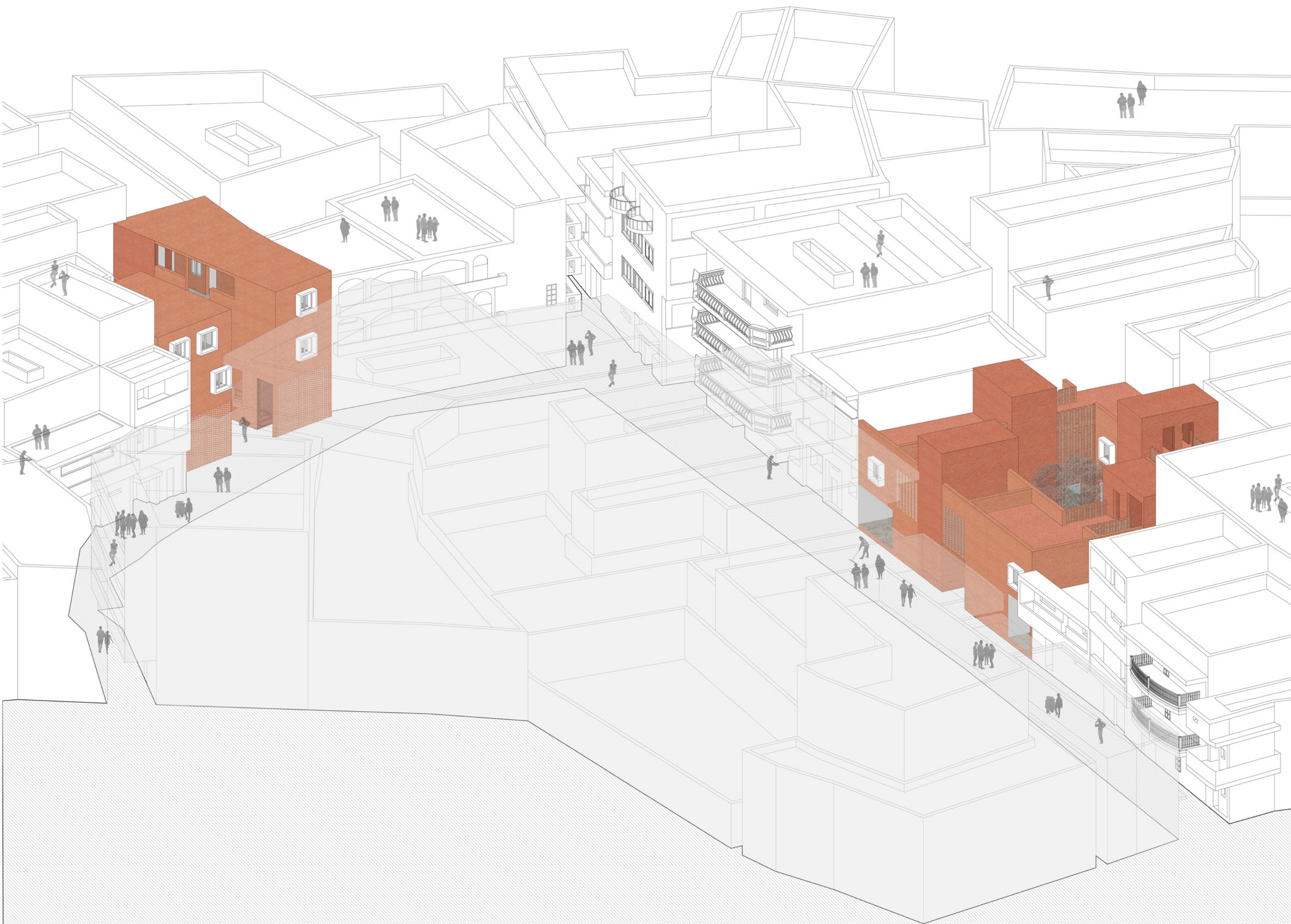


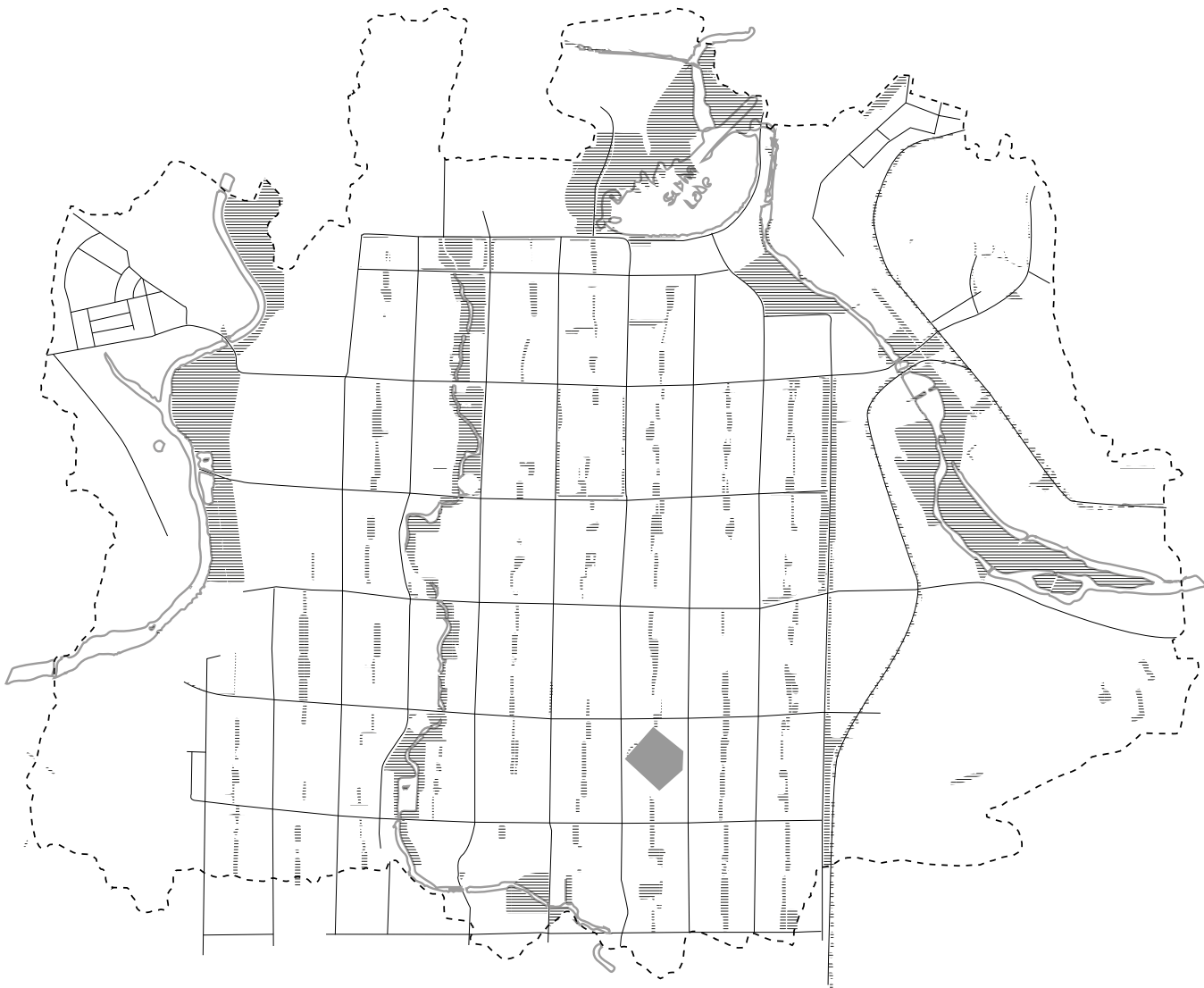
ACUPUNCTURAL ARCHITECTURE IN BURAIL

ADDITIONAL BOOKLET



GENERAL INFORMATION BURAIL

Area of the Plot		
Permanent cluster	400 m2	(250-400)
Temporary cluster	200 m2	(200-300)
Chaupal		(160-250)
Coverage		
Permanent 400 m2 - courtyard 120 m2		70%
Temporary 200 m2 - courtyard 60 m2		70%
Built Area		
Permanent 280 * 3 floors		840 m2
Temporary 140 * 3 floors		420 m2
Floor Area Ratio		
Permanent 840/400		2,1
Temporary 420/200		2,1
Number of dwelling units created in cluster		
Permanent:		4 dwelling units
Temporary		10 dwelling units
Estimated number of people accommodated in the project		
Permanent 4 Families of 3-5 persons		12-20 persons
Temporary 1-2 per room		10 -20 persons
Density of population		
Burail before 10 persons per 70m2		1428 persons per hectare
Burail after 15 persons per 300 m2		500 persons per hectare
Density of accommodation		
Permanent 15 persons/4 dwellings		3,75
Temporary 15 persons/10 dwellings		1,5



REFLECTION PROJECT AND PROCESS

Bad conditions as trigger for approach

Burail, Chandigarh – sector 45. During our site survey and design research we were confronted with the bad living conditions in the existing situation of Burail: the streets were very narrow and the buildings relatively high when facing the narrow streets. The configuration of the existing buildings consisted of small living units staggered in two or three floors with just a small light well in the middle. It was very clear that the density of Burail, in built mass versus public space, as well as in the individual buildings was too high for comfortable living conditions. The bad living condition within the existing situation was our main trigger to create a proposal with more comfort and quality, and to reduce the density within the individual buildings.

What also triggered our design approach was the strict border between the public streets of Burail and the private area of the individual living spaces. During the site survey we felt that existing buildings were quite closed towards the streets. For us it was interesting to think about this transition, because that would also improve the social interaction in Burail. The characteristic Indian spirit of Burail was fascinating us and we decided to elaborate more on this lively yet dense area with a lot of height difference on the rooftops, which create a completely new life on top of the buildings. The aspect of colour was also important for the character of Burail and triggered us to think about future perspectives of people painting their houses in different colours.

Transforming fabric by combining and balancing

In our project we aim to achieve an improvement in the current living conditions of Burail. Our design research showed us that the divisions of the different plots was not very suitable for qualitative living conditions, as most of them were long and narrow and three of the four facades were touching other buildings. By combining several plots together, a bigger surface could be created to accommodate better living conditions. Our strategy on urban scale can be seen as acupuncture; the urban fabric of Burail will change on several specific locations where plot owners would like to combine their plots.

Our main goal was to create less density within the buildings, because the current situation was built for quantity, not for quality. As the transition between the public and the private also triggered us, we therefore introduced the courtyard as this transition element. Within our acupuncture strategy, the courtyards will create new 'pockets' in the urban fabric of Burail. They can be seen as an extension of the public street network.

