

Next Life Living

Revitalizing post-war neighborhoods by subdividing existing row houses and introducing innovative architectural configurations effectively addresses the housing crisis in the Netherlands.

Summary:

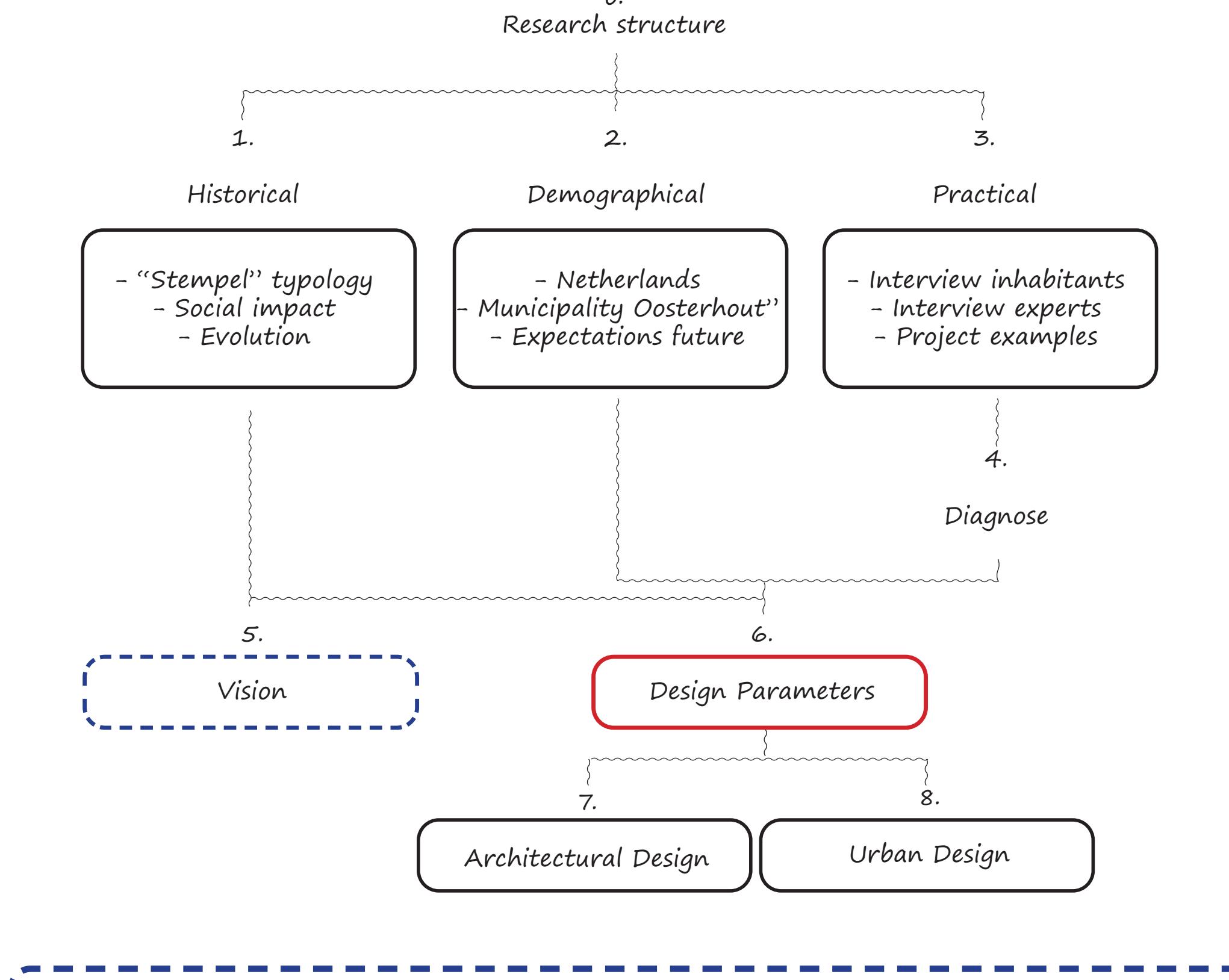
In the Netherlands, we are confronted not only with a housing crisis stemming from a **scarce** **city of available dwellings** but also with a **dearth of vitality** on the streets and a deficiency in social cohesion among inhabitants. The last problem is especially visible in Dutch after-war neighbourhoods.

The housing shortage in the Netherlands is primarily caused by people, especially **older adults and empty nesters**, choosing to stay in their homes for longer than necessary [1]. This tendency is characterized by the occupation of larger residences than required, leading to a substantial amount of utilized living space. Such behavior is driven by factors such as elevated costs of moving and a strong emotional attachment to the living environment.

Social predicaments often arise due to an insufficiency of **social interaction** within neighbourhoods. This is particularly evident in areas lacking facilities that promote community engagement among residents or fail to facilitate fortuitous encounters on the streets [2]. Unfortunately, the growing trend of individualism has led to people avoiding public spaces, which has resulted in less liveliness and social interaction in neighbourhoods.

Design : the design presented in the following pages is a fusion of architectural intervention and urban restructuring aimed at revitalizing a post-war "Stempel" neighborhood. Within this framework, seven distinct housing typologies have been meticulously crafted to cater to diverse groups within the community. By integrating architectural interventions and reconfiguring urban structures, the design aims to breathe new life into the neighborhood while addressing the housing requirements of its residents.

Setup research by design



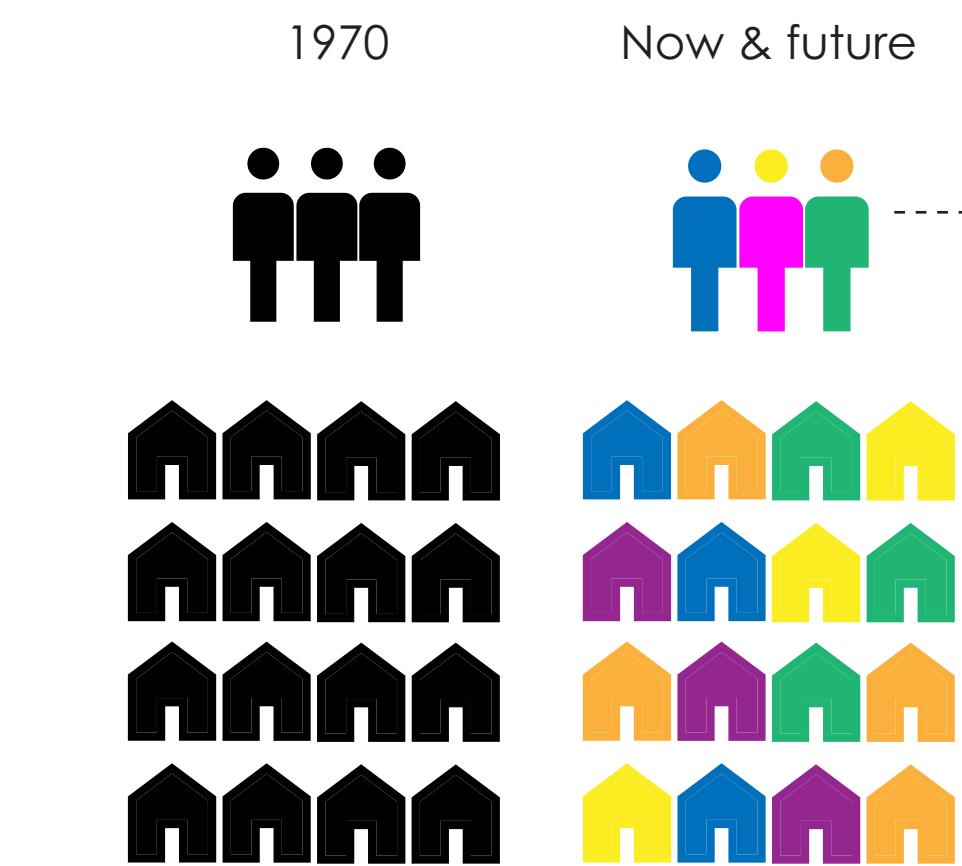
Vision

We find ourselves in a dynamic situation where the diversity of people in the Netherlands is steadily increasing, and this trend is expected to continue in the future. However, the current housing stock does not adequately cater to the demands of these diverse users.

By understanding the evolving needs of different user groups, we can design spaces that are inclusive, adaptable, and environmentally friendly. Through these considerations, we can revitalize the existing housing stock, enabling it to meet the diverse demands of our ever-changing society. Instead of resorting to demolition and new construction, we should create innovative living arrangements and integrate alternative functions. This approach promotes diversity and enhances sustainability, as it avoids unnecessary waste and environmental impact.

Stakeholders

The three most important stakeholders and their needs for this design are:



1. Residents

Desire a sense of **belonging and community** within their neighborhood. Additionally, there is a growing demand for **greater diversity in housing types and floor plans** to accommodate the increasing diversity of people, including varying lifestyles and religious backgrounds, emphasizing the necessity for more inclusive and diverse architectural designs.

2. Dutch housing corporations

Have a need to improve their housing stock to meet tenant expectations. They prioritize promoting liveliness and social cohesion within neighborhoods to enhance resident well-being and **encourage long-term tenancy**.

3. Dutch government

The Dutch (local) government is actively seeking comprehensive solutions to **tackle the housing shortage and environmental crises**. Their objectives include not only addressing the housing issue but also ensuring the development of efficient infrastructure, transportation systems, and public services that cater to the needs of the community.

Design guidelines

- Diversity in homes entails the provision of **a home for each group of users**. This includes a variety of volumes, facades, floor plans, and other architectural elements that cater to the unique preferences of individuals within each group.
- Enable aging in place by creating an **adaptable architectural design** that can be customized to accommodate the varying needs and budgets of different elderly individuals.
- Demolishing is an act of crime. The demolition of homes in post-war neighborhoods should be minimized to the greatest extent possible in order to align with the nitrogen and carbon footprint **objectives set by the Dutch government**.
- Densify the neighbourhood **from 1,600 to 4,000 inhabitants to introduce liveliness and vibrancy**. It is beneficial to densify these neighborhoods, particularly because they are situated near city centers,

