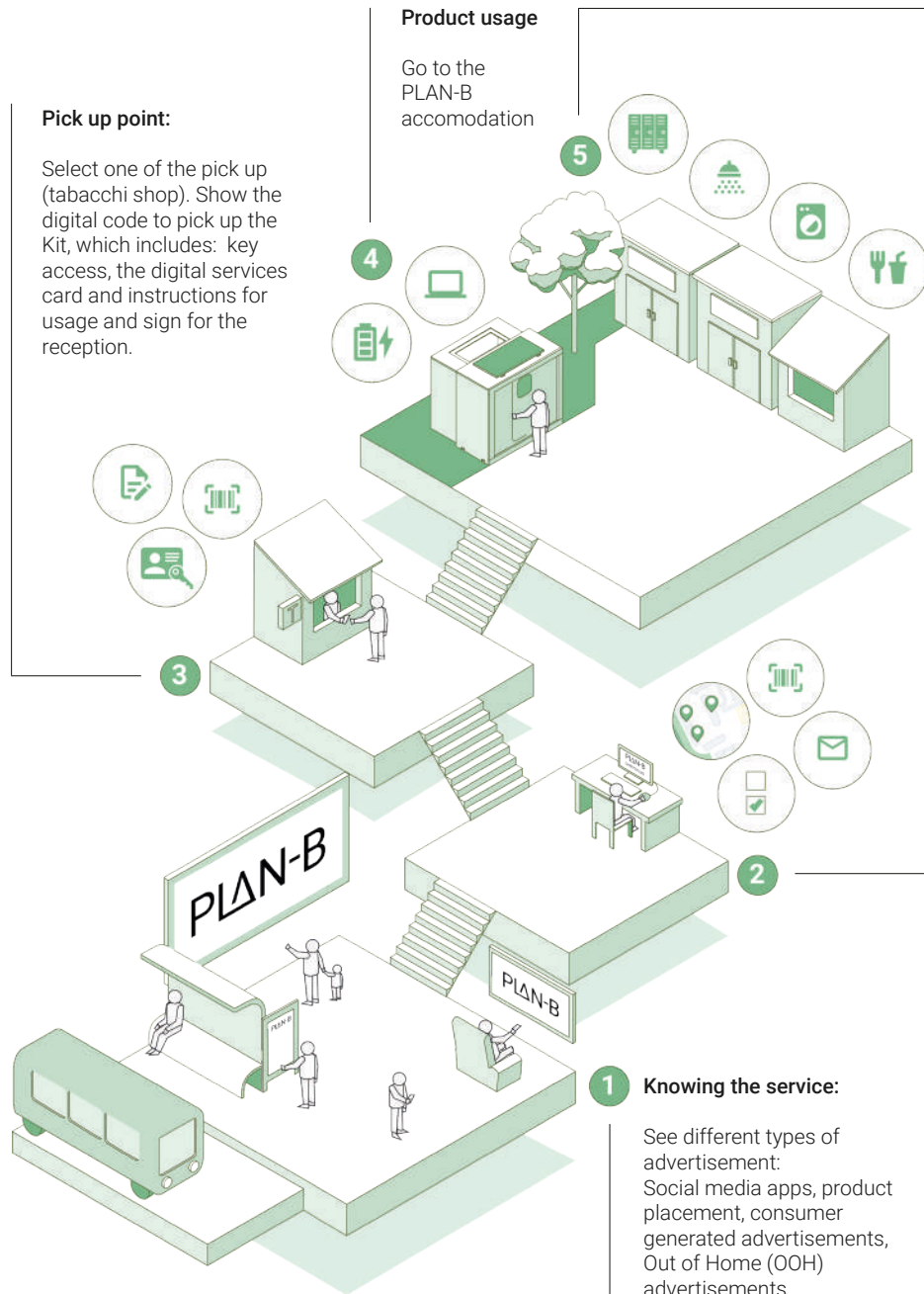
STAKEHOLDERS MAP

PLAN-B's communal effort was facilitated by integrating existing resources and stakeholders. The public affairs department is responsible for policy development, and the service alliance initially includes supermarkets, laundries, shower rooms provided by gyms, and lockers. The service-related human and material resources are utilized to the maximum extent possible to achieve a win-win situation with the stakeholders.