Second thing we wanted to achieve in our project is more related with social aspects. The existing population of Burail mainly consisted of temporary inhabitants, which lead to badly maintained buildings and an identity loss for Burail. In our opinion, the temporary inhabitants of Burail are a well working concept and therefore we want to incorporate them in our strategy. Still, an identity loss should not be the result of these inhabitants. That's why we want to achieve a more balanced ratio between the permanent inhabitants and the temporary inhabitants. In the current situation of Burail, people don't want to live there permanently. By transforming the urban fabric into combined plots, a new opportunity for qualitative living can be introduced. This will be more attractive for the inhabitants to live there on permanent basis.

Public space and social groups as generator of project

Social aspects were very important for the development of our project, as in catering for different social groups as we mentioned before. We wanted to create a balance between the temporary and permanent inhabitants because we want to accept the temporary fact that's already happening in Burail and to attract more permanent inhabitants to keep this identity of Burail alive. Because both social groups have different needs, as we see the permanent people as the families and the temporary people in single or cohabiting configuration, we came up with two different typologies, according to their needs. The permanent inhabitants, the families, would like to have more privacy and safety, while temporary dwellers would like to have an active participation in the urban life. This played an important role in development of our different typologies.

Another important aspect in the development of our project was the toolbox we designed for the urban scale. In this toolbox our acupuncture approach reacted towards different public spaces, like the streets and the chaupals (open spaces).

The public space functions as the generator for our different architectural configurations of the buildings. The public spaces as well as the inhabitants themselves were creating different architectural typologies, as the different types of courtyards in the streets and the different types of 'towers' facing the chaupals. The differences were created in open or closed courtyards, individual of staggered housing and private or collective functions.

Charles Correa's service core as backbone

As in our case every project was very different, we needed some kind of a backbone. Taking a look at the projects of Charles Correa inspired us in using the same principle of the 'service core'. For us this core could function as the backbone of the project, as we could use it as the repeating element in our strategy. In our projects the core defines the boundaries of the courtyard. It was a big struggle to find the right solution for this core, but when we finally had it, it was easier for us to design and define the different situations.

Inspired by brick architecture

Burail was in our eyes the representation of traditional Indian architecture and in fact it was not designed by architects but by the people themselves. For this reason most of the materials used were brick, because it was cheap and easy to build with. In our design projects we also wanted to use brick, because it was indeed an easy way of building, it fits within the existing context of Burail and was flexible in the sense that it could be suitable in all irregular plots we wanted to combine. Using brick was for us the most appropriate solution. As our inspiration we used the precedents of the institutional buildings we visited in Chandigarh, the girls hostel in sector 11 and the examples of governmental housing as presented in the book Documenting Chandigarh, the architecture of. The precedent of the institutional building taught us how to deal with the relation between individual rooms and collective spaces, as we wanted to design this for the typology of the temporary building. It helped us in designing qualitative collective spaces in relation to the individual private spaces.

The precedents of the governmental housing inspired us in architectural sense. We really liked the aspect of the perforated facades, creating a 'screen' which is not completely closed but not completely open either. It functions both for filtering daylight and for ventilation purposes. We were influenced a lot by this kind of facade architecture, because it gave us a lot of possibilities. In our own facade designs, we played with this brick perforations, varying from a closed brick facade to semi open to very perforated, which are of course in relation with the living functions behind the facade. The institutional building also gave us some inspiration in architectural way. When designing our perforated brick facades, we wanted to create an extra dimension by introducing the concrete frames as used in the institutional buildings. Incorporating them into our design made the facades more lively.

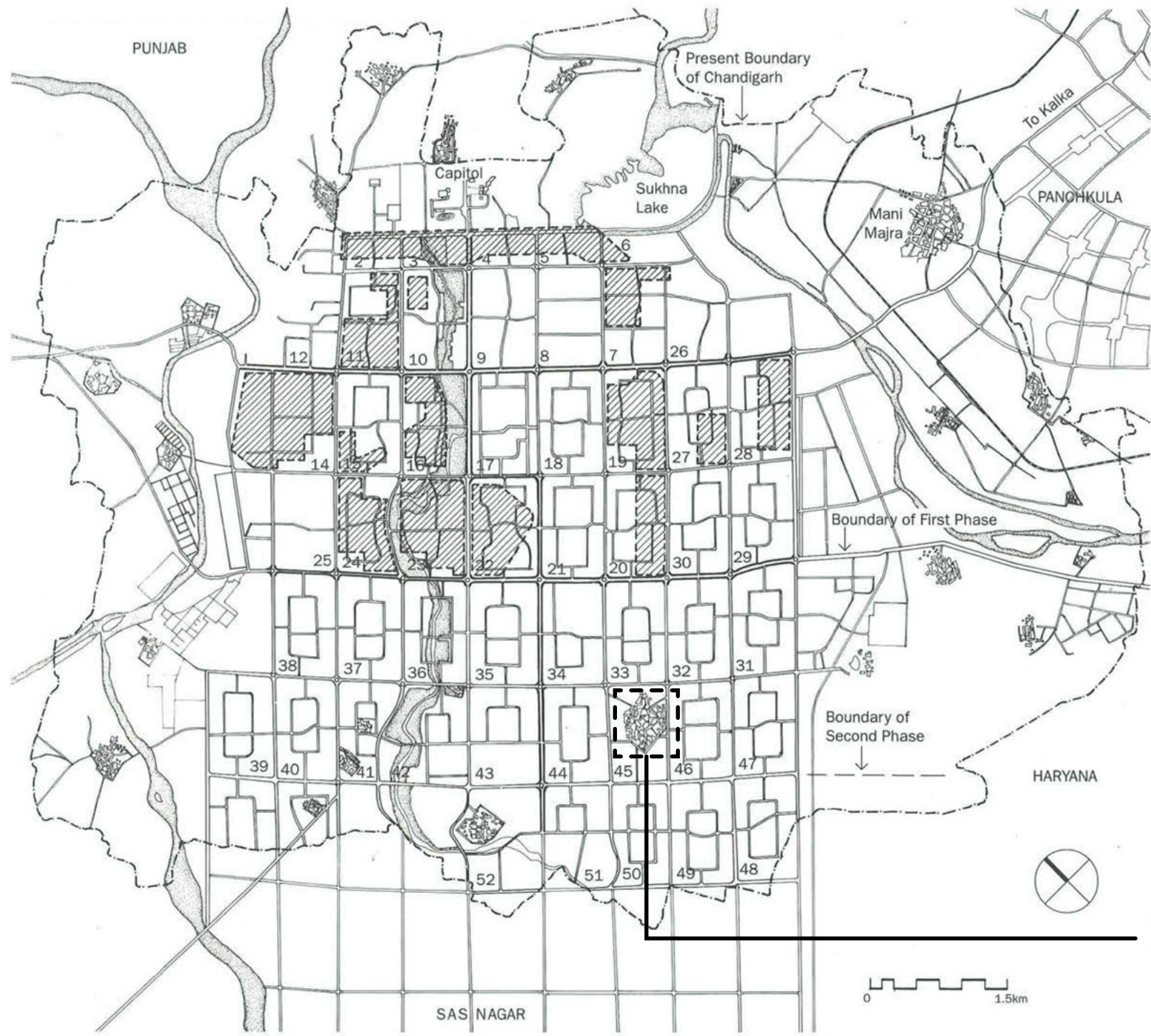
Integrated design in single material

As explained before, the projects in our design were all different due to the different plot configurations. A repetitive modular system was not an option in our case, because it would never fit the irregularities within Burail. With our idea of the core as backbone and the perforated brick architecture on the outside, it was logical to use the same material everywhere.

That's why everything in our project is designed with brick, because it can function as the load-bearing wall, in double layer; it can function for natural ventilation as well, with this perforated parts in the facade and in architectural sense it is also pleasing for the eye. In this way we achieve an integrated design which incorporates all elements by using the same materials everywhere. Referring to what we mentioned before, the aspect of colour is also important in the architecture of Burail. Therefore we leave it open for the inhabitants of Burail to paint their own facades, which will make it more personalized.

DESIGN RESEARCH

Position of Burail in city of Chandigarh



CHANDIGARH: The Present Scenario

- Village Clusters
- Heritage Zones

Description

Burail's existence was already there before the planning of the new Chandigarh. Within the second phase of its construction, Burail was inserted in the grid system of Le Corbusier. Inhabitants of the village of Burail defended their property and the boundaries of this village are still visible in urban fabric nowadays.

When Burail started expanding very quickly, the government restricted Burail's boundaries by defining it with a fence. Within Burail the building development continued and density is still increasing.

Currently, life within the former 'village' has extremely decreased. The old village has now become an urban village with such a high density, that living conditions are very bad. This has formed our interest in improving these living conditions.

Burail, sector 45

Source: Documenting Chandigarh, The Indian Architecture Of Pierre Jeanneret | Edwin Maxwell Fry | Jane Beverly Drew; Kiran Joshi

Sector 45 - Difference in density and urban fabric



Sector 45 of Le Corbusier's plan

Boundary of Burail, surrounded by a fence which avoids further expansion into the sector

Old 17th century fortress of Burail

Main road defining the oldest part of Burail

DESIGN RESEARCH

Layers in urban fabric

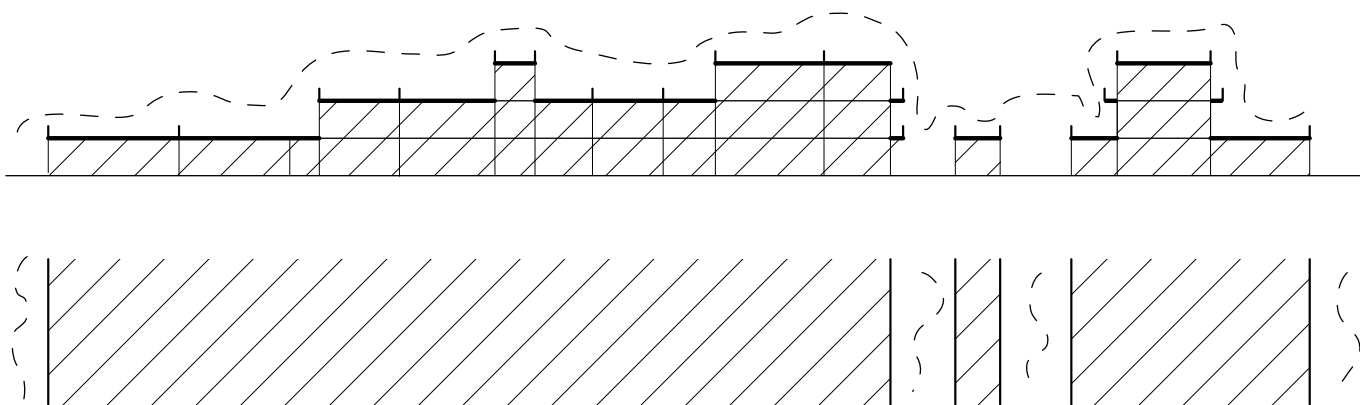


DESIGN RESEARCH

Swot analysis

Strengths

- commercial functions like markets and shops
- shared spaces as balconies and rooftops
- rooftop life separated from street life



social cohesion in shared spaces

Weaknesses

Unregulated growth led to high density

- Bad living conditions inside and outside
- Minimum standards of living
- Bad ventilation, no daylight