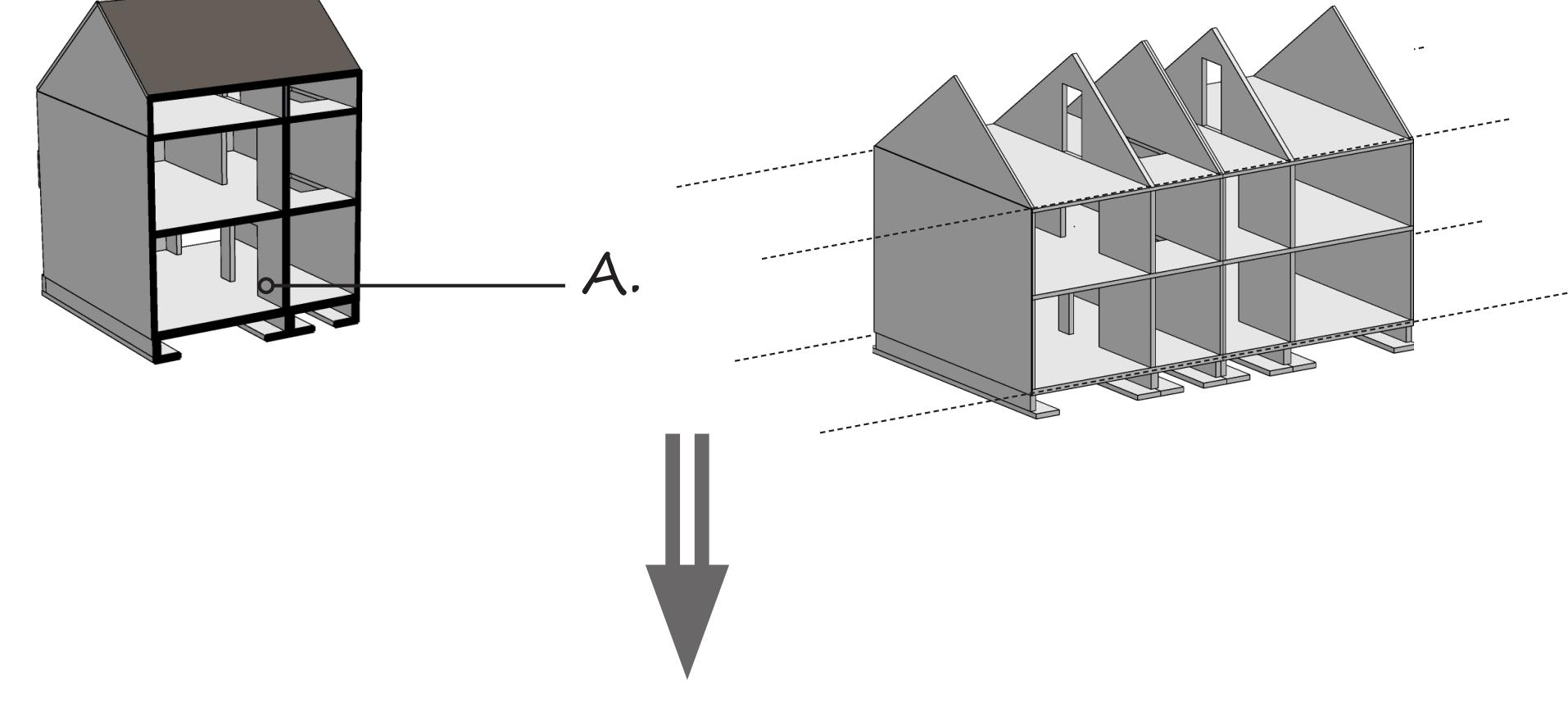
The Basics



To address the diverse housing requirements of various user groups, three new housing typologies have been devised, utilizing the existing concrete structure of the housing stock. By incorporating additional volumes and implementing vertical and horizontal divisions, a total of nine distinct housing types ranging from 35 (xs) to 140 (XL) square meters can be created, see the figure below.

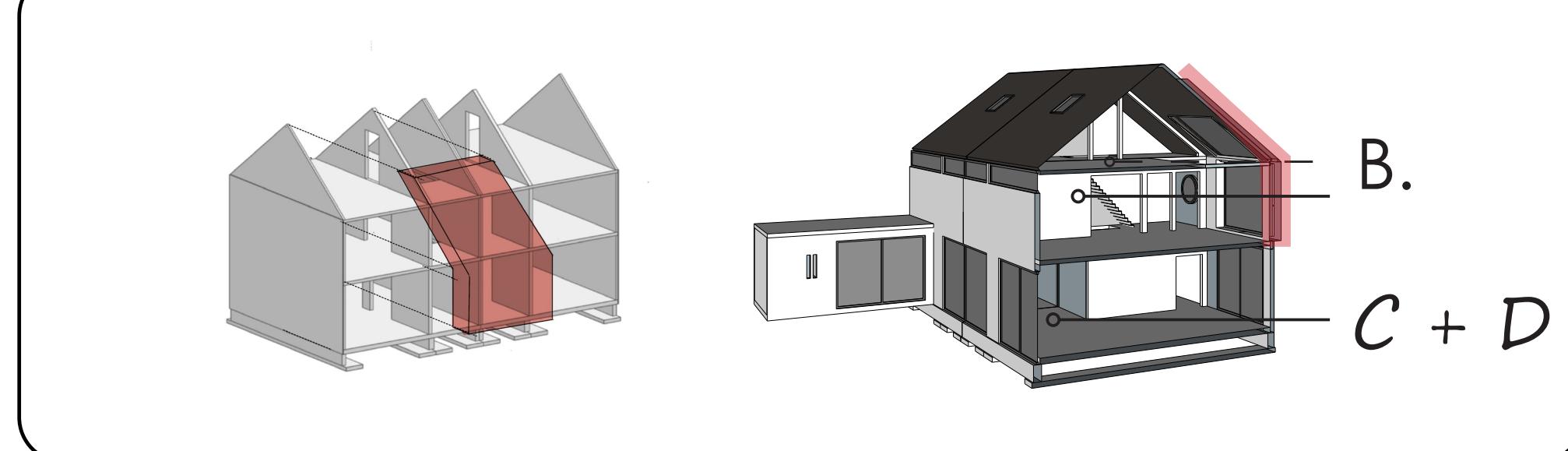
Situation NOW

Base typology 0.

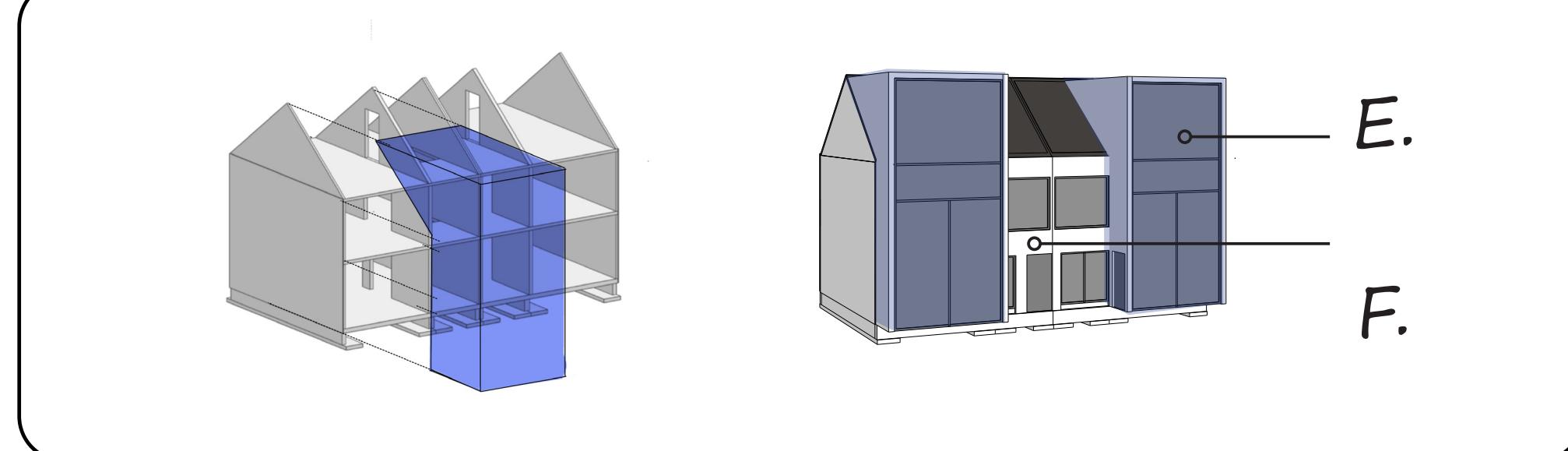


Possible new typologies for the FUTURE

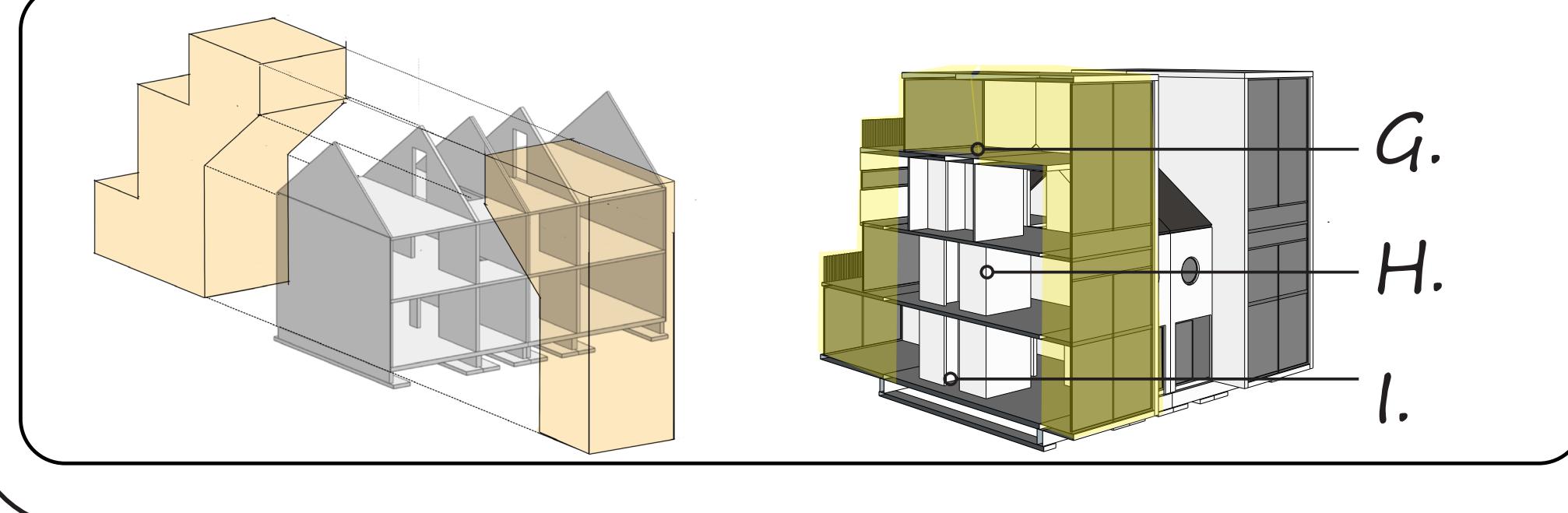
Typology 1 from 2 to 4 homes



Typology 2 from 2 to 3 homes



Typology 3 from 1 to 3 homes



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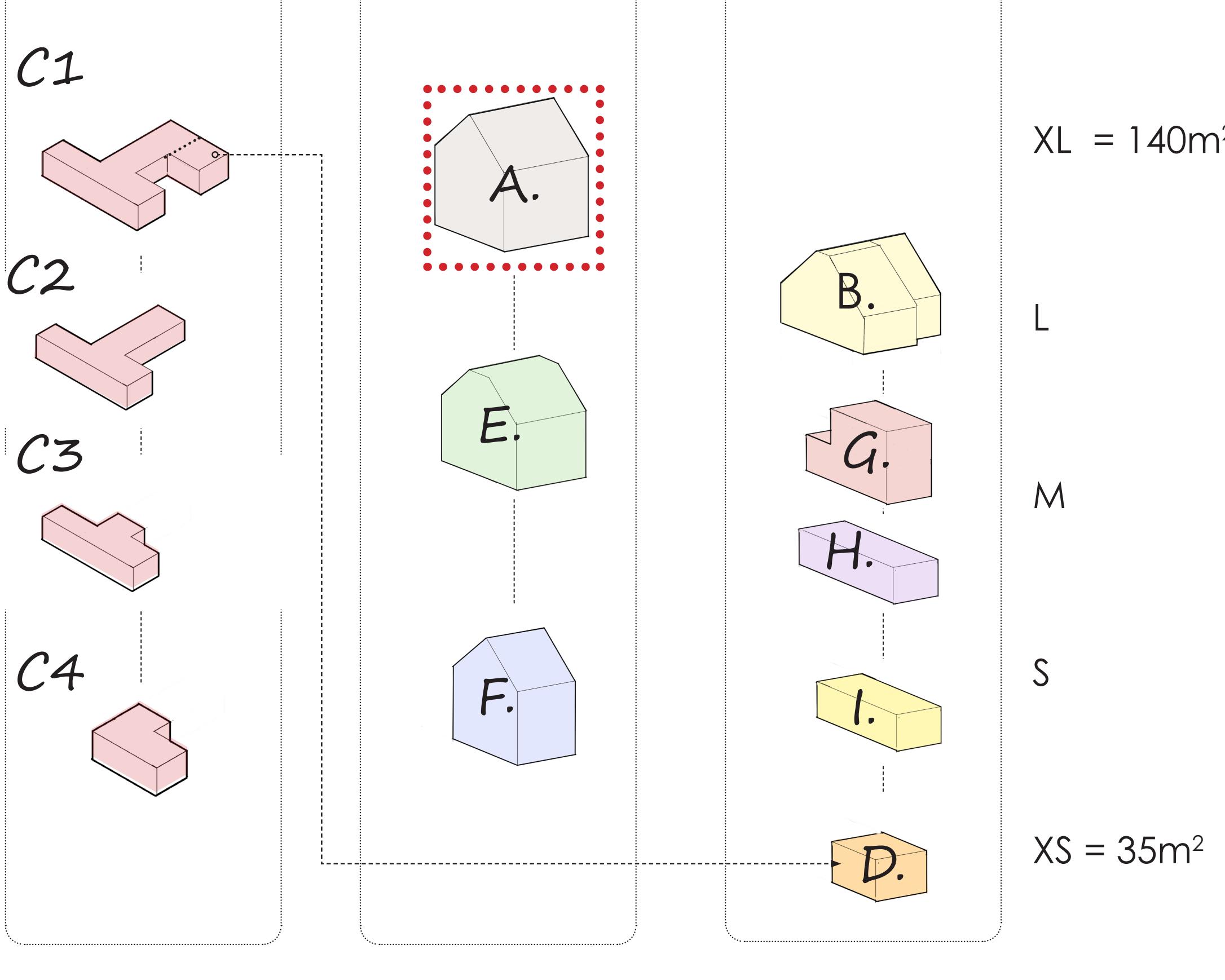
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Elderly

Families

Starters and more



..... Basis (Typology 0)

The pilot in the "Kastelenbuurt", shows that it is possible to solve the housing crisis by transforming this after war "Stempel" neighbourhood.

