responsivedwelling

Dwelling Graduation Studio Msc 3

At Home In The City, TU Delft

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Introduction

The twenty-first century's return of urban dwelling fights against the modernistic idea of sprawl in the suburbs, where a dream home with a green lawn and copius parking space was everyone's goal.

The Dwelling graduation studio 'At Home in the City' focuses on contemporary and future urban architecture on the scale of both the dwelling and the city.

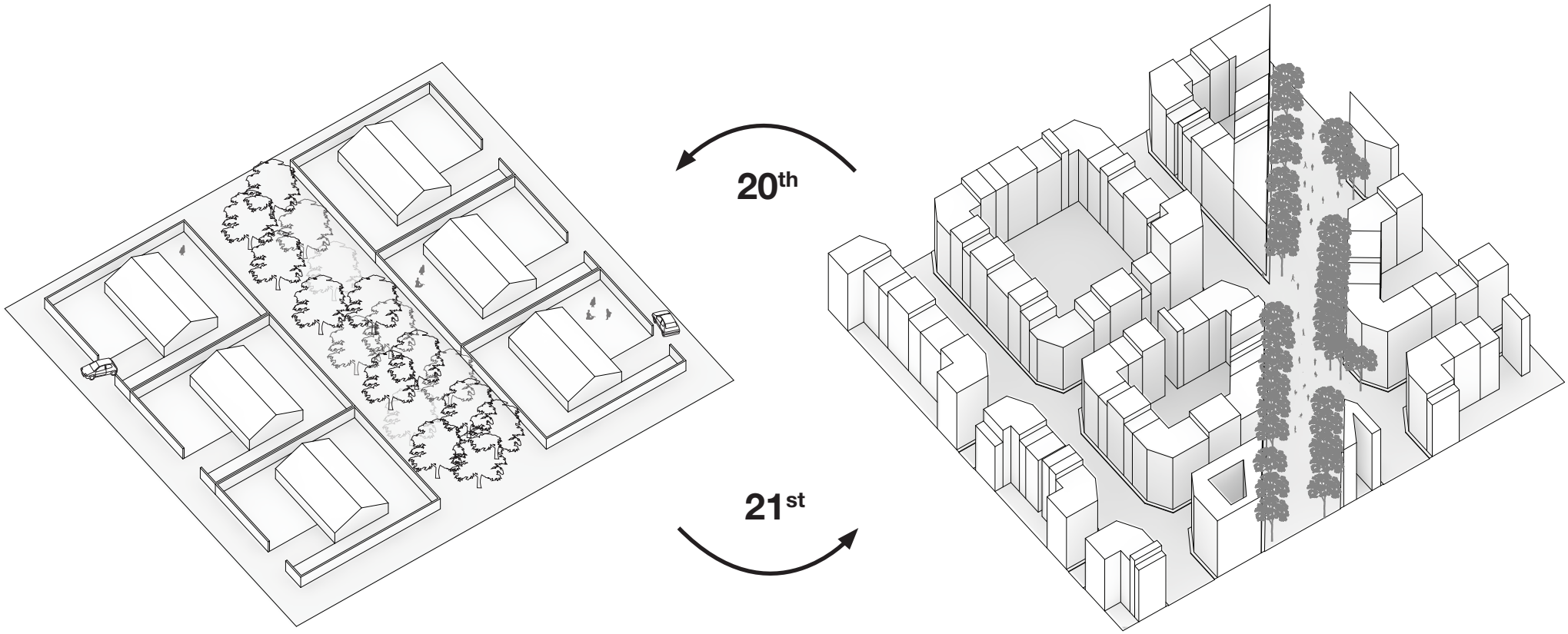
"living in the central city connotes progress, moral and physical health, and social responsibility"—a contrasting outlook to the modernistic position which regards the city as being a bad place to live. "As households move further out into the suburbs, they are considered to lose access to the once-despised and now sought-after attributes: land-use and social mix, and proximity to the new non-polluting industries of information technology and finance. Living, working, and playing in the central city is now lauded the way that strict separation of land uses in the suburbs used to be". The move back into the city is becoming a more recurrent theme. The city is regarded as a place to gather, to meet people, to socialize and engage in the spontaneity of urban culture. People feel inclined to look for a house or apartment within the denser city areas, closer to an assortment of services as well as a multitude of entertainment venues—this is a new generation with new views and trends.[1]

The planning of liveable compact cities is on the agenda at the moment. An approach to doing so would be through collective dwelling, where proximity to urban services brings about more living quality.

This booklet is an illustration of a research theme on 'Responsive Dwelling' conducted by Felipe Aldana, Tetta Huizinga and Dominika Linowska.

"The dream of living in a house in the idyll of one's own garden, even though it is still deeply lodged in people's imaginations, must compete today with choices of habitats that lay their emphasis on the proximity of urban services and demand an architectural quality that is adaptable to the ways people live today... A new awareness..." [2]

[1] Whitzman Carolyn. Suburb, slum, urban village: transformations in Toronto's Parkdale neighbourhood, 1875-2002. UBC Press. 2010.
[2] New Forms of Collective Housing in Europe. p36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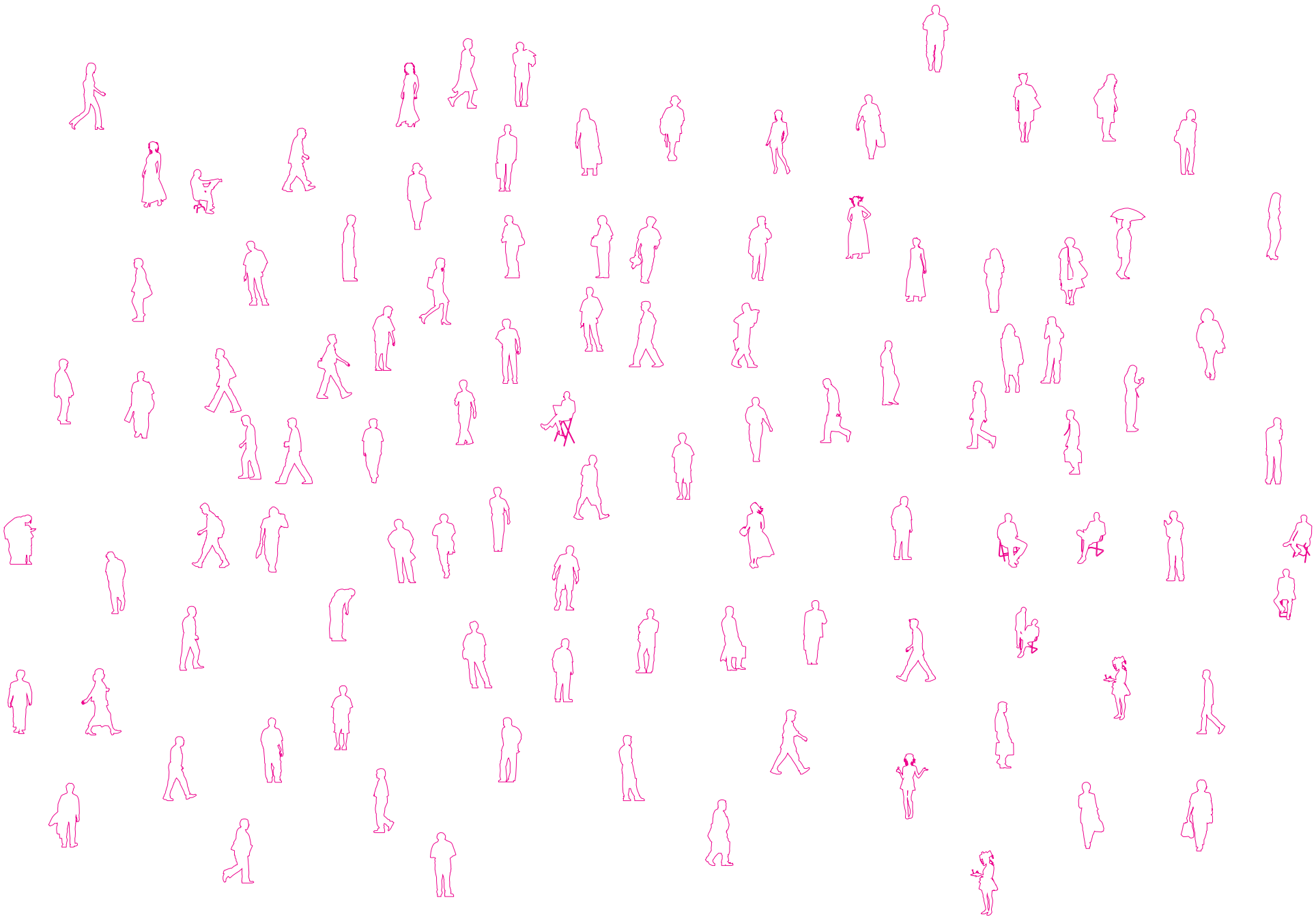


"…the desire for community living is winning over more and more individuals who are looking for real contact with their neighbours, the experience of using spaces alongside others, the resolution of urban frictions, the sharing of common spaces, and the collective experience in general."[3]

Collective dwelling

Collective habitat or living is viewed as an exercise and an apprenticeship in living with otherness. There is a social aspect involved in living with the 'other' which should be maintained and nourished from within the architecture (the building complex or the housing block).

The studio will focus on density, housing typologies, identity and lifestyles, spatial explorations, transformation, mixed programmes, and new technical concepts within twenty-first century living.

"*Man's insistent search for a home of his own is being confronted, in a time of generalised urbanisation, with a whole range of new complexities. To the realisation that the practical use of urban spaces involves a physical disconnection from the place of residence is added that of the importance of the relationships that surround it. With places of work and leisure being scattered ever more loosely over a wide geographical area, there has been a revival of interest in belonging to a genuine neighbourhood.*"[4]

As stated earlier, living in the city is becoming an economical and sustainable trend. This aspect is linked to a variety of city features such as bikeability, walkability, good infrastructure, abundance of ammenities, supporting local businesses, etc. What does it mean to dwell in a city? What sorts of urban fabric patterns shape the city, the block and so on? How does that affect the single dwelling?

[3] New Forms of Collective Housing in Europe. p35

[4] New Forms of Collective Housing in Europe. p44

Urban design – shaping buildings, circulation and public space

Urban design is a representation of the constant, if not natural, human effort to understand their surroundings. It is our attempt to organize the human condition, shelters and places of work, recreation and self-improvement. The city is a complex system of layers aiming to allow individual freedoms within a framed set of rules, developing these rules is not always a straightforward process, and debate has always been closely tied to the architectural and urbanism discourse. The complex process of shaping the city and organizing its systems, is undertaken by different professions: urban planning, landscape architecture, architecture, civil engineering; among many others. Ultimately the general goal is to positively link people to their built environment in a physical, sociological and psychological way.

The morphology maps presented along side this text, reflect the multiple variations attainable through urban design. Whether sporadic or extremely planned (i.e Cerda's Barcelona Eixample,) these images portray crystalized layers, a moment in the development of various cities, where no two city layouts are the same, as they respond to different natural, cultural and social conditions worldwide, one cannot copy/paste a city.

The types of organizational strategies are varied across the world and throughout time. Early civilizations had created divisions of land in grid patterns, such as Mohenjo-Daro and Harappa (2600BC) with straight streets, in order to tax according to property area[5]. In middle-age Paris, the wall built by Philip II and the House of Platagenent to protect the city in 1190, enclosed an area of 253 hectares and limited developable space, as it was the case of many medieval cities in Europe. This situation forced a creative use of space that not always resulted in ideal conditions given the growth in population; however in many cases it resulted in vibrant streets with a dense texture. This model of the irregular grid, high density, fine grade urban texture and constant human interaction, was maintained in the radical project of Haussmann for Paris[6]; a concept lost in the modernist approaches of the mid 20th century, where buildings were placed as objects "liberating ground space" as described in Le Corbusier's Plan Voisin for Paris, or the failed example of Brasilia by Lucio Costa, where the human scale is neglected in favour of grandiose architecture that only responds to itself. The shift for a more human scale of proximity and higher density was recognized in the 60s and 70s, and although examples of suburban developments are still ongoing, particularly in North America, the growth is in decline in comparison to the higher density of the metropolitan city.[7]

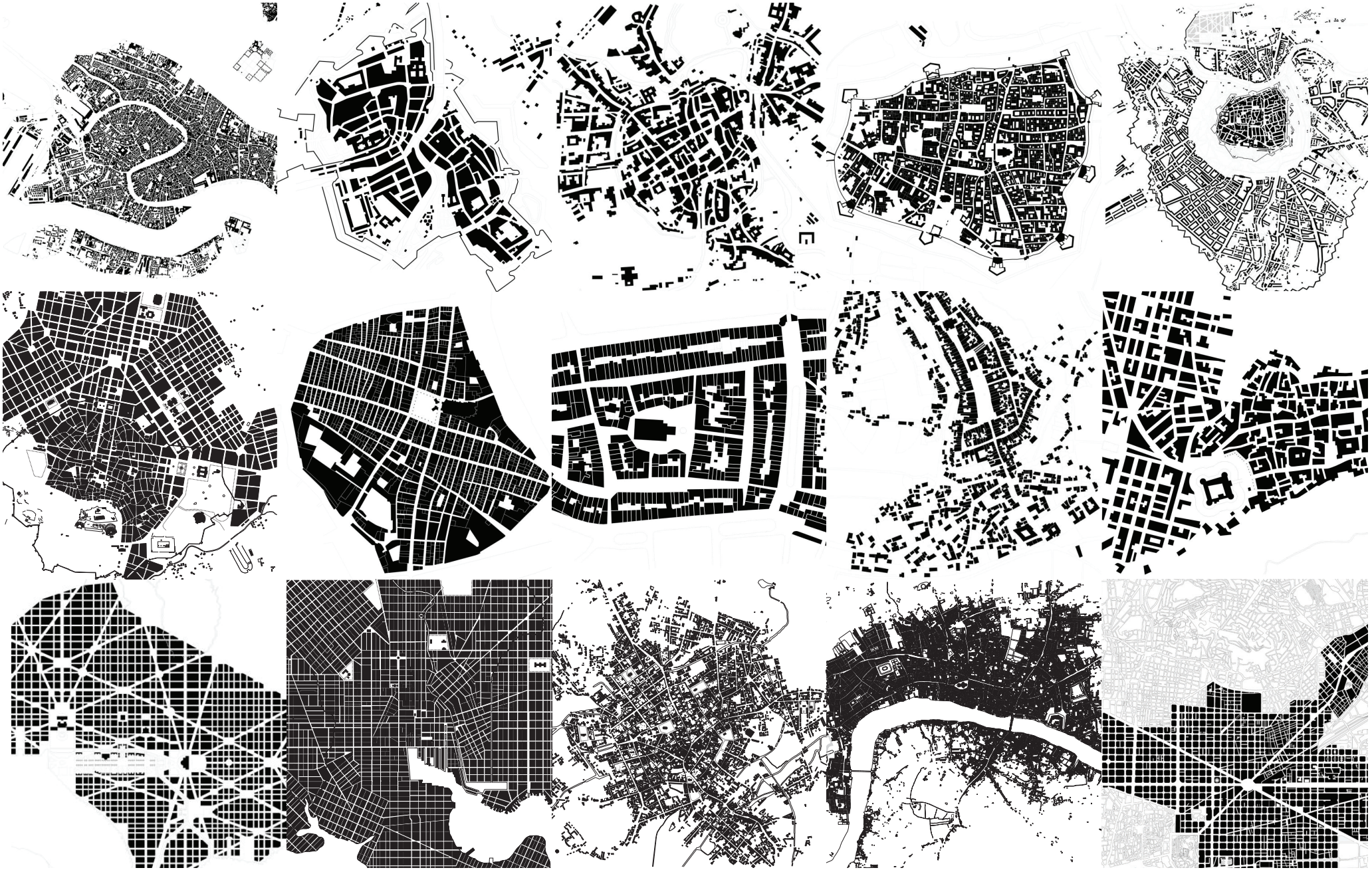
The city is the place to be, and the organization and logic of the city plan becomes ever more interesting; it is the convergence of psychological and physical systems, a constant morphing of the city adapting to growth, density, mobility, emerging technologies and cultural evolution; these conditions are an enormous influence to the buildings that populate the city blocks. Buildings belong to the city, the city informs the design of a building, however the city cannot be without its architecture, it's a fascinating relationship of coexistence.

Our interest lies in an architecture that responds to this mutuality, buildings that behave within a larger system, and bring a positive effect to it; they become a link between the notion of "the city" and how we experience it.

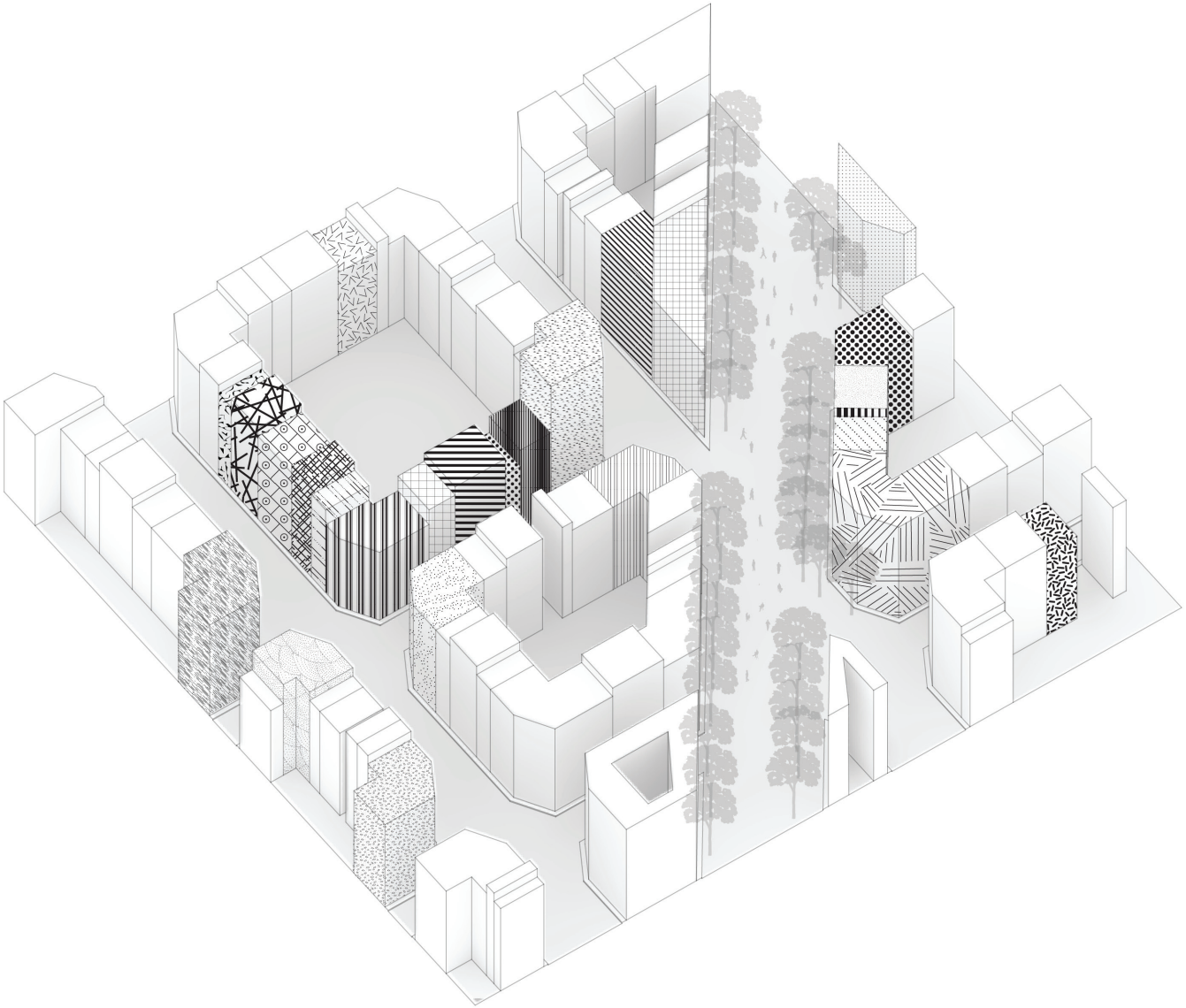
5 (http://en.wikipedia.org/wiki/Grid_plan#Ancient_grid_plans)

6 http://www.arch.ttu.edu/people/faculty/ellis_c/Paris_Lectures/2%20Roman%20and%20Medieval%20Paris%20pdf.pdf

7-(http://www.slate.com/blogs/future_tense/2012/06/28/new_census_data_show_us_cities_growing_faster_than_suburbs.html)



Focus on the dweller



If the complex relationship between the building and the city is ultimately experienced by the citizen, then surely he or she must have an input in the development of their own environment. People should be entitled have an input in how the city could be improved, starting with their own dwelling.

Architects are in an in-between situation, they must respond to the hopefully positive, agenda of the city plan, with a contribution to the city. But, the reality is that as a paid profession, architects must respond to their clients as well, who just as the city are confronted with different circumstances over time, whether these are involuntary or they are acts of self expression, architecture must be able to adapt to these changes. Here the architect is presented with a challenge of dealing with flexibility over time in space.

Question :

How does an architect mediate between an established city plan while providing flexibility to the dwelling?

Method and Background

The purpose for this research is an evaluation of how the architect mediates between the context and the flexibility given to the dweller. Although it is a rather straightforward question, it important to understand that any project created by the architect is not an object in a vacuumm; at different scales, components respond to a larger system. This research will look into applied techniques for balancing the needs of the dweller with the complexities of the building context.

Although the term flexibility has a positive connotation, and a sense of liberation from complete specificity, it presents a great challenge to architects and urban planners. Flexibility transcends cities and buildings from the 'built' to a development of time systems, where buildings must respond and evolve to unexpected events. One could argue that one of the fastest evolutions we see in our cities are dwellings, as families grow or shrink very often. At this scale, many experiments and methods have been applied. The work of Tatiana Schneider and Jeremy Till makes a strong case on the study of "Flexible Housing", where buildings, mostly residential, can adapt to changes in their lifetime and does not become redundant and obsolete quickly. Furthermore, it gives people the satisfaction of creating their own environment.[8]

According to Schneider and Till, flexibility in buildings in Europe resulted from three different factors. First, following WWI, European nations were faced with an unprecedented demand for urban housing, where the beginnings of standardization were emerging. Every possible dimension was based on usage and ergonomics. This was an attempt to create flexible spaces that accommodate the basic necessities of the average person.
The second factor that drove the motivation for flexible housing, arouse from technical influences and the adoption of industrialized solutions; standarized building components where interior members worked independently from the load bearing structure; here modularity and hierarchy of organized components were treated as clearly defined elements. Lastly, user participation and user choice; Mies van der Rohe argued that buildings should last longer than the function for which they were initially designed, and stated that *"flexibility is one of the most important concepts of architecture, and frame construction as the most appropriate form of construction to balance the fixed need for efficient forms of construction with the changing need of it's occupants."*

The participation of the occupant in the building is key to the work of Dutch architect John Habraken, who in 1961 published the book *De Dragers en de Mensen: Het einde van de massa Woningbuow* – the book was translated in 1971 as *Supports*: *An Alternative to Mass Housing*. According to Habraken, the work of Mies does not reflect his concept of flexibility "…Mies van der Rohe makes a skyscraper with its chairs in the lobby, he controls everything"[9] Instead, Habraken's basic principle is one of separation of control and a separation of elements of construction. He called the "support" or base building, which should be clearly defined from the "infill" or the interior, fit in residential construction and design. This means that the infill component could be altered or taken down independently as needed. In his book, Habraken makes it clear that the support is the long-term basic component of a building, and is responsive to the infill, which by definition is the short-term component. Although short-term, infill is extremely crucial as it the direct reflection of the resident, and we believe that to some degree our sociological evolution. It is interesting to note at this point, that the separation of components also means the separation of involvement, professionals assuming control over the support, and users over the infill.

According to Herman Hertzberger, the issue of components and durability can be seen from the scale of the city; where buildings last less than the public infrastructure around them, or the public squares and plazas. Buildings are changed and exchanged, but do not compromise the integrity of the city itself; this can be regarded as another type of flexibility "*It is impossible these days to conceive of a building capable of resisting the urge, the compulsion even, to alter in the wake of the ever-changing ideas, ways of working.…modifications of zonings and functions, expansion, reduction or simply the need to look different, these are forces no one can keep in check. A building that is unable to admit this much freedom of movement has a bleak future ahead of it*."[10] this is a very intriguing thought, as it liberates the concept of flexibility and permanence from the building scale.

Although the idea of support and infill is very interesting as a structural and technical approach, for this research we want to understand the concept within a larger scale by mergeing the ideas of Hertzberger and Habraken. This research aims to explore the separation of components at a various scales, and how the architect is a mediator within this system of components - a Matryoshka doll scenario where the dweller has liberty within a space designed by the architect, who in turn works within a space planned by the city. This is also a condition where each individual component can adapt, (is flexible), within the larger supporting system (the ensemble).

8 Scheider&Till.Flexible Housing.Elsevier, Amsterdam. 2007- Chapter "The Rhetoric of Flexibility" p.5

9- Film- (movie No.1 from http://www.habrakenmovie.org)

10- Hertzberger, Herman. Space and the Architect.010, Rotterdam p 176

Application

To understand the methods used by architects in order to mediate between two different scales, dweller and context, it is important to establish the general scales that he/she is confronted with. This is key to a project that is relevant to its surroundings, function and place in the urban scheme of the city. This research analyzes these scales in three stages.

First, the levels of permanence diagram (p.15)- an arragement where components are organized not only by scale but by level of permance within the built environment. It shows all built components found in the city, starting from the neighbourhoods that compose the city, scaling down to the smallest component which can organize space - the movable partition. This chart depicts a logic where, in an ascending order (partition to city), components are independent from each other, and do not compromise the integrity of the next higher level- for instance, the removal of the interior partition does not compromise the dwelling from working as a dwelling, the removal of a building in a block, does not compromise the overall integrity of the city block, or the block from the neighbourhood etc.
An initial comparative analysis takes different scales of built environments, and depicts the levels of permanence that each one covers. The larger examples such as the Barcelona Cerda grid covers all possible levels, meaning that its existence is dependent of many components, and would take a very large amount of these smaller parts to be removed to compromise its integrity; making it very permanent and very flexible.

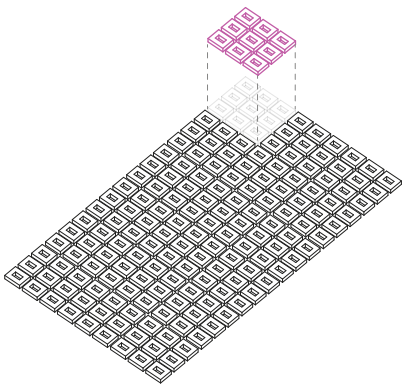
"*the grid irons of Manhattan and Barcelona - ....this is an example par excellence of a plan that permits filling in adequately from block to block and in every epoch. There is no other city plan that takes such a childlishly simple underlay of rules to generate such convincing dialectic of order and freedom in a process continuing throughout time."* [11]

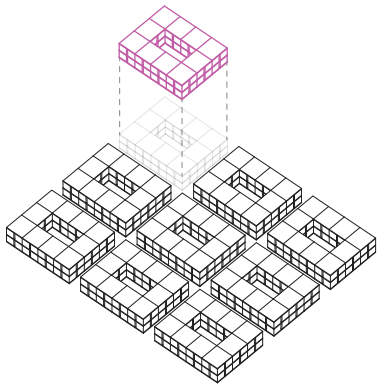
In order to further develop the level of permanence chart and understand its potential at different scales, a second stage is the selection of 8 projects as initial comparative cases; these cases have been chosen from different continents and urban conditions. The matrix (p.18-21) illustrates how the specific components from each project fit within the permanence level to which it can relate.

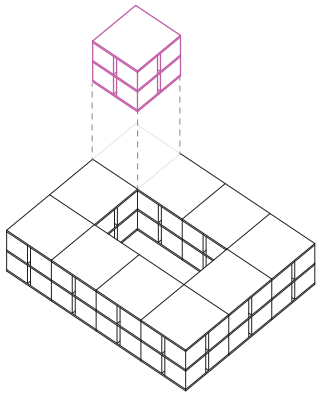
After the components have been organized, the research focuses on the relation between these levels. This last stage of the responsive dwelling research, is the selection of 3 dwelling projects; where a deeper analysis is performed at the scale of the neighbourhood, the scale of the building and the scale of the dwelling. Our interest is in the relationship between these levels of permanence and ultimately the architect's position as a mediator between them; answering how the building is responsive and related to the context, how is the dwelling related to the building, and how does it respond to the dweller.

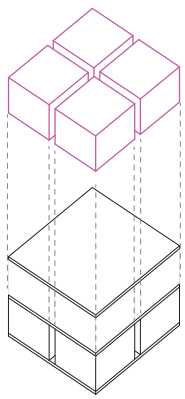
11- Hertzberger, Herman. Space and the Architect.010, Rotterdam p.177

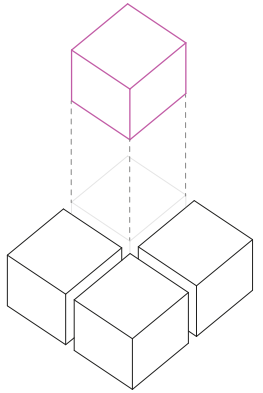
city | neighbourhood | block | block infill | support infills | individual dwelling | movable partitions

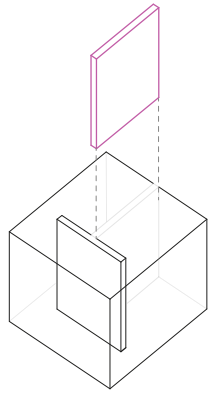












Barcelona Eixample grid

Borneo Sporenburg Master Plan

Kowloon

Quinta Monroy

Urbanex

Next 21

Gifu

Nemausus

Comparative cases

Barcelona & the Cerda grid A

location: Barcelona, Spain

date: 1859

architects: various (masterplan by Ildefons Cerda)

The case of Barcelona presents an interesting example of a rigid plan but rich in architectural variety. The original Eixample (expansion) project of Barcelona by Ildefons Cerda 1859, consisted of a grid extending from the old city to the eastward to the shores of the Besos river. Each block was originally planned to be filled on two sides only, in order to bring light and create larger green spaces through the city, alleviating the substandard hygienic and living conditions of the medieval town that triggered the expansion in the first place. Speculation increased the built area of each block in several stages, Cerda's plan had a built volume of 67.200m3 but progressive additions resulted in the current 294.771m3 including attic setbacks and a 115 x115 built on all sides (perimeter block) with interior courtyards, and a maximum height of 20 m. The Cerda grid presents a support of rules that each building must follow to developing into a composition that defines the strong identity of the district. Originally the Eixample district was home to bourgeois vertical housing, for those in search of cleaner air higher in the Collserolla Mountains and away from the industry near the Mediterranean. Each family built their house in the grid, where the next residence would be constructed adjacent to it without space in between. Ultimately the block would fill in a perimeter fashion. By the 1930s most of the blocks were filled with Catalan modernisme buildings from different architects; each building with very particular artistic expression is the infill with clear response to the parameters of urbanism, and If one is these buildings were to be replaced it will not compromise the integrity of the block.

Kowloon Walled City B

location: Hong Kong, China. year: N/A to 1995

architects: N/A

number of dwellings: appx 50,000

The Kowloon Walled City is an extremely dense and uncontrolled enclave which grew into a megastructure of extreme fascination. It was the first urban development, which took place with the absence of any official authority. There is no sufficient ventillation or light which permeates through the great wall. Despite the horrible living conditions, the grand dwelling complex is actually quite self-sustaining. The residents formed a tightly knit community, helping one another endure various hardships.Thousands of shops, factories, and services were operating and catering to various needs. Each dweller builts their part onto the whole complex. With a strict wall (the support) defining a clear perimeter for the built mass, this area filled up quickly, without any rules or constraints making it completely out of control. The demolition of Kowloon Walled City began on March 1993 and was completed in April 1994. Afterwards, in December 1995, it was transformed into a park which kept the original footprint of the strict boundary.

As shown in diagram B3 on p16, the Kowloon case study stands out greatly from its surroundings. The density as well as the formal language are completely different from the southern part (low-rise, high-density dwellings) and the north and eastern part (high-rise, high-density blocks/towers). In this case, the 'city within a city' is not being responsive at all to its surroundings, in fact, it is clearly isolated from the rest of society.

Urbanex Sanjo

C

location: Nakagyo-ku, Kyoto, Japan date: 2002
architects: Gendai Keikaku Arch. & Planning Office Osaka and community

The Urbanex Sanjo complex is situated in the central part of Kyoto, Japan. This part is a high dense area with building heights up to twelve floors. The plot of the complex is bounded by buildings that together form a city block. The city blocks are organized on a rigid grid. The blocks in the grid have little open space and are filled with buildingvolumes that vary in size.

The program consists of traditional japanese apartments that approximitaly have the same size.The design was under supervision of an architectural office and the municipality, but was designed together with residents of the local community.
Residents participated primarily in the design of the volumes inside the cityblock. The volumes react to the surrounding building volumes and vary in height to provide open space for its residents.

As the buildings surrounding the complex defined the plot, the support was set. Residents of the community defined the infill.

Gifu Apartments

D

location: Kitagata, Japan
architects: Arata Isozaki & Associates, Misaki Design & Architects Office, Daiken Sekkei, Kinka ARchitects Office

The Gifu Kitagata complex is situated in Kitagata. The complex consists of five buildings, four in the south and one in the north.

The plan is to connect the blocks in the whole area and thereby creating a large collective dwelling complex with common public spaces en facilities, but it isn't realized yet. At this the time there is a lot of open unused space surrounding the north block. There is little connection with the the surrounding buildings, which include an industrial area. If the complex of all buildings was realized it would create an isolated area.

The design of the four south blocks was completed by four architects that each designed one block. The block in the north was designed by multiple architects.

The skeleton was designed by the supervising architectural office. The dwellings inside it were designed by other architects and differ in width and number of floors, which creates a big variety of dwellings. Inside each part of the north block the dwellings share circulation space and storage space.

Borneo / Sporenburg

E

location: Amsterdam, Netherlands date: 1996
architects: West 8 + various
number of dwellings: approx. 2500

Borneo Sporenburg is an example of an experimental 'new urbanism'. It came about as a competition on a high-density, low-rise dwelling scheme. The parcellation scheme was adapted to the urban plan, where 60 free parcels were sold by the municipality through a lottery. Each one was designed by a different architect. This proclamation of individuality became prototype for a radical new strategy in Dutch urban planning. In almost every new planned neighbourhood in the Netherlands free parcels will be integrated.

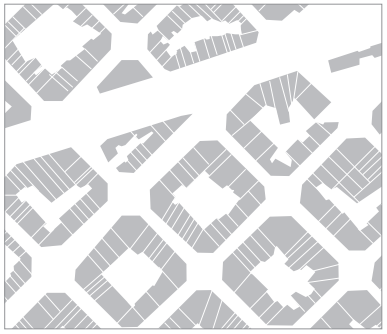
Borneo-Sporenburg responds to strictly defined boundaries. The typical allocation of the support in this case are the 5m wide by 16m deep plots, and usually three levels high. Low-rise dwellings are arranged in strict banded-blocks, subdivided into individual parcels. This compact new housing has a residential program of urban density of 100 houses/ per hectare. The infill in this case study is the private house.

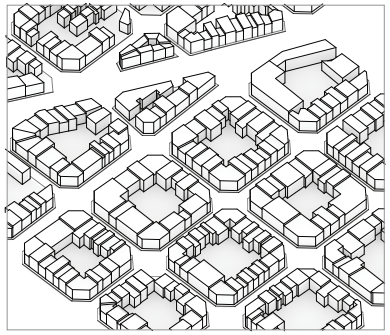
The West 8 scheme of a 3.5m high first floor is an advantage of the long term possibility of assigning the ground floor to other functions such as shops, offices, bars, cafes, etc. At the moment the location is mainly residential, and does not have as much of a 'city-life' as envisioned during the planning process, yet it still fits into the old city fabric of old central Amsterdam as an only 20 year old neighbourhood.

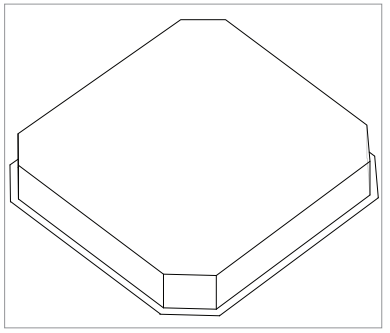
Neighbourhood

Block

A







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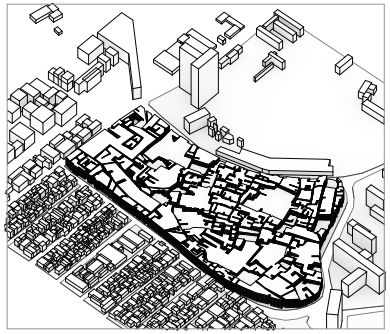

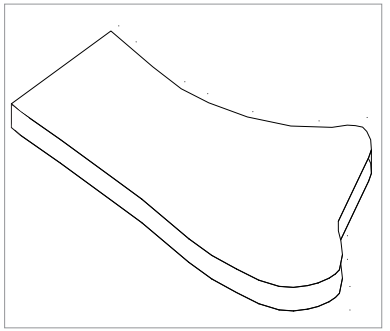

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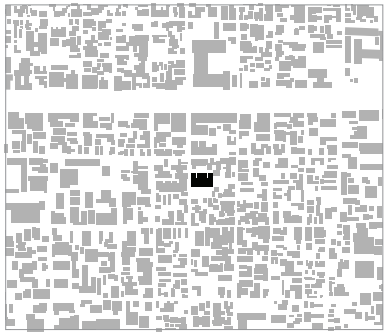

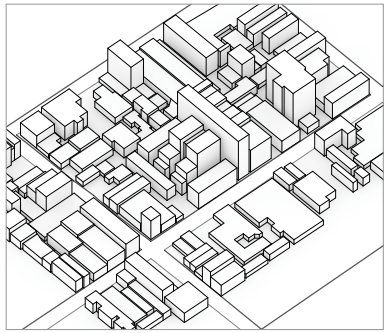

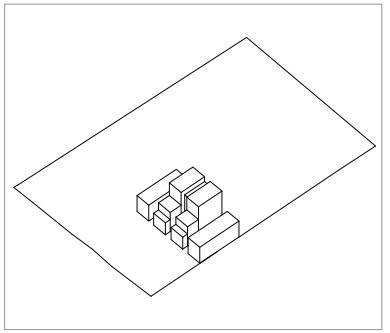

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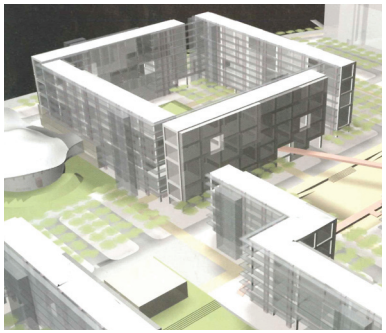

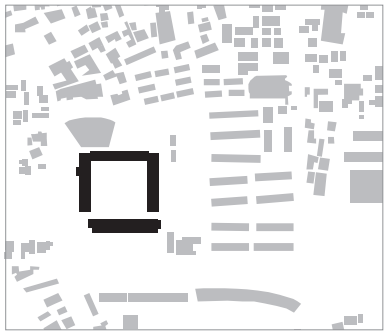

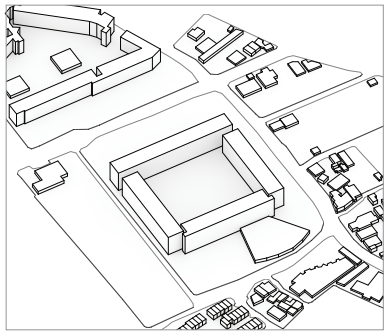

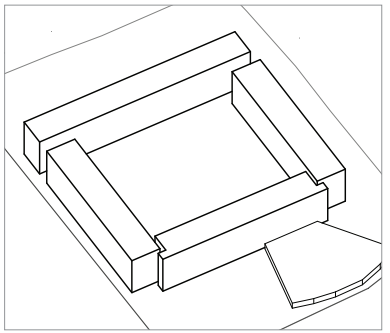

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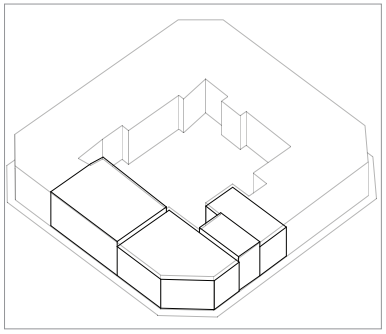
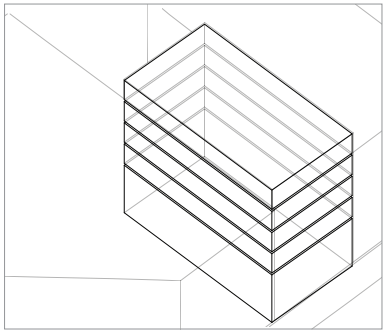
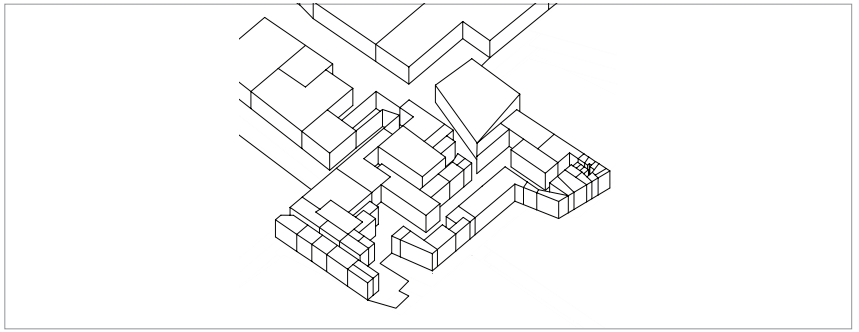
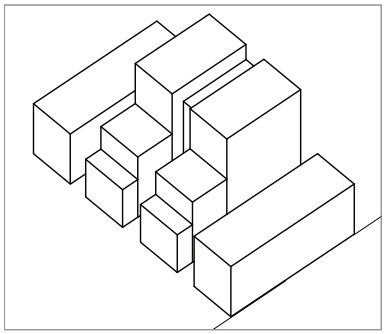
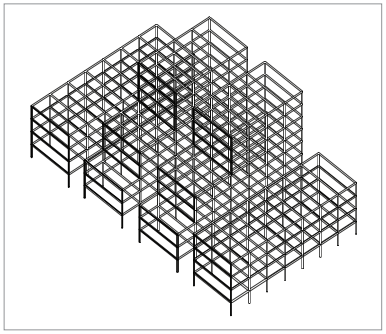
Building

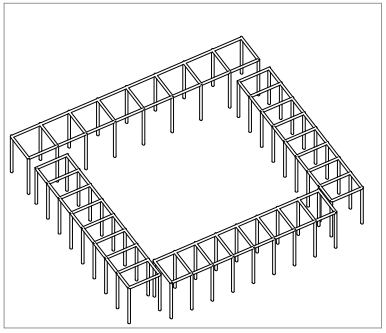


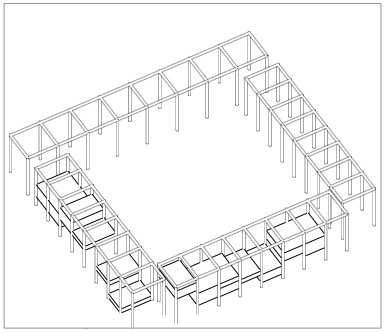












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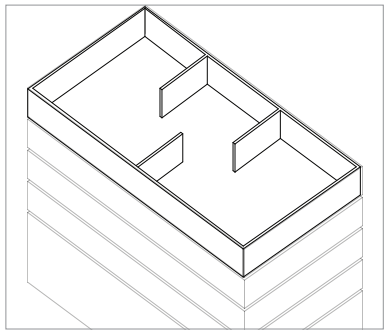
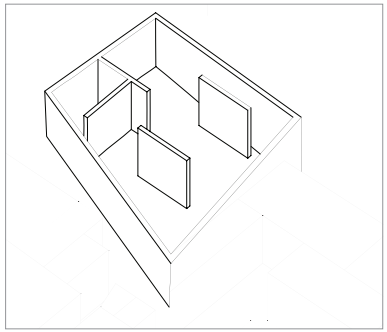
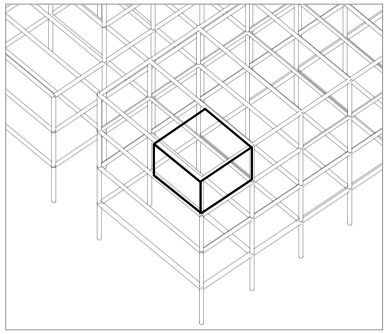
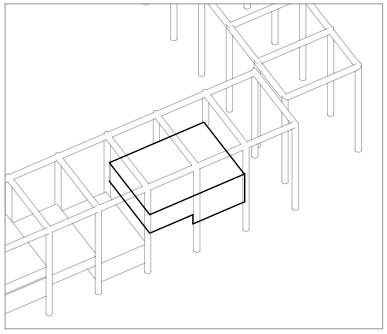
6

Dwelling









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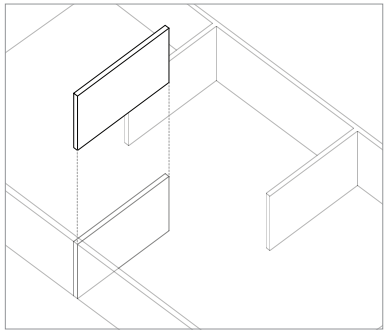
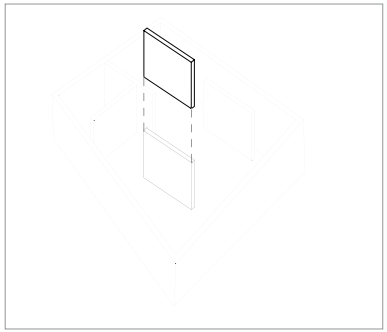
Partition