Scale, proportions and safety of buildings not kept in mind

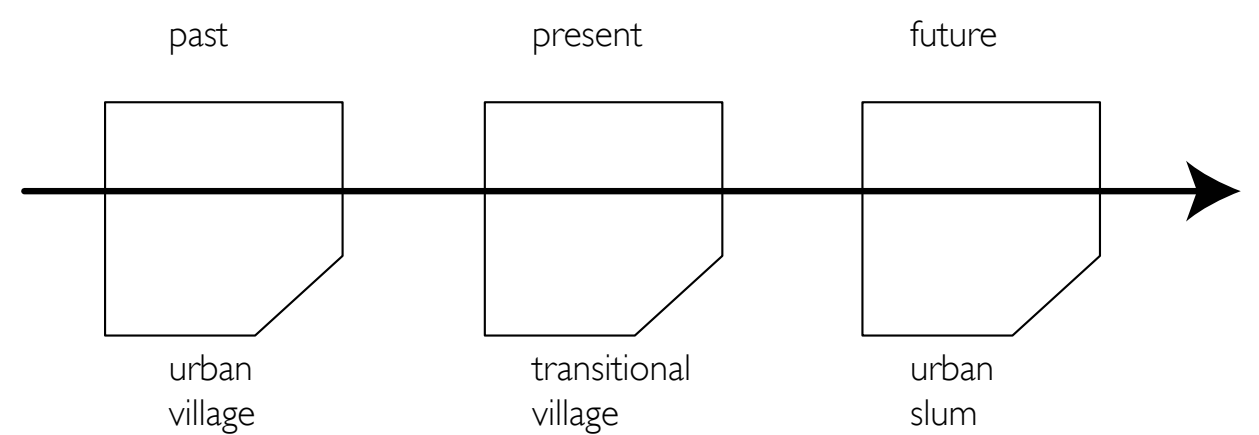
Public spaces like chaupals remain unused

Lack of attachment to house results in bad maintenance



Threats

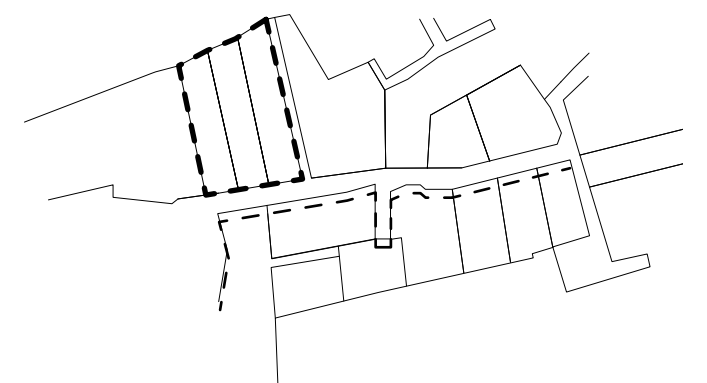
prevent burail from becoming an urban slum



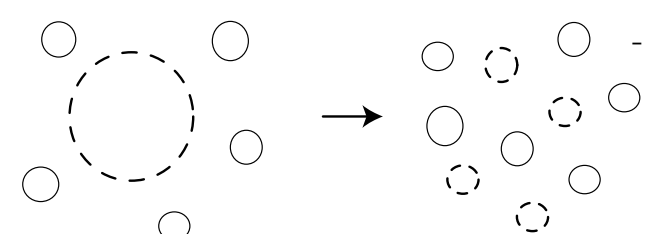
Opportunities

upgrading living conditions by

- rethinking densification of streets
- rethinking densification of dwelling



- increasing community feeling
- mix different dwellers - temporary and permanent



DESIGN HYPOTHESIS

Toolbox for public spaces

Street
 act as semi public space, with the extension of residential activities into the public realm by the occupants residing in the abutting hohuseholds

 lack of thorough traffic discourages commercial activities

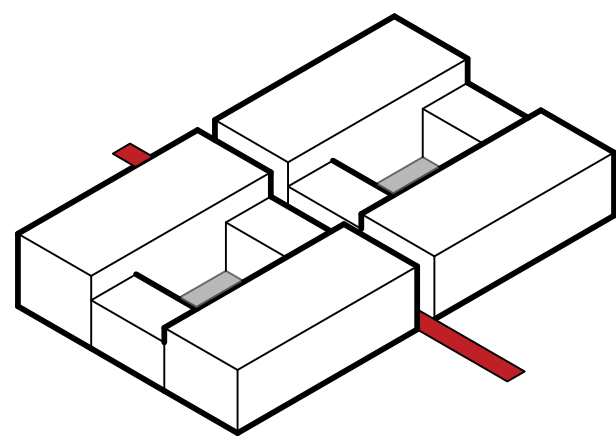
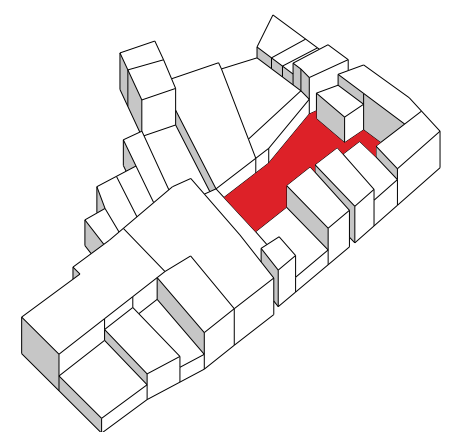
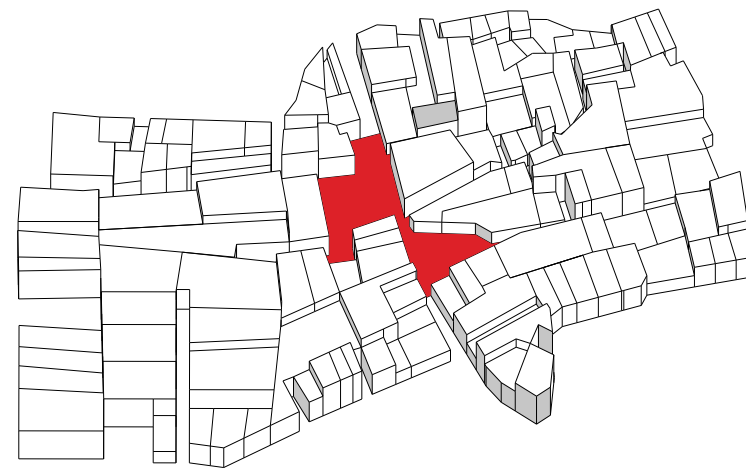
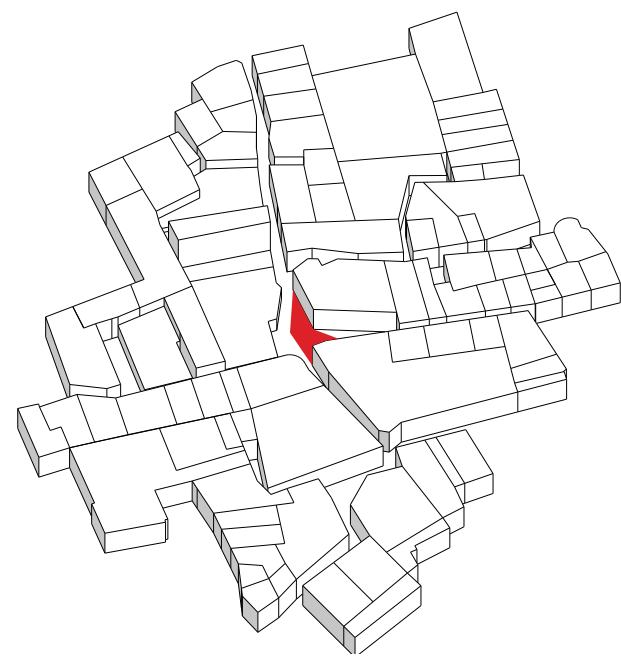
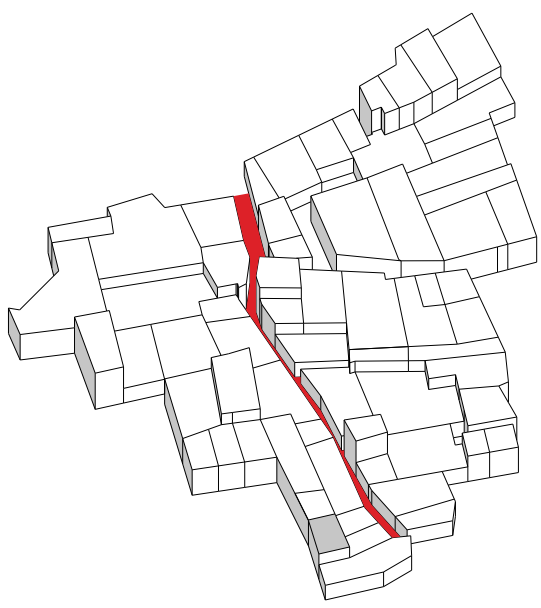
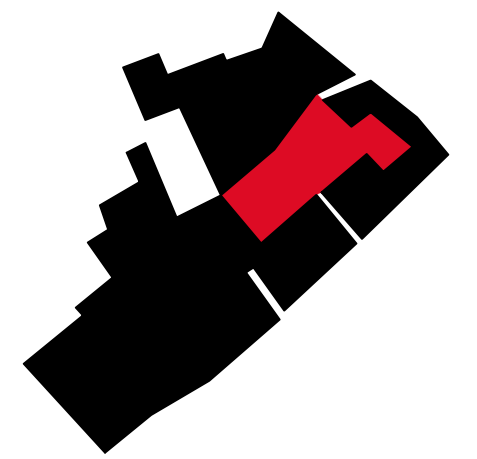
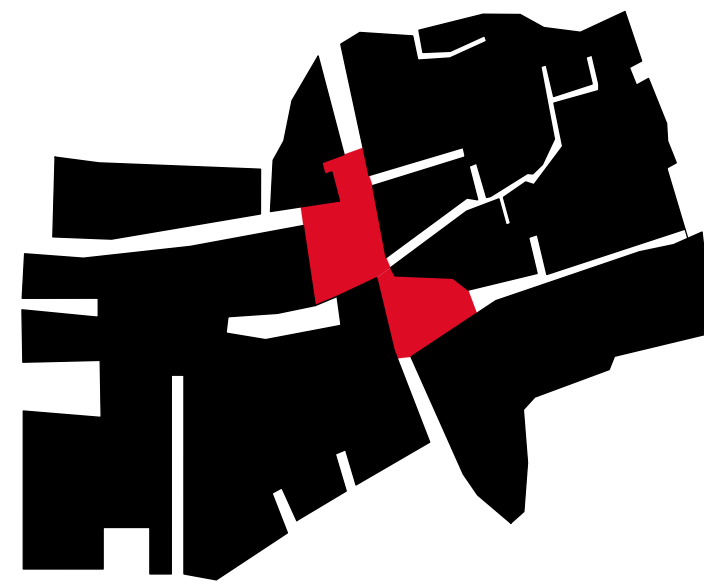
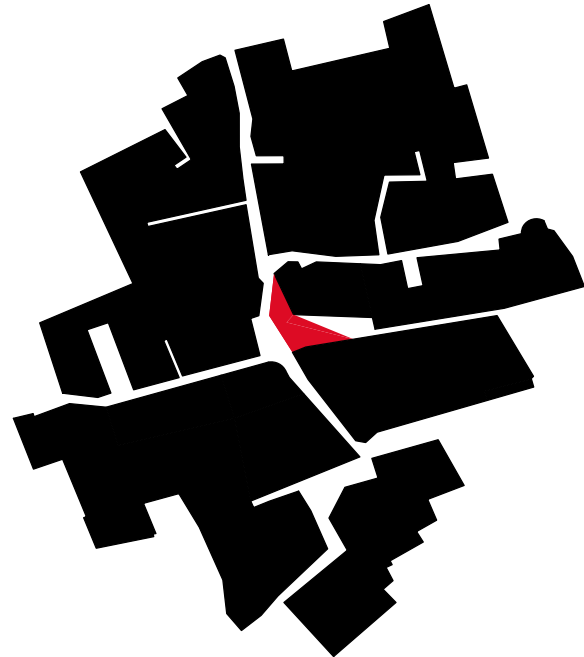
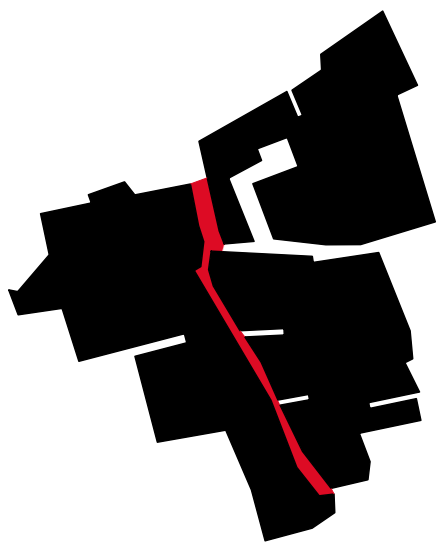
Chowk
 a hub of public activity, physicaly evolved from two or more streets intersecting in a common space