0. Existing family home (XL)

The already mentioned issues of the dearth of vitality on the streets and deficiency in social cohesion are frequently observed in Dutch post-war neighbourhoods, particularly in the "Stempel" (Stamp) neighbourhoods constructed during the 1960s and 1970s. In the picture below you can see how stamps were setup during this period. To demonstrate that architectural changes can address the problems, a pilot project is being carried out in the "Kastelenbuurt" located in the municipality of Oosterhout (Noord Brabant). This neighbourhood holds significance for the researcher as he resided there during the 1970s and 1980s.

Many of these post-war neighborhoods are built using concrete casting construction methods, with houses arranged in rows of 4 to 10. This construction approach ensures durability and robustness. The structural strength primarily relies on the floors, making them a crucial element that must be preserved when considering any changes to the buildings.

Examples Dutch "Stempel" neighbourhoods

Existing block size [4 - 10 buildings] - Existing homes build via casting construction

- Minimize shadows in gardens or courtyards

To minimize the impact of added volumes, it is advisable to restrict such interventions to the north side of building blocks. By conducting a sun analysis, these buildings can be strategically positioned to prevent shadows from affecting the sunlight in gardens and courtyards. This approach ensures optimal lighting conditions and preserves the quality of outdoor spaces.

Main rod

Design 3: The Starter

5. Ground floor, two mirrored apartments (M)

6. First floor, two mirrored apartments (S)

7. Second & third floor, two mirrored apartments (M)

FROM 2 existing family homes to 6 small and medium apartments

This typology focuses on adding volume to accommodate more apartments by utilizing the framework of two existing homes. The design emphasizes internal flexibility, primarily through adjustable floor plans. A central feature of the design is a room divider that houses wet areas such as the bathroom, toilet, and kitchen. This allows residents to choose their preferred living arrangement. The ground-floor apartment also offers the potential for alternative uses, such as commercial purposes or community facilities, which can be determined by the neighborhood's residents.

- Unexpected meeting

To encourage unexpected meetings, the entrances of all the connected buildings are shared. Adding street furniture at these entrances increases the chances of people meeting each other. This design approach aims to create a friendly and lively atmosphere where people can easily interact and connect in the neighborhood.

- Robust collective in-between spaces stimulates collectiveness

Robust collective housing forms lie in a well-positioned intermediary space: a courtyard, a green area that provides a breath of fresh air in the city and is accessible from the public realm. They should bring clarity to the distinctions between private, public, and collective spaces [1].

An example of this is the well-known street parties, where the street is temporarily closed off with fences for a day or weekend, and neighbors open their front doors, creating a pop-up collective. This idea, which is optional but possible to implement at any time, is achieved by adding additional rooms at the back of the ground floor houses. On street level, the streets are slightly densified at the front and back, and in this way creating a sense of a courtyard.

- Make corners attractive

Corner dwellings in the 1970s often lacked intricate detailing due to cost concerns [2]. Parking cars in front posed a challenge. In order to enhance their appeal, new forms have been introduced, serving as residential and vehicle spaces, and neighborhood greenery, houses, gyms, and much more. The specific functions should depend on what the neighborhood desires and the inhabitants should be consulted regarding future functions.

Central strip for unexpected meeting

Design 1 : The Integrator

1. Life cycle resistant patio row house on ground floor (S,M,L,XL)

2. Two mirrored apartments on first and second floor (S)

FROM 2 existing family homes to 2 apartments and 1 lifecycle resistant, with possibility to split

As mentioned in the introduction, the housing shortage issues in the Netherlands are primarily caused by elderly individuals and empty nesters who remain in their family homes for longer than necessary. To tackle this problem, a row patio typology is proposed, which involves combining the ground floors of two row houses to create a spacious patio area. This approach allows for a substantial ground floor area of up to 110 square meters, providing a lifecycle resistant solution that can adapt to occupants' changing needs over time. Lifecycle resistant houses prioritize flexibility, accessibility, durability, and incorporate smart home technology to support individuals in aging in place and accommodating evolving lifestyles.

Note: To meet the future housing needs of Oosterhout's growing elderly and empty nester population, the pilot project highlights the importance of developing resilient life cycle resistant apartments also on the outskirts of the district.

Design 2 : The Family Connector

3. Two mirrored family houses (M)

4. One family house in the middle (S)

FROM 2 existing family homes to 1 small and 2 medium family homes

The presence of two expansive underground parking lots offers multiple benefits to the urban landscape. Firstly, it ensures that vehicles remain concealed from view, thereby enhancing the visual appeal of the streetscape. Moreover, this arrangement encourages increased pedestrian activity, resulting in a vibrant and lively environment.

By integrating these streets with strategically positioned pocket parks, opportunities for neighborly encounters are further amplified. These designated pathways, depicted by red dotted lines, lead pedestrians to the various cross-shaped pocket parks, serving as welcoming spaces for social interactions and community gatherings.

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- More eyes on the street for safety & remove cars for liveness

A secure neighborhood is often the most significant aspect, which is closely linked to social cohesion. In this architectural design, safety is guaranteed by increasing the activity and openness of the front portions of buildings on the first and second floors. This enhances visibility and fosters a sense of security within the community. To facilitate this, cars should be removed from the streets within the designated building blocks (located in the side streets branching off from the main road in the neighborhood).

Parking centrally underground give extra liveness in the streets

Section A-A

Central strip for unexpected meeting

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One of the design objectives was to introduce diversity in housing options. By incorporating these two new types of family homes alongside the existing ones, a total of three types of family homes will be available. These include a spacious one measuring 140 m², a medium-sized one ranging from 80 to 100 m², and a smaller one 70 m². Additionally, the interior design was structured to provide inhabitants with choices, such as the option to reside either in the front or in the back.

Urban design

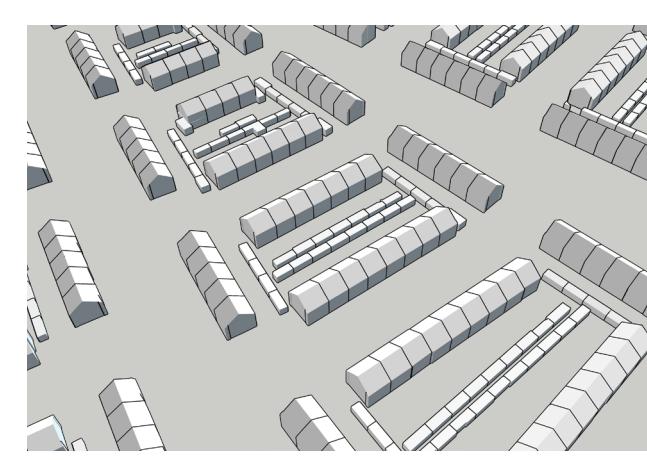
1970

Now

2055

Urbanism is the translation of social structures that are enclosed in different types of buildings from cheap to expensive as well as in rent as in buy. The "Stempel" neighbourhoods were built in a social context with low-income differences, and this is well translated in the buildings.

Total 3.200 inhabitants in 800 homes (300 owned, 500 rental)



Total 1.600 inhabitants in 800 homes of which 400 rentals (scope projec)

Increasing diversity in social structures entails embracing a wider range of living arrangements. (Social) rental homes are **not changed in the last 50 years** and social structure of inhabitants is unilateral. By transforming these, there is potential to foster diverse social structures and infuse vitality into its streets.

Total 4.000 inhabitants (**2.400 new**) with 1.200 extra homes:

- **400 within the existing structure** with 7 new housing types provide diversity in inhabitants
- 800 in the border of the neighbourhood and
- new functions for extra liveliness / cohesion

Netherlands: 15-25% of the housing stock consists of post-war "Stempelwijken". With a total of 7.9 million homes, an average of **20% corresponds to 1.58 million homes**. This will meet the Dutch goal of 1 million homes within 20 years.

- Location other functions

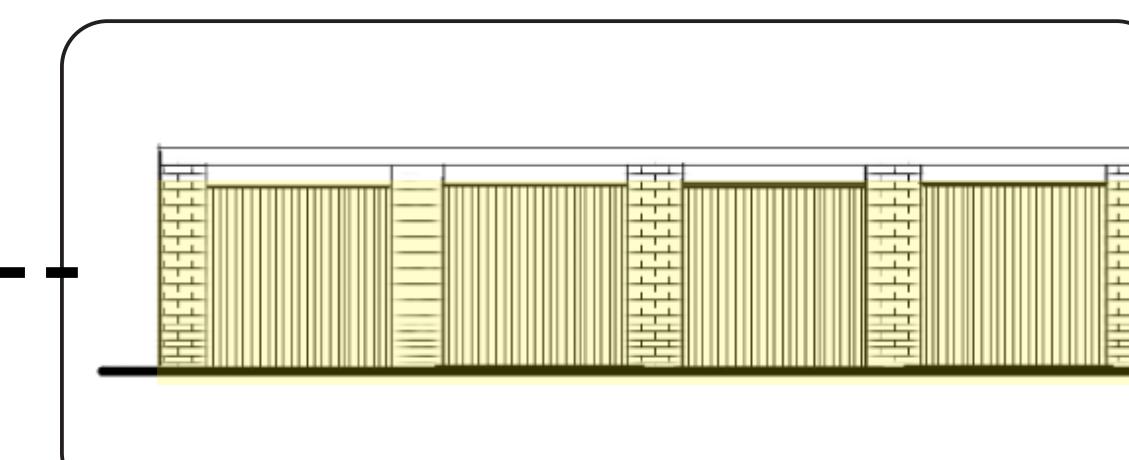
1. Part of ground floor apartment (variant 3)



2. Part of life cycle resistant dwelling (variant 1)



3. Existing garages



4. New volumes

- Not in scope
- Scope transformation
- Extra scope boarders
- Extra water
- Other functions
- Carpenters
(Car)mechanics
Sculptors
Construction companies
Ateliers
Storage
Second-hand stores / repair shops
Intercultural organization
Funfair-operators
"Broedplaats"
Clothes store
Workshops
Yoga studio
Dog daycare
Band-practice room
Supermarket
Healthcare