SYSTEM MAP

The interaction between different touch points and stakeholders within the system is managed by PLAN-B operationally. After the user's application to PLAN-B is approved, PLAN-B also acts as a service integration center to associate the service supplier for the user's basic living needs.



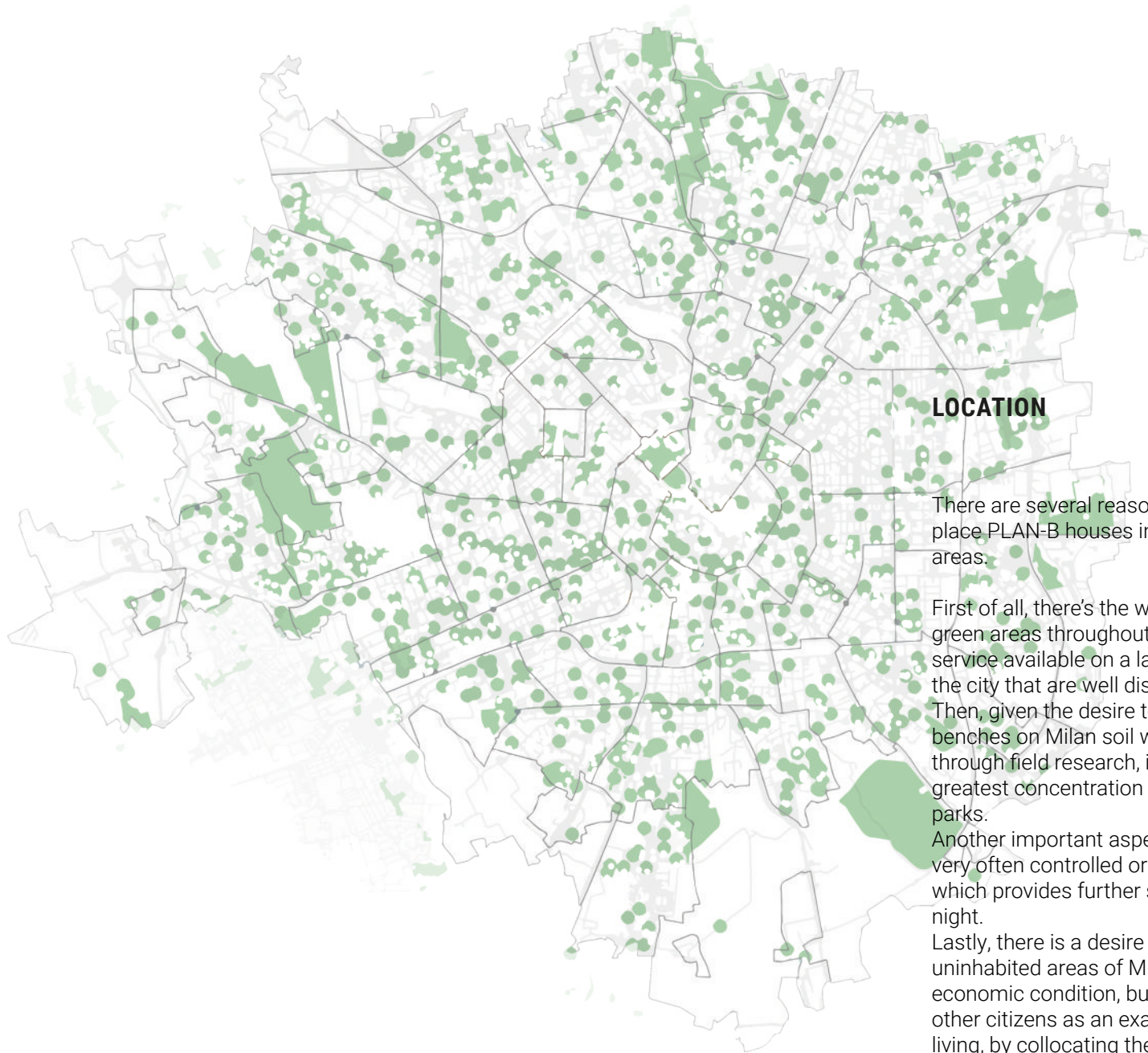
SERVICE MAP

Our service covers several stages; a customer can choose if he can complete all the steps online. The map explains the PLAN-B service step by step.

PRODUCT

PLAN-B
01

PLAN-B, true to its meaning, is a temporary accommodation for students in Milan. We plan to position PLAN-B in the parks that are near residential areas. When not in use each PLAN-B is a public bench. A customer can convert this bench into a minimal accommodation to stay in.



Parks distribution
among Milan

LOCATION

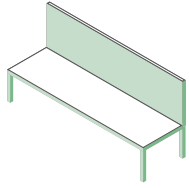
There are several reasons why it was decided to place PLAN-B houses in parks near residential areas.

First of all, there's the wide distribution of those green areas throughout Milan: in order to make the service available on a large scale, exploiting areas of the city that are well distributed was necessary.

Then, given the desire to replace the existing benches on Milan soil with PLAN-B benches, through field research, it was pointed out that the greatest concentration of benches is located in parks.

