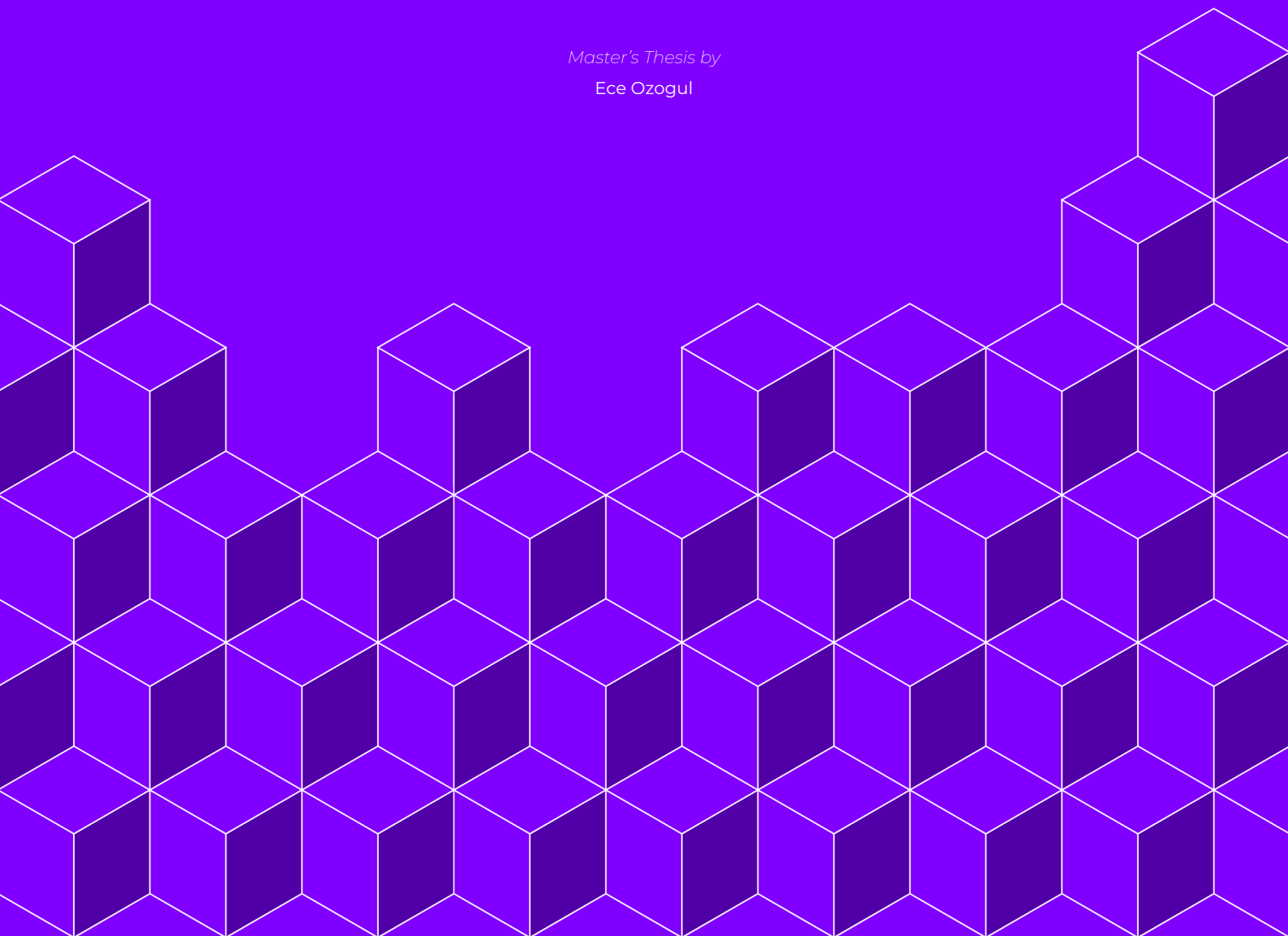
EXPLORING THE POTENTIAL OF TINY HOUSES TO ADDRESS URBAN HOMELESSNESS

A Research-Through-Design Approach

Master's Thesis by

Ece Ozogul





POLITECNICO DI TORINO

Department of Architecture and Design (DAD)
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MASTER'S DEGREE THESIS

Exploring the Potential of Tiny Houses to Address Urban Homelessness: A Research-through-Design Approach

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Last but certainly not least, a special thanks goes to my reliable companions, magnesium bisglycinate and chamomile tea. They have undoubtedly earned their place in these acknowledgements for the comfort they provided when things became overwhelming.

To all of you, thank you for being part of this journey and for making this achievement possible.

Abstract

Housing is one of the most basic human needs, yet access to adequate and affordable housing remains a challenge across many growing cities. In response to these pressures, tiny houses have gained increasing attention as an alternative housing typology associated with affordability, reduced environmental impact, and simpler ways of living. They have also been explored as a possible response to homelessness. However, reducing the size and cost of a dwelling does not automatically make it appropriate for people experiencing homelessness, whose needs extend beyond physical shelter to include privacy, safety, stability, belonging, and social inclusion.

This thesis therefore explores the question: ***Under what conditions might tiny houses become an appropriate form of housing for people experiencing homelessness and address their needs?***

The thesis adopts a ***research-through-design approach***, beginning with a proposal developed for the Buildner Micro Home Competition 24/25, which was later shortlisted among the Top 40 entries. The questions that emerged through this design process provided the starting point for the theoretical research that followed. The research first investigates tiny houses as an architectural typology, looking at their definitions, motivations, limitations, and strategies related to affordability, flexibility, and construction. It then turns to homelessness as a multidimensional condition, with particular attention to Turin, Italy, and examines the role architecture can play in providing appropriate accommodation for people experiencing homelessness.

Bringing these two areas of research together shifts the focus from simply asking how small or affordable a dwelling can be, towards also considering what it needs to provide for the person living in it. The findings are brought together through ***three scales of intervention: the dwelling, the community, and the city.*** From this synthesis, five main ***design principles*** emerge: ***Dignity through Privacy, Adaptability through Flexibility, Belonging through Community, Stability through Support,*** and ***Inclusion through Connectivity***, with ***Affordability through Standardisation*** acting as an overarching principle across the three scales.

The research concludes that tiny houses may provide an appropriate housing option for people experiencing homelessness, but only under certain conditions and not as a standalone solution. At the dwelling scale, privacy and flexibility are important in responding to individual needs. At the community scale, shared spaces and support services can provide opportunities for belonging and greater stability. At the city scale, connection to the surrounding neighbourhood, services, employment opportunities, and everyday urban life can help prevent the community from becoming isolated. Finally, these ***findings are translated back into design*** through the re-elaboration of the initial tiny house proposal and the development of an ***urban tiny house community for people experiencing homelessness in Turin***, completing the research-through-design loop.

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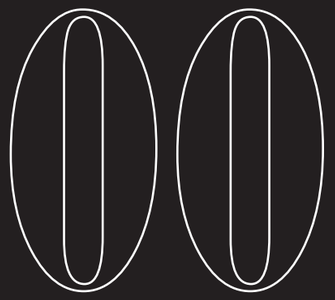
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Introduction

Problem Statement and Research Question

Methodology

Thesis Structure

Problem Statement and Research Question

Housing is one of the most basic human needs, yet access to adequate and affordable housing remains a challenge for many people. Across Europe, rising housing costs, insecure employment, and a chronic shortage of affordable housing continue to push numbers of people into rooflessness, houselessness, and other forms of housing exclusion (Lee, Tyler and Wright, 2010; Nooe and Patterson, 2010). In response to these conditions, alternative forms of housing have gained increasing attention, including ***tiny houses***. Tiny houses are generally associated with affordability, reduced environmental impact, and simpler ways of living (Anson, 2014; Ford and Gomez-Lanier, 2017). They have also emerged as a potential approach for ***addressing homelessness*** (Evans, 2020; Ford and Gomez-Lanier, 2017), even though academic research on their feasibility as a long-term housing solution remains relatively limited (Shearer and Burton, 2023).

The growing interest in tiny houses raises questions that go beyond their reduced physical size. While a smaller dwelling may require fewer materials, less land, and lower construction costs, these characteristics alone do not determine whether it provides appropriate living conditions. The question of minimum space is therefore also a question of what a dwelling needs to provide in order to support everyday life. Issues such as privacy, comfort, flexibility, storage, independence, and the ability of a space to respond to different users become increasingly important as the size of the dwelling decreases.

These questions become particularly significant when tiny houses are considered as housing for people experiencing homelessness. Homelessness involves more than the absence of physical shelter and can include the loss of privacy, safety, stability, belonging, and social inclusion (Chamberlain and Johnson, 2001; Somerville, 2013). Providing a small and inexpensive dwelling may address the immediate need for shelter, but it does not

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necessarily respond to these wider needs. Approaches such as Housing First similarly demonstrate the importance of combining stable housing with appropriate support rather than treating accommodation alone as the only goal (Evans, 2020).

The thesis therefore does not approach tiny houses as a universal solution to homelessness. Instead, it investigates the conditions under which they might become one appropriate form of housing within a broader system of accommodation and support. This requires considering the dwelling not as an isolated object, but in relation to the resident, the community in which it is located, and the wider urban environment. In this way, the research moves between different scales, from the organisation of the individual home to questions of community, services, accessibility, and connection to the city.

This thesis therefore asks:

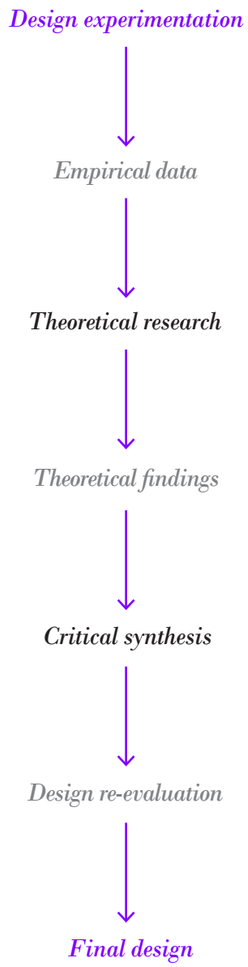
Under what conditions might tiny houses become an appropriate form of housing for people experiencing homelessness and address their needs?

Methodology

The research question did not begin as an academic one. It emerged from practice, through participation in the ***Buildner Microhome Competition 24/25***, where a tiny house proposal was developed and shortlisted among the ***Top 40 entries***. The competition was a ***practical starting point*** for exploring issues of minimum living space, comfort, modularity, flexibility, construction, and affordability through design. Working through these challenges, however, raised questions that could not be resolved through design alone: How can limited space still provide satisfactory living conditions? What makes this form of housing affordable, and how do flexibility and modularity contribute to that affordability? And, more fundamentally, how might these considerations change and adapt once tiny houses are applied in different situations and contexts?

The thesis adopts a ***research-through-design approach*** in order to investigate these questions. Rather than separating theoretical research from architectural design, the methodology creates a continuous relationship between the two. The process is therefore understood as a loop: ***design generates questions, research challenges and develops those questions, and the findings return to design.*** The initial competition proposal consequently functions not only as a project presented at the beginning of the thesis, but also as a design experiment through which the main areas requiring further investigation were identified.

Following this initial design phase, the theoretical research is developed through two interconnected areas. The first examines tiny houses as an architectural and housing typology, considering their definitions, different forms, motivations, limitations, and the debates surrounding the tiny house movement. Particular attention is given to questions of minimum living space, satisfaction, affordability, flexibility, modularity, and prefabricated construction. The second area of research examines



homelessness as a multidimensional condition. It considers the different circumstances and needs of people experiencing homelessness, the situation in Turin, and the role that architecture may play in providing appropriate accommodation.

The findings from these two areas are then brought together through a ***critical synthesis***. Rather than directly transferring the original tiny house proposal to the context of homelessness, the research asks what would need to change for such a dwelling to respond more appropriately to the needs identified through the research. This synthesis is considered across ***three scales of intervention: the dwelling and resident, the community, and the city.*** From these scales, a series of ***design principles*** is developed to connect the theoretical findings with architectural decisions.

The final stage returns these findings to design. The original competition proposal is critically re-evaluated and re-elaborated according to the principles identified through the research, while the scale of ***the project expands from an individual tiny house to an urban tiny house community for people experiencing homelessness in Turin***. The final design therefore does not represent a separate application following the research, but forms the concluding stage of the research-through-design process through which the initial proposal is reconsidered in response to what has been learned.

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Thesis Structure

The thesis is structured around ***three consecutive phases that reflect the research-through-design process.***

The first phase begins with ***Chapter 1***, which presents the ***Microhome Competition*** and the development of Tetris House. The competition project is treated as an ***exploratory design laboratory*** rather than as a final architectural solution. Its development introduces the initial questions surrounding minimum space, flexibility, modularity, construction, affordability, and adaptability. The chapter concludes by identifying the issues that could not be fully resolved through the competition project alone, and that consequently became the starting point for the theoretical research.

The second phase consists of Chapters 2 and 3. ***Chapter 2*** investigates the ***tiny house typology***, beginning with questions of definition and the development of the Tiny House Movement before examining motivations, criticisms, satisfaction with small-scale living, and the spatial, economic, and construction strategies associated with affordability. ***Chapter 3*** shifts the focus towards ***homelessness***. It examines homelessness as a multidimensional condition, considers its causes and different forms, and looks specifically at homelessness in Turin. The chapter then investigates the role architecture may play in providing accommodation that responds to the needs of people experiencing homelessness.

The third phase brings the two research strands together. ***Chapter 4*** develops a ***critical synthesis*** across ***three scales of intervention: the dwelling/resident, the community, and the city.*** At the dwelling scale, the research asks how architecture can support dignity; at the community scale, how it can support belonging and stability; and at the city scale, how design can contribute to social inclusion. Through this process, five main ***design principles*** are identified: ***Dignity through Privacy, Adaptability through Flexibility, Belonging through Community, Stability through Support, and Inclusion through Connectivity. Affordability through Standardisation*** is identified as an overarching principle supporting all three scales.

These principles are then translated back into design. ***The initial tiny house is re-elaborated at the dwelling scale, while the project is expanded at the community and city scales through the development of an urban tiny house community for people experiencing homelessness in Turin.***

Chapter 5 concludes the thesis by reflecting on the research question, the conditions identified through the study, and the potential and limitations of tiny houses as one possible form of housing for people experiencing homelessness.

Introduction 00

01

Microhome Competition

1.1 Introduction to the Competition

1.2 Competition Project: Tetris House

1.3 Outcomes and Further Research

1.1 Introduction to the Competition

The *Microhome Architecture Competition 2024/25*, organised by Buildner in partnership with Kingspan, asked participants to design a small, modular, off-grid home for a hypothetical young professional couple. The dwelling could have a maximum building footprint of 25 m² and had to provide the basic functions of a home, including a sleeping area, living and working space, kitchen, bathroom, and storage (Buildner, 2025). The limited footprint therefore required the different activities of everyday domestic life to be accommodated within a highly compact space.

The competition encouraged participants to rethink how these functions could fit comfortably within such a limited area while considering spatial efficiency, construction, materials, energy efficiency, and environmental impact. No specific site was given for the competition. Participants were free to choose a hypothetical urban or rural location anywhere in the world and develop the design according to that context. The brief also encouraged consideration of affordability and the possibility of the design being adapted, replicated, or scaled into larger communities (Buildner, 2025).

These requirements made the competition particularly relevant as ***a starting point for investigating the tiny house typology***. The challenge was not simply to make a conventional house smaller, but to reconsider how domestic functions could be organised when space was highly limited. Decisions concerning circulation, furniture, privacy, storage, structure, and environmental performance became closely interconnected. A small change in one part of the dwelling could directly affect the use and organisation of another.

At the same time, the competition introduced questions that extended beyond the design of a single 25 m² dwelling. The requirements for modularity, affordability, transportation, and potential replication suggested that the house could be understood as part of a wider system rather than as an isolated architectural object. This became an important starting point for the development of Tetris House and, subsequently, for the research undertaken in this thesis.

1.2 Competition Project: Tetris House

Architectural Concept

Tetris House was developed around a ***modular system*** in which the functions of the dwelling are distributed between ***six independent modules***: living, kitchen, hygiene, relax/work, terrace, and greenhouse. Rather than designing the 25 m² house as one fixed volume, the project breaks it down into smaller spatial units that can be connected in different arrangements. Each module has a specific function while remaining part of the same construction system.

The modular approach emerged from the intention to make the house ***adaptable*** beyond the particular configuration required by the competition. The initial proposal was developed for the hypothetical professional couple defined by the brief, but designing a fixed house specifically for two residents would limit its ability to respond to different circumstances. By separating the dwelling into modules, the number and arrangement of spaces can instead change according to different users, environments, and scenarios.

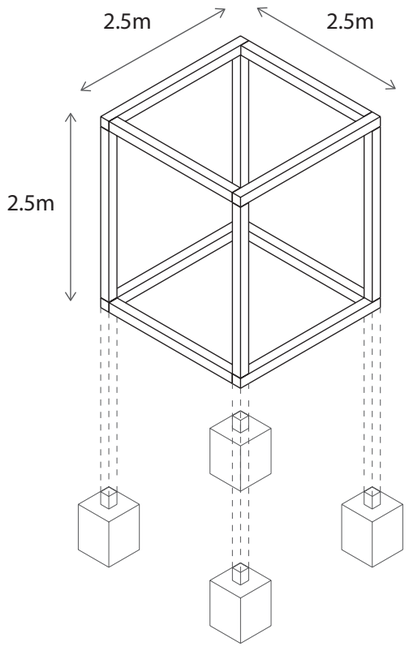
The initial configuration therefore provides a compact home of approximately 25 m² while allowing the system to be expanded or reorganised. Additional modules can be introduced for larger households, while different arrangements can respond to different sites. In this sense, ***flexibility is approached at two levels***. At the scale of the house, modules can be combined in dif-



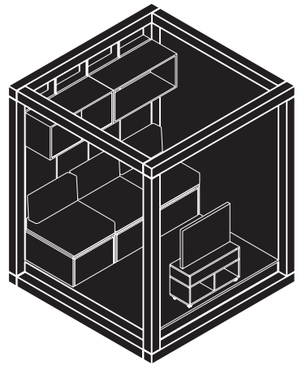
ferent configurations; within the individual modules, multifunctional furniture and movable elements allow the same limited space to accommodate different activities. The project therefore explores how a reduced footprint might remain adaptable rather than becoming spatially restrictive.

Structural Concept and Variations

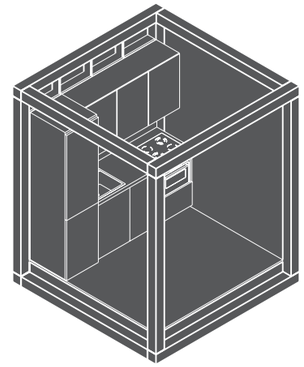
The modular idea is also reflected in the structural system. Each module is designed as an ***independent timber structure***, with beams and columns forming a repeated structural frame. ***Prefabrication*** was considered from the beginning of the project in relation to both construction and transportation. Individual modules could be largely prepared before arriving on site, transported separately by truck, and then connected to form the complete dwelling.



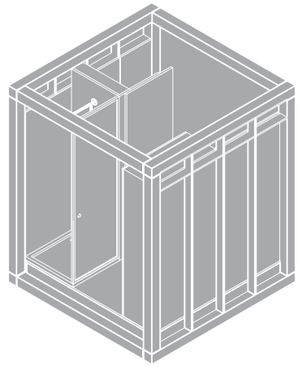
Living Module



Kitchen Module

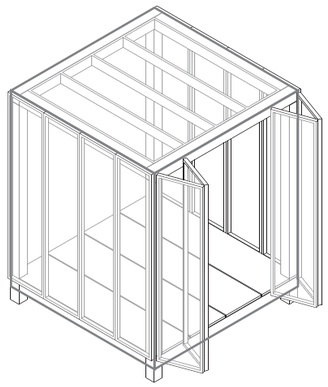


Hygiene Module

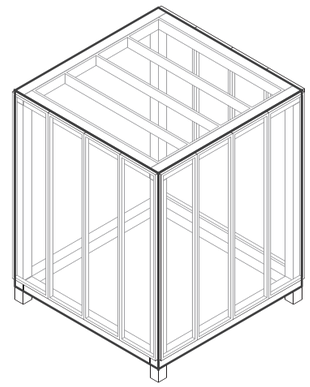


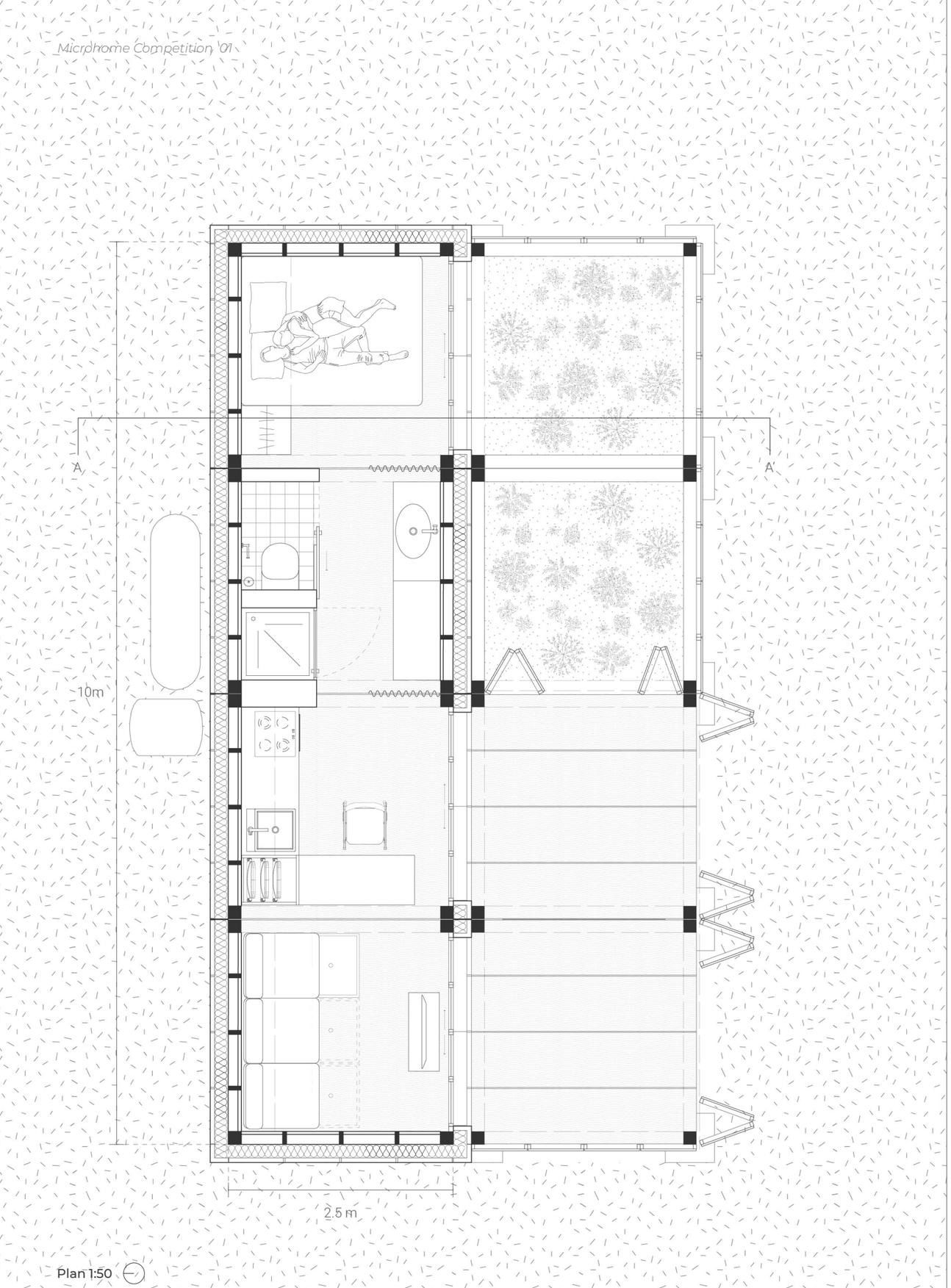
Relax / Work Module

Terrace Module



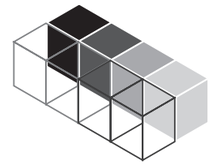
Greenhouse Module





Plan 1:50

Using a ***repeated structural system*** also allows the same basic components to generate ***different configurations***. The competition proposal explored both linear and compact arrangements for two-person and family-sized homes. Instead of creating an entirely different construction system for each variation, the same modules can be repeated and recombined. This establishes a ***relationship between modularity and adaptability*** that later became one of the subjects investigated through the theoretical research.

Variations	*Linear*	*Compact*
2 people microhome		
Family size microhomes		
		

The modular approach was therefore not considered only as a formal characteristic of the project. It raised wider questions concerning transportation, construction efficiency, repetition, affordability, and the possibility of adapting a dwelling over time. Although the competition proposal suggested potential advantages in these areas, their wider implications required further investigation beyond the design phase.



Interior Flexibility

The limited footprint also required individual spaces to perform more than one function. Rather than assigning a separate room to every domestic activity, the project uses ***flexible furniture and movable elements*** to allow spaces to change throughout the day.

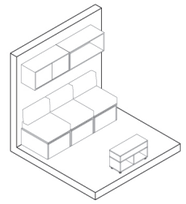
In the living module, storage boxes beneath the sofa can be pulled out and used as tables, additional seating, or rearranged to extend the sofa into a spare bed for a guest. In the relax/work module, the bed can be folded to free the floor area for other activities, while a foldable table allows the same space to become a working area. Similarly, storage furniture within the kitchen can be opened and used as a dining or working table. Curtains provide another layer of flexibility by allowing spaces to be visually separated when greater privacy is required.

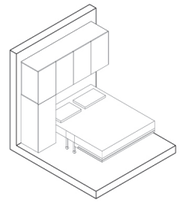
These elements were introduced to ***make better use of the limited floor area*** without permanently dividing the interior into a series of small rooms. The project therefore treats flexibility as an everyday spatial condition: the dimensions of the house remain unchanged, but its use can change according to the activity taking place. This exploration later raised broader questions about whether spatial efficiency alone is sufficient to create satisfactory living conditions and how flexibility might respond to residents with different needs.

Living Module

Relax / Work Module

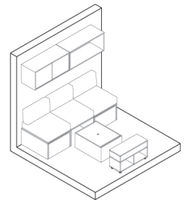
Normal use

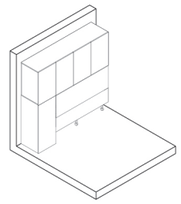




Sleeping mode

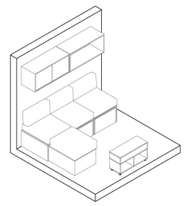
The storage spaces under the couch can be used as tables,

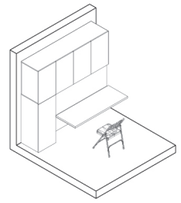




The bed can be folded and stored within the wardrobe, freeing up space for activities like yoga, dancing,

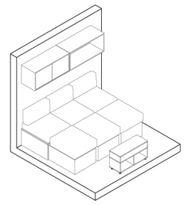
... or they can be used to extend the couch for a more comfortable sitting,



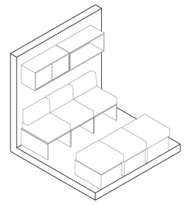


... or become a working space once the foldable table is open.

... or they can be used to extend the couch to create a spare bed in case of guests staying over,



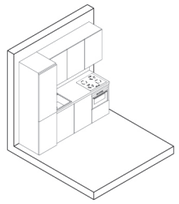
... or they can be used as pouffs for additional sitting area.

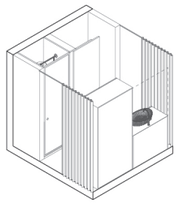


Kitchen Module

Hygiene Module

Normal use

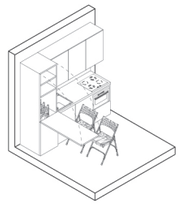




The hygiene module includes a toilet cabin, shower cabin, sink, and storage space with a washing machine. It is designed to allow users to use the space simultaneously without waiting for one another.

The curtains at the ends of the module allow privacy when needed, separating public areas from private ones.

The storage cabinet in the kitchen can open and be used as dining or working area.





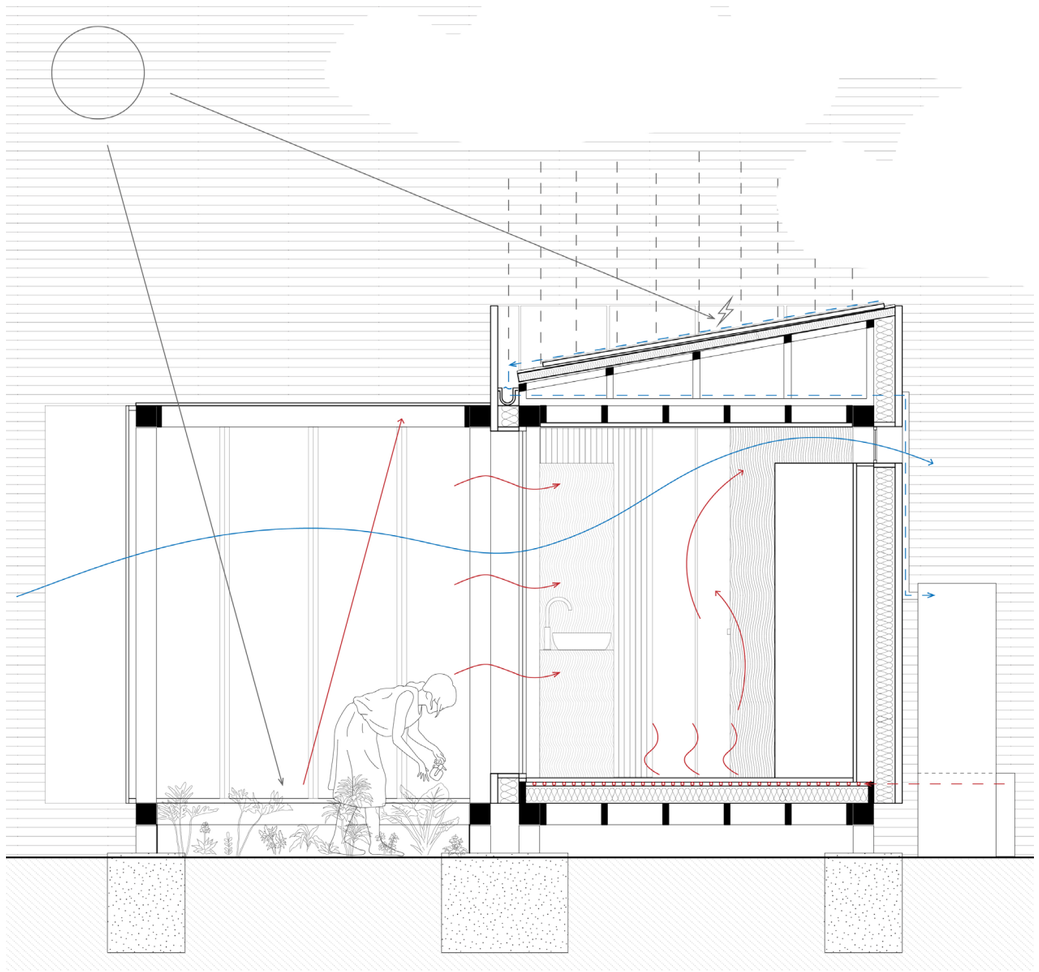
Environmental Strategy

The competition brief required the house to operate off-grid, making environmental performance another important part of the proposal. The design therefore combines passive strategies with systems for producing energy and collecting water.