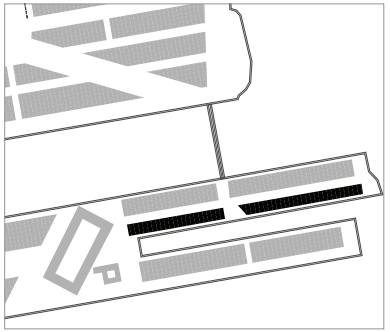


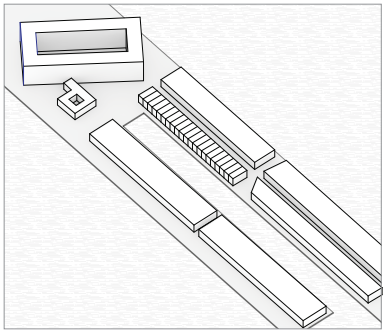
8

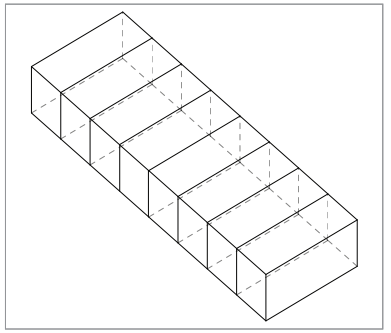
Neighbourhood

Block

E







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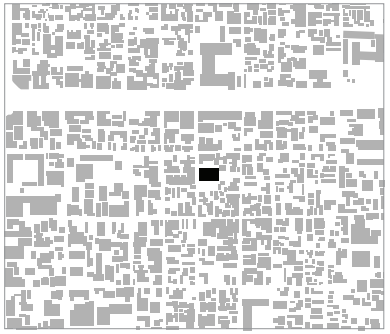

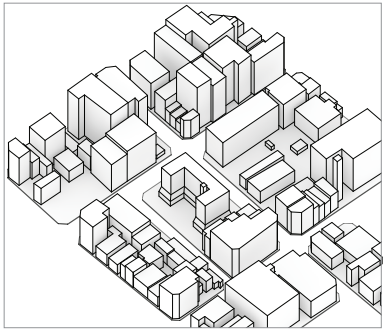

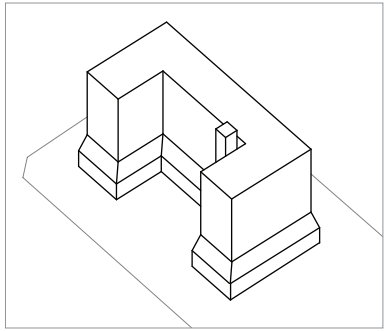

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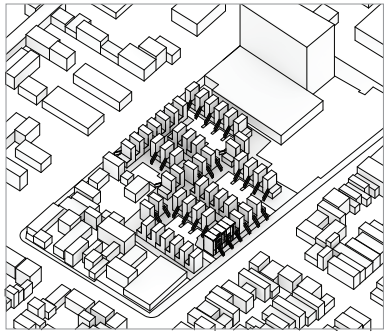

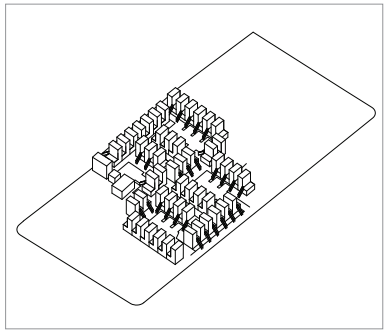

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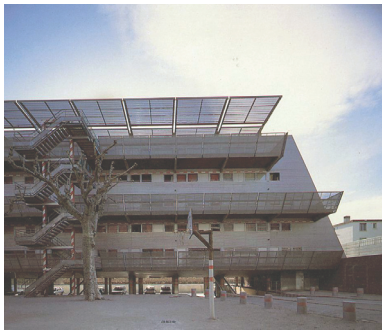

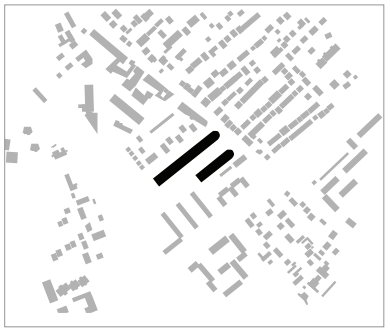

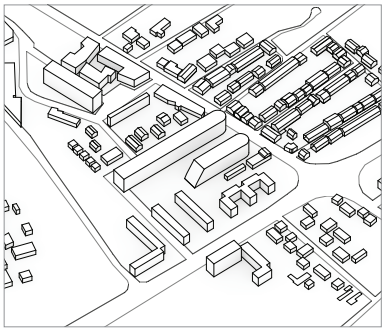

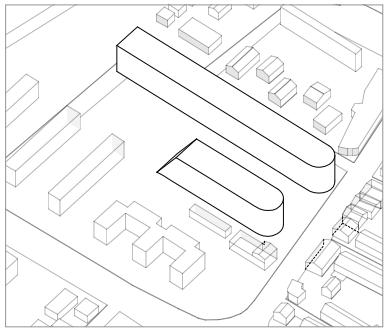

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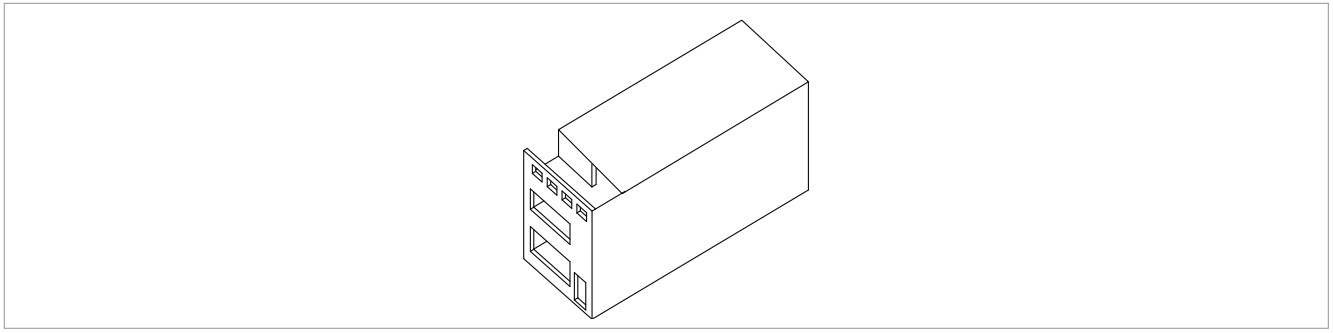
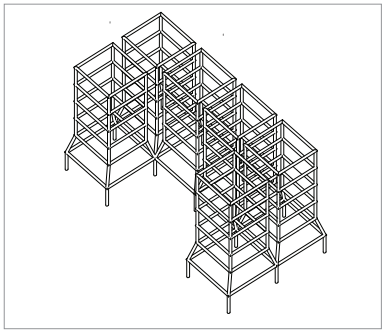
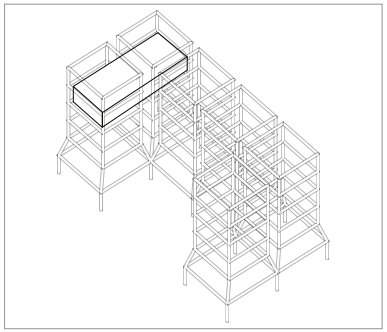
Building

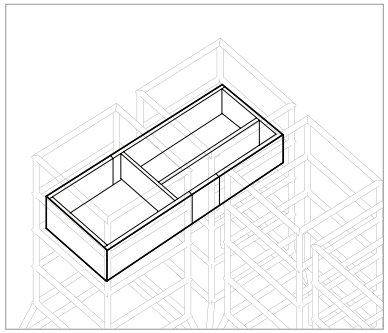
Dwelling

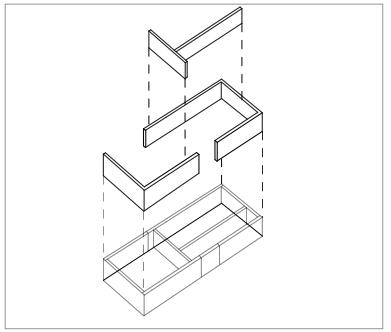
Partition

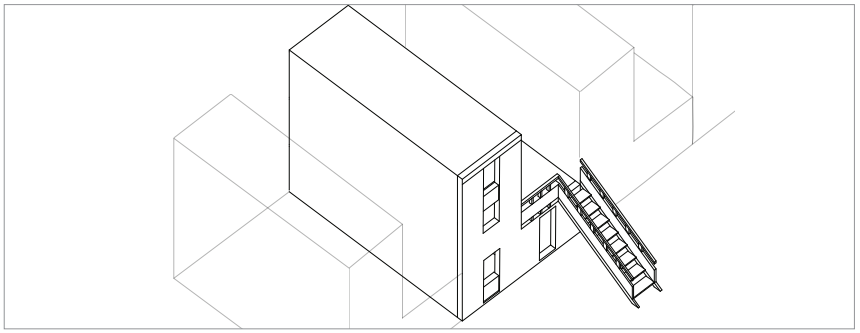


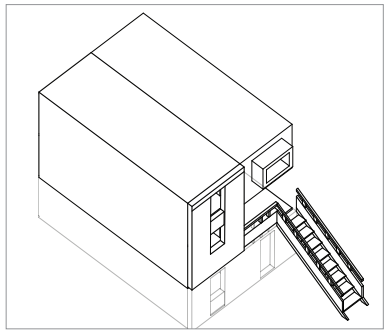


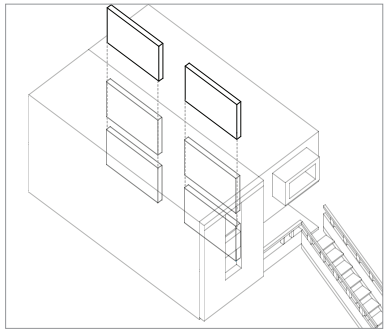


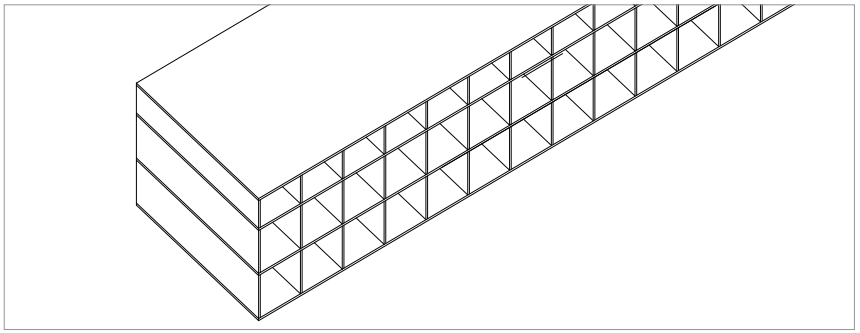


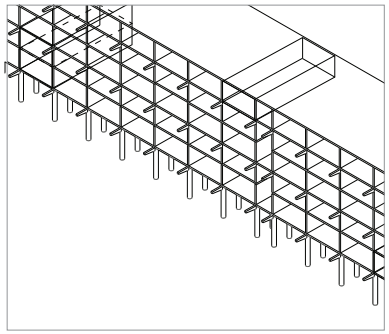












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In-depth studies

The third stage of this research focuses on three dwelling projects with different characteristics. Next 21 in Japan. Quinta Monroy in Chile and Nemausus in France.

These projects were chosen because of their different geographical locations and urban conditions, giving some insight to the different approaches to the notion of flexible dwelling, given with a different cultural and location background. The also emerged from different design participation levels, Next 21 had different architects working with different clients, Chile had one architect working in a participatory manner with the community, and in the case of Nemausus one architect designing the whole complex for the unknown client.

These projects also present different scales, in the case of Nemausus, the project is a large complex of slab buildings with the most amount of dwellings and higher density. Chile presented a repeted module of 3 dwellings that takes the majority of the city block, and provides a low-rise, middle density community. Next 21, is the least conventional in terms of stacked dwelling, given that the entire building works as a frame awaiting infill; and is the best known example of the open-building movement, following the principles of John Habraken.

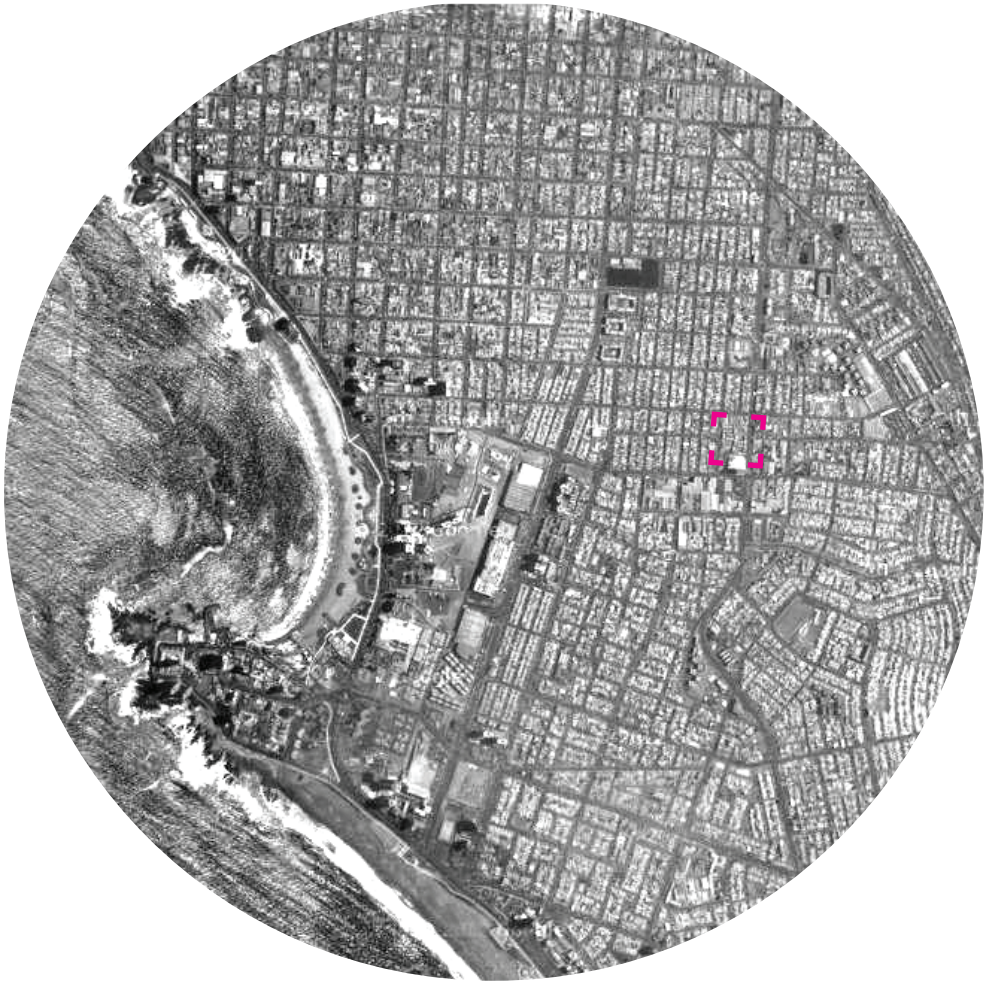
Furthermore, they covered different levels of permanence which adds to the variety of methodology employed,


Nemausus p90
Next 21 p28

City Fabrics

A Next 21 - Osaka, Japan
B Quinta Monroy - Iquique, Chile
C Nemausus - Nimes, France

A



B

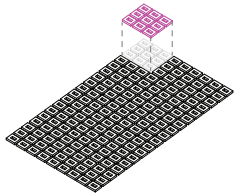
C

Criteria

The selection of comparative criteria evaluates the performance of each project at the neighbourhood level, the building level and the dwelling level. The aim is to understand the different methodologies in different conditions used by the architects to address the same issues.

The criteria has been chosen in such a way that it can be applied at all three levels, and provide valuable information about each project. Volumetric adjacency is the only exception, which is utilized only at the neighbourhood level in order to understand the relationship between the scale of the project and its surroundings, this is considered necessary at this level but did not reveal substantial information at the other two levels.

The sequence of diagrams and drawings is explained in the chart adjacent to this column.



Next 21

Quinta Monroy

Nemausus

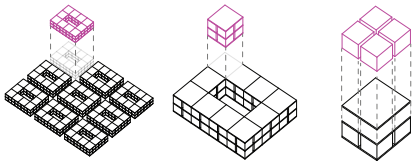
responsive at neighbourhood scale

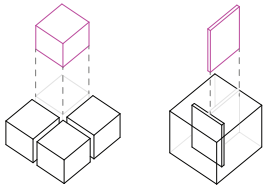
structure

programme

volumetric adjacency

circulation





structure

programme

circulation

responsiveat building scale

structure

programme

circulation

responsive at dwelling scale

Next 21

location: Osaka, Japan
date: October, 1993
architects: multiple
number of dwellings: 18

The project NEXT21 is situated in Osaka, Japan in a mixed residential area in central Osaka. It is part of a block that fits a grid of mainly rectangles. NEXT21 was set up as an experimental project that was designed as a building that should at least have a lifespan of 60 years.The client of the project is the Osaka Gas Company and supervising architectural studio is Shu-koh-sha Architectural and Urban design studio. The aim of the experiment is the design of a collective residential building that offers family houses for different types of families, differing in composition and lifestyle. Main goal is the design of an adaptable and at the same time durable building.

The experiment consisted of multiple stages. Before the building was completed possible future residents were asked to share their wishes for a perfect home. These comments were used in the deciding on the aims of the building and dwelling units. After completion of the building, the project opened for public for a period of six months. Visitors were asked to share their opinion on the design, and there judgments were evaluated. In the second phase, sixteen families lived in NEXT21 for five years. After this period their experiences were evaluated as well.

An important goal of NEXT21 is the appliance of a ‘two-step housing system’, which separates the building into two parts: long life elements (support) and short life elements (infill). The long life elements are expected to change over time during a longer process than the short life elements. A second system used in NEXT21 is the division in independent subsystems. By dividing building parts already at the stage of design, the project is able to adapt to future changes. The idea is, though mostly technical, similar to the levels of permanence of Hertzberger.

Aside from this aim the project was set up to create an ecological building that provides, for instance, water reuse and a small animal habitat. For this reason the building provides a lot of green open spaces that run vertically through the building.

The projects program consists of eighteen dwellings that were designed by thirteen different architects. Each architect designed a dwelling with its own type of lifestyle. All dwellings have approximately the same size. Aside from the residential program the ground and first floor offer space for commercial city services.


A


B

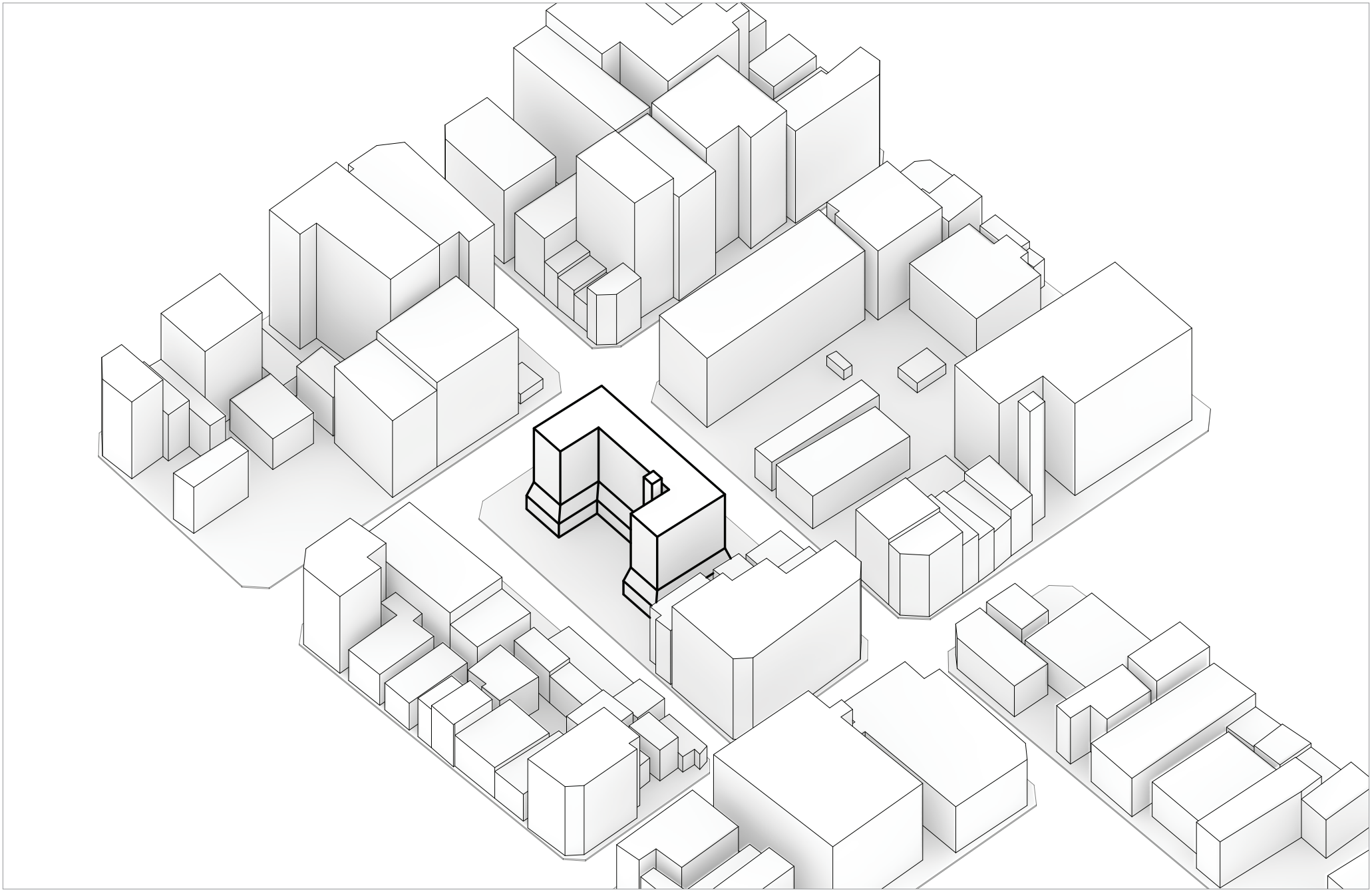

C


D


E

A Intenal garden for the residents

Responsive
at neighbourhood scale



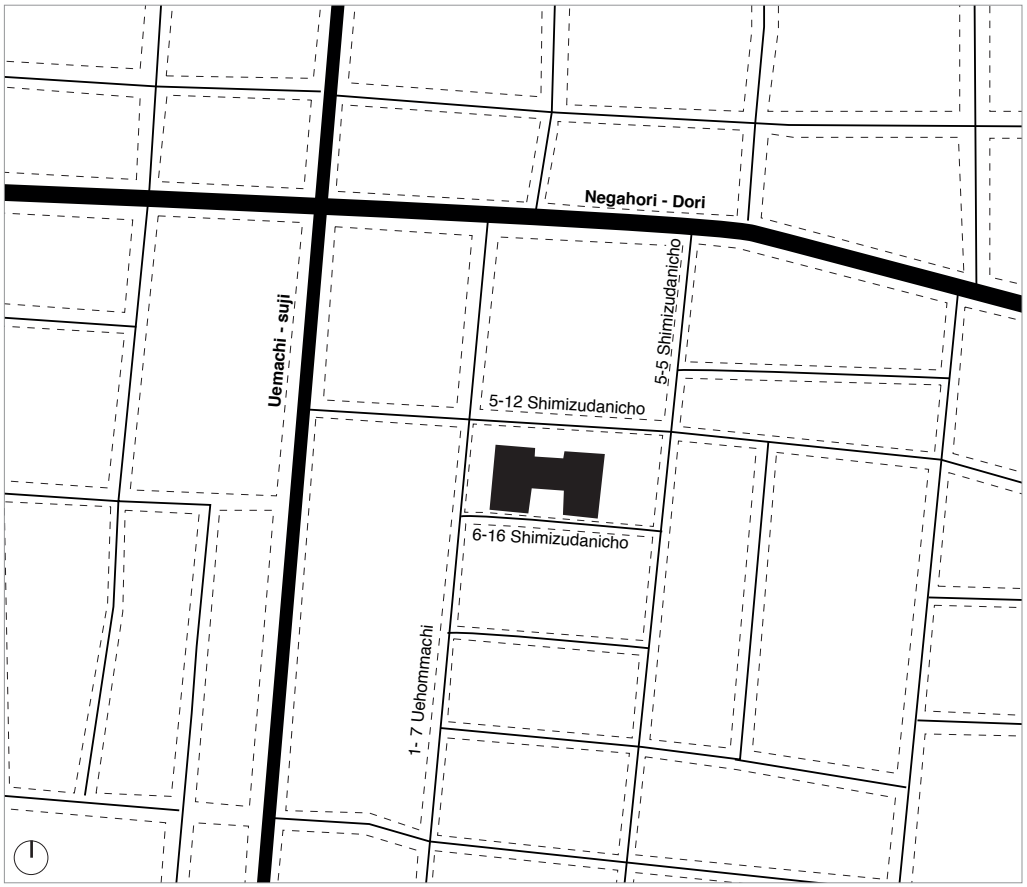
Responsive
at neighbourhood scale

Structure

NEXT21 is located in the center of Osaka. It is situated in a block that is shared with several smaller buildings. The block is accessible by four one-way streets, each being approximately 6m wide. From these streets two main roads can be reached. The neighborhood of NEXT21 is part of a residential and office area. Apart from this main program, there are some commercial facilities as well. The program of NEXT21, dwellings and commercial services corresponds to this area. The adjacent buildings around NEXT21 have different heights and widths. The volume of the project has a medium height of 6 floors. It is the only building with a half open center courtyard. The open part of the building with the courtyard faces mainly lower buildings at the south, while the closed sides face the higher buildings.

From the surrounding one-way streets the building can be reached. On the north and south there are entrances for the parking garage, accessible for residents only. The building has multiple entrances, divided over three sides. Most of them provide entrance to the commercial services in the two lower floors. The main residential entrances are at the northwest corner and at the courtyard.

Around the building, belonging to the ground area of NEXT21, there is a lot of green. The pavement on this area leads to the entrances located at the north, west and south sides of the building. The east side of the building is situated closely to adjacent buildings and is not accessible. The green and small concrete walls at the edges of the NEXT21 area create a boundary between the building area and the public pavement. Moreover, the west and south sides are about one meter lower than the pavement. The entrances located at these sides can only be entered by means of stairs, creating an extra boundary with the contextual pavement and street.

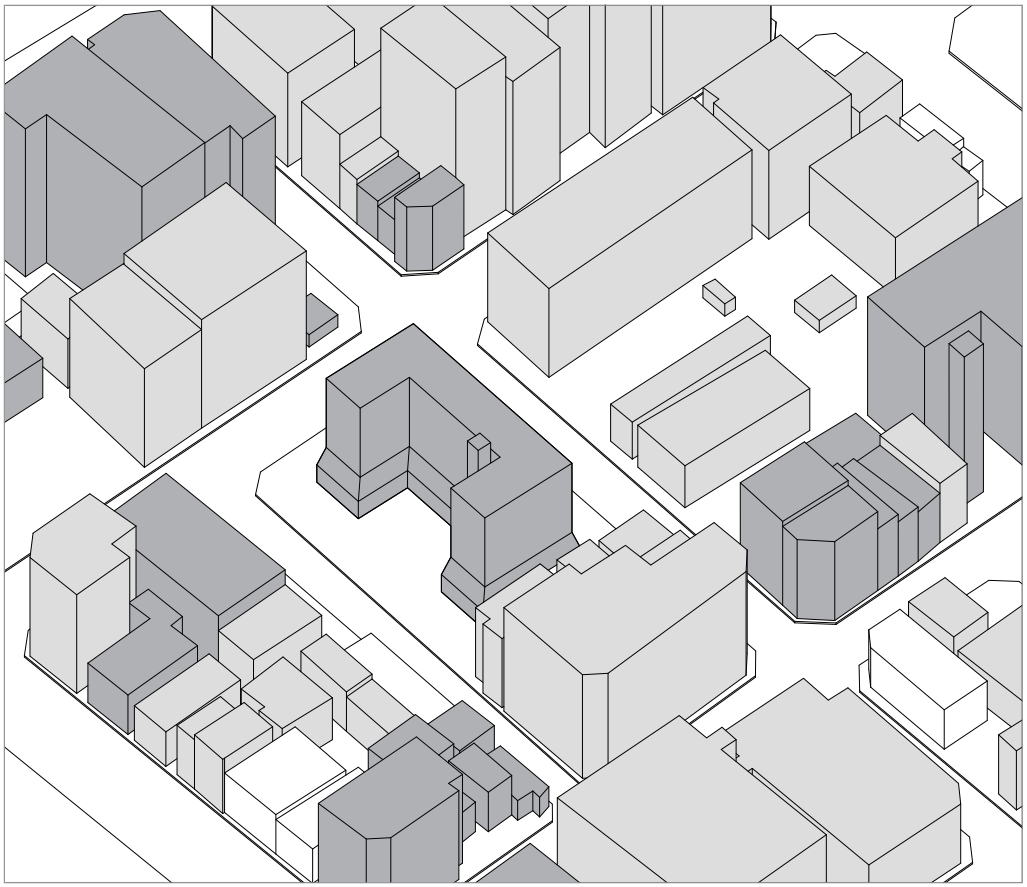


Structure: street hierarchy

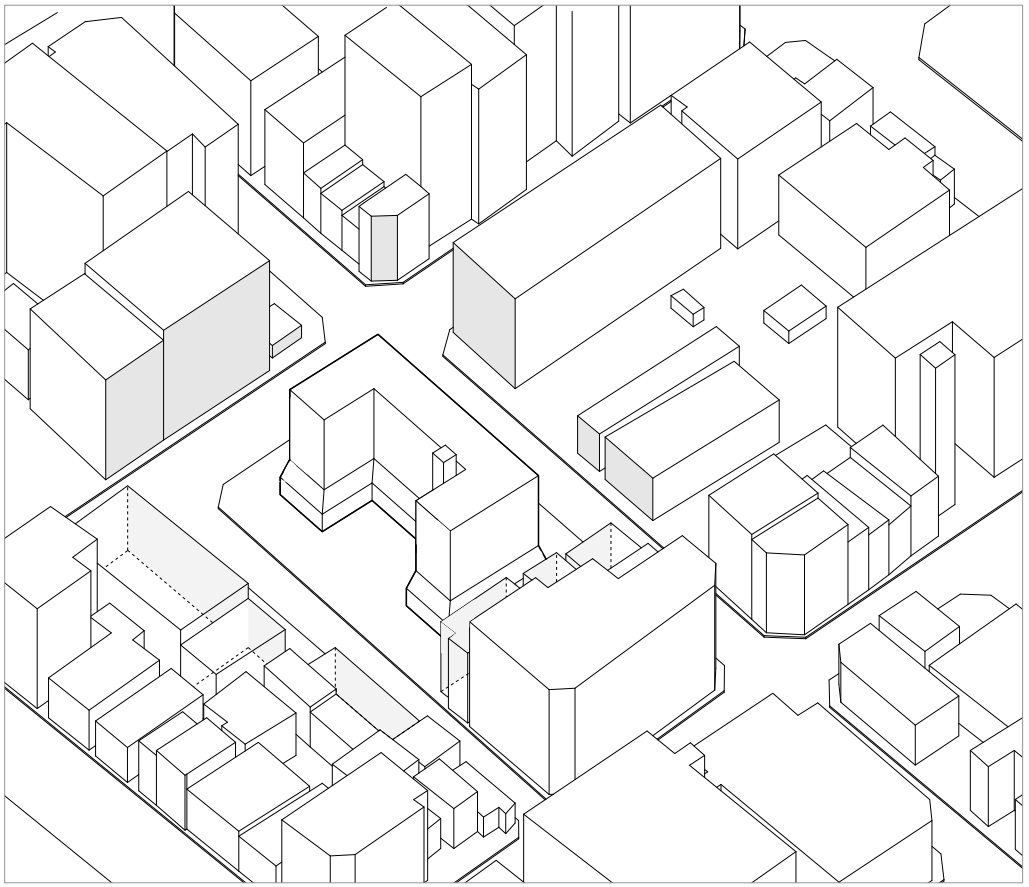
Context: figure ground

Responsive
at neighbourhood scale

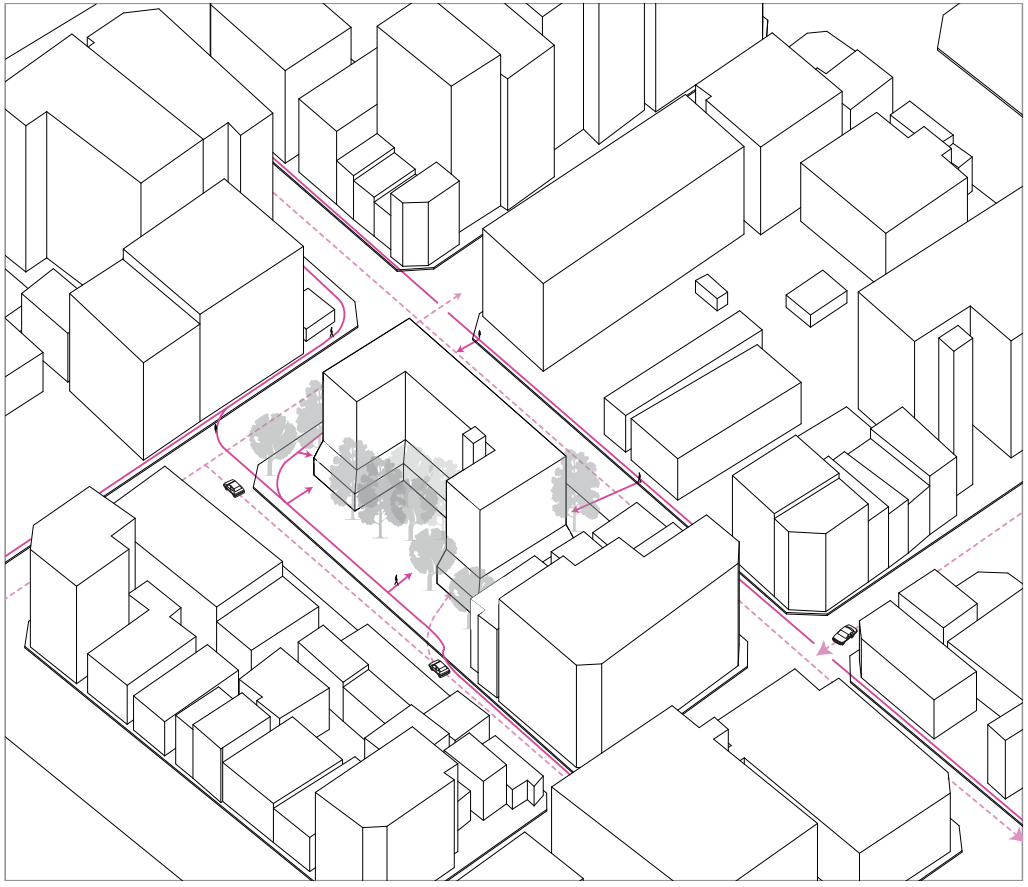
Program and Circulation

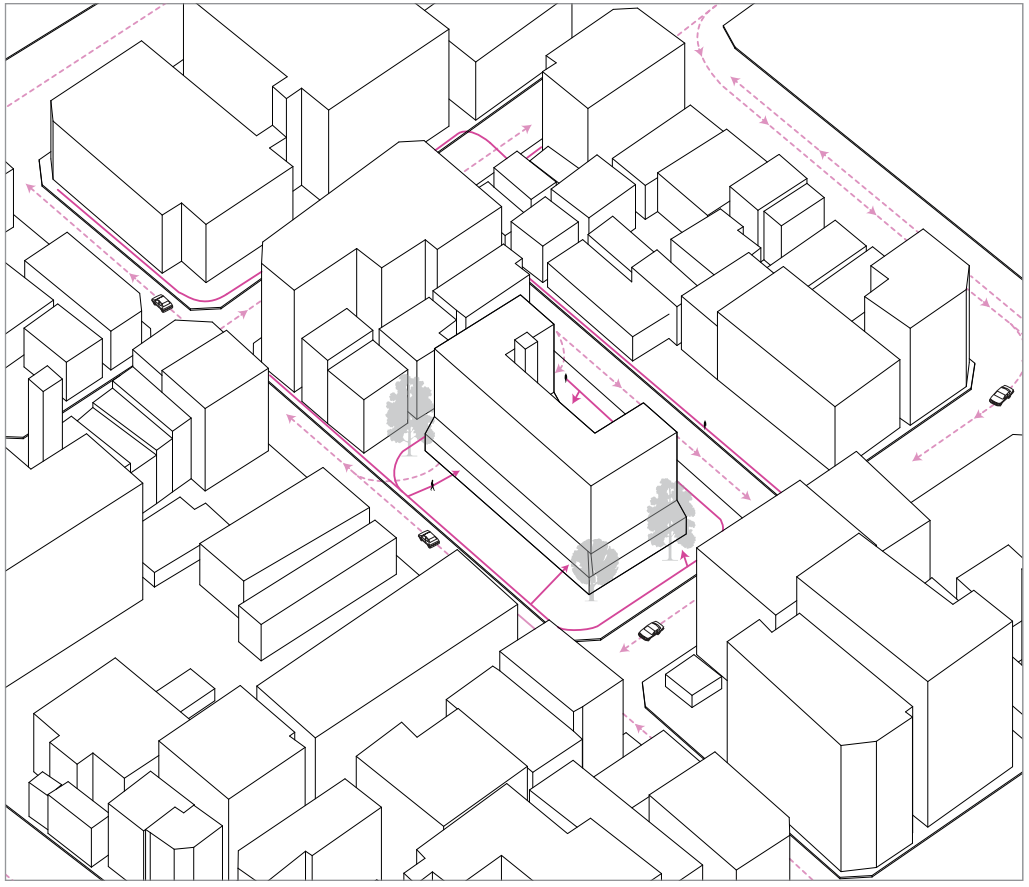


Program: ■Residential ■Office □Commercial



Adjacent volumes





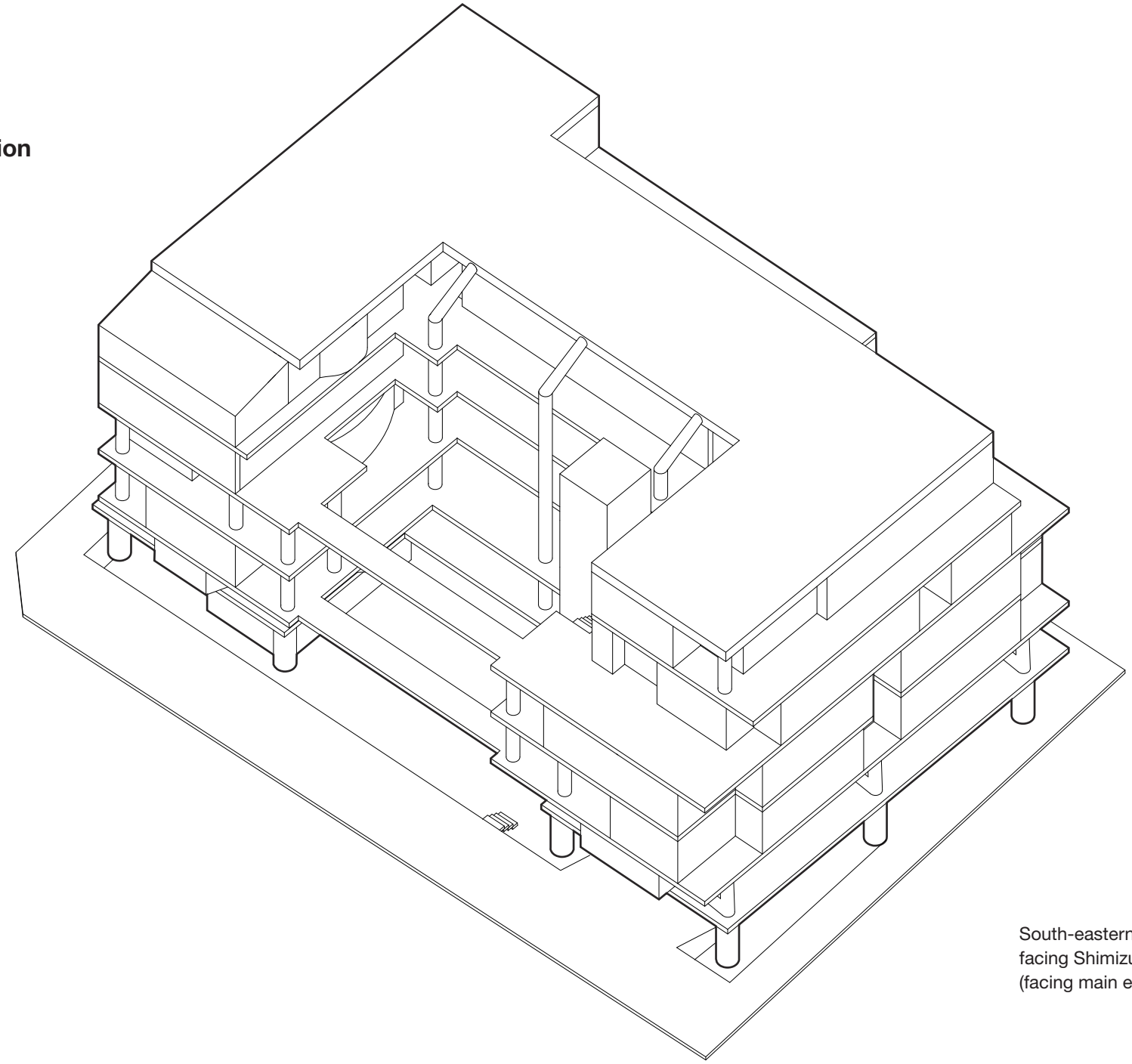
Circulation: access from neighbourhood to building

Pedestrian

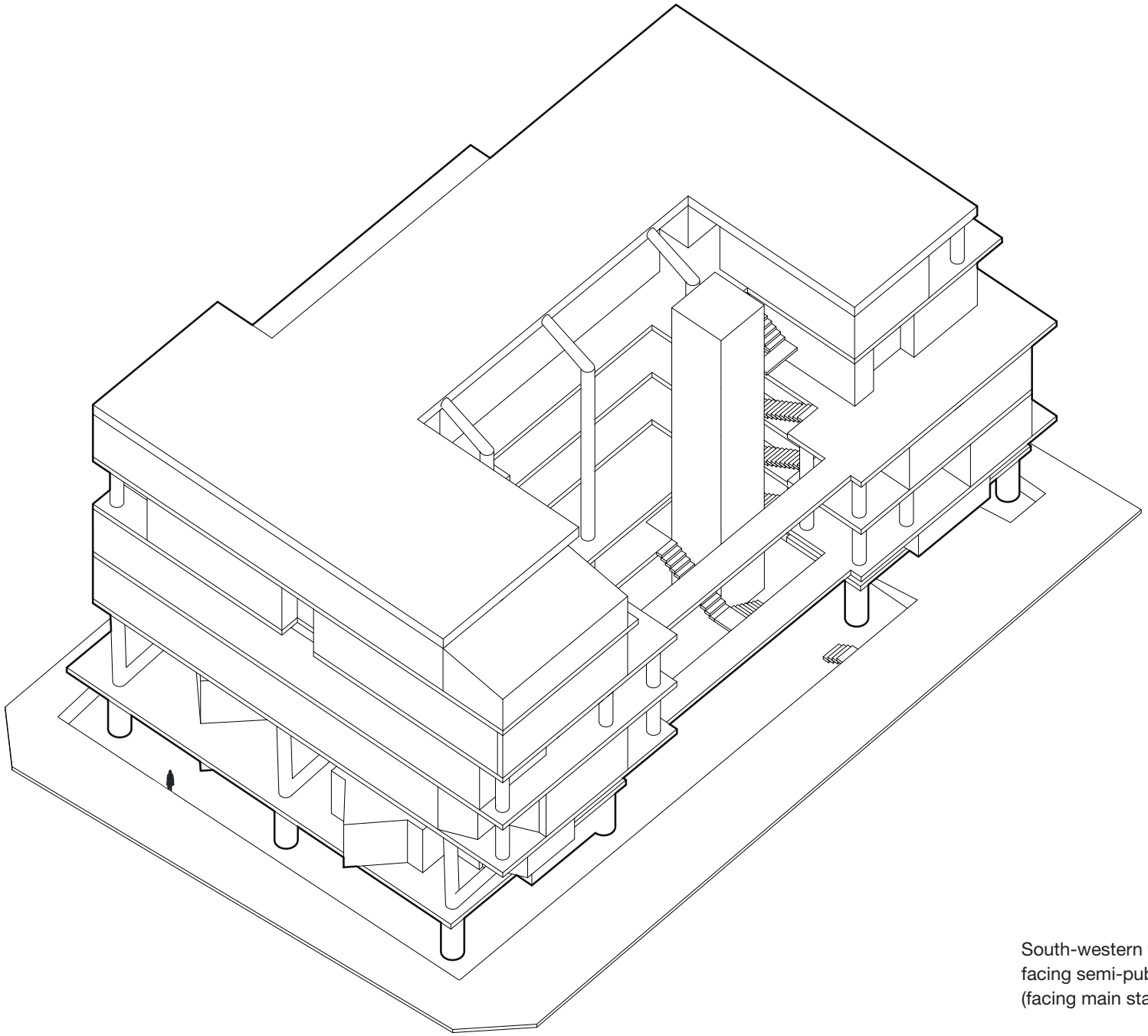
Vehicular

Responsive
at building scale

General Information

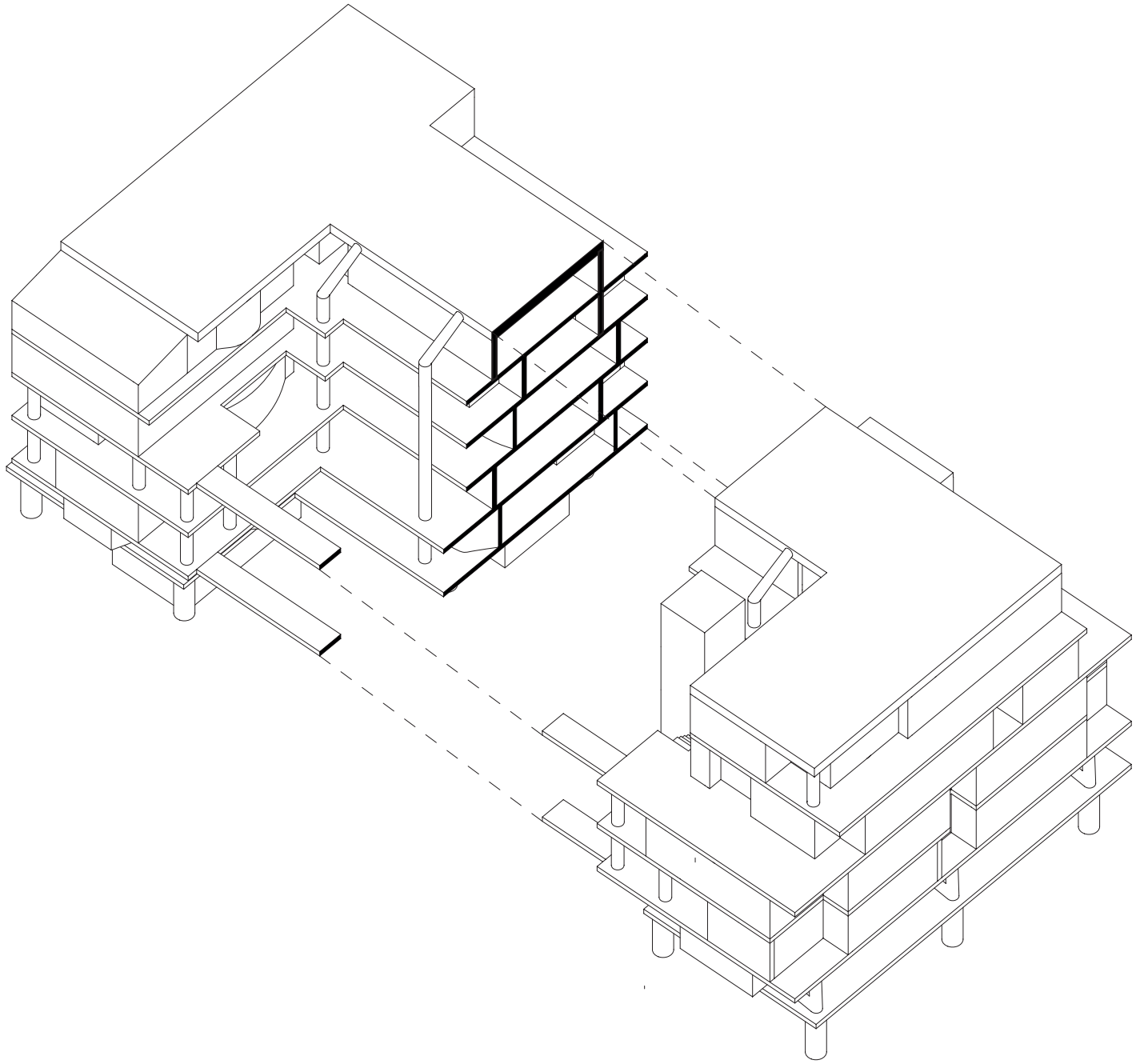


South-eastern facade
facing Shimizudani road
(facing main entrance)