 attracts community, institutional and commercial activities due to high number of footfalls

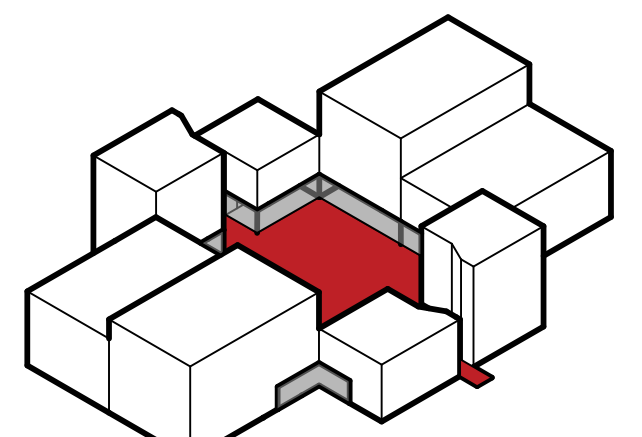
Chaupals
 a community owned and operated space primarily meant as a guest-house and a platform for socio-cultural activities, ceremonies and functions

 it co-exists with places of worship, public and institutional buildings

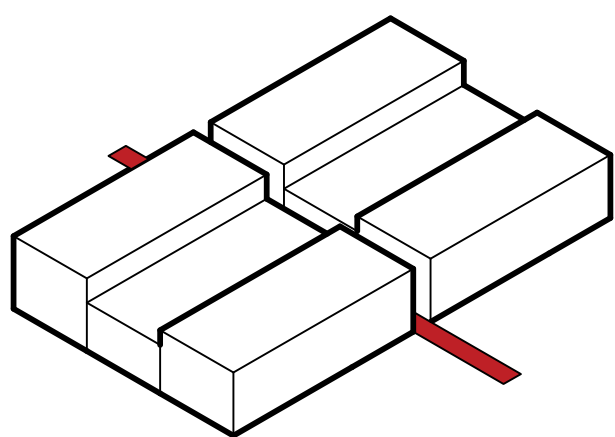
Backyard
 vacant plots or unused spaces near the fringe are mostly used as storage spaces, godowns, workshops supporting various activities abutting the circulatory roads, thereby spilling over the rear side than in the front