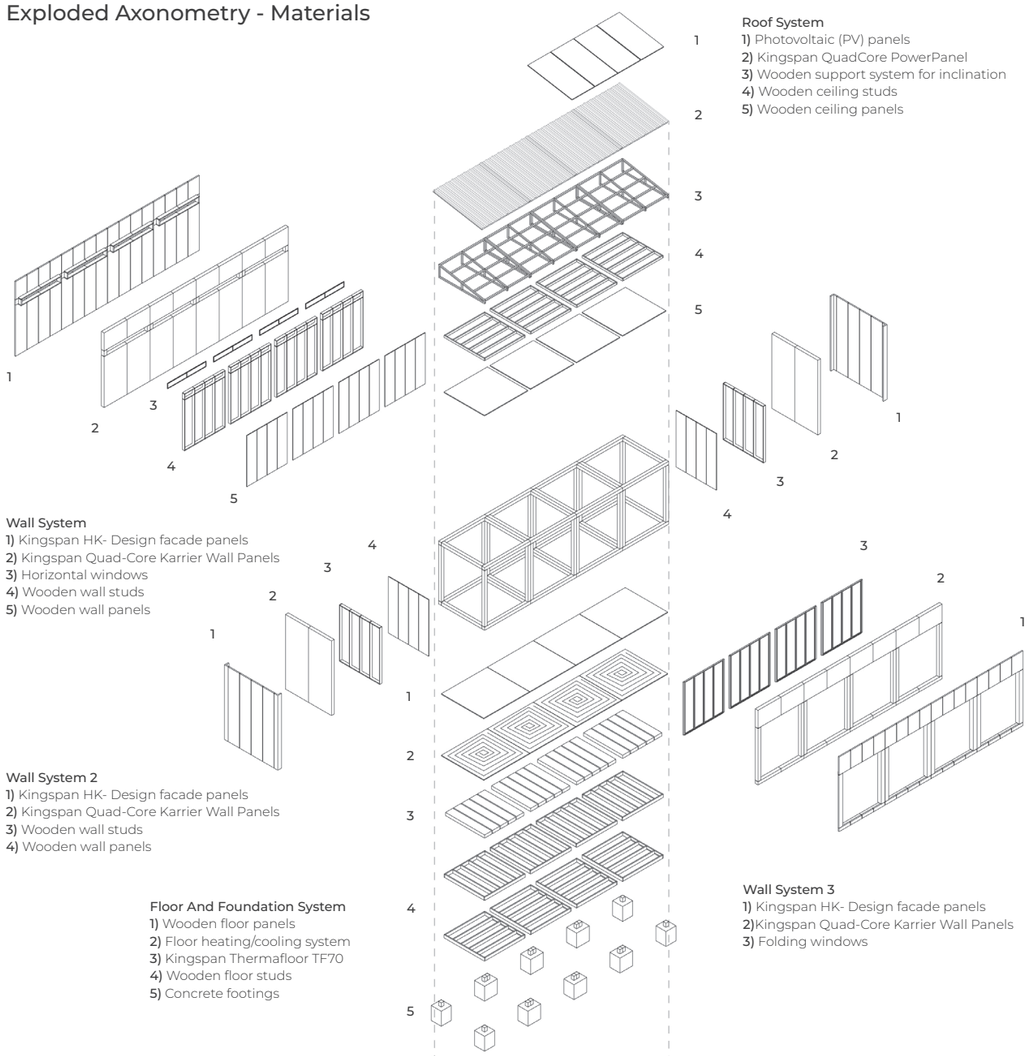
During winter, solar exposure is used to warm the greenhouse and enclosed terrace modules, creating intermediate spaces that can contribute to the thermal performance of the dwelling. During warmer periods, openings positioned on opposing sides of the house support cross-ventilation, while higher openings allow warm air to escape. The inclined roof is oriented to increase solar exposure for photovoltaic panels, while its slope also directs rainwater towards a harvesting system for reuse within the dwelling.

These strategies formed part of the competition proposal's attempt to consider the tiny house not simply in terms of spatial reduction, but as a small self-sufficient system. At the same time, because the competition did not define a specific geographical site, these environmental strategies remained connected to a hypothetical context. The question of how the house might need to change when transferred to a real climatic, regulatory, and urban context therefore remained open for the later stages of the thesis.

Section AA'



Exploded Axonometry - Materials



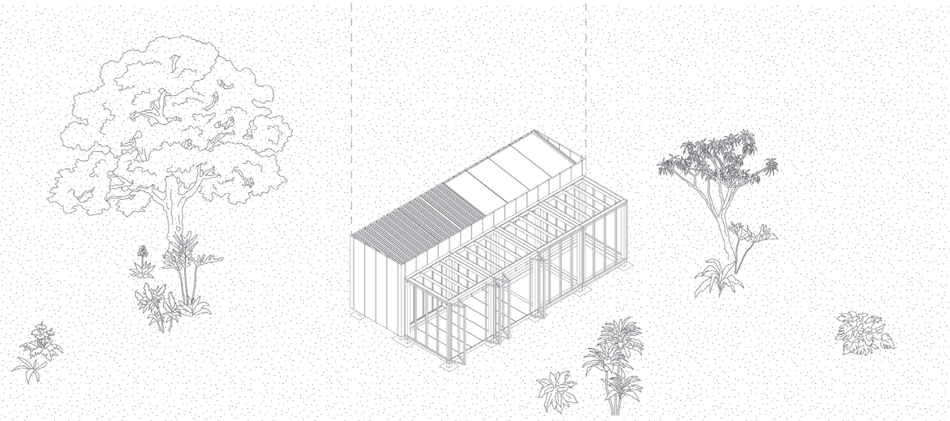
Roof System
1) Photovoltaic (PV) panels
2) Kingspan QuadCore PowerPanel
3) Wooden support system for inclination
4) Wooden ceiling studs
5) Wooden ceiling panels

Wall System
1) Kingspan HK- Design facade panels
2) Kingspan Quad-Core Karrier Wall Panels
3) Horizontal windows
4) Wooden wall studs
5) Wooden wall panels

Wall System 2
1) Kingspan HK- Design facade panels
2) Kingspan Quad-Core Karrier Wall Panels
3) Wooden wall studs
4) Wooden wall panels

Floor And Foundation System
1) Wooden floor panels
2) Floor heating/cooling system
3) Kingspan Thermafloor TF70
4) Wooden floor studs
5) Concrete footings

Wall System 3
1) Kingspan HK- Design facade panels
2)Kingspan Quad-Core Karrier Wall Panels
3) Folding windows



1.3 Outcomes and Further Research

The project was ***shortlisted among the Top 40 entries*** in the *Microhome Competition 24/25*. However, within the thesis, the significance of the competition extends beyond this result. Its main role was to establish ***a practical starting point*** from which the later research questions could emerge.

Designing Tetris House provided an ***opportunity to understand the tiny house typology through practice***. The restriction of the building footprint required careful consideration of how everyday domestic activities could take place within a limited space. ***Flexible furniture, movable partitions, and multifunctional areas*** became important strategies for avoiding an interior that felt excessively restricted. At the same time, the ***modular construction system*** introduced questions of ***transportation, assembly, repetition, and the possibility of adapting the dwelling to different users and sites.***

The design process also revealed the limitations of addressing these questions through a competition proposal alone. Creating a spatially efficient 25 m² dwelling does not necessarily demonstrate that the space will provide satisfactory living conditions over time. Similarly, although modularity and prefabrication appeared to offer advantages for construction and replication, the extent to which these strategies could contribute to actual affordability required further investigation. The competition therefore raised questions not only about how to design a tiny house, but about the wider conditions that might make tiny-house living appropriate.

These uncertainties became particularly important when considering adaptability. The original competition brief defined a hypothetical young professional couple as the residents, allowing the design to respond to a relatively specific user. However, the modular nature of the proposal suggested that the system might potentially respond to other household compositions and living situations. This shifted attention from the original configuration towards a broader question: ***if the dwelling is adaptable, who else might it be able to accommodate, and what would need to change in order to respond appropriately to their needs?***

This question opened the possibility of considering tiny houses beyond their common association with voluntary downsizing and lifestyle choice. Their small scale, potential affordability, modularity, and capacity for replication have also led them to be considered in relation to ***wider housing challenges, including homelessness***. However, applying the same dwelling to people experiencing homelessness could not simply mean changing the intended resident while leaving the architectural assumptions unchanged. It required ***a better understanding of both the tiny house as a housing typology and homelessness*** as a complex condition.

The competition phase therefore generated ***two interconnected directions*** for further research. ***The first concerns the tiny house itself***: What actually defines a tiny house? How can limited space still provide satisfactory living conditions? What makes this form of housing affordable? How can flexibility, mod-

ularity, and prefabrication contribute to its effectiveness? These questions form the basis of Chapter 2.

The second direction concerns the resident and the wider context in which housing operates. If tiny houses are to be considered for people experiencing homelessness, it becomes ***necessary to understand what homelessness means, the different circumstances in which it occurs, and the needs that architecture may be able to address.*** Housing can no longer be evaluated only according to size, construction cost, or spatial efficiency, but also according to its ***ability to provide privacy, dignity, stability, belonging, and connection to the wider city***. These questions lead into the research developed in Chapter 3.

In this sense, the competition project is not treated as a finished solution that the thesis later attempts to justify. Instead, it functions as ***the first stage of the research-through-design process***. The practical decisions and unresolved questions generated through Tetris House establish the subjects investigated theoretically in the following chapters. The findings of that research are then brought back to the project in Chapter 4, where the original proposal is critically re-evaluated and transformed according to what has been learned. This completes the transition from design as a starting point to research, and finally back to design.

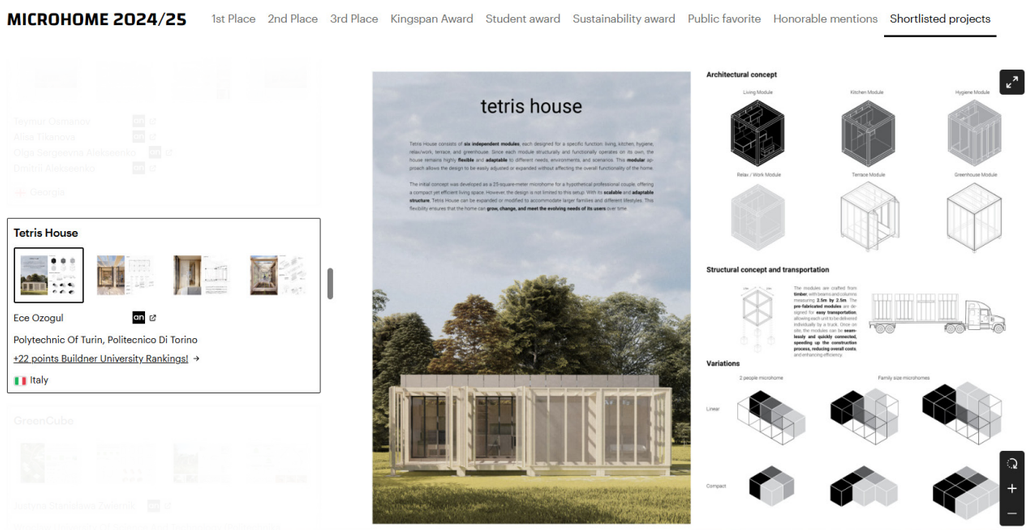


Fig. 1 Microhome 2024/25 Competition shortlisted projects. Source: Buildner (2025).

02

Tiny Houses

2.1 What is a Tiny House?

2.1.1 Definitions

2.1.2 Typologies

2.2 Tiny House Movement

2.2.1 Early Foundations and Philosophical Background

2.2.2 Various Motivations Behind Adopting the Tiny House Lifestyle

2.2.3 Debates on the Movement

2.3 Is "The Minimum" Enough?

2.3.1 Maslow's Hierarchy of Needs Applied to Housing

2.3.2 Satisfaction Levels Driven by Different Motivations in Tiny House Living

2.3.3 Requirements and Needs Linked to Tiny and Affordable Living

2.4 Affordable Design Strategies for Tiny Houses

2.4.1 Architectural Design Considerations for Affordability

2.4.2 Modular and Prefabricated Construction

2.1 What is a Tiny House?

2.1.1 Definitions

The tiny house concept has recently gained popularity mostly through social and popular media. According to Merriam-Webster Dictionary, a tiny house is defined as *"a small house or mobile home that typically has a floor plan of less than 500 square feet* (around 47 m²) *and that is usually designed for ergonomics and space efficiency"*. The IRC Appendix Q, which is based in the US, describes tiny houses as *"... a dwelling which is 400 square feet or less (37 m²) in floor area excluding lofts"*. According to The Tiny Life Blog, a tiny house should measure between 100 and 400 square feet (approximately between 9.2 m² and 37 m²). In contrast, the book "Tiny House Style" published by the well-known Tumbleweed Tiny House Company in the US states that international building codes require homes to have a minimum of 220 square feet (approximately 20.5 m²) of interior space to be considered legal. The International Code Council specifies that *"Every dwelling unit shall have at least one room that shall have not less than 120 square feet (around 11 m²) of net floor area"*, while *"other habitable rooms shall have a net floor area of at least 70 square feet"* (around 6.5 m²) (Kilman, 2016; Shearer and Burton, 2019).

Clearly, the definitions of tiny houses vary across different sources, leading to ambiguities and a lack of a widely accepted definition. It's quite challenging to define something with so

many variations, especially when some can even be ordered online on Amazon, like an industrial product. Since the idea of small houses is still unclear, it is difficult to evaluate the claims made about them. A common starting point while trying to define tiny houses is, of course, the size, as it's the first outstanding feature of these houses. However, in that case, one might wonder if small apartments, like a studio apartment, qualify as a tiny house or not. Theoretically, it would not be entirely incorrect to say yes, but most tiny house advocates disagree. The definition of size can also be relative rather than absolute, as perceptions may differ from one culture to another (Shearer and Burton, 2019). Therefore, if "the case of being smaller than a certain size" cannot be the only criterion, how can one define tiny houses?

2.1.2 Typologies

Despite its popularity, the academic literature on Tiny Houses remains limited. There is a particular lack of research on their characteristics as dwellings, such as size, design, and cost, as well as their role in a broader social movement. Much of the information available comes from non-scholarly sources, including social and popular media (Shearer and Burton, 2023). Even tiny houses, simply understood as dwellings of a specific size, is a poorly defined concept, although an attempt to clarify this was made by Shearer and Burton (2019).

In their article, Shearer and Burton (2019) introduced a series of typologies that categorize and define tiny houses based on various features. This classification aims to clarify the different forms of tiny dwellings and their definitions, as well as to eliminate others, aiming to resolve the ambiguities surrounding the concept.

Fig. 3 shows different typologies of tiny houses. The main categories are defined according to their degree of *mobility.*

Type 1 is fully or partially *mobile tiny houses,* including *Type 1a: tiny houses on wheels, Type 1b: relocatable tiny houses,* and *Type 1c: fully mobile dwellings.*



Fig. 2 Tiny House on Wheels. Source: Redukt Tiny Houses (n.d.)

Type 1. Mobile (fully or partially)

1a Iconic tiny house on a trailer.

- Size: < max dimensions allowable (around 20 m^2 or <3.5 tonnes (EU))
- Mobile, on a trailer
- Owner/friends/family built
- House fully owned, trailer and vehicle possibly financed
- Legal as a "caravan" or RV, varies depending on location
- Moves from construction site to permanent or semi-permanent site in urban or rural land, free campsites, friends/family land, caravan parks
- Dwellers often have strong environmental focus, and often off-grid
- Can have a community focus, urban tiny house dwellers report size of house forces community activities

1b Relocatable tiny house, moved to site then fixed or semi-permanent. Prefab, cabin, shipping container, "tiny house", mine hut, kit home etc.

- Size – larger than 1a; mostly <40 m^2
- Moved infrequently (<6 months is general minimum lease time)
- Owner/friends/family build, purchased second-hand or as a kit
- Cost (likely greater than 1a). House often fully owned, land owned, mortgaged or rented
- Legal as primary/secondary/ancillary dwelling on own or rented land
- No specific environmental or community focus (other than the individual)

1c Fully mobile dwellings: Caravans, boats, bus, trucks, tents, tepees

- Very small (smaller than 1a and 1b)
- Highly mobile and often temporary structures
- Not generally built from scratch, purchased new/used or repurposed (e.g. bus/truck)
- Cost, varies wildly (<$1000–$100,000+)
- Environmental ethos as per tiny house movement
- Legal to park in designated areas, such as caravan parks, free camping, state forests; if on others (friends/family) property, time permitted depends on council
- Often a strong community focus. Environmental sustainability not a prime motive, depends on individual

Type 2. Permanent (non-mobile)

2a Purpose built tiny house/cottage

- Size, generally under 50 m^2
- Semi/detached, usually built by registered builder, or owner, friends and family
- Cost (varies widely, likely $50 k plus, depending on construction material, builders)
- Fully legal (subject to council restrictions, such as on potable water and sewage) on own land. Generally in a rural/rural residential area
- No particular environmental or community focus (other than the individual)

2b Converted non-residential building (shed, garage, barn)

- Under 70 m^2
- Can be a temporary dwelling but is not usually moved
- Detached or semi-detached (attached to a larger property)
- Cost? Mostly relatively inexpensive <$20,000. Often rented or built on family/friend's land
- Legal, but councils differ widely regarding these dwellings, and length of permitted residence. Located in all areas, from suburban to rural
- No particular environmental or community focus (other than the individual)

2c Tiny house village (apartment complex/cottage/townhouse in intentional or co-housing community). These include apartments.

- Generally the individual's private space is small (mostly under 40 m^2), with shared facilities (i.e. kitchen, garden, tools)
- Designs vary widely, and may include "alternate" dwellings such as converted railway carriages and yurts
- Cost is variable, and depends on tenure and location. Either rented or owned or subject to alternate tenures such as tenants in common or social housing
- Fully legal in many countries. Located from city centres to rural and regional areas.
- Frequently have a strong fundamental ecological and/or social philosophy and rules.

Fig. 3 Types of tiny houses. Source: Shearer and Burton (2019)

Type 1a, tiny houses on wheels (see Fig. 2), are the type most commonly associated with the modern tiny house movement. These are commonly constructed similarly to standard houses, but on a trailer base. Their compact size allows them to meet road transport regulations, although the maximum permitted dimensions and weight can vary by country. These houses can be partially or entirely constructed by the intended occupants, or purchased from a tiny house builder as a trailer and frame, a shell without interior fittings, or a fully finished home.

Type 1b, relocatable tiny houses (see Fig. 4), include a wide range of movable dwellings, such as prefabricated homes, sheds, shipping container houses, kit homes, granny flat kits, site huts, and pop-up houses. They are commonly purchased as fully completed buildings, DIY kits, or second-hand structures. Except for shipping container homes, they are generally larger than Type 1a houses because they are not subject to the same transport restrictions. Although they are designed to be movable, they are rarely relocated. When they are moved, the process typically requires a large commercial vehicle, such as a tilt-tray truck. They are commonly placed on privately owned land or in designated communities such as trailer or RV parks.



Fig. 4 Portable Home – ÁPH80 by Ábaton. Source: ÁBATON (n.d.)

Type 1c, fully mobile dwellings (see Fig. 5), include caravans, boats, recreational vehicles (RVs), converted buses, and even tents. Some emphasize that a tiny house should be clearly identified as a “house” rather than a recreational vehicle (RV), as Appendix Q of the Tiny House Guide states that RVs are not classified as tiny houses. They are generally the smallest of the three categories and may be located on privately owned land, but they are more commonly found on rented sites, such as caravan or RV parks.



Fig. 5 Caravan house. Source: Truma (n.d.).

Type 2 is ***permanent tiny houses,*** including ***Type 2a: permanent purpose-built tiny houses, Type 2b: converted non-residential buildings,*** and ***Type 2c: tiny house communities.*** In most local planning jurisdictions, these types of dwellings are usually allowed as long as a building permit has been granted.

Type 2a, permanent purpose-built tiny houses (see Fig. 6), are among the most recognisable forms of housing within the modern tiny house movement. These houses are generally compact, mostly averaging around 50 m². This category includes dwellings such as granny flats, country cottages, and cabins. These houses are typically built on land owned by the occupant or builder. In many cases, they serve as secondary dwellings, pro-

viding additional living space, accommodation for dependent family members, or a source of rental income. Others are developed as holiday homes or rural retreats, often incorporating natural building materials. In urban areas, purpose-built tiny houses may also take the form of infill developments.



Fig. 6 Permanent Camping 2 by Casey Brown Architecture. Source: Photograph by Andrew J Loiterton, Archello (n.d.)

Type 2b, converted non-residential buildings, are permanent structures adapted from existing buildings such as sheds, garages, and barns. Unlike Type 1b dwellings, they are built on fixed foundations and are not designed to be relocated. They are usually located on land owned by the resident. Because they reuse existing structures, they are generally more affordable, although they may not have the distinctive appearance associated with purpose-built tiny houses.

Type 2c, tiny house communities, consist of groups of small dwellings arranged within a shared community. These may include apartments (see Fig. 7), townhouses, cottages in cohousing developments, or clusters of tiny houses created for specific purposes, such as housing for people experiencing homelessness (see Fig. 8). Although some of the dwellings are mobile, these communities are considered permanent because they remain on a fixed site and the homes are rarely relocated. Residents usually share facilities such as kitchens, laundries, vehicles, and often shared responsibilities such as property maintenance. Housing may be privately owned, rented, or government-provided social housing. These communities can be located anywhere, including urban, suburban, or rural areas. Many tiny house villages are also built around values like environmental sustainability, community living, or specific social focus, such as providing homes for the homeless.



Fig. 7 Shipping container housing complex for the homeless by NAC Architecture and Bernards construction management company. Source: McKnight (2021).



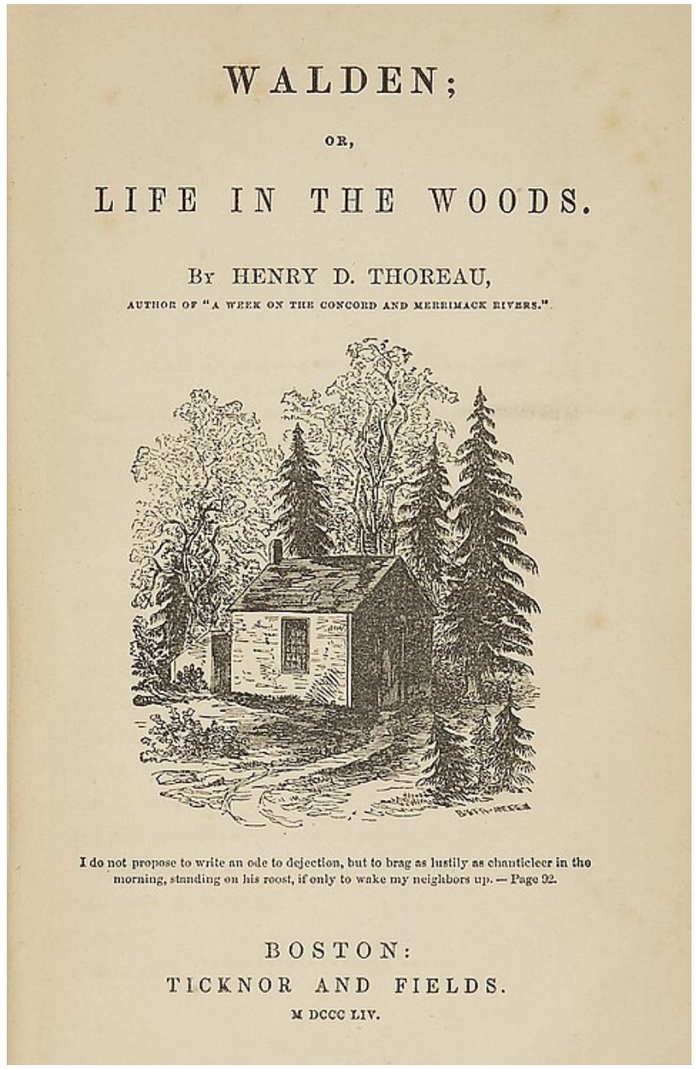
Fig. 8 Community First! Village for the homeless. Source: New York Times (2024).

2.2 Tiny House Movement

Larger homes have long been associated with success, wealth, and an improved quality of life (Wotton, Skates and Shutter, 2018). However, there's a trend that challenges this logic: the Tiny House Movement (Ingram, 2020). The Tiny House Movement is a social and architectural trend that promotes simple living in small spaces (Anson, 2014). Although the Tiny House Movement has gained popularity in recent years through the media, the concept of living small is not new.

2.2.1 Early Foundations and Philosophical Background

The ideological roots of the movement date back as far as the 1850s and have been influenced by a range of ideas. Thoreau's ideas in *Walden* (1854) provide an early philosophical foundation for the movement, promoting simple living, individualism, and closeness to nature. In his book, Thoreau reflects his experience of living in a one-room cabin in the woods near Walden Pond. As he famously wrote, *"I went to the woods because I wished to live deliberately, to front only the essential facts of life"*, expressing his belief that true fulfillment comes from simplicity rather than material wealth (Anson, 2014).


WALDEN;

OR,

LIFE IN THE WOODS.

By HENRY D. THOREAU,

AUTHOR OF "A WEEK ON THE CONCORD AND MERRIMACK RIVERS."

I do not propose to write an ode to dejection, but to brag as lustily as chanticleer in the morning, standing on his roost, if only to wake my neighbors up. — Page 92.

BOSTON:

TICKNOR AND FIELDS.

M DCCC LIV.

Fig. 9 Original title page of Walden featuring a picture drawn by Thoreau's sister Sophia. Source: Wikipedia (2026).

"I went to the woods because I wished to live deliberately, to front only the essential facts of life."

Henry David Thoreau

The development of the movement was also shaped by architectural and social changes throughout the 20th century. Post-war modernist houses of the 1940s (see Fig. 10), following World War II, were historically influential. In that time, many families lived in compact, functional homes due to housing shortages and limited resources (Shearer and Burton, 2019; Harris, Nowicki and White, 2023). The movement was also influenced by the minimalist idea *"less is more"*, popularised by the architect Ludwig Mies van der Rohe (Ford and Gomez-Lanier, 2017). During the 1960s, the environmental movement also reinforced these ideas by encouraging reduced consumption, energy efficiency, and more sustainable lifestyles (Shearer and Burton, 2019).

While these ideas set a foundation for the Tiny House Movement, the reasons why people choose to adopt the tiny house lifestyle today are far more diverse. To better understand the movement, it is important to examine the different motivations that encourage people to embrace tiny house living.



Fig. 10 Case Study House No. 8 (Eames House). Source: 20th-Century Architecture (n.d.)

2.2.2 Various Motivations Behind Adopting the Tiny House Lifestyle

Affordable Housing

The Tiny House Movement, as we know it today, originated in the United States of America in the late 1990s, primarily due to housing affordability issues (Shearer *et al.*, 2018). Tiny houses are generally cheaper to build, maintain, and run than traditional homes (Ford and Gomez-Lanier, 2017). One of the strongest motivations for adopting the tiny house lifestyle found in the literature is financial independence. Mutter's (2013) interviews with North American tiny house owners show this clearly: several people linked their decision directly to the 2008 financial crisis, after conventional homeownership became unstable. Vasseur, Sing and Short (2022) find something similar in Germany, where tiny houses are increasingly seen as a response to housing shortages rather than simply a lifestyle trend.

A Desire to Live More Sustainably

According to sociologist Tracey Harris, the Tiny House Movement can also be seen as a counter-cultural lifestyle movement that challenges our consumer culture (Ingram, 2020). Harris argues that the movement is not primarily about the physical dwelling itself but rather about the desire to consume less and create less environmental impact by limiting our possessions (Ingram, 2020; Paulsen, 2020). Kilman (2016) notes that tiny houses use much less material and energy than conventional homes, and Mutter (2013) adds that this difference is often larger than expected. It is worth noting, though, that sustainability is not always the starting motivation. Several people in Mutter's (2013) study said environmental concern only became important to them after they had already moved into a smaller home and started rethinking what they actually needed. In this sense, sustainability can be a result of tiny living just as much as a cause of it. Harris, Nowicki and White (2023) capture this well when they describe *"living small as a lifestyle choice rather than a limitation of choice"*.

A Search for Freedom and Independence

Besides cost and sustainability, some describe their choice in more personal terms such as a search for freedom and independence (Boeckermann, Kaczynski and King, 2018; Vasseur, Sing and Short, 2022). Mangold and Zschau (2019) describe this as part of a search for the “good life”, in which people value autonomy, simple ways of living, and meaningful experiences over accumulating possessions and space. Mutter's (2013) interviews give a clear example of this idea in practice: one interviewee described going through regular “purges”, getting rid of things he no longer felt he needed, until his apartment was almost empty and he realised he no longer needed a large space at all. For him, the tiny house was not the cause of his simplicity, but the natural next step. This stands in direct contrast to the idea that bigger homes signal a fuller or more successful life (Wotton, Skates and Shutter, 2018; Mangold and Zschau, 2019).

Mobility

Mobility is also one of the most distinctive motivations linked to the movement, mainly because many tiny houses are built on wheels rather than fixed foundations. This allows residents to move without selling a home or ending a lease. A kind of freedom that has gained cultural attention through films such as *Nomadland* (see Fig. 11 and 12), which follows a community of people living in vehicles while navigating unstable work and a changing economy. Wotton, Skates and Shutter (2018) note that this flexibility appeals especially to people expecting changes in their career, relationships, or life circumstances, for whom a fixed home feels more like a limitation than a comfort. Mutter (2013) documents this directly: several interviewees described the appeal of being able to move their home whenever they needed to, while others used this mobility more practically, building in one location while searching for work elsewhere before eventually relocating. That said, Shearer and Burton (2023) warn against treating mobility as a defining feature of the whole movement.

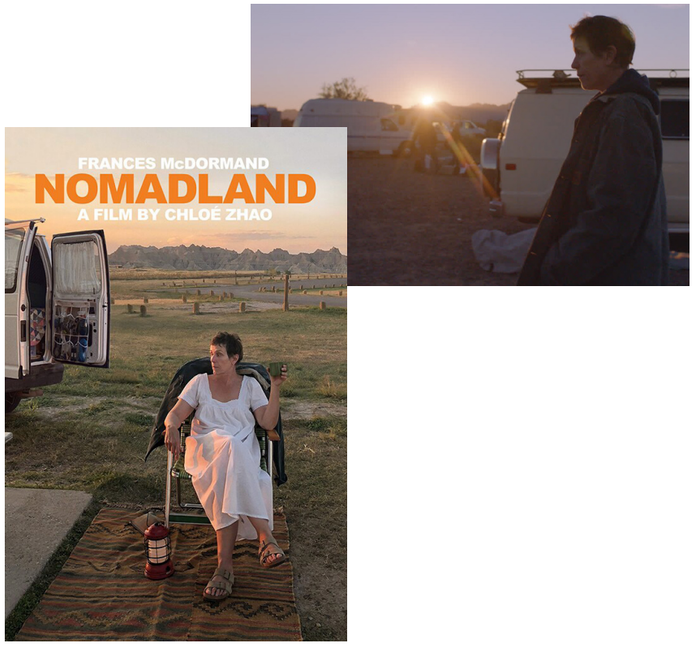


Fig. 11 A scene from Nomadland. Source: IMDB (2020).

