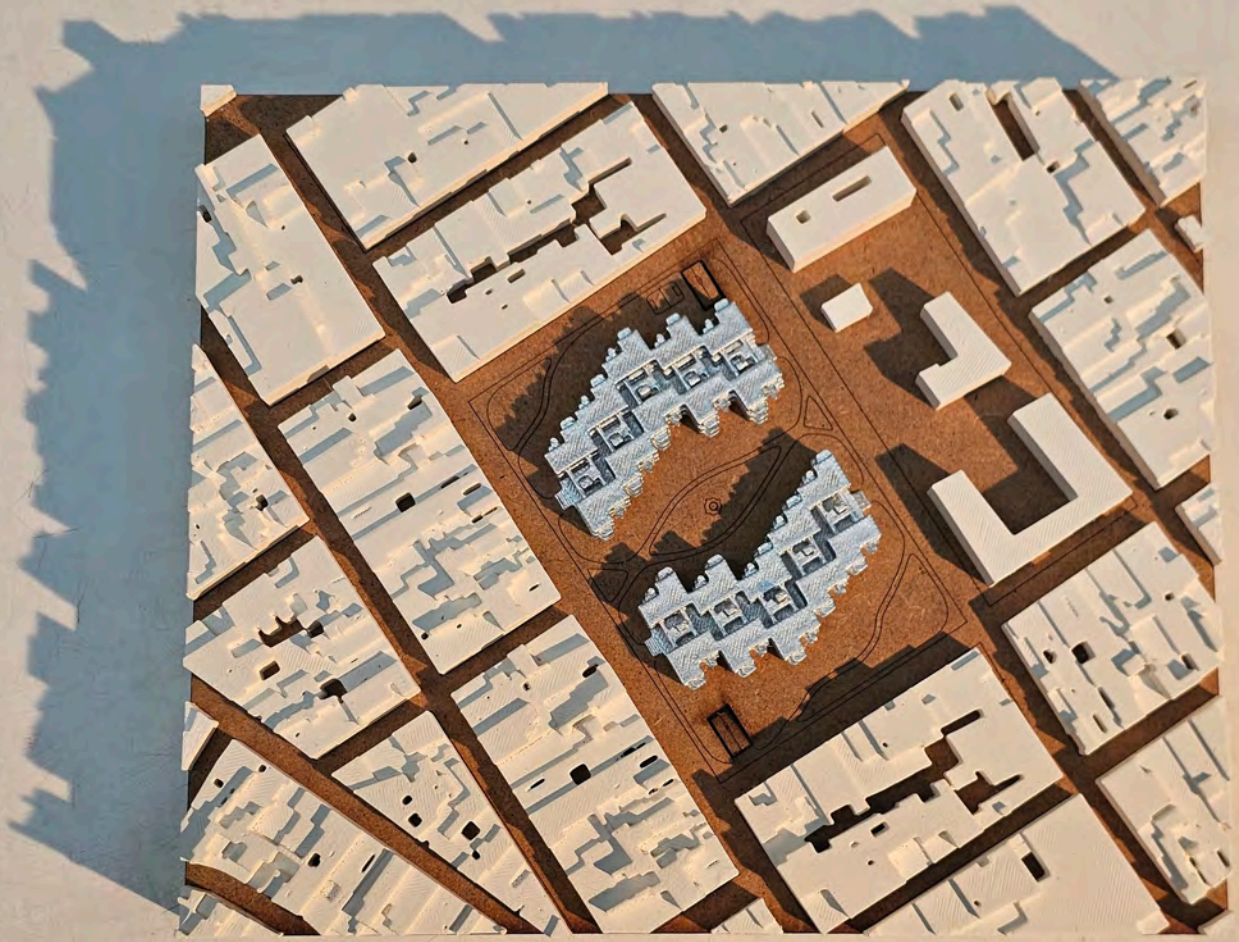

HOMES

Djura Sjoerds

Reconstruction of Syrian Housing

Graduation Studio: Extreme Architecture
MSc Architecture, Urbanism and Building Sciences
TU Delft

First supervisor: Job Schroën
Second supervisor: Alessandra Navarro

June 5th 2026
Delft, The Netherlands

More than 2 million internally displaced Syrians still reside in camps or informal settlements, with many unable to return home, because their homes were destroyed, occupied, or unsafe.
(Shelter Cluster, 2025)

Foreword

This graduation project originated from a deeply rooted motivation to support marginalized communities. This motivation developed at a young age, when, as a ten-year-old girl, I visited a school in a slum area. Standing next to children my own age, I became aware of the stark contrast between their living conditions and the safe environment in which I was able to grow up. Since then, I have felt a strong responsibility to contribute, wherever possible, to supporting others.

This graduation project focuses on housing Syrians who lost their homes as a result of the war and wish to return. The outcome is a design proposal for permanent housing for returning families in Homs, Syria. Throughout the design process, I learned that embracing ambiguity, utilizing rapid iterative modeling, and fostering a collaborative studio dialogue are critical tools for developing a sustainable, dignified housing alternative.

I would like to express my sincere gratitude to my teacher, Job Schroën, and fellow students, who really made this graduation project the most enjoyable course of my bachelor's and master.

I hope this project contributes to a broader discussion on how architecture can help bring people back together in a period of trauma and mourning, and how it can provide a framework for rebuilding everyday life.

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Abstract

This thesis presents a high-density residential complex for 600 people in post-conflict Homs, Syria. Defying generic humanitarian blocks, the project utilizes four core design principles: layers of privacy, typological diversity, fostering social cohesion, and incremental growth. Crucially, the layers of privacy dictate the entire project across all scales. This is explicitly manifested in the housing layouts, where the floor plans are organized sequentially, positioning private retreats deeper into the dwelling away from the entrance. On a larger scale, this spatial gradient transitions from the public central courtyard to the semi-private access galleries shielded by a secondary facade. To accommodate varied families, the master plan offers typological diversity and enables self-determined incremental growth through double-height voids, allowing internal expansion over time. Ultimately, this framework translates traditional Syrian values into a contemporary density, offering a dignified architectural strategy that supports the psychological recovery of returning families.

Introduction

Problem Statement and Relevance

The Syrian conflict, which began in 2011 and persisted into the mid-2020s, has created one of the most severe housing crises in contemporary history. Over 13 million Syrians have been displaced internally and abroad since late 2024 (UNHCR, 2025). Since December 2024, when the Assad regime fell, approximately 1.6 million Syrians have returned, yet 80% of these returning families find their homes completely or partially destroyed (UNHCR, 2025). According to the Shelter Cluster, over 2 million internally displaced persons continue to reside in camps or informal settlements, unable to return due to destroyed, occupied, or unsafe housing (Shelter Cluster, 2025). Homs was the Syrian city most affected by the crisis in terms of both physical and social repercussions (UN-Habitat, 2022).

The reconstruction of housing in Syria faces several interrelated challenges. A key concern is the tension between the quantity and quality of housing provision. Priorities of rapid shelter delivery and cost efficiency largely dominate current post-conflict reconstruction efforts. While these strategies address immediate humanitarian needs, they risk producing housing that meets only minimal shelter standards and fails to respond adequately to residents' socio-cultural, spatial, and long-term requirements. Returning families are rebuilding their lives, expanding their households, and gradually improving their financial capacity. Their housing needs are therefore dynamic, encompassing demands for increased living space, flexibility, and the ability to adapt homes over time.

This dilemma exposes a critical paradox in post-conflict reconstruction: the conflict between 'fast' and 'slow' development. The immediate pressure to house many returning citizens drives top-down, standardized humanitarian aid operations. These fast, emergency-driven interventions focus purely on mathematical optimization; maximizing units while minimizing time and cost. However, housing is not merely a quantitative commodity; it is a qualitative baseline for societal stabilization. 'Slow' reconstruction, which prioritizes community engagement, local craftsmanship, and cultural continuity, is essential for long-term urban resilience.

Furthermore, post-conflict environments are highly vulnerable to commercial exploitation (Saliba, 2016). In the rush to rebuild devastated cities like Homs, there is a significant threat from speculative developers pushing for rapid, westernized or Gulf-style high-rise developments (Azzouz, 2019). This corporate approach to reconstruction often treats the destroyed city as a clean slate, erasing historical street patterns and traditional urban typologies in favor of generic, disconnected concrete towers. For a highly traumatized population, this architectural dislocation can be deeply damaging. It replaces the intimate, community-oriented scale of traditional neighborhoods with anonymous, atomized spaces that sever local social ties. Consequently, this mismatch between corporate architectural forms and local ways of living can inadvertently trigger a secondary wave of cultural displacement, as residents find themselves unable to identify with or functionalize their new environment.

Homs city center (pre-crisis)

Ancient mosque of Khalid Ibn Waleed (pre-crisis)

UN-Habitat (2014)

Comparable post-conflict contexts illustrate the consequences of neglecting these factors. In Kosovo, hastily constructed, standardized apartment blocks were implemented to address urgent housing needs; however, they often failed to accommodate family aspirations and cultural preferences. Within a few years, this mismatch led to extensive modifications or selective abandonment of housing units (Hansen, 2012). This example underscores the importance of anticipating long-term use, adaptability, and the preservation of cultural identity in post-conflict housing design.