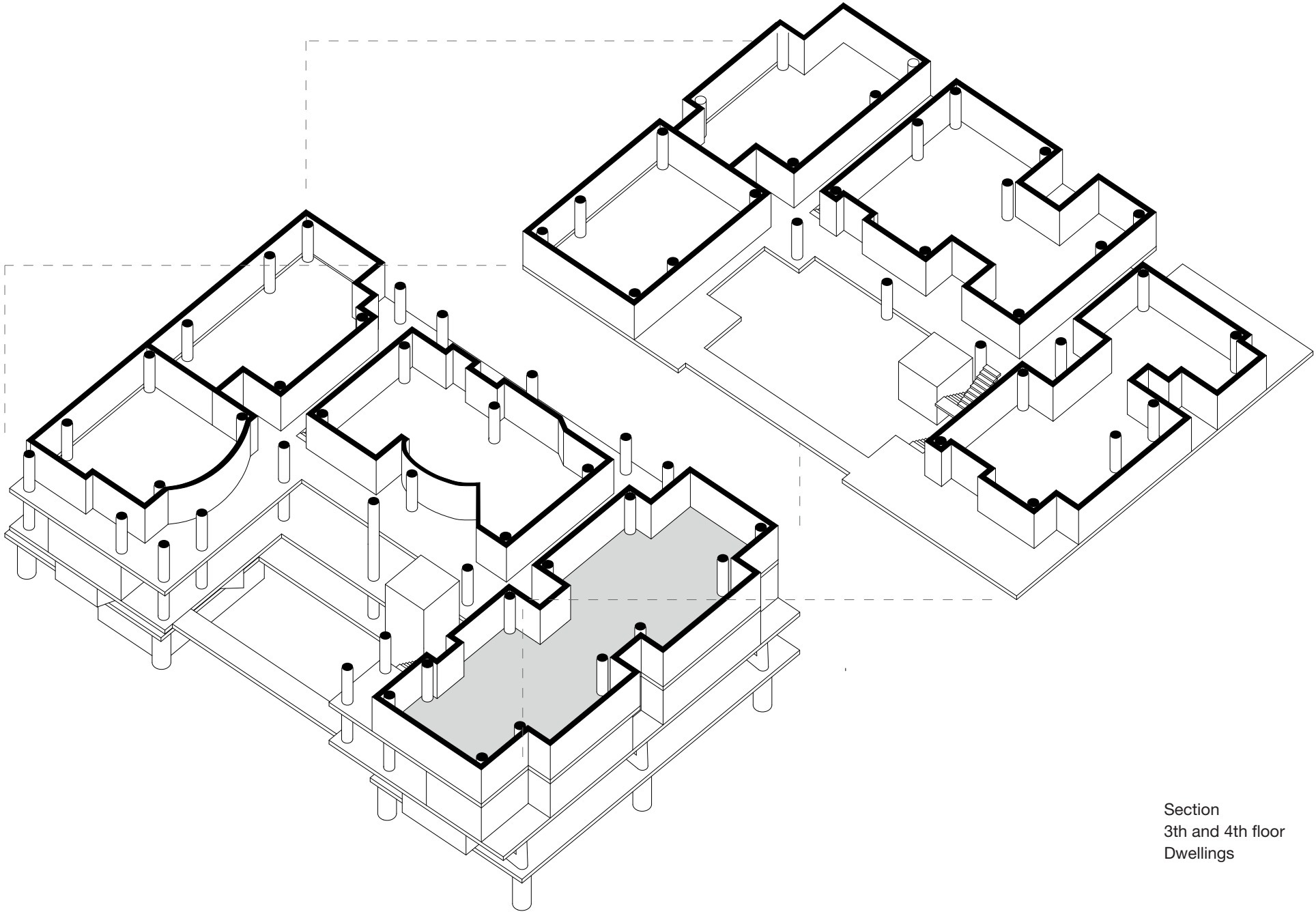


South-western facade
facing semi-public courtyard
(facing main stairs)

General Information



Section
3th and 4th floor
Dwellings



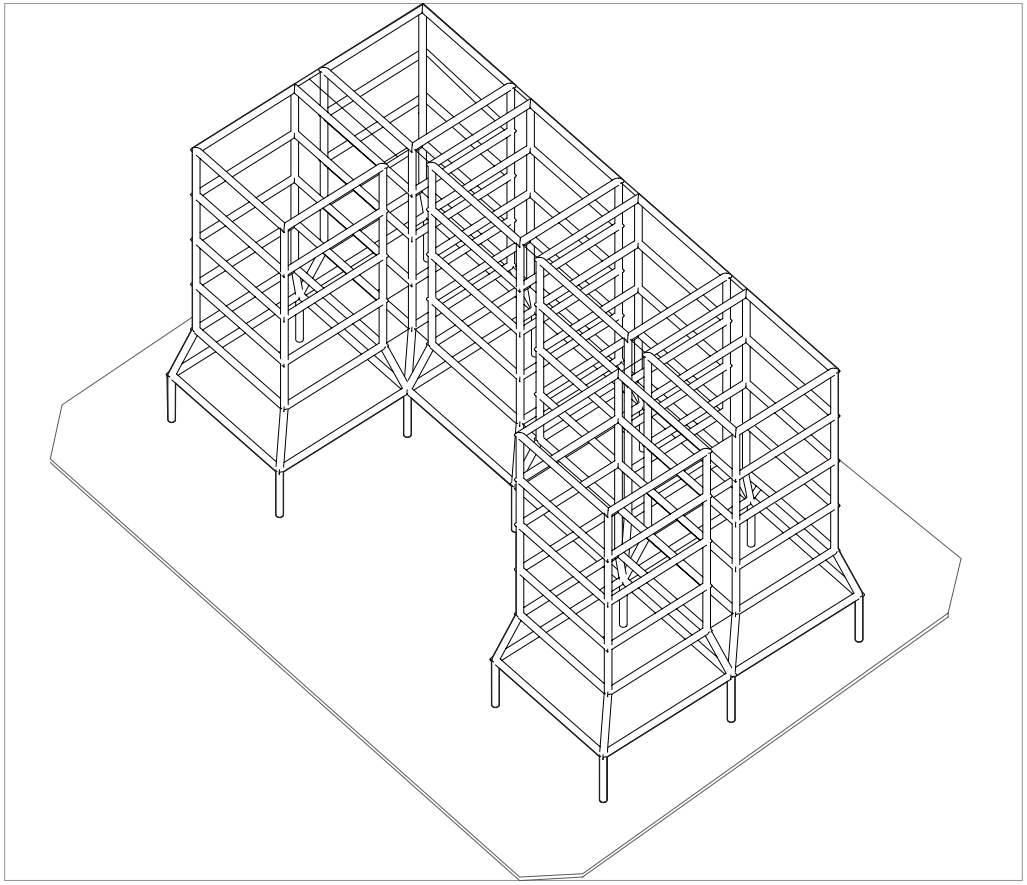
Section
3th and 4th floor
Dwellings

Structure

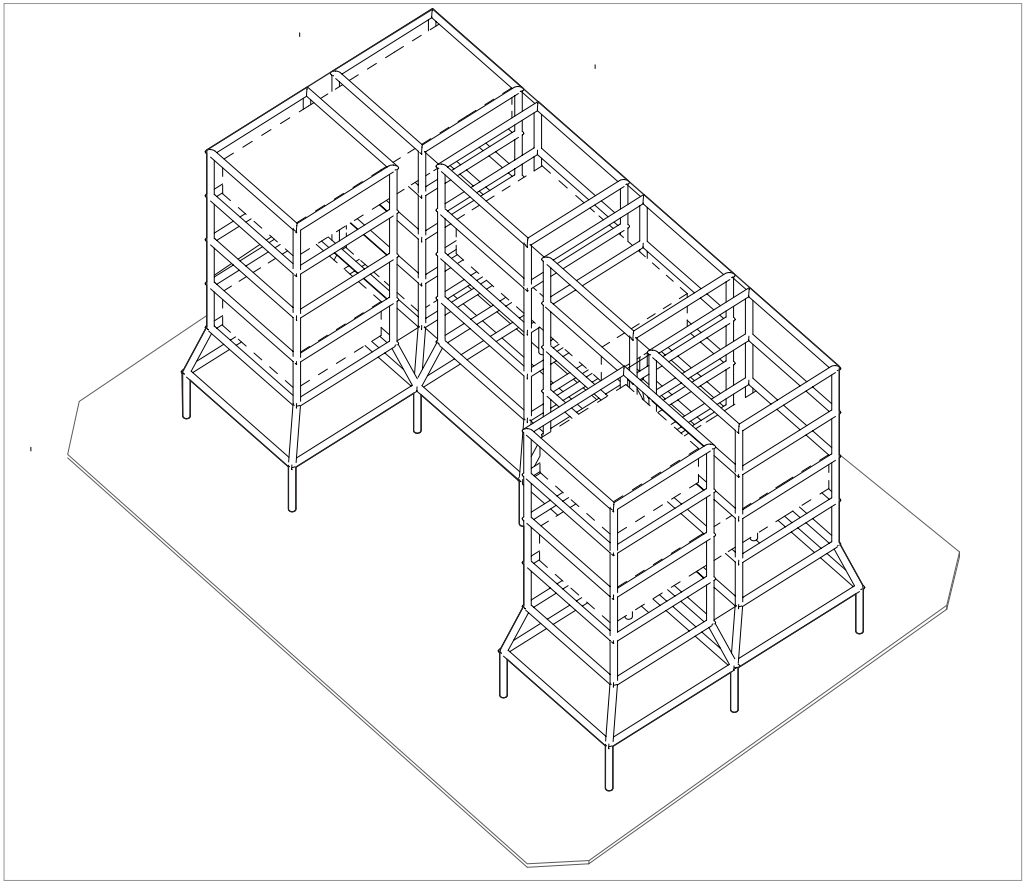
The program of NEXT21 consists of commercial facilities and city services in the lower two floors and dwellings in the upper four. At the roof a communal garden is constructed, connected by a green structure to the courtyard.

Two principal concepts are incorporated in the design of NEXT21. The first is the division of elements in short-life and long-life elements (two stages building). Second, these elements are divided in independent subsystems (systems building). The long-life elements are called the infrastructure of the building and contain the subsystems main bearing structure, cladding, the public doors and windows and the plumbing and mechanical system outside the units. The short-life elements are called the infill and are seen as two subsystems. The outer walls and the other parts of the units. The infill consists of the outer en inner dwelling walls and dwelling program, the piping and wiring inside the dwelling and the overall arrangement of spaces, restricted to a modular grid. The infill is seen as an individual system, while the infrastructure is the common one.

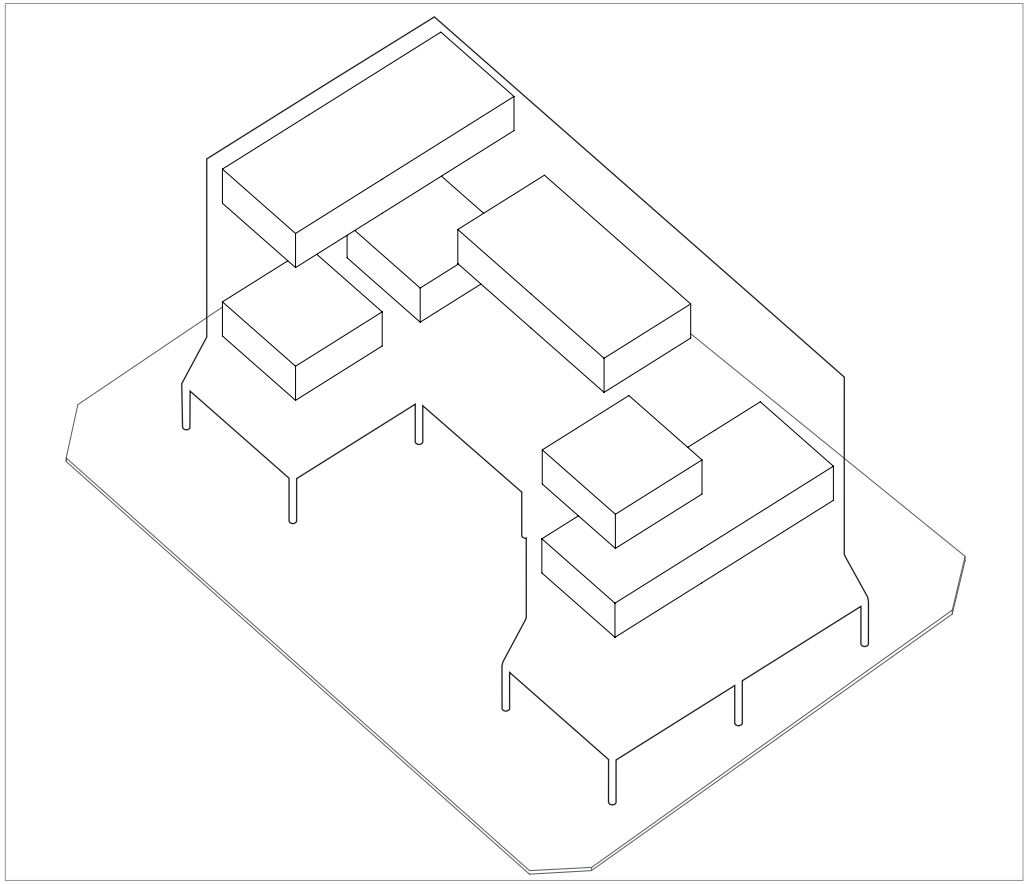
The Shu-koh-sha Architectural and Urban design studio, designed the frame of the building. Six towers construct this frame. They all have the same measurements, varying from 7.2 x 7.2m in the upper levels and 10.8 x 10.8m at ground floor level. By consolidating four columns into one at the lowest floors, a larger bay size is created, necessary for the parking area and public functions. A group of thirteen architects, among whom the client, all designed a part of the (infill) dwellings. All inner walls, in the commercial as well in the residential part can be moved or removed. The outer walls of the dwellings can be changed by residents as well.



Structure - Frame



Structure - Frame and Dwelling units



Structure - Dwelling units

Responsive
at building scale

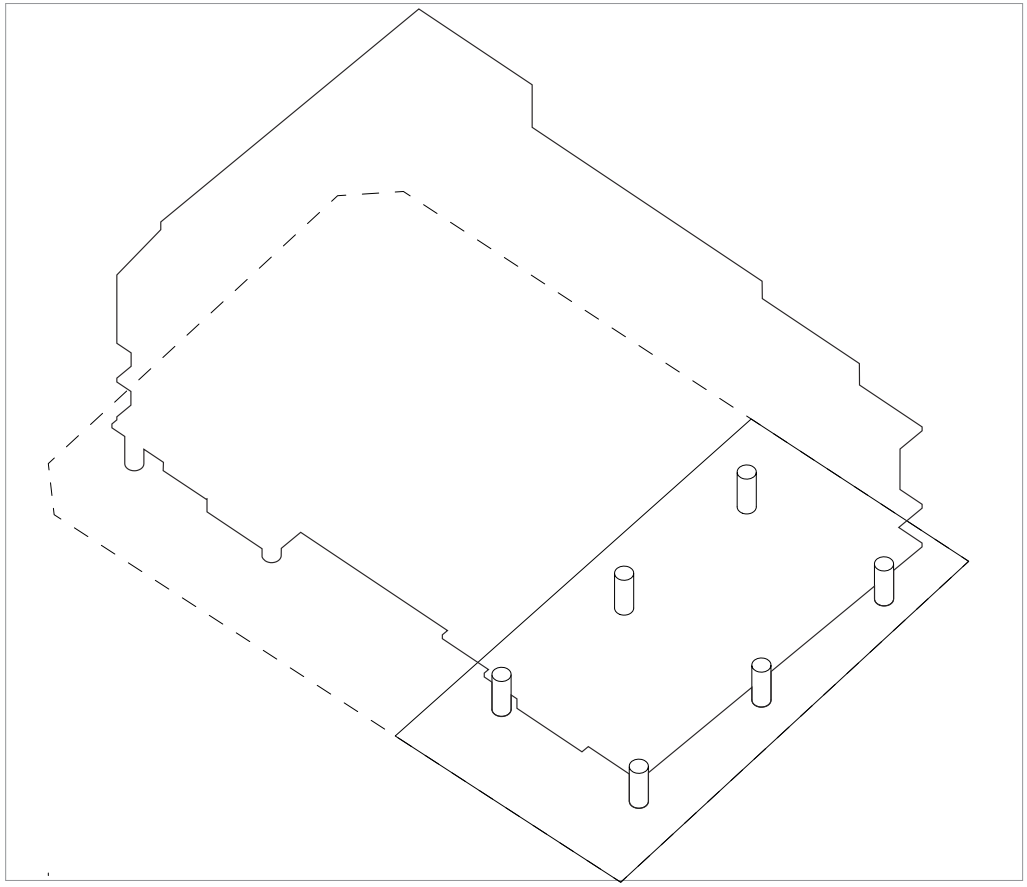
Program

The main structure is part of the long-life structure. Therefore, the outer form of the building isn't adaptable. According to Hertzberger only a durable form, meaning a structure with a clear spatial structure or infrastructure, can act as support and give direction to the infill of the complex.[12]

For NEXT21, without side additions, the specific form of the building corresponding to its context will stay the same. Per floor major variations can occur. The different compositions of the volumes at the lower floors and at the dwelling floors show this variety. The floor plans of the upper floors show some variety, each dwelling differing from the others, but the main volume composition stays the same. The common corridors, which also contain shafts, are fixed and limit the composition change. The number of dwellings varies from four to five, providing each family with more or less the same sized dwelling.

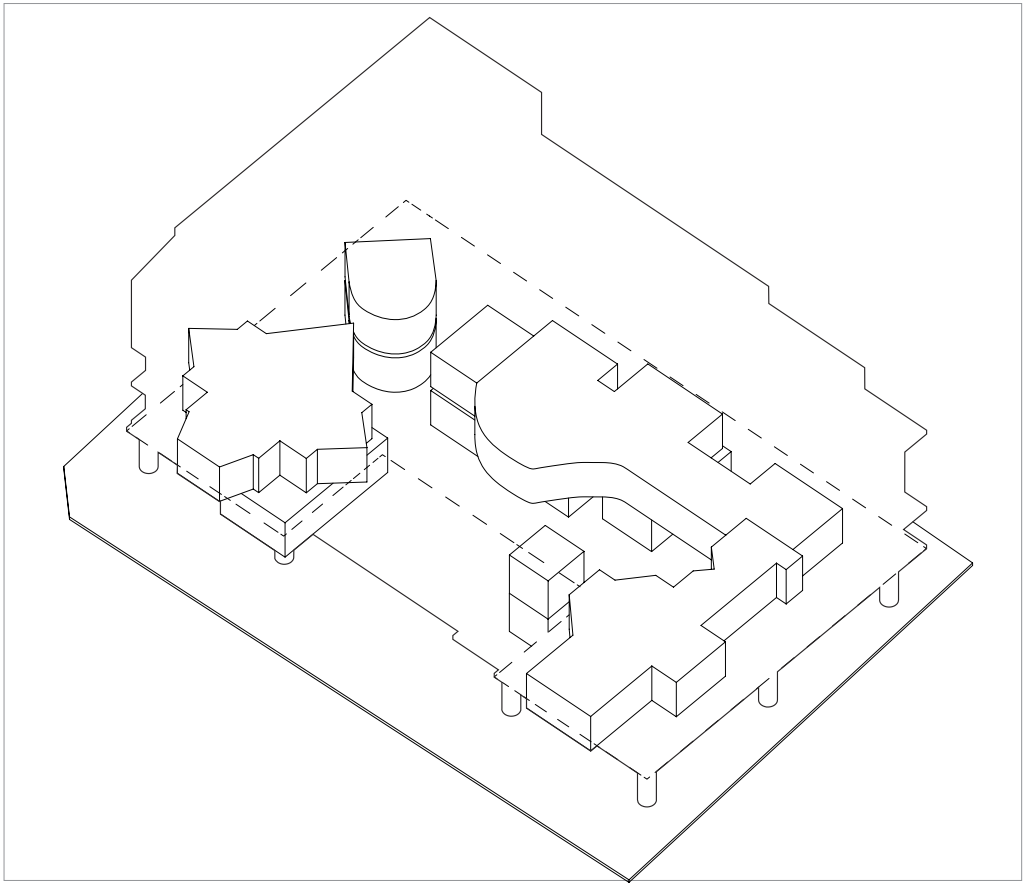
All the piping and wiring runs vertically through two common shafts. The horizontal shafts are organized through low slabs under the common corridor spaces, which are all located in the space between the six structural towers. From these slabs the pipes run to each individual dwelling. This system enhances the adaptability of the dwelling unit.

The eighteen dwellings all have their own lifestyle theme.
As mentioned in the building introduction, one of the main goals for the building was the design of a collective housing complex that responds to different types of families. The lifestyles were defined by the architects, not the future residents. However, to make the different dwellings responsive to future residents, the evaluations of possible future residents at the start were used to define these lifestyles.

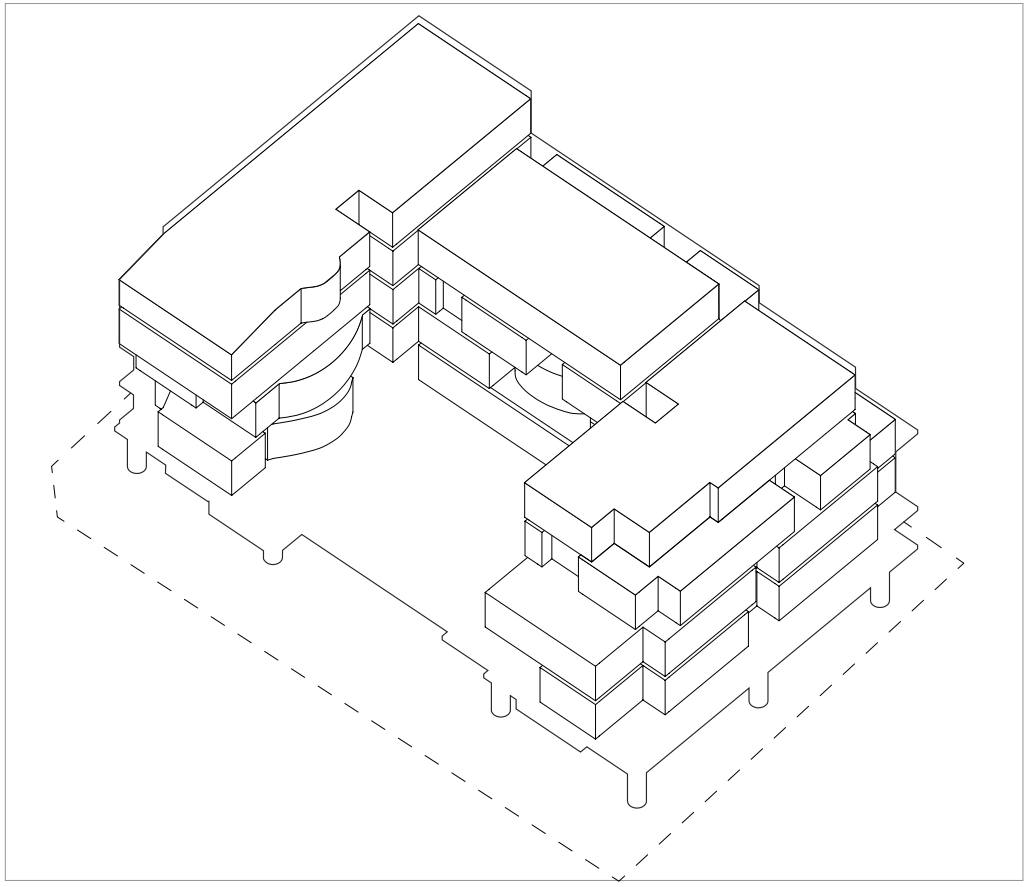


Program - Parking

12- Hertzberger, Herman. Space and the Architect.010, Rotterdam p.176-177



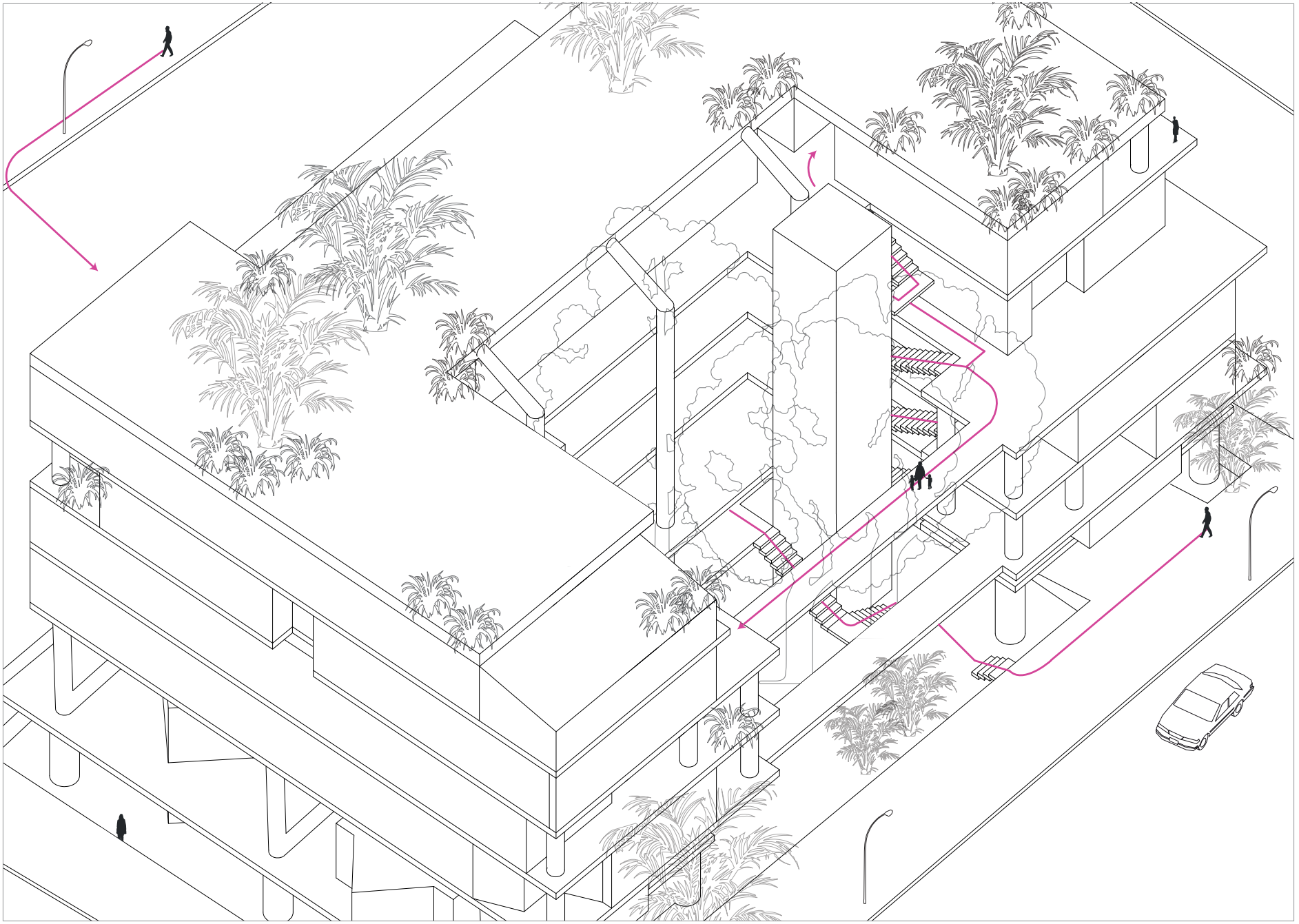
Program - Commercial / City services



Program - Dwellings

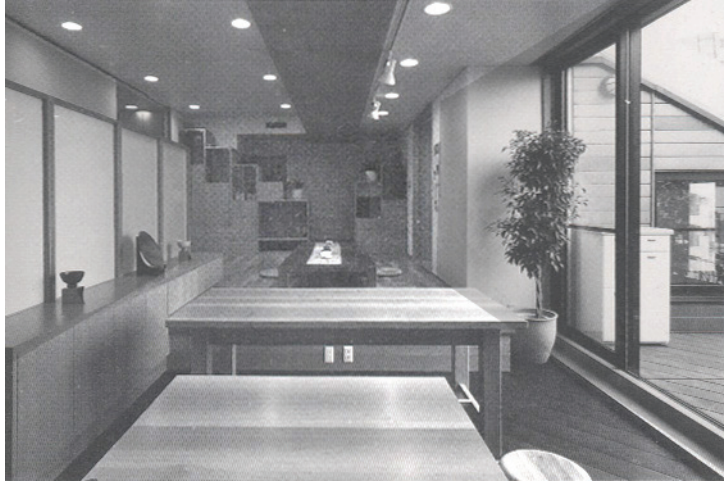
Responsive
at building scale

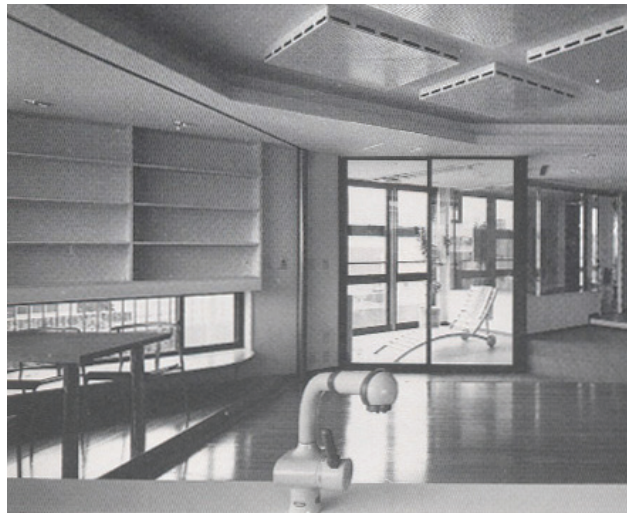
Circulation



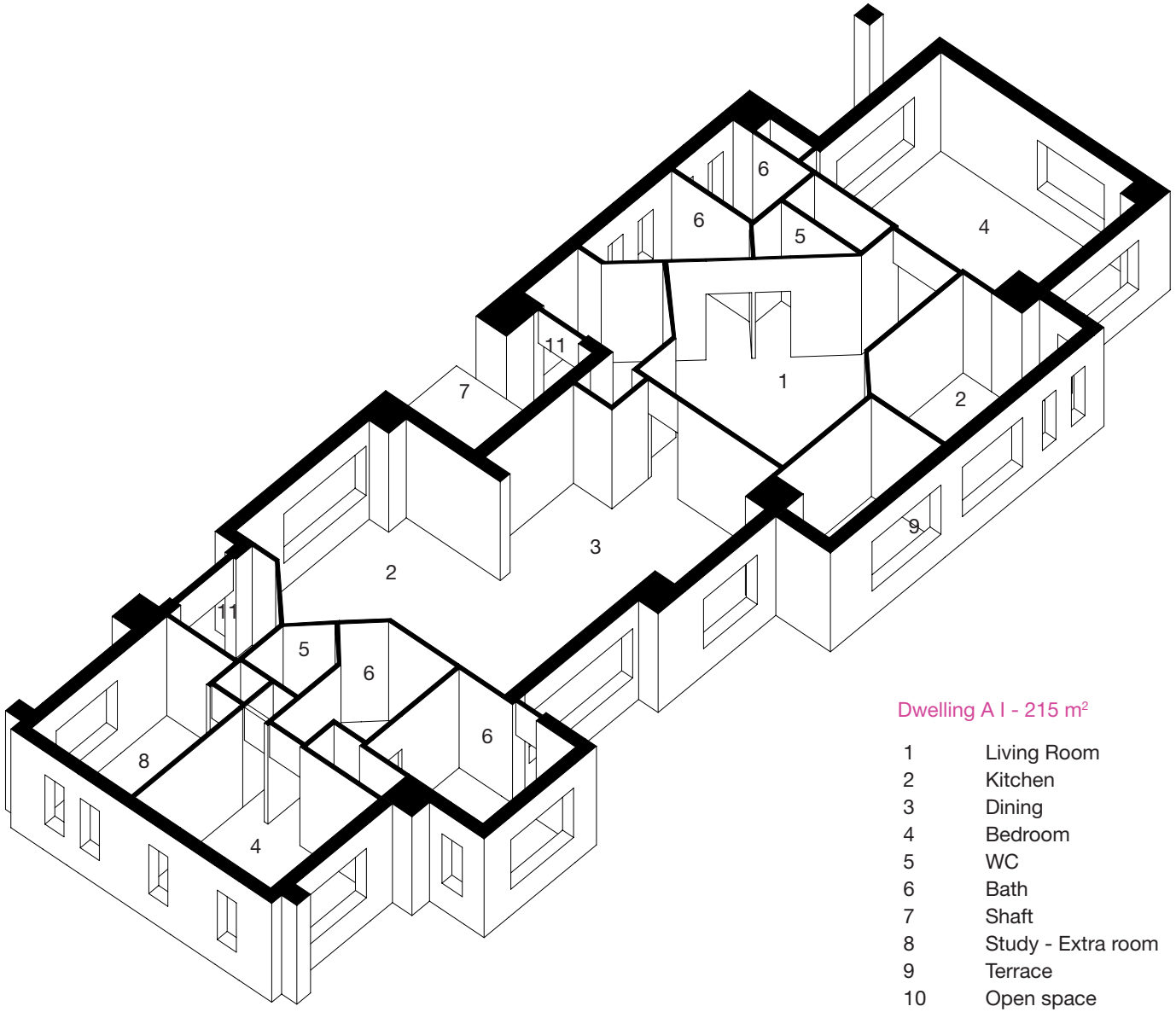
45

Responsive
at dwelling scale



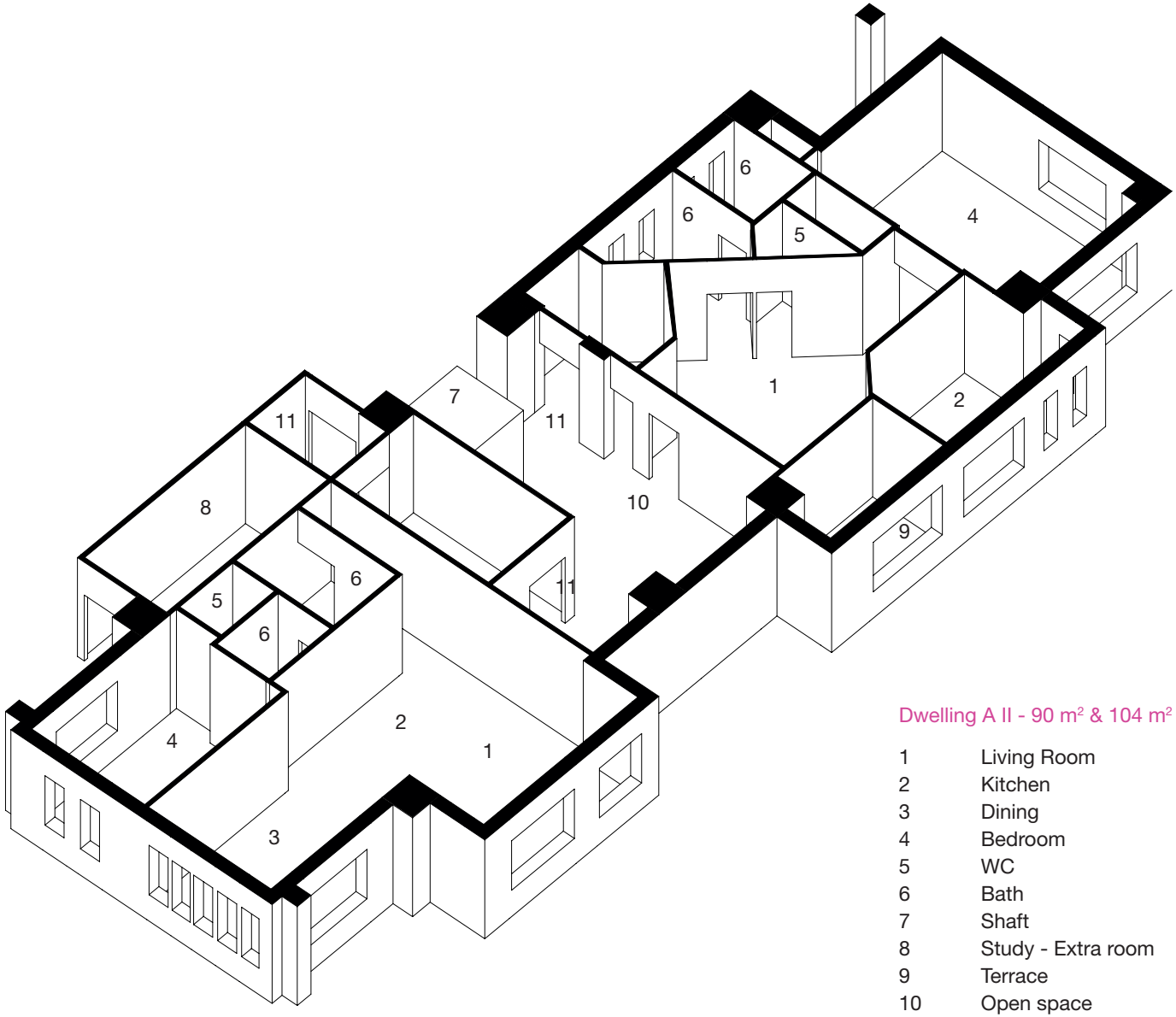


General Information



Dwelling A I - 215 m²

1	Living Room
2	Kitchen
3	Dining
4	Bedroom
5	WC
6	Bath
7	Shaft
8	Study - Extra room
9	Terrace
10	Open space
11	Entrance



Dwelling A II - 90 m² & 104 m²

1	Living Room
2	Kitchen
3	Dining
4	Bedroom
5	WC
6	Bath
7	Shaft
8	Study - Extra room
9	Terrace
10	Open space
11	Entrance

Responsive
at dwelling scale

General Information

To create a unified appearance, cladding materials were preselected, rules were made up for the exterior walls and windows were designed on the basis of a modular system.

Independent coordinators were employed to ensure cohesiveness between the common spaces and the individual units. The outer walls of the units can be moved. For the variation of position of these walls a grid was set up. This grid made it possible to extend the unit partly to a common area or to diminish it, leaving a wider common corridor. All external walls had to be 300mm thick.

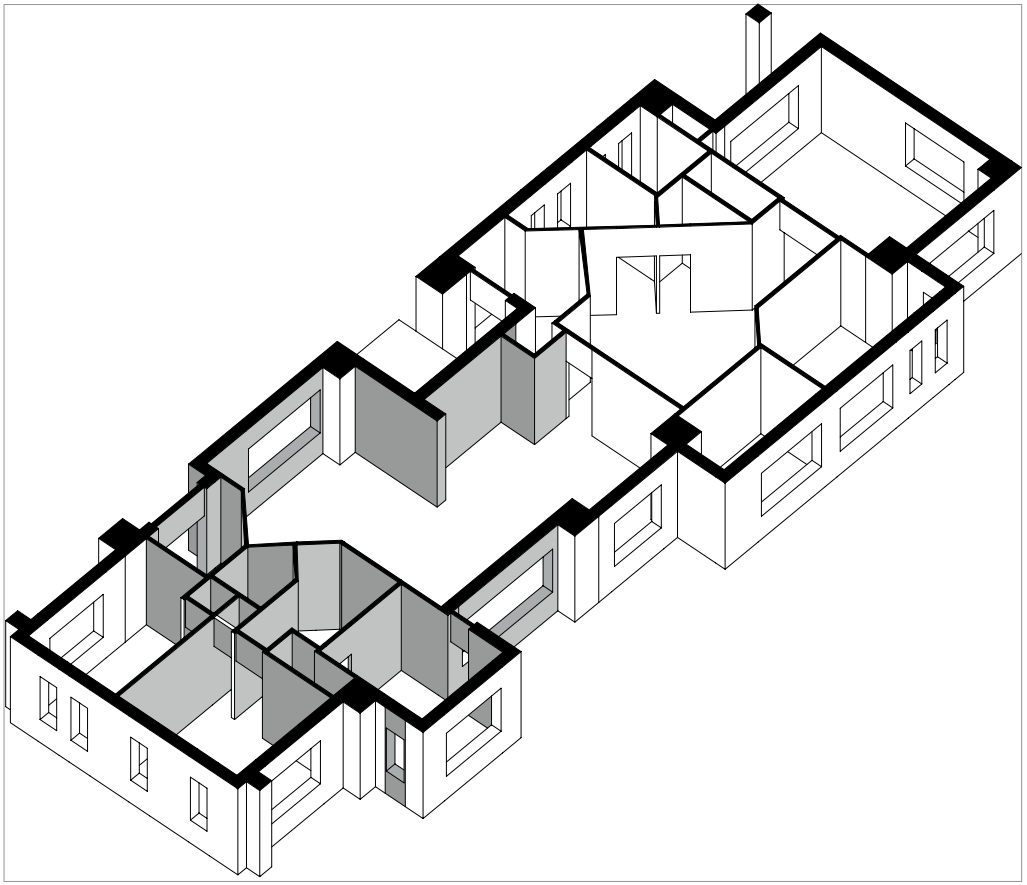
The outer walls were divided into three groups, all having a different degree of freedom for the architect of the unit. The first group consists of the walls at the street side, all designed by the supervising studio. The second type of outer walls is very similar, with the addition of balconies. The window openings in these walls could be changed according to the modular system. The third group of outer walls is located at the side of the courtyard. The design for this group was completely free. The modular grid of 300 x 300mm was used throughout the building.

The division is a direct respond to the surrounding streets and adjacent buildings.

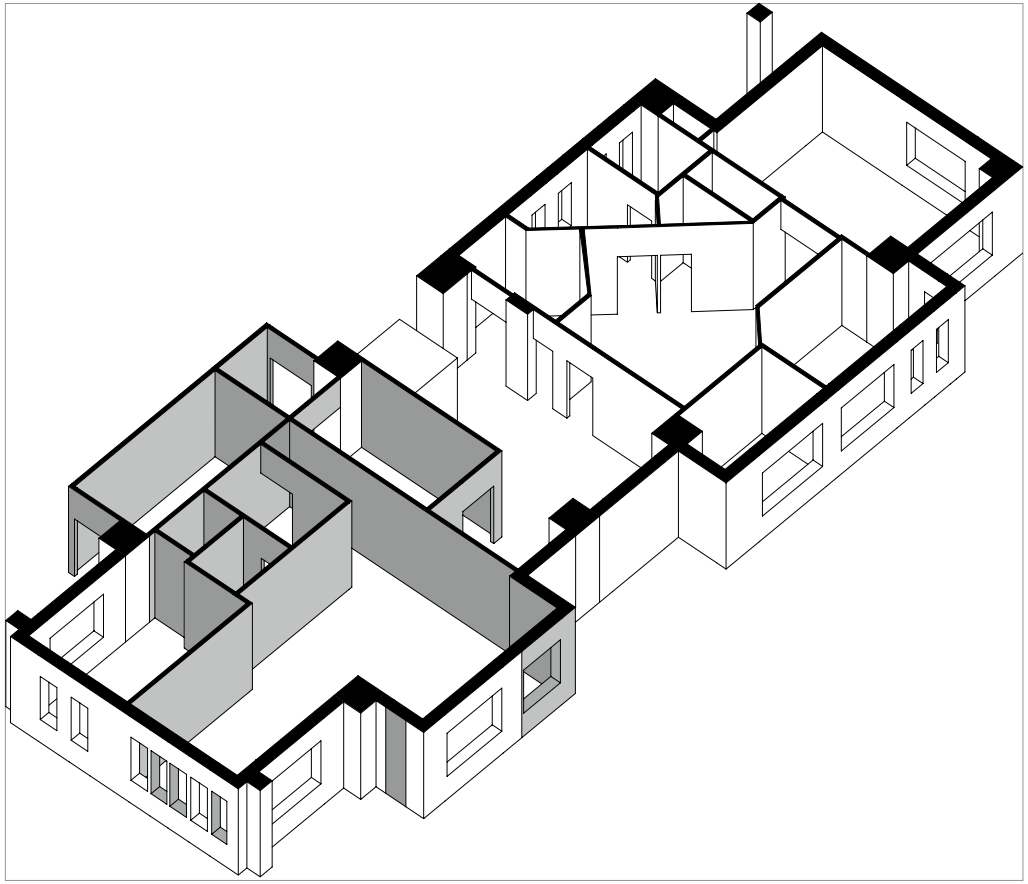
The adaptability of inner and outer walls is visible in the drawings. They show the same unit that was changed after a few years. The unit was first one dwelling that was used for a multiple generation family. After the adaptions the unit was divided into two separate dwellings that are connected by a semi open area. In this case the purpose of the unit was still to provide space for a family of multiple generations, but in separate volumes.