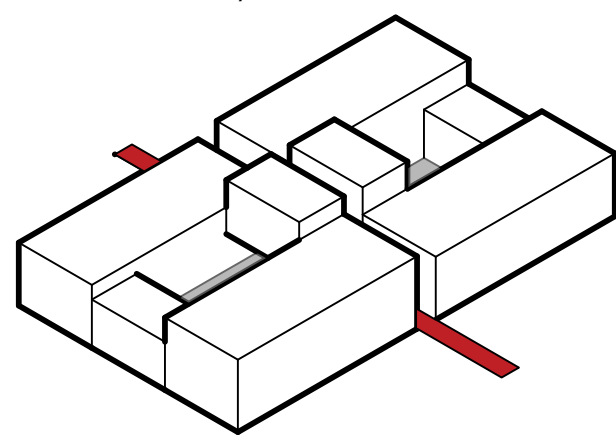
Closed courtyard



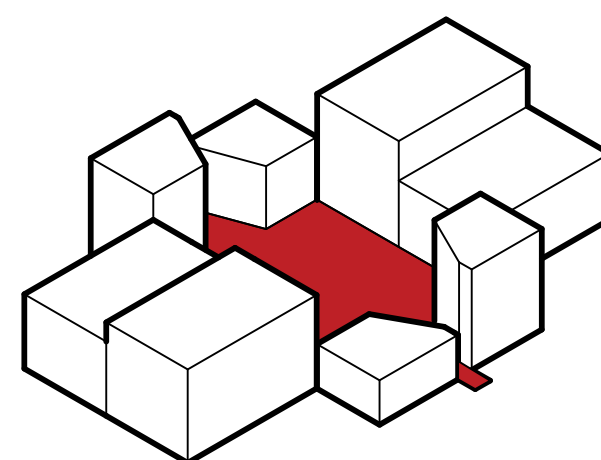
Open plint



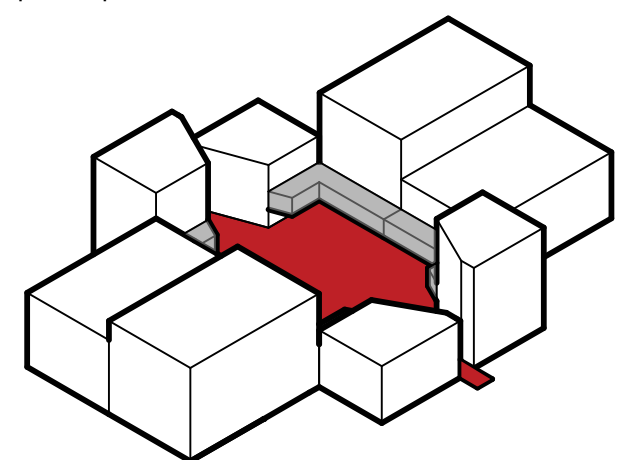
Existing



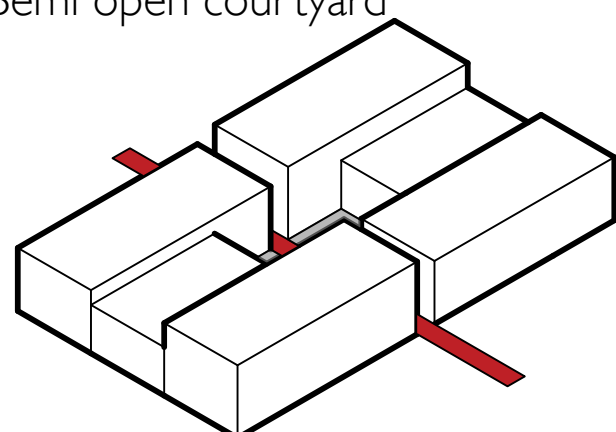
Semi open courtyard



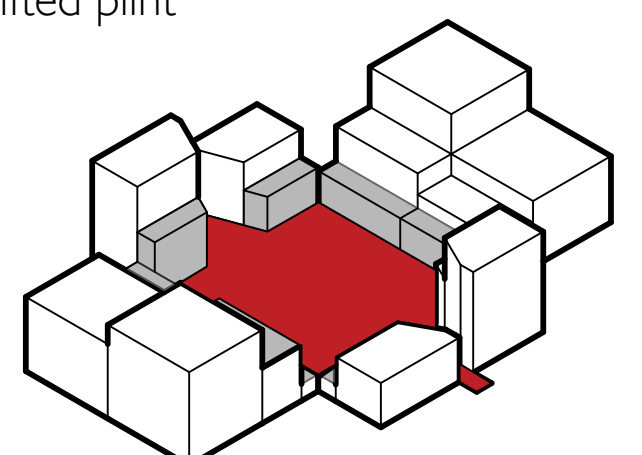
Existing



Lifted plint



Open courtyard



Terraces as plint

DESIGN HYPOTHESIS

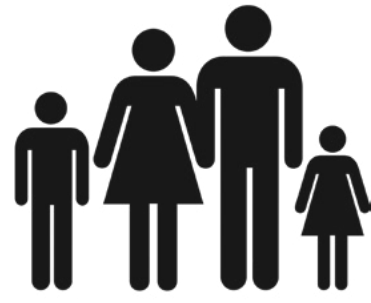
Toolbox for social groups

Permanent inhabitants

Families 3 -5 people

Working in Chandigarh or having a shop in Burail

Stay in Burail for more than 5 years



Temporary inhabitants

Single or co-habiting people

Working in Chandigarh

Stay in Burail for a few years



Expectations

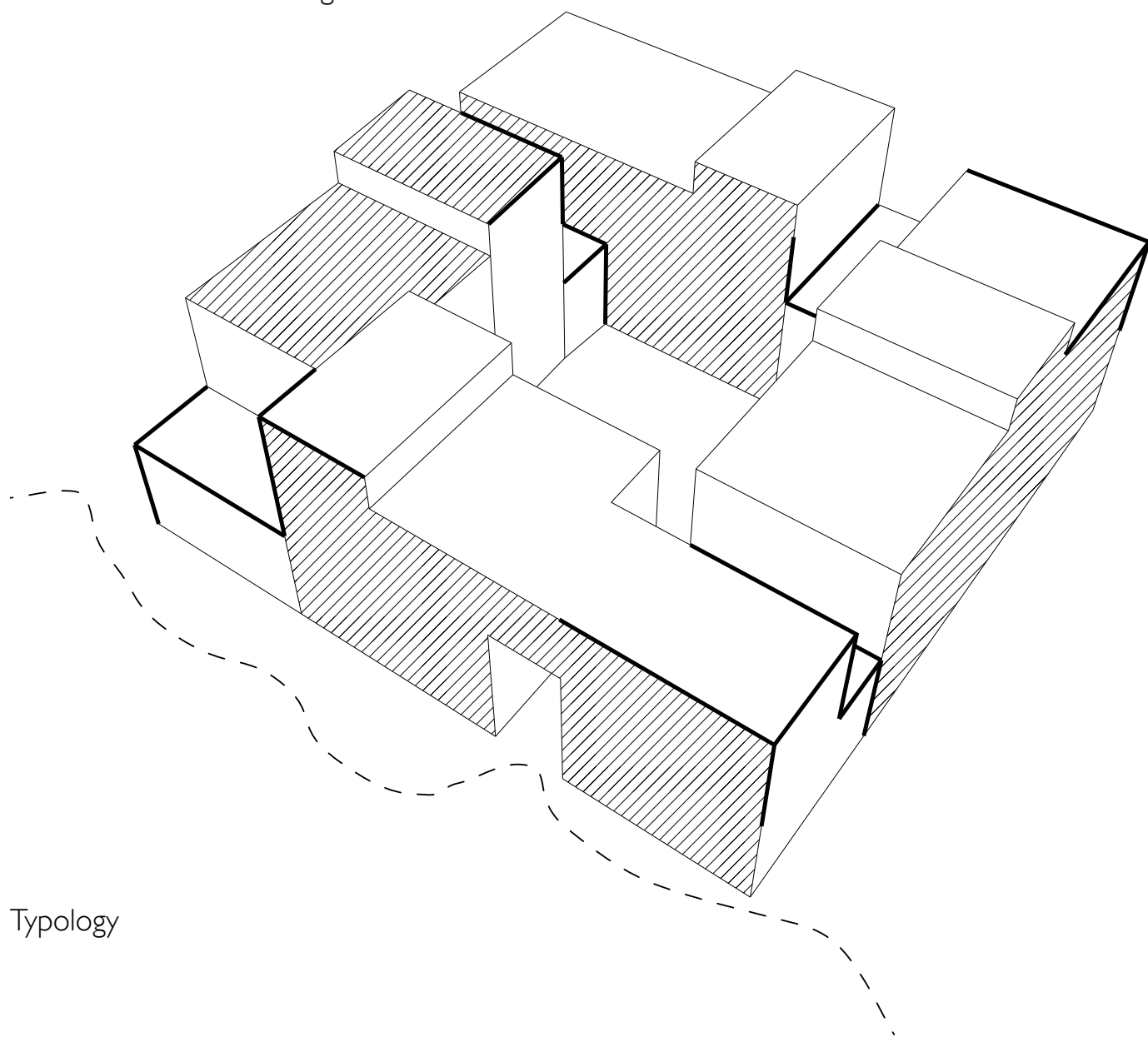
| Safety | privacy | social cohesion | community feeling

closed and small scale neighbourhood

Expectations

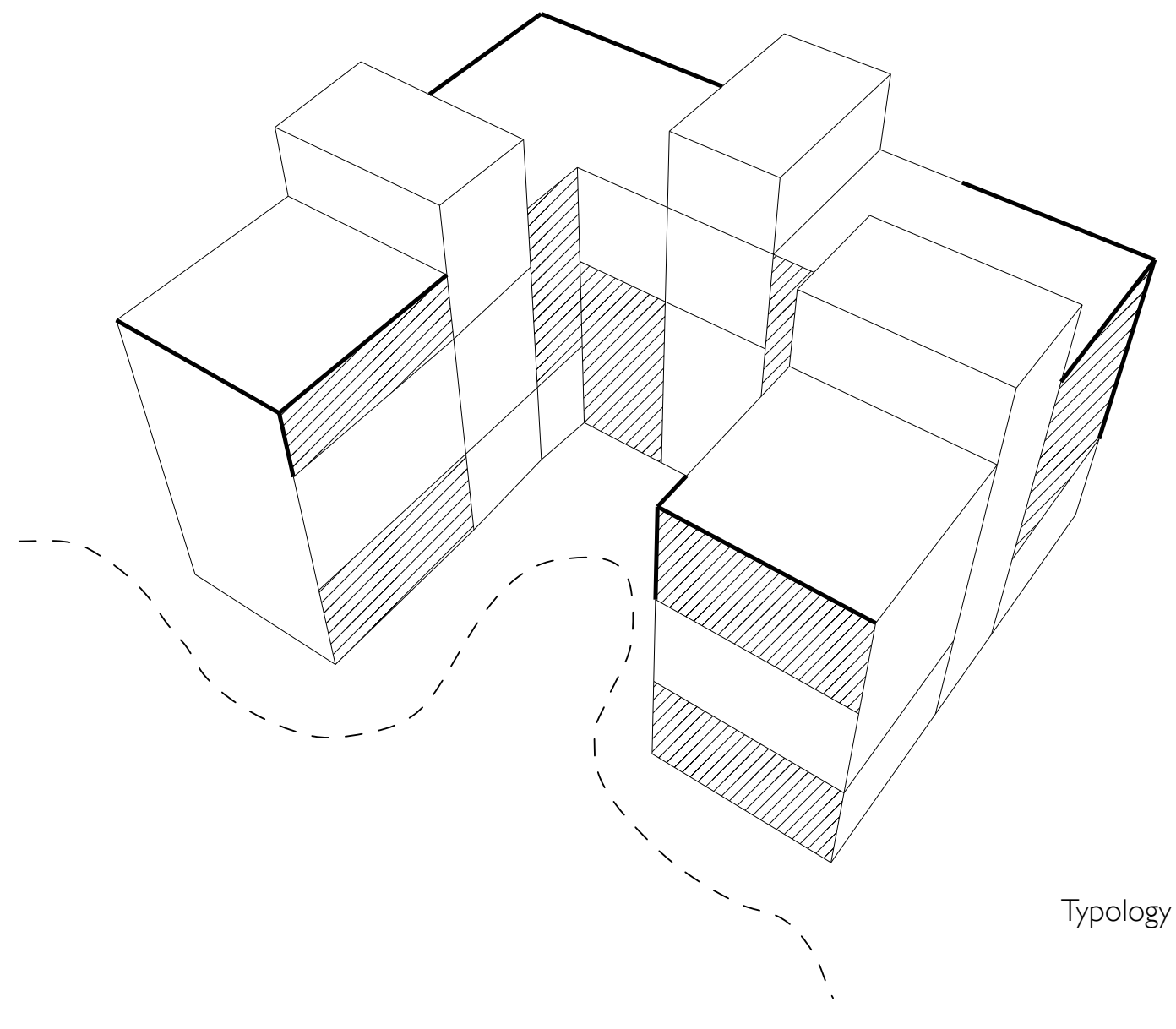
Social interaction | community feeling | active participation in urban life

open neighbourhood |



Typology

Single family housing around private courtyard



Typology

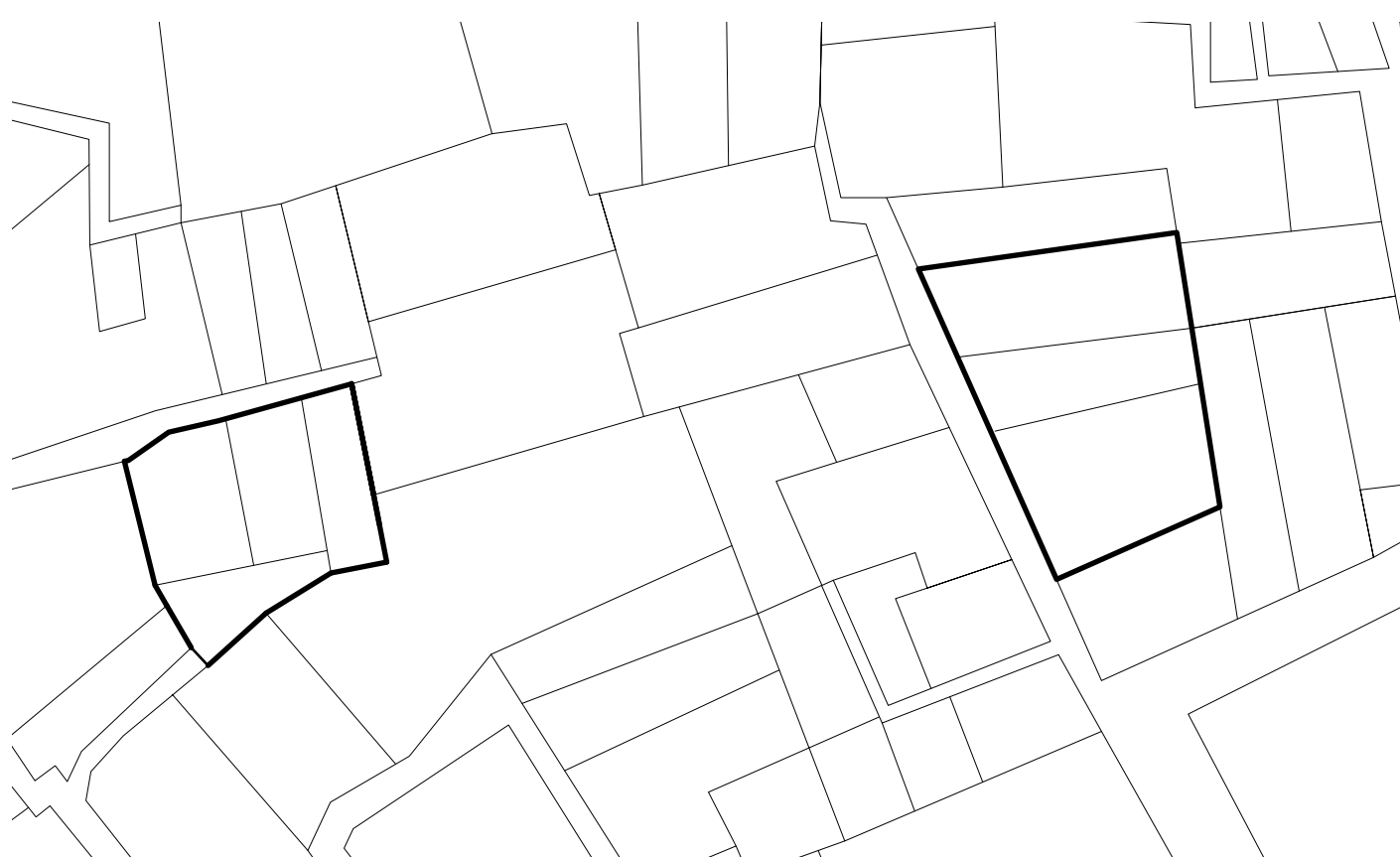
Staggered apartments around open courtyard