+ much more driven by inhabitants

The "Kastelenbuurt" in 2055

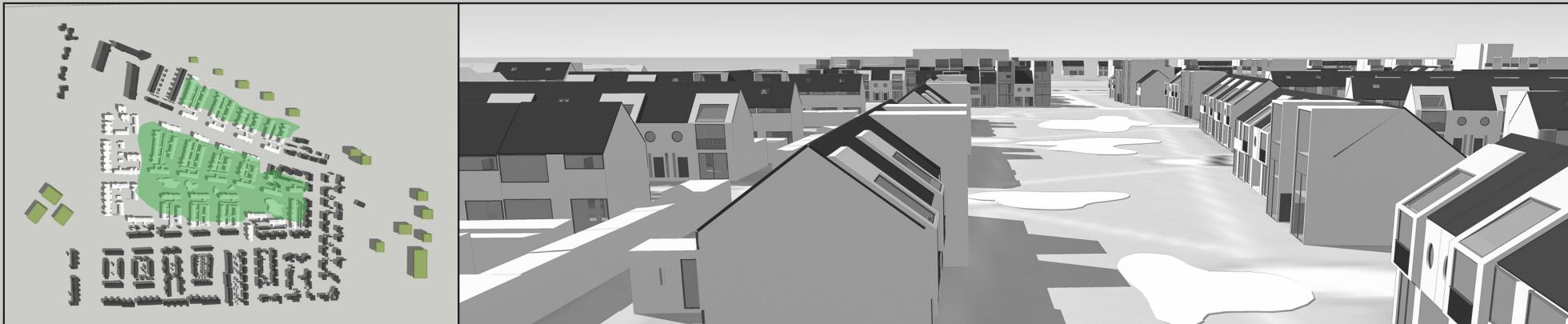
New walk/cycle path

Underground main road

Underground parking



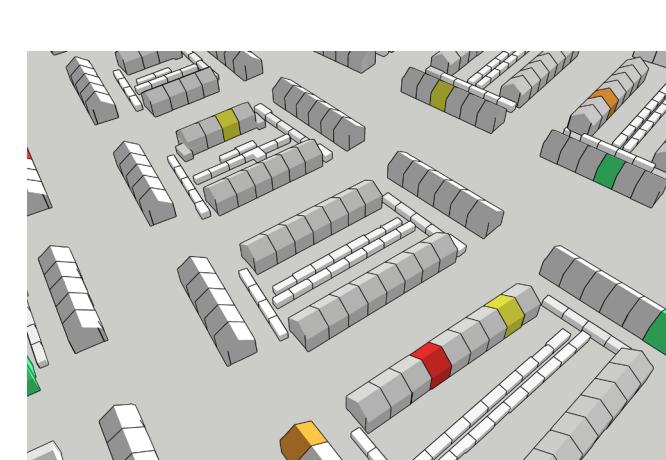
Density low - Street courtyard [Densification 50%]



Area introduction board

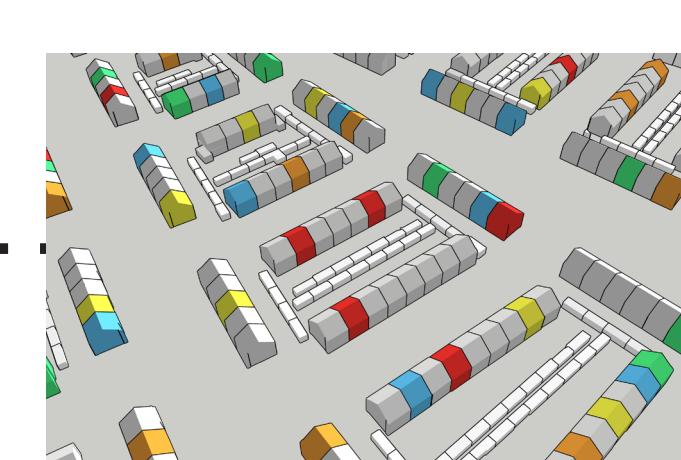


- Implementation strategy



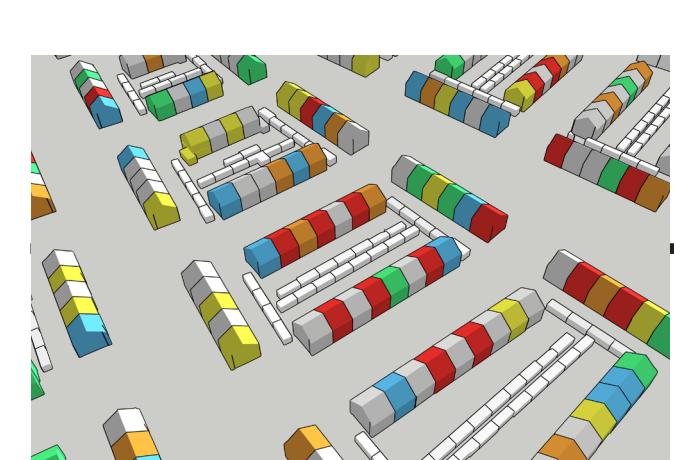
2025

The completion of the first pilot indicates that an example from each type has been implemented. As a result, the local community can witness the transformation.



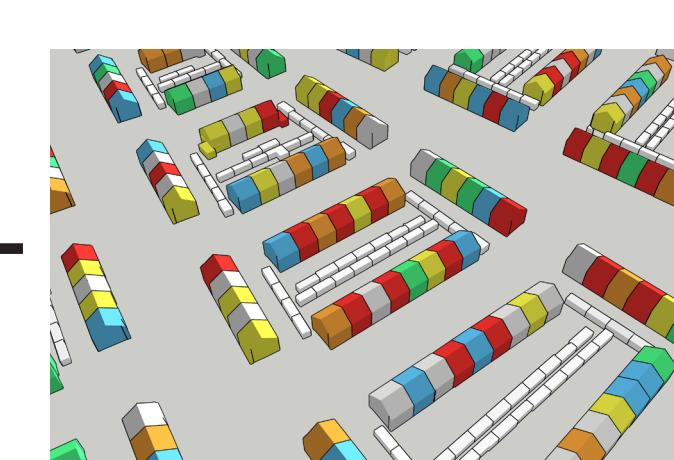
2025

Considering the pattern of people moving out of the neighborhood every two years, it becomes feasible to accomplish 40% of the overall objective within the initial ten years. This progress can be achieved by implementing various housing types in response to the demand.



2035

The anticipation is that within a span of 20 years, approximately 80% of the densification objective can be attained. The driving force behind these changes continues to be the demand influenced by the altered social structure.



2055

The realization of the densification goals can be achieved within a timeframe of 30 years. It is crucial to establish a diverse blend of housing options and incorporate new functionalities. This dynamic mix should enable dwellings to continually adapt and serve fresh purposes as needed.

- Organization

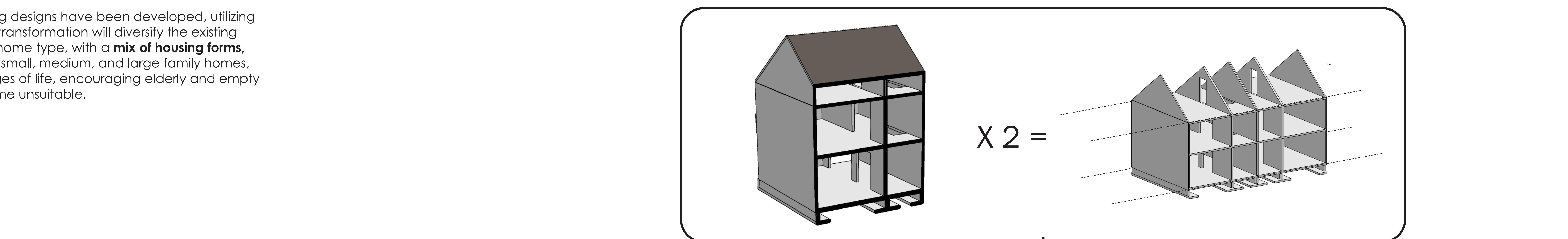
A crucial factor in making this transformed way of living successfully is an effective organization. Currently, we refer to these organizations as "Vereniging voor Eigenaren" in Dutch, which translates to "Association for Owners." Under this new arrangement, both property owners and renters coexist within the same street, building block, or neighborhood. It is important for not only property owners but also renters to be part of the owner organization to foster a sense of shared ownership among all residents. Therefore, we should consider establishing a user organization, or "Vereniging voor Gebruiker" in Dutch.

This organization would also encompass the income generated from spaces that serve other functions, thereby influencing the contribution of the user organization. A well-organized neighborhood, which implies effective organization, results in increased income and lower monthly expenses for users. Such incentives encourage property owners to actively participate in this organization.

Architectural design

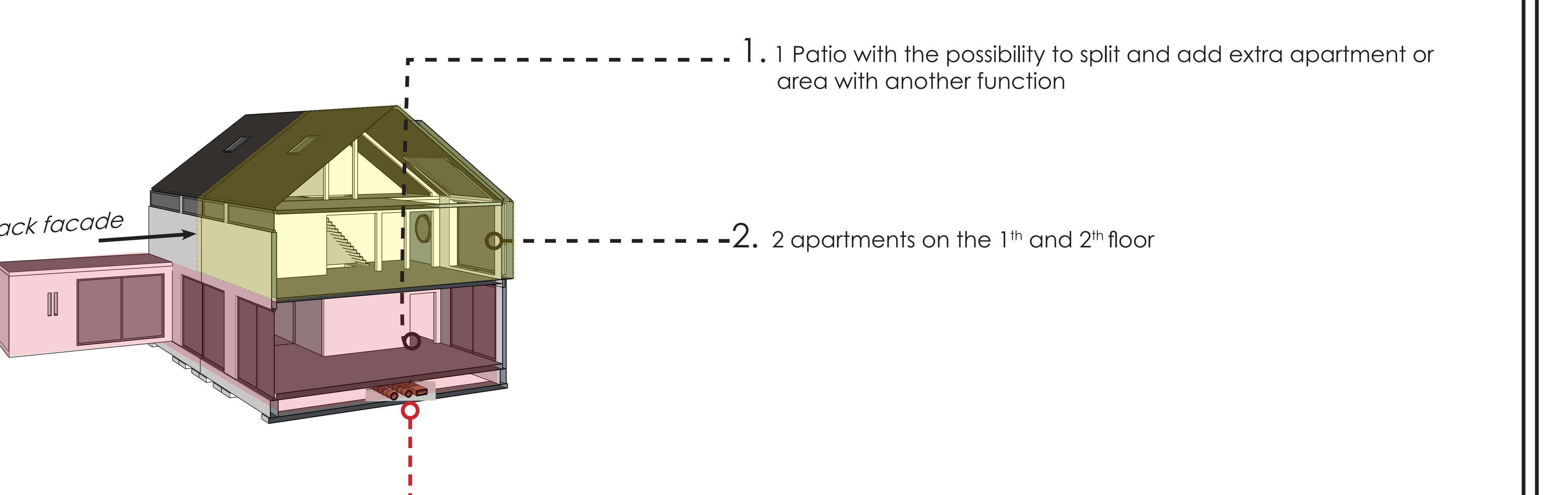
"Diverse Homes for every life phase: unleashing 7 unique housing types within existing housing stock can solve the housing shortage on the Dutch market"

To achieve **architectural diversity**, three new housing designs have been developed, utilizing concrete structures of existing mirrored houses. This transformation will diversify the existing neighborhood, currently dominated by one family home type, with a **mix of housing forms**, resulting in a more varied community. It will include small, medium, and large family homes, apartments, and a patio home for transitioning stages of life, encouraging elderly and empty nesters to relocate when their current homes become unsuitable.