Objective and Motivation

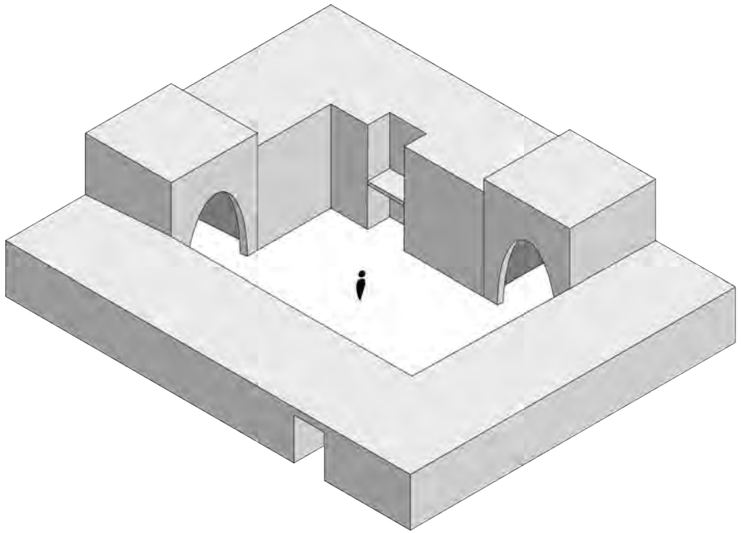
This architectural design thesis focuses on the reconstruction of housing in Homs. For this, the neighborhood of Karm Shamsham is selected as the project site. Karm Shamsham presents a critical contemporary condition: it is a neighborhood where heavy destruction coexists with the return of citizens, creating a context where some parts are already undergoing reconstruction while others remain in ruins. This complex threshold gives the area a potential to be transformed into a supportive, permanent home for returning families in the short term, provided it is guided by a coherent architectural framework.

The objective of this thesis is to design post-conflict housing that honors traditional Syrian housing culture while directly supporting the psychological recovery and trauma healing of returning families.

My architectural ambition is to counter the alienating effects of both generic humanitarian blocks and speculative high-rises. The project aims to design an urban housing system that respects the communal structures of Syrian domestic life, translating traditional values into a contemporary density.

Research and Design Questions

To bridge the gap between theoretical socio-cultural analysis and physical architectural intervention, a central design question along with three investigative sub-questions have been formulated.



Typical Syrian Courtyard House

The main design question is defined as follows:

How can post-conflict housing in Homs be designed to facilitate adaptable reconstruction while simultaneously respecting traditional socio-cultural domestic spatial structures and supporting the psychological recovery of returning Syrian families?

To systematically solve this challenge, the following sub-questions are addressed through the design:

Socio-Spatial Hierarchy: What are the core spatial parameters and boundary conditions concerning traditional Syrian domestic life, specifically regarding the threshold between public, semi-private, and private domains, and how can these be reinterpreted within a contemporary multi-family housing typology?

Tectonic Adaptability: Through what structural and modular frameworks can the architectural design accommodate temporal flexibility and 'incremental growth,' allowing returning families to expand their dwellings over time?

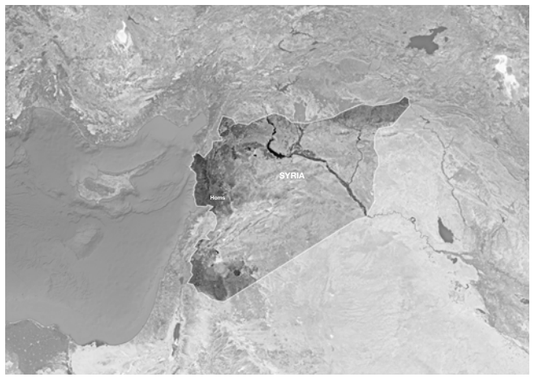
Psychological Transition: How can the different levels of privacy in the Syrian culture be articulated to foster a sense of security, stability and trauma recovery for inhabitants?

Scope and Context

This report presents the final design outcomes of a graduation project developed within the Extreme Architecture studio at the TU Delft.

The document is organized into four main chapters. Following this introduction, the Approach details the methodology, design strategies, and the technical framework that guided the project. The Results chapter presents the architectural design through a comprehensive set of drawings, diagrams, and explanatory texts. Finally, the report concludes with the Conclusion, which answers the central design questions, offers recommendations for post-conflict reconstruction, and reflects upon the methods and tools used throughout the graduation process.

To ground the contemporary architectural intervention, the Appendix includes a supporting research paper that analyzes the 2000-year evolution of domestic architecture in Syria, providing the necessary theoretical foundation for understanding Syrian housing culture.



Approach

Methods

1. Design Strategy

The design strategy of this thesis follows a research-driven design methodology, divided into two distinct phases: a diagnostic research phase and a generative design phase. The first phase establishes the socio-spatial and psychological baseline of the project. This is achieved by first analyzing the 2000-year evolution of Syrian domestic architecture to identify its defining characteristics, spatial mechanics, and historic usage. Building upon this historical foundation, the second step investigates the spatial syntax of the contemporary Syrian floor plan. The final component of this diagnostic phase explores how the built environment can actively contribute to the trauma recovery of the inhabitants of Homs.

Because safety concerns and ongoing local instability made it impossible to conduct on-site field visits to Syria, these fundamental research questions were addressed through alternative digital and remote research methods. Once these questions were answered, the gathered data formed a comprehensive programmatic and spatial brief that served as the direct input for the generative design phase. During this phase, various architectural configurations were developed and tested. Through physical model-making, different spatial organizations were evaluated to determine what structural and layout strategies functioned best within the context. Ultimately, the most successful option was selected and elaborated across multiple scales, ranging from a 1:1500 urban block intervention down to 1:5 technical details. The architectural resolution of this chosen strategy is presented in the next chapter through floor plans, elevations, sections, three-dimensional renders, and analytical diagrams.

2. Research Techniques and Tools

To circumvent the limitations of remote research, a diverse toolkit of qualitative and quantitative investigative techniques was deployed. The contemporary Syrian floor plan was analyzed through a multi-layered approach. First, literature regarding the historical and modern domestic habits of Syrian families was thoroughly reviewed. To bridge the gap between academic text and lived reality, this was supplemented by an analysis of visual data from online photographs and architectural floor plans sourced from contemporary Syrian real estate websites, covering both pre-war housing stock and recent reconstruction projects. Furthermore, an innovative digital ethnography was conducted by analyzing Syrian cooking videos on YouTube. This provided unmediated insights into the daily choreography of the domestic sphere, specifically revealing how kitchens are utilized.

To validate the conclusions drawn from this remote digital analysis, the findings were synthesized into a comprehensive spatial diagram. This framework was subsequently presented to two practicing Syrian architects during interviews. These experts cross-referenced and confirmed the accuracy of the diagram, ensuring that the interpreted spatial layout accurately reflects the authentic housing culture and functional dynamics of a Syrian home.

Simultaneously, a multi-scale urban mapping was conducted for the specific site intervention. The neighborhood of Karm Shamsham was analyzed utilizing satellite imagery combined with a comprehensive neighborhood profile published by UN-Habitat (2022). This report provided critical spatial maps, damage assessments, and demographic data, allowing for a precise understanding of the neighborhood's structural state, the rate of citizen return, and the socio-economic challenges characterizing the area.

3. **Expected Output**

The expected output of this approach is a fully contextualized, multi-family housing complex that operates as both an urban space fostering social cohesion and a safe domestic place. Structurally, the output is documented through architectural drawings that demonstrate how a building can transition from a macro-urban scale down to the micro-scale of construction details.

Technical Framework

1. **The Evolution of Syrian Housing**

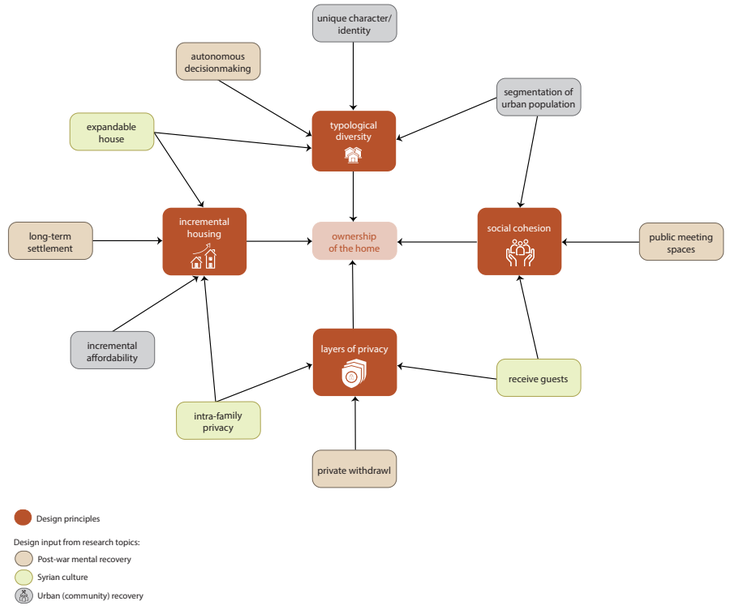
A historical review of Syrian domestic architecture reveals a deep-rooted tradition of spatial flexibility and adaptability. Historically, Syrian homes have always integrated mechanisms for future expansion, which occurred primarily as horizontal, ground-level additions within multi-generational family plots. However, implementing this tradition within the contemporary urban morphology of Homs presents a severe architectural challenge. Due to high urban density, the available city blocks are entirely built out, leaving no room for traditional horizontal growth.

To cope with this spatial constraint, citizens currently employ informal adaptation strategies, such as enclosing their private balconies to create an extra bedroom for expanding families. While this solves the immediate need for interior space, it simultaneously destroys the dwelling's relationship with the outdoors, leaving families without private open-air spaces. This historic analysis underscores that a successful contemporary intervention must provide alternative, structured methods for vertical or internal expansion, while preserving the historical necessity of the courtyard or private outdoor space as a sanctuary for domestic life.