DESIGN STRATEGY

Combining plots for better living conditions

Smoother transition from public streets to private houses

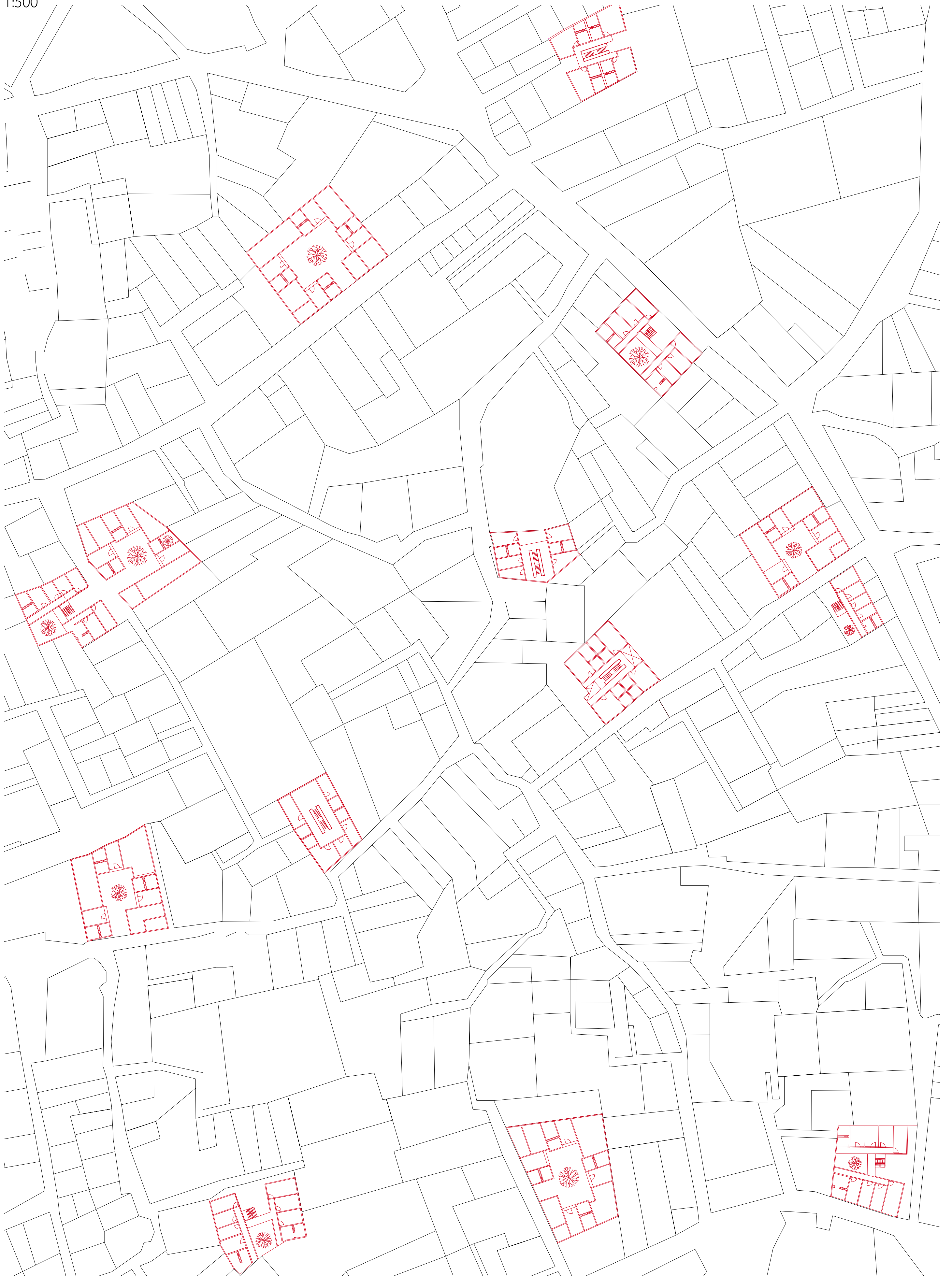
Core as backbone of project - defining boundaries of courtyard



URBAN PLAN - ACUPUNCTURE

1:500

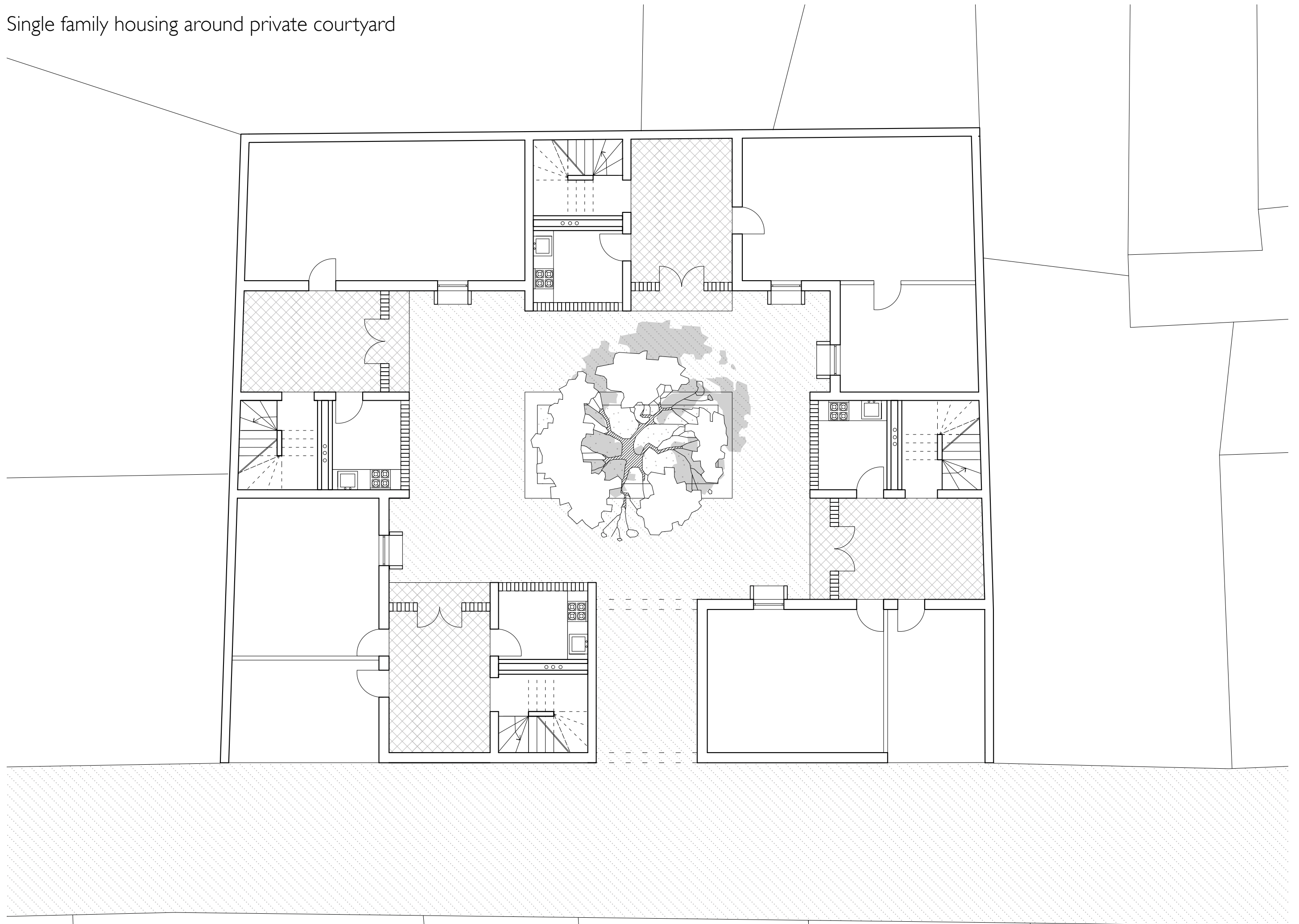
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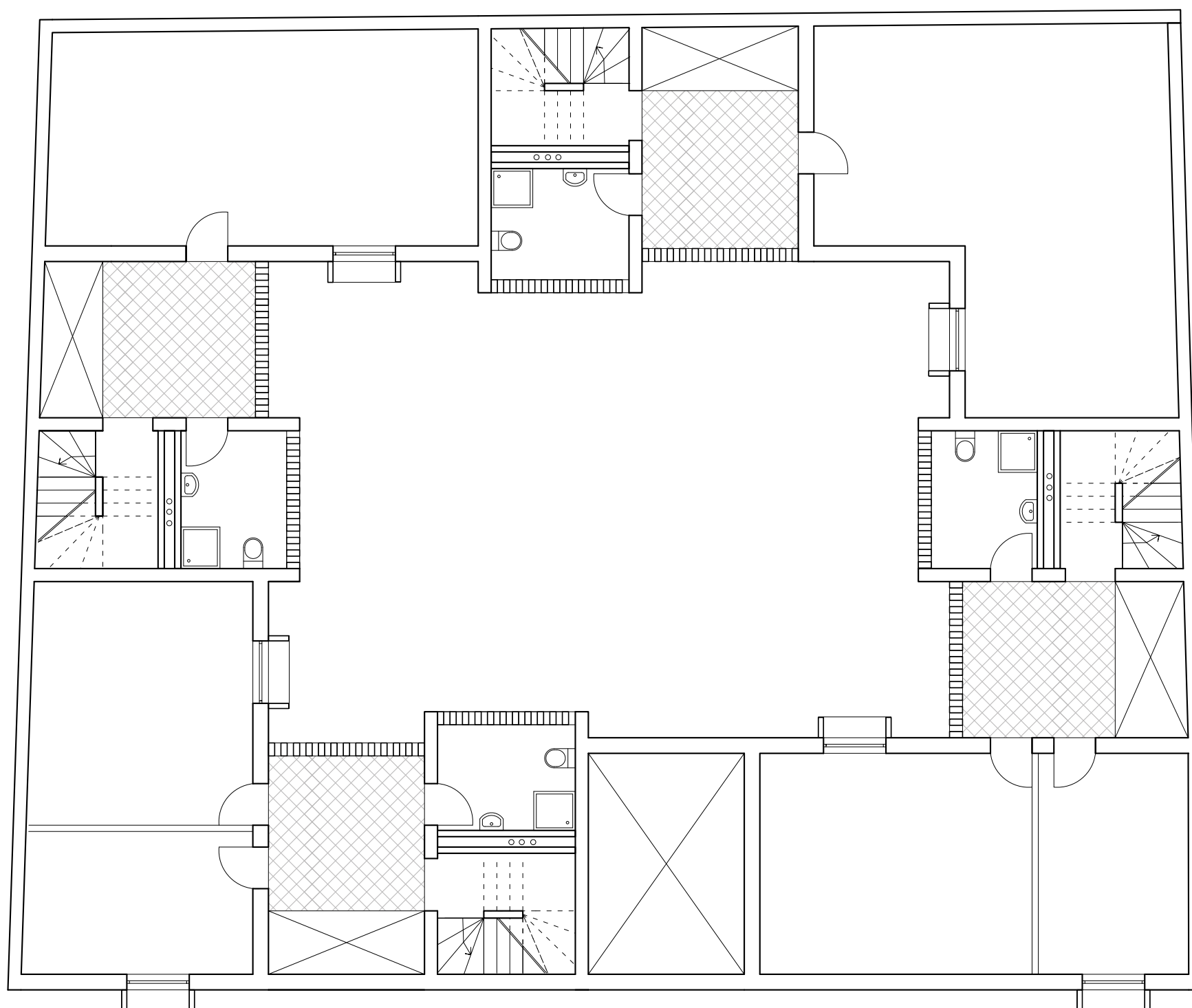
PLANS