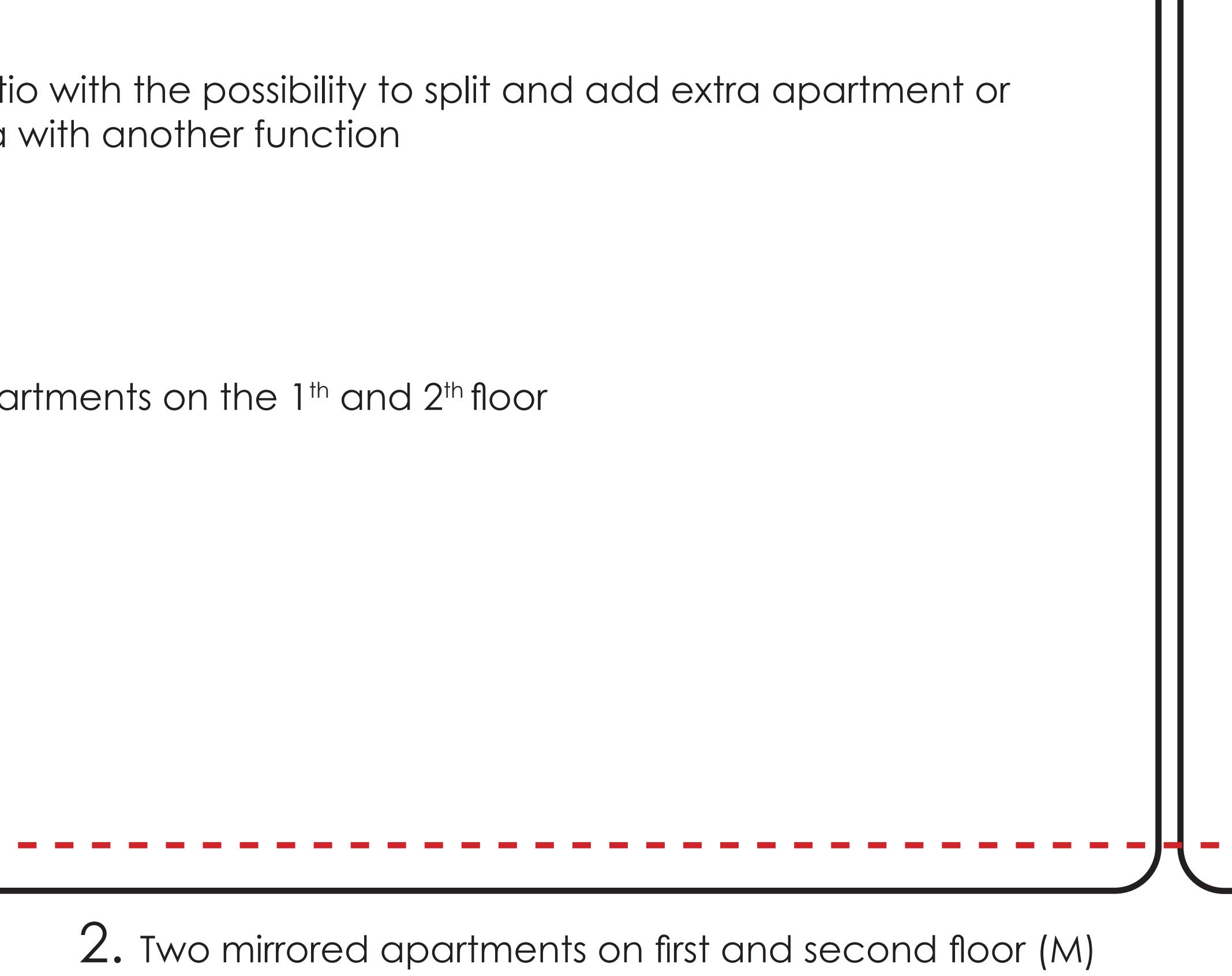


Design 1 : The integrator, for elderly & empty nesters, starters and/or other functions

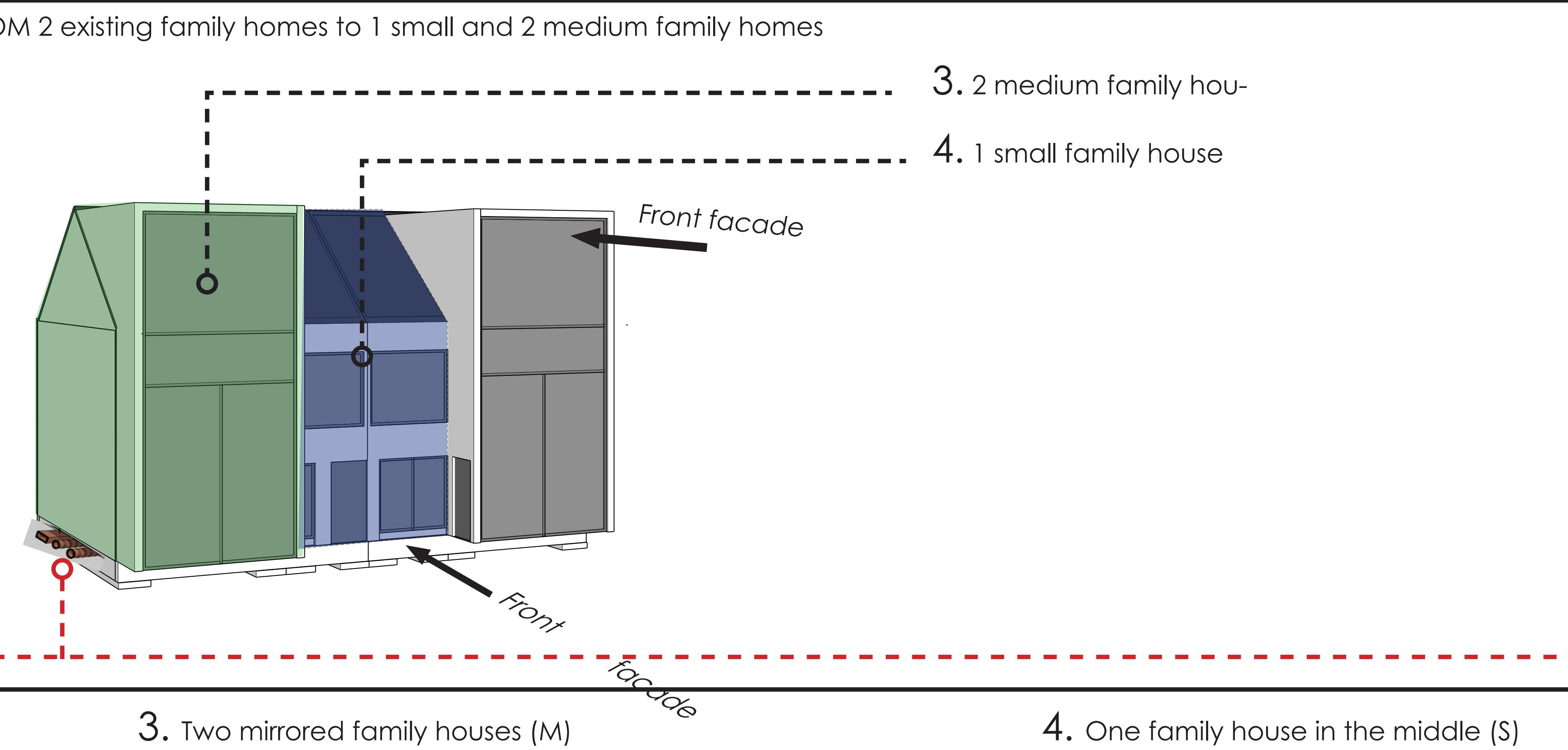
FROM 2 existing family homes to 2 apartments and 1 lifecycle resistant, with possibility to split