Fig. 12 Nomadland film poster. Source: 20th Century Studios (n.d.).

A Sense of Community

Although the tiny house movement is connected to individualism, the reality of living in tiny houses creates a need and desire for community and relationships (Kilman, 2016). Boeckermann, Kaczynski and King (2018) found that, for most tiny house residents, a sense of community is an important reason for choosing the tiny house lifestyle. Similarly, Willoughby, Mangold, and Zschau (2020) found that many tiny housers want not just a smaller home, but a more connected and cooperative way of living. Mutter's (2013) interviews reflect this on a personal level: one participant placed her tiny house near close friends so she would have support nearby if her health worsened. Mutter also describes small, self-organised tiny house neighbourhoods, such as the Boneyard community in Washington, DC, where residents built their homes next to one another and shared outdoor space. Taken together, these examples suggest that living in a smaller home does not necessarily mean having smaller social connections. For many in the movement, the opposite may be closer to the truth.

2.2.3 Debates on the Movement

The Permanence of the Movement

In their 2019 article, Shearer and Burton conclude by raising an open question, one that would later shape their 2023 article, asking whether tiny houses are a real housing type or more of a philosophy (Shearer and Burton, 2019, 2023). They note that although the public shows strong interest in tiny houses, the movement remains small and niche, in the case of Australia. Even so, its impact may lie beyond housing numbers: it may point to a wider cultural shift towards simpler living and greater environmental awareness (Shearer and Burton, 2023).

Romanticisation of Thoreau

A common criticism is that the movement borrows Thoreau's ideas without addressing the deeper social and political context behind his time at Walden Pond. Critics argue that using Thoreau's ideology of deliberate simplicity risks hiding the real housing pressures such as debt, affordability, and instability that drive many people toward tiny living out of need rather than a romanticised philosophy (Anson, 2014).

Commodification of Simplicity

A related concern is that voluntary simplicity, once seen as a rejection of consumer culture, has itself become something to sell. As Anson (2014) writes, *"the tiny house movement runs the risk of reproducing tired tropes of environmental romanticism in a culture of commodification."* What began partly as a critique of consumerism has, in some parts of the movement, turned into a lifestyle brand: custom builds, styled interiors, television shows. This raises the question of whether the movement can truly challenge consumer culture while still relying on its marketing methods.

Privilege and Inequality

Another criticism concerns who can actually participate in tiny-house living. Although tiny houses are often marketed as affordable, building one usually still requires land, money, and either construction skills or funds to hire help (Ford and Gomez-Lanier, 2017). This raises a fair question: is tiny house living truly accessible to lower-income people, or is it mainly available to those who already have enough financial and social resources to choose simplicity voluntarily? This difference between downsizing by choice and small living caused by housing insecurity appears throughout much of the critical literature.

The Sustainability Aspect

As the tiny house movement is still considered relatively new, academic research on its long-term viability as a sustainable housing option remains limited (Anson, 2014). Dwellings are generally expected to fall in the center of the three Pillars of Sustainability Venn diagram (see Fig. 13) and satisfy *economic, social,* and *environmental* requirements. Some scholars proposed a fourth pillar: human sustainability, which includes cultural, spiritual, and political dimensions. Although each pillar is equally important, measuring and balancing them remains challenging (Wotton, Skates and Shutter, 2018).

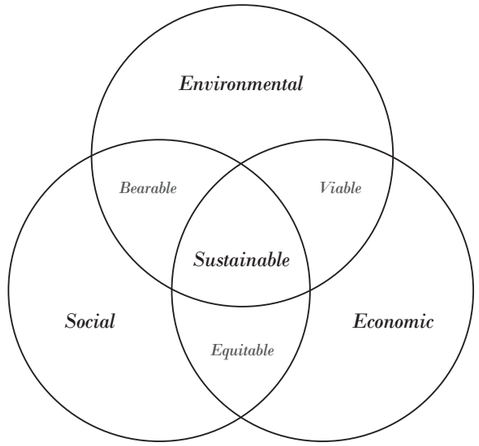


Fig. 13 Three Pillars of Sustainability Venn diagram. Source: Shutterstock (n.d.) - re-elaboration of the author

Environmental

One key assumption behind the tiny house movement is that it reduces environmental impact (Ford and Gomez-Lanier, 2017). This is mostly true in terms of building materials and heating or cooling costs, but the picture becomes less clear once the individual habits, energy sources, and land use are considered.

Economic

Tiny houses can improve affordability by reducing the spatial footprint (Ford and Gomez-Lanier, 2017). However, this affordability can be complicated by land costs, as tiny houses often cost more per square foot to build than standard homes.

Social

Tiny houses are seen as having potential to help with several housing issues, including housing for people experiencing homelessness, temporary housing and guest homes, and space-efficient solutions in crowded urban areas (Ford and Gomez-Lanier, 2017). Ford and Gomez-Lanier (2017) support this with real examples: Boneyard Studios in Washington, D.C. (see Fig. 14 and 15) demonstrated the potential of tiny homes for creative urban infill on land too narrow for conventional building, while Seattle's East Union Village (see Fig. 16) used tiny houses to provide low-cost, transitional housing for people experiencing homelessness. Both cases show that tiny houses can respond to genuine social needs, even where legal recognition of the housing type itself remains uncertain, as seen in the ongoing difficulties tiny house owners face with zoning laws and building codes that were not designed with such small dwellings in mind. However, Ford and Gomez-Lanier (2017) also suggest that tiny houses potentially may hold the most long-term promise not as permanent, full-time residences, but as a form of temporary housing.



Fig. 14 Boneyard Studios. Source: UrbanTurf (2014)



Fig. 15 Boneyard Studios. Source: UrbanTurf (2013)



Fig. 16 East Union Tiny House Village. Source: CHS Capitol Hill Seattle News (2016)

2.3 Is “The Minimum” Enough?

2.3.1 Maslow’s Hierarchy of Needs Applied to Housing

Humans are complex beings guided by a hierarchy of needs that shapes their behavior and environment. Abraham Maslow, a well-known psychologist, explained this with his famous model, ***Maslow's Hierarchy of Needs***, represented as a pyramid (see Fig. 17). At the basic level, there are physiological needs such as air, food, and water, followed by safety needs such as protection from fear and harm. Above these, there are social needs such as love and belonging, followed by esteem needs, and at the top is the need for self-actualization. According to Maslow, higher-level needs cannot be fully satisfied unless basic needs are met.

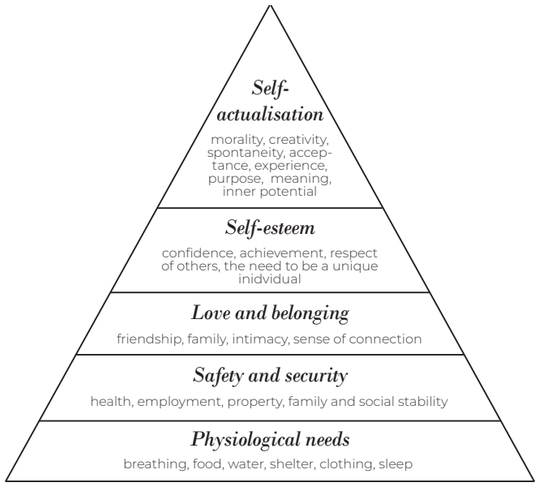


Fig. 17 Maslow’s Hierarchy of Needs. Source: Wotton, Skates and Shutter (2018) - re-elaboration of the author

Maslow's framework is frequently applied beyond psychology, including architecture (Wotton, Skates and Shutter, 2018). Early housing types mainly provided the essential elements of housing: shelter, a place to sleep, and protection, offering safety and security, which correspond to the base levels of Maslow’s hierarchy of needs. This could also be observed in the concept of the *“primitive hut”* (see Fig. 18), a simple form of architecture designed only to meet basic human needs. During the Neolithic Revolution, people began to transition from a nomadic lifestyle to settled agricultural communities, bringing with them the concepts of property and boundaries. This evolution signaled a transition from a simple shelter to the creation of organized and defined spaces. Spaces became more than just areas to occupy; they were partitioned to separate private areas from public ones, sacred areas from everyday ones, and personal areas from communal ones (Wotton, Skates and Shutter, 2018).

Within communities, the design of residential and public spaces began to reflect social connections and the desire for belonging. As societies expanded and wealth became attainable through land and property, residences generally evolved from merely meeting basic needs to representing social status and personal achievement. In many contexts, the size and quality of a person's home became a “visible” symbol of their success, directly linked to the highest levels of Maslow's hierarchy: esteem and self-actualization. Therefore, dwellings not only fulfill physical needs but also provide identity, social recognition, and personal fulfillment (Wotton, Skates and Shutter, 2018).



Fig. 18 The Primitive Hut. Source: Laugier (1755)

Tiny houses are currently perceived to only be able to meet the lowest levels of Maslow's hierarchy and to indicate a lower standard of living (Wotton, Skates and Shutter, 2018). However, this view may not fully reflect their potential. Prosperity may not always be connected to the size of a home but rather to the quality and use of its space. This can also be observed in Le Corbusier's *Cabanon* (1951) (see Fig. 19), described as the archetype of the minimum cell, based on an absolute ergonomic and functionalist approach, and represents the culmination of his re-

search into rational and functional living space reduced to a minimum. The cabin measures just 3.66 × 3.66 metres (15 m²), with its dimensions based on *the Modulor* (see Fig. 22), which is Le Corbusier's system of proportion based on the human body. Despite its small size, it accommodates all the essential functions of a home, including sleeping, working, storage, and washing, within a carefully organised layout based on ergonomic principles (Fondation Le Corbusier, n.d.; Le Corbusier World Heritage, n.d.). Le Corbusier himself described the house as: *"For my own personal use, I have a castle on the French Riviera measuring 3.66 × 3.66 metres; it was for my wife. It was amazing – the interior was extravagant in terms of comfort and elegance."* (Le Corbusier World Heritage, n.d.).

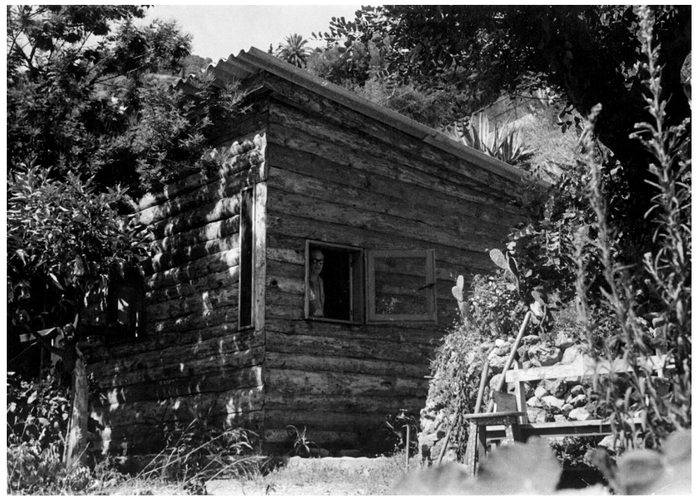


Fig. 19 Cabanon de Le Corbusier. Source: Photograph by Willy Boesiger, Le Corbusier World Heritage (n.d.).



Fig. 20 Interior of Cabanon. Source: Photograph by Olivier Martin-Gambier (2006), Fondation Le Corbusier (n.d.).



Fig. 21 Interior of Cabanon. Source: Photograph by Cemal Emden, Tekla Fabrics (n.d.).

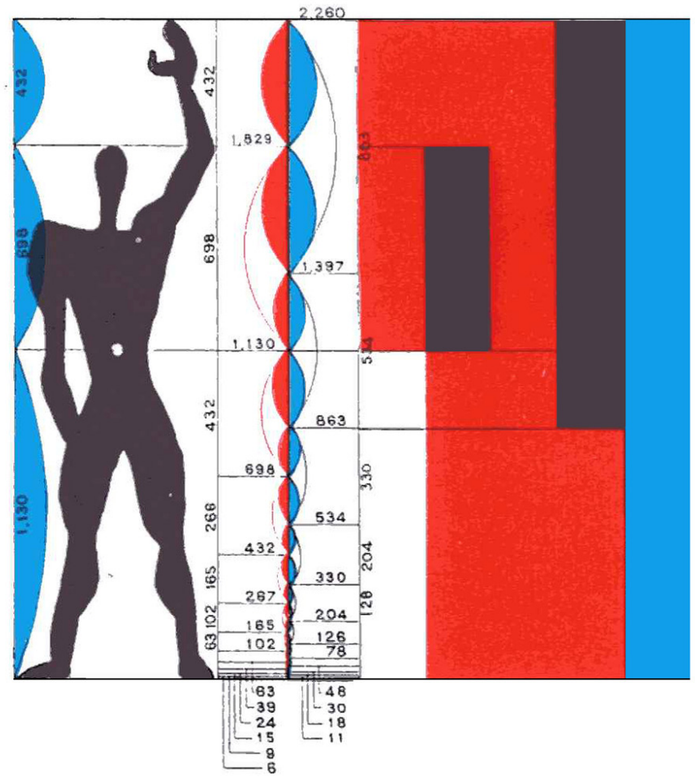


Fig. 22 Le Corbusier's Modulor. Source: Arellano (2018)

In some cases, tiny houses can even be designed as luxurious spaces, despite their small scale, and are not always meant to be affordable. Still, there is often cultural resistance to the idea, as small homes are commonly linked to poverty or social disadvantage (Wotton, Skates and Shutter, 2018). These perceptions, however, depend greatly on the cultural and economic context in which they appear. According to the case studies they discussed, Wotton, Skates and Shutter (2018) suggest that Tiny Houses actually have the potential to satisfy every level of Maslow's Hierarchy of Needs and can be much more than a tiny space. This invites reflection on what our needs truly are and what contributes to a sense of fulfillment.

Over time, the culture of looking at housing has become a commodity rather than a necessity (Anson, 2014). Once it became a commodity, it became associated with the higher levels of Maslow's hierarchy: self-esteem and self-actualization (Wotton, Skates and Shutter, 2018). Because large homes are commonly linked to success and comfort, Tiny Houses are often seen as lower status. However, this can be a perception rather than the true limitation of the housing itself. Wotton, Skates and Shutter (2018) suggest that choosing a Tiny House can reflect a desire for simpler, more sustainable, and authentic living, which aligns with self-actualization. By minimizing excess and focusing on what is essential, individuals may experience greater freedom, control, and overall fulfillment. This is also supported by the ideas of Henry David Thoreau, as he believed that true fulfillment comes from simplicity rather than material wealth (Anson, 2014).

Research on people who actually live in tiny houses tends to back this up. Mangold and Zschau (2019) interviewed tiny house dwellers in the US and found that most of them describe downsizing not as giving something up, but as a deliberate route toward what they call the "Good Life": a life with more autonomy, more security, closer relationships, and richer experiences. In other words, by spending less on housing itself, people free up time and money for the things that actually sit near the top of Maslow's pyramid.

2.3.2 Satisfaction Levels Driven by Different Motivations in Tiny House Living

Tiny Houses are theoretically able to satisfy most of our needs, “if also” our values align with what they can offer. However, in practice, there are some other aspects to consider as well. In their 2018 article, Boeckermann, Kaczynski, and King examine the motivations of tiny house residents and understand whether they are correlated to tiny house satisfaction, relying on data collected from an online survey of 182 residents. The study identifies several key motivations, including a desire to simplify life, reduce environmental impact, lower living costs, gain freedom and mobility, build community, and pursue personal challenges. According to their findings on the survey, among all the other motivations, the desire for a simplified lifestyle is the only motivation that comes with high levels of satisfaction in tiny house living. While financial and environmental factors were important to many, these factors were less strongly linked to satisfaction than value-driven reasons like simplification.

Based on this survey, it is acknowledged that not everyone benefits the same from tiny houses, as people have different motivations and different motivations have different satisfaction levels. Especially if adopting the tiny house lifestyle is not by choice but by obligation, mostly driven by economic reasons, in search of affordable housing. However, carefully designed spaces can still positively influence satisfaction levels with this type of living. Therefore, it is important to strike a balance between affordable living and residents' needs to feel satisfied, for people who choose this lifestyle in search of affordable housing.

2.3.3 Requirements and Needs Linked to Tiny and Affordable Living

Affordable housing is closely linked to requirements and needs, as the social scientist Abraham Maslow stated in his “Hierarchy of Needs” in 1940 (Kallis, 2023; Jocher, 2018). A common challenge in affordable housing is reducing costs vs. preserving or enhancing quality. Achieving affordability involves rethinking the standards of housing and eliminating what is excessive. However, “the minimum” does not have to mean low-quality or degraded housing (Davis, 1995, 2004; Kallis, 2023).

In 1929, the architects of modernity had already addressed the topic of the “existential minimum” needed for actual human living when they focused the *CIAM (Congrès Internationaux d'Architecture Moderne)* conference in Frankfurt on *“The Minimum Dwelling”* (Kallis, 2023; Jocher, 2018). This was mostly due to the architectural and social demands of the post-World War I period (when there was an urgent need to provide housing that could be built quickly with limited resources) and therefore to find standardized solutions to urban housing shortages (Harris, Nowicki and White, 2023; Kallis, 2023).



Fig. 23 Examples of ‘model’ buildings constructed for the Weissenhof estate in Stuttgart: (1) Le Corbusier, (2) Behrens, (3) Scharoun, (4–5) Stam, (6) Oud, (7–8) Mies van der Rohe and (9) Frank. Source: Kallis (2023)

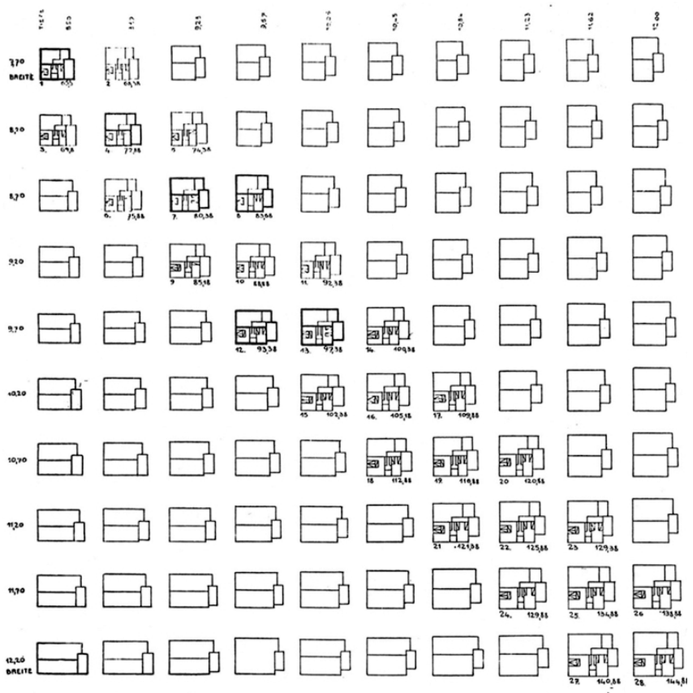


Fig. 24 Alexander Klein, Comparison and evaluation of different projects reduced to the same scale. Source: Ramaccini (2022)

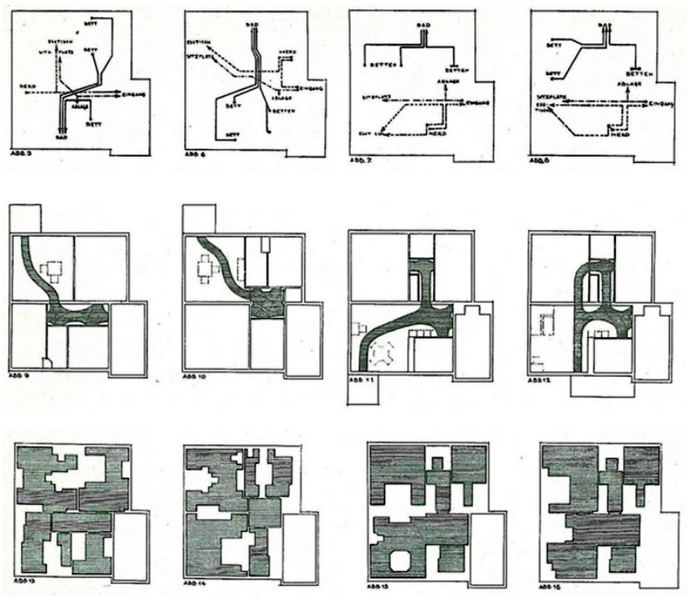


Fig. 25 Alexander Klein, Analysis of paths and free surfaces. Source: Ramaccini (2022)

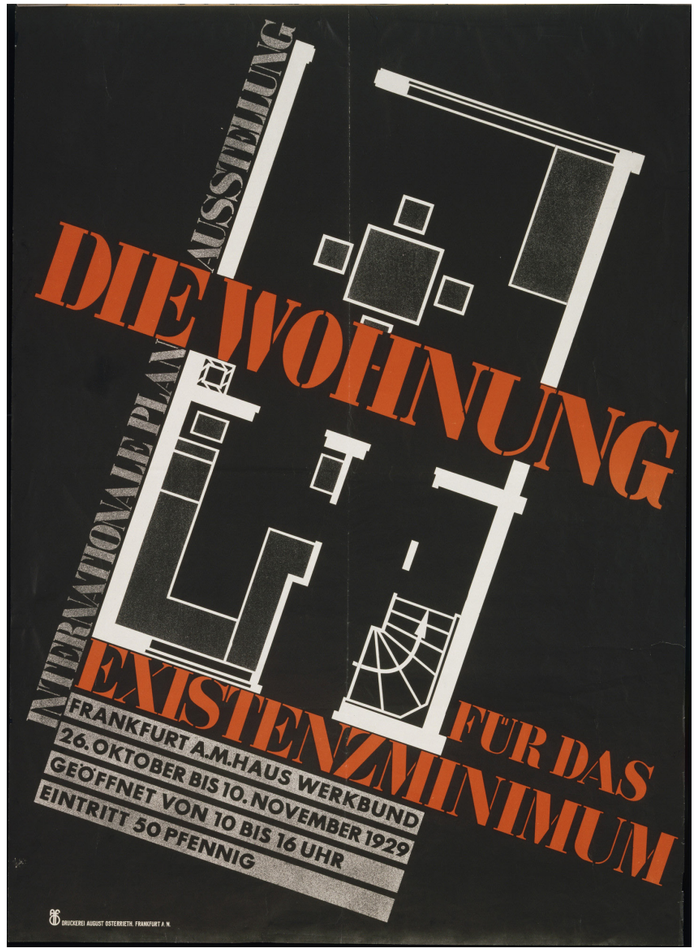


Fig. 26 Die Wohnung für das Existenzminimum (Leistikow, 1929). Source: Museum of Modern Art (MoMA) (n.d.).

Architecture and design have a strong role to play in translating human needs into built form. Not just by being efficient, but by being sensitive to how people live, what they require psychologically, socially, and spatially. Material choice, spatial organization, and building process are all tools for balancing cost-efficiency with humane design. It's about building better, not cheaper (Jocher, 2018).

2.4 Affordable Design Strategies for Tiny Houses

Housing affordability is mainly a problem of balance between supply, demand, and household income (Anacker, 2019). It is acknowledged that architecture cannot directly lead to affordable housing, and in the long term, political and social shifts are needed. However, architecture can still make a significant contribution with careful design considerations and construction techniques (Hartl, 2018). In response to this, the tiny house typology is increasingly framed in the literature not only as a compact dwelling but also as one of the potential solutions to the housing affordability and environmental crises (Chang, 2023; Keable, 2017; Shearer, 2018). Therefore, understanding the design and construction strategies that improve affordability is essential for their integration into tiny house typology.

2.4.1 Architectural Design Considerations for Affordability

The largest savings potentially come from early design and construction decisions, which mainly include building form, volume, and floor-plan design (Brysch and Czischke, 2022; Hartl, 2018).

A central shift in affordable design thinking is recognizing that spaces don't need to be strictly divided for each function such as sleeping, cooking, eating, or working (Jocher, 2018). This principle is seen in high-density housing strategies, where maximising spatial efficiency and functionality is treated as a key design goal, not just something to reduce (Adeyemi *et al.*, 2024). Songpa Micro-Housing in Seoul (see Fig. 27), for instance, provides only 10 m^2 per person, thanks to built-in wall cabinets and foldable beds to maximise the space. Each unit has a bathroom and a small kitchen, while shared spaces offer additional room.

Flexibility is another important strategy. Designing flexible floor plans and keeping the structure separate from interior finishes is cost-effective over time, as social and demographic changes might require adaptable spaces. Open-plan, multi-functional buildings are valuable as they can be easily converted for different uses (Hartl, 2018). Songpa Micro-Housing also exem-

plifies this strategy through its dynamically flexible mixed-use design. It features fourteen “unit blocks”, which allow residents to choose between a single unit or, if couples or friends need more space, recombining the blocks into larger configurations (see Fig. 28) (ArchDaily, n.d.). Battaino, Fossati and Marconi (2025) similarly argue that flexibility should be seen as a design strategy on its own. This approach allows housing to remain affordable and adapt to changing living needs over time, instead of being fixed for one use when it's built.



Fig. 27 Songpa Micro Housing, Seoul. Source: ArchDaily (n.d.).

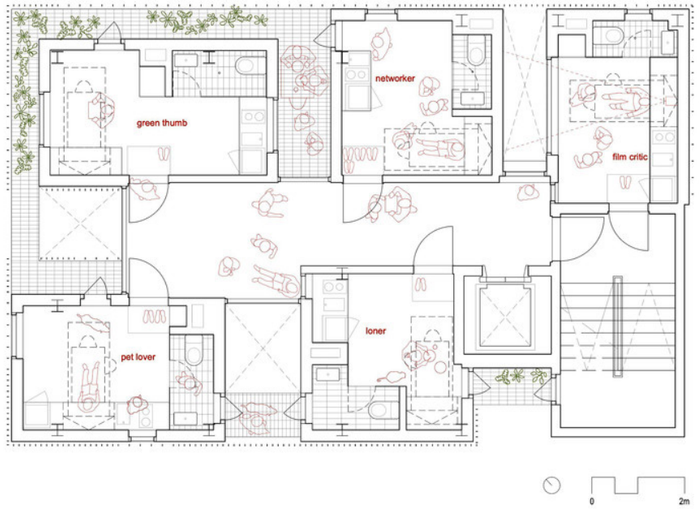


Fig. 28 Songpa Micro Housing, Seoul. Source: ArchDaily (n.d.).



Fig. 29 Songpa Micro Housing, Seoul. Source: SsD Architecture (n.d.).

Most of the costs come from a few key building elements. Structural work consumes almost half of the total construction costs. To ensure cost-efficient and sustainable construction, it is important to prioritize local and regional materials to minimize transport, as well as to focus on simple, durable, and recyclable materials. Using clear construction principles, including a logical planning grid for frames, aligning walls vertically, and avoiding unnecessary projections, can offer good possibilities for cost savings. Facades also often account for ~20–30% of the construction costs. Therefore, if a building is designed in a compact form, it reduces façade area and lowers energy/heating needs by providing a better area/volume ratio. Circulation spaces usually take up about 20% in residential buildings, and minimising these areas can contribute to a more compact and efficient space (Hartl, 2018).

2.4.2 Modular and Prefabricated Construction

Traditional construction methods are increasingly seen as inadequate to address the housing shortage, as they involve lengthy timelines and high costs, making it challenging to meet the urgent demand for affordable housing. Additionally, the environmental impact of traditional construction methods is an increasing concern, as the industry contributes a significant percentage to global carbon emissions. In response to this crisis, modular and prefabricated construction techniques have emerged as promising solutions (Adeyemi *et al.*, 2024; Thai, Ngo and Uy, 2020).

Prefabrication

Prefabricated residential buildings are often seen as low-quality. This perception partly comes from associations with temporary emergency shelters and the flaws of many prefabricated concrete buildings from the 1970s. What is often overlooked is that craftsmanship has advanced significantly with new technologies and construction methods (Pawlitschko, 2018).

Prefabrication construction is a process in which building components are manufactured off-site in a factory and then transported to a construction site for installation and assembly. This method offers many advantages compared to traditional on-site construction, such as faster and safer manufacturing, better quality control, simpler and precise on-site assembly, reducing both work time and overall construction period (Adeyemi *et al.*, 2024; Hartl, 2018; Thai, Ngo and Uy, 2020). These efficiencies also translate into sustainability benefits, including material efficiency, reduced on-site waste, and improved working conditions (Adeyemi et al., 2024; Thai, Ngo and Uy, 2020). Shifting construction from the site to a weather-protected, fully equipped production environment offers major time and cost advantages and allows for complex, high-quality solutions that would be difficult or impossible to achieve with traditional on-site construction (Pawlitschko, 2018).

The most commonly preferred materials in prefabricated systems include steel and wood due to their lightweight and durable character (Adeyemi *et al.*, 2024), and are used in creating components, such as reinforced steel elements and solid or frame-built wooden walls and ceilings (Adeyemi *et al.*, 2024; Pawlitschko, 2018). Using wooden components in prefabrication has a long tradition and has evolved with new woodworking and gluing technologies that enable greater strength, longer spans, and complex shapes. Modern prefabricated construction primarily uses timber frame or solid cross-laminated timber (CLT) systems (see Fig. 30), sometimes combined with glue-laminated timber and standardized steel connectors, allowing rapid assembly (Pawlitschko, 2018).



Fig. 30 Student Unit by Tengbom Architects (2013). Source: Photograph by Bertil Hertzberg, ArchDaily (n.d.).



Fig. 31 Diogene by Renzo Piano (2013). Source: Renzo Piano Building Workshop (n.d.).

Modularity

Modular construction is a specialized type of prefabrication where entire spatial units, modules, or building components are manufactured in a factory and then transported to the construction site to form a complete structure (Adeyemi *et al.*, 2024; Pawlitschko, 2018; Thai, Ngo and Uy, 2020). Economic advantages of prefabrication are not just because parts are made off-site, but also because many identical or similar modules are produced in series (Pawlitschko, 2018). This approach is particularly effective in structures with repeated units, such as apartments, schools, offices, dormitories, hotels, and hospitals, due to relatively small sizes of components, short spans, and repetitive layouts (Pawlitschko, 2018; Thai, Ngo and Uy, 2020). Since these modules also typically come fully equipped with interior finishes, bathrooms, windows, doors, and sometimes even facade elements, the on-site work is greatly reduced (Pawlitschko, 2018).



Fig. 32 50 Modular Timber Apartments by PPA architectures. Source: ArchDaily (n.d.).



Fig. 33 50 Modular Timber Apartments by PPA architectures. Source: ArchDaily (n.d.).



Fig. 34 Student Hostel Woodie by Sauerbruch Hutton Architects. Source: ArchDaily (n.d.).