The dwelling shown has the lifestyle theme: multiple generation house. Some other themes are: the sound house, the house with an office, the extensive family house, the garden house and the fitness room house.

Because of the common shafts per unit the programmatic planning of the dwelling can change. Per dwelling as well as in the dwelling itself. The drawings show a change in location for the kitchen and bathroom after splitting the unit.

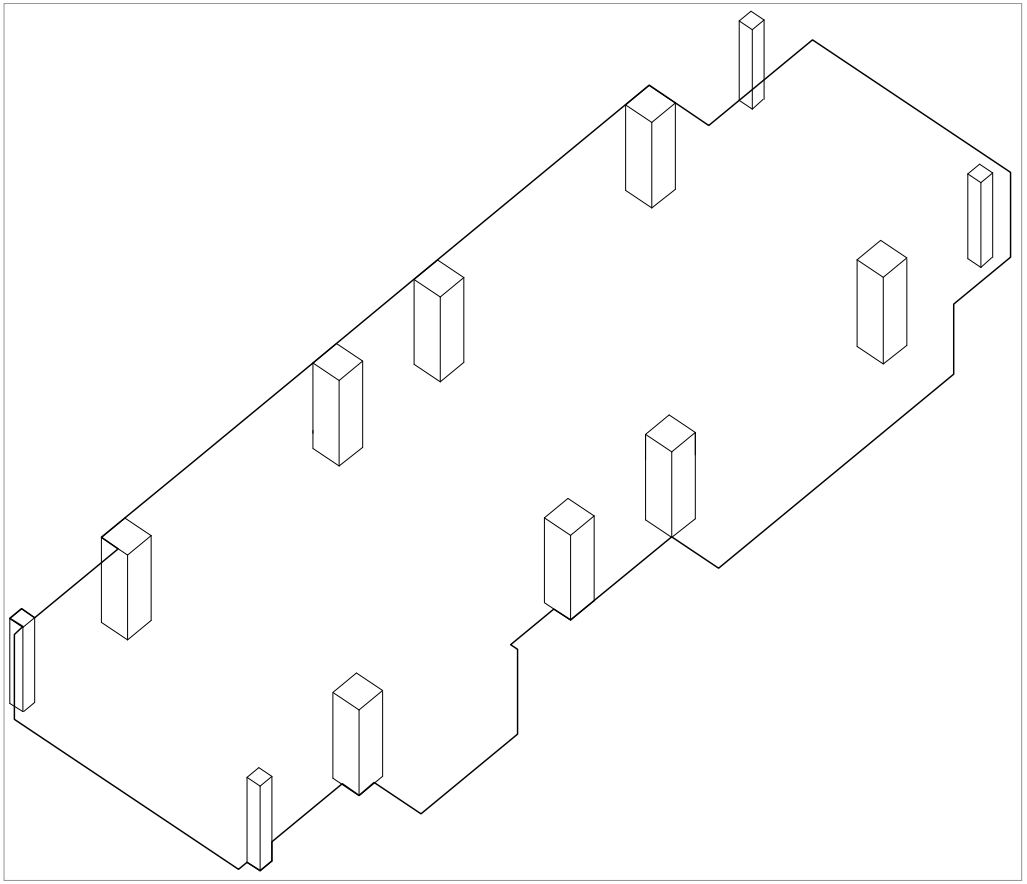


Dwelling A new walls

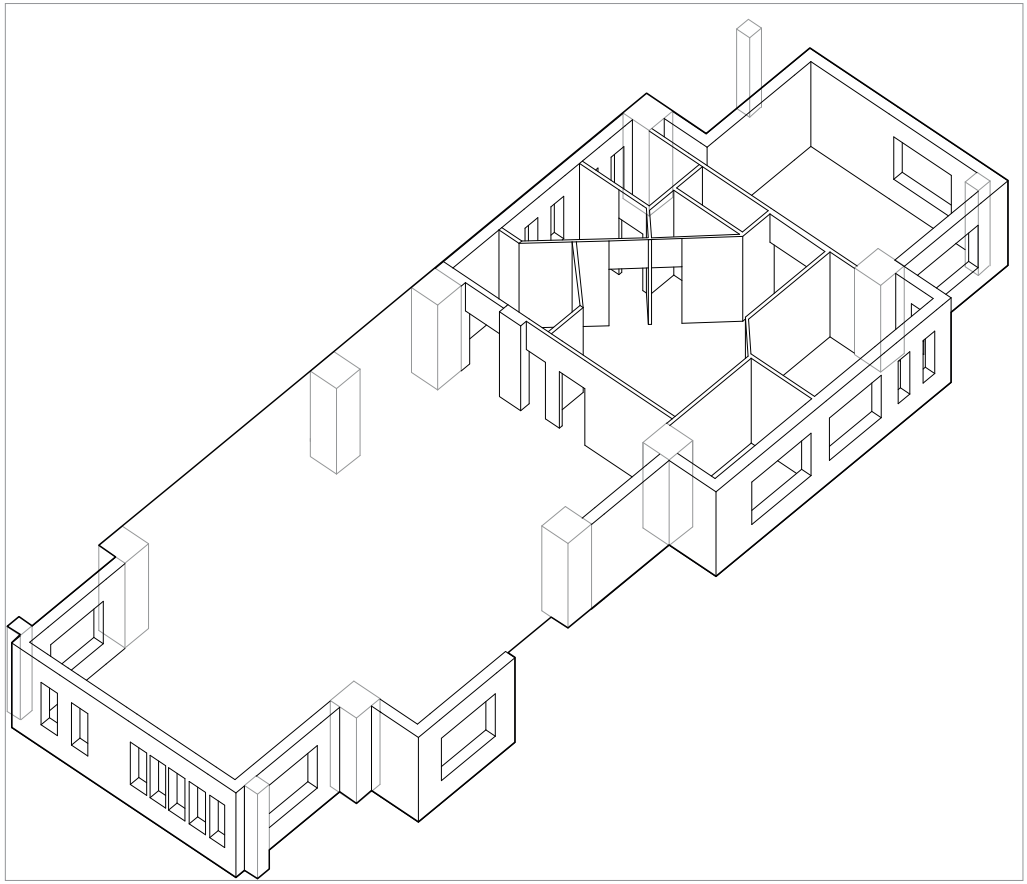


Dwelling B new walls

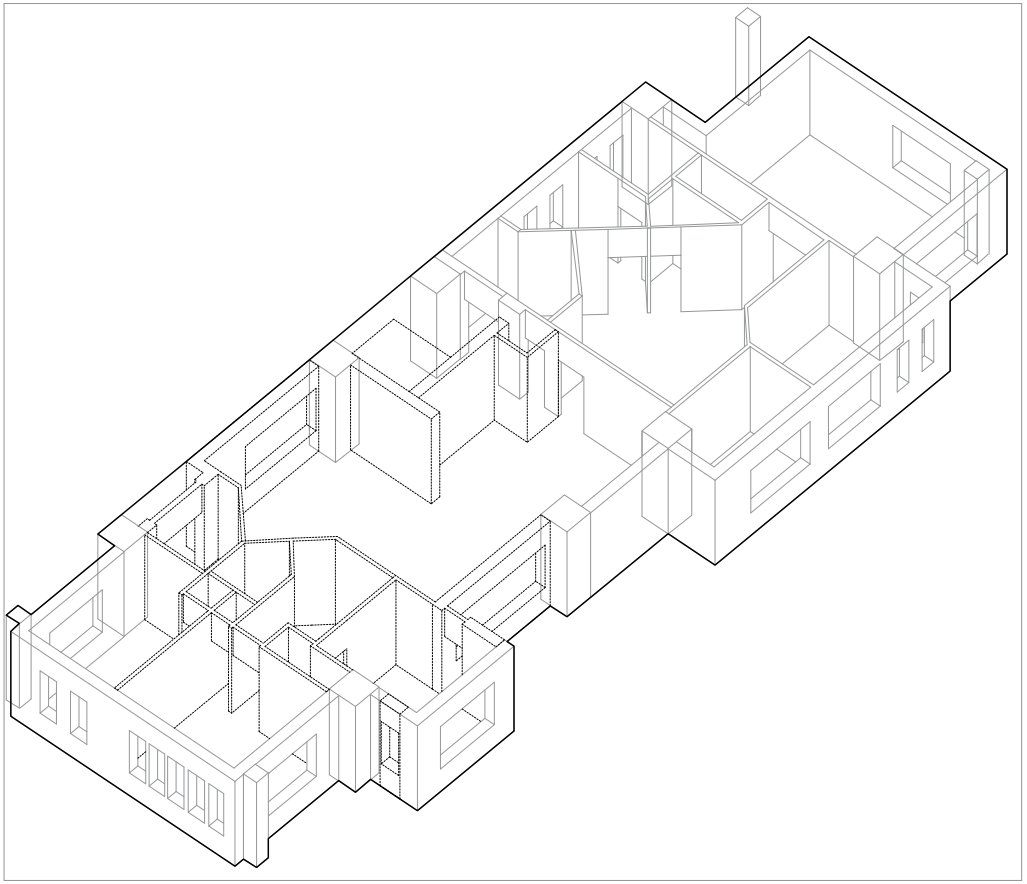
Structure



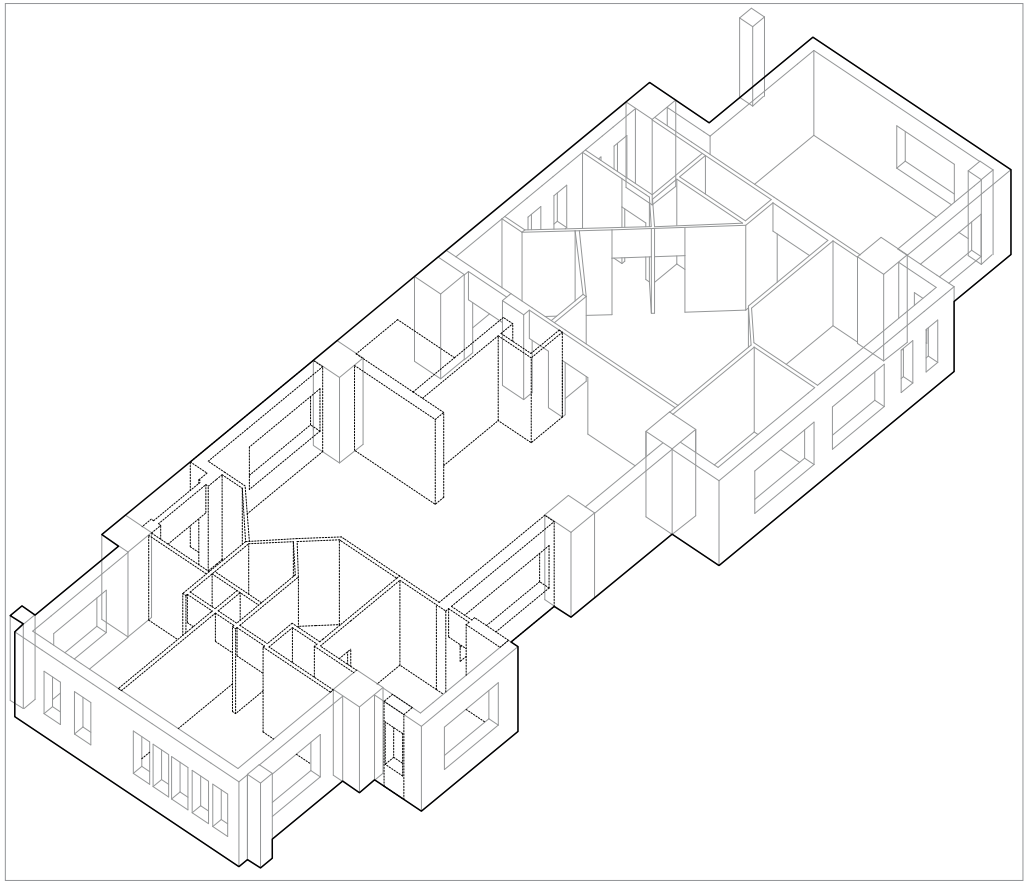
Dwelling A/B main structure



Dwelling A/B walls remained after splitting

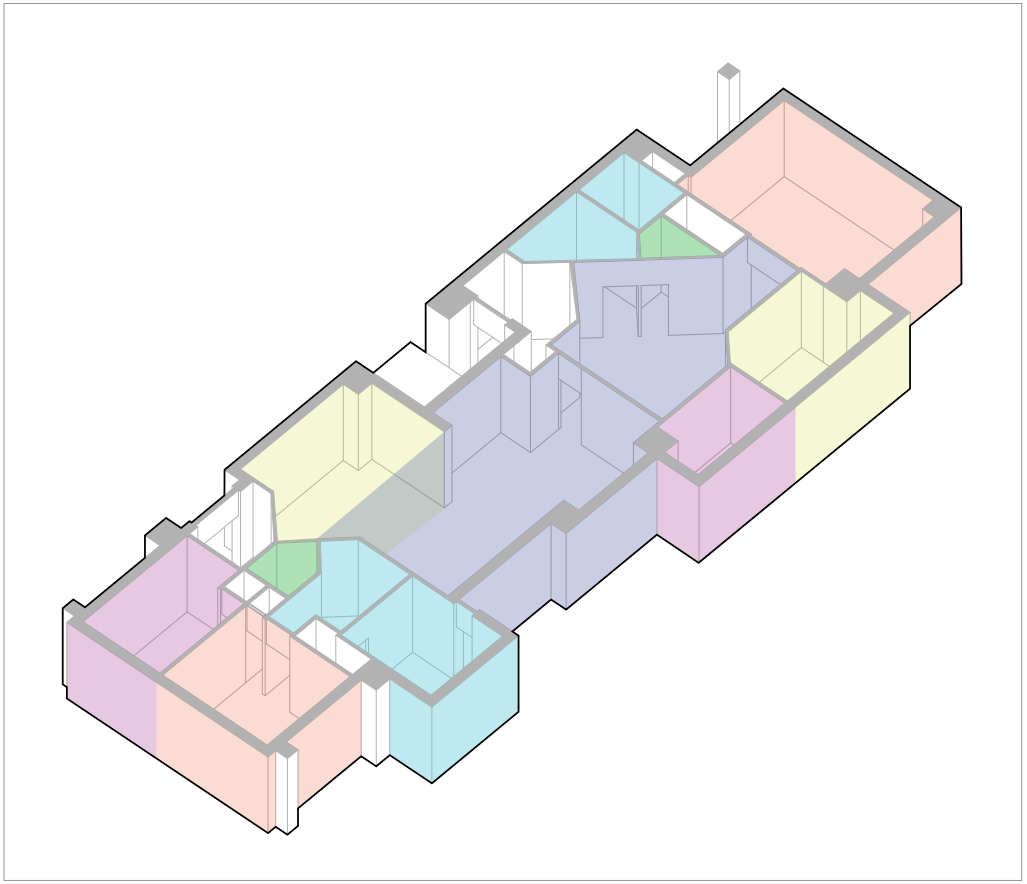


Dwelling A new walls

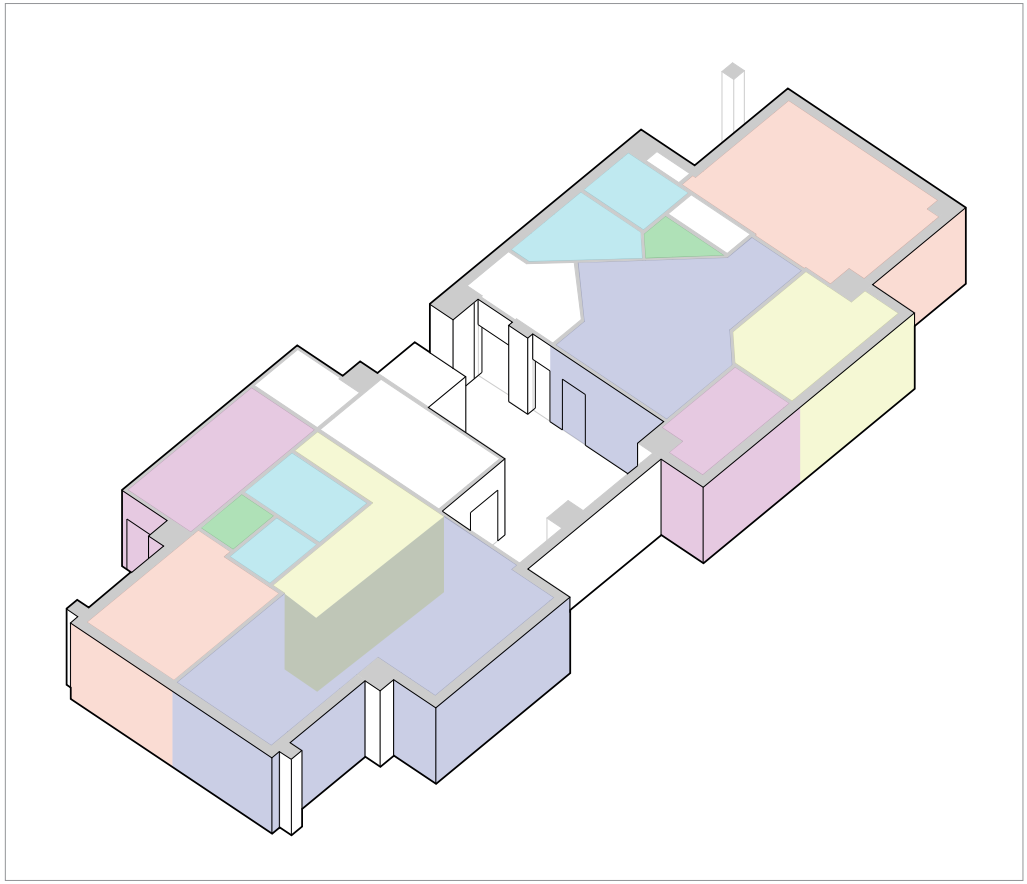


Dwelling B new walls

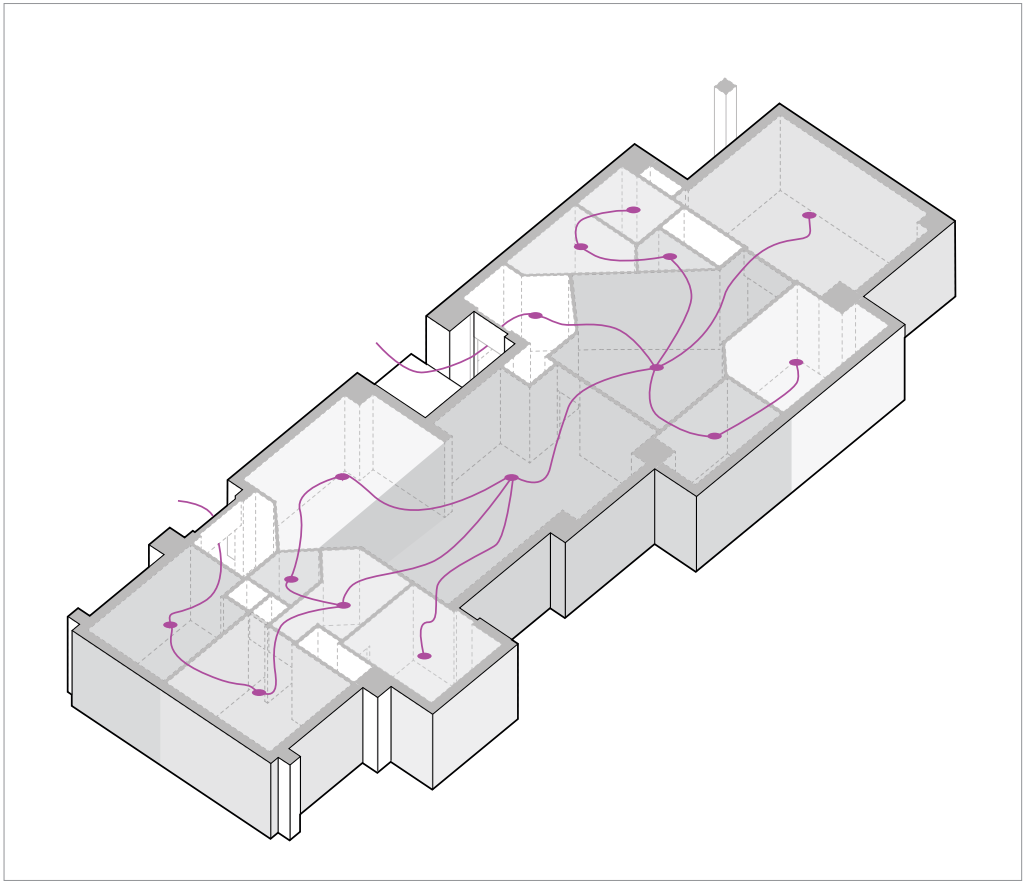
Program and Circulation



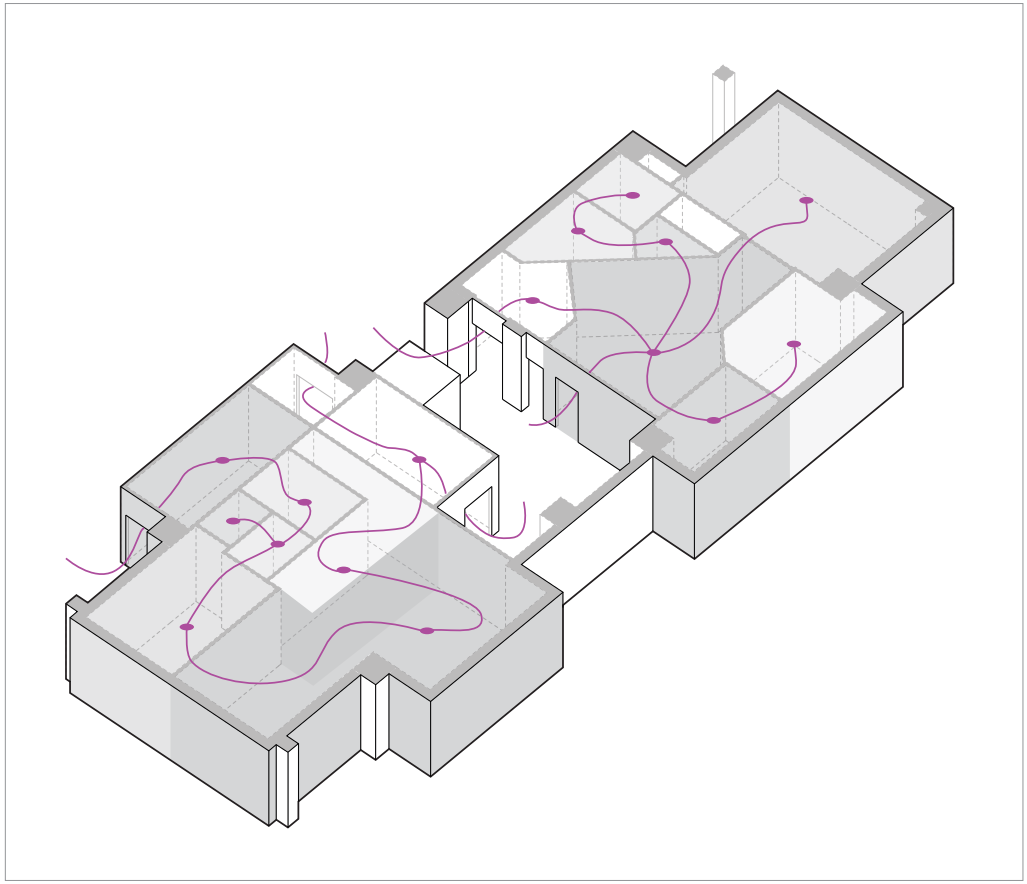
Dwelling A



Dwelling B



Dwelling A



Dwelling B

Responsive
at dwelling scale

Interior perspectives
level 4 pre and post adaption

Quinta Monroy

location: Iquique, Chile
date: 2003
architects: Elemental Arquitectos
number of dwellings: 93

Quinta Monroy is located in the city of Iquique in the Chilean desert, a compact city that presents an interesting urban fabric nestling between the Andes mountains and the Pacific Ocean. With a small grid of 80m x 40m (google earth), it is a human scaled and walkable environment.

Elemental architects were approached by the Chilean government to resolve the following equation: To settle the 100 families of the Quinta Monroy, in the same 5,000 m^2 site that they have illegally occupied for the last 30 years which is located in the very center of Iquique. According to Santiago Aravena, head of Elemental, They had to work within the framework of the current Housing Policy, using a US$ 7,500 subsidy with which we had to pay for the land, the infrastructure and the architecture. Considering the current values in the Chilean building industry, US$ 7,500 allows for just around 30m^2 of built space.

And despite the site's price (3 x more than what social housing can normally afford) the aim was to settle the families in the same site, instead of displacing them to the periphery. If to answer the question, one starts assuming 1 house = 1 family = 1 lot (only 30 families would be hosted in the site). The problem with isolated houses, is that they are very inefficient in terms of land use. That is why social housing tends to look for lowest land costs. That land, is normally far away from the opportunities of work, education, transportation and health that cities offer. This way of operating has tended to localize social housing in an impoverished urban sprawl, creating belts of resentment, social conflict and inequity. Elemental's first task was to find a new way of looking at the problem, shifting our mindset from the scale of the best possible U$ 7,500 object to be multiplied 100 times, to the scale of the best possible U$ 750,000 building capable of accommodating over 90 families and their expansions.

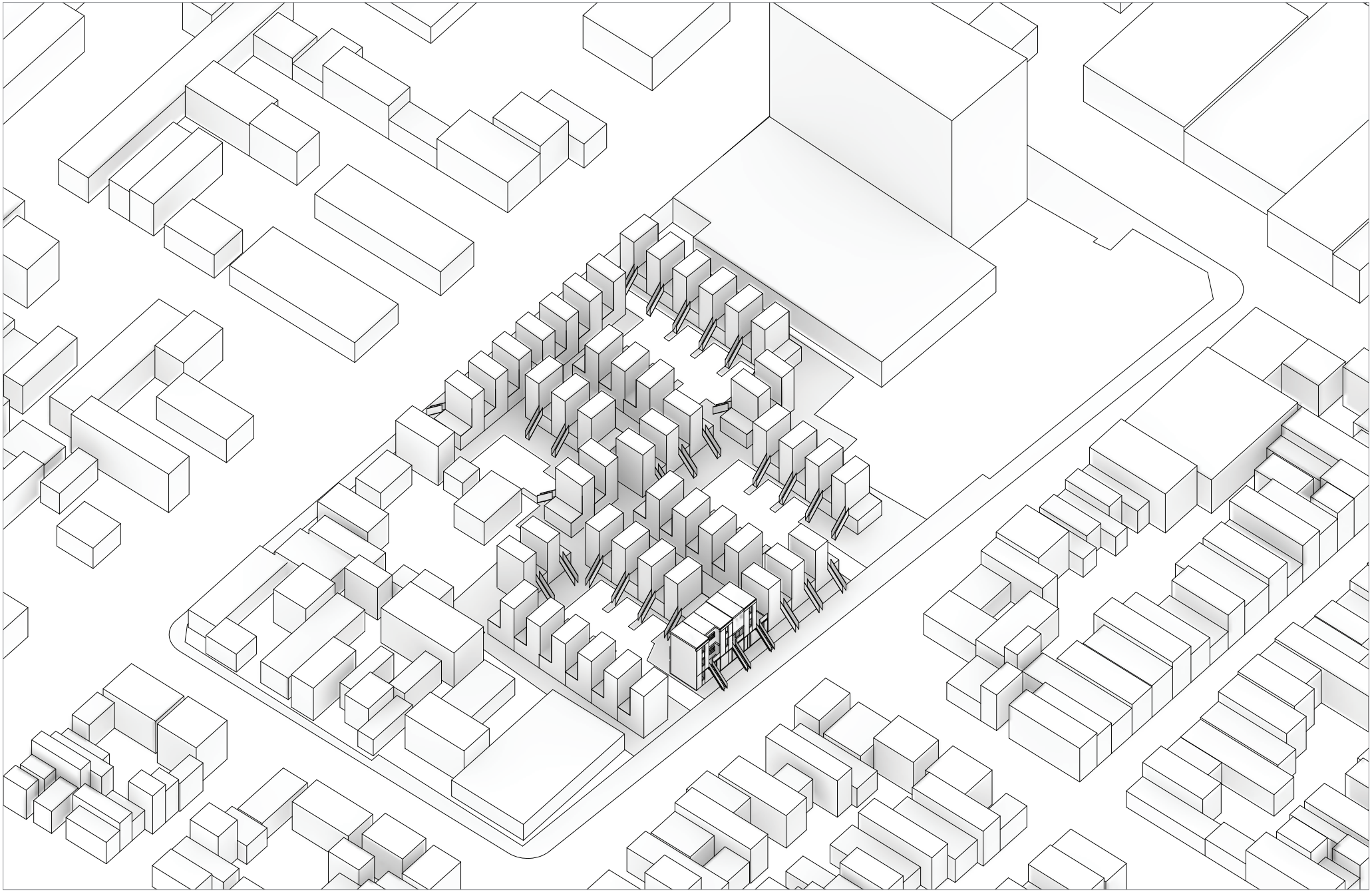
Elemental intended for the buildings to expand through an addition of blocks in the upper floors. In first place, to achieve enough density, (but without overcrowding), in order to be able to pay for the site, which because of its location was very expensive. To keep the site, meant to maintain the network of opportunities that the city offered and therefore to strengthen the family economy; on the other hand, good location is the key to increase a property value. Second, the provision a physical space for the "extensive family" to develop, has proved to be a key issue in the economical take off of a poor family. Due to the fact that 50% of each unit's volume, will eventually be self-built, the building had to be porous enough to allow each unit to expand within its structure. The initial building must therefore provide a supporting, (rather than a constraining) framework in order to avoid any negative effects of self-construction on the urban environment over time, but also to facilitate the expansion process.

Instead a designing a small house (in 30 m^2 everything is small), Elemental provided a middle-income house, out of which they were giving just a small part now. This meant a change in the standard: kitchens, bathrooms, stairs, partition walls and all the difficult parts of the house had to be designed for final scenario of a 72m^2 house.

In the end, when the given money is enough for just half of the house, the key question is, which half do to do. Elemental choose to make the half that a family individually will never be able to achieve on its own, no matter how much money, energy or time they spend.

A Collective area for the residents

Responsive
at neighbourhood scale



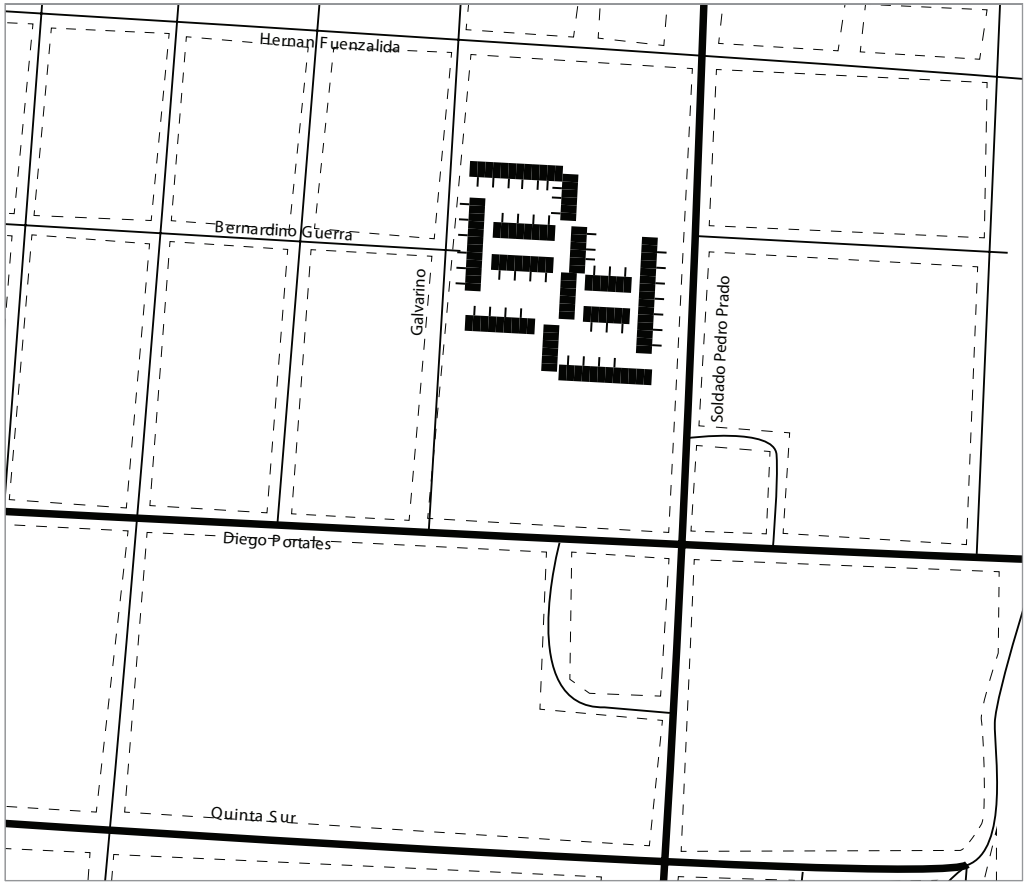
Responsive
at neighbourhood scale

Structure

Quinta Monroy is well known for its interesting 'incremental design' approach, but it also interesting to analyze the project in relation to its context. The diagrams in adjacent page depict that the case study is bordered by a main artery (Soldado Pablo Prado,) and confronted by a street that starts perpendicular to it (Bernardino Guerra), causing a break in the regularity of the city grid. Further analysis show in the adjacent volumes diagram (p.64) a condition, which Kevin Lynch regard as a 'node', in the mental map of the neighbours, as they try to make sense of their surroundings.

By using a repetitive module and clear volumes, Elemental enhances this node within the larger notion of the city, particularly useful in this case; where surrounding buildings are monotonous and very similar in scale (shown in the adjcent volumes diagram); except for the taller office building on southeast corner of the block, which unlike Quinta acts as a node solely on Soldado Prado.

The program and circuation diagrams (p.64-65) show that at the neighbourhood level, the city block where Quinta is located, acts as a protencting barrier between Soldado Prado and the residential neighbourhood along Bernardino Guerra. The block is located in between two streets with different traffic flow and intensity, the design of the project does not make any particular distinction to either street in terms of access and pedestrian circulation; however the architect takes advantage of the pause derived by the alteration in the city grid, and uses it for larger for collective public space not seen in other residences west of Soldado Prado. This arragement is a smart gesture particularly towards the Guerra side where the one way street forces vehicles to move away from the complex and slow speeds. Inside the complex the courtyards have restricted use of vehicle only to residents, the courtyards enable children to play and adults to use them as collective spaces. This triggers neighbourhood interaction, sociability and safety, a sense of what Jane Jacobs describes as 'eyes on the street'. Residents on ground level are given entrances on both sides of the building, allowing flexible circulation towards the street and the collective courtyards.- these are further studied at the building level evaluation of Quinta Monroy.



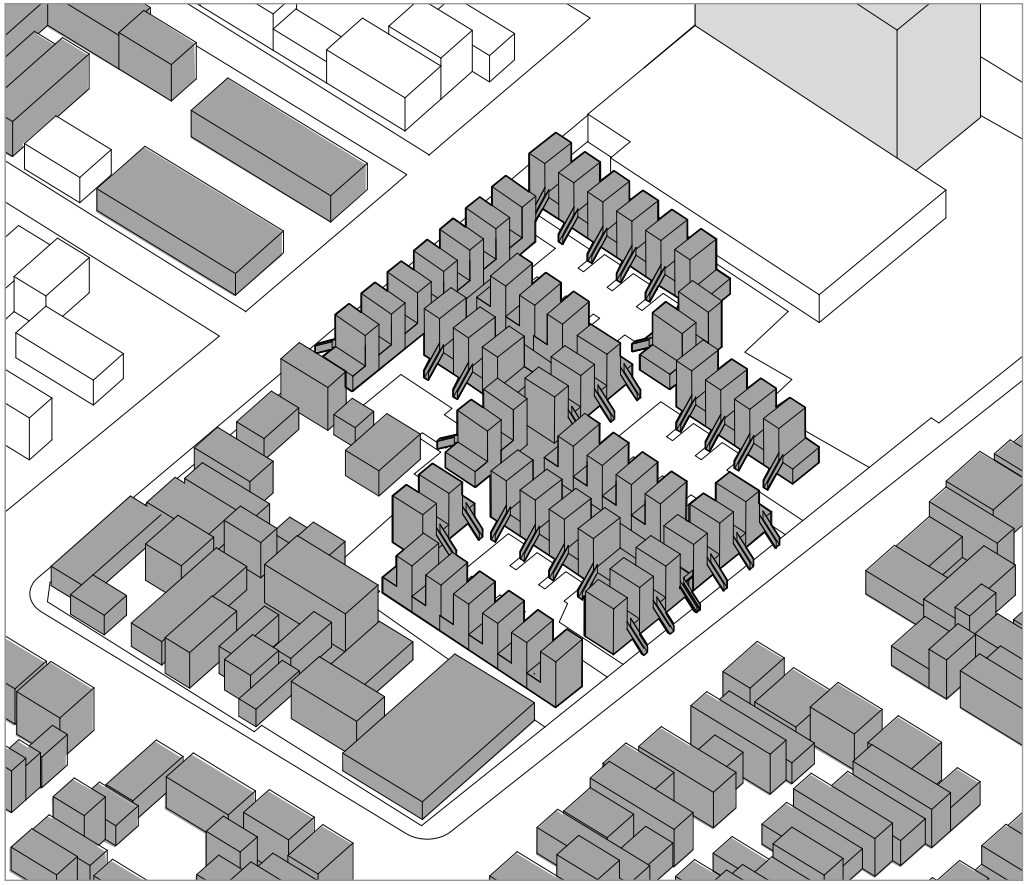
Structure: street hierarchy

Context: figure ground

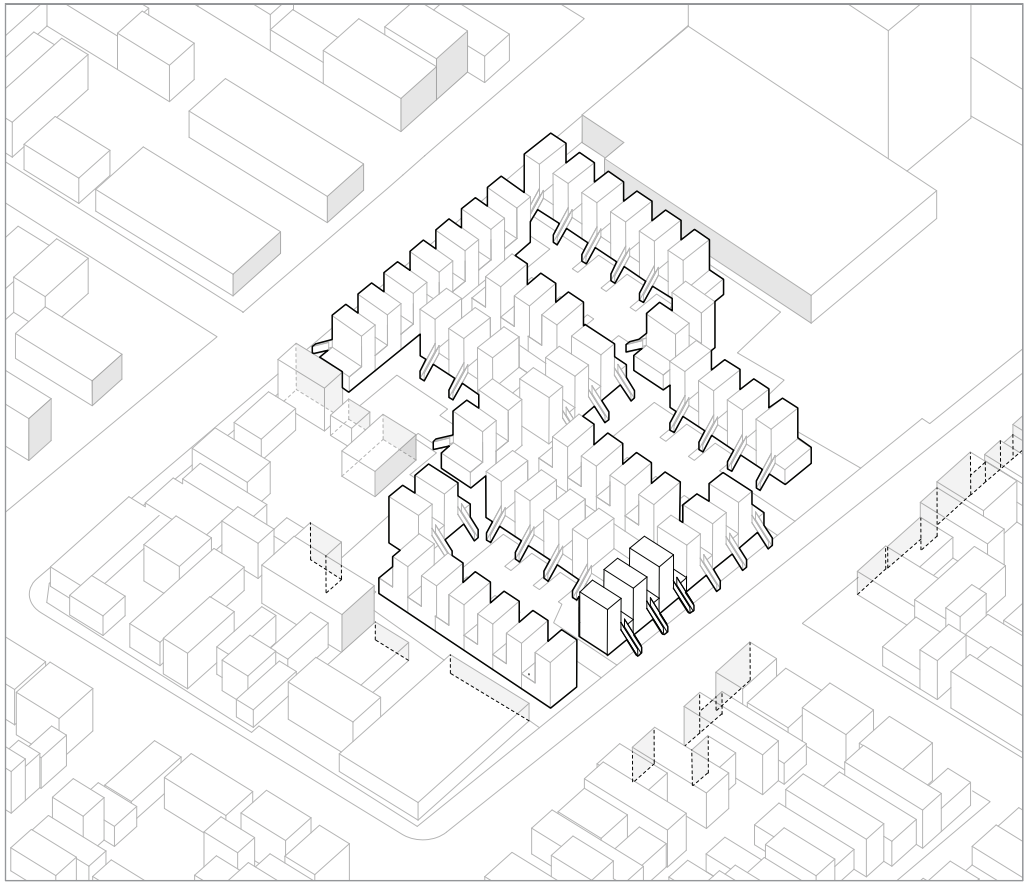
63

Responsive
at neighbourhood scale

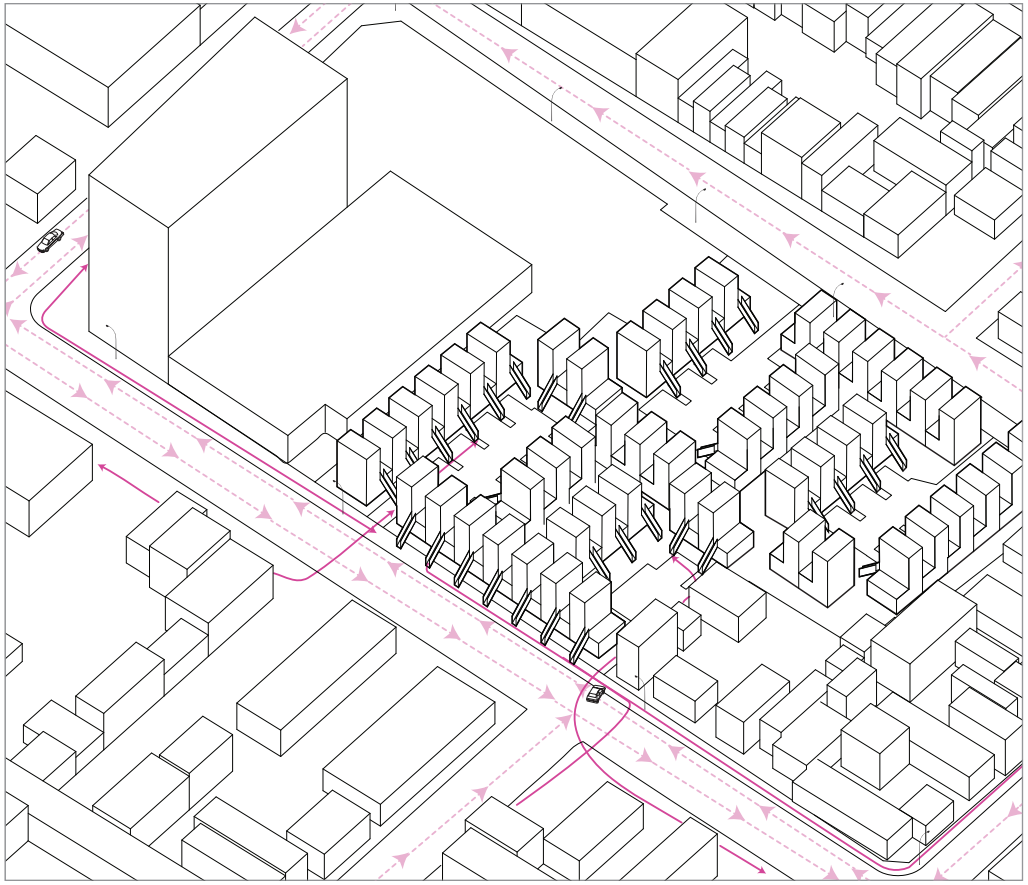
Program and Circulation

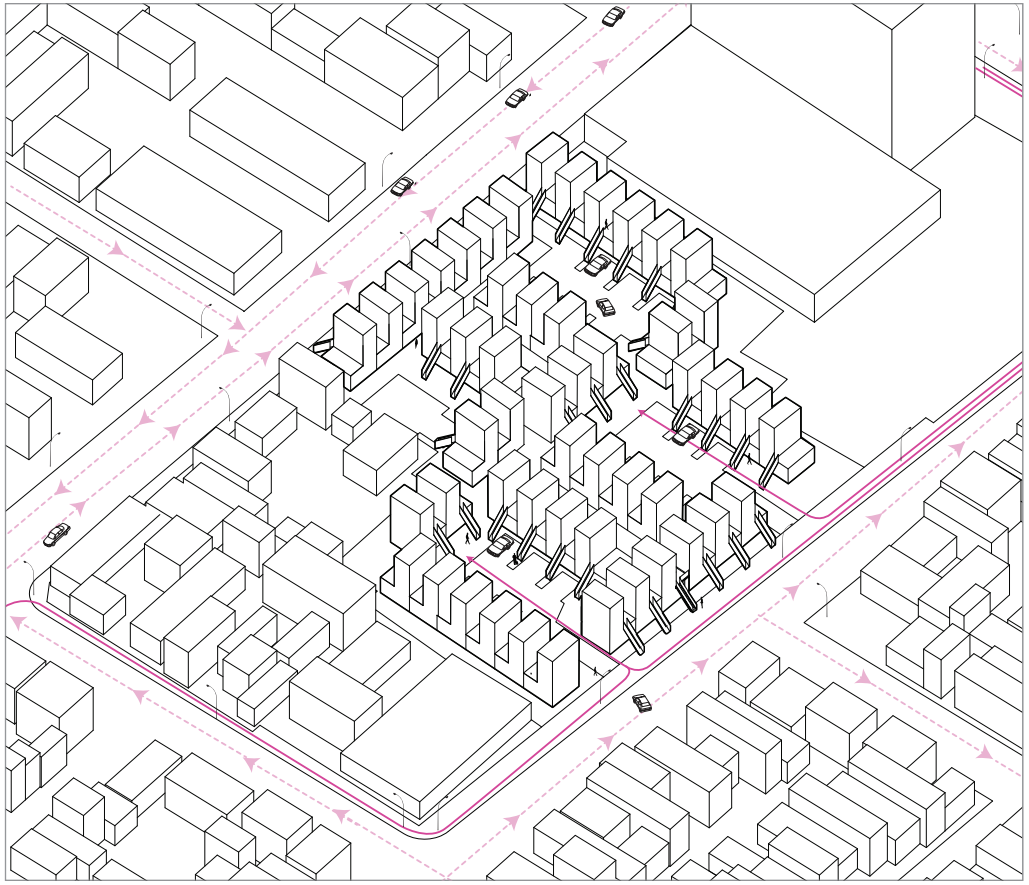


Program: Residential Office Commercial



Adjacent volumes





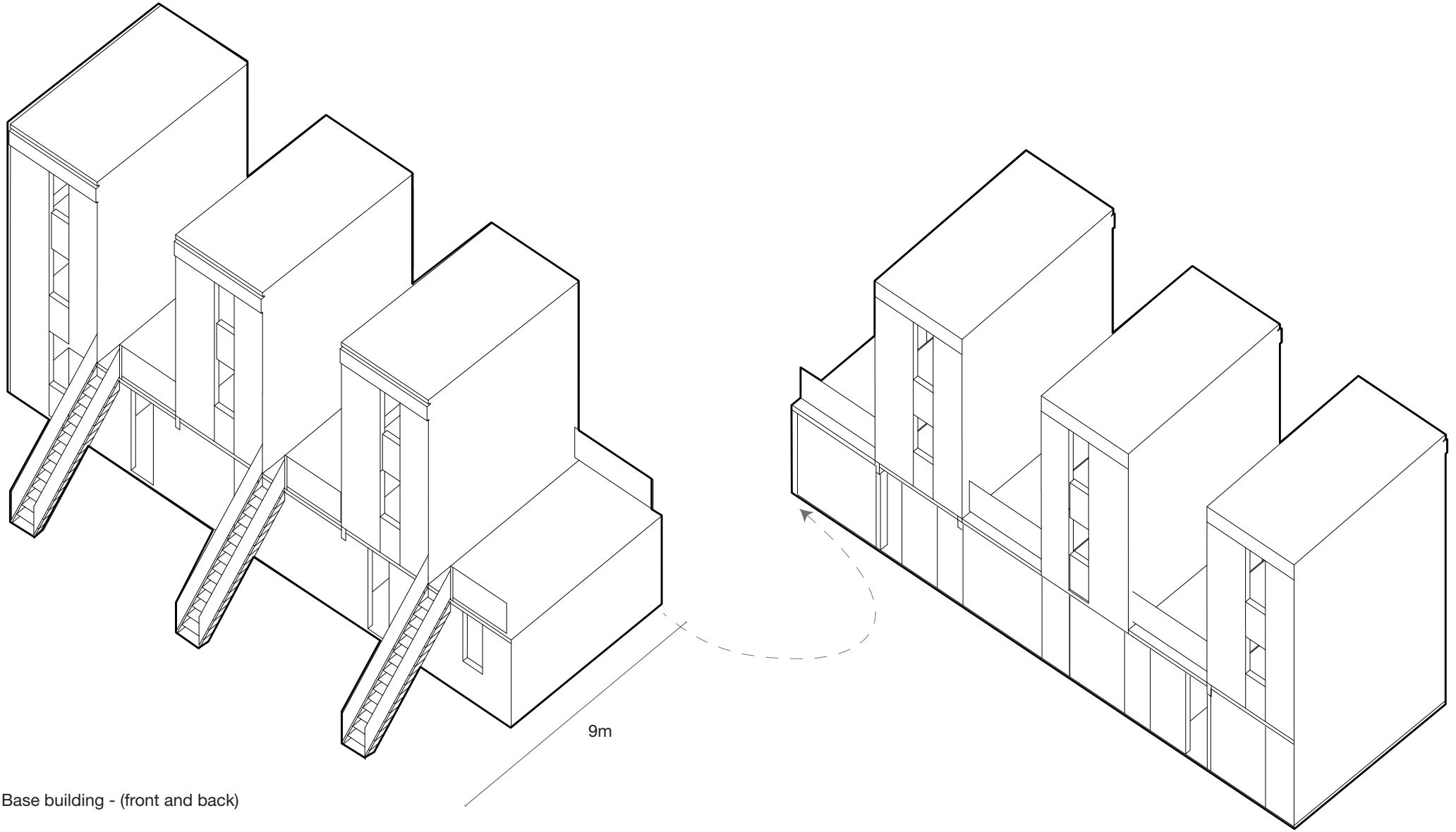
Circulation: access from neighbourhood to building