1. Life cycle resistant patio row house on ground floor (S,M,L,XL)

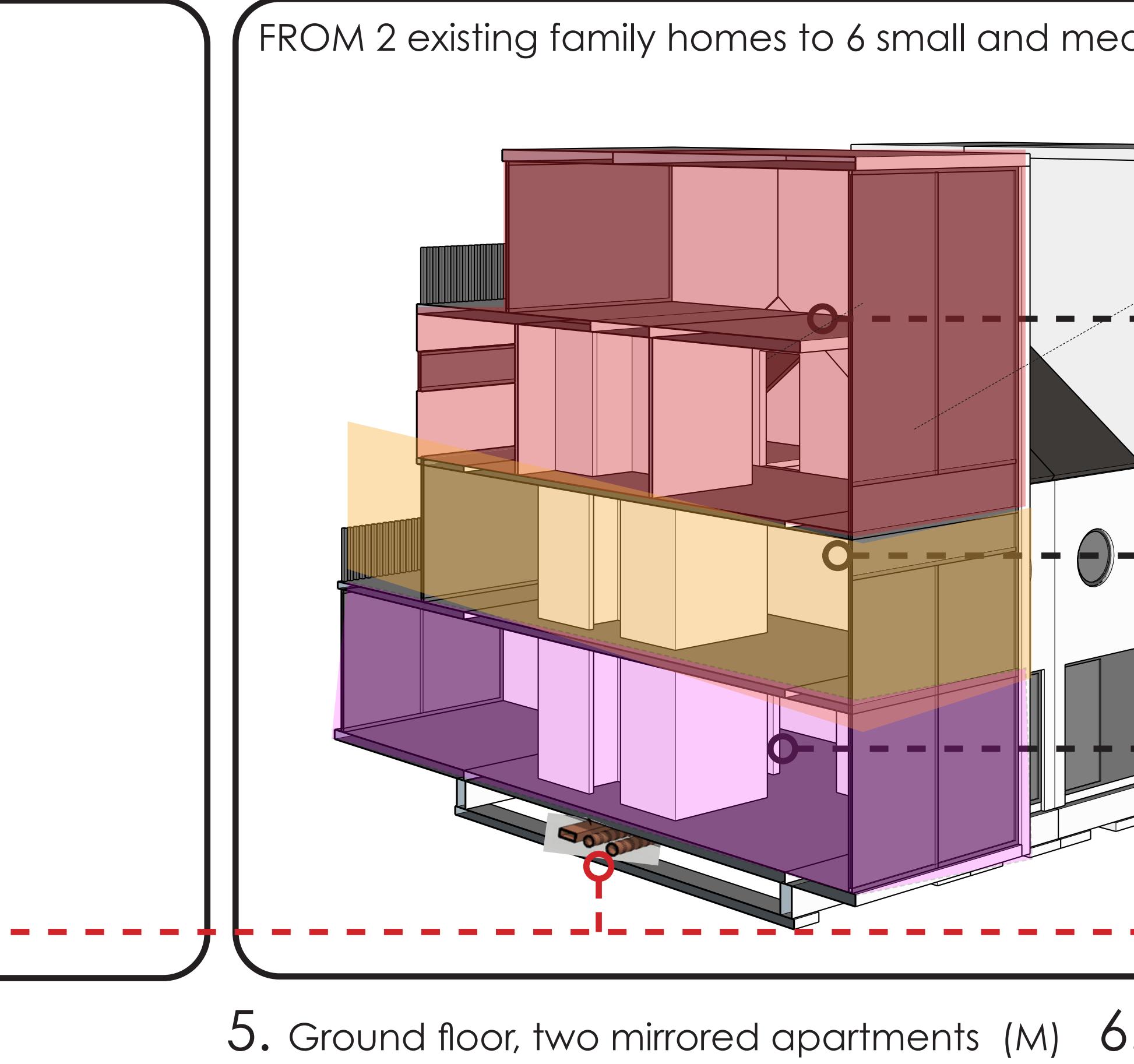


2. Two mirrored apartments on first and second floor (M)



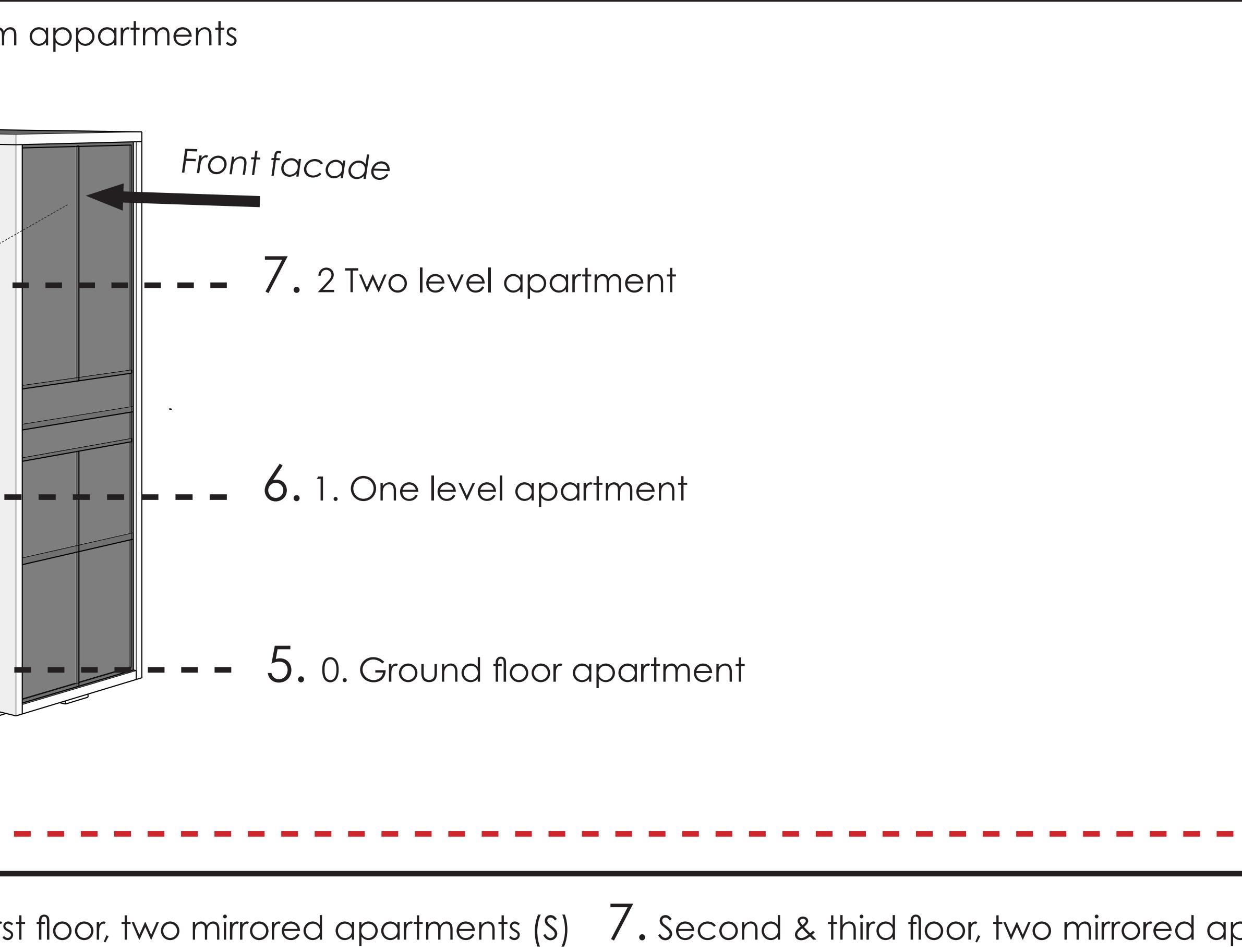
3. Two mirrored family houses (M)

Design 2 : The family connector, for families with a different budget



4. One family house in the middle (S)

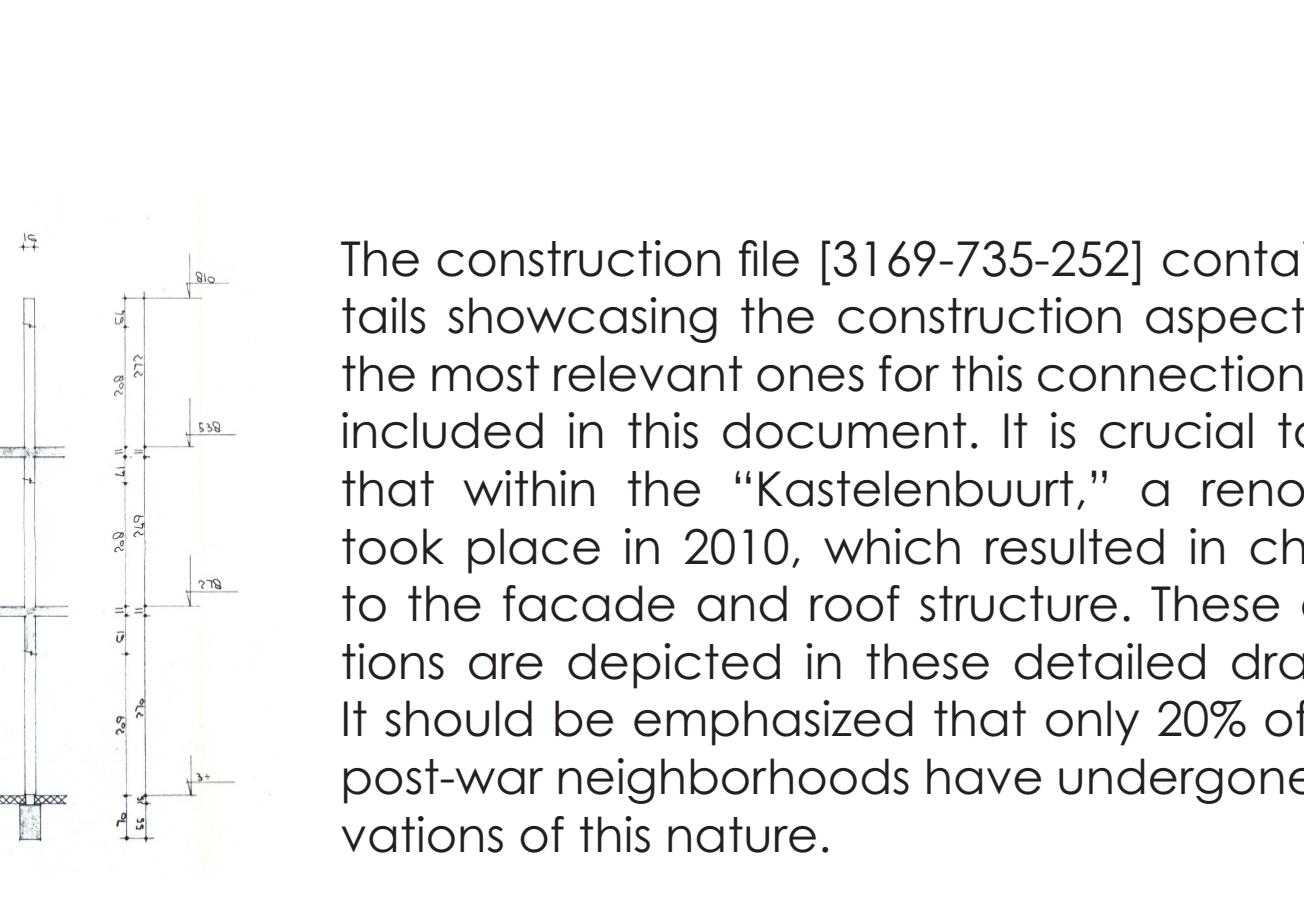
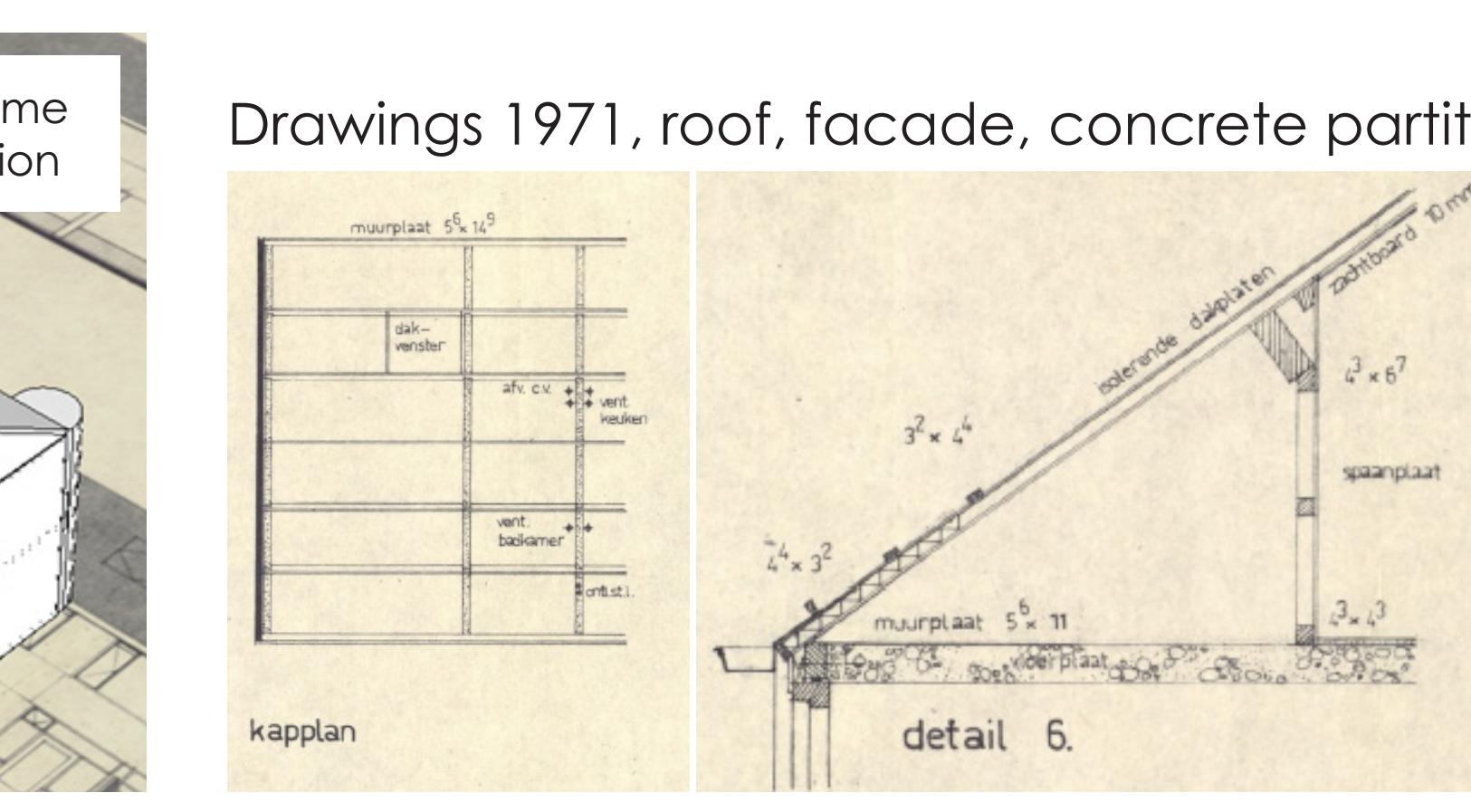
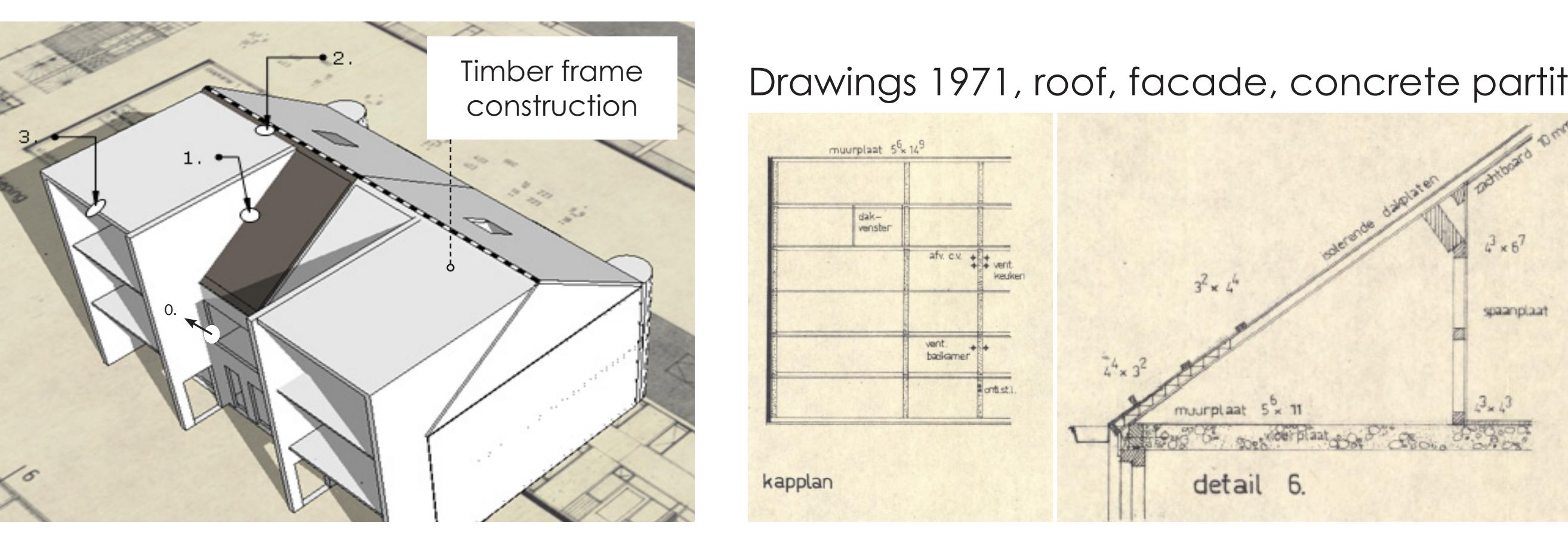
Design 3 : The starter, for starters with different budgets



Literature used in these panels

- [1] Boelhouwer, P. J., Drift, R. van der, & Boumeester, H. (2022). Voor een gezonde woningmarkt zijn structurele hervormingen en beleidsinterventies op de korte termijn een sine qua non.
- [2] Muis, J., Smets, P., Butendorp, C., Groot, S., Zilma, R., Jonkman, S. (2022). Hoe sociale cohesie de buurt bij elkaar houdt.
- [3] Callahan Jr, J. "Aging in place." New York (2019).