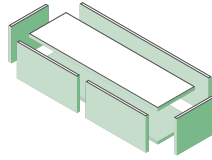
Another important aspect of parks is that they are very often controlled or cordoned off by gates, which provides further safety to the users during the night.

Lastly, there is a desire not to "hide" users in uninhabited areas of Milan because of their economic condition, but to show themselves to other citizens as an example of more sustainable living, by collocating them in central areas.



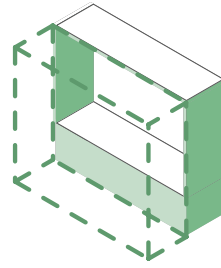
Empower

Replacing existing facilities with single function.



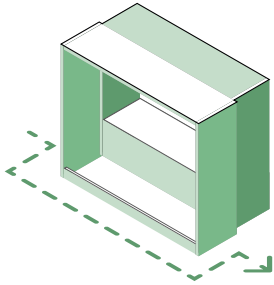
Easy manufacturing and Cost efficiency

Simple surfaces to cut, assembled and installed with a minimal cost.



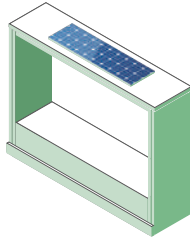
Closed

The product provides a sense of wrapping and security for the user.



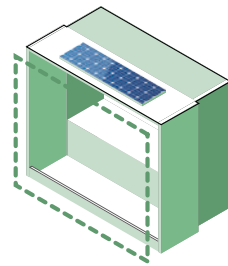
Public resources management

Minimize the waste of public space resources.



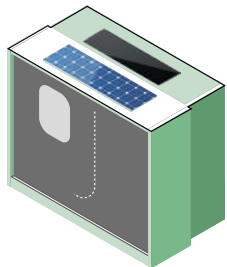
Space folding and off-grid

Its subsidiary functions can serve the public space, thanks to solar panels and the bench configuration.



Open and Close

Privacy in public space.



Curtains and skylights

The curtain from the storage cabinet and install it on the frame.
The skylight provides a respite for the user as a channel of communication with nature in an enclosed environment.