2. **Contemporary Floor Plan Analysis**

The spatial configuration of the contemporary Syrian home is dictated by a strict hierarchy of privacy. This privacy operates on multiple axes: within the family itself, between extended family members, and between the household and visiting guests or neighbors. In traditional and modern Syrian architecture, this manifests as a sophisticated zoning and circulation strategy that moves from public to highly private.

The spatial sequence dictates that the further one penetrates the dwelling, the more private the spaces become. Immediately adjacent to the primary entrance, a dedicated guest room (salon) and a separate guest restroom are positioned. The kitchen is strategically located near this guest zone to facilitate the serving of food of the



female head of the family. Beyond this threshold lies the family living room, which acts as a semi-private transition space where only close family and friends are welcome. Finally, the private bedrooms are physically separated from the social spaces, often divided by a bathroom, with the primary parental bedroom situated at the absolute end of the circulation path, featuring an en-suite bathroom for maximum privacy.

3. **Spatial Parameters for Trauma Recovery and Social Cohesion**

Architecture in a post-conflict zone needs to do more than just provide shelter; it must actively help people heal from trauma. Currently, most reconstruction in Homs consists of highly standardized, repetitive apartment blocks. This uniform way of building separates different social groups from one another, which increases tension in an already fragile society. To counter this isolating effect and support psychological healing, my research points to a clear design solution: combining a variety of housing types within a single building complex. By offering different apartment sizes and layouts under one roof, the building naturally attracts a mix of different families, age groups, and backgrounds. This creates a shared space where people can meet, helping to bring the community back together.

Furthermore, the architecture must actively foster a sense of security and stability. Returning families are potentially traumatized by a history of repeated displacement, having been forced to move multiple times during their flight. The architecture must convey permanence, moving away from the cold, anonymous 'box-like' geometry of standard humanitarian refugee blocks, which serve as constant visual reminders of conflict. By offering shared, welcoming public or semi-public courtyards (which are severely lacking in Homs) the built environment provides spaces where citizens can safely gather, unite, and rebuild shattered social structures, while still being able to retreat into the absolute safety of their own private space.

4. **Design Principles**

The convergence of the methodological findings and the technical framework establishes four core design principles that guide the architectural intervention. These principles are embedded across all scales of the project, from urban massing to the detailed layout of individual rooms:

1. Layers of Privacy: Reinterpreting the traditional public-to-private spatial sequence to ensure socio-cultural comfort and familial boundary control.

2. Incremental Housing: Providing a flexible structural framework that allows dwellings to grow and adapt over time as families expand.

3. Fostering Social Cohesion: Utilizing shared spaces and a mix of diverse typologies within the block to bring different social groups together and counter urban polarization.

4. Typological Diversity: Rejecting generic mass-housing forms in favor of distinct architectural character, allowing residents to visually and spatially identify with their home.

Ultimately, these four principles unite under a singular, overarching architectural objective: returning complete spatial and psychological ownership back to the residents, empowering them to actively retake control of their domestic lives.




Google Maps, 2026

Members of the Free Syrian Army inspect a damaged building after clashes with President Bashar al-Assad's forces in Karam Shamsham district in central Homs August 11, 2012. Picture taken August 11, 2012. REUTERS/Yazen al Homsy

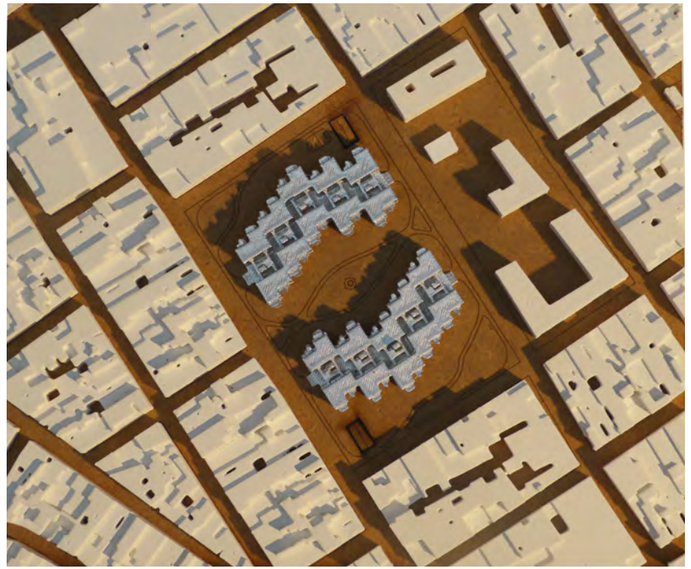
Facebook 2026

Results

The final design outcome is a residential complex of 16,800 m^2 comprising 100 housing units. Because the design allows for internal expansion within the dwellings, the total capacity is highly flexible, accommodating a population ranging from 200 to 600 residents. Additionally, the project integrates 800 m^2 of public space, designed to serve as a communal gathering area that benefits both the residents of the complex and the wider city population.

The residential complexes are structured by repeating a single, modular building block in a horizontal direction. This base block consists of three distinct housing typologies, two of which offer the capacity for incremental internal expansion. To ensure privacy for the ground-floor apartments, the entire residential block is elevated by 1.5 meters above street level. This elevation simultaneously creates a functional semi-basement space underneath the complex dedicated to resident parking. Furthermore, a secondary facade around the building plays a crucial role in managing both solar gain and visual privacy.

Throughout the design, the four core principles (layers of privacy, incremental housing, fostering social cohesion, and typological diversity) are fully integrated. Their spatial and structural application will be further demonstrated and explained through the architectural drawings and diagrams in the following chapter.

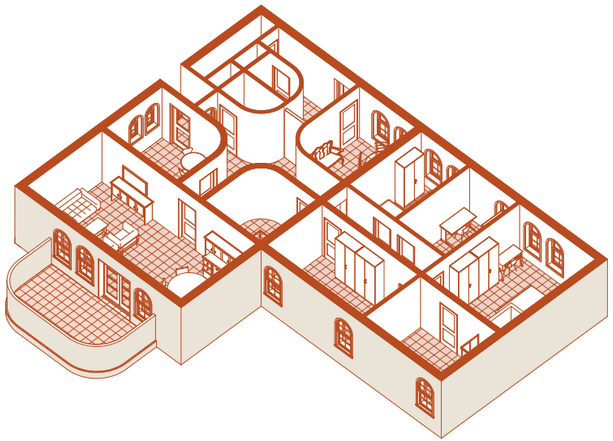


Typology 1

This is housing typology 1, which clearly demonstrates how layers of privacy dictate the spatial organization of the floor plan. From the main entrance, there is immediate access to the guest room and a dedicated guest restroom. Beyond this entry zone, the circulation path is separated from the private quarters of the house by either a heavy curtain or a door, depending on the preference of the residents. Past this threshold, only the inhabitants, close friends, and extended family members are welcome.

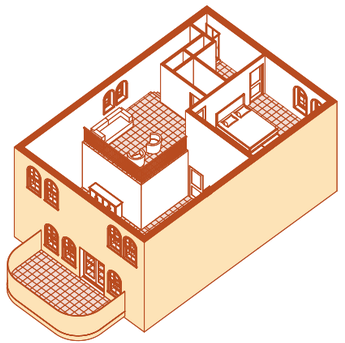
The first space encountered in this private zone is the kitchen. It is strategically positioned near the guest room so that the host can easily prepare and serve food to visitors. The kitchen provides direct access to a small utility balcony, which allows cooking odors to escape and serves as a preferred space for drying laundry. Following the kitchen is the primary living room, which opens up to a large balcony. Given the high summer temperatures common in Syria, these balconies are heavily utilized as extensions of the living space.

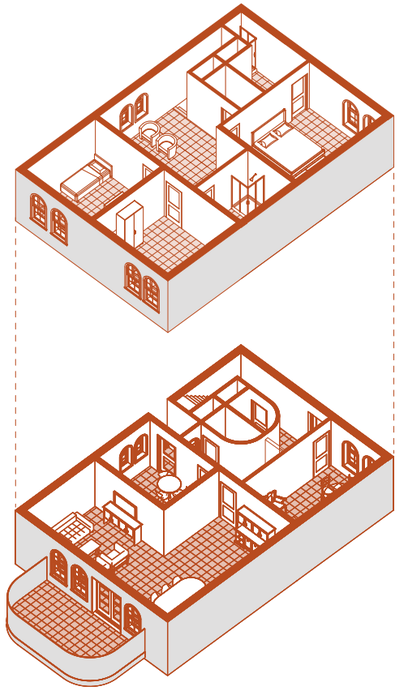
The central bathroom, adjacent to the living room, acts as a spatial buffer that separates the daytime living spaces from the quiet evening areas. The children's bedrooms are located at the front of this private corridor, while the primary parental bedroom is situated at the absolute end of the hallway, complete with an en-suite bathroom for maximum privacy. A key feature within the main bedroom is the inclusion of a dedicated dressing table.



Typology 2

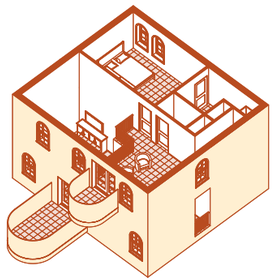
This typology functions in exactly the same manner as Typology 1, with the main exception that the layout is distributed over two floors. The drawing on the left displays the initial configuration, where a double-height maisonnette provides the structural potential for expanding the number of rooms on the upper floor (as also shown in the render). The drawing on the right illustrates how this internal expansion can be fully realized over time.