Pedestrian

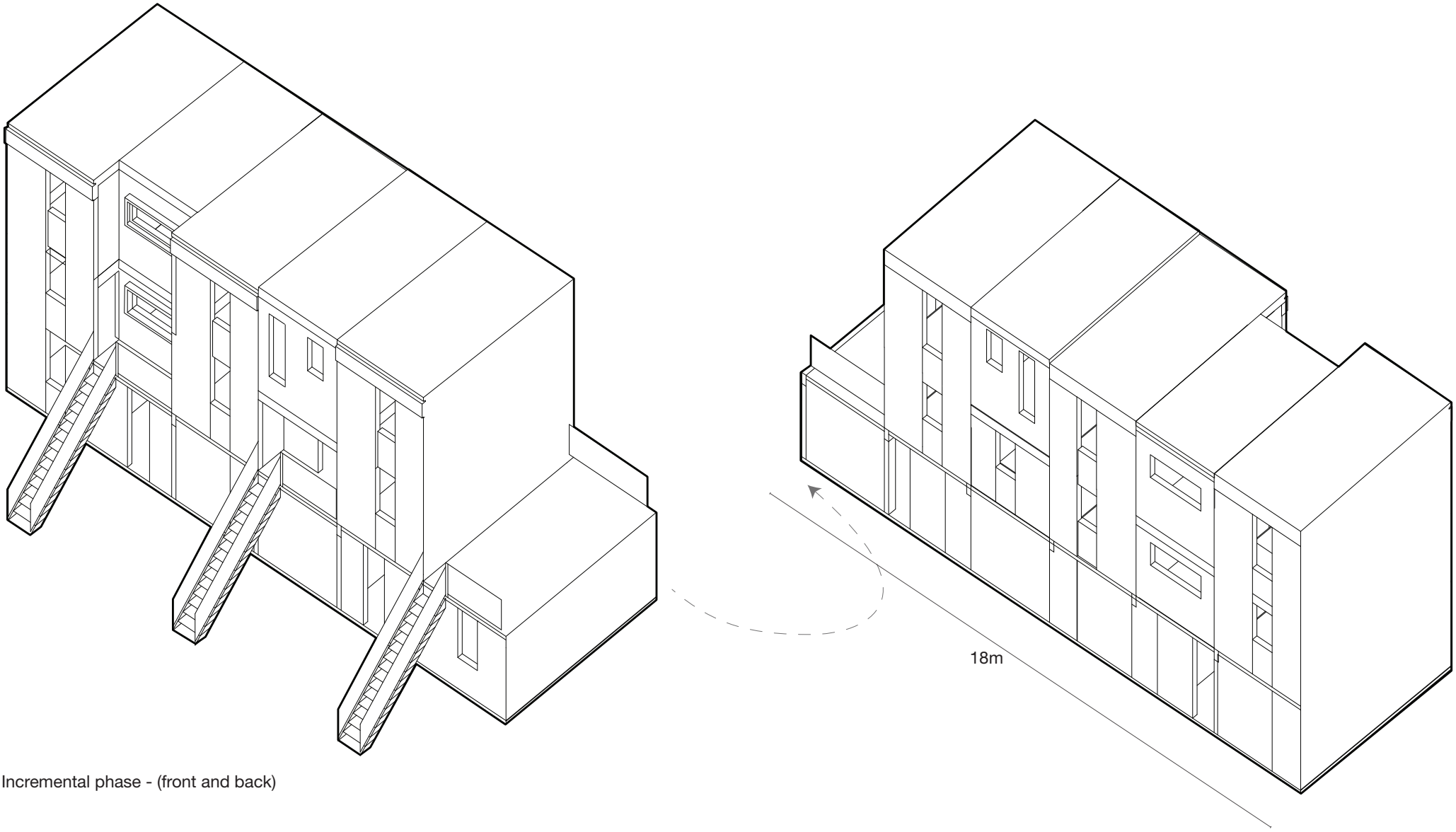
Vehicular

Responsive
at building scale

General Information

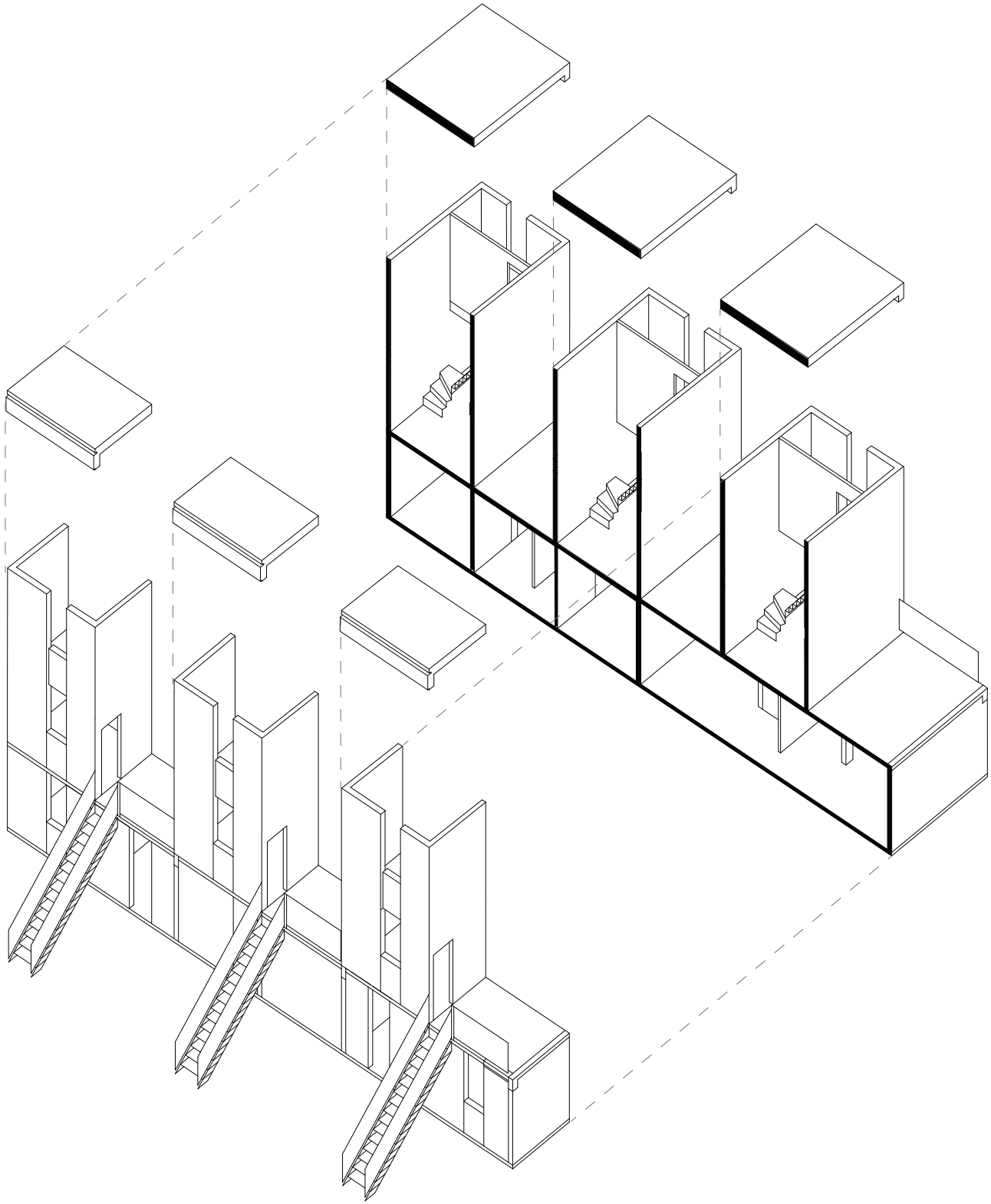


Base building - (front and back)

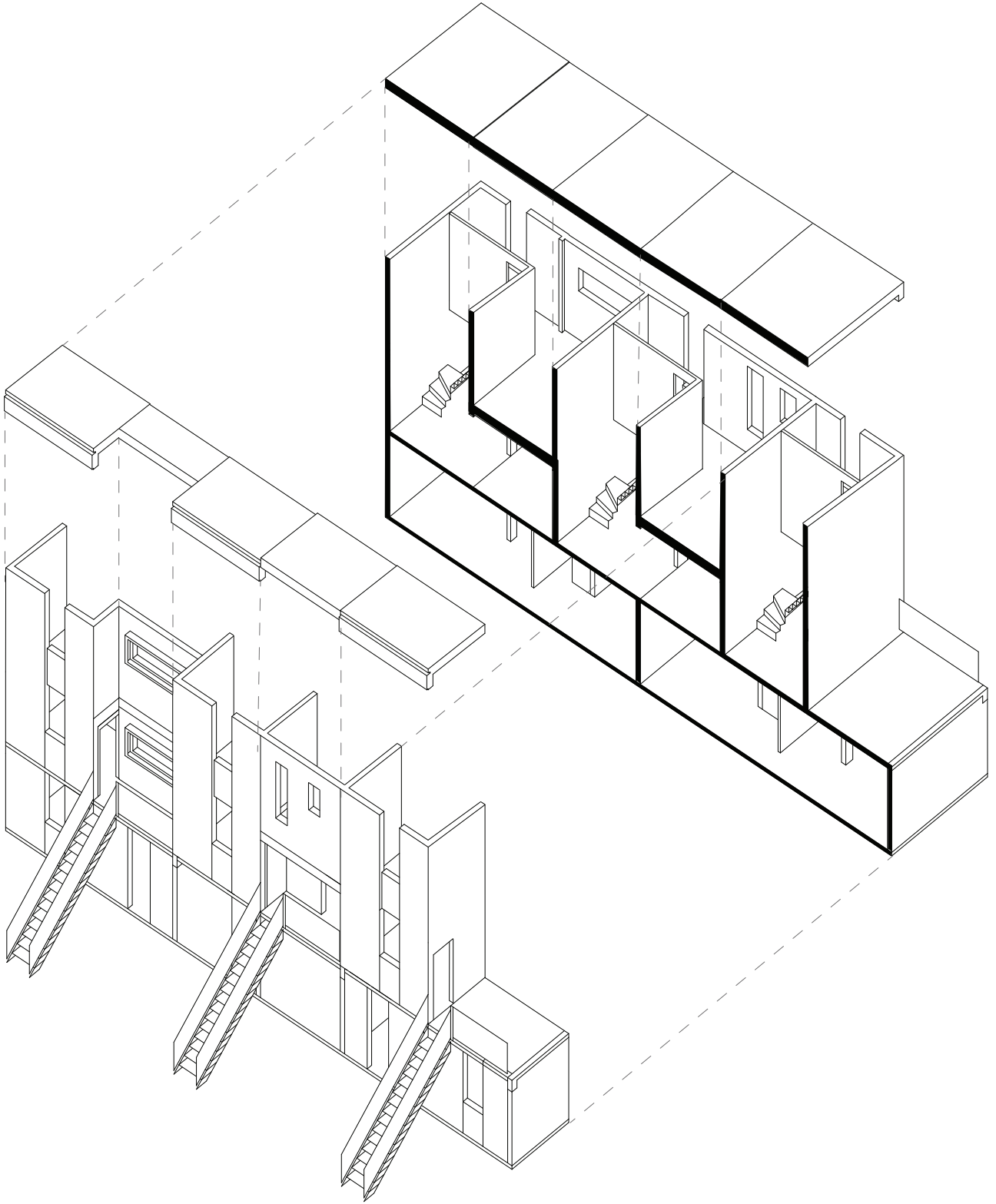


Incremental phase - (front and back)

General Information



Base building section

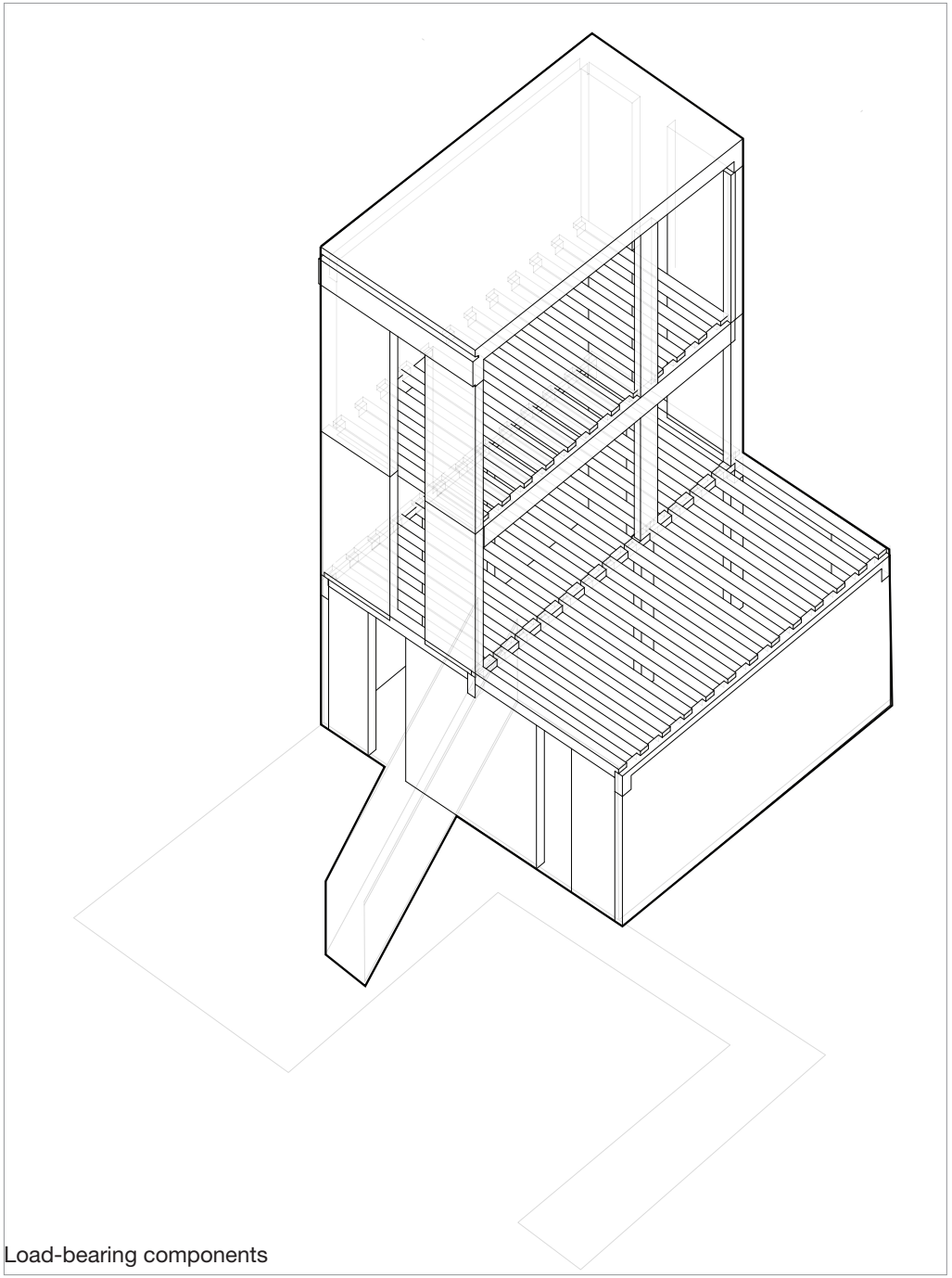


Incremental phase section

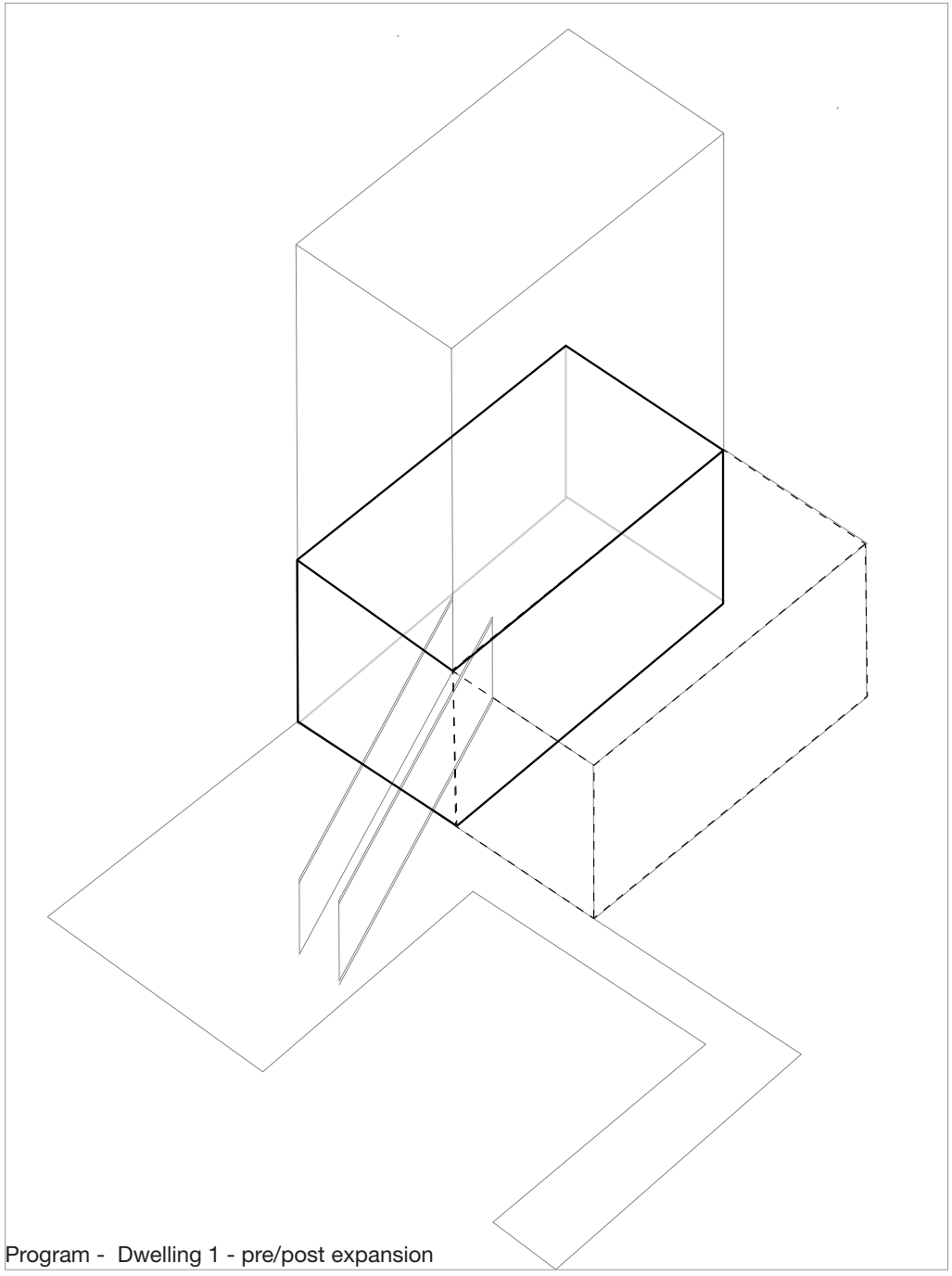
Responsive
at building scale

Structure and Program

To respond to the dweller and their future needs, Elemental gave the resident the section of the house that is basic components to call a building home. The dwellings, include a kitchen, bathroom and a multipurpose room as a basic support system. The architect has made a clear distinction between the structural elements, key to the incremental design approach, coding non structural members with clear differentiation of material; concrete / concrete block as permanent components and MDF panels for temporary use (image p77).

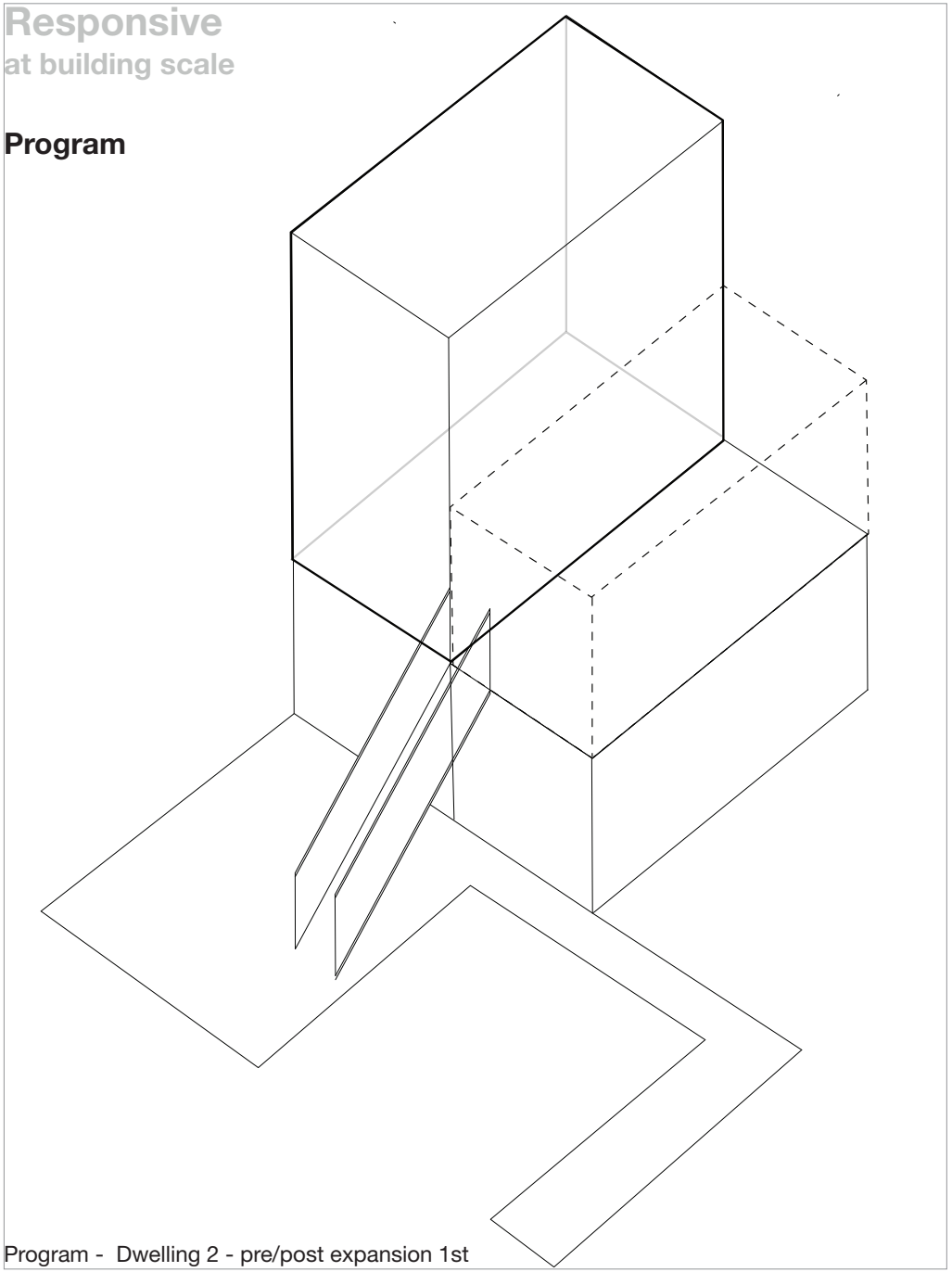


Load-bearing components

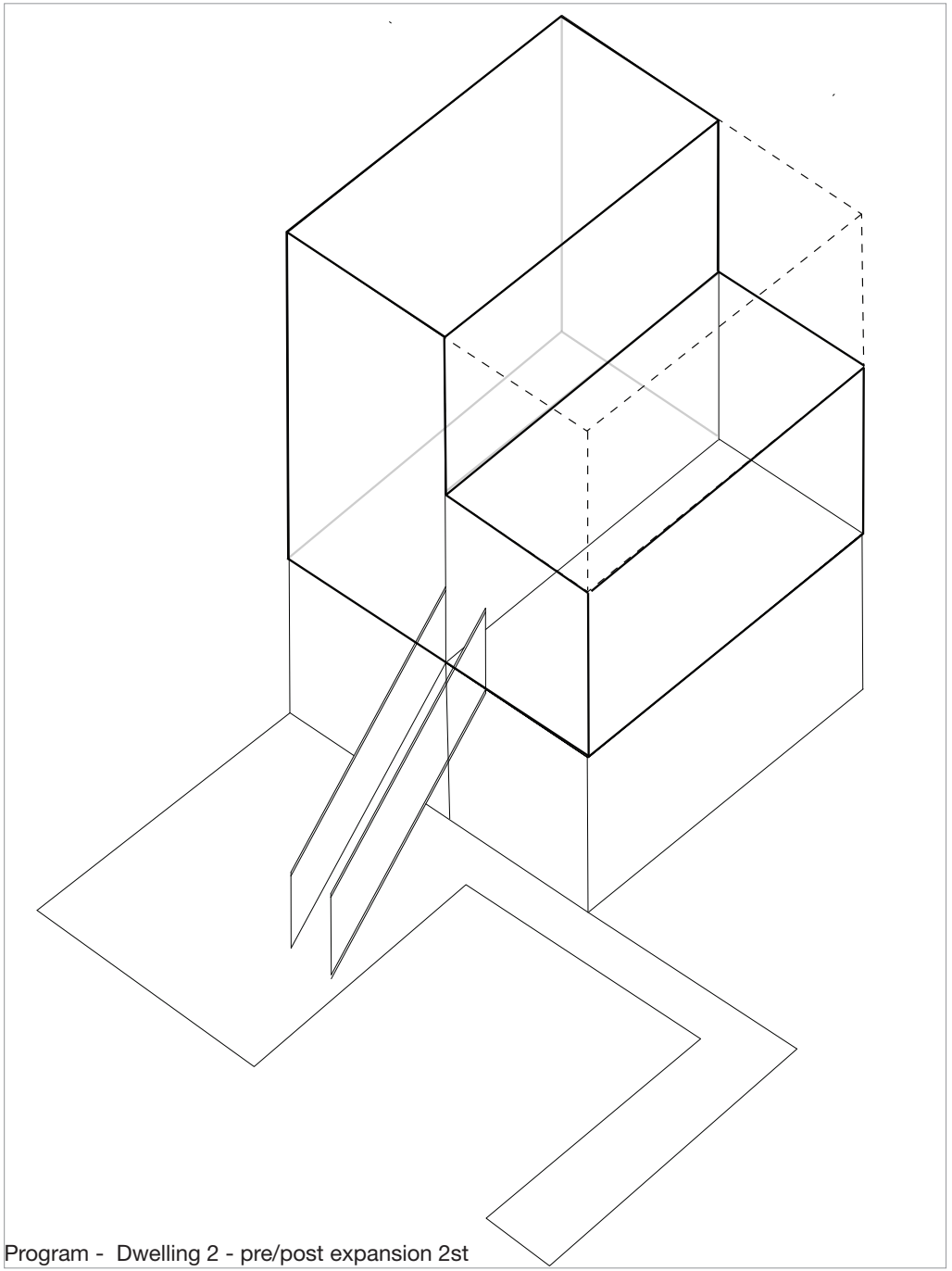


Program - Dwelling 1 - pre/post expansion

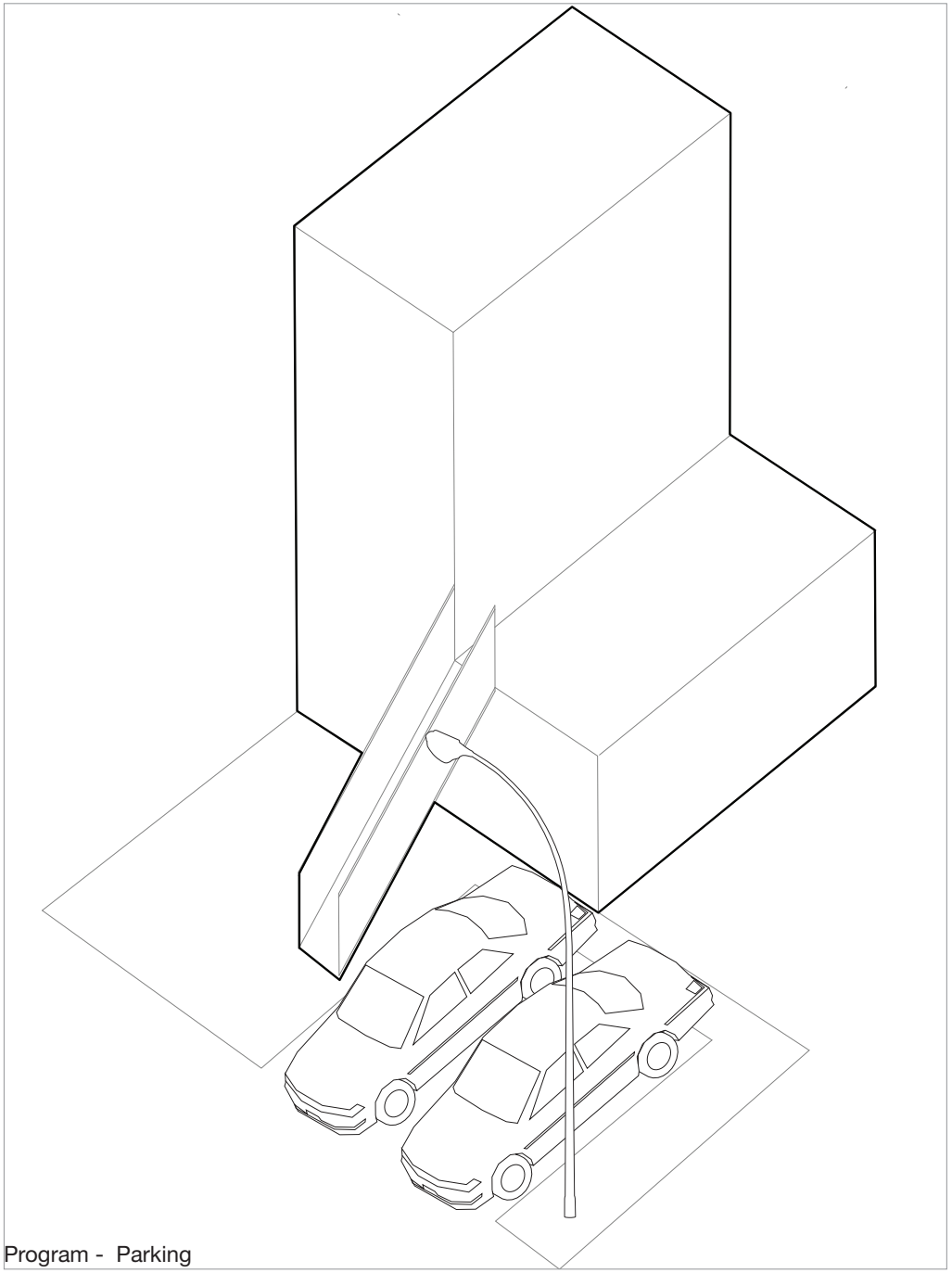
Program



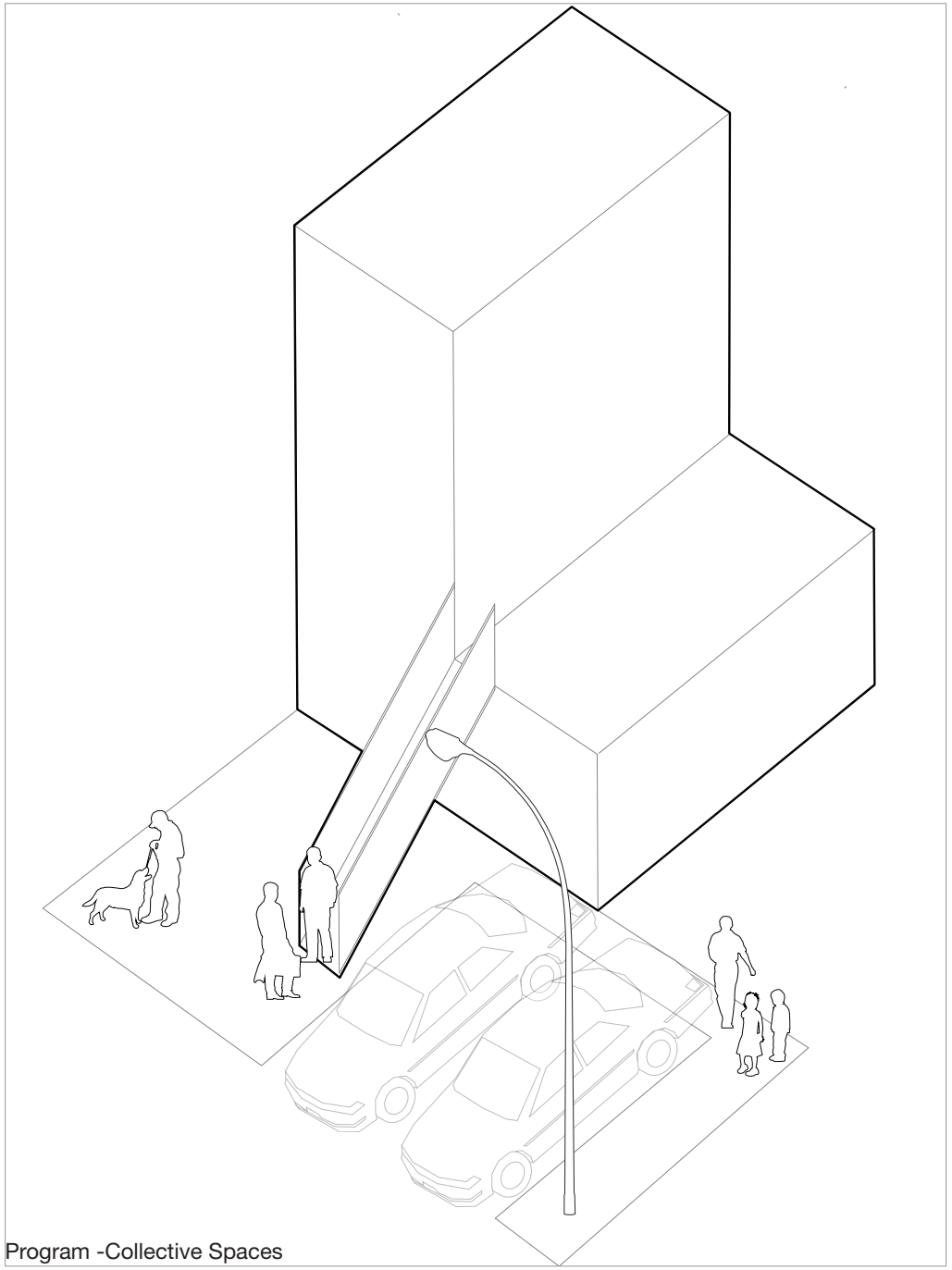
Program - Dwelling 2 - pre/post expansion 1st



Program - Dwelling 2 - pre/post expansion 2st



Program - Parking

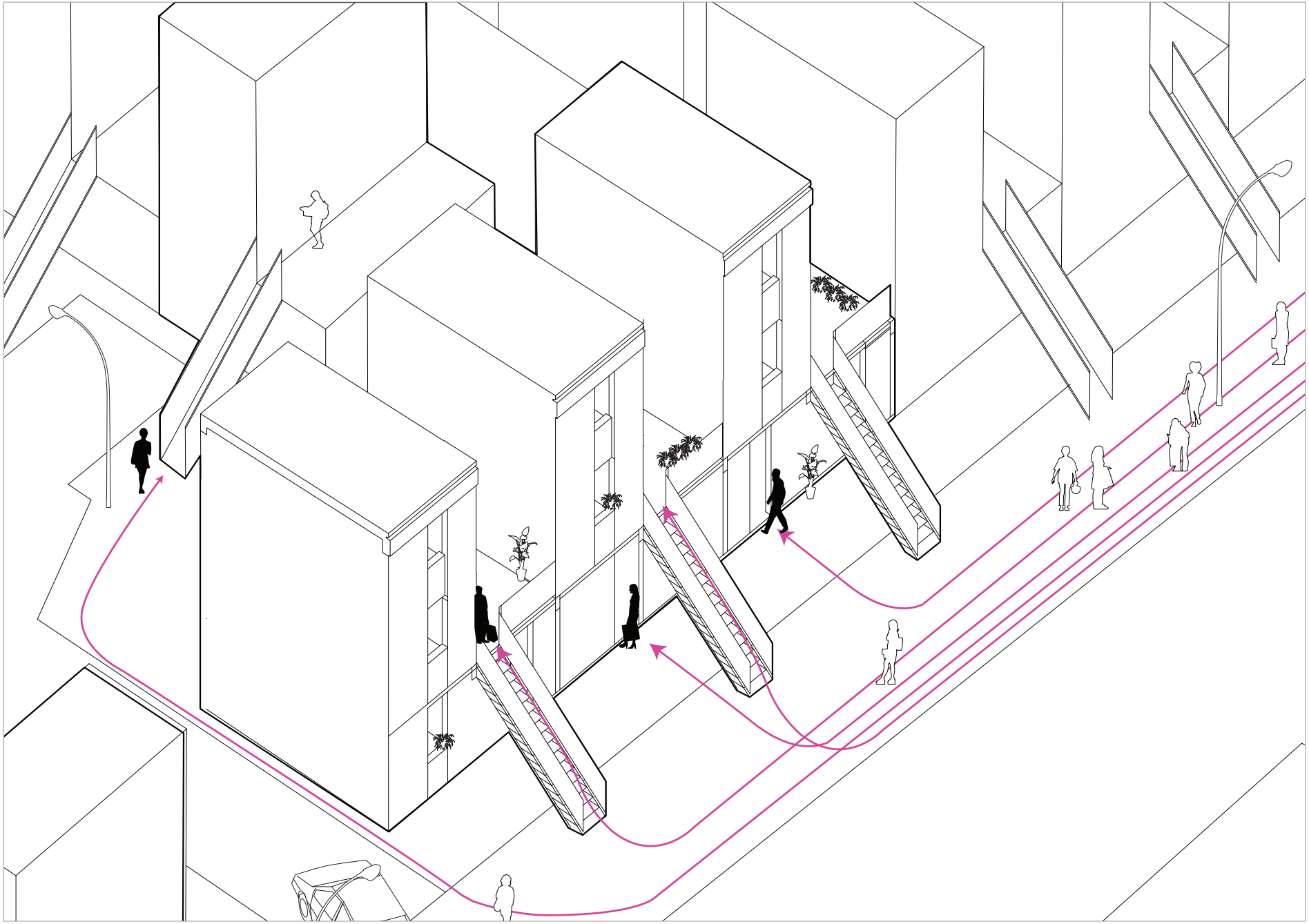


Program -Collective Spaces

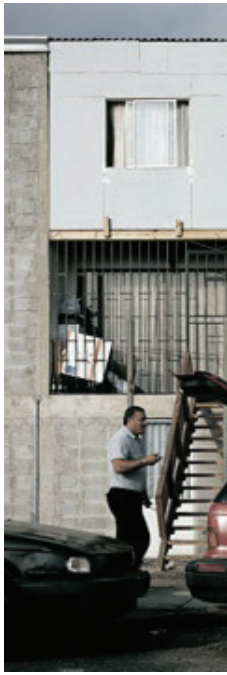
Responsive
at building scale

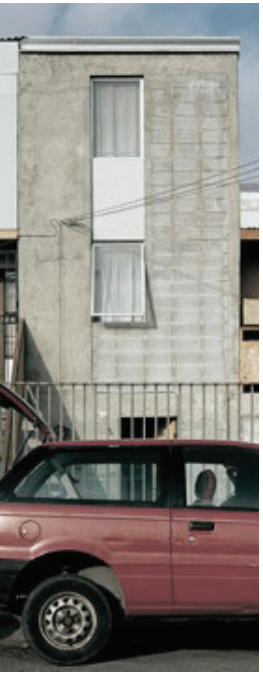
Circulation

It's interesting to see that the staircases to access the 1st level sit directly onto the sidewalk, perhaps as a welcoming act to the resident, but also as gesture designed by the architect of the buildings connecting to the city. However post-occupancy images (p76-77) show that some residents prefer to limit this connection and in joined effort with the ground level residents fencing is added. This is an example where the architect's vision can be somewhat utopian, as residents may not feel completely safe within their surroundings, an incremental design is developed further than the initial architect's intention.



Responsive
at dwelling scale





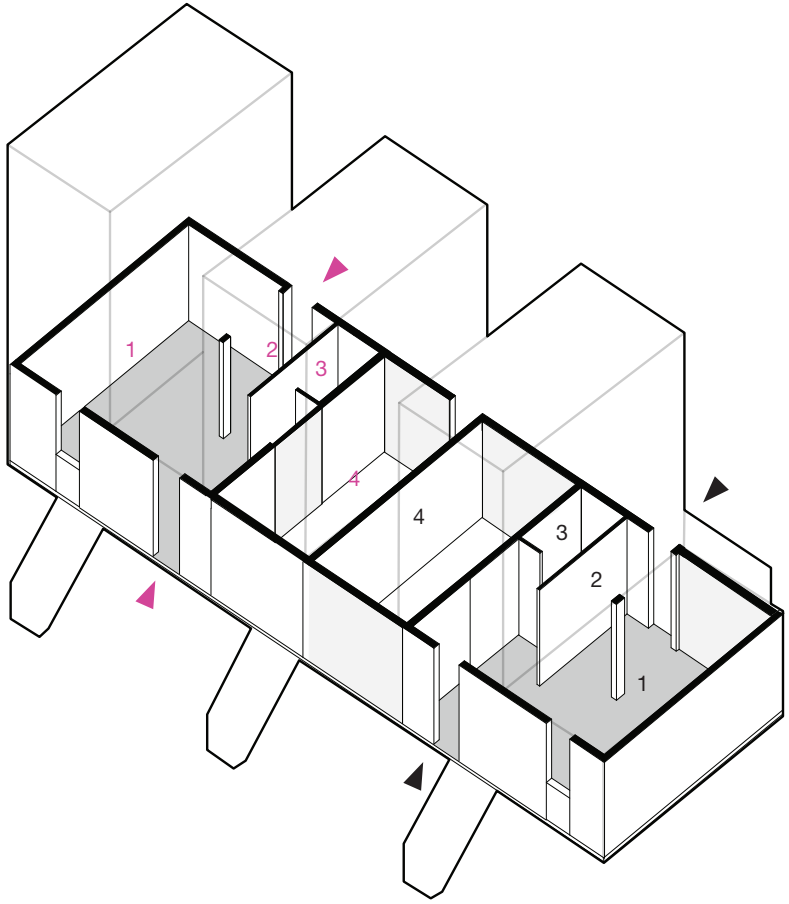
Responsive
at dwelling scale

Structure and Program

The lowest scale analysis of Quinta Monroy is the individual dwelling. In order to evaluate the possibilities of flexiblity within the house, this section takes a cluster of three buildings and compares different programmatic accomodations of program. Dwelling denominated C.D is a comparision dwelling that remains fixed throughout the series of diagrams, as ‘control’ dwelling.