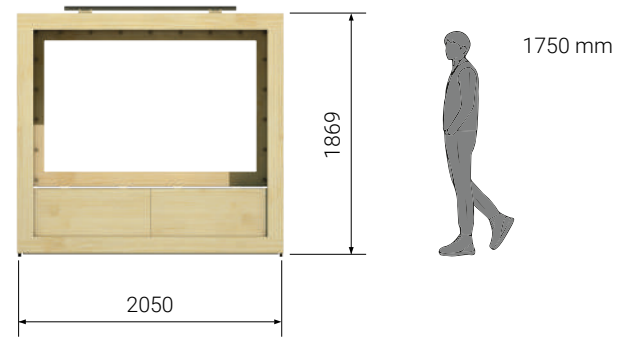
IDEATION

After understanding the user's primary needs for living off-grid within a tiny house, identified in the need for a place to sleep, security, a place to eat and work, privacy, an emergency bathroom and a storage area, the process of devising the structure began. Next are depicted the basic steps for the design of PLAN-B house.

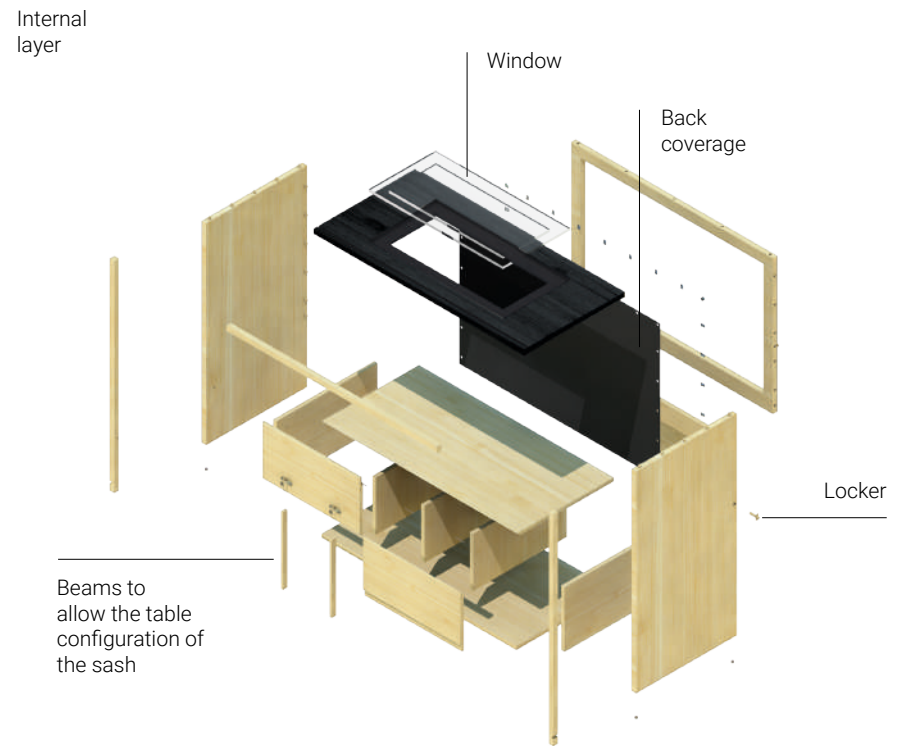
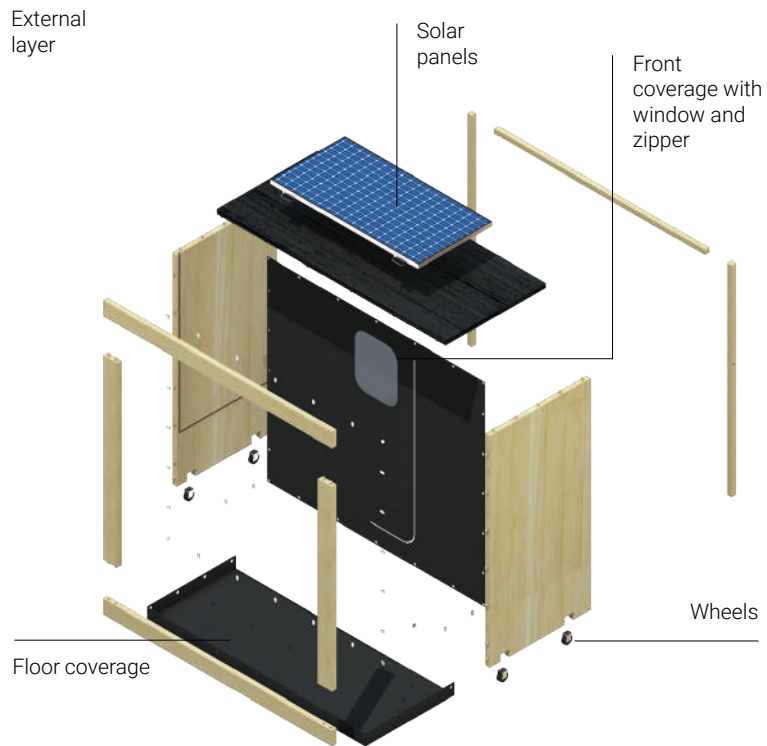
HOME CONFIGURATION