Permanent typology 1:100

Single family housing around private courtyard



Ground floor

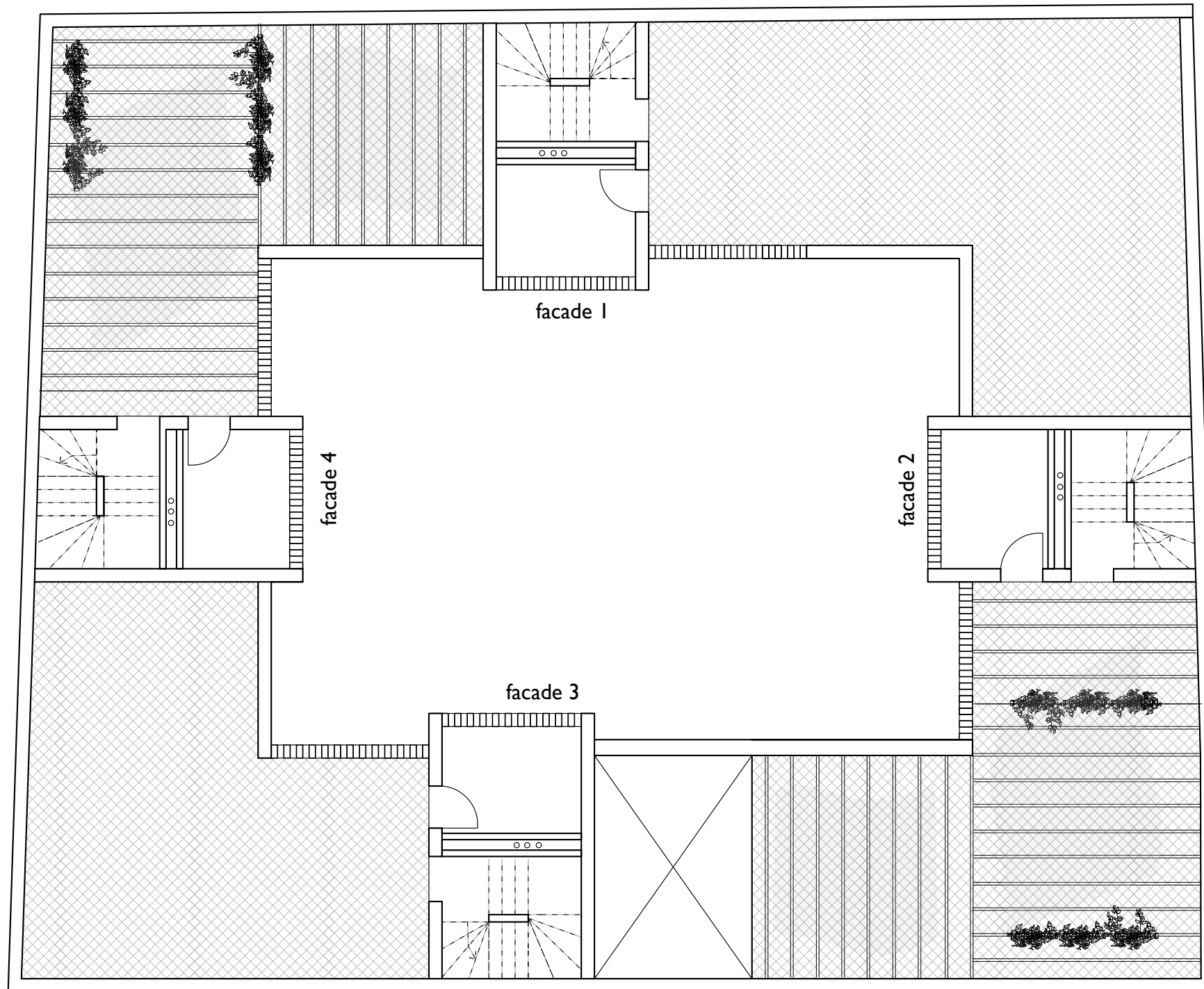


First floor

PLANS

Permanent typology 1:100

Single family housing around private courtyard



Roof top

FACADES

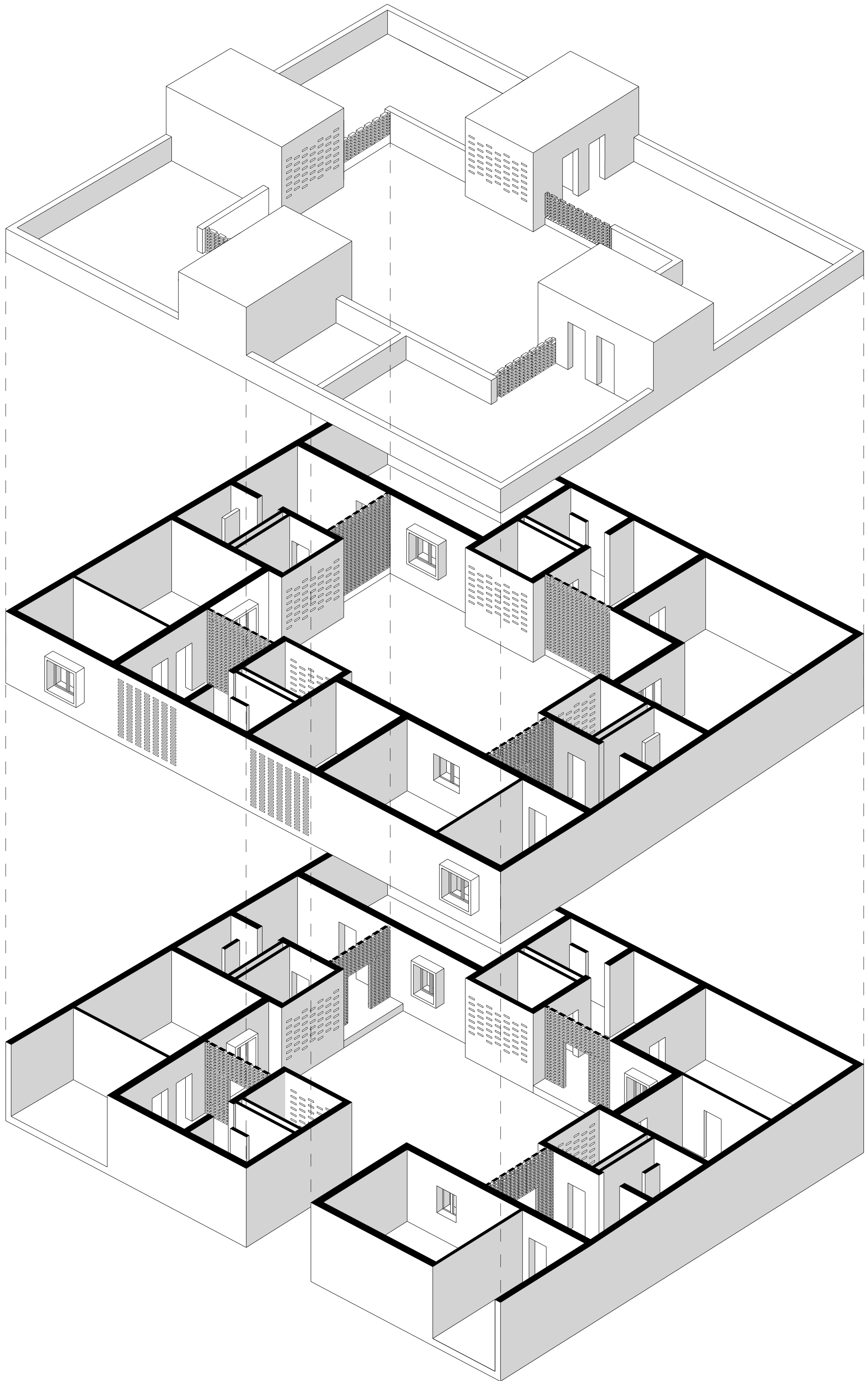
Permanent typology 1:100



First floor