Since there is no specificity of use for the open room ,furniture arrangement and function is left to the resident’s priorities. Once the dwelling is expanded (to double the size) the resident is able to accommodate more of their priorities, in a case where waste of space is impossible, as it is small to begin with. Here the architect leaves the resident to be confronted with a personal decision on how to arrange their life within the house, with no need for the architect to intervene.

The 1st level dweller is given less area to begin than in the ground level, but a it is more phase oriented development. Initially, post-occupancy images (p76-77) show the outdoor space djacent to the main room and kitchen area used as storage and occasionally as a patio space. After the temporary wall is removed the multi-purpose room is expanded, into the outdoor area, however at this level it is necessary to add secondary structural walls, as the expasion process also occurs in the 2nd level, with the 1st level acting as support for the next phase.

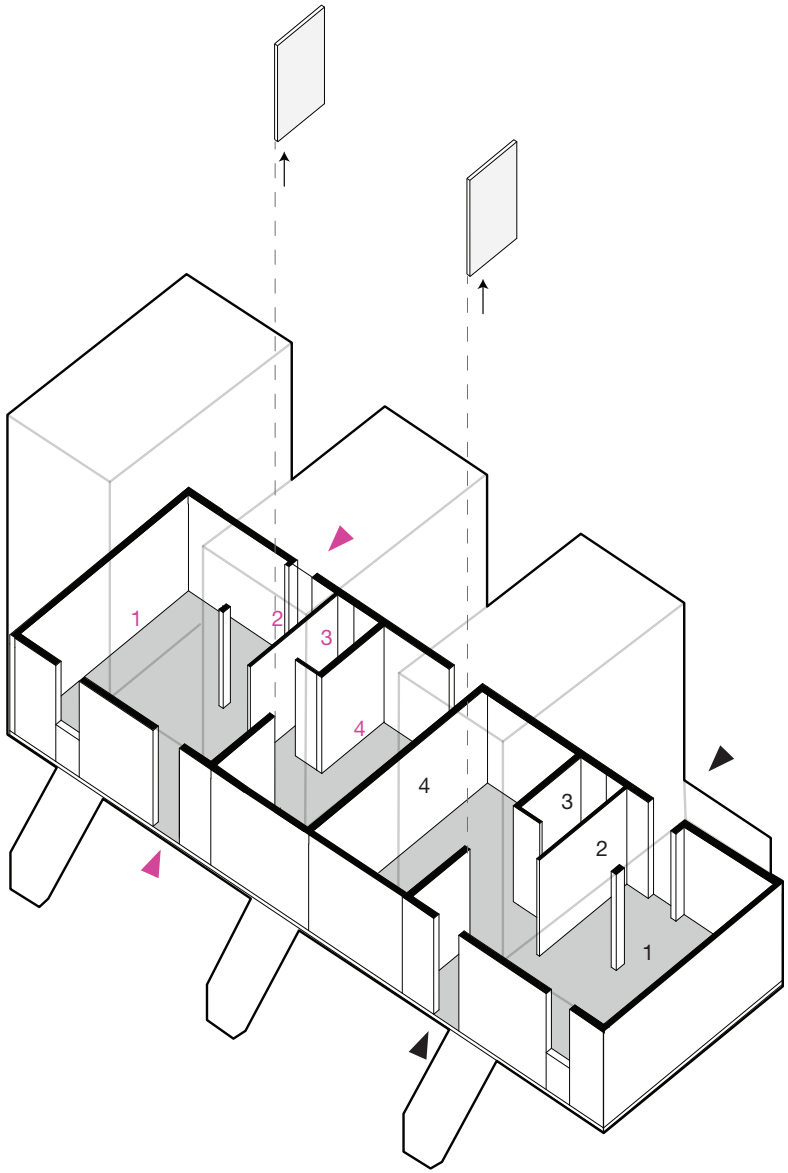


Dwelling A - 36m²

1	Living Room /Bedroom
2	Kitchen
3	WC / toilet
4	Area for expansion

Dwelling B - 36m²

1	Living Room /Bedroom
2	Kitchen
3	WC / toilet
4	Area for expansion



Dwelling A - 70m²

1	Living Room / Dining Room
2	Kitchen
3	WC / toilet
4	Bedroom

Dwelling B - 70m²

1	Living Room /Bedroom
2	Kitchen
3	WC / toilet
4	Workshop

Responsive
at dwelling scale

Structure and Program

Dwelling C - 25m²

Level 1

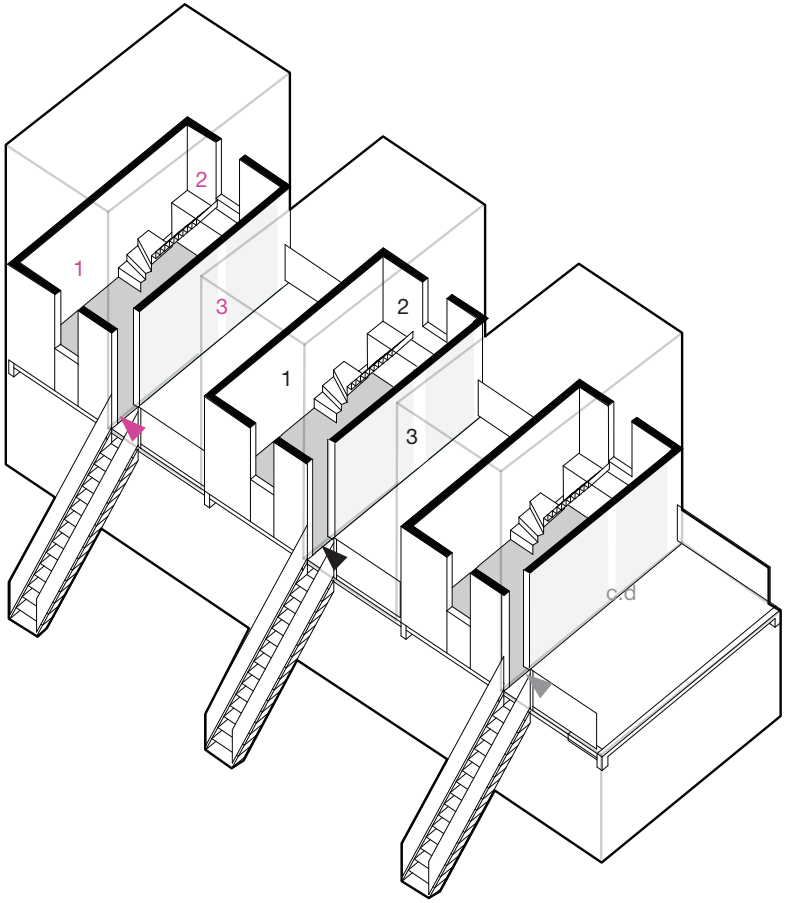
1 Living room / Bedroom
2 Kitchen
3 Patio / Area for expansion

Dwelling D- 25m²

Level 1

1 Dining room / Bedroom
2 Kitchen
3 Patio / Area for expansion

Comparison dwelling



Dwelling C - 72m²

Level 1

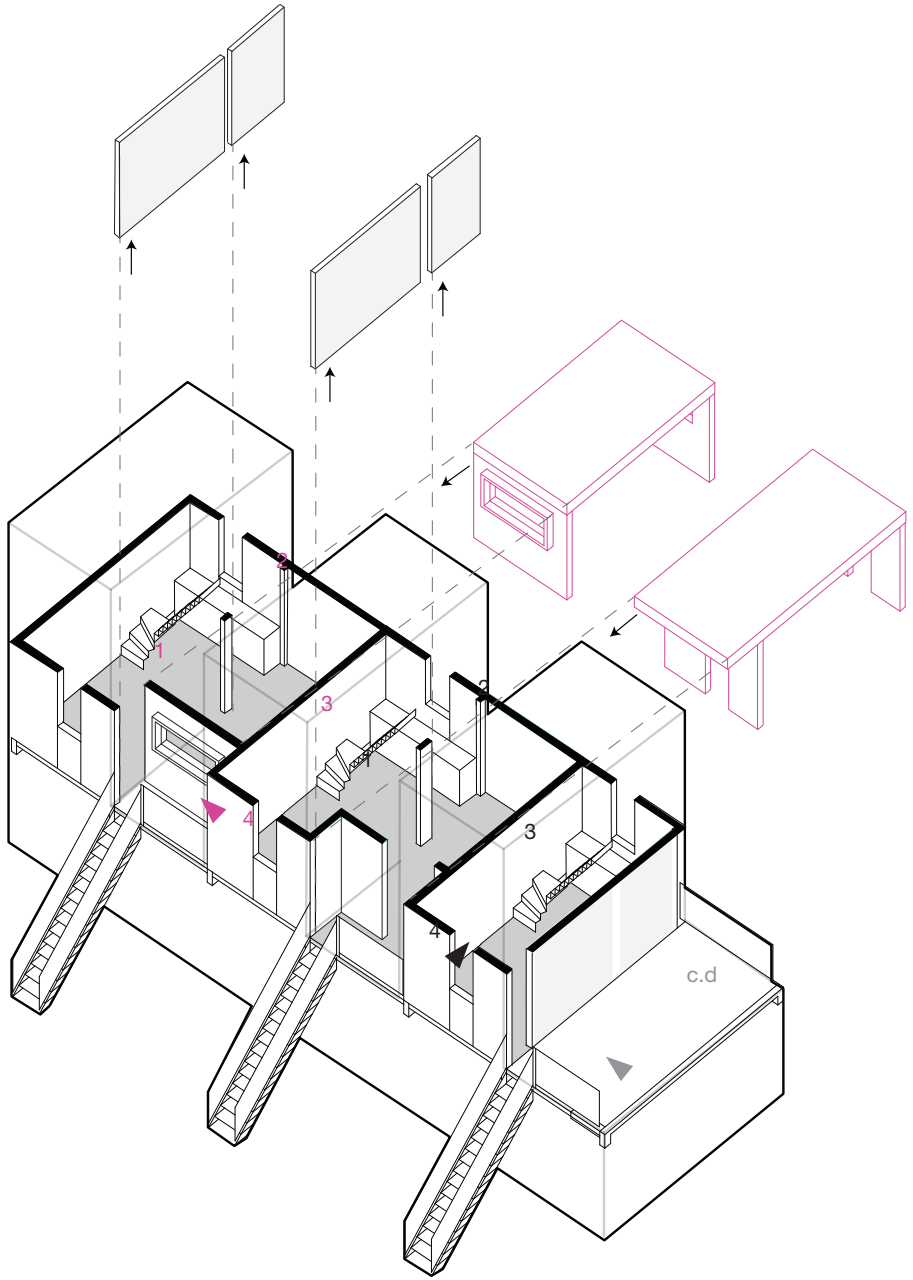
1 Bedroom
2 Kitchen
3 Living room / Dining room
4 Front Porch

Dwelling D - 72m²

Level 1

1 Living room / Dining
2 Kitchen
3 Bedroom / Studio
4 Front Porch

Comparison dwelling



Responsive
at dwelling scale

Structure and Program

Dwelling C

Level 2

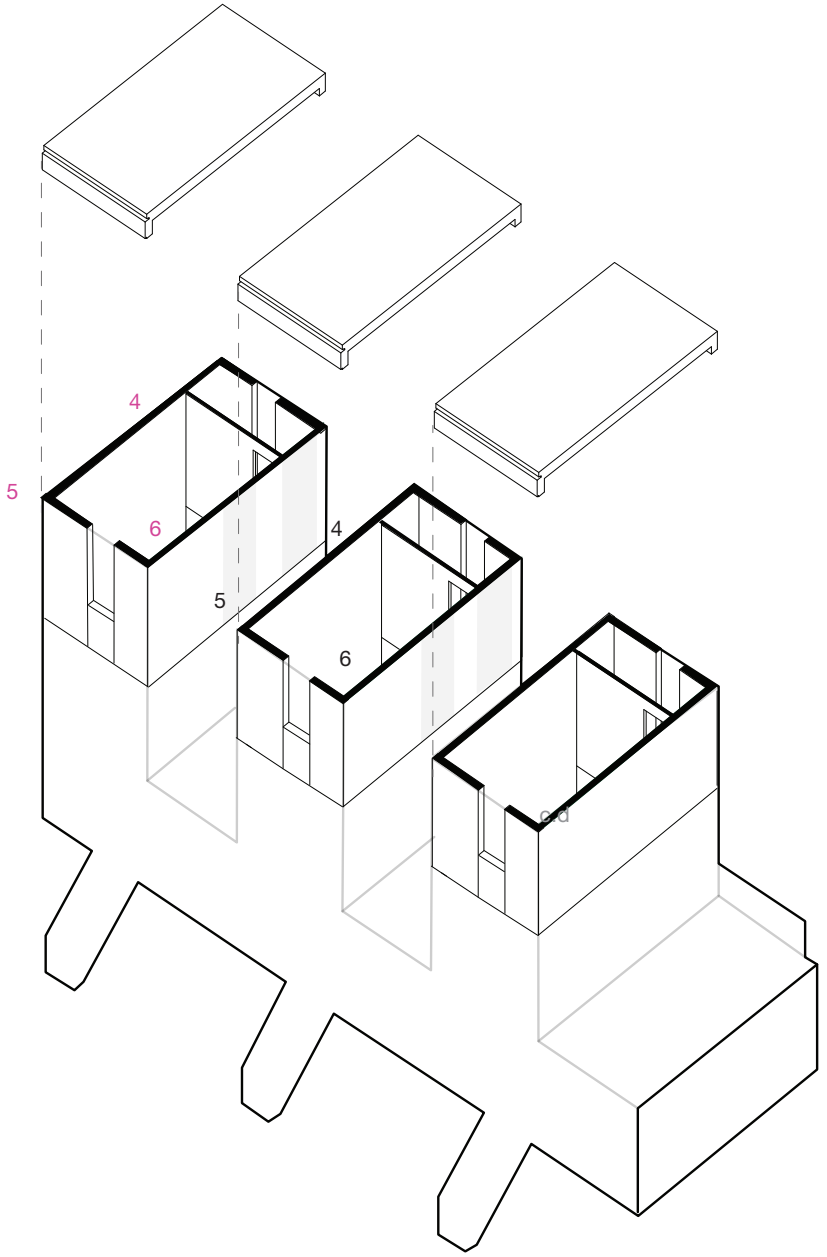
4 WC / toilet
5 Dbl height / Area for expansion
6 Area for expansion

Dwelling D

Level 2

4 WC / toilet
5 Dbl height / Area for expansion
6 Area for expansion

Comparison dwelling



Dwelling C

Level 2

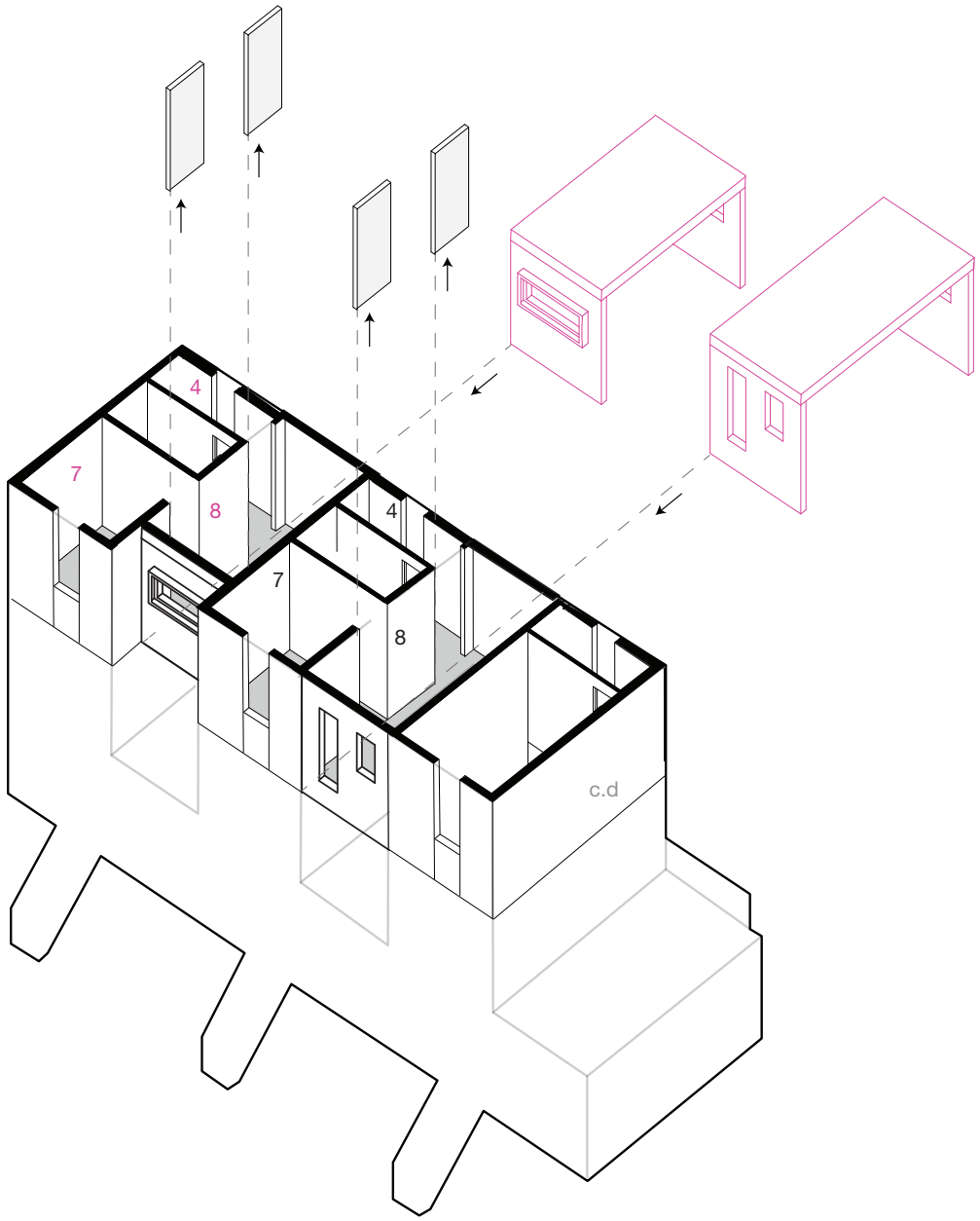
4 WC / toilet
7 Bedroom 1
8 Bedroom 2

Dwelling D

Level 2

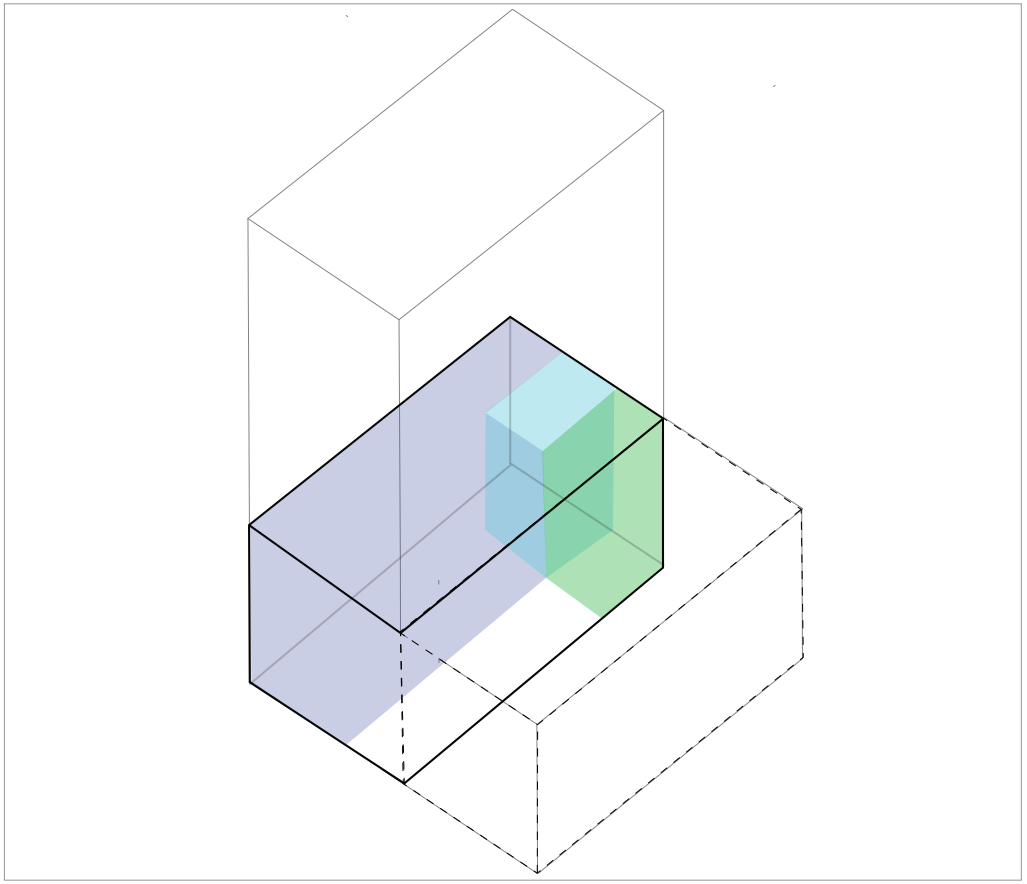
4 WC / toilet
7 Bedroom
8 Work area / Studio

Comparison dwelling

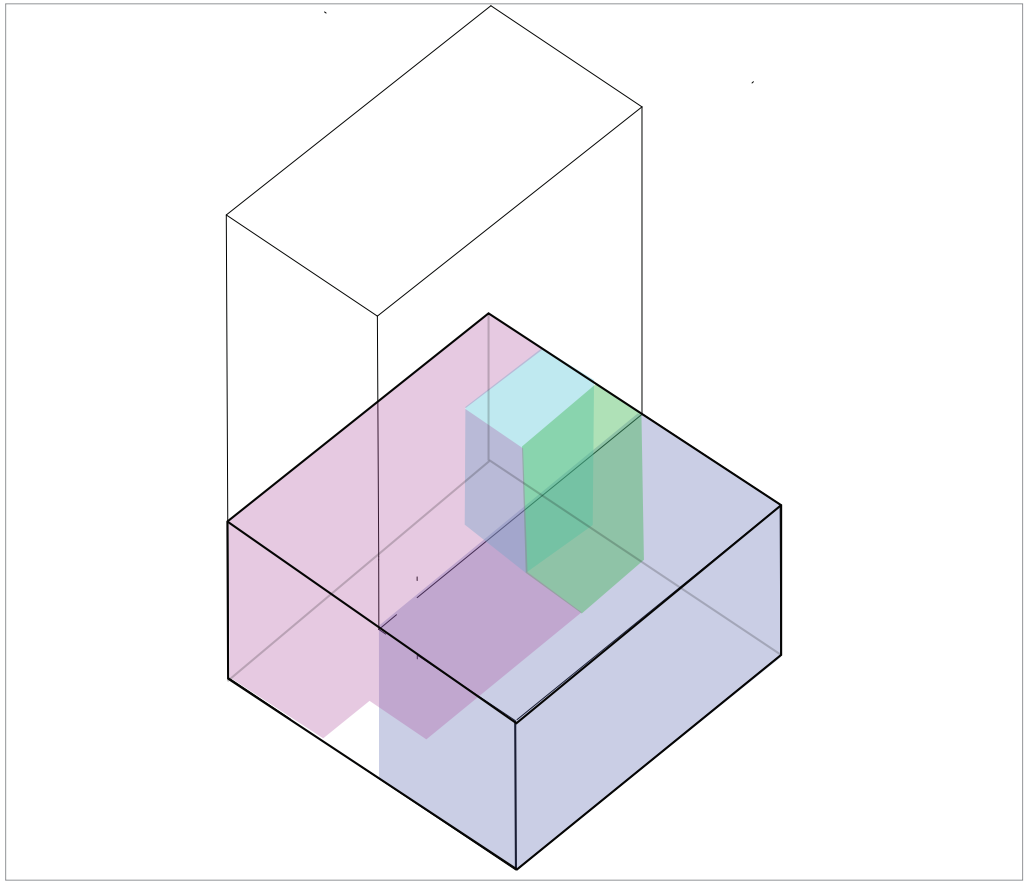


Responsive
at dwelling scale

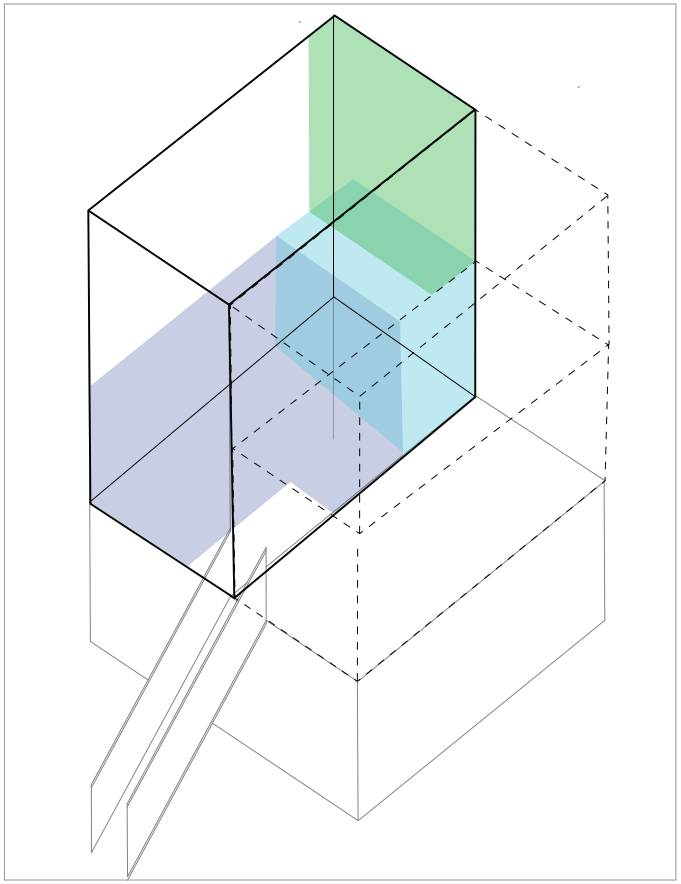
Program



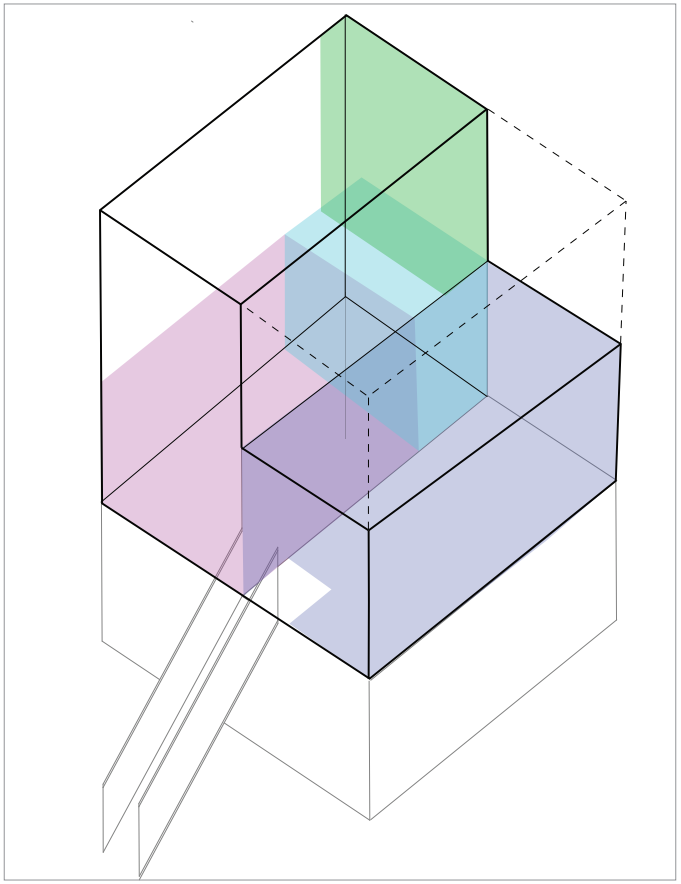
Dwelling A



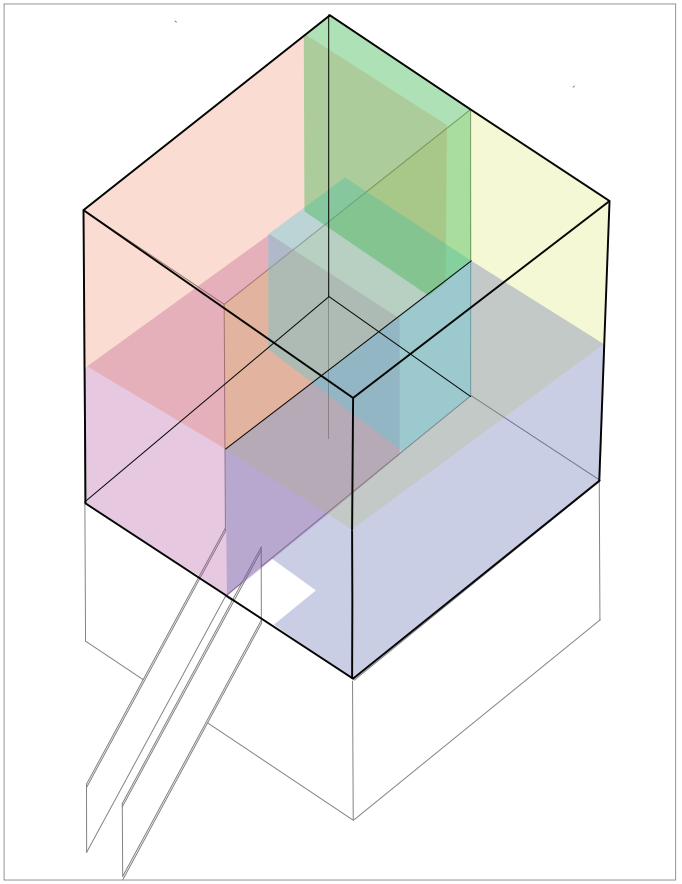
Dwelling A Post- Expansion



Dwelling B Level 1 / 2



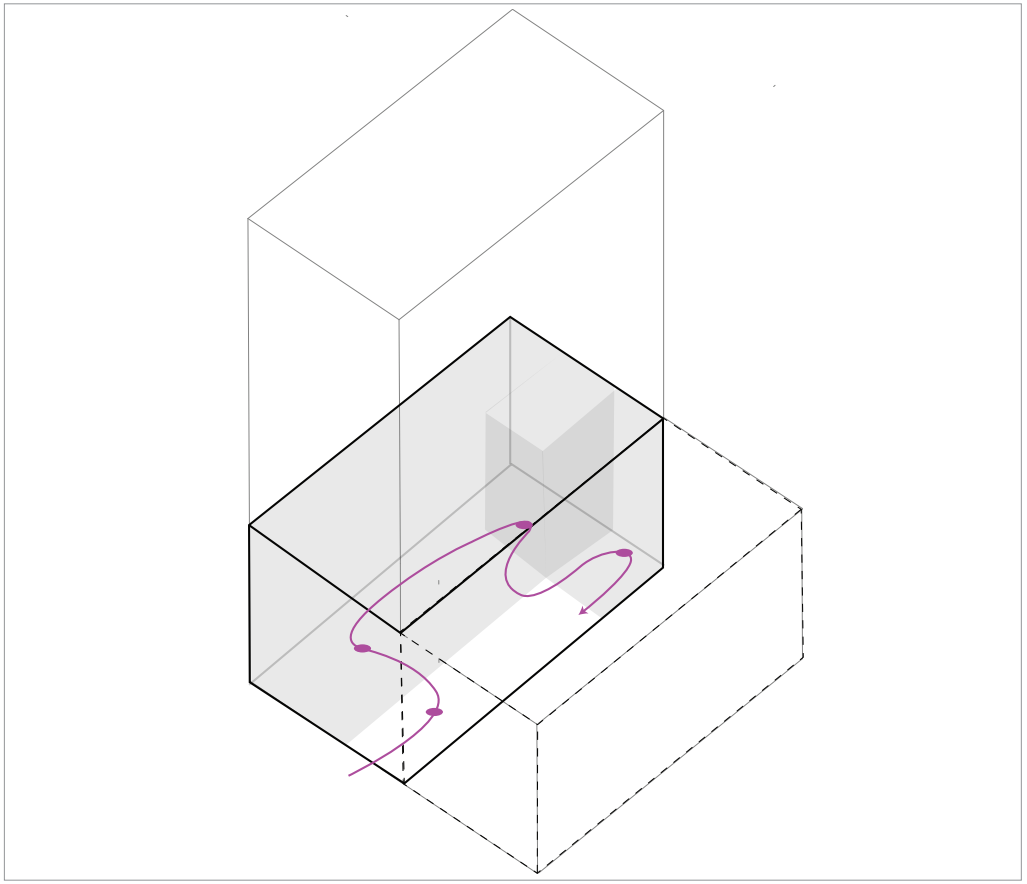
Dwelling B Level 1 / 2 Post Expansion 1



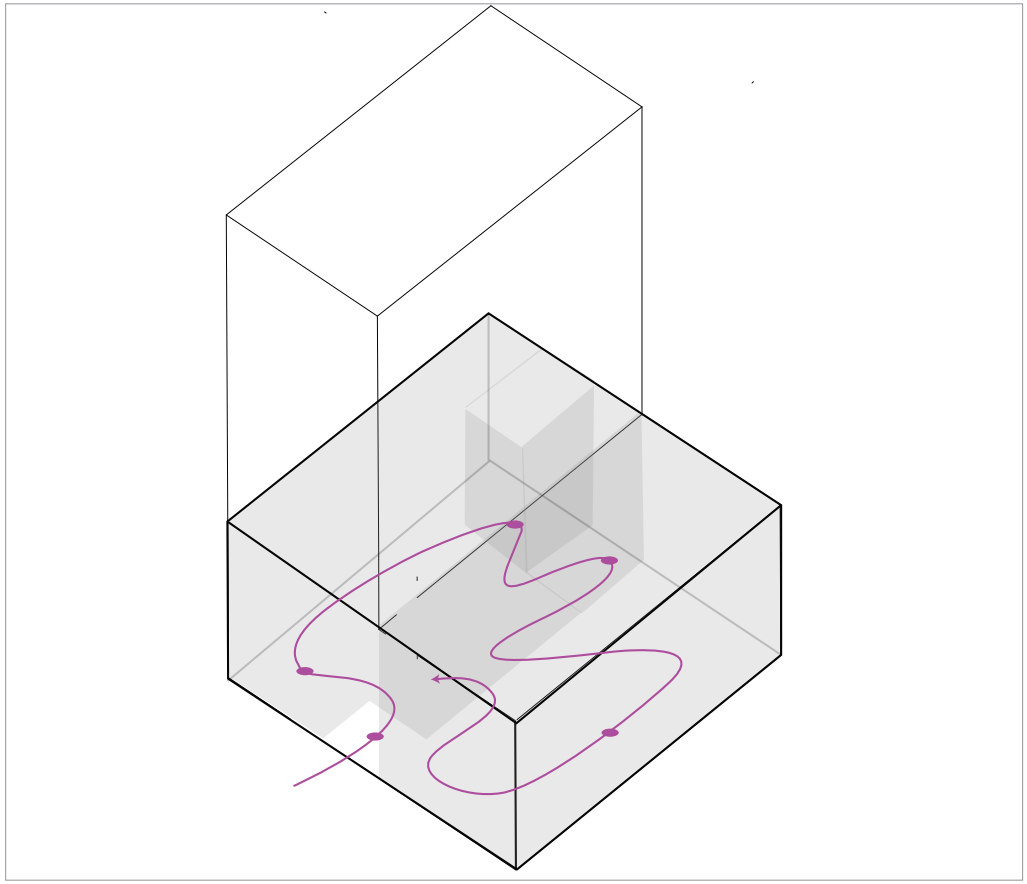
Dwelling B Level 1 / 2 Post- Expansion 2

Responsive
at dwelling scale

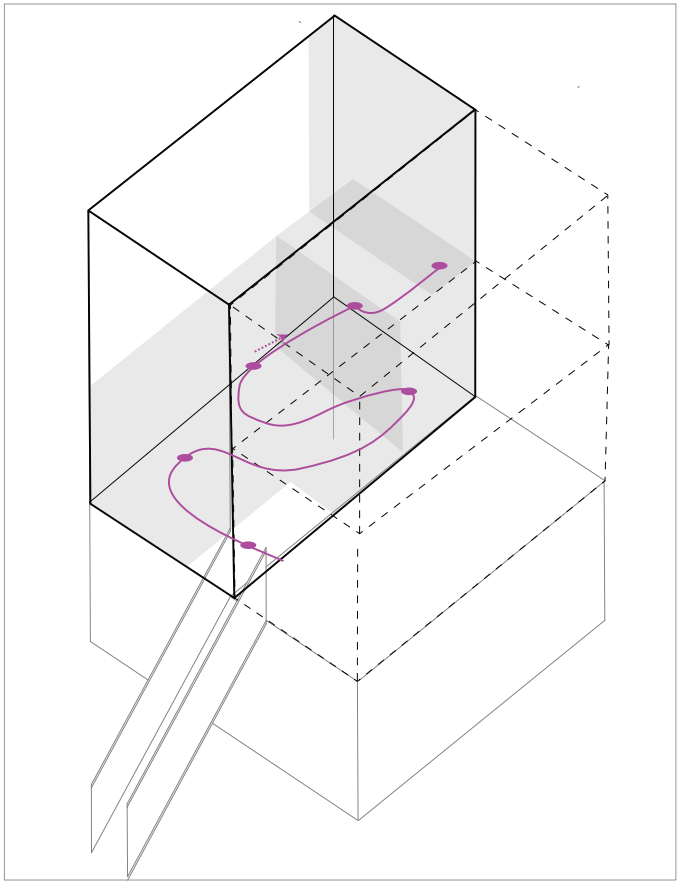
Circulation



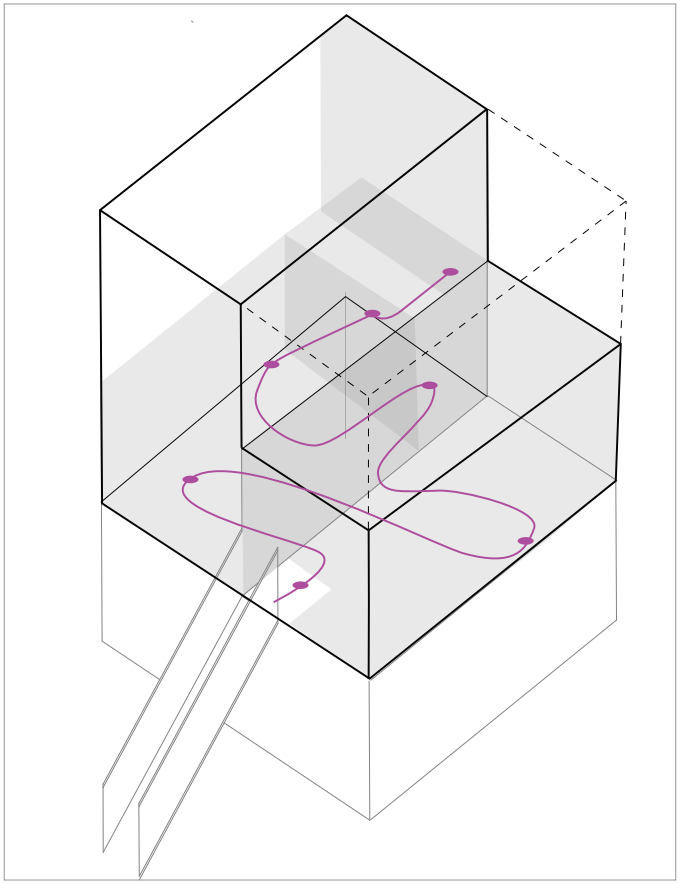
Dwelling A



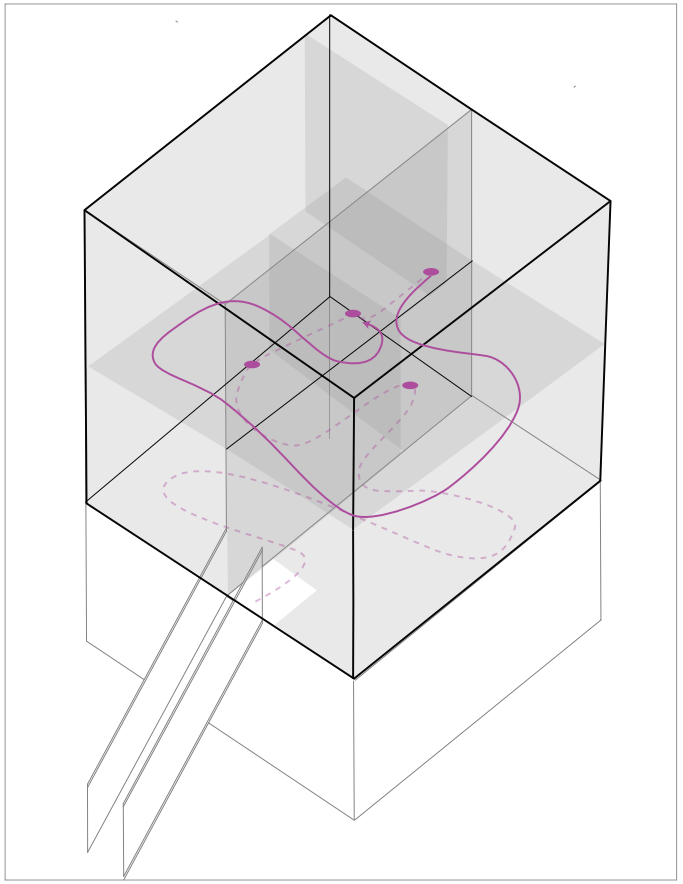
Dwelling A Post- Expansion



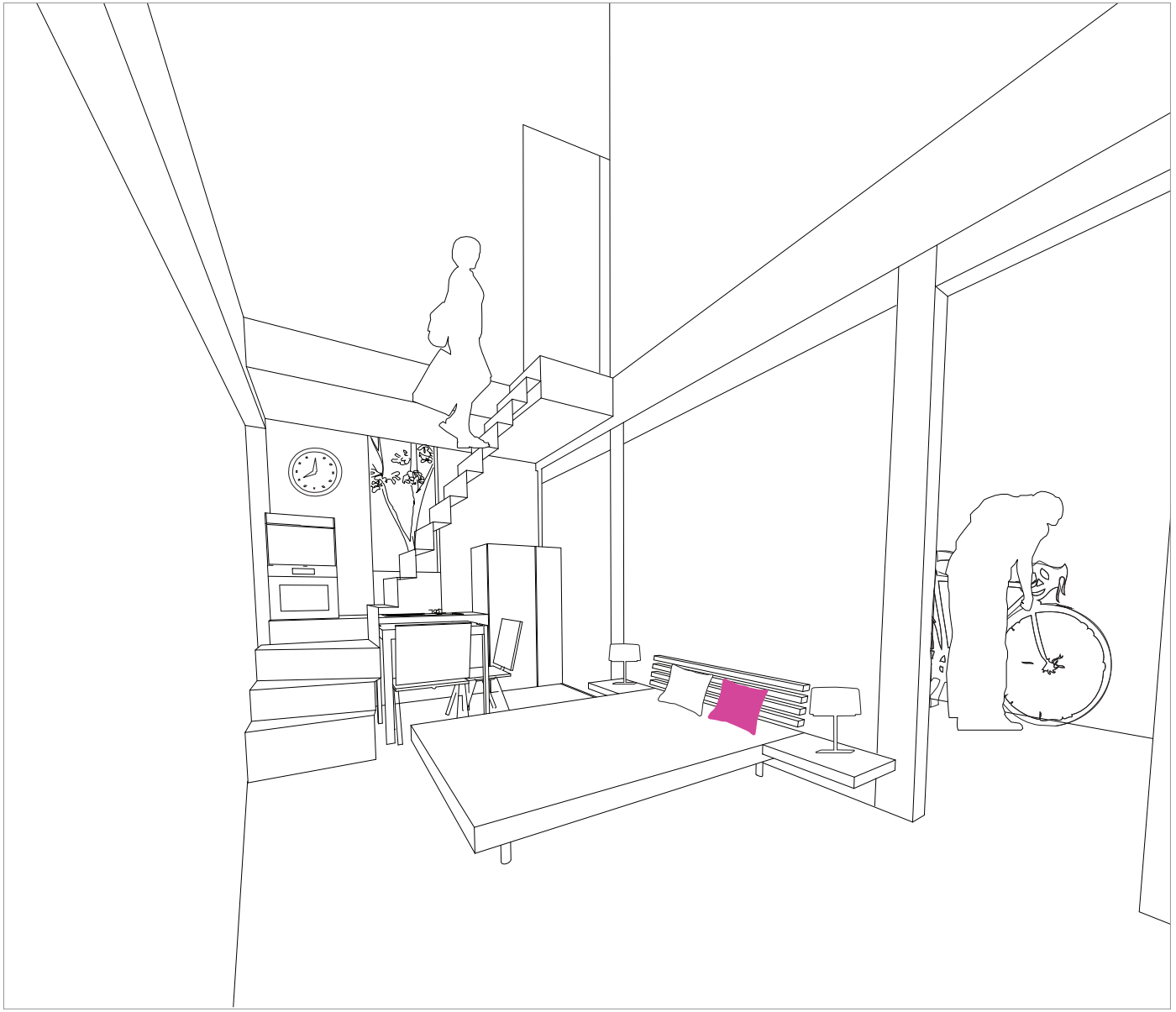
Dwelling B Level 1 / 2



Dwelling B Level 1 / 2 Post Expansion 1



Dwelling B Level 1 / 2 Post- Expansion 2



Interior perspectives level 1 pre and post expansion

Nemausus

location: Nimes, France (General Leclerc)
date: 1985-1987
architects: Jean Nouvel
number of dwellings: 114 tenement / detached apartment houses

The Nemausus (two parallel slab blocks) was constructed as a social housing complex of the eighties. The housing scheme uses the principle of providing an excess of raw space that the tenants can then adapt as they wish. The argument for this is that the quantity of space is more valuable in the long term for the residents than the quality of finish. Dwellers have the flexibility of ugrading their homes when they have the time and money or will to do so. Architect Jean Nouvel made sure to utilize industrial materials and prefabricated parts throughout the building, made for less costly and easy assembly.