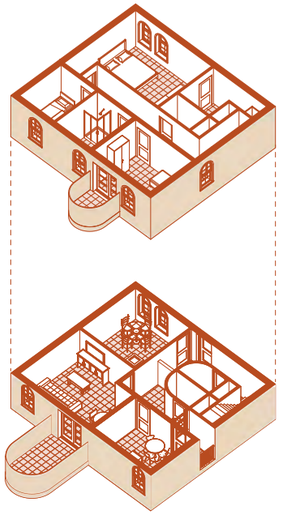




Typology 3

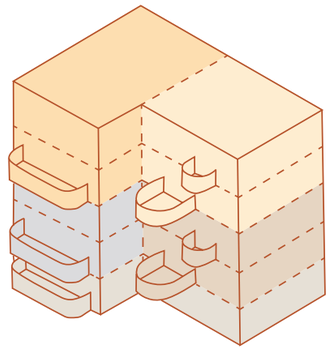
This typology operates similarly to Typology 2, offering a more compact footprint while maintaining the exact same number of rooms. Consequently, this variant is designed for residents with a smaller budget who still desire the same level of living comfort. Additionally, this dwelling features two separate outdoor spaces: one private balcony extending from the primary living room, and another dedicated to the secondary living area.

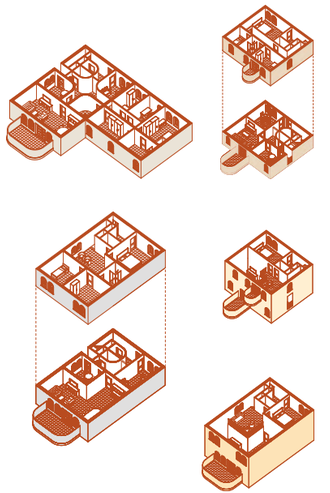


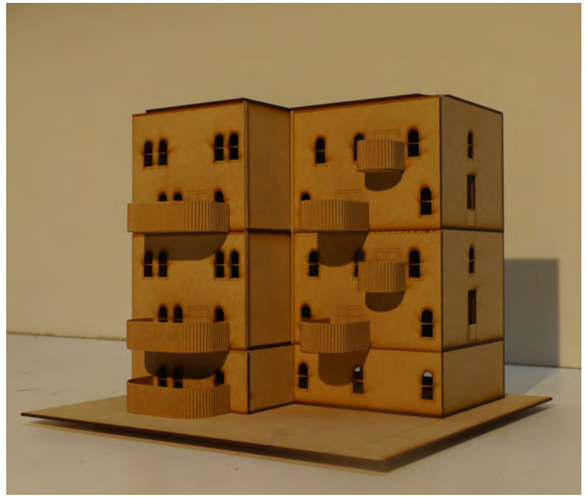


Typology to block

The previous three housing typologies can be combined into a single, cohesive residential block, as illustrated in the adjacent diagram. This modular block is subsequently repeated to form the entire residential complex.

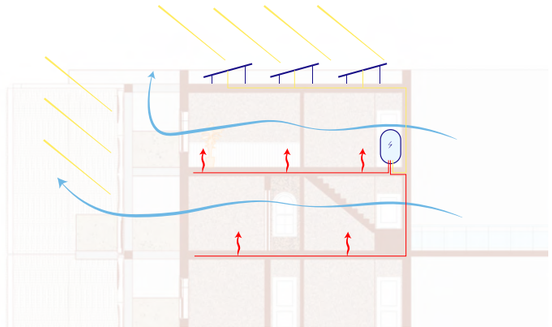


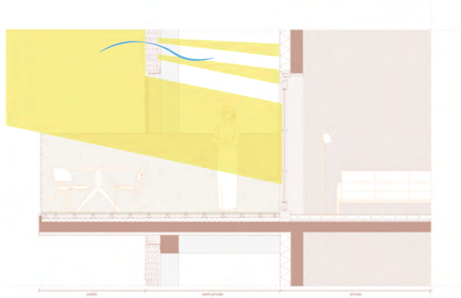




Climate Design

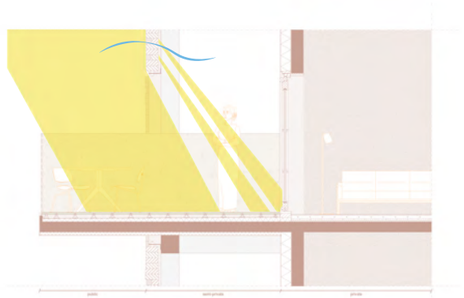
The climate concept is depicted in the adjacent drawing. Roof-mounted photovoltaic (solar) panels generate electricity to power individual water boilers in each dwelling. During the winter, these boilers heat water for underfloor heating. Conversely, in the summer, the system cools the water to provide a radiant cooling effect on the indoor temperature. Furthermore, cross-ventilation throughout the entire apartment ensures a continuous supply of fresh air. The specific functioning of the secondary facade is explained on the following page.





Winter

Due to the low sun angle, direct sunlight hits the windows and penetrates deep into the dwelling. This facilitates passive solar heating, naturally warming up the interior spaces.

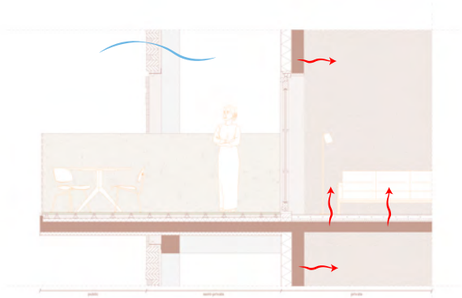


Summer

The sun is positioned high in the sky, and the secondary facade blocks direct solar radiation from reaching the windows. However, the rotated bricks within this secondary facade ensure that sufficient indirect daylight still enters, keeping the interior of the home bright.

Day

Throughout the day, the high thermal mass prevents the building from heating up quickly. Because the mass has cooled down during the night, it acts as a heat sink, absorbing indoor warmth and keeping the interior spaces cool.

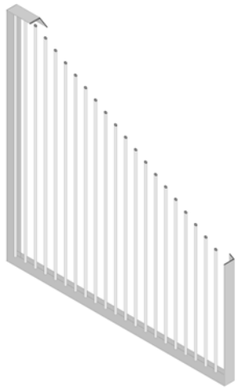


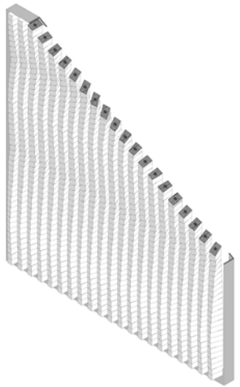
Night

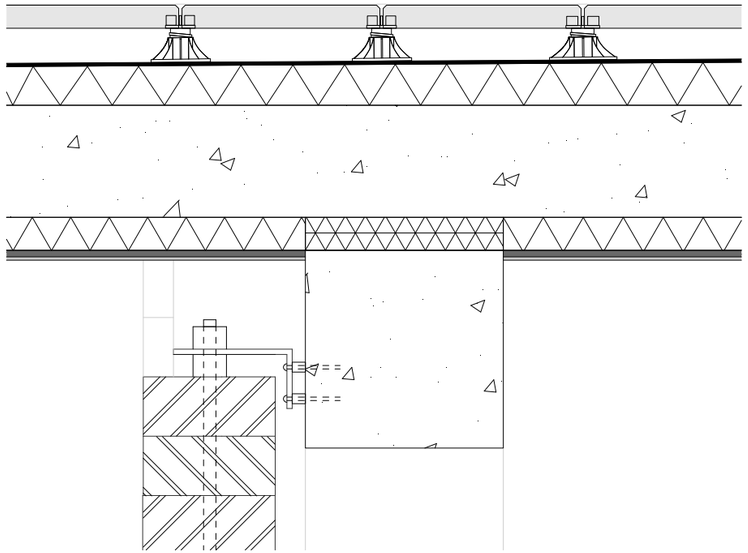
During the night, the stored heat within the thermal mass is gradually released to warm the dwelling. This cooling-off process prepares the thermal mass to function as a cooling mechanism again the following day.

Second facade

The secondary facade consists of bricks that are threaded onto vertical metal rods. These rods are integrated into a steel framework, which is anchored to a concrete structural cantilever that projects from the building's main facade. Functionally, this double-skin facade operates as both an integrated solar shading device and a visual privacy screen.







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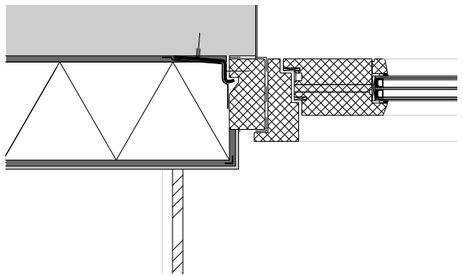
Privacy zones

The horizontal section of the building fragment illustrates the performance of the various layers of privacy. It captures the transition from the interior of the dwelling (private), through the buffer space behind the secondary facade (semi-private), and finally to the exterior realm in front of the secondary facade (public).

The detail illustrates how the frame of the doors is anchored to the load-bearing concrete wall.