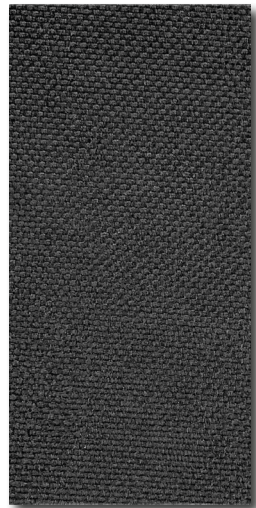


BENCH CONFIGURATION



EXPLODED VIEW





Reinforced
waterproof
polyethylene
fabric



Steel

Bamboo veneer panels
GreenB - Natural Color



Bamboo veneer panels
GreenB - Black paint

[2] Bambù: Qualità E Caratteristiche
[Internet]. Idee Green. [cited 2023Jan18].
Available from: [https://www.ideegreen.it/
bambu-29037.html](https://www.ideegreen.it/bambu-29037.html)

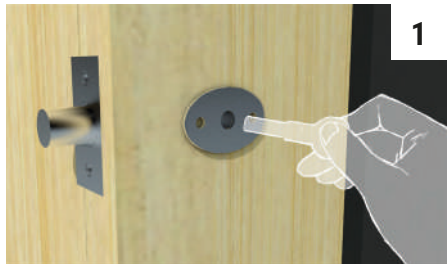
MATERIALS

the choice of the materials was conducted with three main concepts in mind: affordability, sustainability, and insulating properties.

The structure of PLAN-B is made entirely of bamboo. In fact, bamboo is particularly suitable for green building because it is inexpensive, and it is a plant that grows in quantity and quickly even in the latitudes of Italy. [2]

As for the fabric covers, it was selected reinforced polyethylene as it is a waterproof and heat-insulating material used as a cover in truck transportation and for camping tents.

The various mechanical components are standard and made of steel.



COVERSION:

1. Open the lock with the appropriate key.
2. Slide the external layer until the catch acts.
3. Apply the coverages by placing the rings into the respective site, and secure it with the nylon run.



DOS:

- ✓ Use the sleeping requirements located in the left storage area.
- ✓ Use the left storage area as a table to eat and work.
- ✓ Use responsibly the camping toilet located in the right storage area.



DONTS



Don't disconnect the solar panes wires



Don't Smoke

In case of emergency or damages contact us

PLAN-B

USAGE

The user experience is designed to be intuitive and fast. Here there are the steps for converting from a public bench to a plan-b house, and the main possible activities within the minimal space.



TESTING AND PROTOTYPING

Two 1:10 scale prototypes were made to test our product. One prototype represents PLAN-B in its bench configuration, while the other represents PLAN-B house. For the structure, a wood whose texture could resemble the aspect of bamboo panels was used. Everything was handcrafted from cutting the wood to making the wheels.







PLAN-B

Off-Grid Housing Solution

EVOLVING
for scarcity