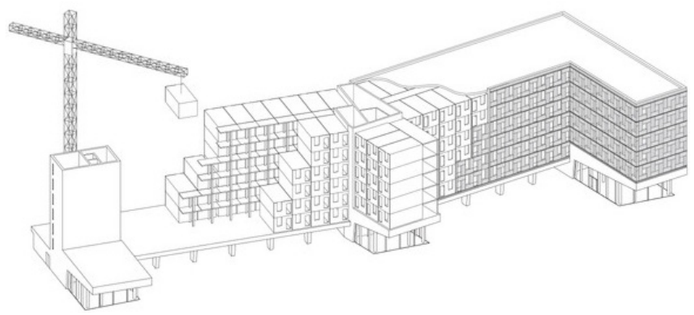


Fig. 35 Student Hostel Woodie by Sauerbruch Hutton Architects. Source: ArchDaily (n.d.).

Modular construction is characterized by three core design principles: ***flexibility, scalability,*** and ***standardization,*** which are essential to its success in various applications, including affordable housing (Adeyemi *et al.*, 2024).

Flexibility is a critical aspect of modular architecture. Unlike traditional construction methods, where design or structural changes usually cause major delays and extra costs, modular buildings are made of standardized units that can be added without major structural changes, easing reconfiguration and expansion. This flexibility is particularly valuable for affordable housing projects as it enables developers to adjust designs to fit different communities or future growth (Adeyemi *et al.*, 2024).

Scalability is another key aspect. Prefabrication of modules can reduce construction time significantly. This aspect especially matters for affordable housing, as it requires producing large quantities of housing units quickly and efficiently. The ability to scale up production without compromising quality or increasing costs is one of the key benefits of modular construction. In addition, modular design enables replicating housing models across different locations, ensuring consistency and quality (Adeyemi *et al.*, 2024).

Standardization is the third essential principle of modular design. Some uniformity is necessary to keep costs down. When the variation is smaller, this also lowers the costs (Davis, 2004). Standardization involves the production of uniform building components in a factory setting through standardized, mass-production processes. This not only enhances efficiency but also ensures a high level of quality control to meet the required safety, durability, and comfort standards (Adeyemi *et al.*, 2024). Since labour costs account for approximately 45% of construction costs in highly industrialized countries, minimizing these costs through standardized industrial or semi-finished products is a further, economically significant advantage (Hartl, 2018).



Fig. 36 Minimod by MAPA. Source: ArchDaily (n.d).



Fig. 37 Minimod by MAPA. Source: Arquitectura Viva (2026).



Fig. 38 Minimod by MAPA. Source: ArchDaily (n.d).

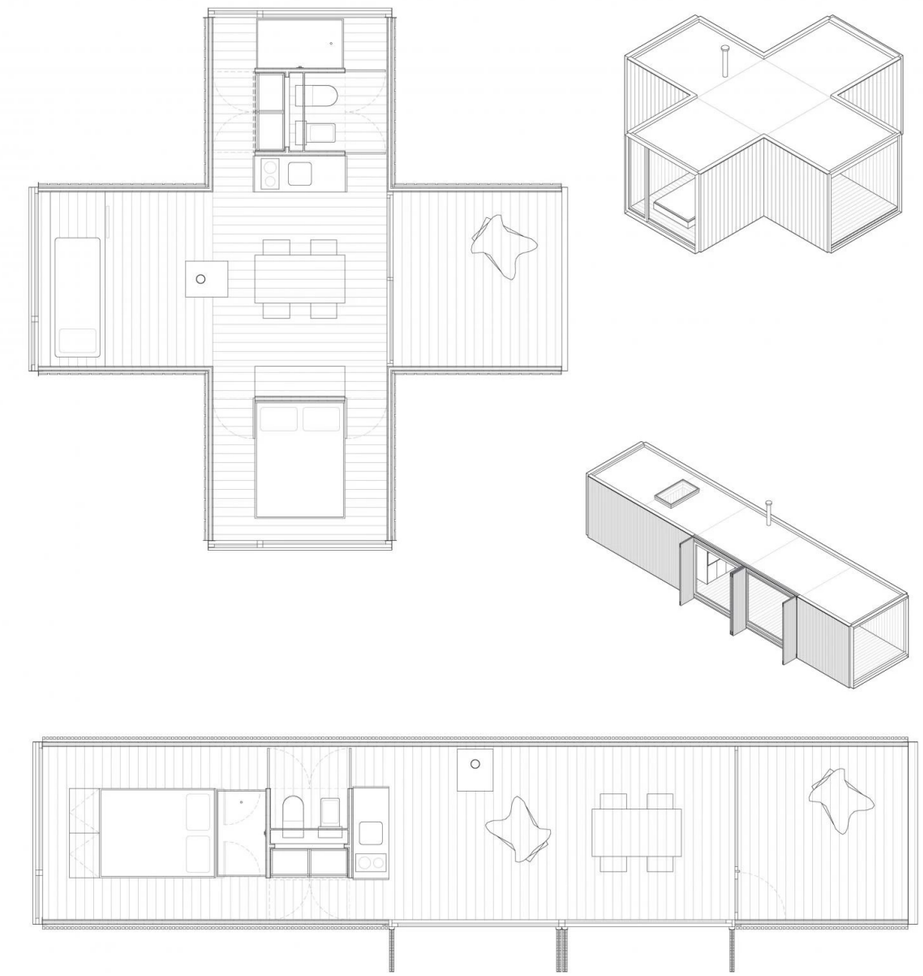


Fig. 39 Minimod by MAPA. Source: Arquitectura Viva (2026).

Some Practical Considerations

Prefabricating certain parts of the housing in factories and assembling them on site can be a more practical and economical solution than manufacturing entire dwellings off-site. The product also must appeal to a wide range of buyers, be accepted in various communities, be transportable over long distances, and be adaptable to different site conditions. It's also important to find the right building site that could accommodate the plan of each basic building, only requiring a few design modifications (Davis, 2004).

03

Tackling Homelessness

3.1 Understanding Homelessness

3.1.1 What is Homelessness?

3.1.2 Who Are the Homeless?

3.1.3 Factors Related to Homelessness

3.2 Homelessness in Turin, Italy

3.2.1 General Statistics and Demographics

3.2.2 Policy Frameworks and Support Strategies: In the Case of Turin

3.3 The Role of Architecture

3.3.1 User-Oriented Design Considerations for the Homeless

3.3.2 Affordable Design Considerations

3.1 Understanding Homelessness

3.1.1 What is Homelessness ?

Homelessness is a major social issue that has been widely studied. In simple terms, people who lack housing are considered homeless. However, is the mere absence of housing enough to capture the complexity of homelessness (Chamberlain and Johnson, 2001; Somerville, 2013)? In practice, homelessness lacks a single, universally accepted definition, as it is interpreted differently across academic disciplines, policy frameworks, and national contexts (Amore, Baker and Howden-Chapman, 2011; Springer, 2000). Consequently, the definition of homelessness has long been a topic of discussion among scholars (Amore, Baker and Howden-Chapman, 2011; Chamberlain and Johnson, 2001). This section, therefore, outlines the main conceptual approaches to defining homelessness and establishes the framework adopted in this thesis.

The reality of homelessness extends beyond the mere absence of a physical dwelling. Defining homelessness simply as "rooflessness" is too narrow, and it excludes people living in insecure or inadequate accommodation (Chamberlain and Johnson, 2001). Homelessness can include ***different forms of deprivation: physiological (shelter, safety), emotional (belonging, relationships), territorial (lack of privacy), ontological (stability, identity), and spiritual (meaning, hope).*** Therefore, understanding homelessness requires a multidimensional view and should be



Fig. 40 Homeless people looking out for each other. Source: Photo by John Gill

understood as a complex human experience shaped by social conditions and personal significance, including belonging, stability, and a sense of self, instead of being viewed solely as a lack of shelter or as statistical “risk factors” that diminish the humanity of homeless people (Somerville, 2013).

Another important aspect in defining homelessness is recognising that homelessness has a temporal dimension and it is not uniform over time. It can be categorised into three major types: ***(1) transitional or temporary,*** where individuals experience brief periods of homelessness while transitioning to stable housing, ***(2) episodic,*** involving short cycles of homelessness, and ***(3) chronic,*** which refers to a long-term or permanent condition (Lee, Tyler and Wright, 2010; Nooe and Patterson, 2010). Individuals' housing situations can change over time as well, ranging from living on the streets to staying in shared dwellings, emergency shelters, transitional housing, or permanent housing. This suggests homelessness is rather a continuum and there is no sharp line between being “housed” and “homeless”. It’s important to recognise this dynamic nature of homelessness, as each type requires different intervention strategies and understanding (Nooe and Patterson, 2010).

While academic discussions highlight the complex nature of homelessness, a clear and operational definition is essential not only for conceptual debate but also for enabling governments to design and implement effective policies. The lack of agreement on a clear definition affects how homelessness is measured, compared across contexts, and addressed through social policy (Amore, Baker and Howden-Chapman, 2011; Busch-Geertsema, 2010; Chamberlain and Johnson, 2001; Springer, 2000).

At the EU level, significant progress has been achieved in defining homelessness. *The European Typology of Homelessness and Housing Exclusion (ETHOS)* was developed by the *European Federation of National Organisations Working with the Homeless (FEANTSA)* as a framework definition and a shared language for policy and practice purposes. Nearly all European

nations and beyond recognise the European Typology on Homelessness and Housing Exclusion (ETHOS) as a helpful conceptual framework. National definitions are typically developed and debated in relation to this typology, even if they often differ from ETHOS itself (Busch-Geertsema, 2010). For this thesis, the ETHOS approach is adopted as the primary framework for defining and classifying homeless people.

3.1.2 Who are the Homeless ?

The homeless population is far more diverse than common stereotypes suggest. Homelessness can include various groups, including men, women, families, children, older adults, employed individuals, veterans, and people living in both urban and rural areas. Although people experiencing chronic homelessness are the most visible group, they only represent a part of the homeless population (Davis 2004; Jencks 1994; Phelan and Link 1999).



Fig. 41 Homeless man trying to raise enough money for a hostel. Source: Photo by John Gill

Classification

ETHOS classifies living situations associated with homelessness or housing exclusion into four main categories: ***rooflessness, houselessness, insecure housing,*** and ***inadequate housing*** (see Fig. 42). ***1) Rooflessness*** refers to individuals with no form of shelter, including those sleeping in public spaces or relying on emergency night shelters. ***2) Houselessness*** describes people who have temporary accommodation, such as homeless hostels, women's refuges, migrant reception centres, or institutional settings, but lack a stable or permanent home. ***3) Insecure housing*** includes individuals whose housing is unstable or at risk, including those staying temporarily with family or friends, living without secure tenancy, facing eviction, or escaping domestic violence. Finally, ***4) inadequate housing*** refers to people living in housing that does not meet basic living standards, including makeshift shelters, structurally unfit dwellings, or overcrowded accommodation. These are further divided into 13 operational groups, which can be used for policy purposes, including analysing homelessness trends and designing, implementing, and evaluating interventions (Amore, Baker and Howden-Chapman, 2011; ETHOS | FEANTSA, n.d.).

Fig. 42 ETHOS operational categories of homelessness. Source: FEANTSA (2007)

Conceptual Category		OPERATIONAL CATEGORY		LIVING SITUATION		GENERIC DEFINITION
	ROOFLESS	1	People Living Rough	1.1	Public space or external space	Living in the streets or public spaces, without a shelter that can be defined as living quarters
		2	People in emergency accommodation	2.1	Night shelter	People with no usual place of residence who make use of overnight shelter, low threshold shelter
	HOUSELESS	3	People in accommodation for the homeless	3.1	Homeless hostel	
				3.2	Temporary accommodation	Where the period of stay is intended to be short term
				3.3	Transitional supported accommodation	
		4	People in Women's Shelter	4.1	Women's shelter accommodation	Women accommodated to experience of domestic violence and where the period of stay is intended to be short term
		5	People in accommodation for immigrants	5.1	Temporary accommodation/reception centres	Immigrants in reception or short term accommodation due to their immigrant status
				5.2	Migrant workers accommodation	
		6	People due to be released from institutions	6.1	Penal institutions	No housing available prior to release
				6.2	Medical institutions (*)	Stay longer than needed due to lack of housing
				6.3	Children's institutions/homes	No housing identified (e.g. by 18th birthday)
		7	People receiving longer-term support (due to homelessness)	7.1	Residential care for older homeless people	Long stay accommodation with care for formerly homeless people (normally more than one year)
				7.2	Supported accommodation for formerly homeless people	
	INSECURE	8	People living in insecure accommodation	8.1	Temporarily with family/friends	Living in conventional housing but not the usual place of residence due to lack of housing
				8.2	No legal (sub)tenancy	Occupation of dwelling with no legal tenancy illegal occupation of a dwelling
				8.3	Illegal occupation of land	Occupation of land with no legal rights
		9	People living under threat of eviction	9.1	Legal orders enforced (rented)	Where orders for eviction are operative
				9.2	Re-possession orders (owned)	Where mortagee has legal order to re-possess
		10	People living under threat of violence	10.1	Police recorded incidents	Where police action is taken to ensure place of safety for victims of domestic violence
	INADEQUATE	11	People living in temporary/ non-conventional structures	11.1	Mobile homes	Not intended as place of usual residence
				11.2	Non-conventional building	Makeshift shelter, shack or shanty
				11.3	Temporary structure	Semi-permanent structure hut or cabin
		12	People living in unfit housing	12.1	Occupied dwellings unfit for habitation	Defined as unfit for habitation by national legislation or building regulations
		13	People living in extreme over-crowding	13.1	Highest national norm of overcrowding	Defined as exceeding national density standard for floor-space or uesable rooms

Note: Short stay is defined as normally less than one year; Long stay in defined as more than one year.

(*) Includes drug rehabilitation institutions, psychiatric hospitals etc.



Fig. 43 Homeless children huddle together for warmth, La Paz, Bolivia (1984). Source: Chris Steele-Perkins /Magnum Photos.

3.1.3 Factors Related to Homelessness

Nowadays, researchers largely agree on a conceptual model that suggests homelessness is best understood as the result of both ***structural (macro)*** and ***individual (micro)*** factors. According to this approach, structural factors create a population at risk, while individual factors determine who within the at-risk group actually becomes homeless because of their personal vulnerabilities. A third element within this approach is situational crisis ("bad luck"). It's often less documented than the other factors, but it has the potential to trigger homelessness when other vulnerabilities already exist. These structural (macro) factors can include a lack of affordable housing, poor economic conditions (such as unemployment and poverty), demographic trends, and

changes in government policies (in welfare, mental health, and housing). The research shows that, for many, the micro-level vulnerabilities begin in childhood. Experiencing physical or sexual abuse, neglect, family conflict, poverty, unstable housing, or alcohol and drug use during childhood increases the chance of becoming homeless later in life. For adults, similar factors increase the risk, along with mental illness, the death of a spouse, and, for women, domestic violence (Lee, Tyler and Wright, 2010).

Although widely accepted, Somerville (2013) criticises this consensus, arguing that the categories of "structural" and "individual" factors are vague and unstable. He argues that this classification tends to treat homelessness as a fixed, measurable "social fact" and reduces it to a single dimension (lack of housing), which strips away the lived, experiential, and relational complexity of what homelessness actually is.

Nooe and Patterson (2010) bring a more dynamic approach, consistent with the recognition of the complexity of homelessness, by introducing an ***ecological systems model*** that shows the relationship of various layers contributing to homelessness. Their proposed model explores homelessness as the spectrum of biopsychosocial risks associated with pathways into homelessness, and of social and individual consequences resulting from periods of homelessness.

In the model proposed by Nooe and Patterson (2010), there are four primary components in relation to homelessness: ***biopsychosocial risk factors, individual and social outcomes, the temporal dimension,*** and ***housing outcomes*** (see Fig. 44). Biopsychosocial risk factors include structural influences such as poverty, unemployment, limited access to affordable housing, discrimination, and inadequate healthcare, alongside individual factors such as mental illness, substance use, poor physical health, negative experiences during childhood, family conflict, domestic violence, imprisonment, limited education, and weak social support. These factors can interact over time to increase vulnerability. The model also recognises the fact that homelessness can be experienced as first-time, episodic, or chronic, with people moving between different forms of housing, including street homelessness, emergency shelters, transitional accommodation, supportive housing, institutional settings, and permanent housing. The model also acknowledges that homelessness itself can worsen existing vulnerabilities such as poorer physical and mental health, social isolation, unemployment, victimisation, and increased criminal involvement. These individual impacts also have wider consequences for communities, including increased demand on health and social services and greater social and economic costs.

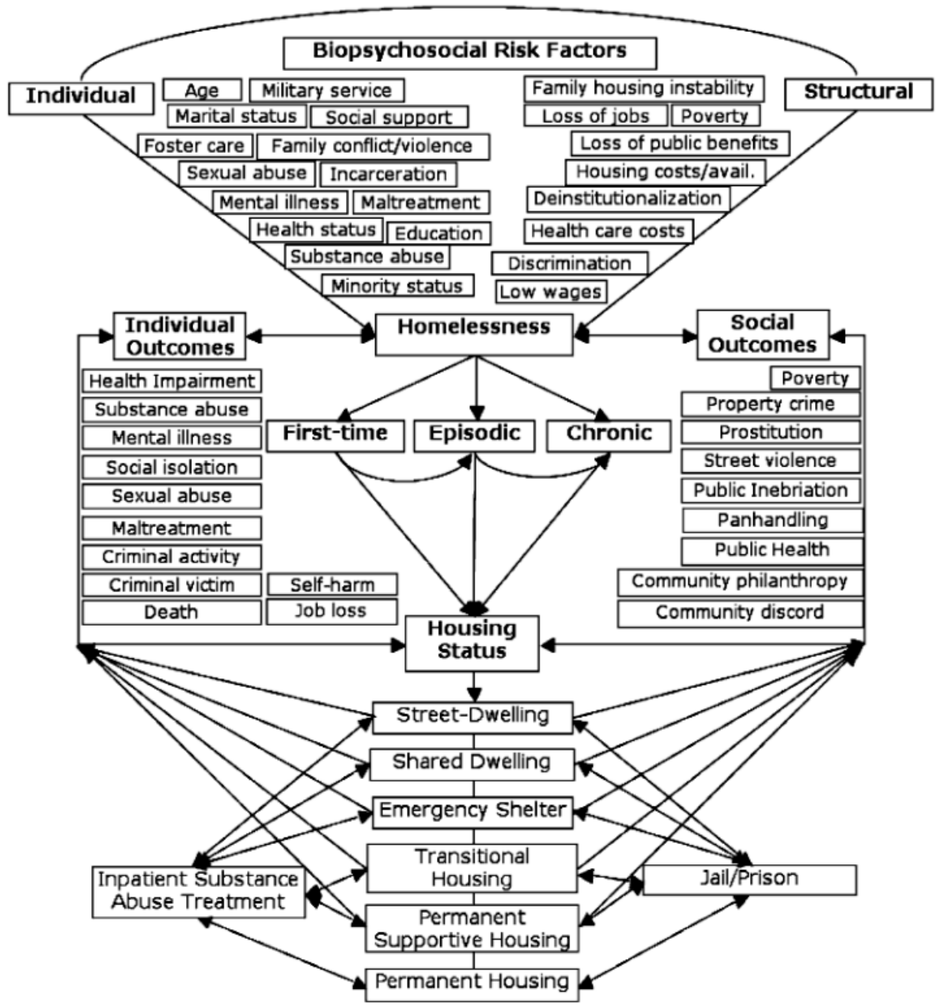


Fig. 44 Ecological model of homelessness. Source: Nooe and Patterson (2010)

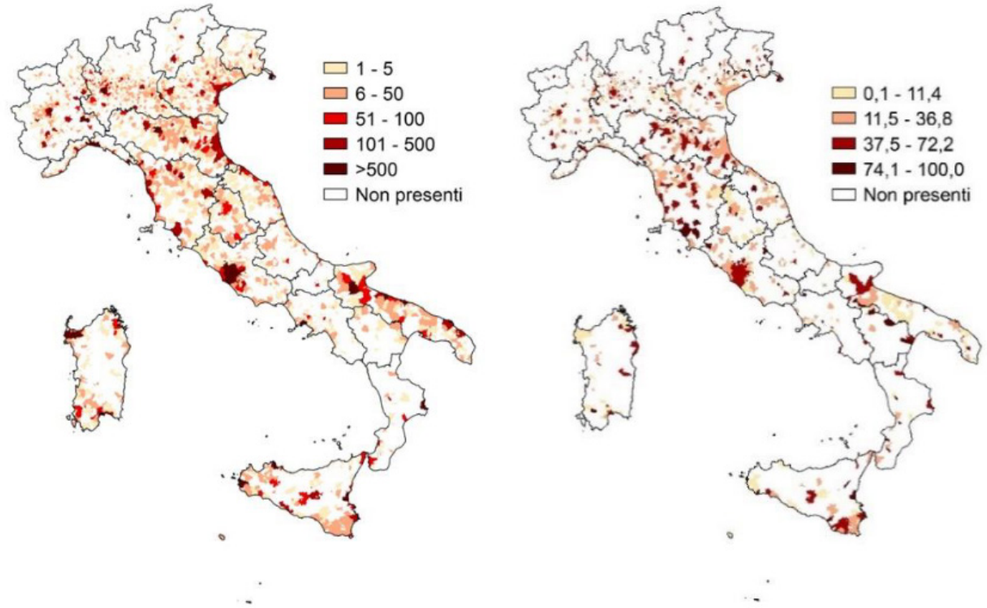
3.2 Homelessness in Turin, Italy

3.2.1 General Statistics and Demographics

In Italy, poverty and homelessness worsened during the early 2010s (Campagnaro and Giordano, 2017). Recent statistics suggest that homelessness remains a significant issue. Rising housing costs, inflation, insecure employment, and a chronic shortage of affordable housing have continued to increase the risk of housing exclusion, particularly in large urban areas such as Milan, Rome, Palermo, Florence, Turin, Naples, and Bologna (fio. PSD, 2024).

Despite the growing importance of the issue, obtaining reliable data on homelessness has long been difficult because national estimates were primarily based on people who accessed homelessness services, inevitably overlooking those outside the support system (OECD, 2024). The most widely accepted recent national estimate of the number of homeless people in Italy comes from *ISTAT (Istituto Nazionale di Statistica / Italian National Institute of Statistics)* and *fio.PSD (Federazione Italiana Organismi per le Persone Senza Dimora)*.

First of all, it is important to frame the official statistical definition of homelessness adopted by ISTAT:



"ISTAT has adopted an administrative definition of the people who are homeless in the Permanent Population Census as of December 31, 2021. Per the law Regolamento Anagrafico, homeless persons are those who are registered with the civil registry at a national residential address and at the address of NGOs/ associations that provide assistance to people experiencing homelessness, and those who elect their domicile at the municipality where they usually reside." (OECD, 2024).

Fig. 45 Number of Homeless People by Municipality (absolute values) and Percentage of Foreign Homeless People in the Total Homeless Population. Source: ISTAT (2022)

OPERATIONAL CATEGORY		LIVING SITUATION		DEFINITION
1	People living rough	1	Public spaces / external spaces	Living in the streets or public spaces without a shelter that can be defined as living quarters
2	People in emergency accommodation	2	Overnight shelters	People with no place of usual residence who move frequently between various types of accommodation
3	People living in accommodation for the homeless	3	Homeless hostels	Where the period of stay is time-limited and no long-term housing is provided
		4	Temporary accommodation	
		5	Transitional supported accommodation	
		6	Women's shelters or refuge accommodation	
4	People living in institutions	7	Health care institutions	Stay longer than needed due to lack of housing
		8	Penal institutions	No housing available prior to release
5	People living in non-conventional dwellings due to lack of housing	9	Mobile homes	Where the accommodation is used due to a lack of housing and is not the person's usual place of residence
		10	Non-conventional buildings	
		11	Temporary structures	
6	Homeless people living temporarily in conventional housing with family and friends (due to lack of housing)	12	Conventional housing, but not the person's usual place of residence	Where the accommodation is used due to a lack of housing and is not the person's usual place of residence

Fig. 46 ETHOS Light operational categories of homelessness. Source: FEANTSA (2007)

ISTAT presents and measures its national data according to the *ETHOS Light Typology* (see Fig. 46) (OECD, 2024), which is a harmonised definition of homelessness for statistical purposes (ETHOS | FEANTSA, n.d.). The groups included in the latest data are: ETHOS 1: Living on the streets or in public spaces, ETHOS 2: Emergency accommodation (e.g., shelters), ETHOS 3: Accommodation for the homeless (e.g., hostels and women's refuges), and ETHOS 5: People in non-conventional dwellings (e.g., caravans, cars or tents). ETHOS 4: People in institutions and ETHOS 6: Living temporarily with others in conventional housing (e.g., sofa-surfing) were not included (OECD, 2024).

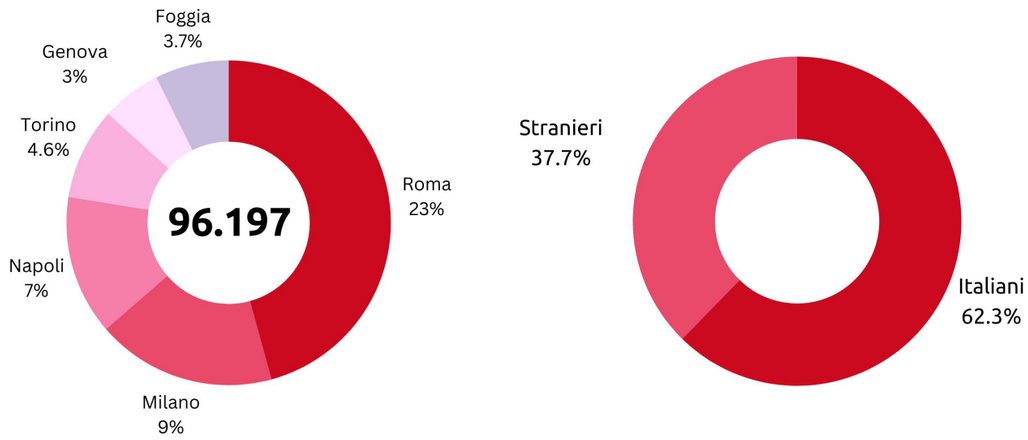


Fig. 47 Distribution of the homeless population across major Italian cities. Source: Avvocato di Strada (2023)

Fig. 48 Distribution of the homeless population by continent of origin. Source: Avvocato di Strada (2023)

According to the latest national estimate reports on people experiencing homelessness, provided by ISTAT, approximately 96,197 people are experiencing homelessness in Italy (2021), representing around 0.16% of the population; 32% are women, 68% are men. Earlier official surveys counted about 50,700 homeless people in 2014, but those studies relied mainly on users of shelters and soup kitchens and are now considered an underestimate. This figure is currently used by the *OECD (Organisation for Economic Co-operation and Development)* and Italian institutions, while a new national survey is being completed.

To improve the data and to take into account the complexity of homelessness, ISTAT has launched a new nationwide survey in 2024 using an internationally recognised Point-in-Time methodology in collaboration with the Italian Federation of Organizations for Homeless People (fio.PSD) (Rosa and Scambia, 2026). Initial results released in March 2026 identified 10,037 adults experiencing homelessness across fourteen metropolitan municipalities. Of these, 55.4% were staying in emergency accommodation, while 44.6% were sleeping rough or in places not intended for habitation (ISTAT, 2026). Although these figures do not represent the total homeless population in Italy, they provide the most up-to-date picture of homelessness in the country's largest cities.

The profile of people experiencing homelessness in Italy has also become increasingly diverse. Although single adult men remain the largest group, homelessness increasingly affects women escaping domestic violence, older adults with insufficient retirement benefits, young people leaving care, migrants, asylum seekers, and individuals experiencing mental health problems or substance abuse (Rosa and Scambia 2026).

3.2.2 *Policy Frameworks and Support Strategies: In the Case of Turin*

Italian Law No. 328/2000 (Framework Law for the Integrated System of Social Services) makes municipalities responsible for providing services for people experiencing poverty and social exclusion. In practice, these services are often delivered in partnership with nonprofit and voluntary organizations to support homeless people (Campagnaro and Giordano, 2017).

In Turin, homelessness services are primarily coordinated through the *Servizio Adulti in Difficoltà (SAD),* the municipal service responsible for supporting adults experiencing homelessness and social exclusion. Through SAD, individuals can access several services (Campagnaro *et al.*, 2022; Lancione, 2014). The main functions of the SAD are to: (i) provide social, economic, and housing support to people experiencing homelessness; (ii) manage and coordinate emergency shelters (hosting 1,577 people in 2019 and 1,838 in 2021), the temporary housing support system (145 people accommodated in 2019 and 174 in 2021), and Housing First (HF) services (40 participants in 2019 and 70 in 2021); and (iii) promote the social inclusion of people experiencing homelessness by facilitating internships and supporting access to employment opportunities. Beyond these operational responsibilities, the SAD also serves as a strategic and political coordinating body. It interprets and implements policy guidelines and directives, secures and allocates funding, monitors and analyses homelessness within the city, and provides updates while supporting appropriate policy responses to emerging issues (Campagnaro *et al.*, 2022).

Temporary and Emergency Housing

In Italy, responses to homelessness and housing exclusion have traditionally focused on emergency measures, with support mainly provided through temporary shelters and street-based services that address people's immediate basic needs (Campagnaro *et al.,* 2022). Italy has around 1,890 services supporting people experiencing homelessness, 17% providing a place to stay overnight. Among these, dormitories are the most common, making up 39% of accommodation services, followed by residential communities (33%) and housing services (28%). In practice, however, most people rely on emergency dormitories, which host more than 75% of all overnight users (Campagnaro and Giordano, 2017).

Night shelters are one of the main support services for the homeless in Turin. They usually offer four types of services: 1) services in response to basic needs; 2) night-time reception services; 3) day-time reception services; and 4) social secretariat that includes acceptance and support services. Most shelters follow "*the staircase approach",* where people have to move through different stages of support, and they are expected to demonstrate, develop, and increase their autonomy in several dimensions (i.e., house chores, the ability to pay bills) before they can access permanent housing. However, this system often focuses more on following rules and meeting service requirements than on the individual needs of each person. This can therefore reduce people's independence and make them feel they must fit into a system rather than receive personalised support (Campagnaro and Giordano, 2017; Campagnaro *et al.*, 2022).

Many shelters are also located in old or unsuitable buildings. They often have shared sleeping spaces, little privacy, poor-quality furniture, and no safe place to store personal belongings. Although they are designed to be temporary, many people end up living in shelters for long periods. These conditions can affect their dignity, well-being, and ability to rebuild an independent life, making it harder to participate in society fully (Campagnaro and Giordano, 2017).

In his 2014 article, Lancione explores four key homelessness policies implemented by the City of Turin. While the services are intended to provide care, he argues that the way they are organised can unintentionally reinforce stigma and exclusion. He identifies three policies that tend to have negative emotional and social impacts: The *"1+1" shelter system* required people to queue daily for a chance of securing a bed, creating uncertainty and disrupting everyday life. Access to many services also depended on obtaining *a fictitious municipal address ("Via della Casa Comunale, 1",* a bureaucratic process that many found frustrating and stigmatising. Similarly, the *"Emergenza Freddo" winter camp* offered emergency shelter but was criticised for its isolated location and poor living conditions. In contrast, he argues that the *Educativa Territoriale outreach programme* is a more successful model as it adopted a more flexible, relationship-based approach, working closely with individuals and responding to their specific needs.