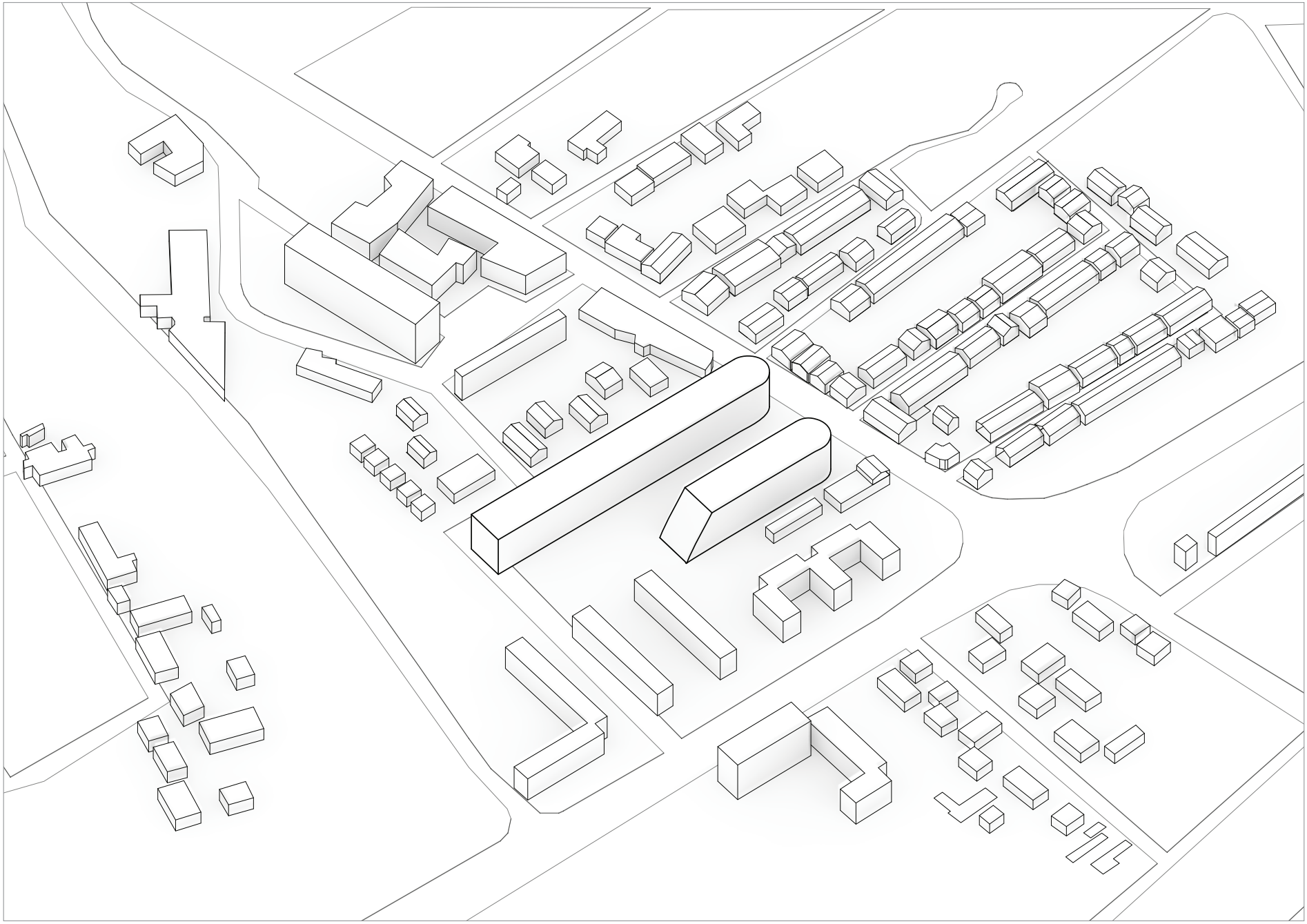
In this case, the support is quite clear. The concrete slab construction (the support) has a strict grid of load-bearing walls placed at 5m intervals. This 6-storey, simple structure was also cheap to design and construct.

Maximum flexibility and typological variety using ‘modular’ apartments was taken into consideration during the design process. The dwelling units (the infill) are either single level, duplex or triplex; most fitting between a 5m cross wall system. Access to each unit is via a wide gallery which runs along the entire length of every second level. Units are equipped with 3 to 4 bedrooms and sizes vary between 90-110m^2 (for smaller apartments) and 120m^2 to 160m^2 (larger homes). The average of each dwelling unit is 91m^2, which is well beyond the traditional social housing size. Nouvel was able to achieve larger dwellings by compromising the materials and construction type used as well as through smart layouts. Because of simple and straightforward structural and technological principles, each apartment can be easily subdivided or left undivided. Hot and cold water connections as well as waste water to and from kitchen sinks for example are wall mounted allowing for easy accessibility as well as changeability.

Between the two blocks, residents have access to a green “arboretum” as public park on the ground floor. Because the project was built on an arterial road at the periphery of Nimes, not too many activities are present around the site. Yet the gesture of lifting the building off the ground connects it visually to the surrounding neighbourhood.

A facade and internal garden

Responsive
at neighbourhood scale



Responsive
at neighbourhood scale

Structure

Nemausus 1 was built as part of the Nimes social housing program in a primarily residential zone (pg.96) situated on the southern part of the city center. The building is located on Avenue du General Leclerc and can be accessed by the two main intersecting roads shown on the opposite page.

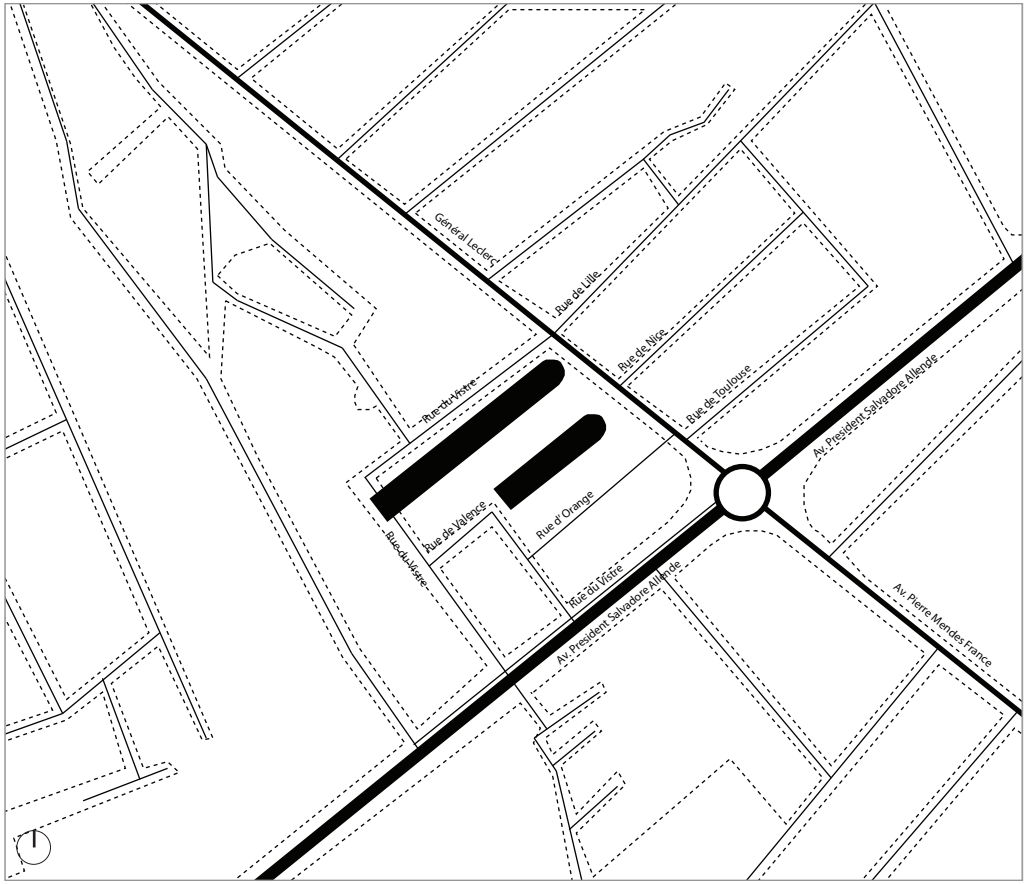
At first, the project may seem like it hadn't taken the context into consideration, but its' careful placement and height are very well inspired by the fabric of the neighbourhood. The smaller building, which is also part of the Nemaus complex was even 'chopped off' by the edge of the block (as shown in the diagram on p.95).

Since Nemausus is lifted off the ground, it may evoke the feeling of an isolated building, just as Villa Savoye or Unite d'Habitation were designed to be (according to Corbusier's point on piloti). Instead, Nouvel's housing complex utilizes the ground floor space as car parking as well as a permeable threshold for pedestrians. The space underneath the building makes a strong connection with its surroundings.

"Even more importantly, the transparency of the ground floor and the very careful landscaping between and around the blocks create the impression of a garden city rather than of an industrial suburb." [13]

13- Wolfgang, Forster. Housing in the 20th and 21st centuries. Prestel. p129

Responsive to neighbourhood



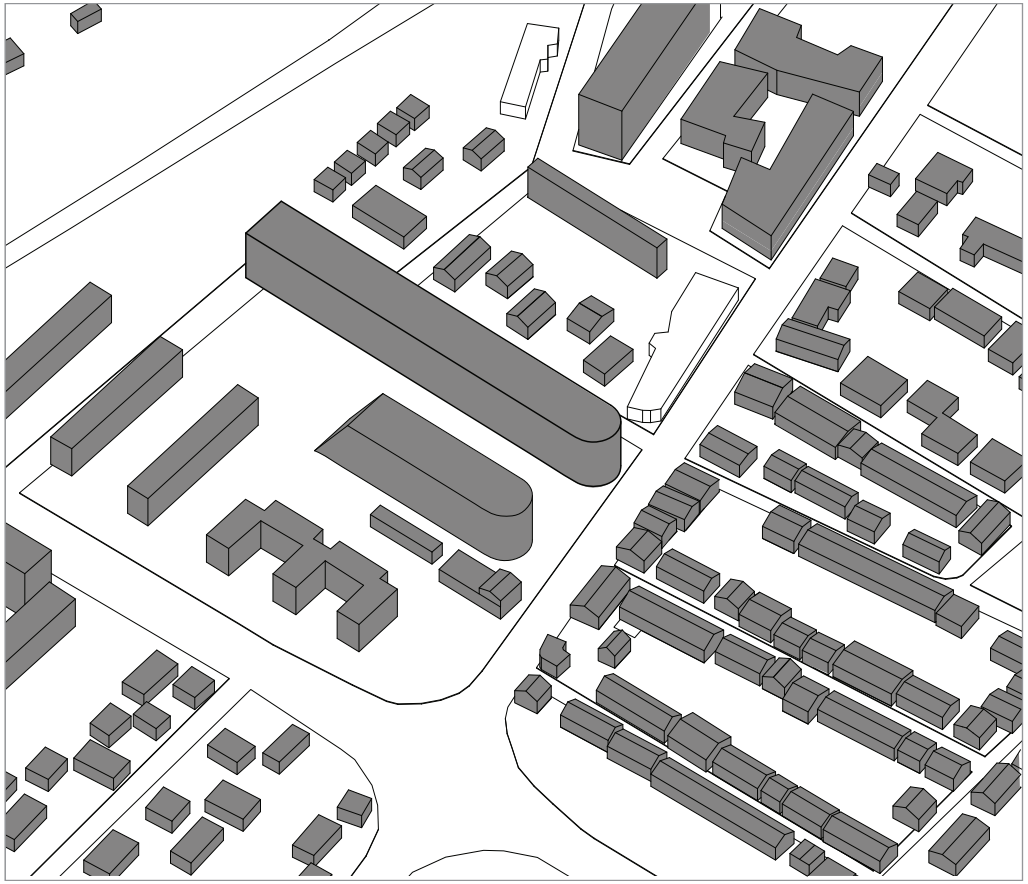
Context: street hierarchy, blocks

Context: figure ground

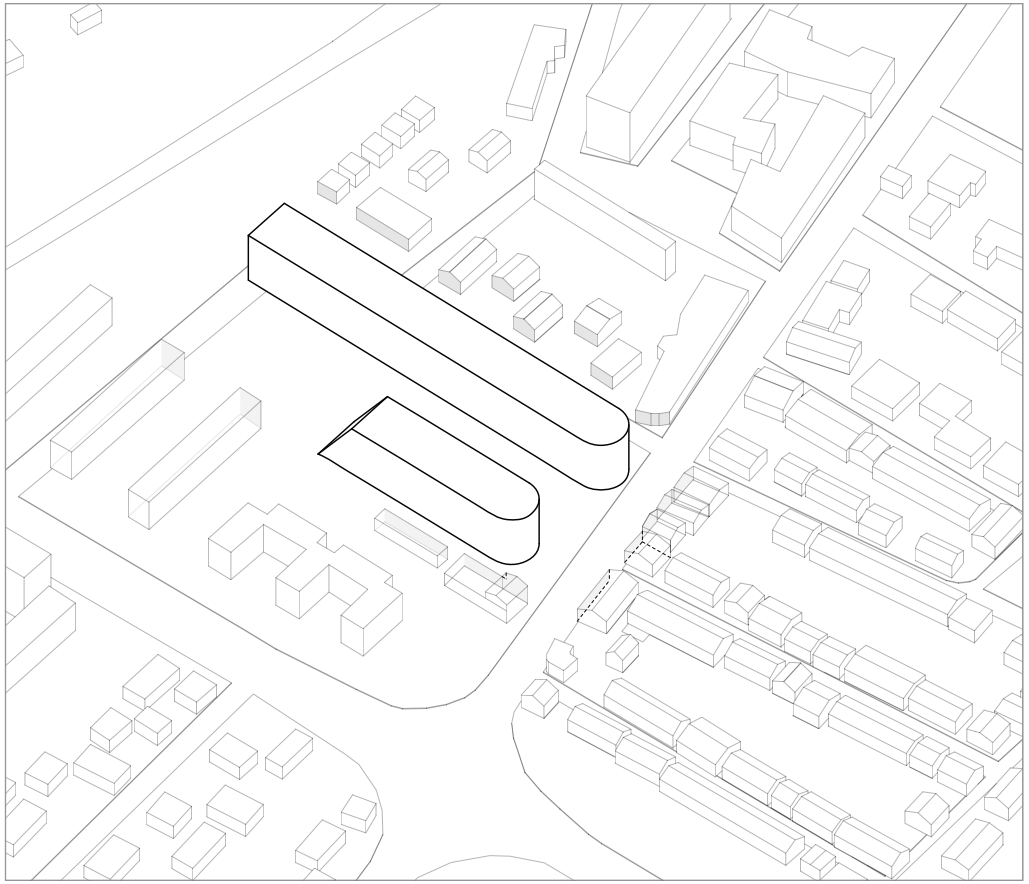
95

Responsive
at neighbourhood scale

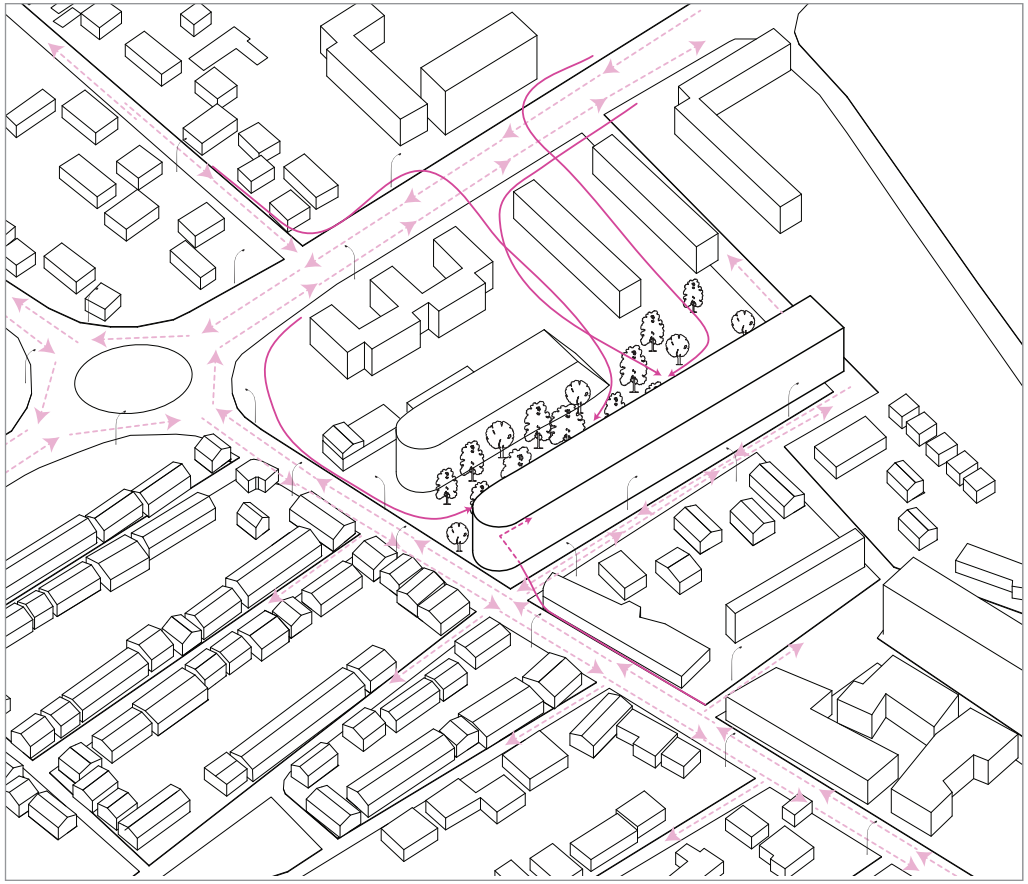
Program and Circulation



Program: ■Residential □Commercial



Adjacent volumes



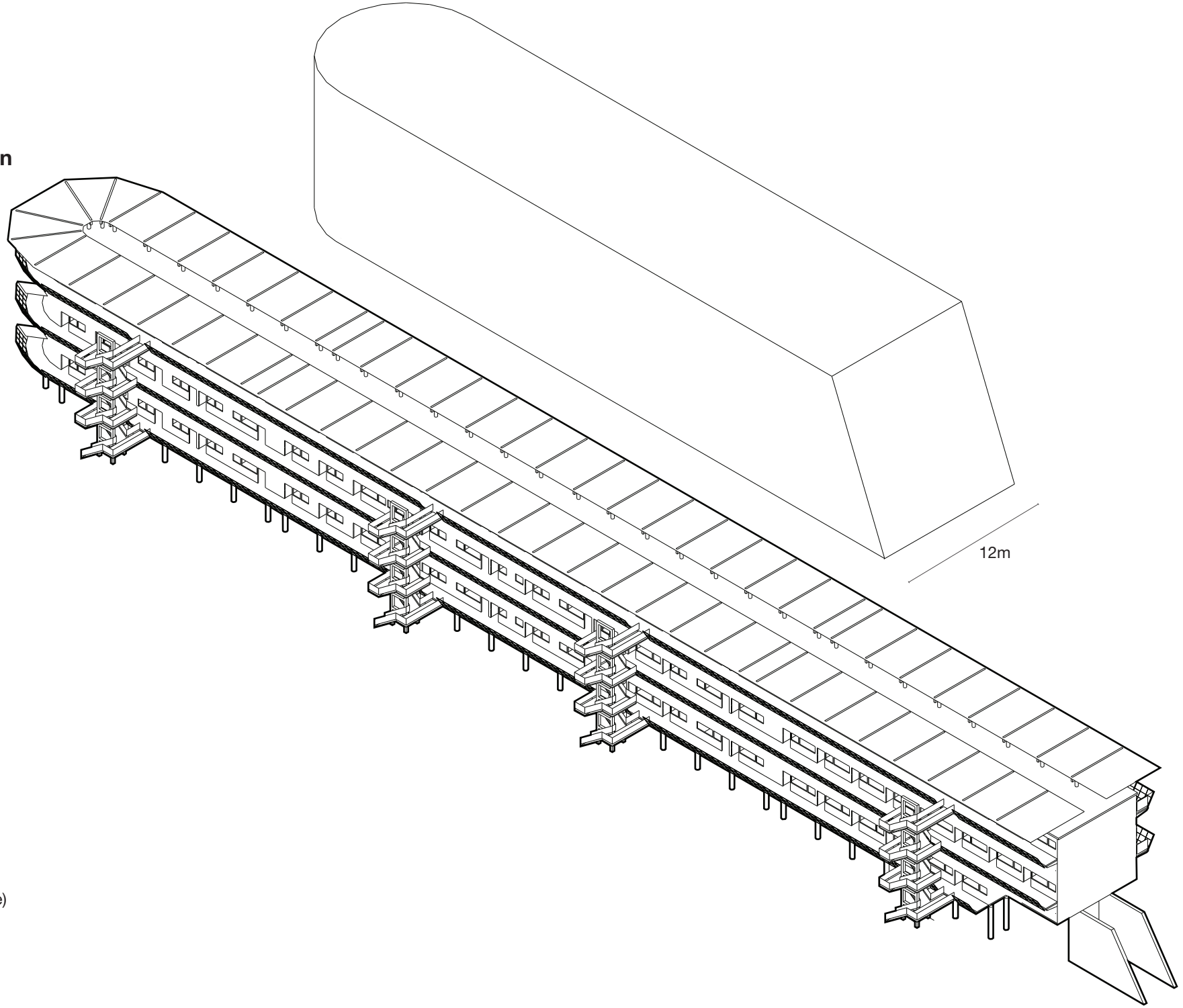
Circulation: access from neighbourhood to building

Pedestrian

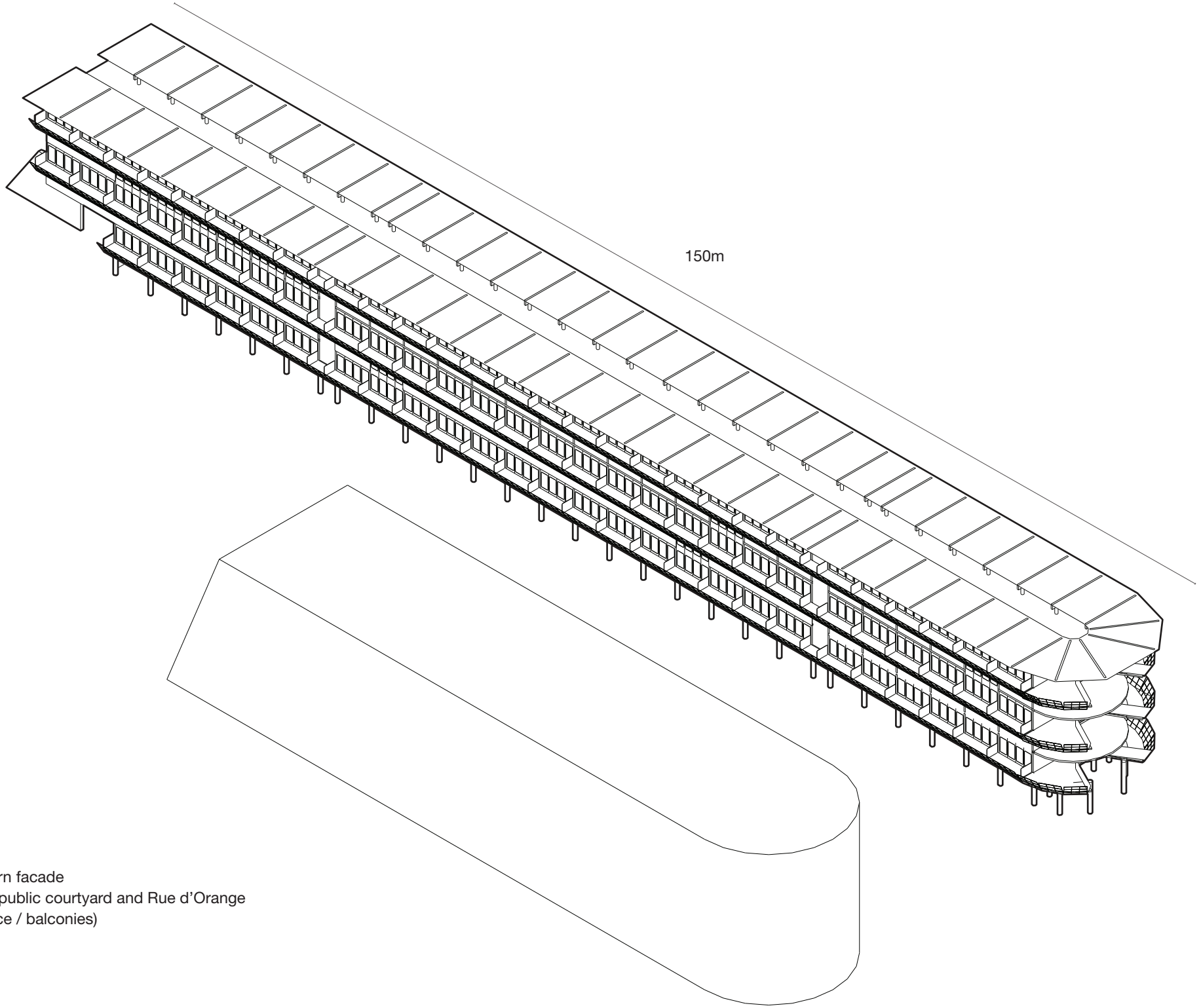
Vehicular

Responsive
at building scale

General Information

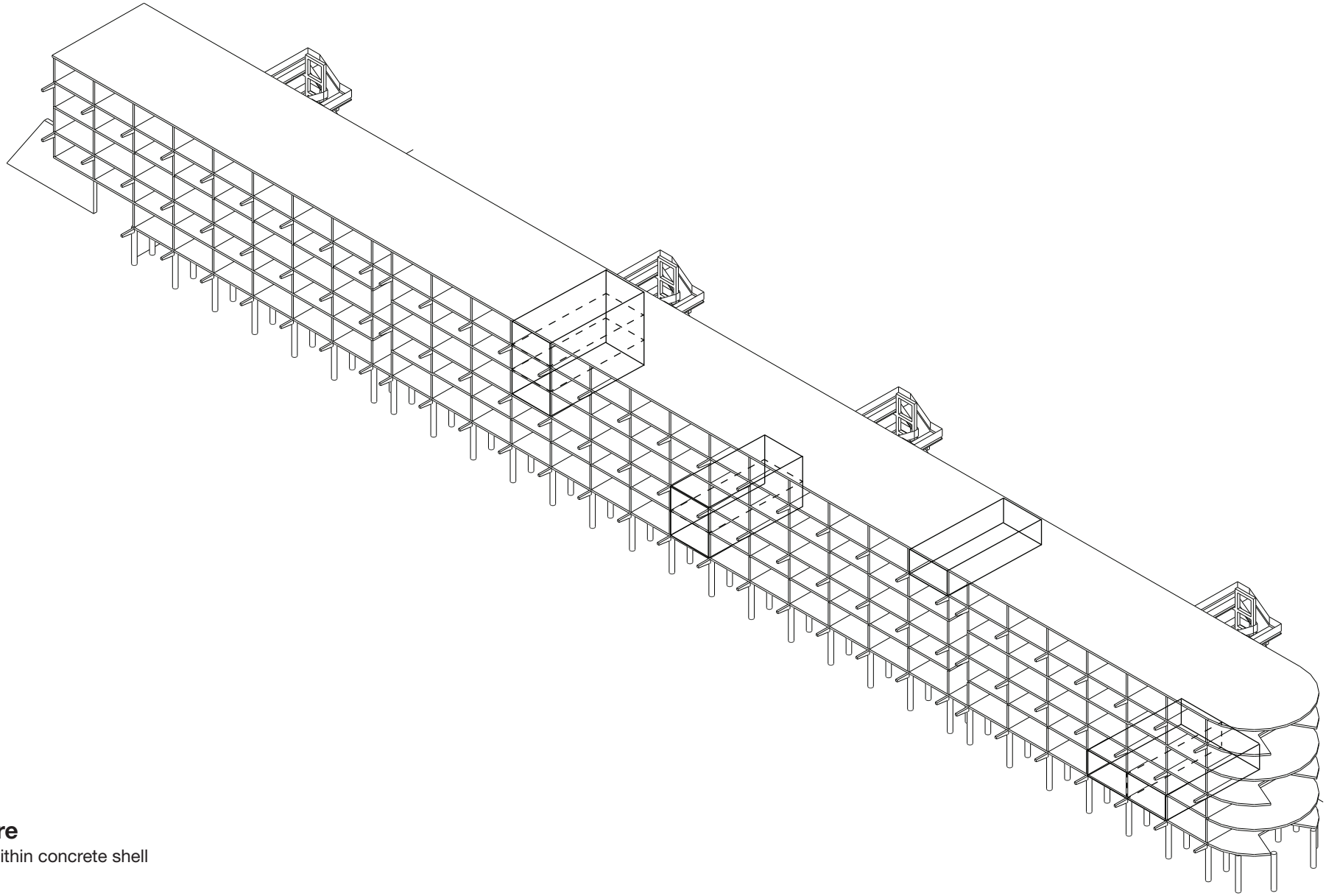


North-western facade
facing Rue du Vistre
(main access + gallery side)



South-eastern facade
facing semi-public courtyard and Rue d'Orange
(facing terrace / balconies)

Structure

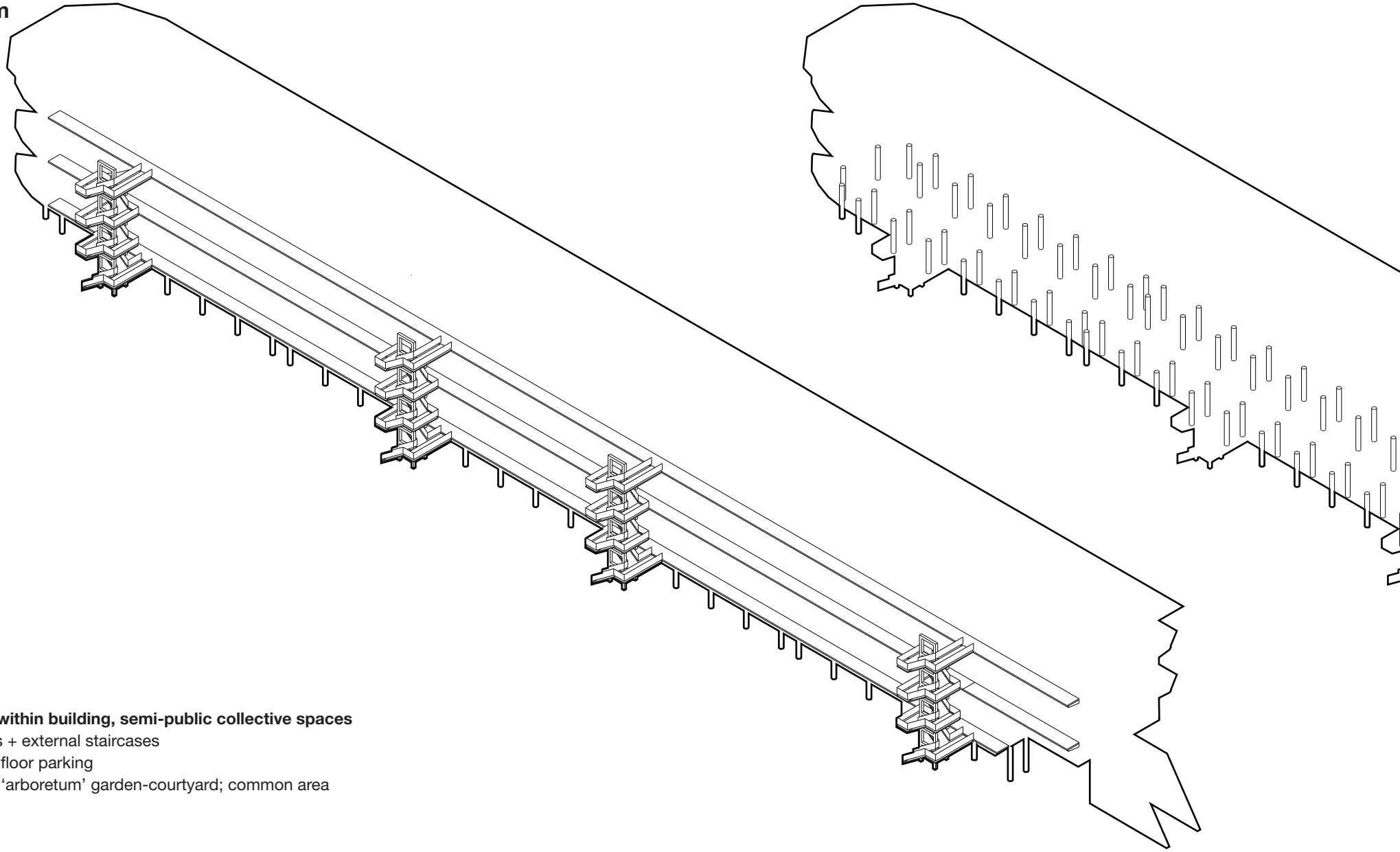


Support: structure
Situation of dwellings within concrete shell

“Une belle piece, pour presque tout le monde, c’est une grande piece. Un bel appartement c’est d’abort un grand appartement.”

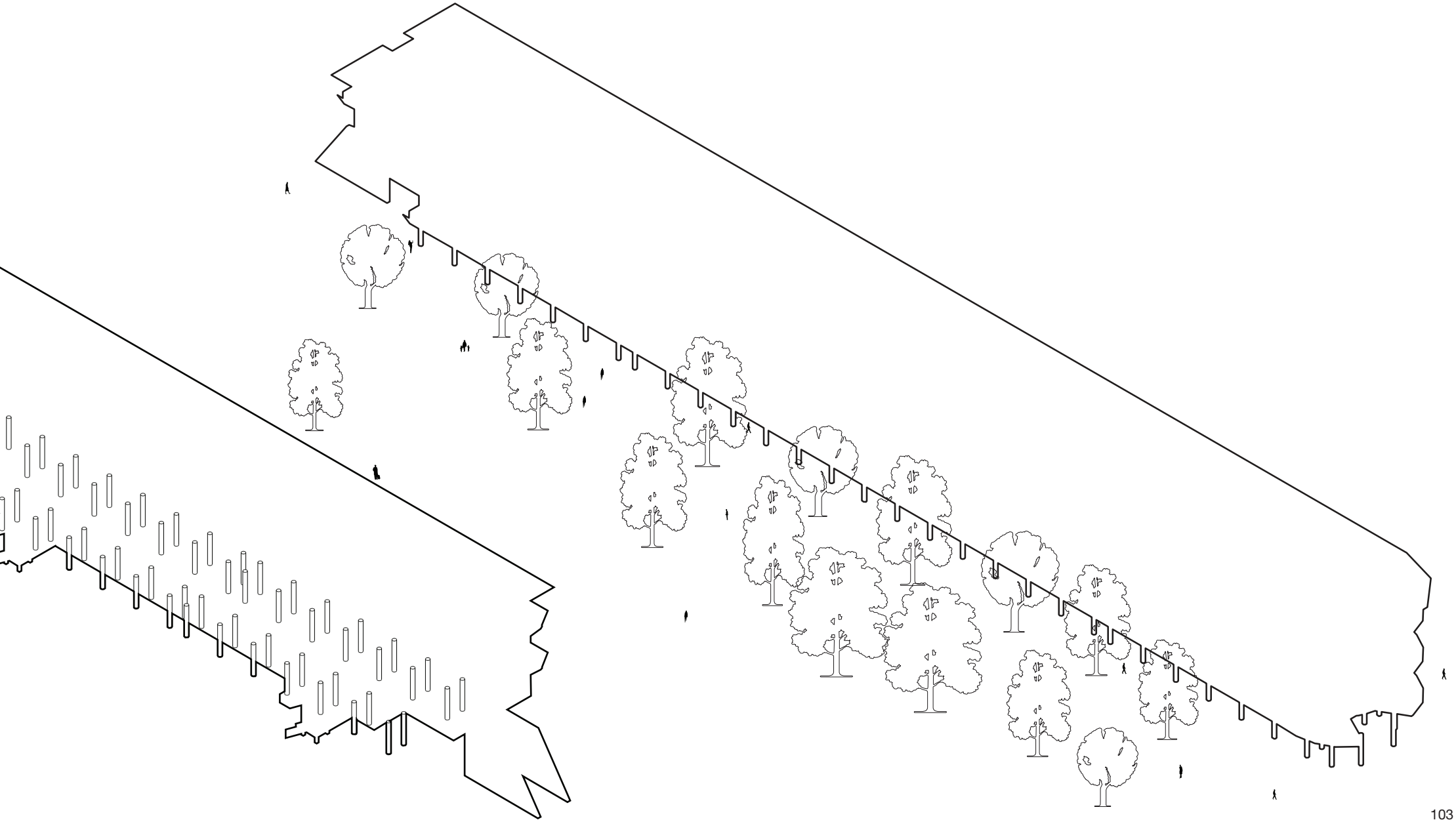
- Jean Nouvel (p17 Nemausus: 114 Appartements sociaux a Nimes)

Program



Program within building, semi-public collective spaces

1. galleries + external staircases
2. ground-floor parking
3. internal ‘arboretum’ garden-courtyard; common area



Circulation

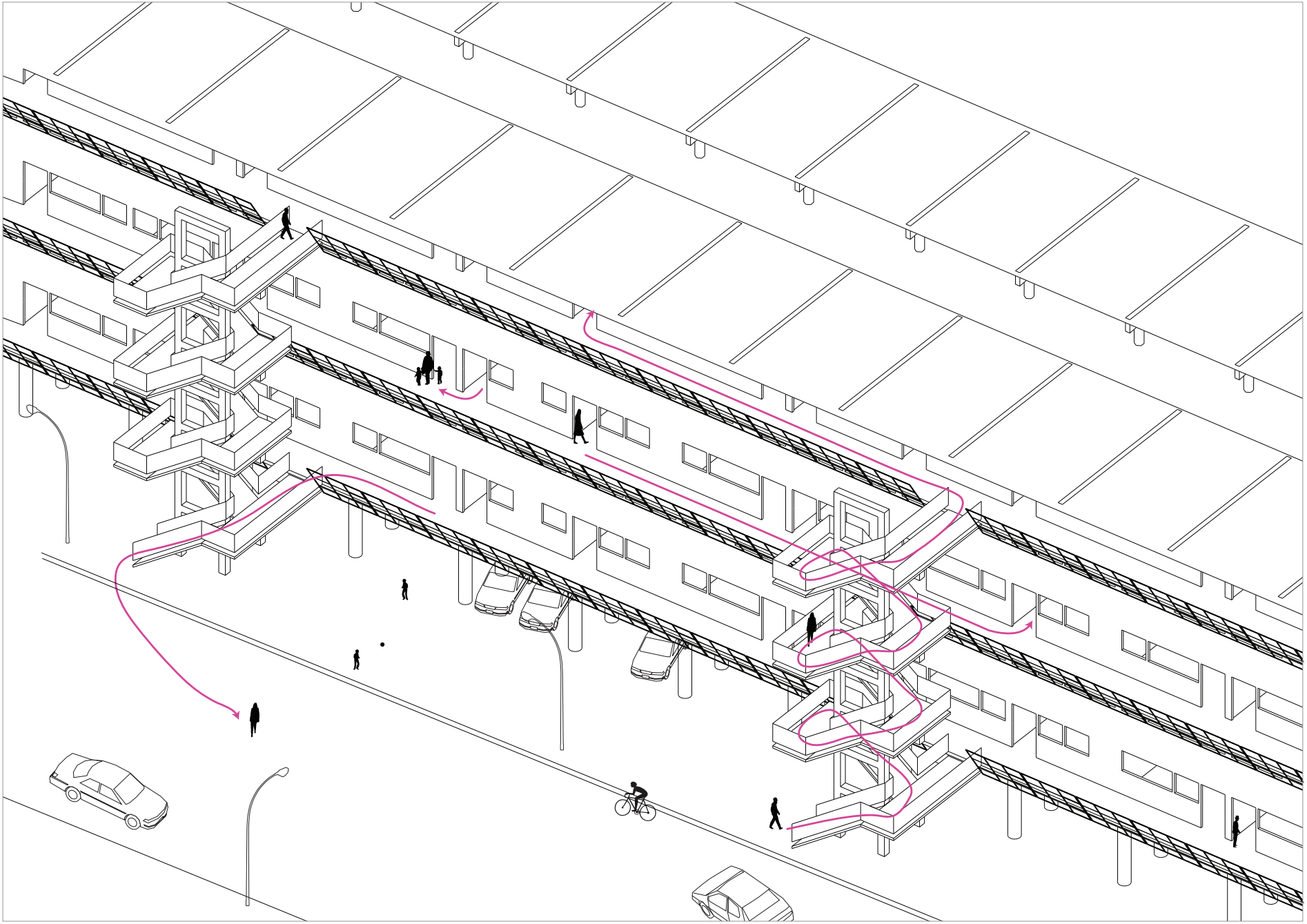
Nemausus contains 114 apartments in two parallel, six-storey blocks (p98-99). As most of the dwellings are duplex apartments, corridors are only needed on every second level. This reduces access space within the useable surface area, as do the open staircases located on the exterior of the blocks, within the common area (p.103). Vertical circulation comprises of two sets of elevators inside the body of the building.

All apartments are oriented to two sides, leading to broad communal corridors with a considerable width to travel on foot or by bicycle, to serve as common space for interaction among neighbors and as an expansion of the dwelling. This gesture creates 'streets in the sky' which visually connect dwellers to the rest of the city. Another strong visual connection is made by lifting the apartment by about 6m and using the space beneath for parking (p.102-103).

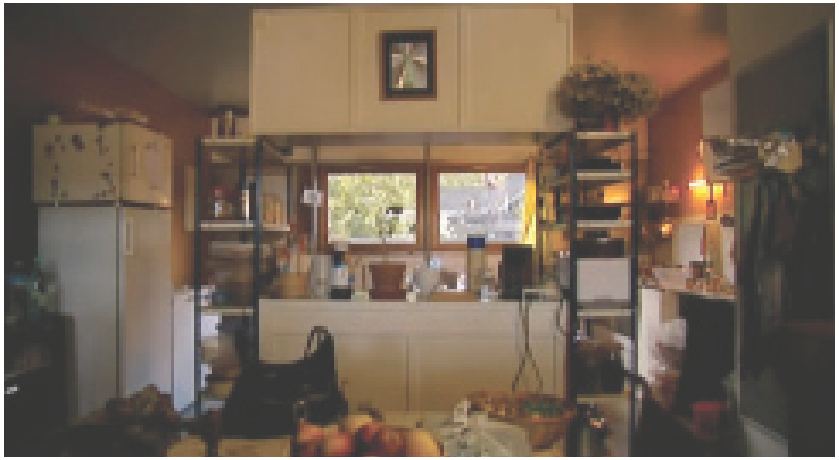
"Here le Corbusier's pilotis principle is applied so convincingly après la lettre that one cannot help but be converted. Other than in the Unité whose heavy columns all but blocking the view generated an inhospitable no man's land, these buildings stand on stilts in scooped-out, and therefore sunken, parking strips so that the parked cars do nothing to obstruct the view through" [14]

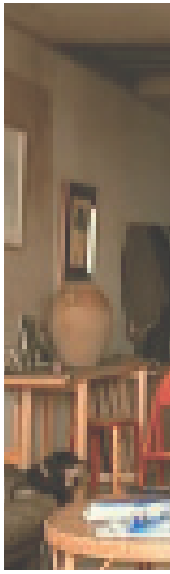
Within the strict context of French social housing, Nouvel has presented a strikingly new approach which focuses on spatial qualities rather than 'unnecessary' material luxury. The adoption of industrial techniques and materials (metal staircases, perforated metal balustrades, industrial flooring, PVC sunshades, and large metal garage doors) allows for more space at the same cost. As Jean Nouvel mentioned in the quotation (pg.101), a nice apartment is a spacious apartment. He achieves this goal by implementing large openings to the galleries as well as the terraces. Every apartment is oriented towards both sides, allowing for cross-ventillation and optimization of light penetration into the dwelling complex.