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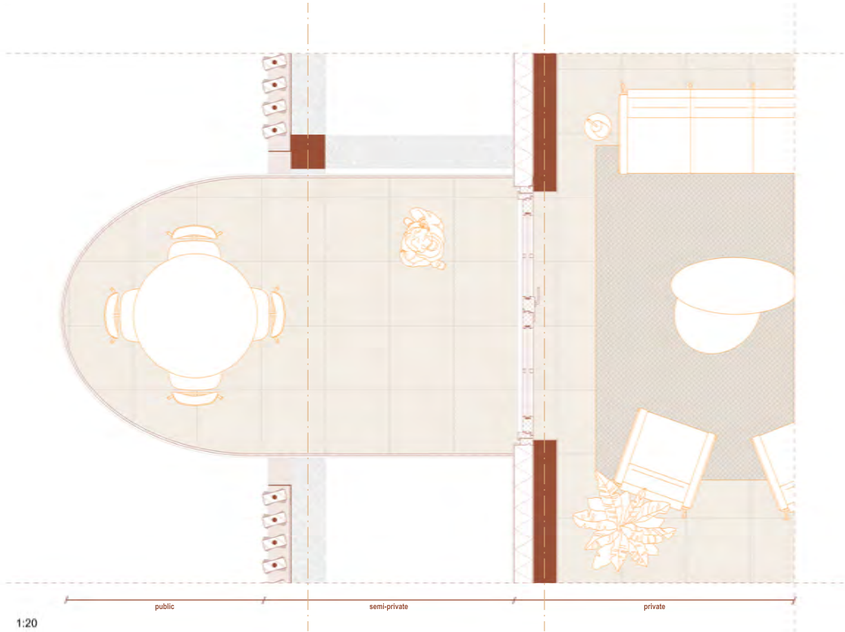

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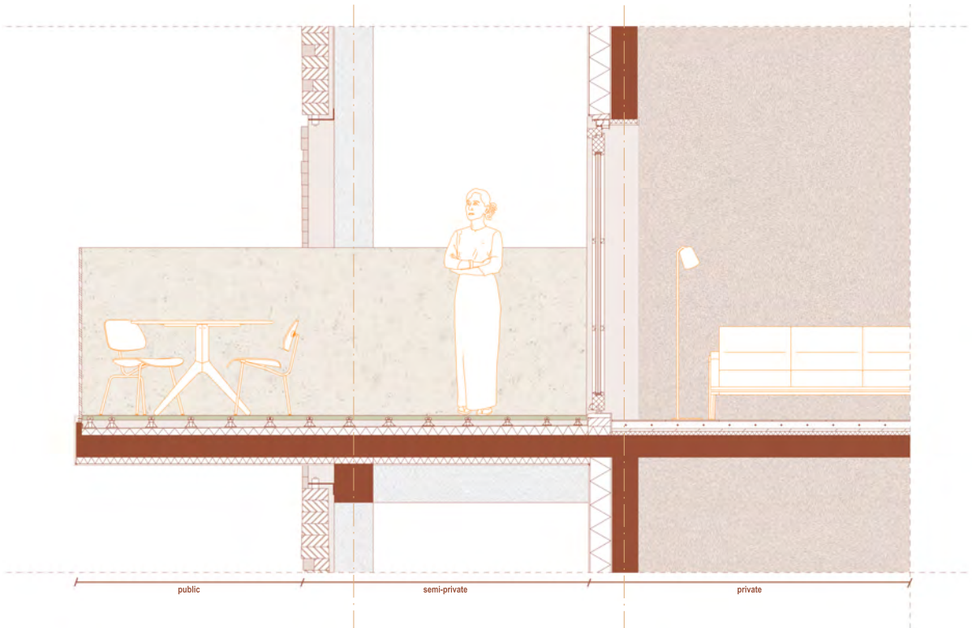
Privacy zones and heat protection

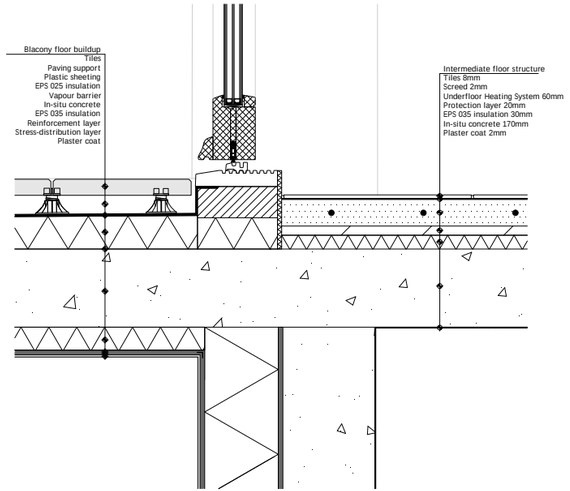
The vertical section further illustrates the performance of the layered privacy system. Additionally, it demonstrates how the building is protected against the hot climate through continuous insulation wrapping around the entire structure.



U-value and acoustic insulation

The detailed drawing illustrates the acoustic insulation applied between the floor slabs to guarantee privacy between levels.

The thermal analysis demonstrates that with a U-value of 0.205 W/m^2K, the dwelling maintains a comfortable indoor temperature of 20°C when the outdoor temperature reaches 35°C.



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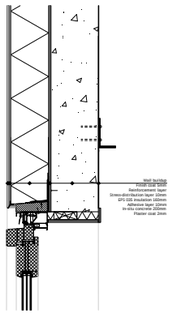
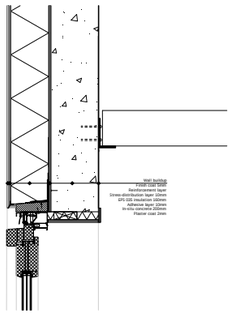
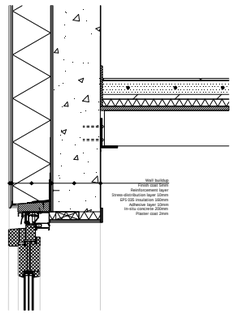


Expansion of the void into a complete second floor.

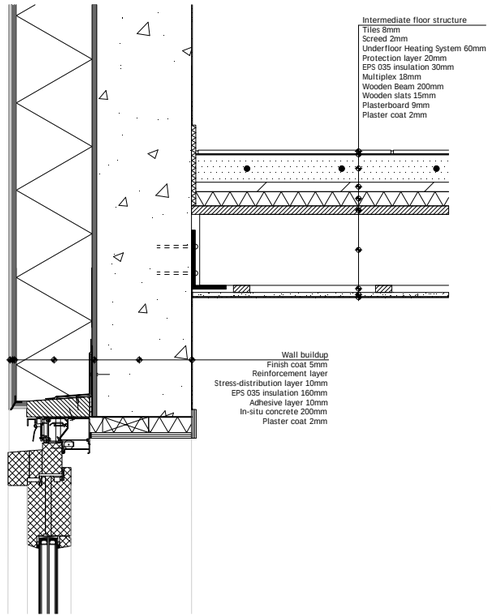
Step 1: Anchor the steel framework to the structural wall ties.



Step 2: Span timber joists across the perimeter frame.

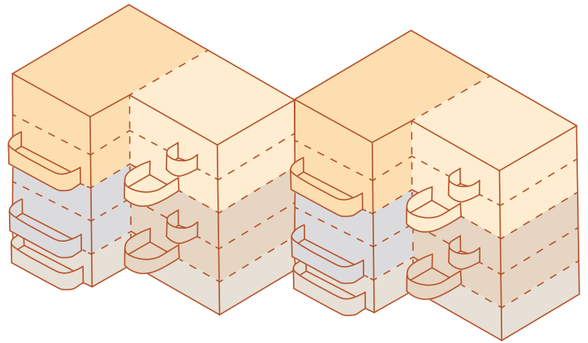


Step 3: Lay the floor boarding over the timber joists, including the integrated underfloor heating system.



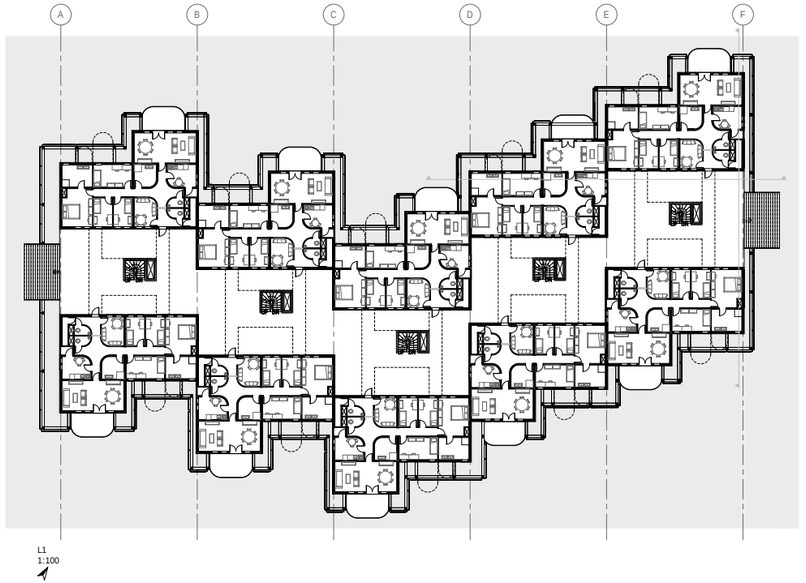
Step 4: Install a plastered gypsum board ceiling to complete the interior finish.

Design principles Scale-up
from one to multiple blocks



Ground Floor

The ground floor plan illustrates how the individual blocks aggregate to form the complete residential complex. The primary entrances are located on the left and right sides of the layout. Wrapping around the perimeter is the secondary facade, which seamlessly intersects with the balconies. Five circulation cores, each consisting of a staircase and an elevator, provide access to the apartments on the upper levels.