Recent research suggests that these challenges reflect wider weaknesses within the Italian system in addressing homelessness. Based on a research project in Turin, Campagnaro *et al.* (2022) argue that homeless services are often fragmented and not well connected. This makes it difficult to provide long-term support for people experiencing homelessness. Therefore, they argue the need for stronger integration between housing, health, and social services, as well as diversifying the housing solutions available for those facing homelessness.

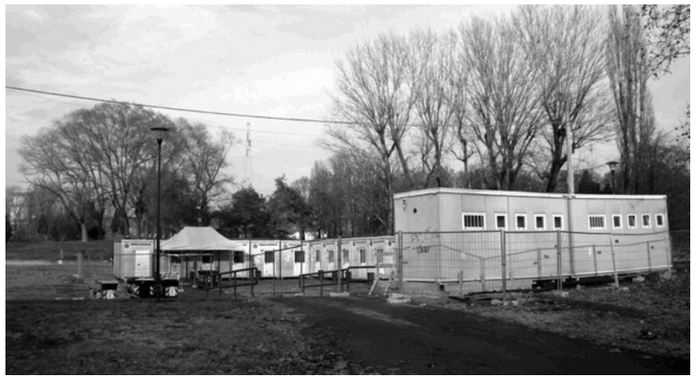


Fig. 49 The 'Emergenza Freddo' camp. Source: Lancione (2014).



Fig. 50 The entrance to the 'via Sacchi' multifunctional centre. Source: Lancione (2014).



Fig. 51 Two young homeless individuals waiting to be served at one of the city's offices. Source: Lancione (2014).

Permanent Supportive Housing: Housing First Approach

Beyond the need for shelter, homeless people are in need of long-term support, such as healthcare, mental health services, addiction treatment, education, childcare, financial assistance, and employment support, to help them achieve long-term housing stability (Davis, 2004). In recent years, permanent supportive housing models have become increasingly popular for addressing homelessness. This approach gives people access to long-term, affordable housing while also providing sup-

port, such as case management and mental health services, to help them build a more stable life. Many permanent supportive housing models adopt the ***Housing First approach***, which allows individuals to access stable housing without first having to meet requirements such as participating in substance abuse treatment. Supporters believe that stable housing gives homeless people the security they need to deal with challenges such as finding a job or overcoming addiction, and this is particularly advantageous for those who are "chronically homeless" (Evans, 2020; Lee, Tyler and Wright, 2010).

In 2015, Italy introduced national guidelines that encourage long-term solutions, focusing on stable housing and social inclusion instead of only providing temporary shelters (Campagnaro and Giordano, 2017; Campagnaro *et al.,* 2022). "*Guidelines for Tackling Severe Adult Marginality"* mark an important step in dealing more effectively with the complex phenomenon of 'homelessness' in Italy. By giving priority to the 'right to housing', the Guidelines were the first official document to outline a national programme and set standards for regions and municipalities to follow when providing social services to people who are homeless. The Guidelines encouraged the adoption of a new policy strategy based on Housing First (HF) and housing-led principles, by overcoming the traditional 'emergency' and temporary accommodation infrastructure. The Turin HF approach is not considered a small change to the system. Instead, it is considered a real opportunity for the entire system to test how it can evolve in a significant way (Campagnaro *et al.,* 2022).



Fig. 52 Man painting on the wall. Source: Priester and Spiers (2023).

3.3 The Role of Architecture

Most people do not immediately think of architecture as a way to help the homeless. However, architectural design can play an important role by creating facilities that preserve people's dignity during difficult times. Well-designed facilities can also encourage individuals who are hesitant to use shelters (often referred to as “shelter-resistant”) by creating an environment that feels safe, welcoming, and respectful, rather than resembling a prison, a depressing warehouse, or an unsafe institution. A place where people ask ***“Can we stay here?” instead of “Do we have to stay here?”*** (Davis, 2004).



Fig. 53 Shelter for homeless women. Source: VanTol (2020).

3.3.1 User-Oriented Design Considerations for the Homeless

Psychological Needs

As noted earlier, homelessness is not just a lack of housing. It is a multidimensional issue that can include lack of safety, belonging, privacy, stability, and hope (Somerville, 2013). When a person becomes homeless, they often feel angry, confused, embarrassed, scared, exhausted, depressed, and hopeless. Their dignity gets damaged. Many are hungry, ill, or using drugs. It is therefore important to recognise the emotional and mental state of homeless people to correctly address their needs and make convenient design choices for homeless accommodations (Davis, 2004).

Maslow’s pyramid, the ***Hierarchy of Needs***, is again a convenient subject to consider in this chapter to put a framework and a psychological guide around the needs of the homeless. Many of Maslow's theories can be understood and reinforced by architectural design. They might be especially relevant to facilities that serve individuals experiencing a crisis by encouraging a more flexible and user-centered approach (Pable, 2007).

First and foremost, homeless people are human, and they're deprived of one of the most ***basic physiological needs***: shelter. As noted in the previous chapter, the higher needs of Maslow's pyramid cannot be satisfied unless the needs at the base are fulfilled. Providing a shelter is the first step, but there's more to consider. Like all other humans, homeless people need ***safety***, which is the second level of Maslow's pyramid. This includes personal security, employment, resources, health, and property. Architecture can provide these needs by creating appropriate environments through convenient design choices. Higher-level needs, which are ***love and belonging, esteem,*** and finally ***self-actualisation***, cannot be fulfilled directly through spatial design; thus, spaces can be designed to create opportunities for these needs to be met.

Spatial Needs

Homeless people need more than just a shelter to stay off the streets. A clean, welcoming, and thoughtfully designed place can give people a sense of safety and hope. Even small design choices, such as creating different spaces where people can relax, socialise, or enjoy privacy, can help them feel respected, valued, and more in control of their lives (Davis, 2004). Designing according to various user groups can be beneficial to address a wide range of needs, as unhoused populations often have diverse circumstances (Pable, McLane and Trujillo, 2021). Consideration of ***trauma-informed design*** can also help create conditions of safety and ameliorate the physical, psychological, and emotional impacts of trauma in homeless accommodations. As most of the homeless people experience high levels of mental health issues such as Post-Traumatic Stress Disorder (PTSD), it is therefore important to recognise the need for built environments to support mental health and wellbeing for the homeless (Owen and Crane, 2022). A supportive permanent housing complex for people experiencing homelessness in Los Angeles' East Compton neighbourhood, designed by US studio Kadre Architects, makes a good example of this approach, as the design is meant to be suitable for people who have experienced trauma and for people of varying ages (see Fig. 57 and 58).

A study done by Campanaro and Giordano (2017) introduces a set of design guidelines for temporary homeless shelters through a collaboration between the Politecnico di Torino, the University of Turin, the Italian Federation of Organisations for the Homeless, and the City of Turin. Rather than seeing shelters simply as places to sleep, the research recognizes them as spaces where people seek ***safety, privacy, support, and opportunities to rebuild their lives***. According to these guidelines, the key needs of homeless night shelters are grouped into four areas: ***usability, wellbeing, safety, and management.*** Shelters should be easy to access and navigate, particularly for first-time or occasional users and those carrying luggage, by removing physical and mental barriers and creating welcoming, intuitive spaces. Wellbeing can be improved by providing comfortable waiting areas, spaces that offer both privacy and opportunities to socialize, and rooms for support services. Good acoustic conditions and ergonomic workspaces are equally important for both guests and staff. Safety is another essential requirement, as residents need to feel secure both personally and in storing their few but valuable belongings, such as phones, documents, money, and personal items. Finally, shelters should be designed to support efficient daily operations, including maintenance, caregiving, and administrative tasks, so they can meet the needs of both residents and staff effectively (Campagnaro and Giordano, 2017).



Fig. 54 Shelter for Homeless Women by Vivas Arquitectos. Source: Photo by José Hevia, Divisare (2024).



Fig. 55 Shelter for Homeless Women by Vivas Arquitectos. Source: Photo by José Hevia, Divisare (2024).



Fig. 56 Shelter for Homeless Women by Vivas Arquitectos. Source: Photo by José Hevia, Divisare (2024).

In his book, Davis (2004) proposes an ***architectural program for housing for the homeless:***

The entries are the first places to make the right impressions. Considering that many homeless people may have prejudices towards the homeless facilities, feeling unsure or suspicious, it is therefore important to create a friendly and welcoming atmosphere to make them feel safe and secure.

Public areas can be designed to reinforce the sense of community and, therefore, a sense of belonging. Public spaces are frequently located within the facility rather than on its perimeter, creating a transition from the public area to a more private interior. Consequently, the public space works as both a buffer and a connection. People who come off the streets are unlikely to have a social network or a sense of community, and social skills are necessary for living in permanent housing, finding and retaining a job, and simply negotiating daily life. Thus, having access to a place where they can meet others, form friendships and connections, and find assistance is essential.

Courtyards can also be useful elements in facilities for the homeless, supporting a sense of community by hosting specific functions, such as gathering spaces. Architecturally, courtyards can enhance daylight entering the building and minimise the need for hallways.



Fig. 57 Permanent housing for people experiencing homelessness by Kadre Architects. Source: McKnight (2026).



Fig. 58 Permanent housing for people experiencing homelessness by Kadre Architects. Source: McKnight (2026).

Specialised spaces are also required for certain services. Many homeless people suffer from a health problem, either physical or emotional. Therefore, including a ***health clinic*** in the facility may help people ameliorate these problems by providing medical assistance, nursing support, mental health care, psychological counseling, and treatment for substance abuse. For those who have been homeless for some time, they usually have no cooking skills, specific eating habits, or preferences. ***Kitchens and communal dining spaces*** within the facility can provide residents with food while also supporting social interaction. Most of the homeless people have pets. A ***kennel*** is a program element often overlooked, and it is one of the reasons some homeless people avoid homeless facilities. Including a ***beauty parlor or a barbershop*** in the facility can help reestablish self-esteem, as it is a struggle for homeless people to maintain personal hygiene. A ***gym*** is particularly important for those with substance abuse problems, as it can deteriorate their bodies when combined with a lack of good nutrition and regular sleep. ***Classrooms*** could be included for potential job training, group therapies, and workshops (Davis, 2004).

Site selection also matters. Homeless facilities should be built in convenient locations (see Fig. 60). Proximity to public transport, jobs, schools, and support services is important to make daily life easier for homeless people, even though building them far away may seem like an easy solution (Davis, 2004; Pable, McLane and Trujillo, 2021).



Fig. 59 The kitchen of shipping container housing complex for the homeless by NAC Architecture and Bernards construction management company. Source: McKnight (2021).



Fig. 60 Shipping container housing complex for the homeless by NAC Architecture and Bernards construction management company. Source: McKnight (2021).

3.3.2 Affordable Design Considerations

Affordability is an important consideration when designing for the homeless, as housing for the homeless often requires unavoidable design compromises. However, even with a small budget, some architectural choices can lead to spaces that are safe, comfortable, and respectful (Davis, 2004). But how?

In his book, Davis (2004) introduces some affordable design considerations for homeless accommodations. ***Uniformity*** is one way to keep construction costs low. But that does not

mean a building has to look boring or repetitive. A building can have two or three different types of units to meet the needs of different residents, such as single adults, families, or people with disabilities. Even when the units follow a similar design, small changes in the layout can make the building more visually interesting, create unique spaces, and can add character without greatly increasing the cost. Even varying colors, shapes, or textures can create distinctive forms. These features are not just for decoration; they can make the building a more enjoyable place to live for the homeless and help it fit better into the surrounding community. Designing a building that residents can enjoy living in and that the community welcomes does not have to be expensive; it is more about spending money on the things that matter. Another aspect is the ***size of the facility.*** Larger facilities can provide housing for more people experiencing homelessness and may be able to offer more services. However, while the cost per person may decrease as the building becomes larger, the overall cost of constructing and operating a large facility is still higher. Therefore, finding the right balance between size, cost, and residents' needs is essential.

04

Design Project

Tiny House Community for the Homeless in Turin

4.1 Synthesis: Can Tiny Houses be a Solution for the Homeless?

4.2 Dwelling / Resident Scale: Tiny House Re-Elaboration

4.2.1 Modularity and Prefabrication

4.2.2 User Adaptability

4.2.3 Context Adaptability

4.3 Community and City Scales: Tiny House Community for the Homeless in Turin

4.3.1 Site Selection

4.3.2 Site Integration

4.3.3 Tiny House Community for the Homeless

4.1 Synthesis: Can Tiny Houses be a Solution for the Homeless?

As discussed in the second chapter, tiny houses can be a satisfactory and affordable housing option under the right conditions, while the third chapter outlined the multidimensional nature of homelessness and the design considerations required to respond to it appropriately. This section therefore brings these two together by asking whether the tiny house typology can meet the specific needs of people experiencing homelessness, and therefore identifies the ***design principles*** before proposing a design project for Turin, Italy, that builds on the findings discussed so far.

Using tiny houses to address homelessness is not new. Over the past decade, tiny house villages for the homeless became a promising housing strategy, especially across the United States (Evans, 2020; Kpeebi and Evans, 2025). This, however, does not mean that tiny houses are a straightforward or universally appropriate solution. Whether they are an appropriate choice for the homeless remains a topic of ongoing discussion (Evans, 2020; Jackson *et al.*, 2020; Kpeebi and Evans, 2025).

To understand this potential properly, it is useful to move from the smallest unit of intervention to the largest: first the individual dwelling, then the community it forms part of, and finally its integration into the city.

These scales mainly aim to answer the following questions:

Dwelling / Resident scale: *How does architecture provide dignity?*

Community scale: *How does architecture support belonging and stability?*

City / System scale: *How can the design support social inclusion?*

Scale 1: Dwelling / Resident - Tiny Houses as Individual Accommodation for the Homeless

The first question is whether the tiny house itself, as a unit, is suited to the needs of a person experiencing homelessness. As discussed in *Chapter 3,* homelessness is not simply the absence of shelter but can also involve a deprivation of safety, privacy, belonging, and stability (Somerville, 2013). A self-contained tiny house creates a clearly defined private territory, spatially distinct from dormitories, shared shelters, and other collective accommodations. Living in an individual unit provides greater privacy and autonomy and is therefore associated with better emotional and psychological stability for people recovering from homelessness (Evans, 2020, 2021). In this sense, a tiny house may directly address the "*User-Oriented Design Considerations*" identified in *Section 3.3.1*, serving as the first step towards stability and dignity.

At the same time, however, people experiencing homelessness have diverse circumstances, meaning that a single fixed dwelling solution may not respond to every resident. The flexibility strategies discussed in *Chapter 2* may offer a response to this limitation. Efficient multifunctional layouts can make better use of limited space, while modular units can be configured or combined to accommodate different and changing living needs.

From this relationship, two design principles emerge: ***"Dignity through Privacy"***, through providing a safe and secure home, and ***"Adaptability through Flexibility"***, through a dwelling system capable of responding to different users and changing needs.

Scale 2: Community - From Individual Units to a Collective Environment

A single dwelling, however, does not exist in isolation. People experiencing homelessness generally need to be within a community that also provides connection and support, and it is at this scale that the tiny house communities become relevant. However, how well a community works seems to depend less on the houses themselves and more on how the community is organised. It depends on whether it follows recent approaches to homelessness, whether it functions as permanent supportive housing rather than another form of temporary shelter, or whether it adopts a Housing First approach instead of asking residents to "earn" their stability first, and the types of social services available to the residents (Evans, 2020, 2024; Kpeebi and Evans, 2025). Fulfilling these aspects may contribute to a sense of belonging among residents and improve their social reintegration.

From this scale, another two design principles emerge: ***"Belonging through Community"***, through providing spaces that encourage social interaction and build relationships, and ***"Stability through Support"***, through accessible services that help residents maintain stable housing and rebuild their lives.

Scale 3: City / System - Integrating Tiny House Communities into the Urban Fabric

The final and, arguably, most difficult question is where these communities belong within the city. A tiny house community that is well designed at the unit and community scale can still fail if it is poorly located or disconnected from transport, employment, services, and everyday urban life. As discussed in *Chapter 3*, proximity to public transport, jobs, schools, and support services makes daily life significantly easier for people experiencing homelessness, even though building facilities far from the city center seems like the easier option (Davis, 2004; Pable, McLane and Trujillo, 2021). Consequently, communities built on the edge of a city, disconnected from these networks, risk recreating the same isolation they were meant to solve, simply with a nicer roof over it. This is where the idea of urban integration becomes useful.

The integration of tiny house communities into urban planning can improve their effectiveness in addressing homelessness (Kpeebi and Evans, 2025). Moving from a tiny house village to an urban tiny house model requires rethinking the relationship between the accommodation and the city. Instead of viewing it as a self-contained camp isolated from everyday life, we can see it as a form of ***infill housing*** integrated into the urban landscape (Cumberbatch-Pearson, 2021). When framed this way, tiny houses are no longer just a temporary solution on the outskirts of the city; instead, they start functioning as an ordinary part of the city, strategically located where residents can rebuild a stable life and feel included in society.

From this scale, the design principle ***"Inclusion through Connectivity"*** emerges, through connecting residents to the surrounding neighbourhood, services, transport, and everyday urban life.

Alongside these five principles, affordability remains central to all scales of intervention. Tiny houses are frequently framed as a cost-effective way of addressing homelessness (Evans, 2024; Jackson *et al.*, 2020), and modular/prefabricated construction, as discussed in *Section 2.4.2*, is often proposed as a way of delivering this affordability. Rather than treating affordability as a reason to compromise spatial quality, standardisation and repetition can therefore be used as tools to support the implementation of the principles identified above. Therefore, ***"Affordability through Standardisation"*** emerges as an overarching design principle supporting all three scales.

Synthesis Summary

Scale	*Research Finding*	*Design Principle*	*Design Strategy*	*Architectural Translation*
Dwelling / Resident	Homelessness can involve deprivation of safety, privacy and stability. An individual tiny house can provide greater privacy, autonomy and personal territory than collective accommodation.	*1) Dignity through Privacy*	*Providing residents a safe and secure home of their own.*	Private dwelling; individual entrance; secure personal storage; visual and acoustic privacy; private bathroom; clear threshold between private and communal space.
	People experiencing homelessness have diverse circumstances, while flexible layouts and modular units can respond to different and changing living needs.	*2) Adaptability through Flexibility*	*Developing a dwelling system capable of responding to different users and changing needs.*	Different unit configurations; accessible units; multifunctional layouts; flexible furniture; modular construction; possibility to combine or adapt units.
Community	Individual accommodation alone is not enough. Connection, social interaction and relationships can contribute to a sense of belonging and social integration.	*3) Belonging through Community*	*Creating opportunities for social interaction and relationship-building without removing residents' privacy.*	Residential clusters; shared courtyards; gardens; communal kitchen/dining; activity spaces; pedestrian areas and shared outdoor spaces.
	The effectiveness of tiny-house communities depends on how they are organised, including permanent supportive housing, Housing First approaches and accessible social services.	*4) Stability through Support*	*Integrating accessible support that helps residents maintain stable housing and rebuild their lives.*	Community / support hub; counselling rooms; healthcare / wellbeing service areas; training/ workshop spaces; communal facilities; connections to external services.
City / System	Even a well-designed community can fail if residents are disconnected from transport, employment, services and everyday urban life. Peripheral isolation risks reproducing social exclusion.	*5) Inclusion through Connectivity*	*Connecting residents to the surrounding neighbourhood and the city.*	Urban infill; proximity to public transport, jobs and services; pedestrian connections; permeable site edges; access to everyday life.
All scales	Tiny houses and modular / prefabricated construction can support affordability. Standardisation and repetition can help control costs without treating affordability as a reason to compromise spatial quality.	*6) Affordability through Standardisation*	*Using standardisation and repetition to support affordability and make the five principles economically achievable.*	Standard structural systems; repeated components; prefabrication; limited unit types; simple construction; shared infrastructure; repetition with controlled variation.

4.2 Dwelling / Resident Scale: Tiny House Re-Elaboration

The first scale of the project focuses on ***the individual dwelling and the resident***. As discussed in the research, having a private, self-contained home can give individuals experiencing homelessness greater privacy, autonomy, and a sense of control over their lives. At the same time, residents may have very different circumstances and needs, meaning that a single fixed solution may not be suitable for everyone.

The project therefore returns to the tiny house developed for the initial competition and re-elaborates it according to what was learned through the research. The original modular concept is retained, but the system is adapted to the Italian context and developed to allow for different housing configurations and lengths of stay. Rather than designing one standard house for one type of resident, the aim was to develop a flexible system that can respond to different users while still providing the privacy and independence of an individual dwelling.

In this way, the individual dwelling responds to the principles of ***Dignity through Privacy*** and ***Adaptability through Flexibility***. Privacy is provided through a self-contained dwelling, while adaptability is achieved through the modular system and flexible layouts that allow different configurations to be created for different residents and needs. At the same time, the use of standardised and repeatable modules supports the overarching principle of ***Affordability through Standardisation***.

4.2.1 Modularity and Prefabrication

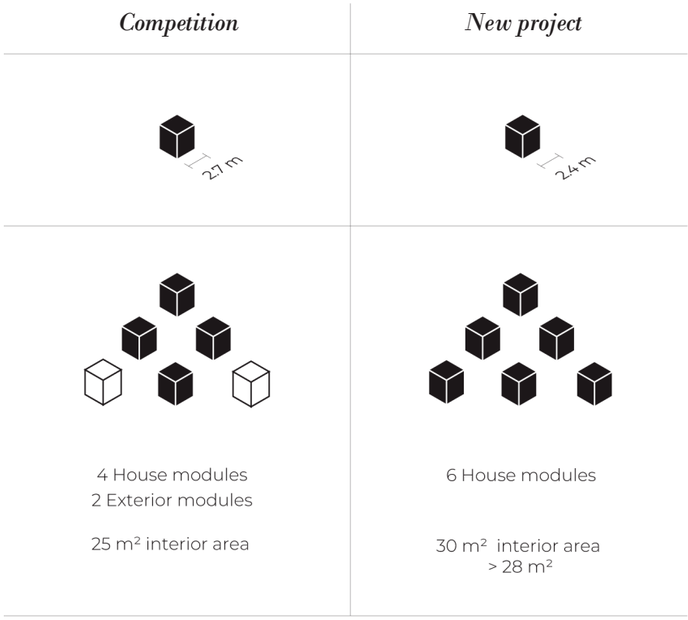
The modular concept developed for the competition project has been retained, but revised according to the findings of the research and the requirements of the Italian context. As discussed in Chapter 2, prefabrication can offer advantages such as faster construction, better quality control, simpler on-site assembly, and reduced material waste (Adeyemi et al., 2024; Hartl, 2018; Thai, Ngo and Uy, 2020). Modular construction can further support affordability through the repeated production of identical or similar units, making standardisation and repetition important parts of the construction strategy (Pawlitschko, 2018).

In the original competition proposal, each module measured 2.7 × 2.7 m. In the revised project, this has been reduced to 2.4 × 2.4 m to comply with Italian transport regulations. Two additional house modules have also been introduced to meet the minimum floor area requirements for permanent housing in Italy, while the Greenhouse and Terrace modules from the competition proposal have been removed. The revised system therefore consists of ***six module types: living, kitchen, dining, hygiene, sleep, and entrance.***

Each module has an independent structural system and is largely prefabricated in a factory before being transported individually to the site by truck. The structure and core layers are factory-assembled, while the exterior insulation, cladding, and

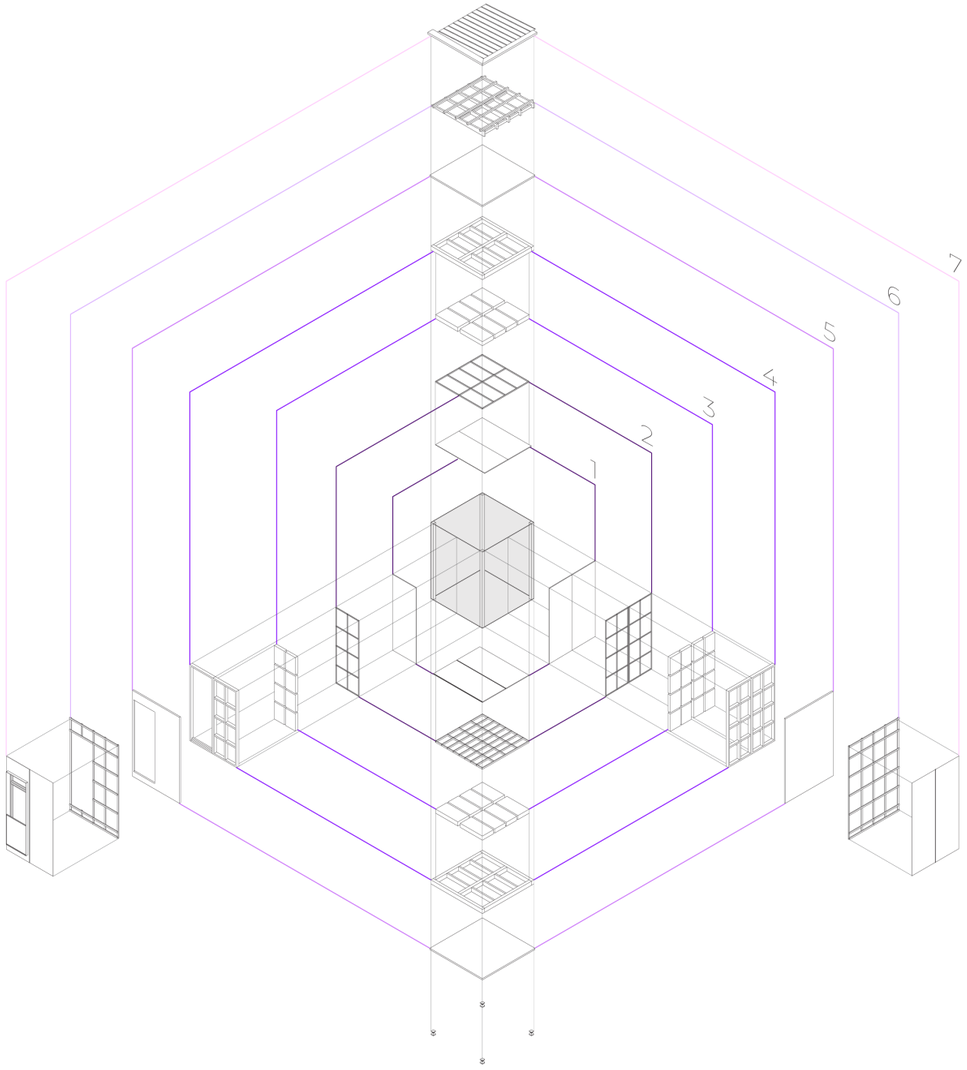
roofing elements are transported separately. Once delivered, the modules are connected on site, and the remaining exterior layers are installed. This reduces the amount of work required on site while allowing the individual modules to be transported and assembled more easily. This approach follows the prefabrication process discussed in the research, where building components are produced in a controlled environment before being transported and assembled on site (Pawlitschko, 2018; Thai, Ngo and Uy, 2020).

Rather than producing one fixed house, the modules can be combined in different ways to create ***different dwelling configurations***. Based on this approach, two main housing typologies have been developed according to their intended length of stay: ***T1 - Long-term Housing***, designed as a permanent dwelling, and ***T2 - Short-term Accommodation / Shelter***, intended for temporary stays. In this way, repetition and standardisation support ***Affordability through Standardisation***, while the possibility of combining the modules in different ways also contributes to ***Adaptability through Flexibility***.



The Smallest Unit: Modules

Module Components



Wall System

1. Timber board interior finish
2. Timber battens
3. Mineral wool insulation
4. Timber stud wall frame
5. Rigid foam board insulation + water insulation
6. Timber cladding battens
7. Metal sheet cladding

Roof System

1. Timber board ceiling
2. Timber battens
3. Mineral wool insulation
4. Timber joists
5. Rigid foam board insulation + water insulation
6. Timber roof structure
7. Metal sheet roof

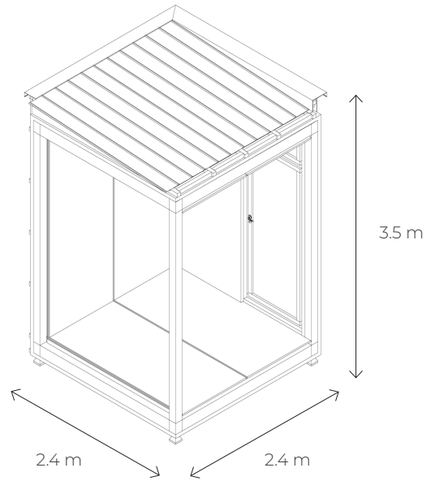
Floor System

1. Timber board flooring
2. Timber battens
3. Mineral wool insulation
4. Timber joists
5. Rigid foam board insulation + water insulation

Adapting to Living Needs

1 - Shelter

A single constructed module fulfills the most fundamental human need: shelter. By considering the essential living requirements of housing, the functions within the house were defined, and the module typologies were developed accordingly. Each module is measured by 2.4 x 2.4 m, meeting Italian regulations for transport, and supported by a structure of 10 x 10 cm columns and 10 x 15 cm beams.