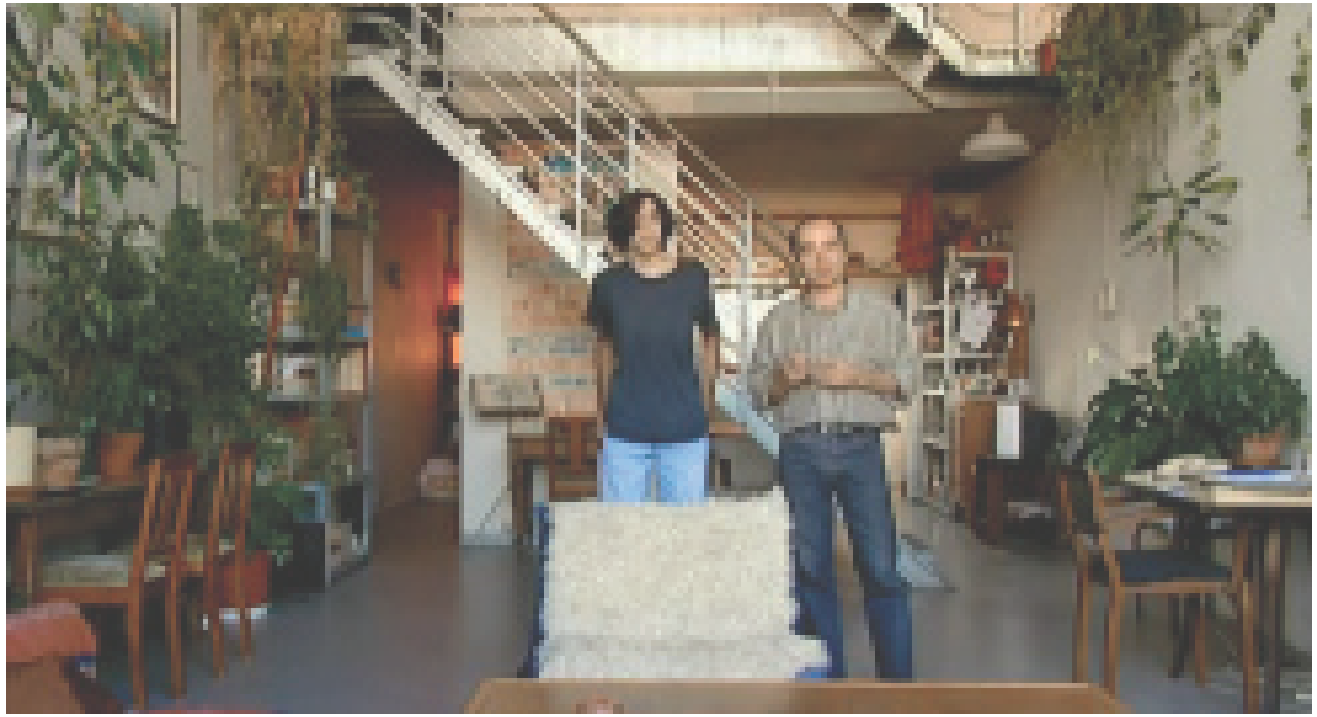
14- Hertzberger, Herman. Space and the Architect.010, Rotterdam p.32



Responsive
at dwelling scale





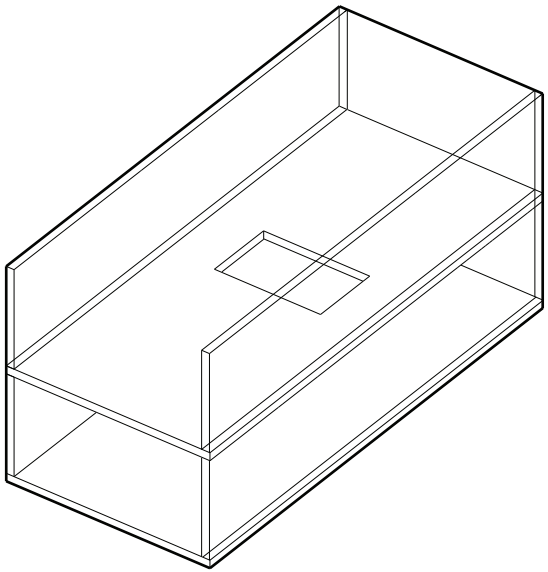


Structure and Program

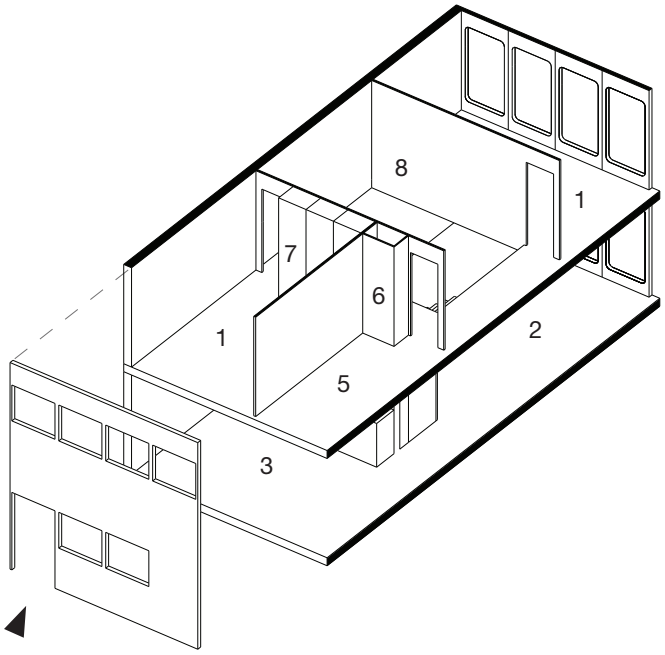
There are 17 different housing typologies all conforming to the same structural grid (p.100). Nemausus is composed of stacked simplex, duplex, and triplex apartments. The most common typology is the maisonette apartment (p.109), with a number of different possible configurations.

Jean Nouvel designed the Nemausus dwellings as bare concrete shells of 5m x 12m x 2.5m. There are no loadbearing walls or hallways within the dwellings, creating an open-plan. The ‘service’ areas, such as the bathrooms, and the kitchen are almost always situated at the core of each unit. This predetermined rule of specific program placement (p.110-113) allows for a minimum number of mechanical shafts running through at equal distances, from the top to bottom of the whole complex. All dwellings have a common program pattern. Each dwelling is accessed via the gallery into either the living room or the kitchen areas. Bedrooms are pushed to the edges of all units, allowing maximum sunlight. In most cases, especially within the ground floor, the dweller walks around the core (bathroom, mechanical, storage) to go about his daily tasks, such as using the kitchen, living room, terrace, etc. In order to create private spaces (bedrooms), thinner walls are placed throughout the dwelling. Because of the smart location of these partitions, there is no need for hallways.

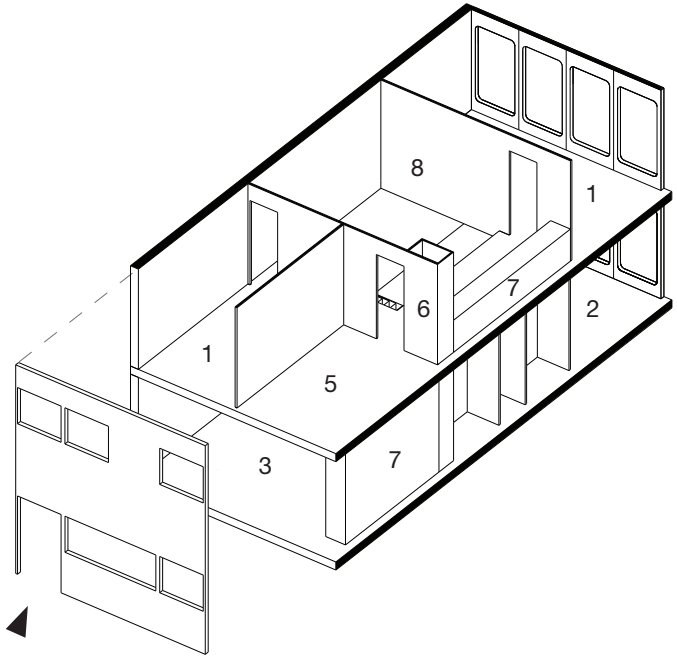
Every resident has access to his or her own private terrace. One can choose to use it as storage, a patio, or an extention of the living area. Flexibility is provided on the level of how one utilizes the provided rooms, galleries, and terraces. The only fixed elements are the metal stairs and the shaft. When Nouvel designed the dwellings as ‘concrete shells’, he wanted the residents to maintain the unfinished look. Instead, the dweller ‘rebels’ against the architect’s wishes and uses paint, wallpaper, and other installations to achieve their individuality (p.106-107).



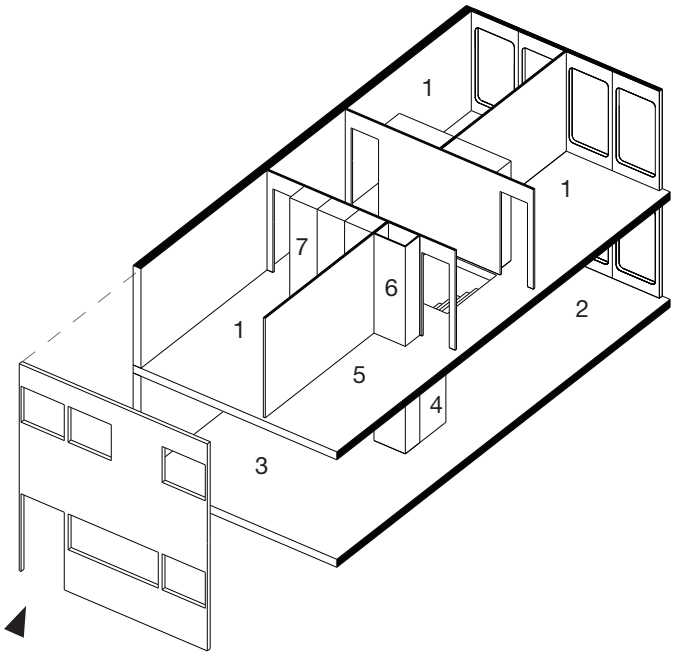
Conrete shell, typical unit proportions



Duplex A - 89m²



Duplex B - 93m²

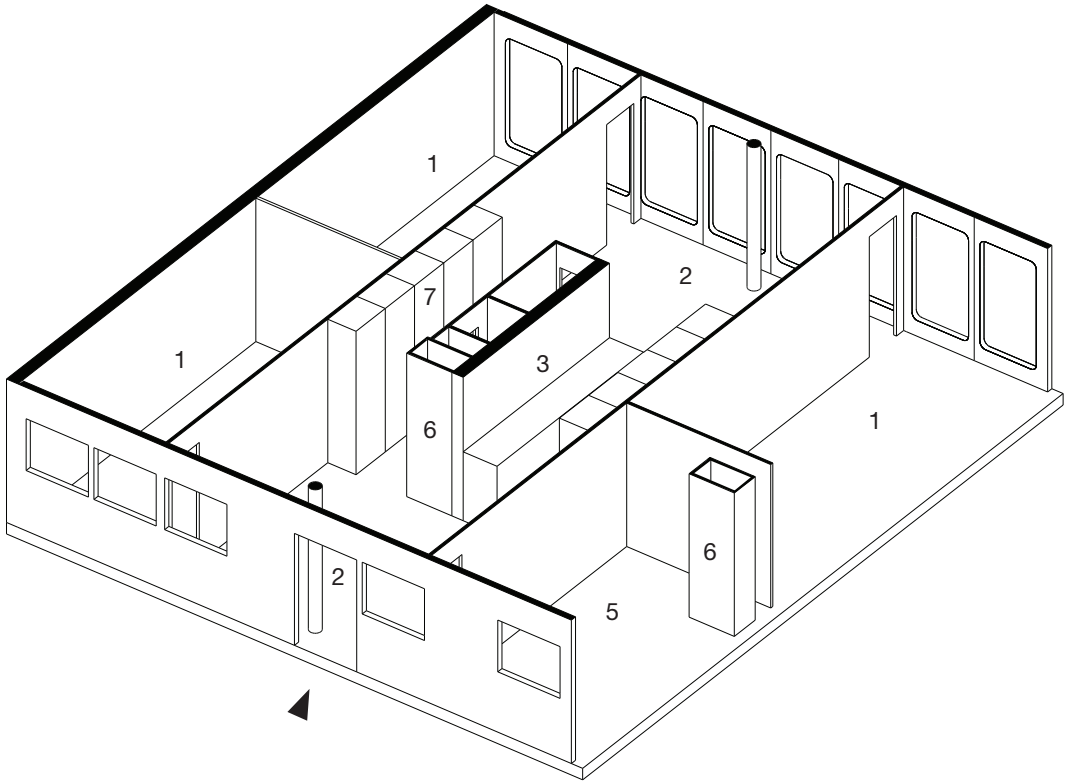


Duplex C - 97m²

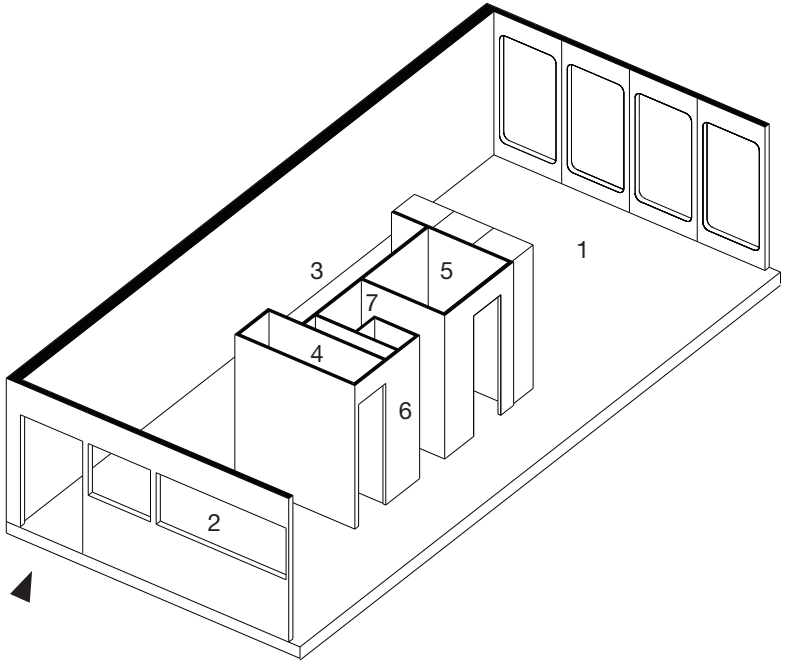
1	Bedroom
2	Livingroom
3	Kitchen
4	WC / toilet
5	Bath
6	Shaft
7	Storage
8	Undefined

109

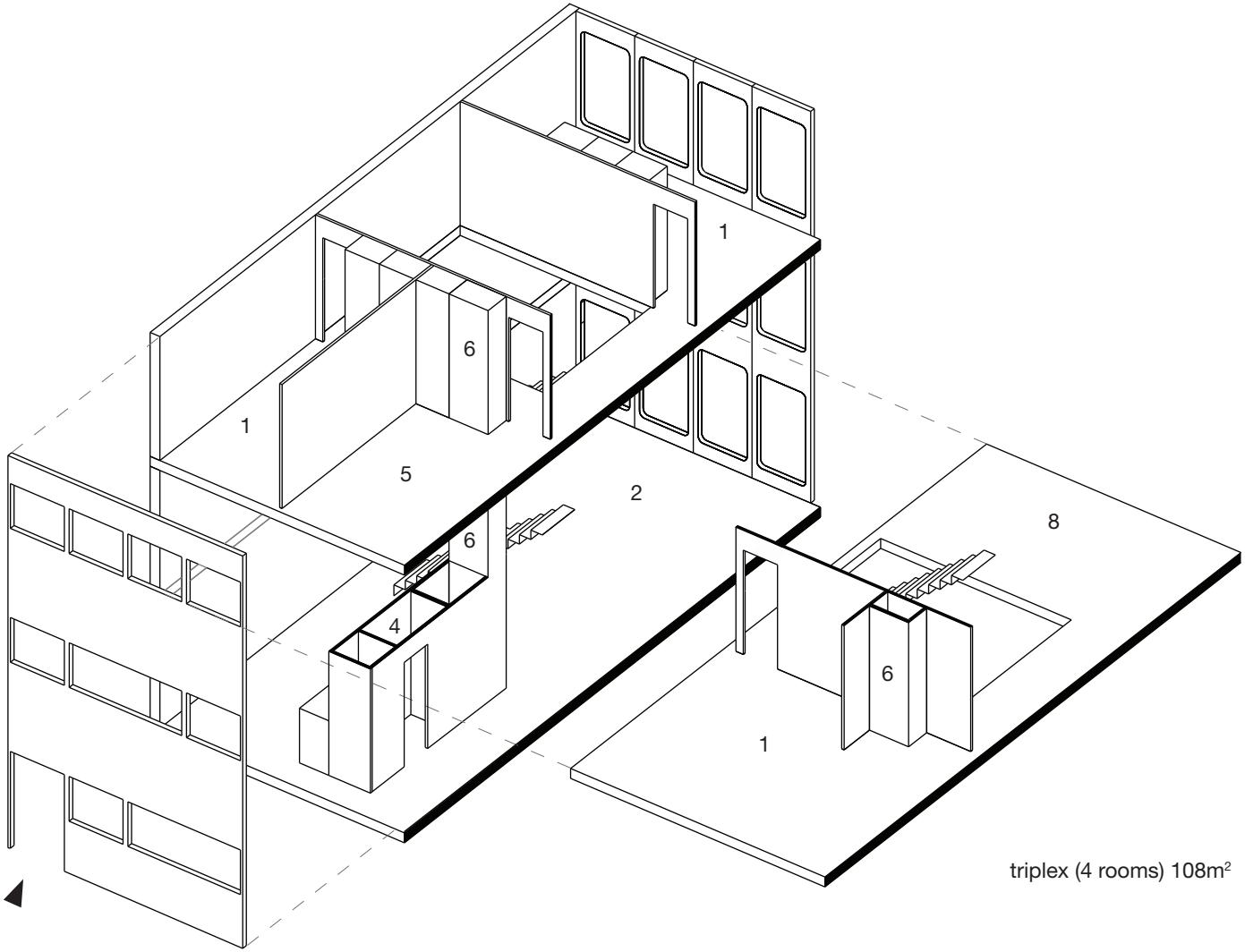
Structure and Program



simplex A (4 rooms) 108m²



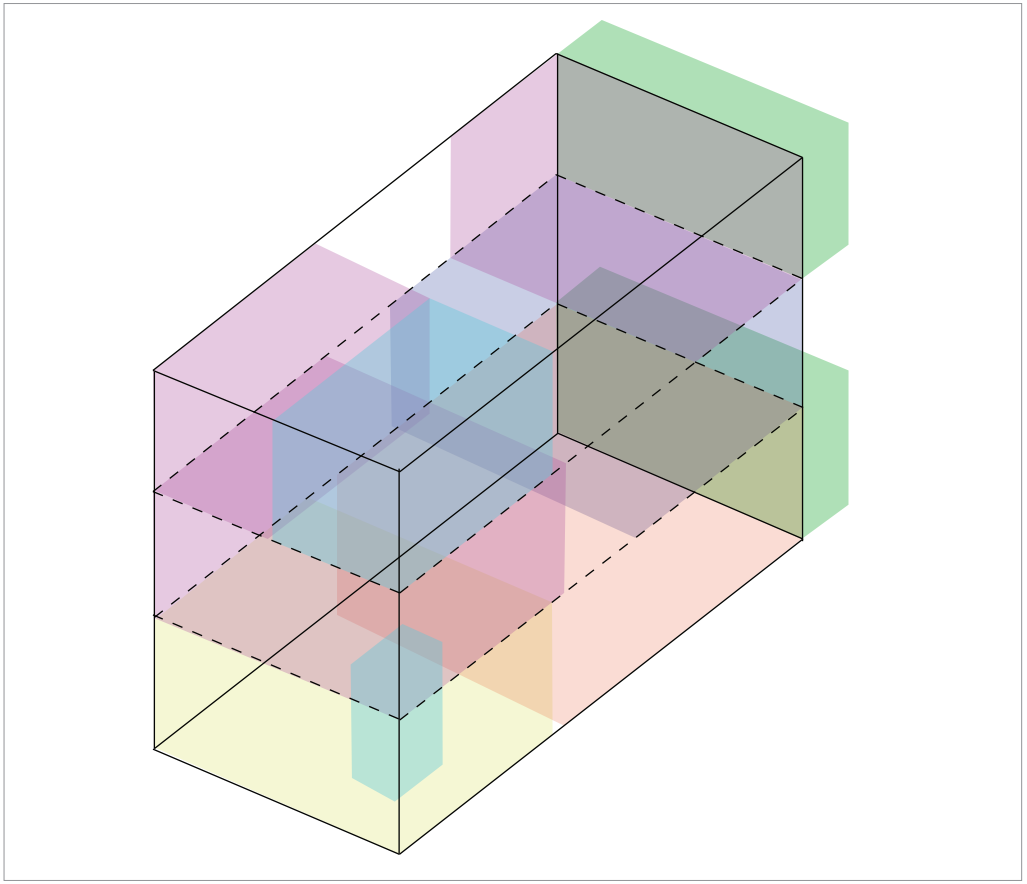
simplex B (2 rooms) 52m²



triplex (4 rooms) 108m^2

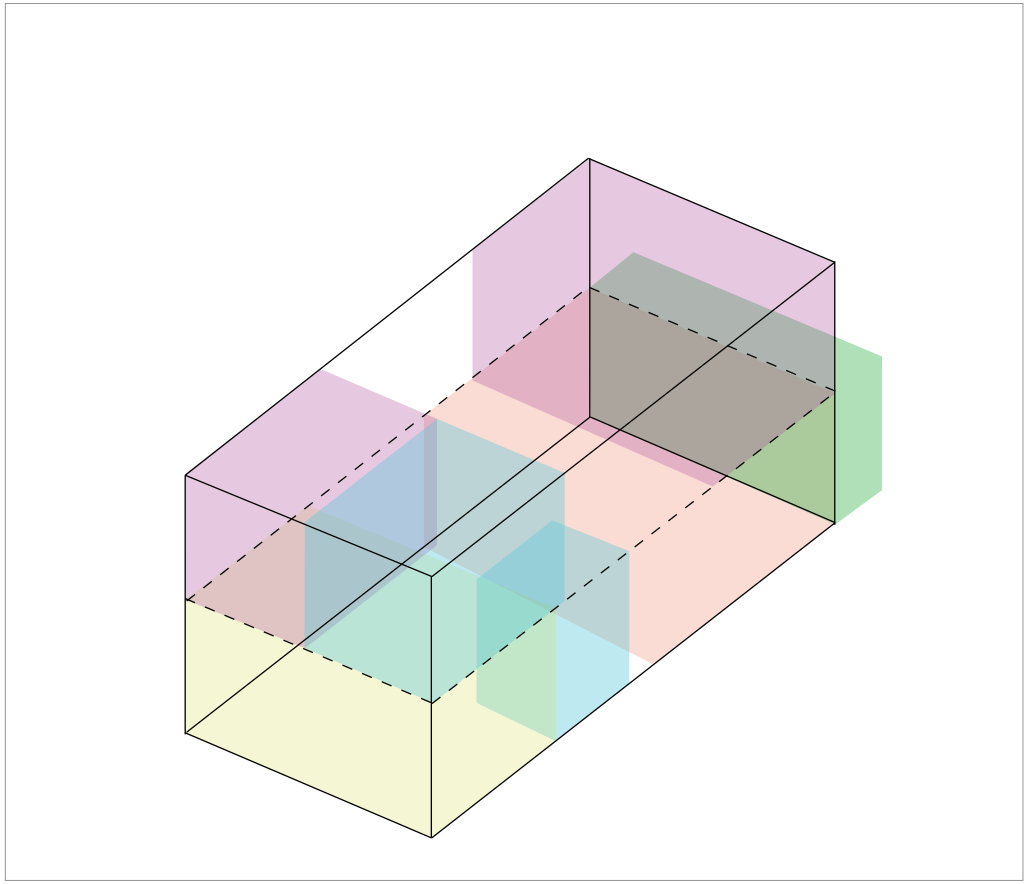
1	Bedroom
2	Livingroom
3	Kitchen
4	WC / toilet
5	Bath
6	Shaft
7	Storage
8	Undefined

Structure and Program

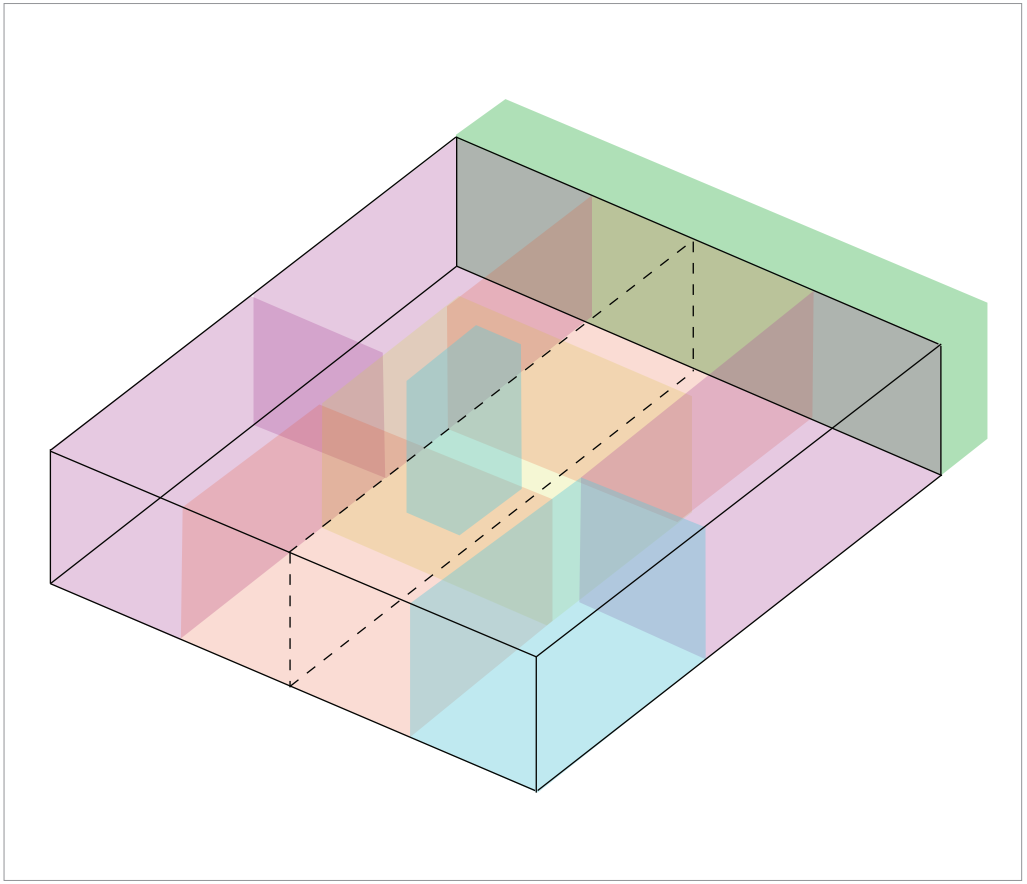


Program distribution within dwelling

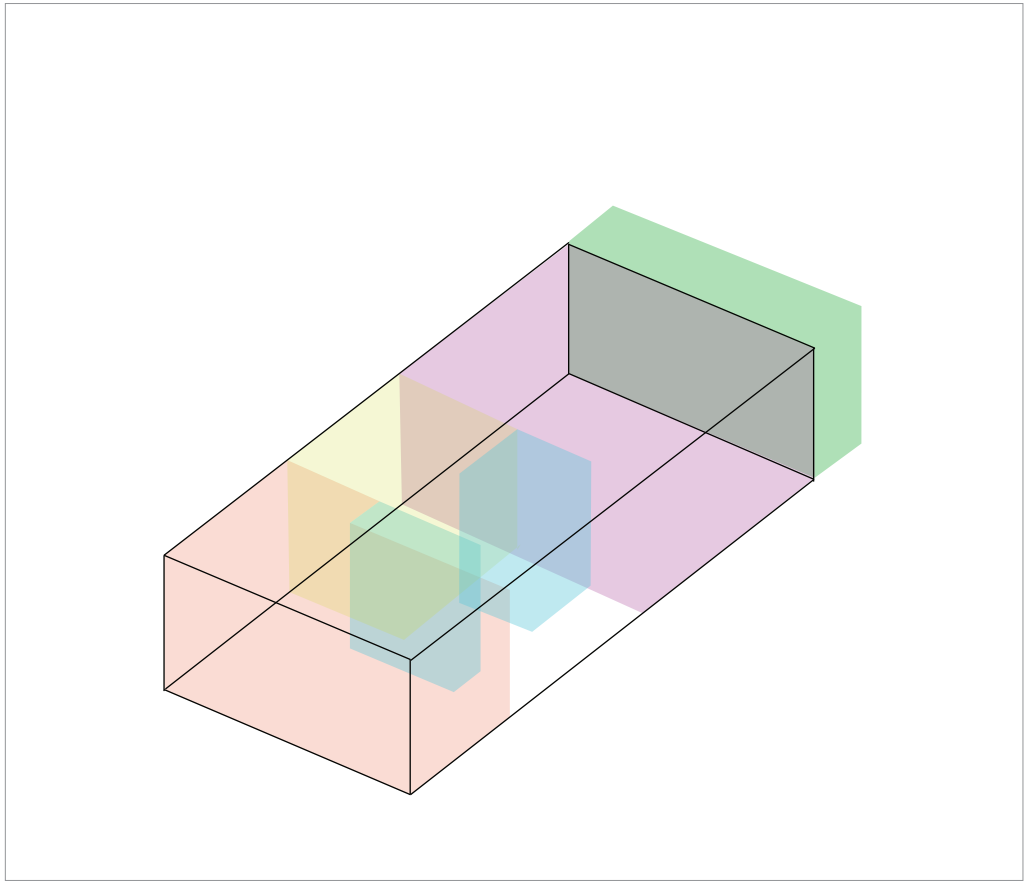
A



B

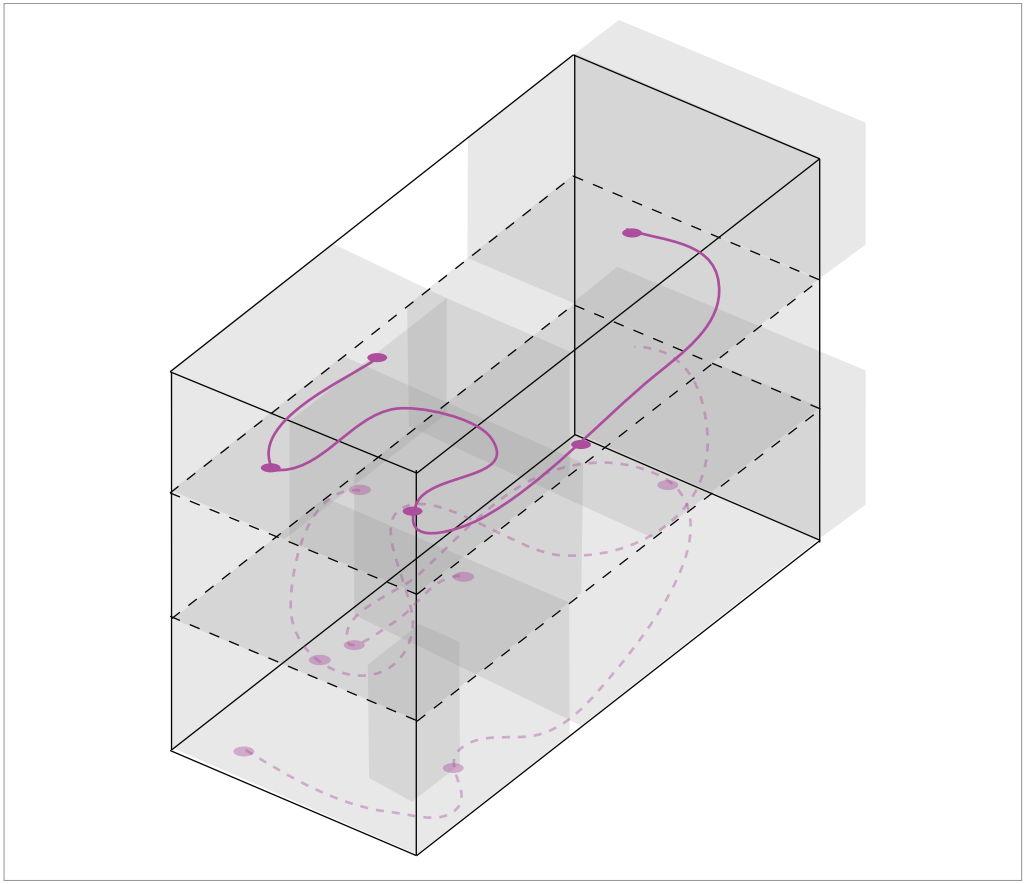


C



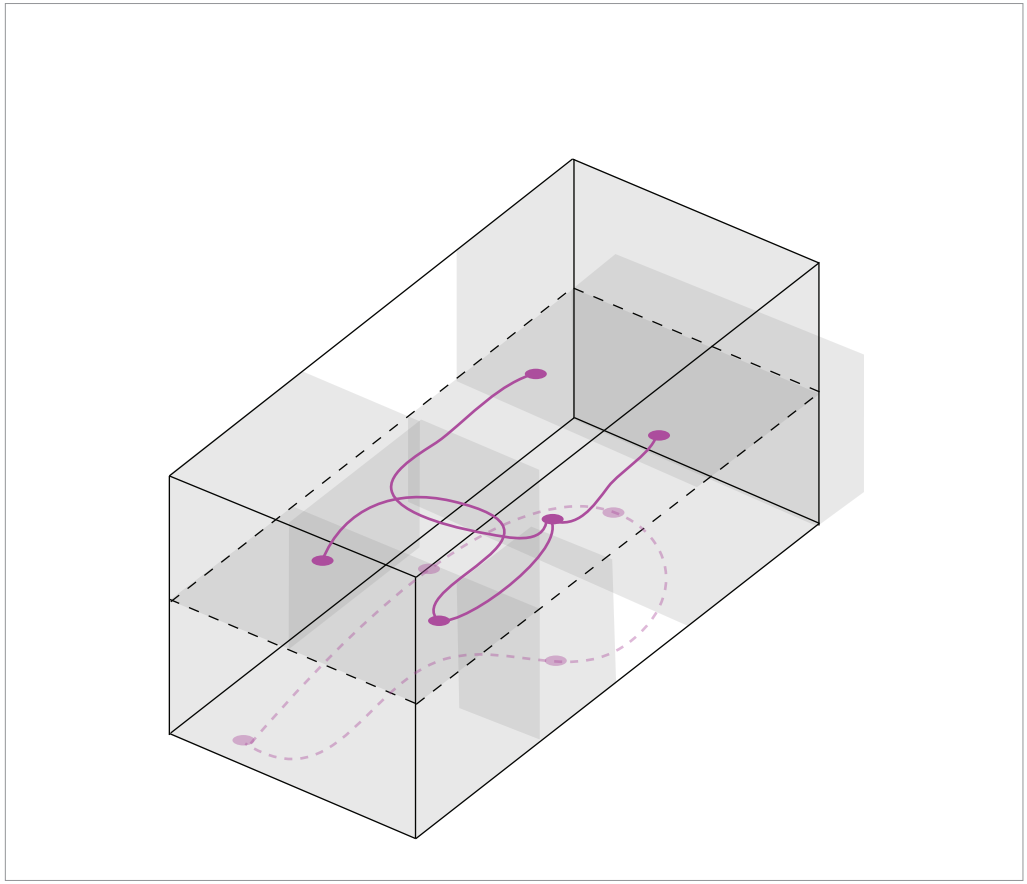
D

Circulation



Circulation within the dwelling

A



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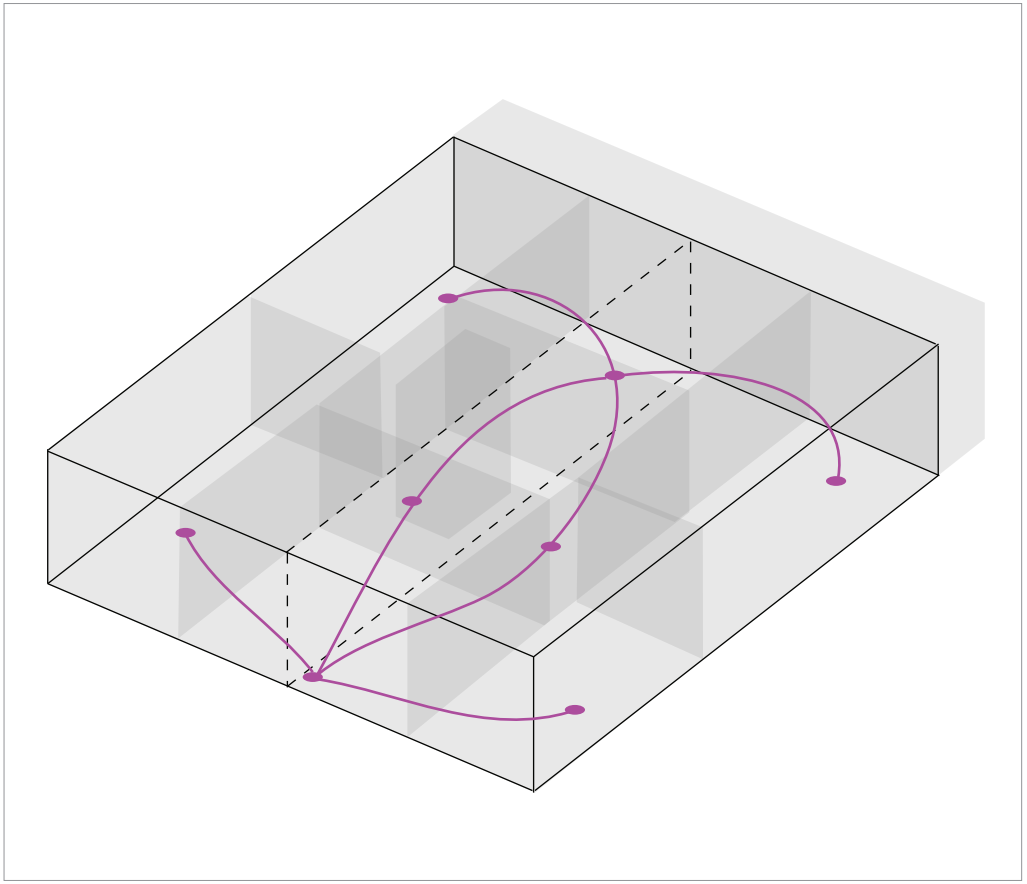

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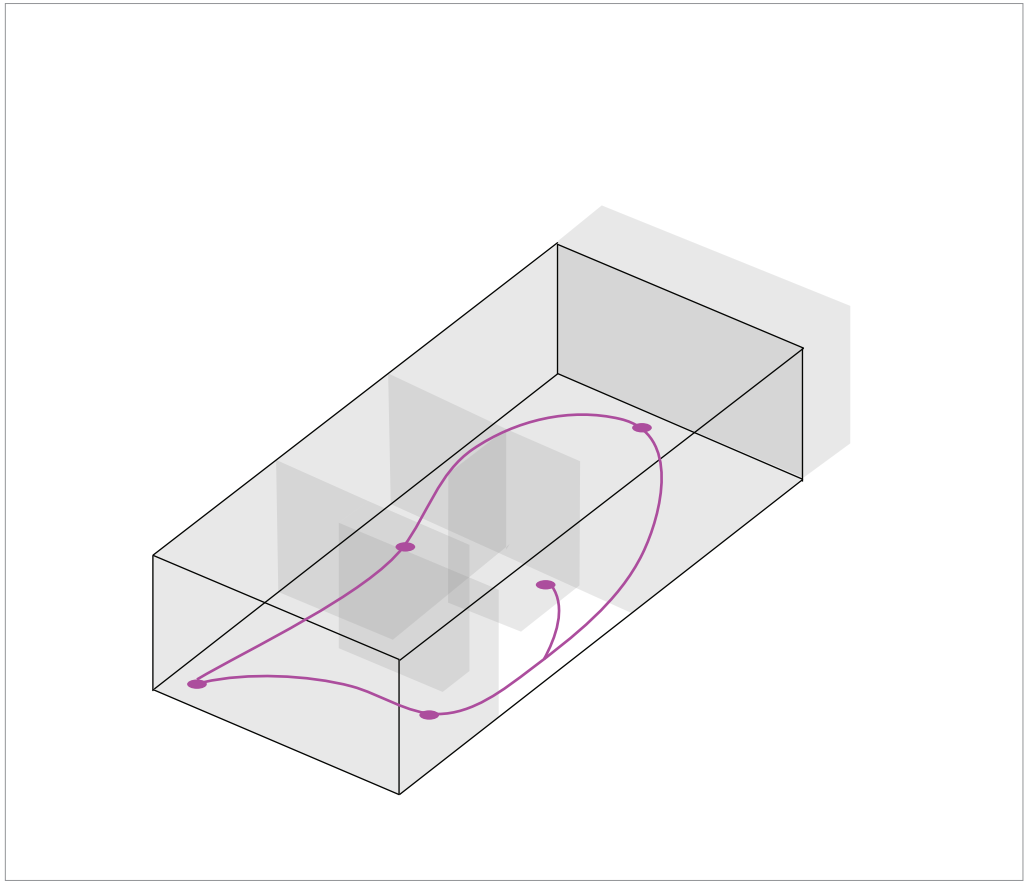
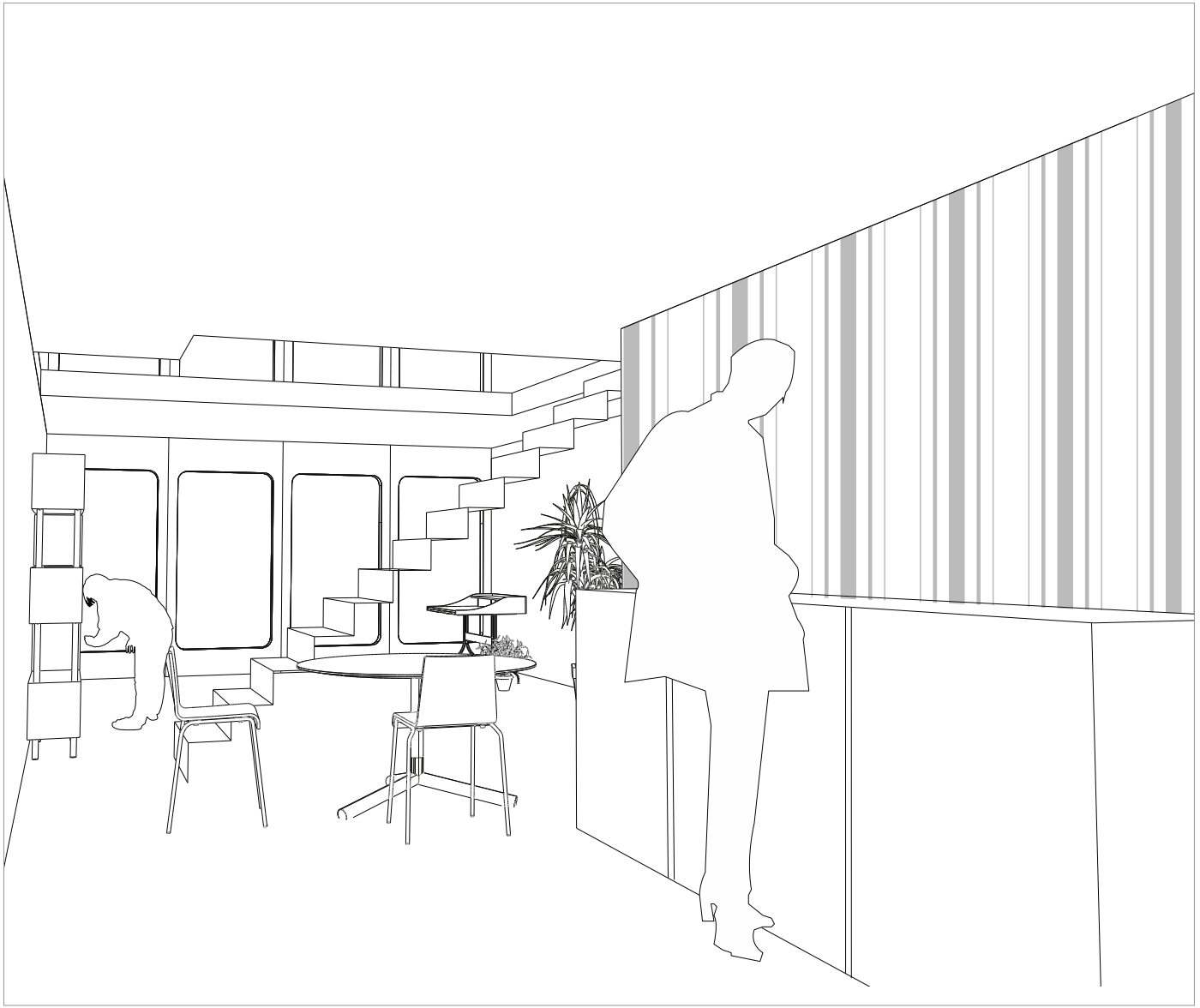


D



Interior perspectives
of maisonette-style ground floor configura-

Conclusion

We do not design in a bubble, and every decision has a cause and effect. Architecture being responsive to the dweller as well as the logic of the urban fabric and context, occurs through the conscious work of the architect as mediator between these two forces, where every project presents a new opportunity.

The collective dwelling projects chosen, had a variety of: scales, architectural languages, densities, and had an embedded notion of flexibility. However, this only responds to one side of the equation. For a flexible project to be integral, it must step out of the structural 'support and infill' scheme and contribute positively to its context. After comparing the 3 case studies, we were pleased to find that each one utilizes a different method of support and infill, but also a different approach to enhancing the city.

The analysis lead to a deeper understanding of how dwellers can rely on the house for adaptability, whether it is for self-expression as in the case of Nemausus, financial means as in the case of Quinta, or an entirely new design to occupy the support as in Next 21. Architects need to take into account the future phases of their projects, as flexibility happens in space and time; the issue of permanence becomes relevant, and fixed parameters need to be evaluated, in this case the city and the context are more permanent systems to inspire the project.

The evaluation of the case studies lead to the reflection on the issue of control, as not every vision by the architect is guaranteed to be fulfilled. In the case of Nouvel's Nemausus, the intention was for the walls to remain bare concrete and pristine, however occupants painted, drilled holes for their artwork and added wallpaper finishings; as a reminder that complete control is impossible. Furthermore the colour coding of the windows was meant to be the only ornament on the facade scheme, but occupants added window coverings invalidating the architect's colour scheme.

A similar occurrence is seen in Chile, where in an attempt to connect the dwellings to the context, the staircases to the upper levels were placed directly onto the sidewalk (similar to the Brooklyn row house) however neighbours fenced off the entrance, disregarding the architect's ideal, in favour of added safety. These notions help to answer our original question but the lessons learned parallel to this question are perhaps even more valuable.

For example in NEXT2, two systems are combined within the building. A long-life and a short-life system, as well as a division in independent subsystems which make the building adaptable on different layers. For instance, the division of mechanical systems are separated within two shafts; one at the main structure and one individual shaft per dwelling. This means that every dwelling is free to change its composition, and is therefore very flexible.

These lessons are particularly imporant for dwelling projects, where people spend many years evolving in many dimensions, and as this process takes place, their house must be able to adapt. It is however the role of the architect to understand the levels of permanence of the project. Where does the project fit within the larger scheme of the city; How do smaller components relate to the higher levels.

The use of the levels of permanence provided insight into a design tool which can be utilized to enrich and positively develop the parallel design projects of the Dwelling studio. Buildings should be designed understanding their place within these levels as they are never meant to be confined to a single level. As important as the well-being of the resident is, the city should be regarded as a powerful informant on the overall project, not so much a constraint but as an opportunity.


-DPM

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D: The Japan Architect #49. Spring 2003. p27
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D1: The Japan Architect #49. Spring 2003. p27

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E1: El Croquis MVRDV 1998/2002. p79
F1: www.mech.hku.hk/sbe/case_study/case/jap/next21/next28.jpg
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