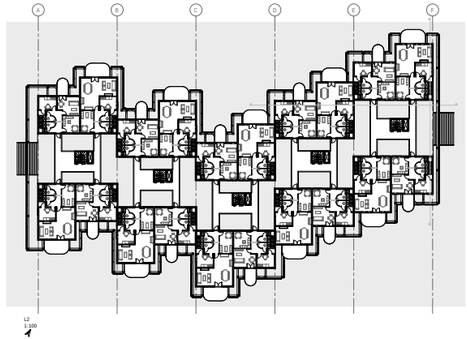


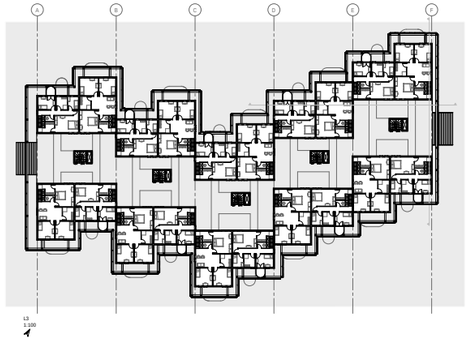
Main entrance

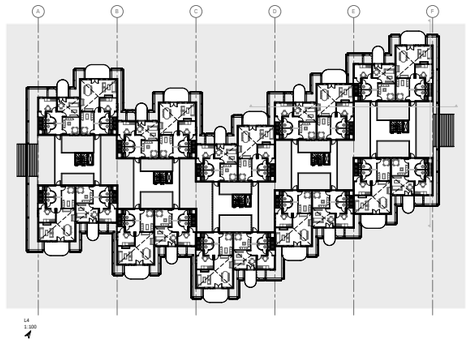
The ground floor circulation space is designed to facilitate spontaneous encounters, while offering flexible areas that residents can customize according to their needs, such as placing benches or seating arrangements.

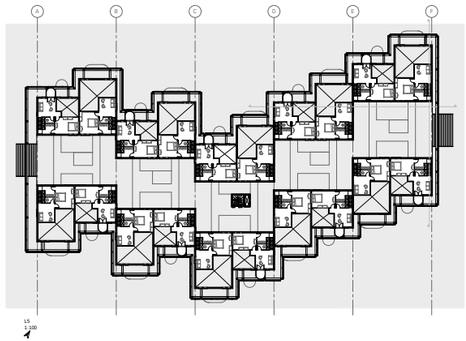
Floorplans

The upper floor plans display the access galleries that lead to the apartments on the first and third floors. Additionally, these drawings clearly illustrate the double-height voids on the upper levels.







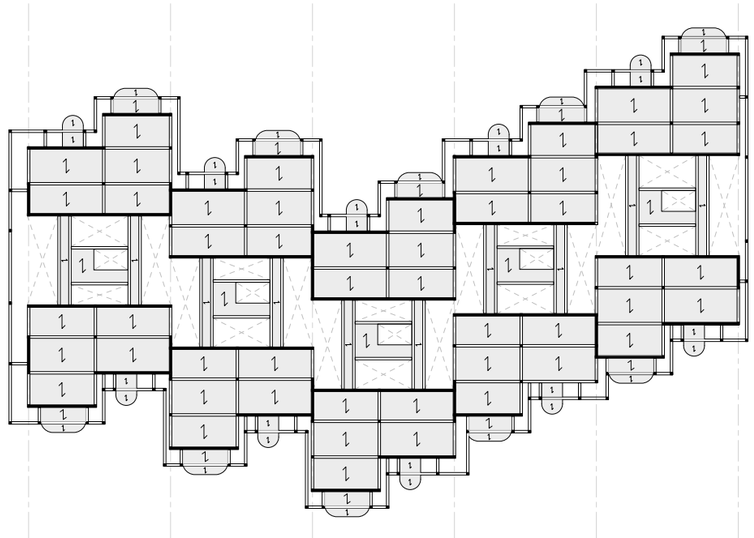


Gallery

The entrance to the house functions as a meeting space for spontanious interactions.

Structural plan

The structural framework utilizes a hybrid system composed of load-bearing walls and columns, both constructed from reinforced concrete. The floor slabs function as rigid diaphragms, and the cast-in-place (in-situ) concrete of the floors and walls creates a monolithic structure that ensures seismic resistance. Additionally, the access galleries are supported by concrete beams. The secondary facade system is anchored to the building via an integrated concrete frame.

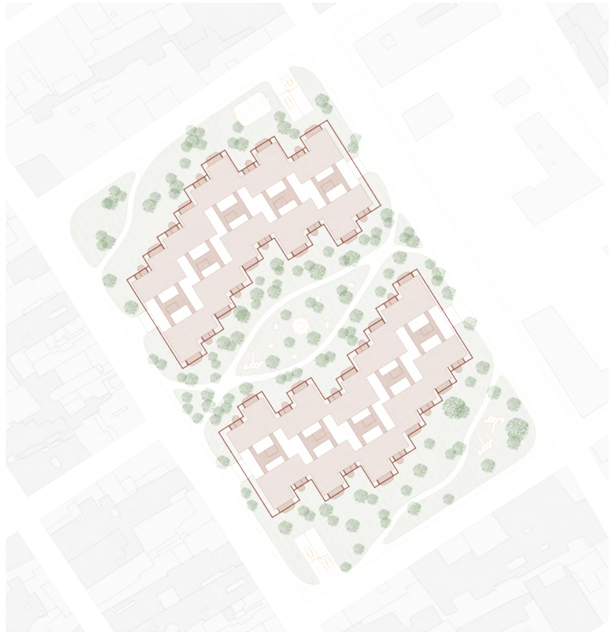


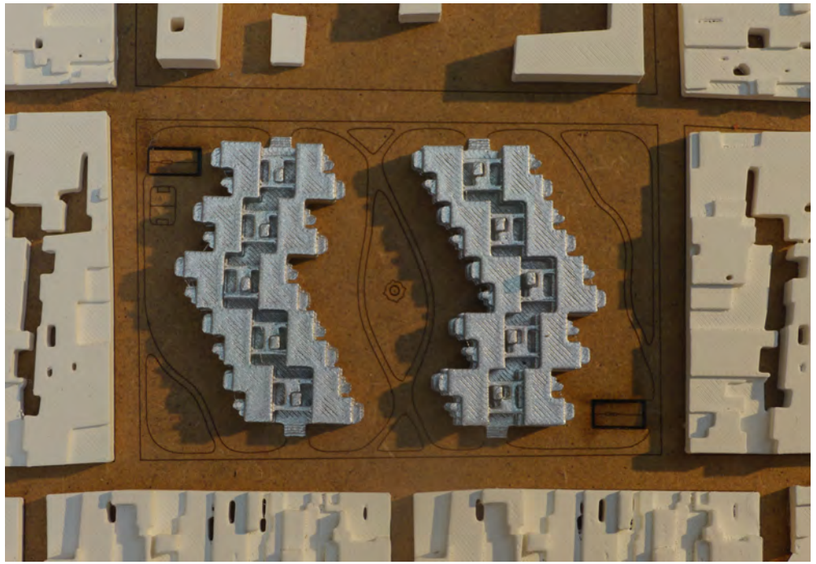
Design principles

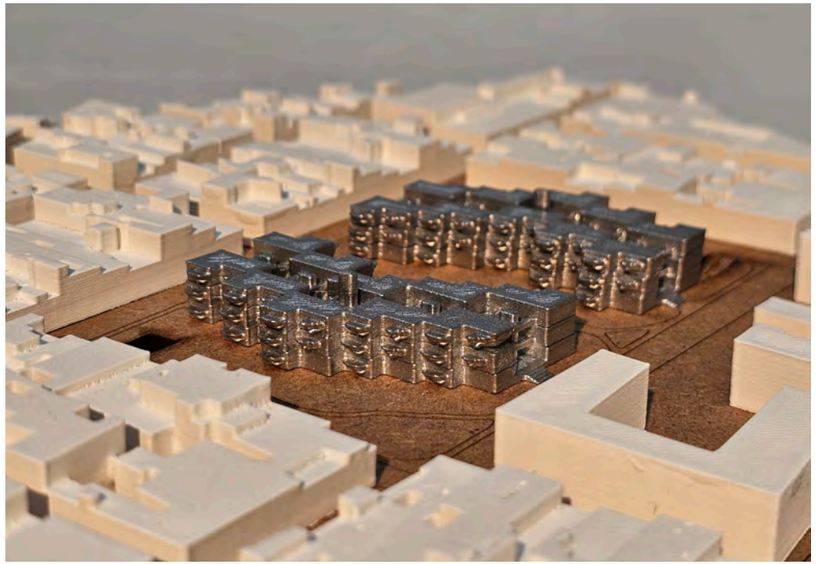
The building section illustrates how the residential units (including the double-height voids on the upper levels) are stacked above the semi-basement parking garage. Additionally, it shows the elevation wall containing the entrances to the apartments of the adjacent block. In this view, it is apparent that the facade is significantly more open than the exterior envelope, as it faces the communal circulation space. The window openings are kept relatively small, which is highly advantageous for mitigating the hot climate and ensuring the desired levels of visual privacy.

Site

The primary entrances to the residential complexes are situated along the street side. The entrances to the parking garages are strategically positioned at the corners of the site, providing direct access to the staircases and elevators that lead up to the dwellings. To optimize the potential of the site, the master plan accommodates two residential blocks. This configuration offers an excellent opportunity to create a vibrant public realm, not only for the residents but also for the wider city. It functions as a gathering space where families meet, children play, and the elderly can socialize on benches. The central fountain is a characteristic element borrowed from traditional Syrian courtyard architecture, providing microclimate cooling during the summer. This urban scheme clearly reflects the zones of privacy.







Zones of privacy

The site section illustrates how privacy is zoned across the entire project from left to right. Additionally, it highlights the spatial relationship between the dwellings and the central courtyard, while demonstrating how the parking garage is accessed.