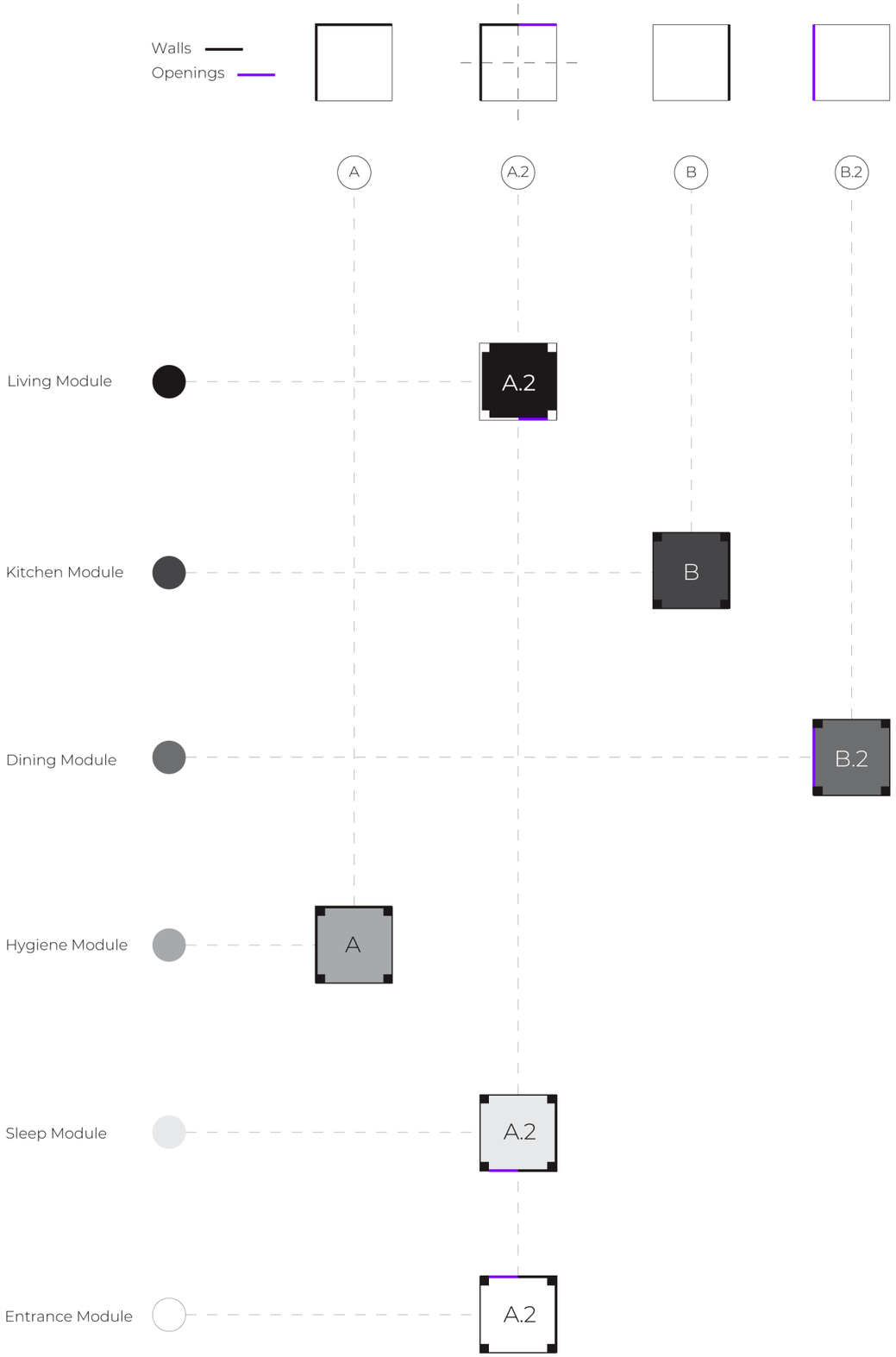


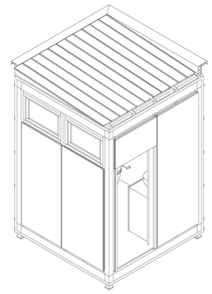
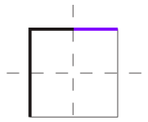
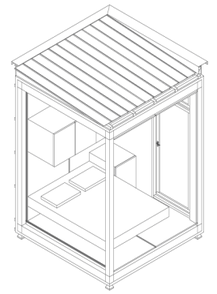
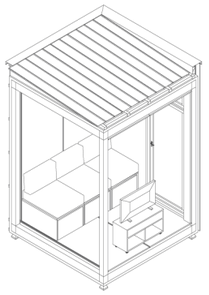
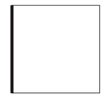
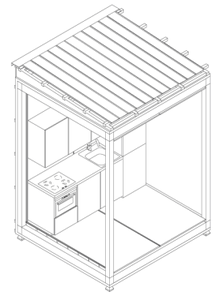
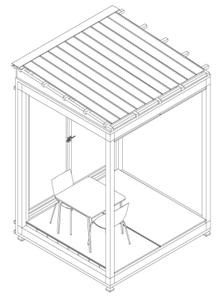
2 - Rest & Sleeping → Living Module, Sleep Module

3 - Hygiene → Hygiene Module

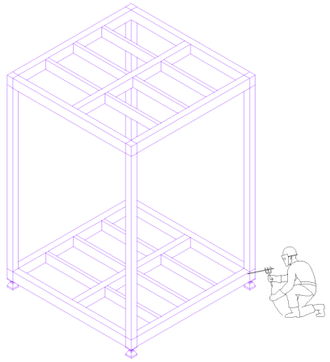
4 - Food → Kitchen Module, Dining Module

5 - Storage → Entrance Module

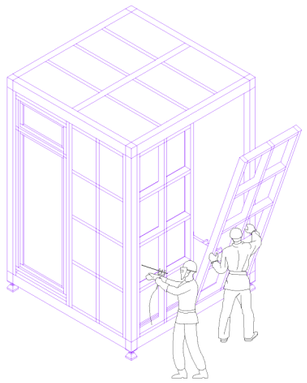


Module Typologies	Modules
 A	 Hygiene Module
 A.2	 Sleep Module  Living Module  Entrance Module
 B	 Kitchen Module
 B.2	 Dining Module

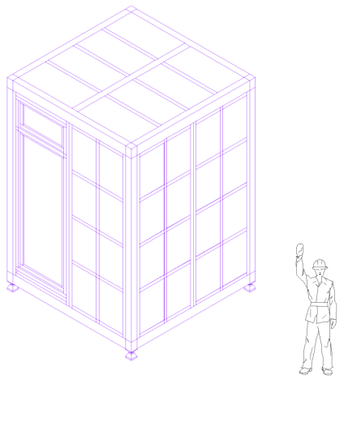
Prefabrication and Transportation of the Modules

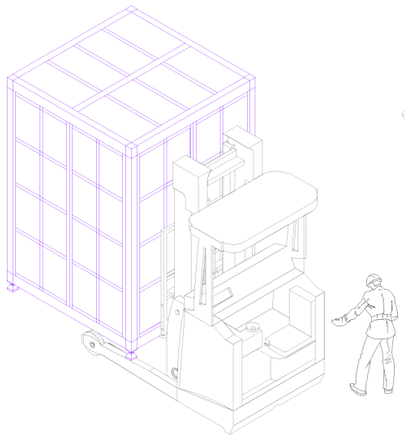


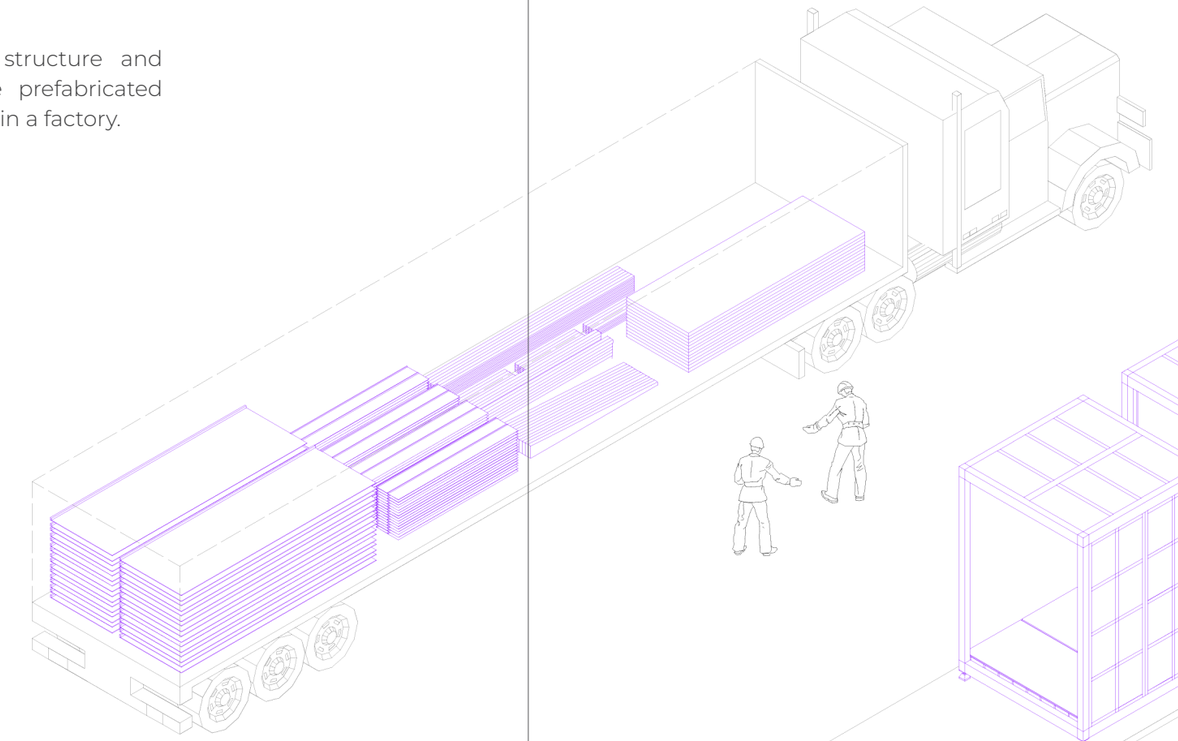
① The modules' structure and core layers are prefabricated and assembled in a factory.



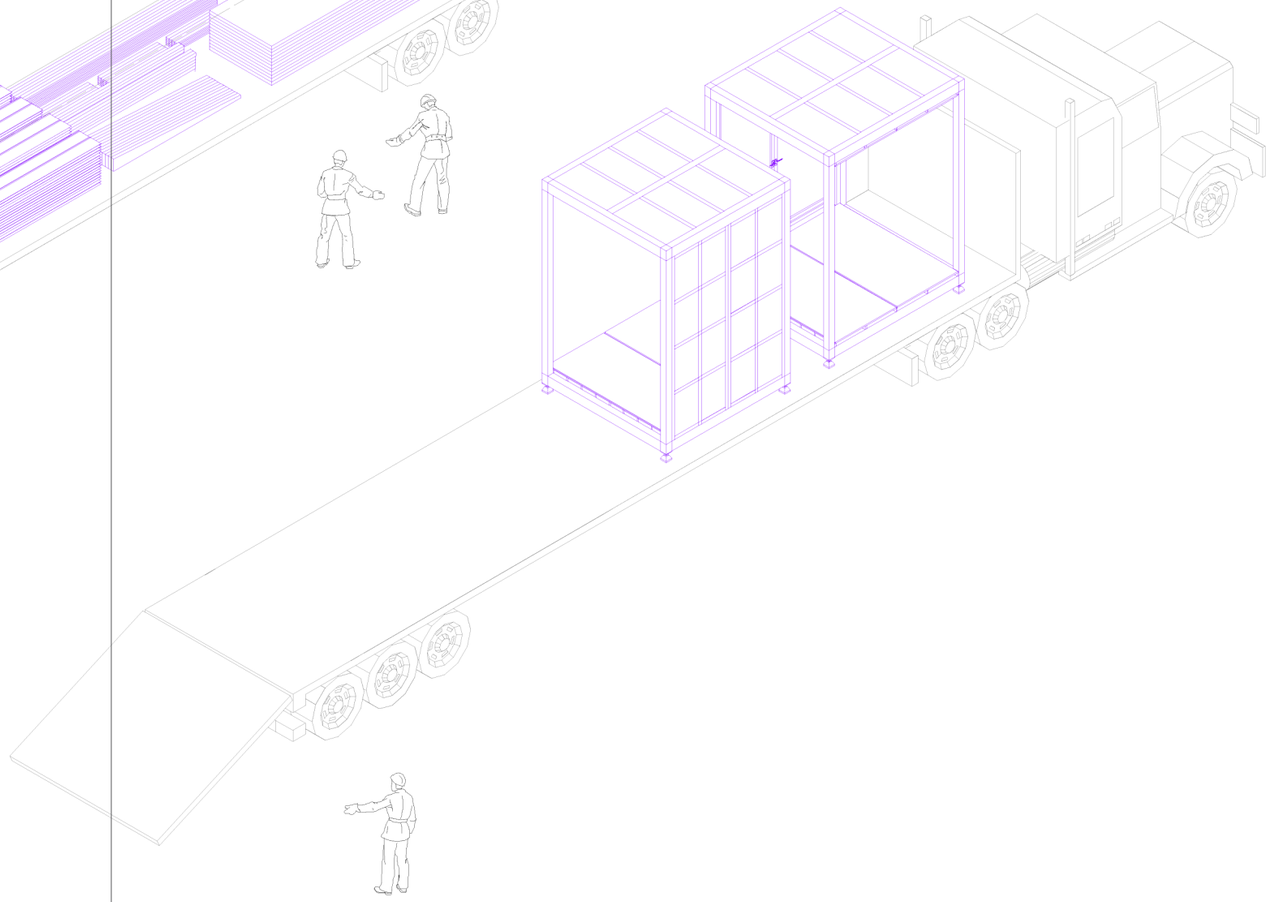
② Once assembled, the modules are loaded onto trucks and transported to the site.



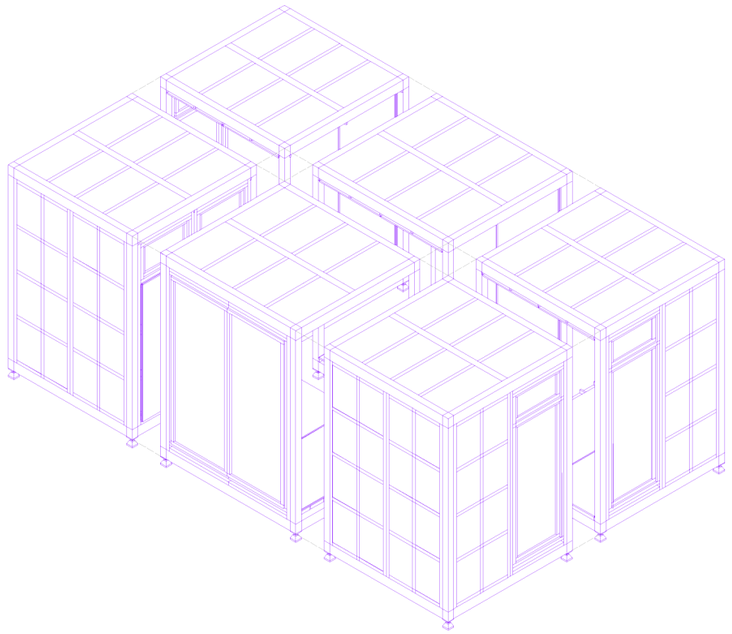




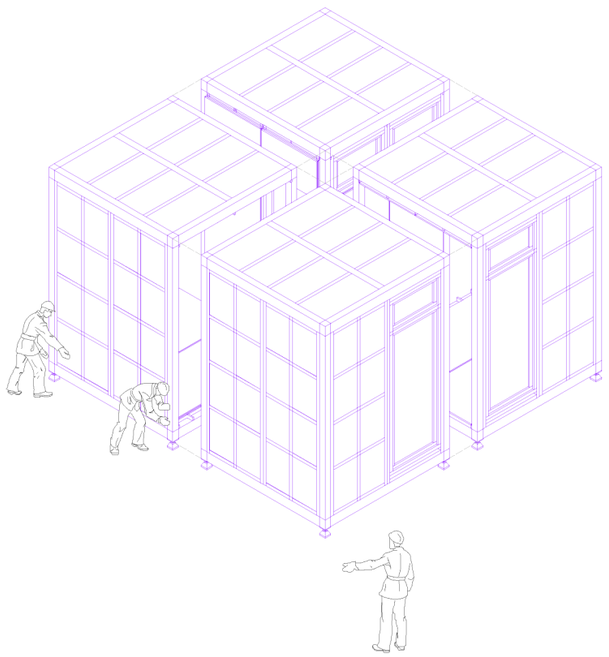
③ The exterior layers, cladding elements, exterior insulation, and roofing materials, are transported separately to the site for on-site assembly.

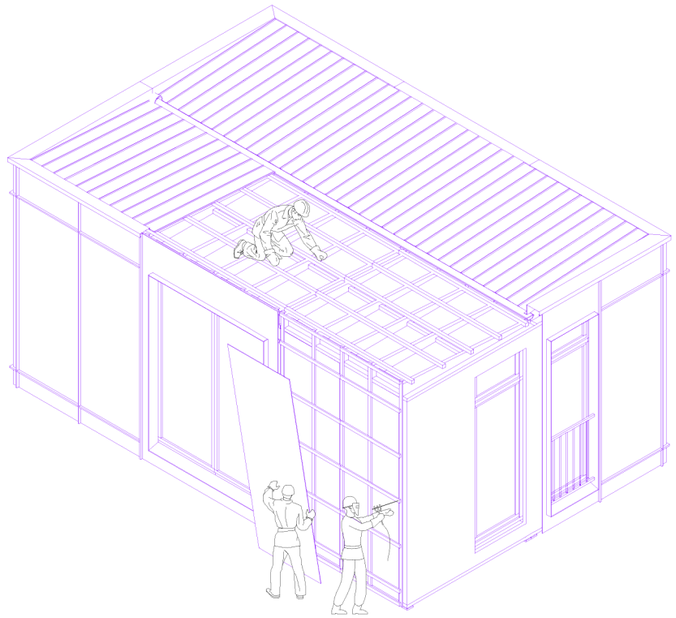


On-Site Assembly of the Tiny Houses

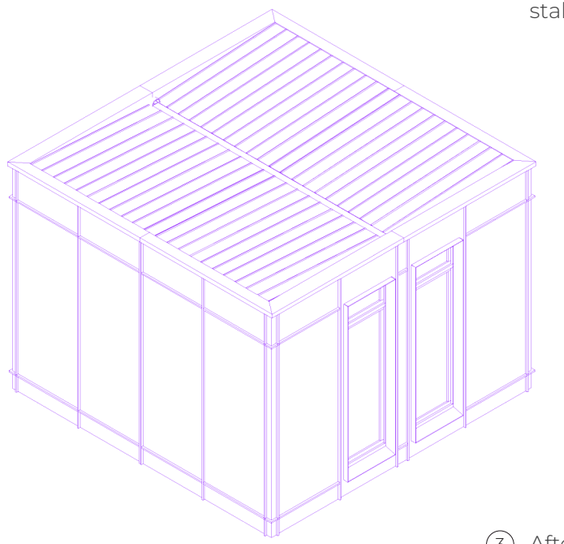


① The modules arrive on site, ready for assembly.





② Once assembled, the cladding elements, exterior insulation, and roofing materials are installed.

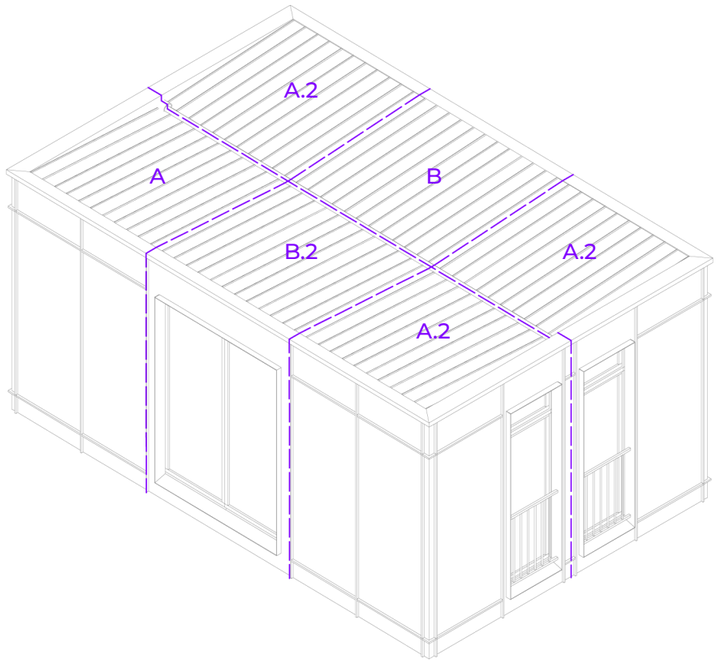


③ After the exterior elements are installed, the tiny house is ready for use.

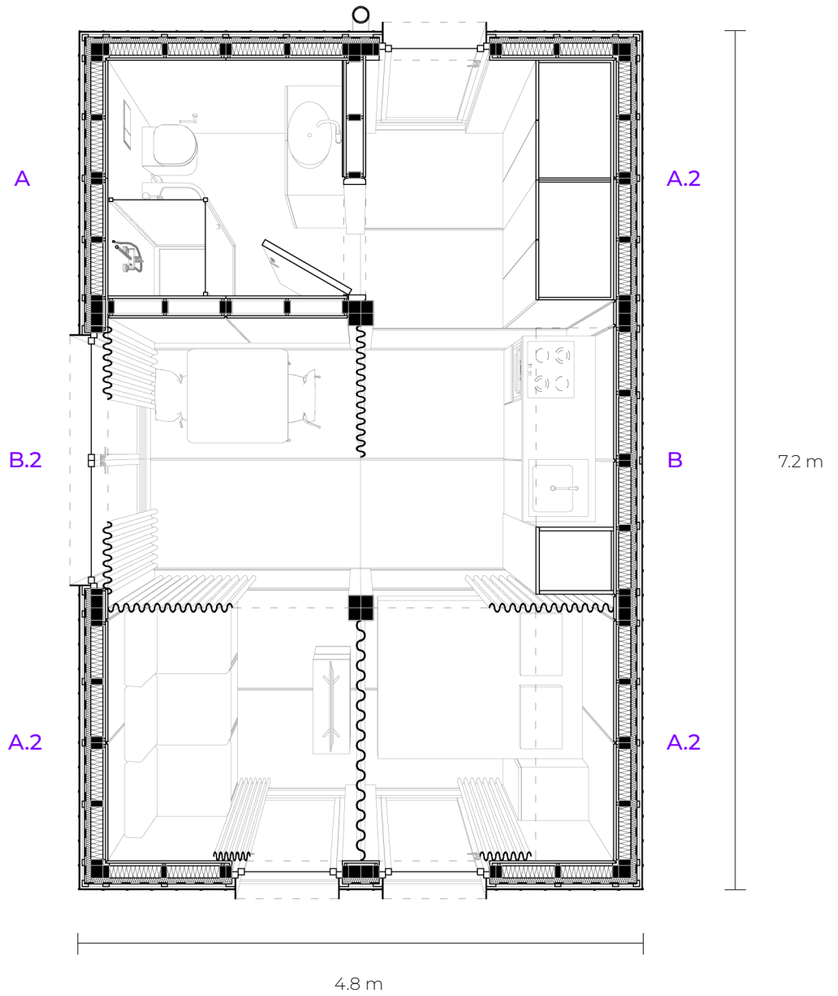
Tiny House Typologies

T1 - *Long Term Stay*

The T1 typology is designed for longer stays and combines ***all six modules*** (living, kitchen, dining, hygiene, sleep, and entrance modules) to form an independent private dwelling of approximately 30 m², suitable for Italian standards. It is mainly intended for people experiencing ***chronic or episodic homelessness*** who may require more stable and permanent accommodation. The house can accommodate ***one or two people***, but its flexible living area can respond to ***different household compositions***, such as accommodating a family with one child or providing additional sleeping space for an occasional guest when needed. The layout also provides space for different everyday activities. Rather than defining each activity within a separate fixed room, the ***open layout*** and ***flexible furniture*** allow the available space to change according to how residents use the house.



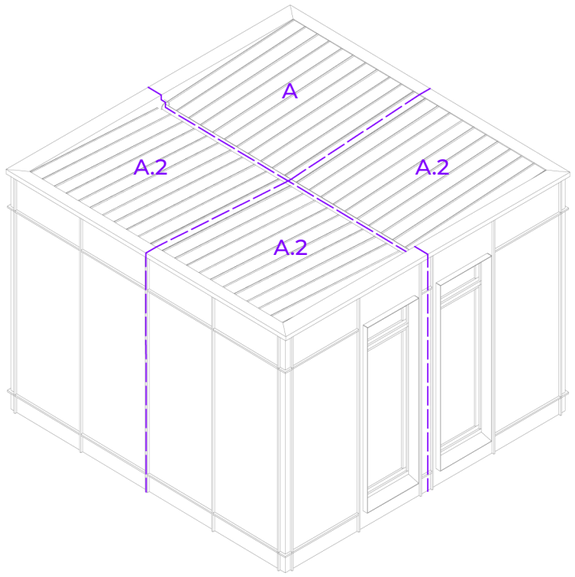
Floor plan 1 : 50



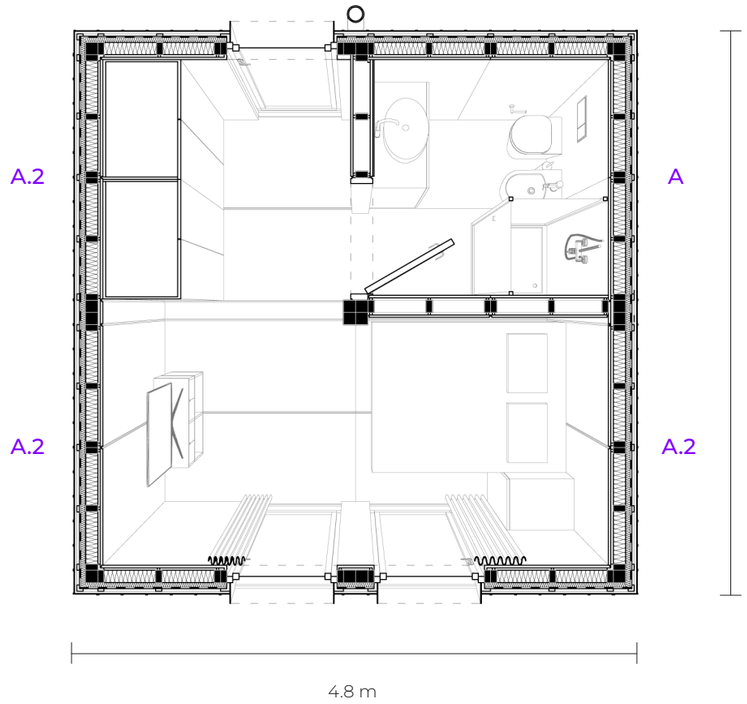
Tiny House Typologies

T 2 - *Short Term Stay / Shelter*

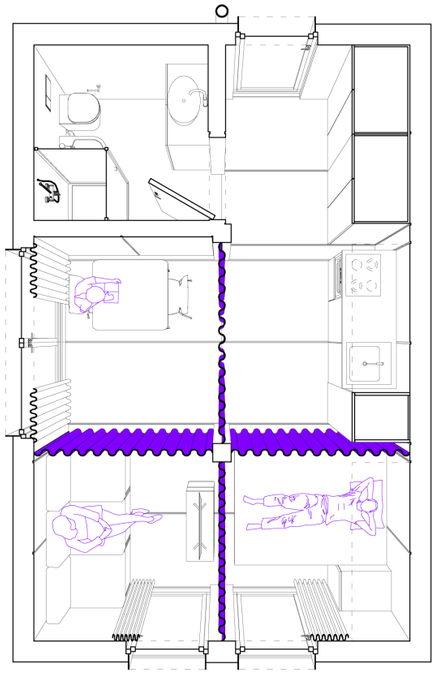
The T2 typology is designed for shorter stays, mainly for people experiencing ***temporary homelessness*** who need immediate accommodation for a limited period. It consists of ***four modules*** (living, hygiene, sleep, and entrance), providing the essential spaces for everyday living within a more compact arrangement. The house can accommodate ***up to two people*** while maintaining the privacy and independence of a self-contained dwelling. Despite its smaller size compared to T1, residents have their own living space, bathroom, and basic domestic facilities rather than depending on shared accommodation. The dwelling aims to provide a comfortable, safe, and private place to stay during a period of temporary housing need.



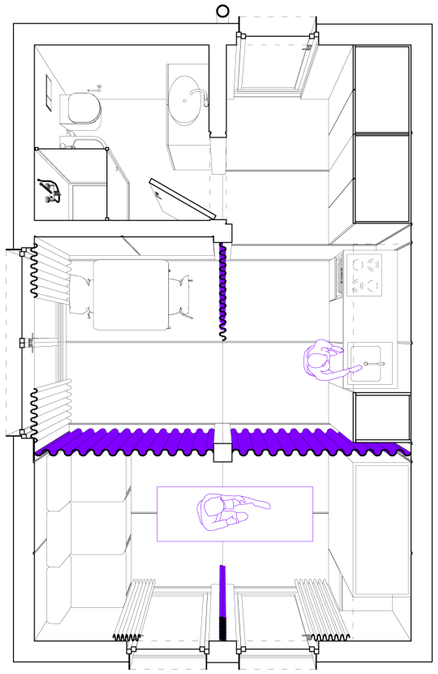
Floor plan 1 : 50



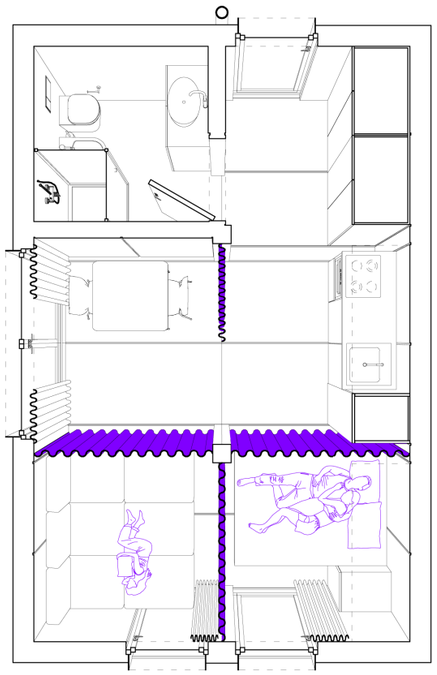
4.2.2 User Adaptability



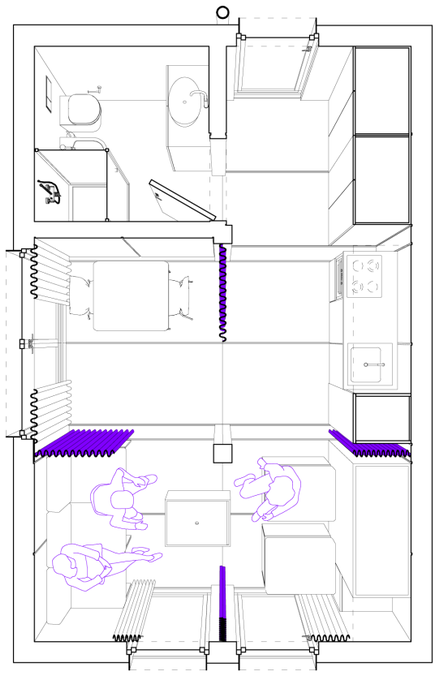
Individual activities



Exercise time



Optional bedroom



Social mode

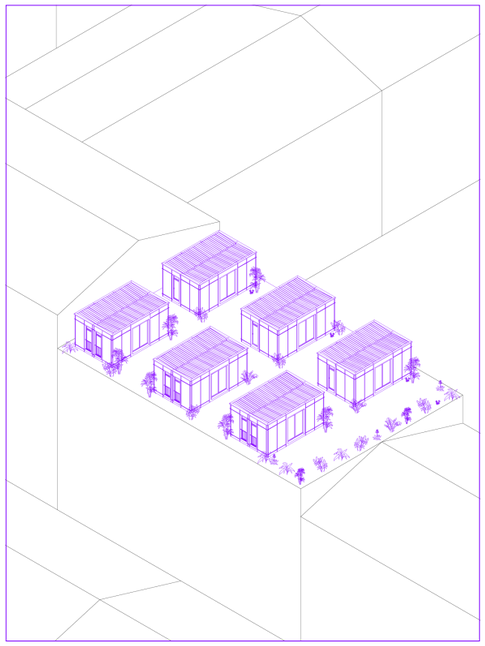
While modularity allows the dwelling to be configured for different residents, adaptability also takes place within the house itself. As discussed in the research, people experiencing homelessness can have very different circumstances and needs, meaning that a single fixed spatial arrangement may not be suitable for everyone (Pable, McLane and Trujillo, 2021). The dwelling is therefore designed to accommodate ***different household compositions***, including a single resident, a couple, or a family with one child, while adapting to their everyday needs.