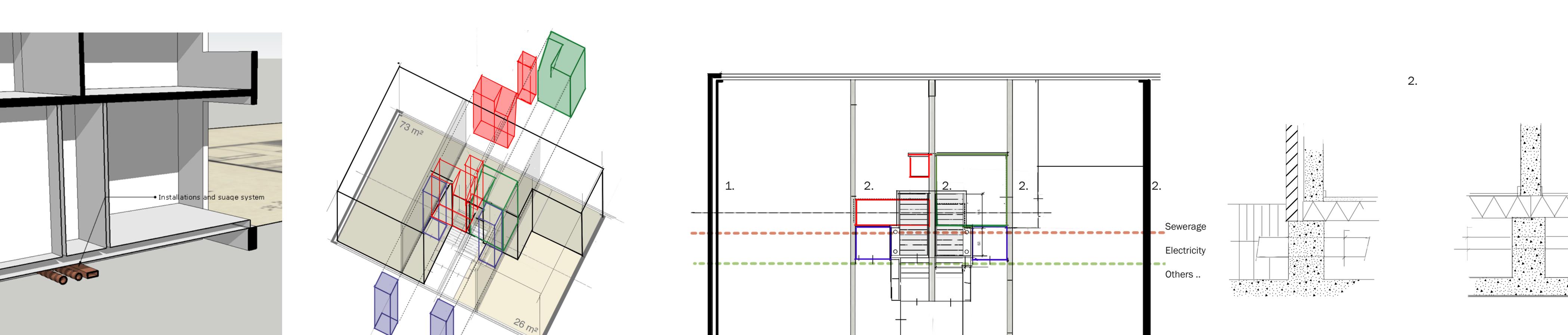
1. Adding or changing volumes



The construction file [3169-735-252] contains details showcasing the construction aspects, with the most relevant ones for this connection being included in this document. It is crucial to note that within this "Kastelenburt," a renovation took place in 2010 which led to changes to the facade and roof structure. These alterations are depicted in these detailed drawings. It should be emphasized that only 20% of these post-war neighborhoods have undergone renovations of this nature.