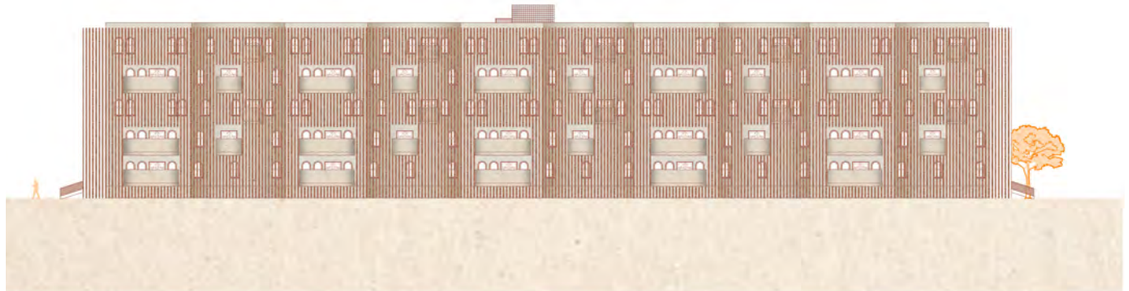
Entrance

This building elevation illustrates the entrance sequence via the grand staircase and the generous opening in the secondary facade. Furthermore, the secondary facade clearly defines the circulation space as a semi-private realm; while it offers a degree of transparency, it screens the specific activities within, merely suggesting the presence of the access galleries behind it. Lastly, the public zones of the balconies project through the secondary facade.

1:200

Privacy in facade

The courtyard elevation evokes a completely different atmosphere. This facade exhibits significant depth and is substantially more closed. The window openings positioned behind the secondary facade are only faintly visible. Furthermore, the few fully private balconies sheltered behind this secondary layer remain virtually invisible, which significantly enhances the overall sense of domestic privacy.



HOMeS

The courtyard visualization captures the core strength of the design: a vibrant public gathering space where people can connect, enjoy nature, and where children can play safely. The zoning of privacy is perceptibly integrated through a configuration of open clearings, pedestrian pathways that delineate these distinct zones, natural sheltering provided by lush vegetation, and the protective layer of the secondary facade. Ultimately, this space is designed not merely for the residents, but as a sanctuary for the entire city of Homs.

Conclusions

This graduation project has resulted in a comprehensive residential complex designed to accommodate approximately 600 people in Homs, Syria. The primary research and design question driving this thesis asked: 'How can post-conflict housing in Homs be designed to facilitate adaptable reconstruction while simultaneously respecting traditional socio-cultural domestic spatial structures and supporting the psychological recovery of returning Syrian families?' This is systematically addressed through the synthesis of three sub-questions, the outcomes of which directly shaped the final architectural and technical manifestation.

Socio-Cultural Spatial Transitions

The first sub-question investigated the core spatial parameters and boundary conditions concerning traditional Syrian domestic life (specifically the threshold between public, semi-private, and private domains) and explored how these could be reinterpreted within a contemporary multi-family housing typology. This was answered through a typological analysis of traditional Syrian domestic layouts, which highlighted gradient privacy as a fundamental spatial requirement.

In the final design, this socio-cultural parameters are translated across three distinct urban and architectural scales:

The Domestic Scale: Dwellings are organized sequentially, where the depth of the floor plan directly correlates with an increasing degree of privacy, moving from spatial openness to deep domestic retreat.

The Architectural Scale: The circulation cores, the communal access galleries, and the buffered intermediate zone behind the secondary facade function as vital semi-private transition realms.

The Urban Scale: The central courtyard, enclosed by the residential blocks, establishes a protected yet shared public domain that mediates between the city and the home.

Structural Frameworks and Incremental Growth

The second sub-question addressed the structural and modular frameworks required to accommodate temporal flexibility and incremental growth, allowing returning families to expand their dwellings over time. The structural answer lies within the design of housing types 2 and 3. By deliberately integrating double-height maisonnettes into the initial construction phase, the architecture anticipates future expansion.

Technically, the internal voids can be easily converted into two additional bedrooms and an extra bathroom at a later stage. This structural adaptability ensures that families can expand their living surfaces incrementally to meet evolving demographic needs without compromising structural integrity, spatial qualities, or overall living comfort.

Architecture as a Catalyst for Trauma Recovery

The final sub-question examined how different levels of privacy within Syrian culture could be articulated to foster a sense of security, stability, and trauma recovery for the inhabitants. The architectural framework facilitates psychological rehabilitation through three spatial mechanisms:

Autonomy and Agency: Providing distinct private spaces within the home allows individuals the necessary isolation required for trauma processing. Furthermore, the ability to modify and expand the home grants residents a sense of agency and long-term stability, countering the psychological displacement caused by multiple forced relocations.

The Power of Choice: The diversity of housing typologies and their inherent adaptability empowers residents with independent decision-making capabilities regarding their domestic environment.

Social Cohesion: On a communal level, the central courtyard serves as a critical infrastructure for collective healing. By providing a secure space for dialogue, shared recreation, and children's play, the landscape design actively bridges fractured social structures and fosters community resilience.

Synthesis of Architectural and Technical Ambitions

The explicit ambition of this project was to counter the alienating, monotonous effects of both generic humanitarian housing blocks and speculative, high-density real estate developments.

The objective was to pioneer an urban housing system that simultaneously respects the communal structures of Syrian domestic life while translating traditional values into a contemporary density.

Evaluating the final design proves that these programmatic, cultural, and technical ambitions have been successfully merged. The project introduces a residential block configuration that operates on two simultaneous layers: it is inherently systemic and modular (rendering it highly reproducible across various post-conflict urban sites in Syria) yet it retains a distinct architectural identity and local character through its tectonic materialization and secondary facade.

Furthermore, by organizing incremental, adaptable units into a multi-story residential complex, the project demonstrates that a relatively high-density urban housing and self-determined incremental growth are not mutually exclusive. Ultimately, by deeply anchoring the design within the socio-spatial traditions of the Syrian housing culture, this project offers a truly sustainable, long-term architectural solution for Homs, effectively preventing the need for a secondary cycle of demolition and reconstruction in the future.

Recommendations

To transition this architectural framework from a theoretical design into a tangible reality on site, several critical socio-technical, regulatory, and logistical conditions must be addressed. Future implementation strategies should prioritize the following recommendations:

Community Engagement and Participatory Design: First and foremost, a comprehensive participatory design process must be established. Local specialists should engage directly with the displaced population of Homs to validate whether the proposed housing typology aligns with their current day-to-day needs. This field research is vital to determine what micro-adjustments or programmatic additions are required to optimize user satisfaction and ensure that the community develops a sense of ownership over the new development.

Logistical Feasibility and Local Expertise: Although the design was conceived with regional construction capabilities in mind, local contractors and structural engineers must be integrated into the early planning phases. Their grounded expertise is essential to accurately map out the current availability of construction materials, structural capacities, and local supply chain logistics. Their insights will help adapt the hybrid concrete and modular timber systems to the practical realities of the contemporary Syrian building sector.

Land Tenure Security and Formal Registration: A significant challenge lies in establishing secure property rights. To prevent the development from destabilizing into informal housing, a robust administrative mechanism must be developed for residents to formally register and claim legal ownership of their apartments. Given the current administrative chaotic reality regarding land titles and competing claims over destroyed properties, local municipalities and international NGOs must collaborate to streamline property registration, ensuring legal stability for returning families.

Site Forensic Analysis and Structural Assessment: Finally, a comprehensive physical assessment of the designated site is urgently required. Due to the limited and fragmented data regarding the exact degree of destruction on the chosen plot, a forensic site survey must be conducted. Assessing the state of sub-surface infrastructure, remaining foundations, and surrounding debris is a requirement for drafting an accurate, safe, and efficient construction timeline.

Reflection

Reflecting on this graduation process highlights both the profound complexities of post-conflict reconstruction and the inherent limitations of designing for a remote, highly sensitive context. Undertaking a project located in Homs, Syria, from an academic environment in Delft presented unique methodological, ethical, and creative challenges that significantly shaped my development as an architecture student.

The primary obstacle was the extreme **scarcity of reliable, empirical data**. Due to the complex geopolitical situation, traditional on-site fieldwork or gathering precise structural and demographic surveys was impossible. Consequently, the research relied heavily on secondary sources, forcing me to operate within a landscape of assumptions. Navigating this ambiguity was intellectually demanding; making critical design decisions without empirical verification induced a constant state of uncertainty. This process taught me the necessity of structured, educated assumptions, but it also underscored the ethical responsibility an architect bears when designing for a community whose reality cannot be fully verified from a distance.

This distance was not merely geographical, but also emotional. It was profoundly difficult to truly comprehend the **psychological reality** and lived experiences of families returning to a traumatized, post-conflict city. To bridge this empathic gap, I immersed myself in literature, case studies, and documentary media. While this deep dive was intellectually rewarding, it inadvertently led to a paralyzing surplus of information. Translating a vast, emotionally heavy mountain of theoretical knowledge into concrete architectural lines proved to be a significant challenge in the early stages.

To break this analytical paralysis, I implemented a **structured, iterative design sprint**, producing an entirely new architectural alternative each week for three consecutive weeks. This time-constrained method shifted the process from passive analysis to active synthesis with model-making. Rather than trying to solve every complex sociological parameter at once, these rapid iterations allowed me to test diverse spatial organizations, hybrid structural systems, and density models independently.

What really helped me get things moving again was being part of an **active graduation studio**. Weekly critique sessions with my tutor provided essential insights, which were really inspiring. Crucially, daily interactions and spontaneous sparring sessions with fellow studio peers offered an indispensable sounding board. These continuous dialogues provided a fresh, objective perspective on my work, challenging my preconceptions and helping me untangle complex spatial puzzles. This collaborative environment proved decisive at critical turning points when definitive design choices had to be made, forcing me to articulate and defend my architectural design.