The interior is designed as an ***open and flexible living space***, with permanent internal walls kept to a minimum. This builds on the idea that domestic spaces do not necessarily need to be strictly divided by function (Jocher, 2018). Instead, ***curtains divide the main living area***, allowing residents to change the spatial organisation according to different activities and levels of privacy. When open, the interior becomes a larger continuous space; when closed, smaller and more private areas can be created. In this way, the open layout can accommodate different uses over time, reflecting the value of flexible and multifunctional floor plans discussed by Hartl (2018).

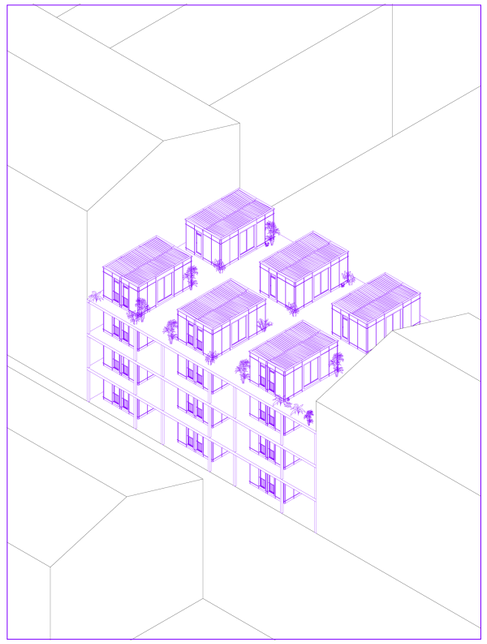
The flexibility of the space is also supported by the ***furniture***. The bed can be folded away, freeing up the floor area for other activities during the day. The sofa in the living area is also flexible, with storage boxes underneath the seating that can be pulled out and used as small tables or additional seats. When needed, they can also extend the sofa into an additional bed for a child or an occasional guest.

Together, the curtains and movable furniture allow the interior to adapt to both the number of residents and how the space is used. A single resident or couple can keep the interior more open, while a family can divide it when more privacy or an additional sleeping area is needed. In this way, ***Adaptability through Flexibility*** is translated into the design, allowing the same dwelling to respond to different users and changing everyday needs.

4.2.3 Context Adaptability



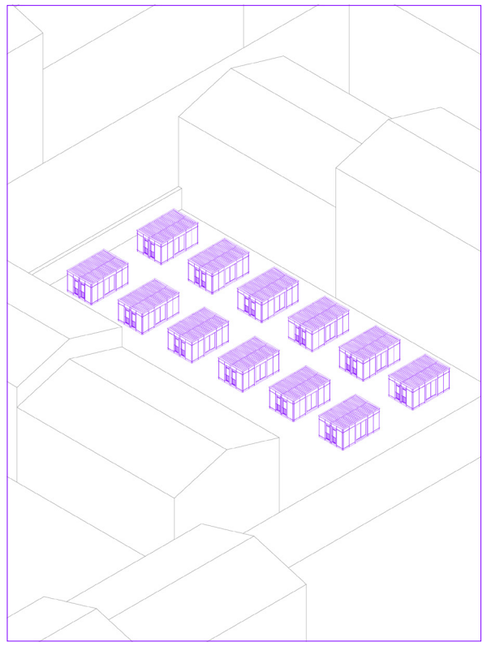
Rooftop settlements



High-rise urban infill



Scattered communities in rural areas



Scattered urban infill

The units are also capable of ***adapting to different contexts***. As discussed in Chapter 2, tiny houses can take different forms and be located in urban, suburban, or rural settings (Shearer and Burton, 2019). Their small scale also creates opportunities for infill development within existing urban areas (Shearer et al., 2018). Therefore, the same housing system can be arranged differently according to the site and its surroundings.

In dense urban areas, the houses can be used as high-rise urban infill, where units are arranged vertically to make better use of limited ground space. On larger plots, they can instead form scattered urban infill, fitting into available spaces within the existing urban fabric. The lightweight and modular character of the units also creates the possibility of rooftop settlements, using suitable existing buildings as sites for new housing. In less dense or rural areas, the same modules can be arranged more freely as scattered communities, allowing for a more open organisation.

Rather than requiring the same arrangement for every site, the number, position, and configuration of the houses can change according to the context. In this way, ***Adaptability through Flexibility*** extends beyond the individual dwelling, allowing the design to respond to different site conditions.

4.3 Community and City Scales: Tiny House Community for the Homeless in Turin

The previous section focused on re-elaborating the tiny house as an individual dwelling, building on the design principles identified through research for the dwelling / resident scale. However, as the research shows, a tiny house alone cannot meet all the needs associated with homelessness. Individual accommodation needs to be supported by opportunities for social connection, access to appropriate services, and integration into everyday urban life. ***The project therefore expands from the dwelling / resident scale to the community and the city scale***, bringing the individual tiny houses to a wider environment.

The proposal combines private tiny house dwellings with communal social spaces and support services. At the community scale, the aim is to create opportunities for social interaction and a sense of belonging. Support services are integrated into the community to help residents maintain stable housing and respond to their needs. At the city scale, the project focuses on connecting residents to the surrounding neighbourhood, public transport, services, employment opportunities, and everyday urban life.

The community is therefore understood not as an isolated collection of tiny houses, but as ***a link between the individual dwelling and the city***. In this way, the proposal reflects the principles of ***Belonging through Community, Stability through Support***, and ***Inclusion through Connectivity*** into the organisation of the site and its relationship with the city of Turin.



4.3.1 Site Selection

The site was selected with the aim of integrating the tiny house community into the existing urban fabric rather than locating it in an isolated or peripheral area. As discussed in the research, proximity to public transport, employment opportunities, services, and everyday urban activities can make daily life easier for people experiencing homelessness and support their social inclusion (Davis, 2004; Pable, McLane and Trujillo, 2021). The selected site in Turin therefore provides an opportunity to develop the project as a form of ***urban infill***, where residents remain connected to the surrounding neighbourhood, responding to the principle of ***Inclusion through Connectivity***.

45.068867, 7.692058

Torino

Fig. 61 Satellite view of Turin.
Source: Google Earth.

About the Site

The selected site is located in central Turin, right next to the city's iconic landmark, the Mole Antonelliana. It originally formed part of the Teatro di Torino, also known as Teatro Scribe, which was severely damaged by aerial bombings during the Second World War. The main auditorium was destroyed, while parts of the perimeter walls and foyer survived. The theatre was never reconstructed, and the remaining structures continue to represent a physical memory of the wartime destruction of Turin (MuseoTorino, n.d.).

Today, despite its central location, much of the former theatre footprint remains an ***urban void*** and is used as a parking area by Rai (Radiotelevisione Italiana), surrounded by the surviving historic fabric. This condition creates an opportunity to introduce a new intervention within the existing urban fabric.

The site selection was also influenced by the SIAT YOUNG 2018 Competition, *Rifugi Minimi per Senzatetto - Homeless Tiny Shelters - In the Heart of Turin*. The competition aimed to explore practical and innovative solutions for creating "shelter islands" within Turin, providing immediate and temporary refuge for people experiencing homelessness during periods of harsh weather (SIAT, 2018). The former Teatro di Torino site was also one of the locations suggested for the competition proposals.

While the SIAT competition mainly focused on small-scale, temporary emergency shelters, it provided an interesting local reference for considering the relationship between homelessness, minimal accommodation, and the urban context of Turin. This thesis develops the idea further by exploring this urban void not only as a place for temporary shelter, but as a tiny house community combining short- and long-term housing with communal spaces and support services.

Fig. 62 Satellite view of the site. Source: Google Earth.



Fig. 63 Teatro Scribe. Source: MuseoTorino (n.d.).



Fig. 64 Bomb-damaged buildings near the Mole Antonelliana. Source: Wikipedia (2026).



Fig. 65 Teatro Scribe after the air raid of 8 December 1942. Source: MuseoTorino (n.d.).

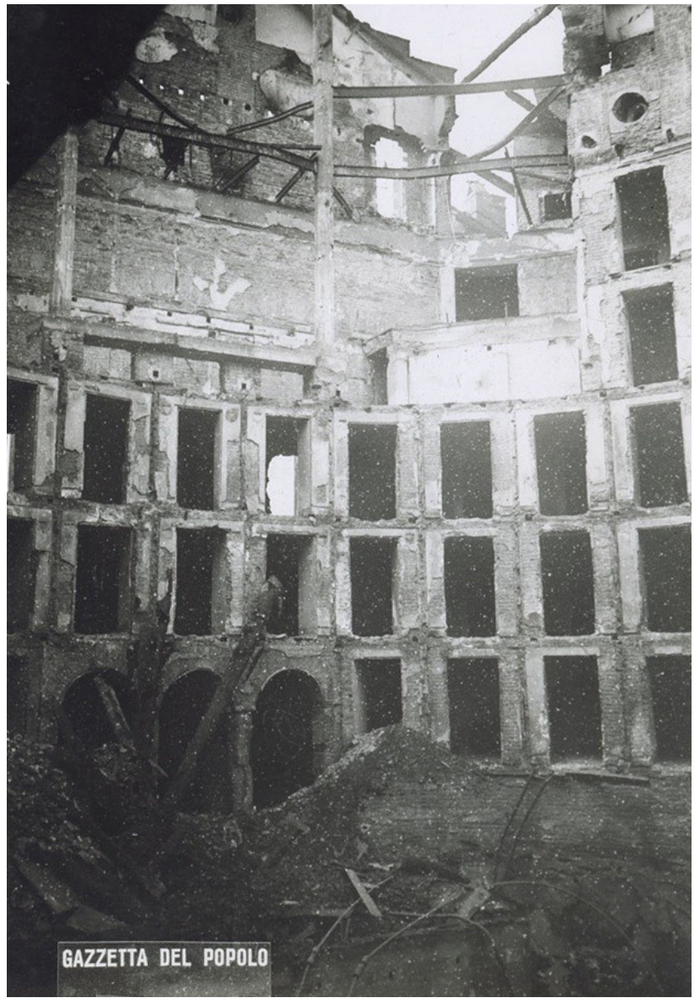


Fig. 66 Teatro Scribe after the air raid of 8 December 1942. Source: MuseoTorino (n.d.).

Fig. 67 Current state of the site.
Source: Author.



Fig. 68 Current state of the site.
Source: Author.



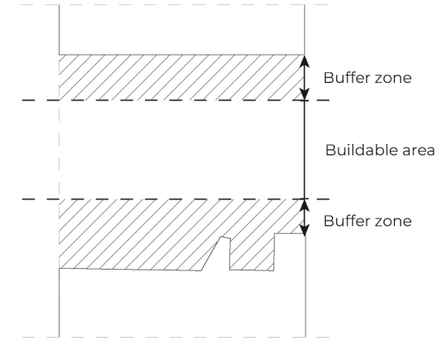
4.3.2 Site Integration



Design Considerations

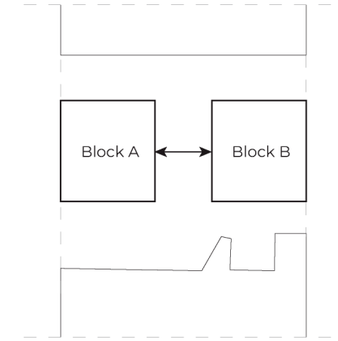
Identifying the boundaries

As the site is located between two buildings, and one of which has historical significance, the design strategy was to establish a clear boundary between the new structure and the existing buildings in order to respect the context of the site.



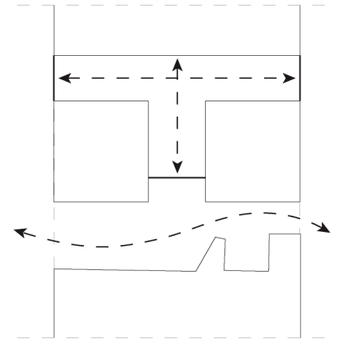
Building blocks

In Turin, the common building typology features central courtyards. To reflect this, and adapt to the city character, the buildable area was divided into two, creating building blocks on the sides and leaving a central courtyard between them.

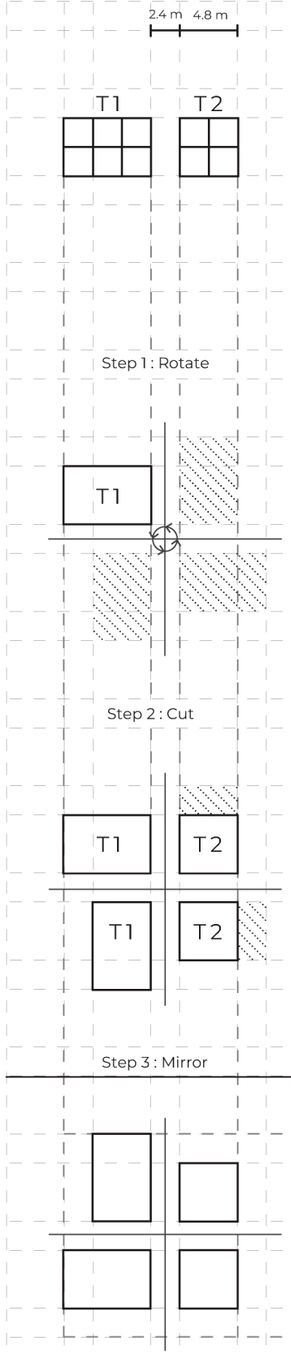


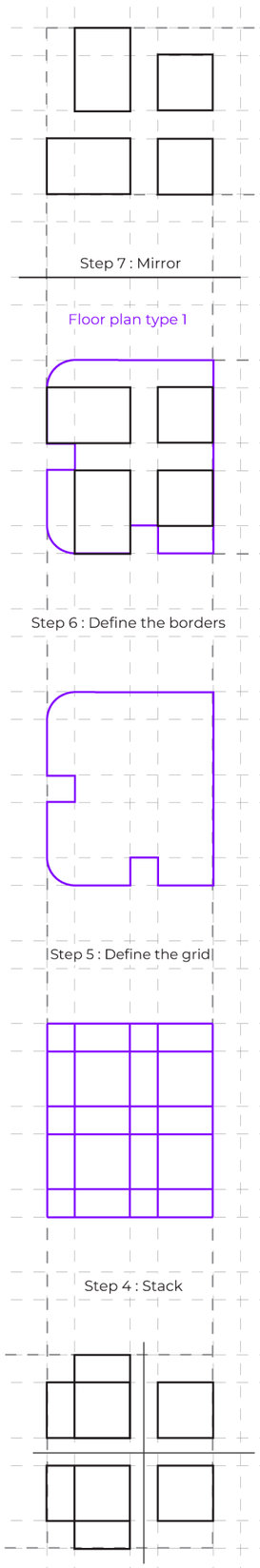
Circulation zones

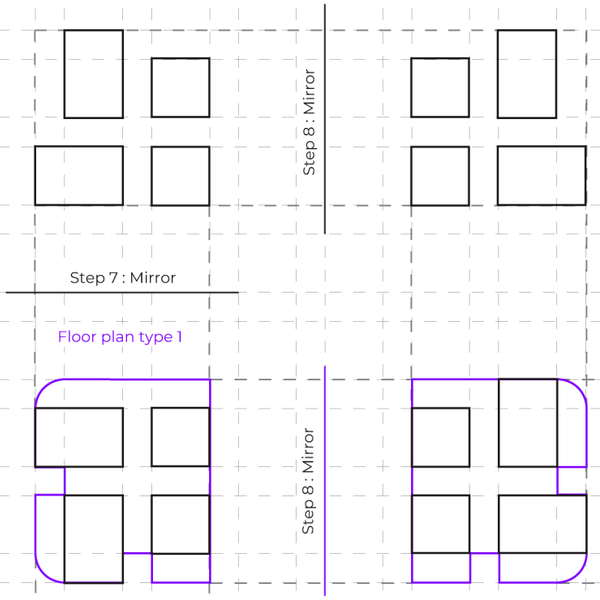
The site is divided into two zones in terms of circulation. One zone remains within the boundaries of the private area designated exclusively for the residents. The other zone functions as a passage between two streets, enhancing the site's engagement with the neighborhood.

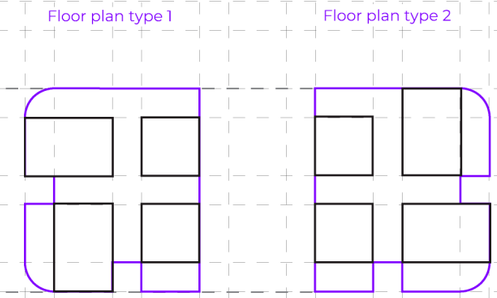


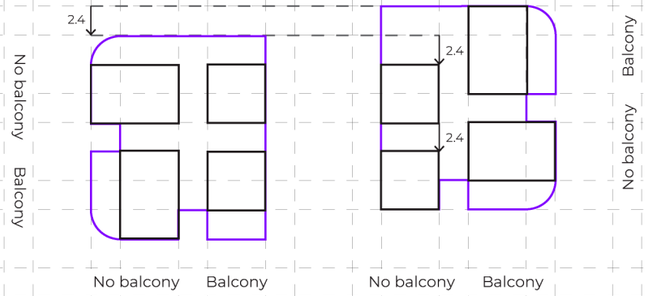
Design Steps

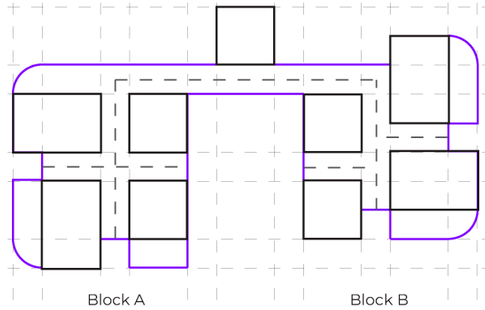












The Container Structure

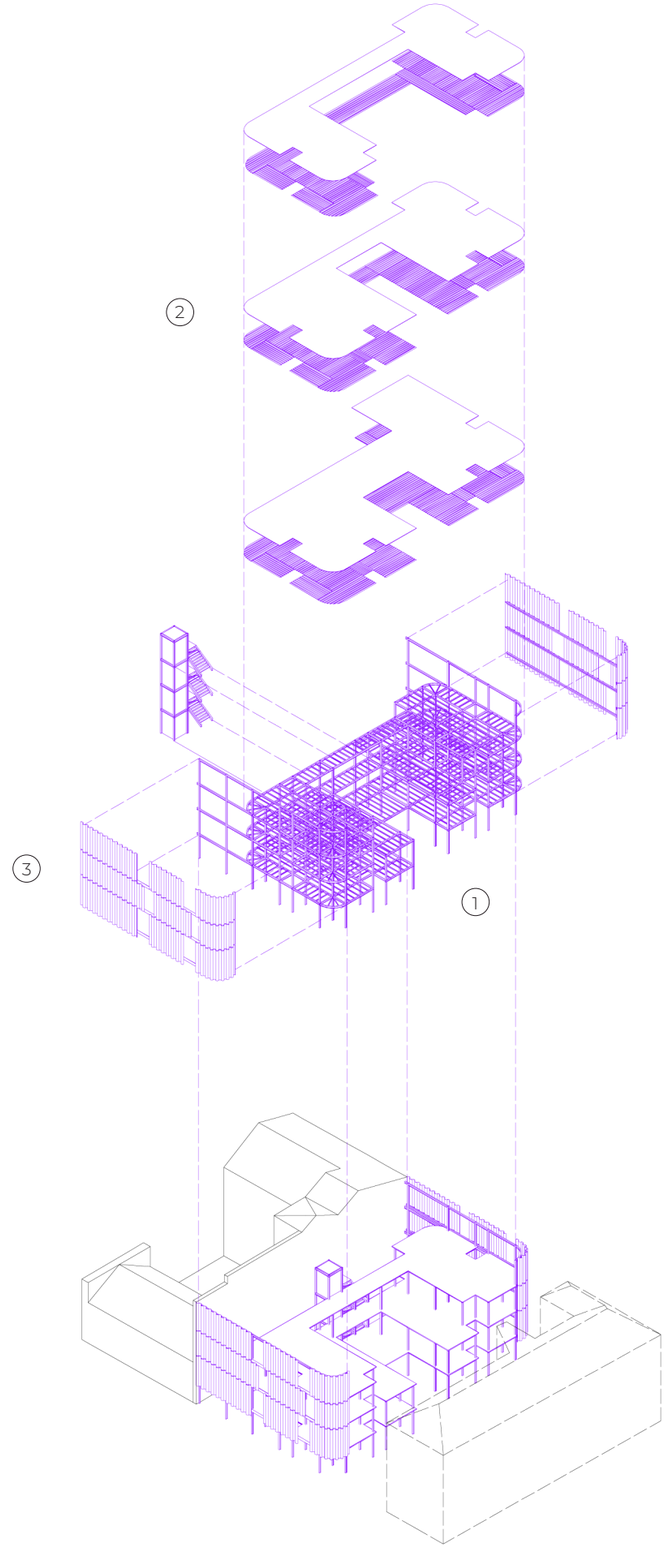
The project takes form as an ***urban infill***, exploring how tiny-house living can be integrated into a dense urban environment. To make this possible, a ***platform-based structural system*** brings the individual tiny houses together and creates the appearance of a unified building, ***allowing the project to blend more naturally into the surrounding urban fabric***. The structure is made entirely of prefabricated steel elements, making construction faster, more practical, and adaptable. It can be easily assembled on different sites across the city and disassembled when needed, giving the project a flexible and temporary character. At the same time, the structural system provides a clear framework for organizing the tiny houses, helping to make efficient use of the available space.

Structural Components

1 - Main structure : IPE 270 + IPE 140 + HEM 200

2 - Floor slab : Corrugated metal sheet + metal sheet flooring

3 - Facade : Curved perforated metal sheet



Building Layout

The building blocks were arranged in a valley-like layout. This arrangement allows more natural light to reach the individual units while also creating a greater sense of openness within the dense urban setting. The variation in height also creates shared open spaces between the units and helps reduce the feeling of being enclosed by the surrounding buildings.

Facade: *Form*

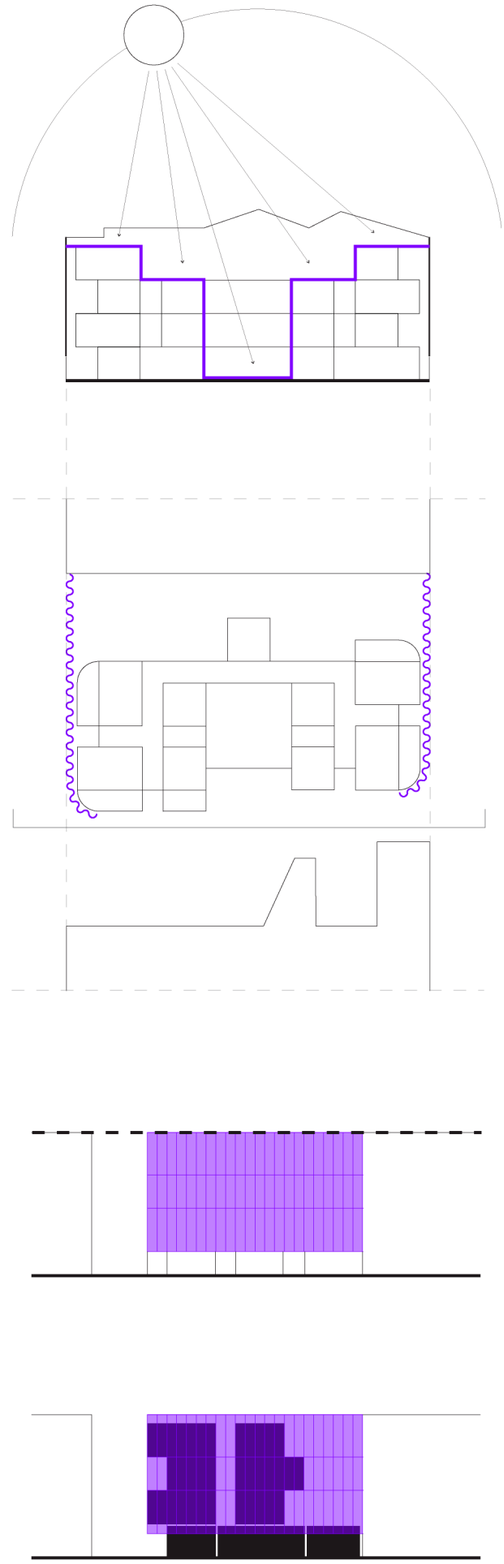
The form of the facade was inspired by the character and history of the site itself. The curved facade panels resemble the movement of an ***open theatre curtain***, creating a subtle reference to the site's past, as if the building is gradually opening up to reveal the spaces behind it.

Facade: *Visual continuity*

Beyond its visual expression, the facade plays an important role in ***preserving the street view***. The facade brings the different parts of the project together, allowing the individual tiny houses and structural elements behind it to be perceived as one unified building to sit more naturally within the urban fabric.

Facade: *Translucency*

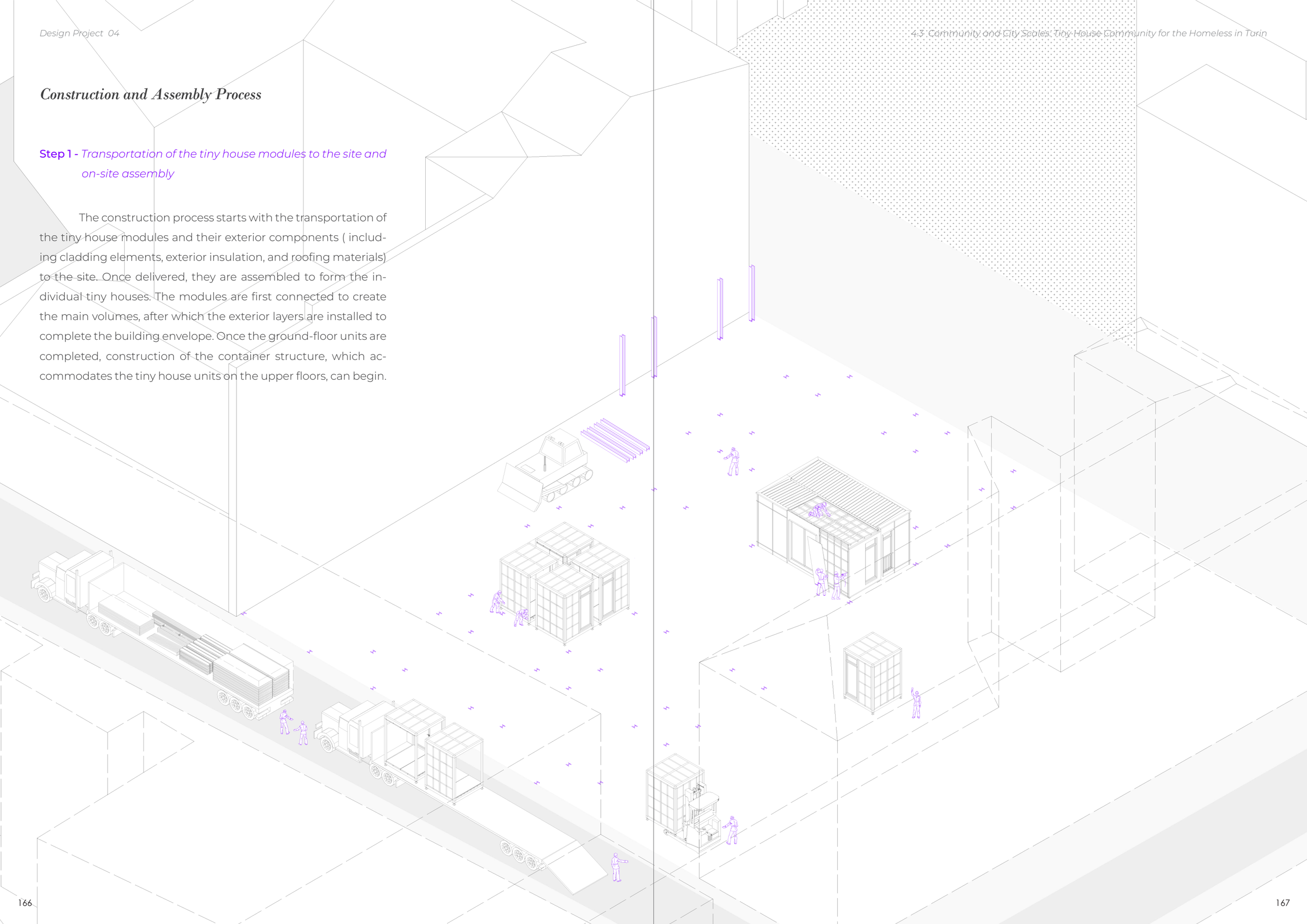
The perforated surface of the facade panels prevents the facade from feeling completely solid or closed. It allows a degree of translucency, offering a hint of the building's underlying form from the outside. This creates a layered facade that balances transparency and privacy.