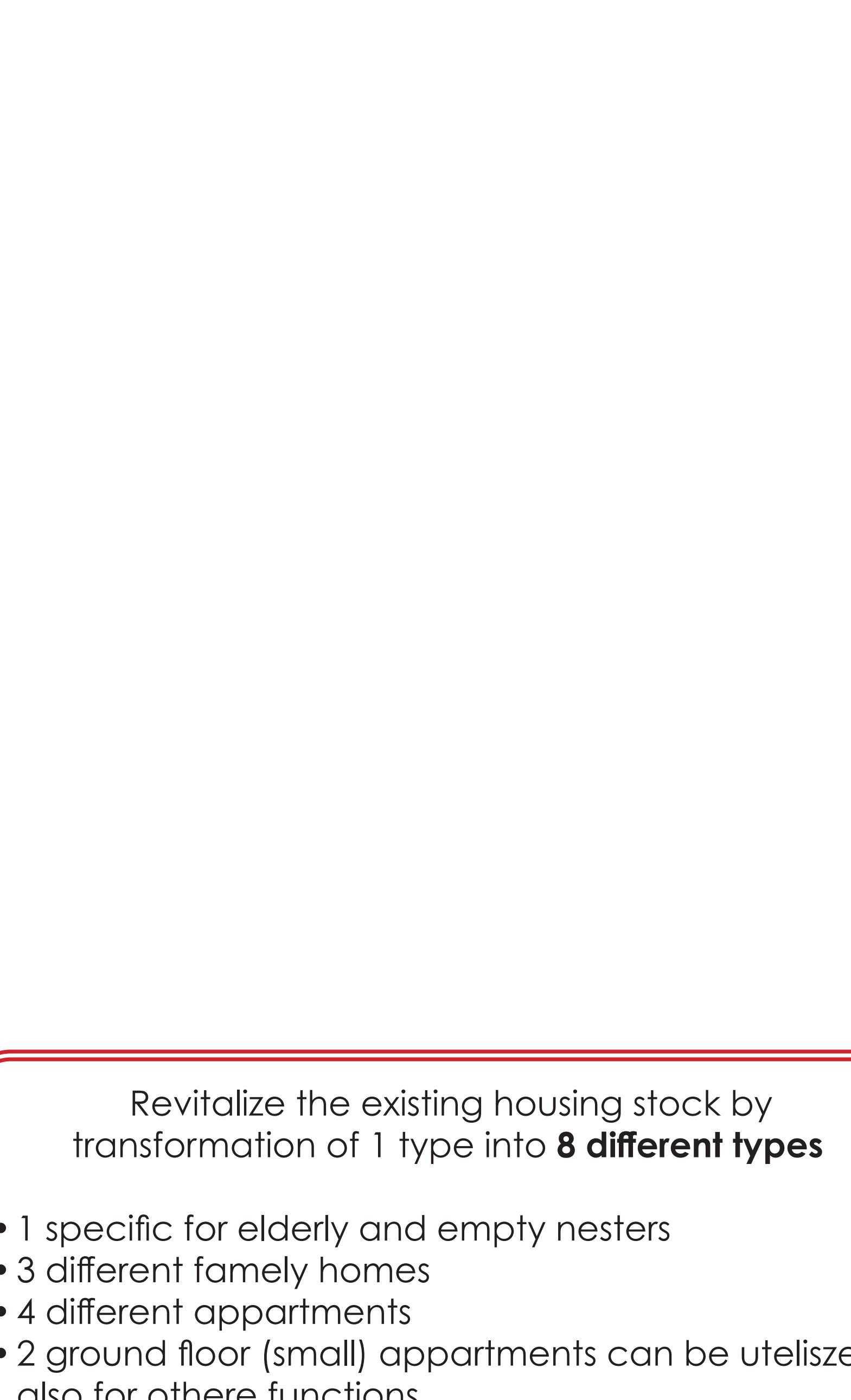
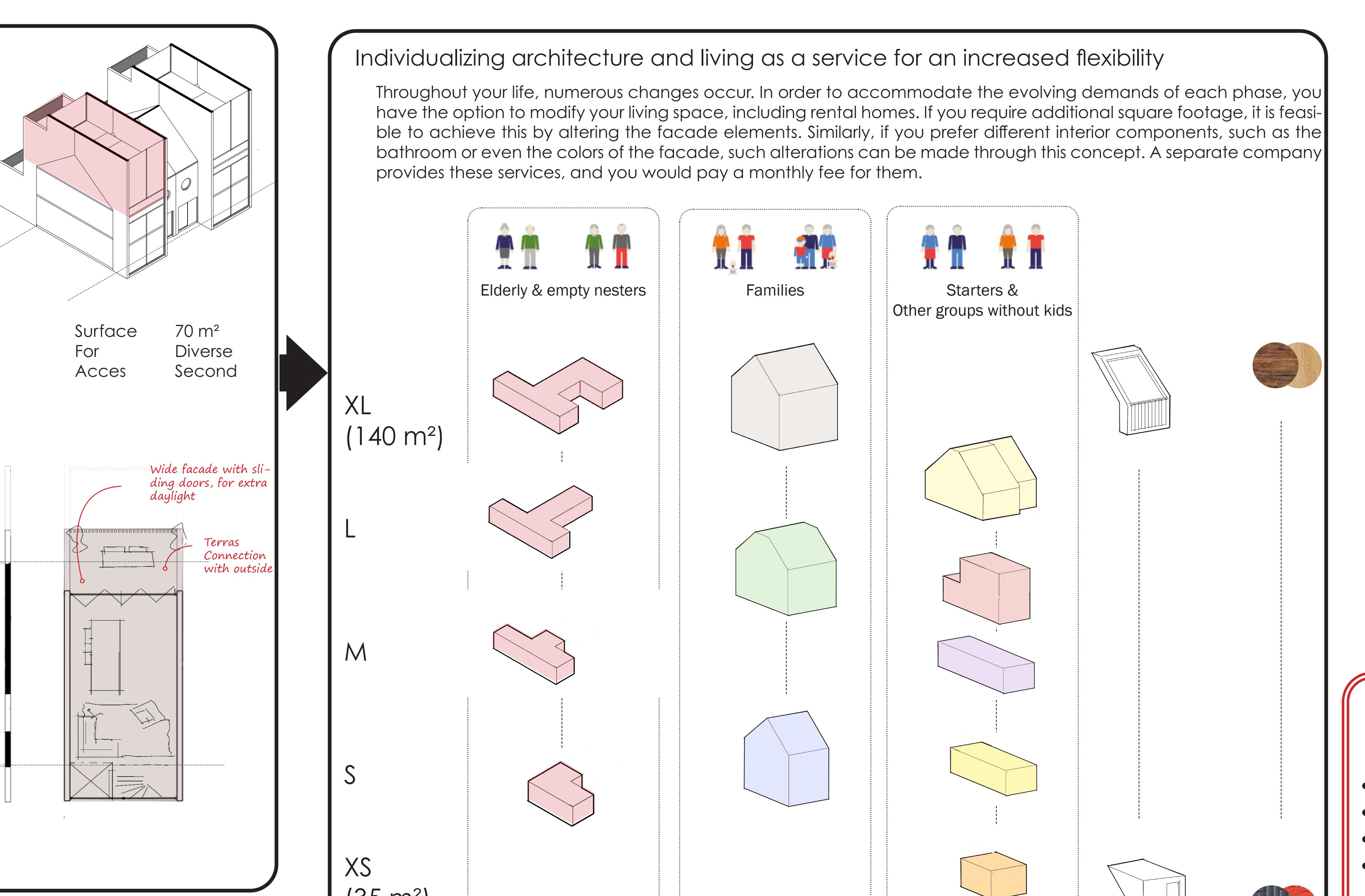
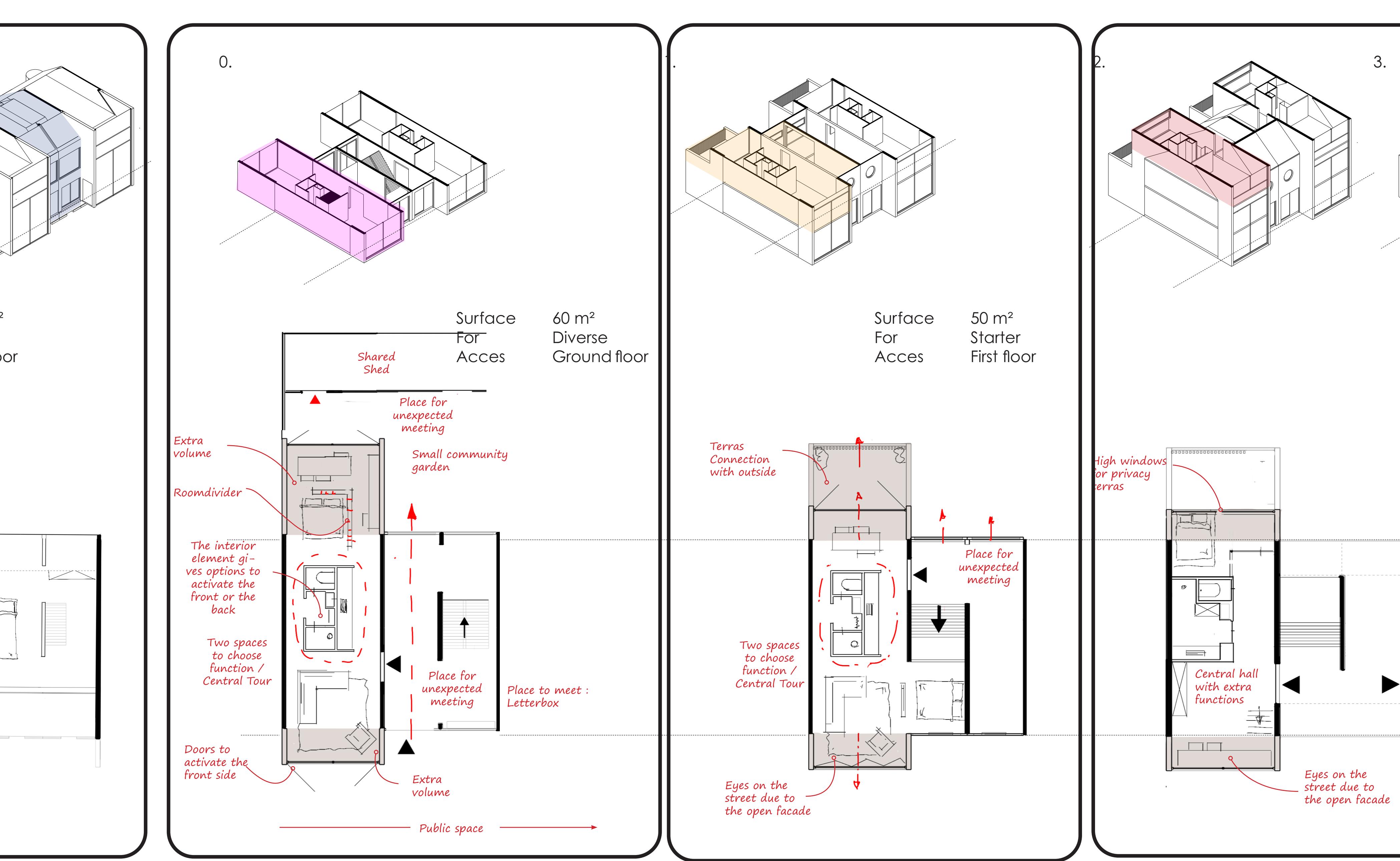
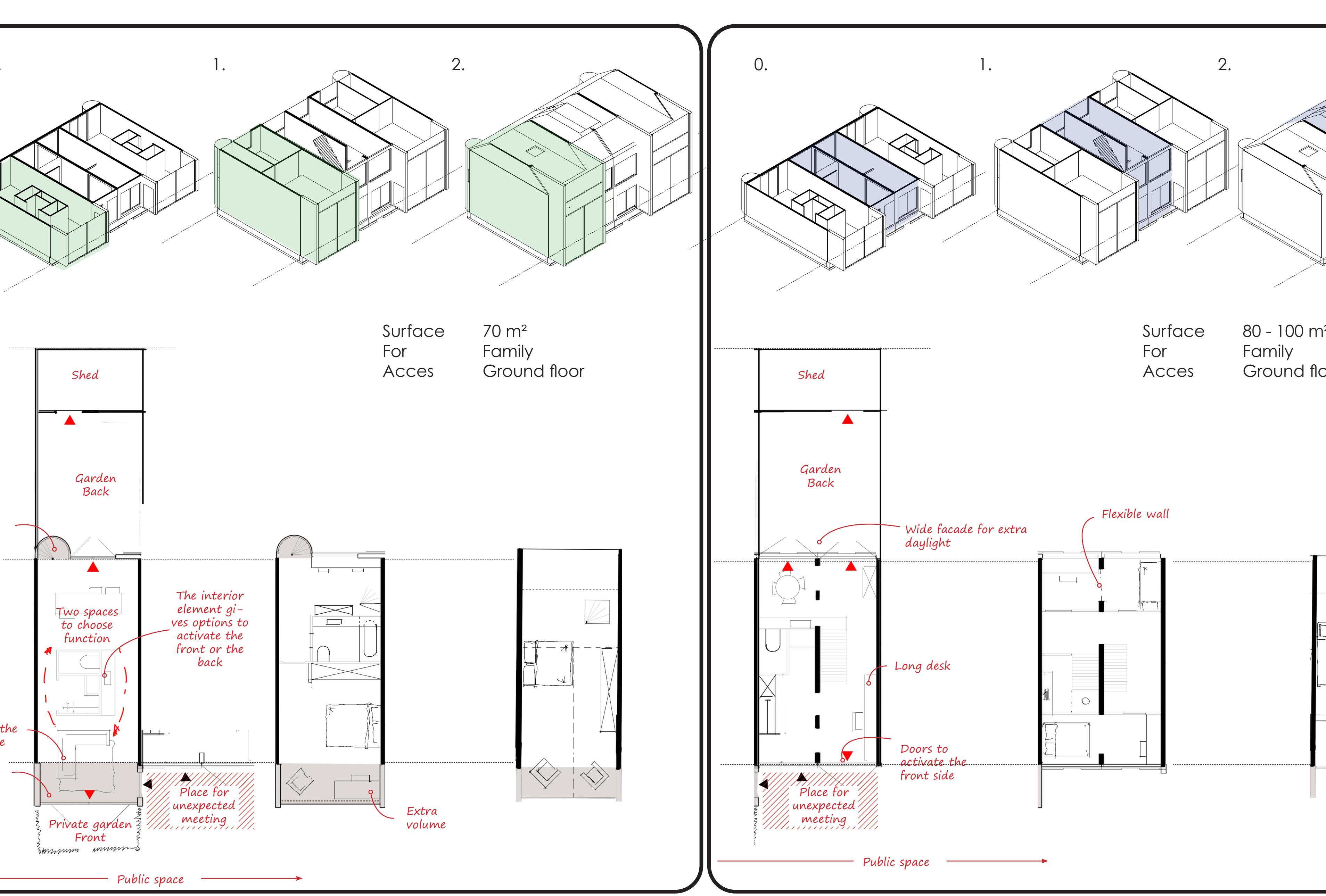
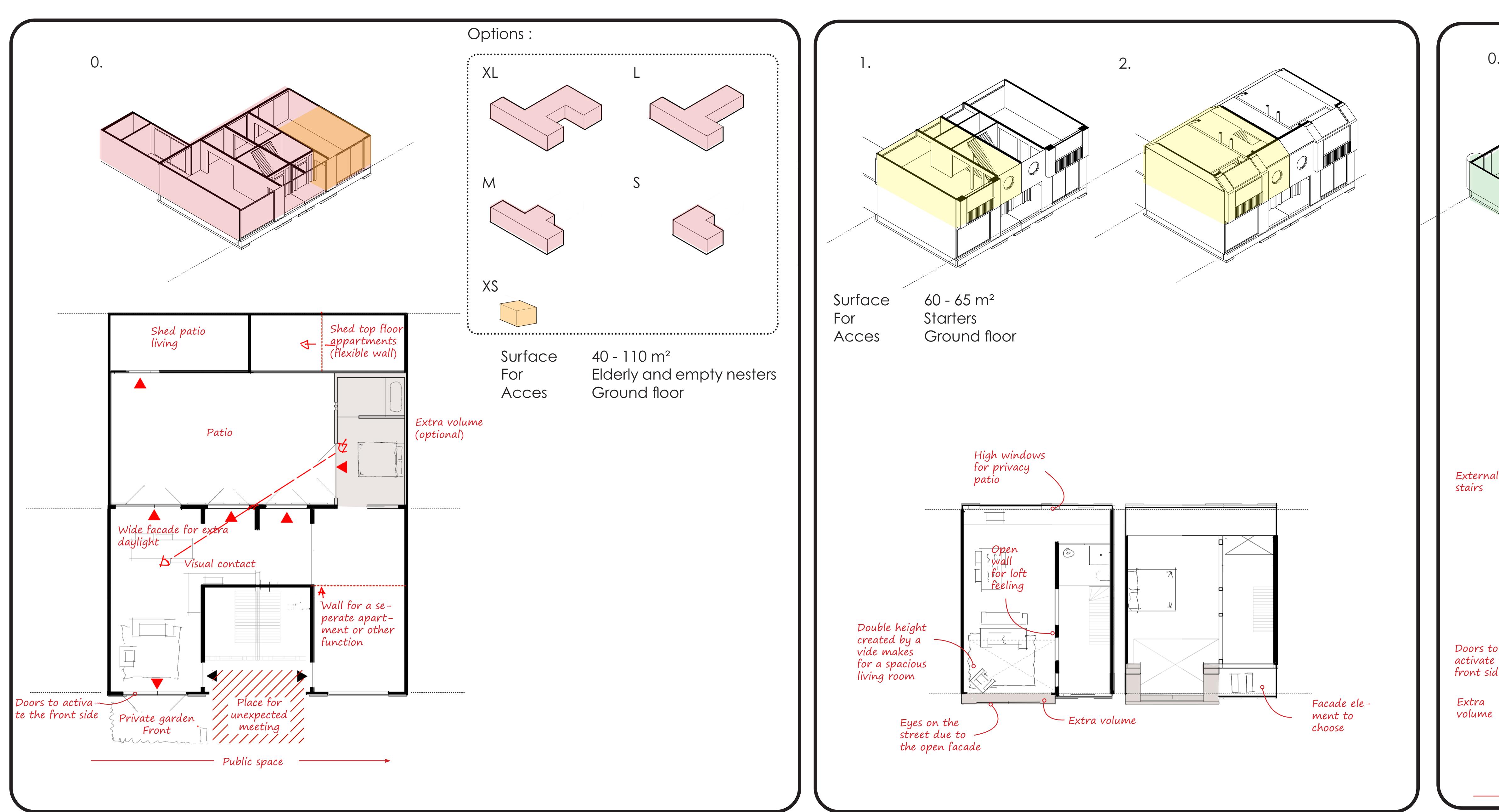
Minimizing demolitions can be achieved by utilizing existing concrete structures. To ensure a rapid transformation, a new connection method has been devised, allowing volume **changes to be accomplished within a single day**, resulting in **minimal environmental impact**. The addition of volume presents numerous benefits, encompassing the ability to create a distinctive new residence a different aesthetic or requires additional volume, the unique connection method enables such alterations to be made in just one day. The sturdy concrete structures of the existing homes can withstand the added load of the new volume, eliminating the need for extensive foundation work in most cases. The prefabricated additions are conveniently transported to the location via the highway. Given their width of less than four meters, transportation adheres to standard rules and regulations.

2. Flexibility and adoptability of installations



Flexible installations in a centralized line underground are possible because most of these post-war row dwellings have a crawl space on the ground floor. By modifying this structure accordingly, several advantages can be obtained:

- Quick adaptations of installations can be achieved. If a new inhabitant desires changes in the location or layout of the installations, it can be easily accommodated.
- Separation of grey and clean water becomes possible, as these houses were not originally designed with separate systems for grey and clean water.
- It prevents pipes from disrupting the ground beneath the homes. In future scenarios, it will be possible to grow trees without sewage problems arising from tree roots.



Revitalize the existing housing stock by transformation of 1 type into 8 different types

- 1 specific for elderly and empty nesters
- 3 different family homes
- 4 different apartments
- 2 ground floor (small) apartments can be utilized also for other functions