In retrospect, this graduation project demonstrated that embracing ambiguity, utilizing rapid iterative modeling, and fostering a collaborative studio dialogue are critical tools for developing a sustainable, dignified housing alternative. I will take these insights with me in future projects.

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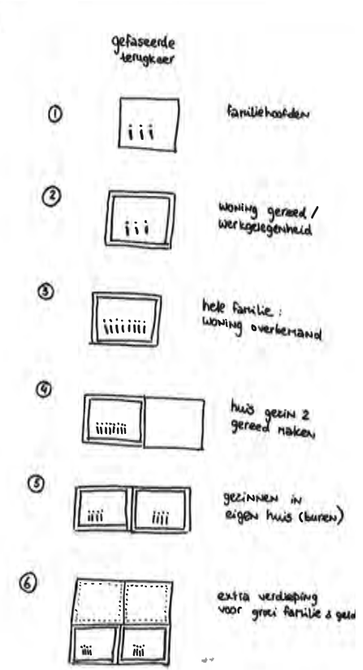
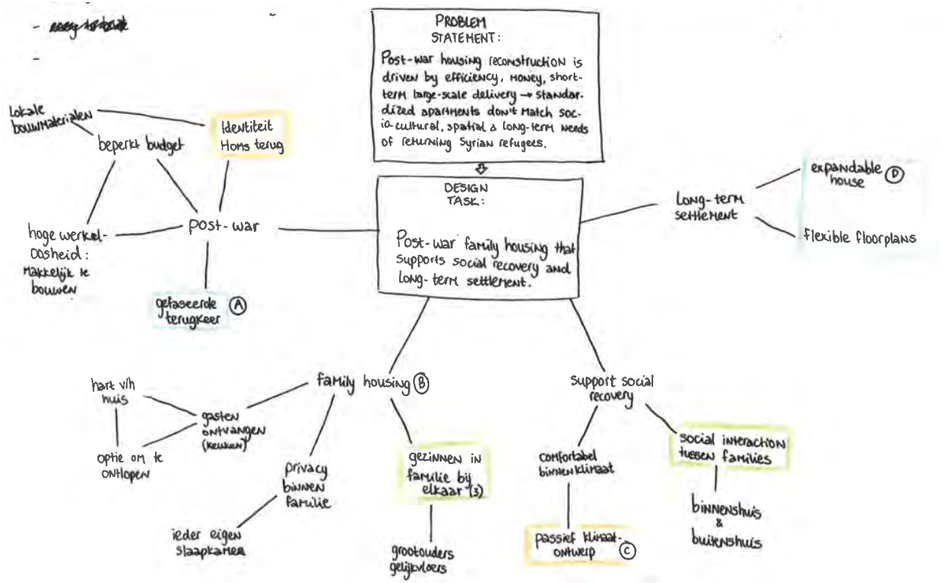
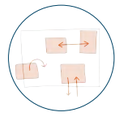
Appendix





Autonomous Decisionmaking
Syrian Culture
Flexible Floorplans

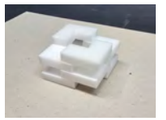


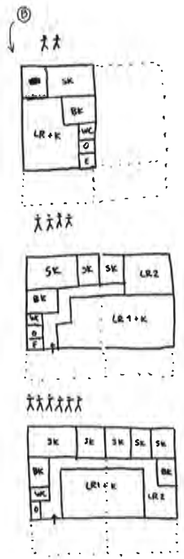
Segmentation of Populations
Modern Apartments
Diversity Housing Units

Prevent Second Construction
Experience Permanence
Future Expansion

Intra-Family Privacy
Social Interaction Households
Privacy vs Exposure

Identity of Homs
Unique Character
Identity

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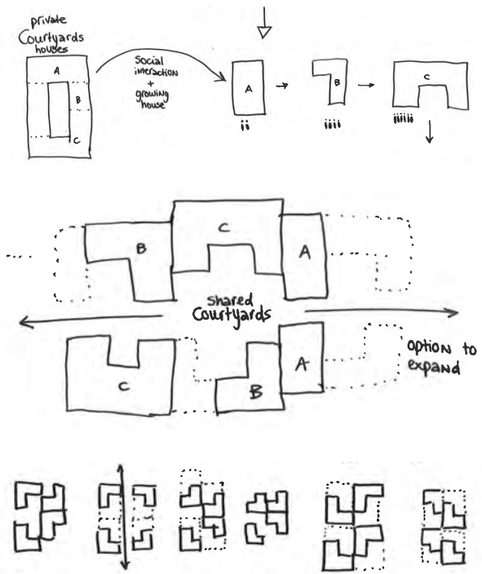
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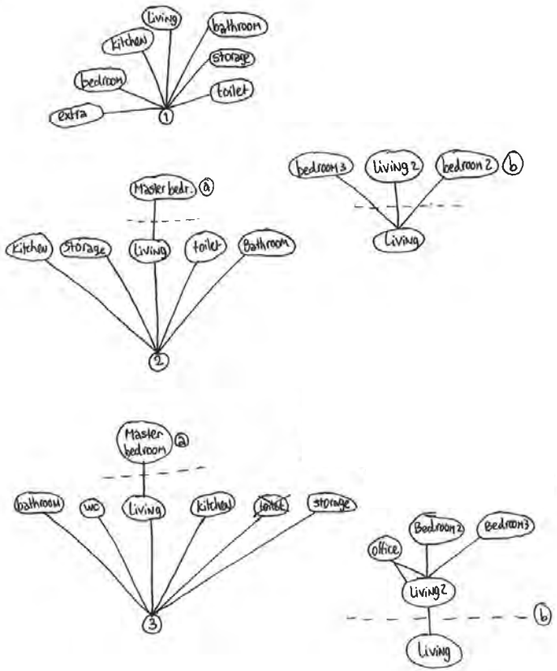
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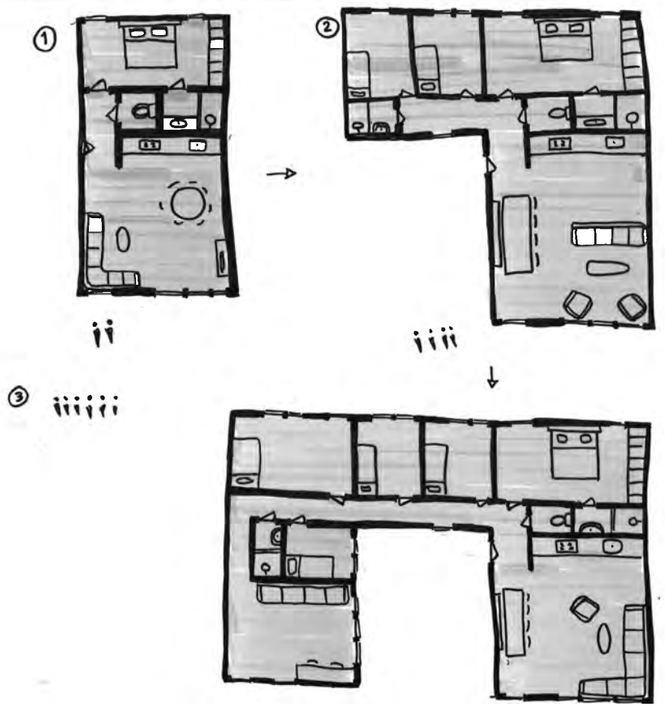
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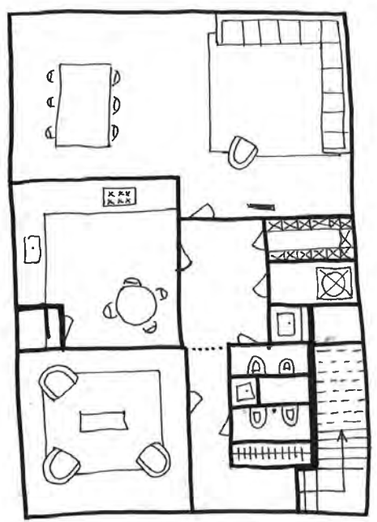

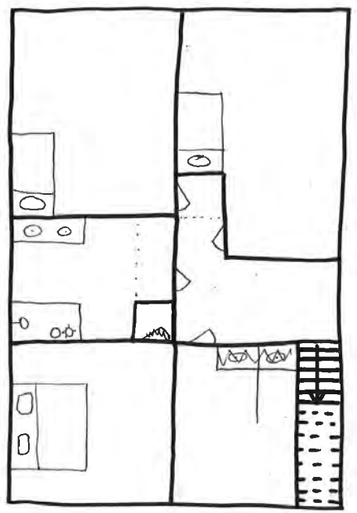

Section A. General considerations	yes	no
1. Is the graduation project conducted as part of an internship (at a company), or as part of a research project at TU Delft? If a student's graduation project is conducted at a company or as part of a research project at the university, questions of data ownership and intellectual property rights need to be addressed in a written graduation or internship agreement before the project begins. Students and their supervisor should consult the Intellectual Property Rights of Students webpage. Additional information can also be found in the Extended Personal Research Data Workflow.		✓
2. Does the project involve conducting (part of) the research outside the Netherlands? Students who intend to travel abroad (even to other EU countries) for study, exchange, research, internship, or graduation project purposes need to follow the Travel Safety Protocol. This includes attending a mandatory Travel Safety Training Session: see the Disclaimer.		✓
3. Will the research involve processing data from humans, such as running a survey, conducting interviews or workshops, collecting data through social media or internet forums, or re-using existing datasets about humans provided by a third party? (If 'yes', see follow-up questions 4 to 13 in Checklist B.) Students who work with data from human participants must complete the next section and apply for and receive ethical approval from the Human Research Ethics Committee (HREC) before conducting the research.		✓

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