Construction and Assembly Process

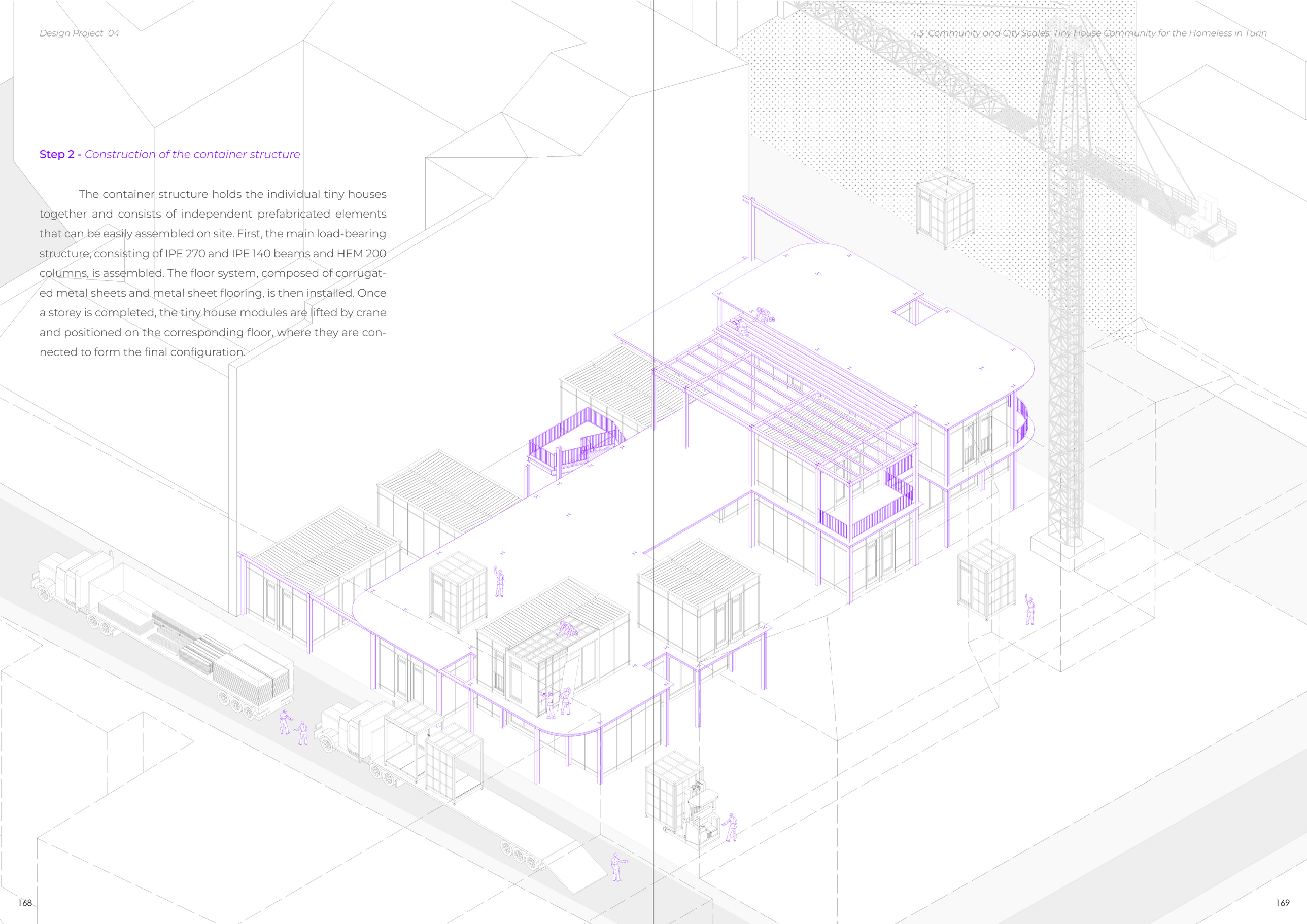
Step 1 - *Transportation of the tiny house modules to the site and on-site assembly*

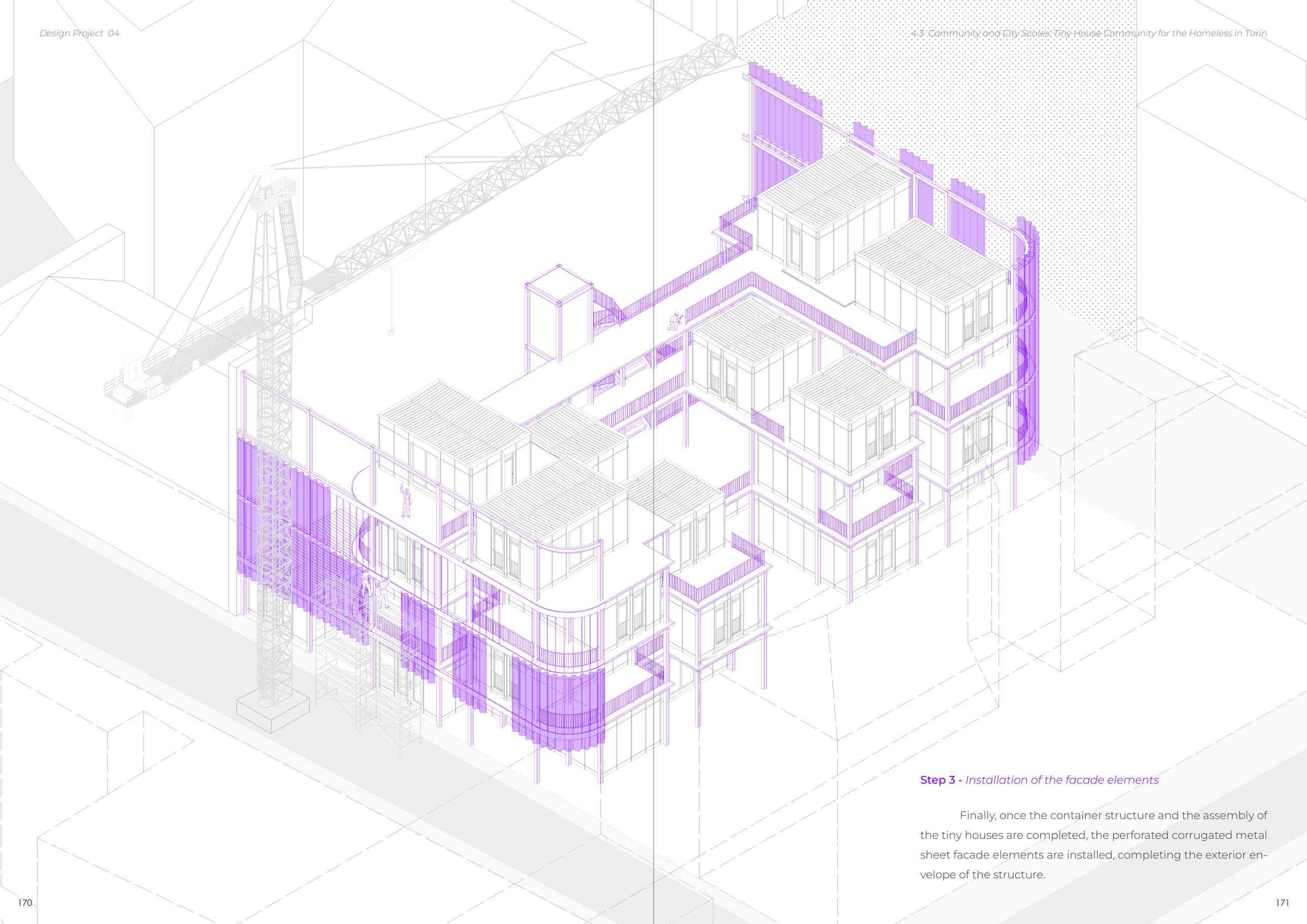
The construction process starts with the transportation of the tiny house modules and their exterior components (including cladding elements, exterior insulation, and roofing materials) to the site. Once delivered, they are assembled to form the individual tiny houses. The modules are first connected to create the main volumes, after which the exterior layers are installed to complete the building envelope. Once the ground-floor units are completed, construction of the container structure, which accommodates the tiny house units on the upper floors, can begin.



Step 2 - *Construction of the container structure*

The container structure holds the individual tiny houses together and consists of independent prefabricated elements that can be easily assembled on site. First, the main load-bearing structure, consisting of IPE 270 and IPE 140 beams and HEM 200 columns, is assembled. The floor system, composed of corrugated metal sheets and metal sheet flooring, is then installed. Once a storey is completed, the tiny house modules are lifted by crane and positioned on the corresponding floor, where they are connected to form the final configuration.

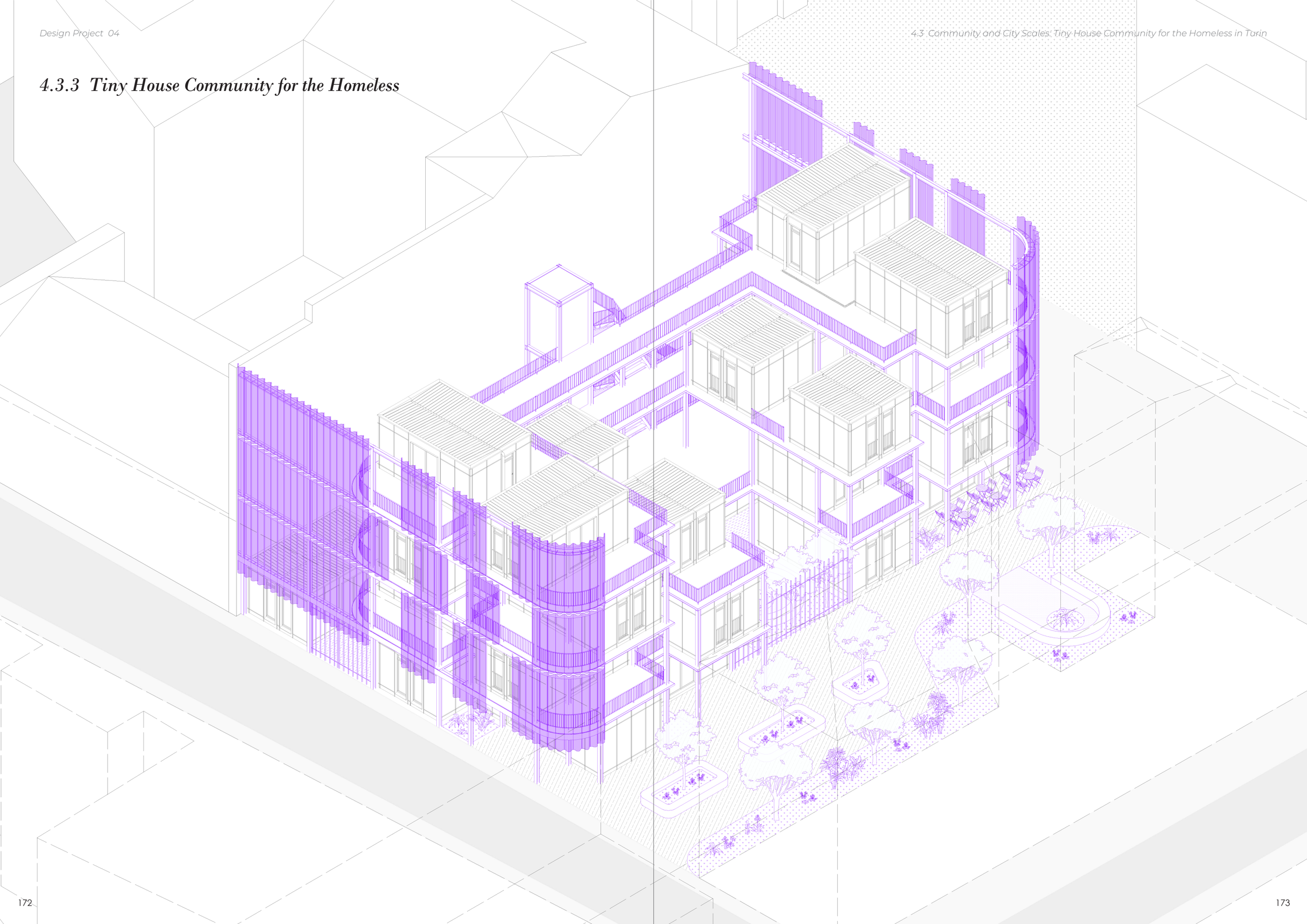




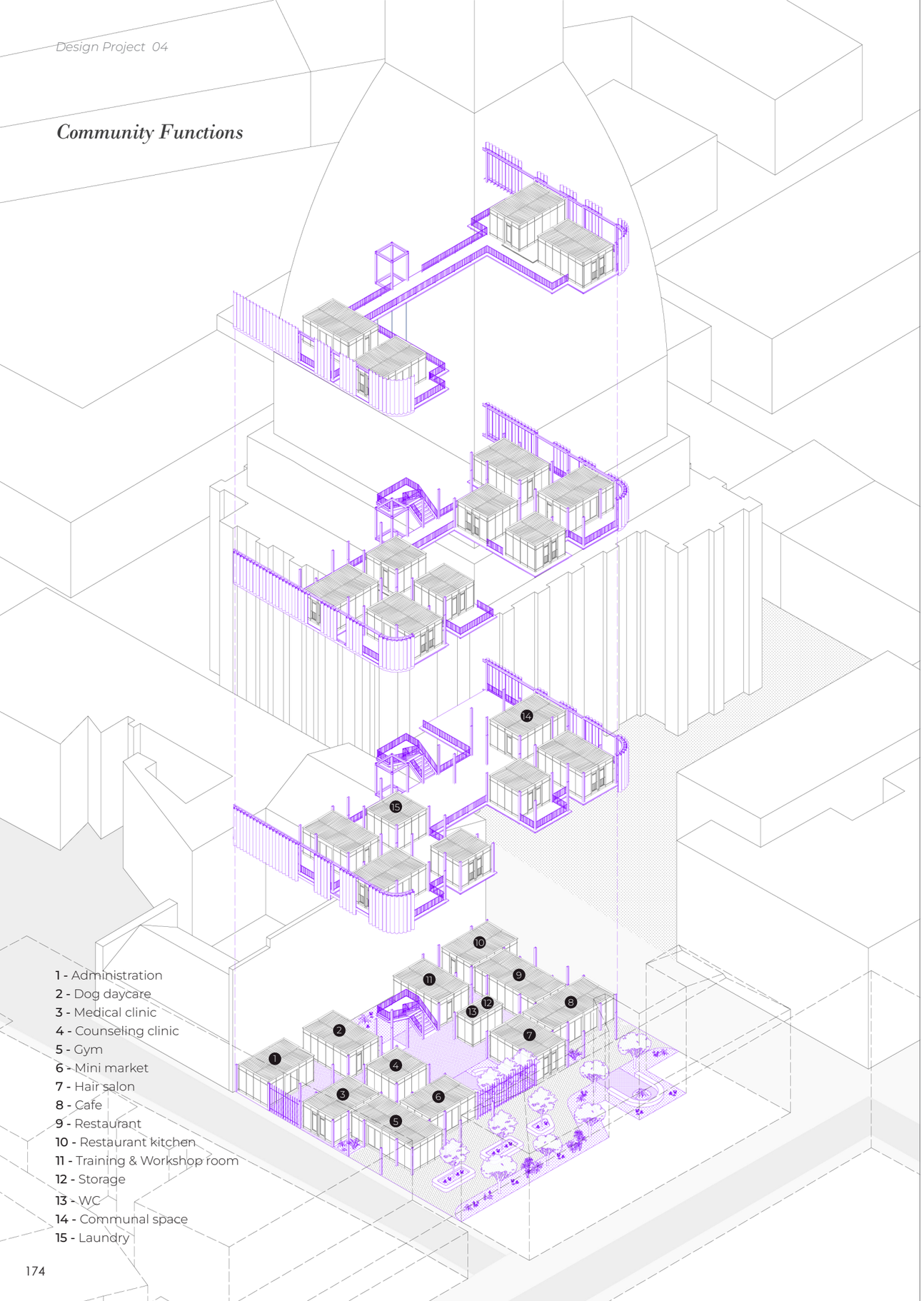
Step 3 - *Installation of the facade elements*

Finally, once the container structure and the assembly of the tiny houses are completed, the perforated corrugated metal sheet facade elements are installed, completing the exterior envelope of the structure.

4.3.3 Tiny House Community for the Homeless



Community Functions

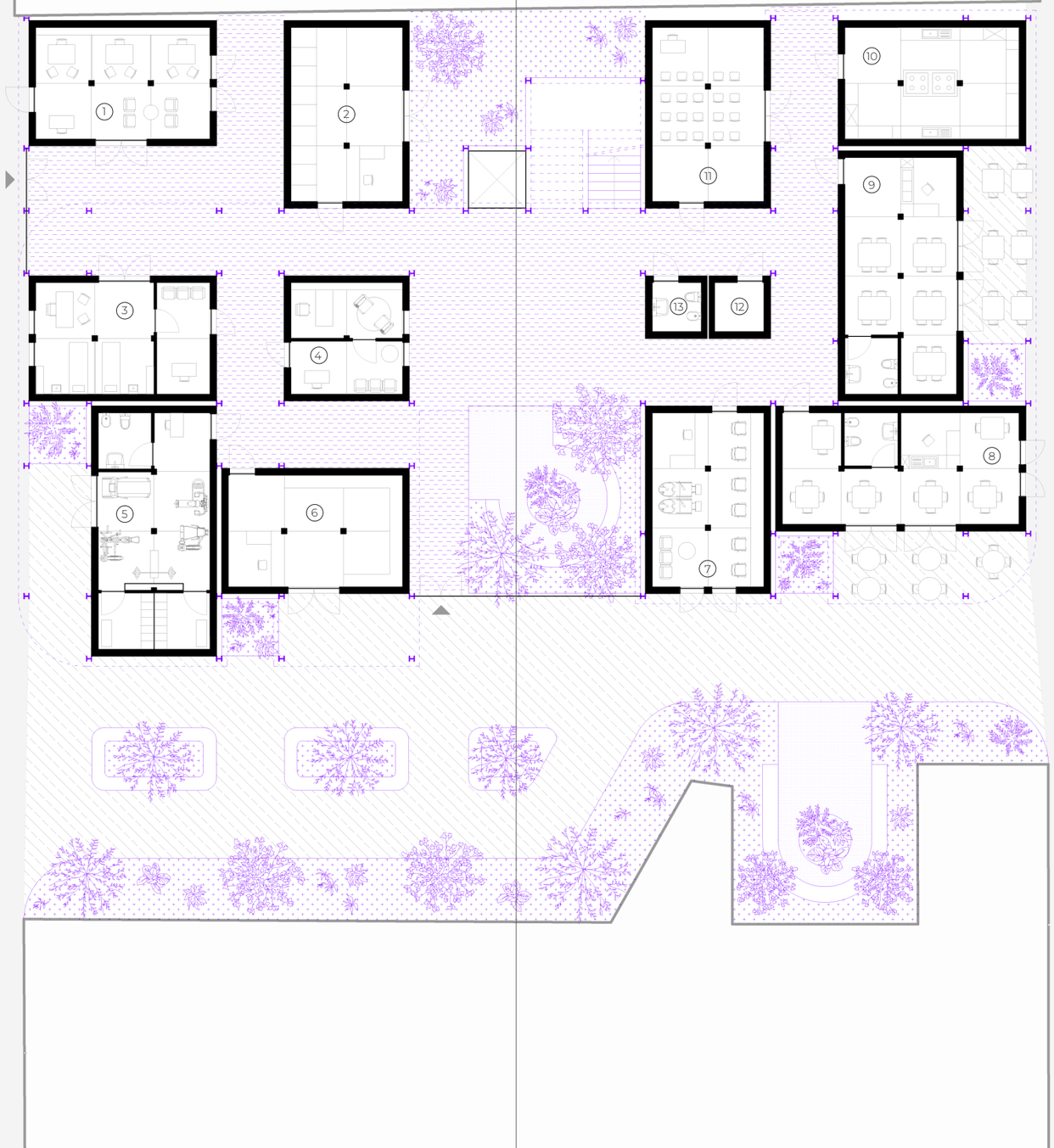


As discussed in Chapter 3, providing shelter alone may not be enough for people experiencing homelessness. Beyond the need for shelter, homeless people need long-term support, such as healthcare, mental health services, addiction treatment, education, childcare, financial assistance, and employment support, to help them achieve long-term housing stability (Davis, 2004). Research in Turin also points out the need for better integration among housing, health, and social services, which are often fragmented and disconnected (Campagnaro *et al.*, 2022). For this reason, the tiny house community aims to combine housing with functions that respond to residents' everyday needs, well-being, and personal development.

The **administration, medical and counselling clinics, training and workshop room**, and **dog daycare** provide residents practical and personal support, contributing to ***Stability through Support***. Alongside these services, the **communal spaces** are intended to create opportunities for residents to meet, interact, and build relationships, therefore contributing to the principle of ***Belonging through Community***. The **café, restaurant, mini market, hair salon**, and **gym**, on the other hand, are open to both residents and the surrounding neighbourhood. Their role is therefore not only to provide everyday services, but also to create points of interaction between the tiny house community and the public. These functions can also provide employment opportunities for residents, supporting their path towards greater independence and stability. Rather than creating an isolated community that only serves people experiencing homelessness, these public-facing spaces allow residents and neighbours to share the same facilities and everyday activities. In this way, they contribute to ***Inclusion through Connectivity***, while also reinforcing ***Stability through Support*** through opportunities for employment and skills development.



Ground Floor Plan 1 : 200

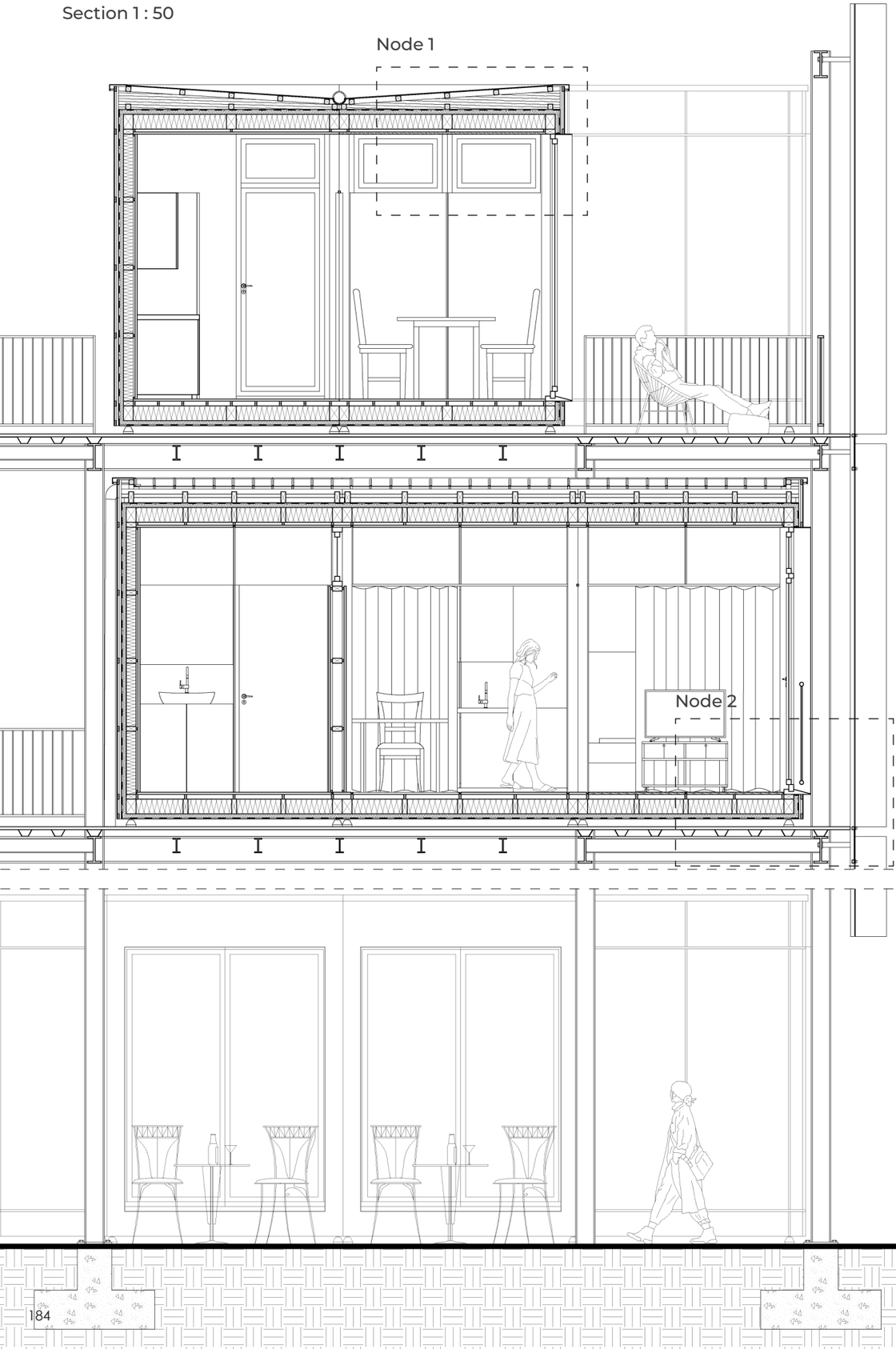


1 - Administration
2 - Dog daycare
3 - Medical clinic
4 - Counseling clinic
5 - Gym
6 - Mini market
7 - Hair salon
8 - Cafe
9 - Restaurant
10 - Restaurant kitchen
11 - Training & Workshop room
12 - Storage
13 - WC

Second Floor Plan 1 : 200

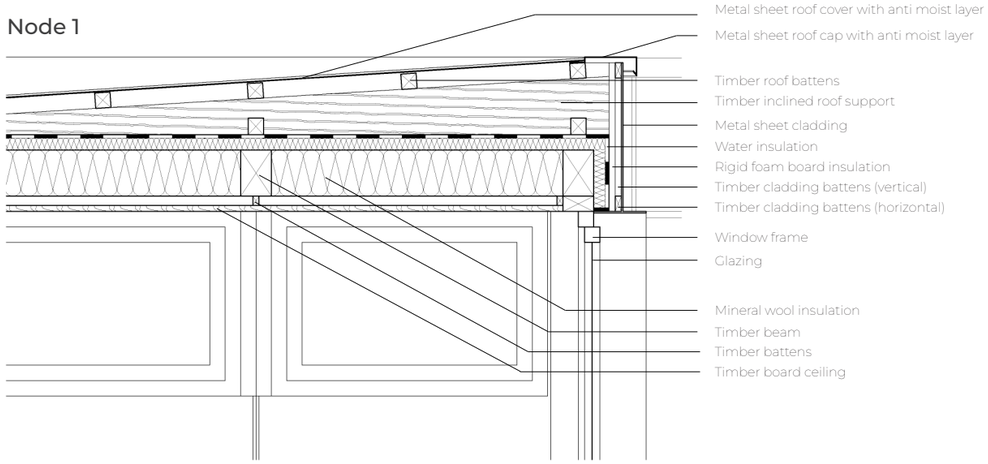


Section 1 : 50

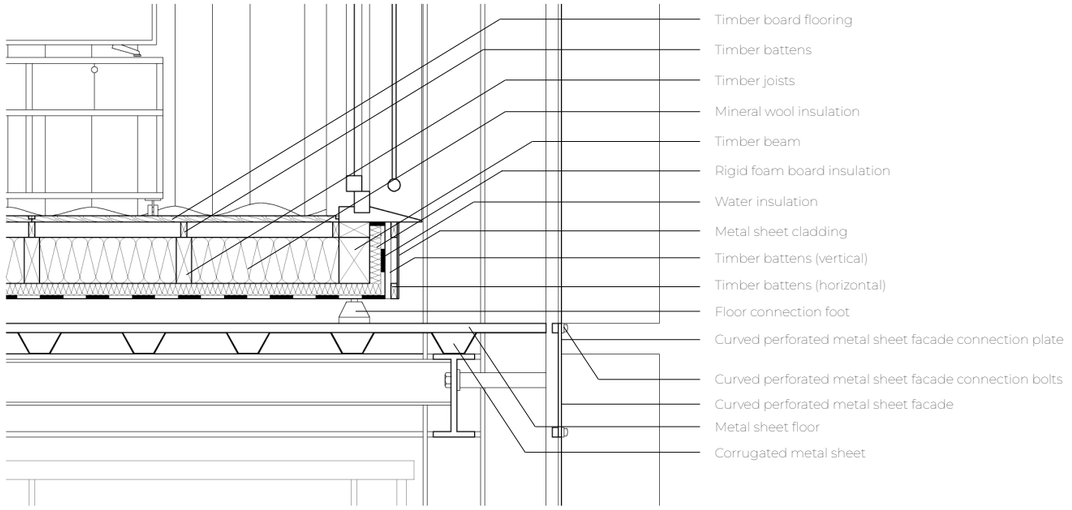


Sections 1 : 20

Node 1



Node 2



05

Conclusion

The initial competition project was a practical starting point for exploring issues of minimum living space, comfort, modularity, flexibility, construction, and affordability through design. However, working through the project also revealed some issues that could not be fully resolved through design alone, particularly once the tiny house was considered in other contexts and living situations. These issues therefore guided the theoretical research that followed.

The first stage of the research showed that the tiny house is not as well-defined as its popularity in media and practice suggests. Definitions can vary between countries and across different cultural perspectives. The typologies developed by Shearer and Burton (2019) were useful in clarifying some ambiguities surrounding the concept. Research also found that the reasons for tiny living today are much more varied and cannot be reduced to a single ideological motivation. However, the motivations behind the Tiny House Movement do not carry equal weight for everyone who ends up living small. Findings suggest that satisfaction is most strongly tied to a chosen simplicity (Boeckermann, Kaczynski and King, 2018). A tiny house is not inherently a good or a bad housing solution; its value depends on whether it responds to what the resident actually needs and wants. The section related to Maslow's hierarchy reinforced this point from a different direction, arguing that size alone does not determine whether a dwelling can support one's needs. Instead, the quality of space and the intention behind its design do.

The second stage of the research turned to homelessness, as housing for people experiencing homelessness was one of the most frequently cited applications of tiny houses in the literature. Adopting the ETHOS framework for its definition and classification was crucial to avoid oversimplification of homelessness as merely the absence of a roof. Instead, the framework presents a spectrum of homelessness that includes roooflessness, houselessness, insecurity, and inadequacy. Homelessness

is also influenced by both structural and individual factors (Lee, Tyler and Wright, 2010; Nooe and Patterson, 2010), highlighting that any response to housing needs to go beyond just providing shelter. The review of Turin's support system, from the "1+1" shelter model to the more recent Housing First approach, showed a system in transition: still reliant on emergency accommodation that typically adopts the staircase approach, yet also aware that stability is what enables people to rebuild their lives. The architectural literature on design for the homeless (Campagnaro and Giordano, 2017; Davis, 2004) added a further layer, showing that dignity, privacy, and a sense of control over one's life are not incidental for a good design for the homeless; they are the design brief.

Answering the Research Question

Bringing these two topics together allowed the thesis to answer its main research question: ***tiny houses can be an appropriate form of housing for people experiencing homelessness, but only under specific conditions, and not as a standalone architectural solution.*** A self-contained tiny house is well suited for restoring a degree of privacy and autonomy that collective shelters cannot offer. However, a single dwelling by itself cannot resolve homelessness. It needs to be part of a community that offers genuine connection and support rather than isolation. This community also needs to be integrated into the city rather than pushed to its edges, supporting residents' connection to everyday urban life.

From this reasoning, five main design principles emerged: Dignity through Privacy, Adaptability through Flexibility, Belonging through Community, Stability through Support, and Inclusion through Connectivity, with Affordability through Standardisation acting as an overarching principle across the three intervention scales. Together, these principles translate the theoretical and empirical findings into a set of criteria that can be tested through

an architectural project, expanding the focus from the individual tiny house towards the relationships between dwelling, resident, community, support, and city.

The final architectural proposal in Turin brings these findings back into design. In doing so, it completes the research-through-design loop established at the beginning of the thesis: design generated questions, research challenged and developed those questions, and the findings returned to design. The initial competition project was therefore not treated as a solution to be simply enlarged or repeated. Instead, it became a reference point that could be critically reconsidered through what was learned in the research.

Contribution and Limitations

The thesis does not conclude that tiny houses are a universal solution to homelessness. Instead, its value lies in clarifying the conditions under which they stop being a lifestyle trend and start being an appropriate housing response. This distinction is important because tiny houses can easily be oversimplified in two opposite ways: either as an inherently affordable solution for people in housing need, or as a form of housing suitable only for those who voluntarily choose to downsize. The research-through-design methodology was central to reaching this more nuanced position, as the process allowed the practical challenges encountered in the initial micro-home design to be tested against, and refined by, the academic literature, rather than treating design and research as two separate exercises.

The thesis nonetheless has limits that should be acknowledged. Academic research on tiny houses remains relatively new, and much of the evidence on motivation and satisfaction draws on studies conducted in the United States, where housing markets, welfare systems, and cultural attitudes toward small living differ from Italy. The data on homelessness in Turin, while among

the most current available, is itself an estimate, and the broader Italian system for measuring and responding to homelessness is still evolving, as shown by ISTAT's ongoing national survey. The design principles are therefore intended to serve as a guide, to be tested and adjusted through the design project itself, rather than as a fixed or universally applicable formula.

Closing Remarks

What began as a practical exercise in a micro-home design competition ends, through this research and the final architectural proposal, in a considerably more grounded position. Ultimately, ***the research shifts the question away from "How small can a home be?" towards a more important one: "What does a home need to provide?"*** Tiny houses are not a shortcut to solving homelessness, but under the right conditions (designed with privacy and flexibility at the dwelling scale, community and support at the collective scale, and genuine connectivity at the city scale) they can offer something that many current forms of emergency accommodation cannot: ***a place that feels less like a shelter to survive in, and more like a home from which to rebuild a life.***

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