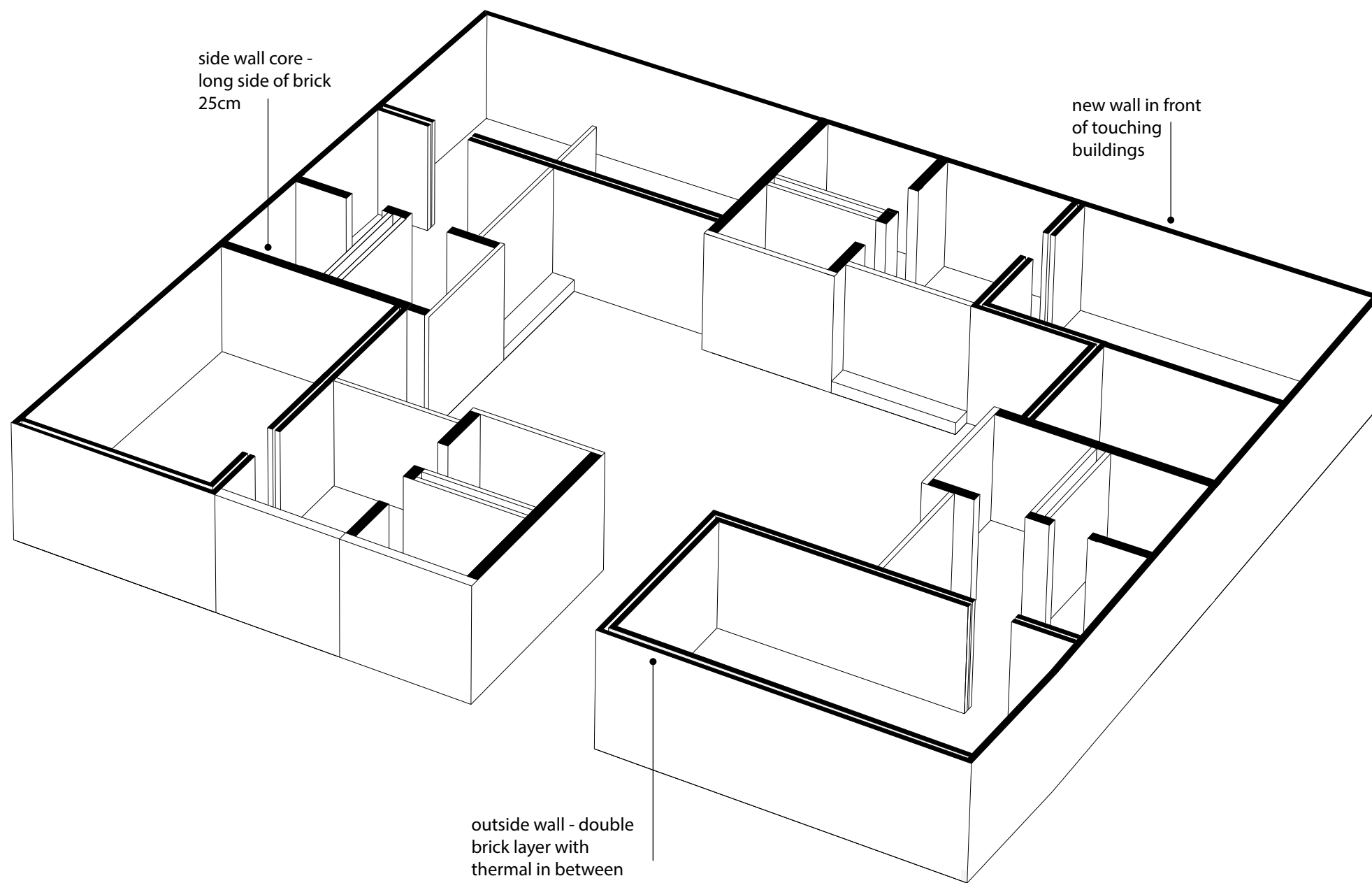
EXPLODED AXONOMETRY

Permanent typology

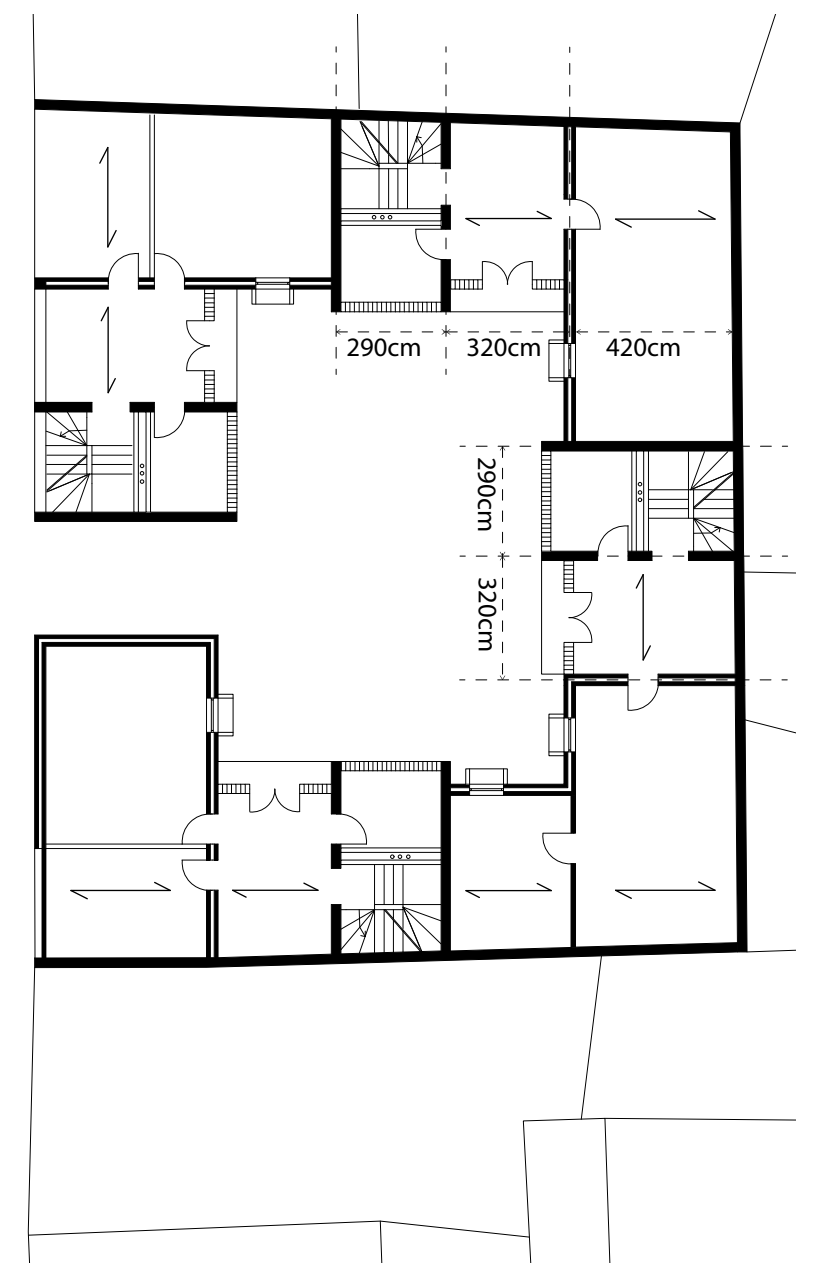


CONSTRUCTION CONCEPT

Single material: brick |
 Varying from double layered and load bearing to single and perforated



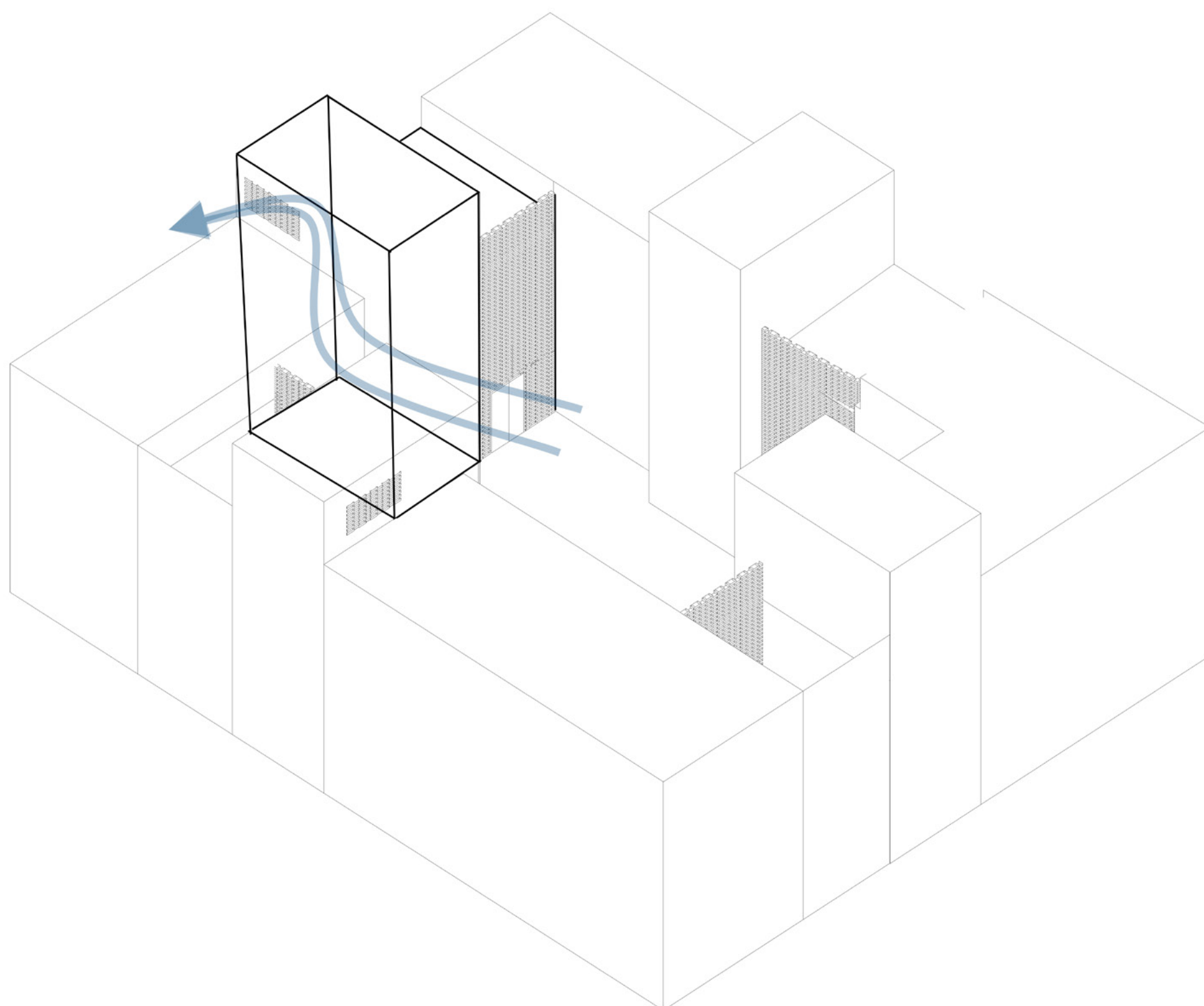
Load bearing structure in brick



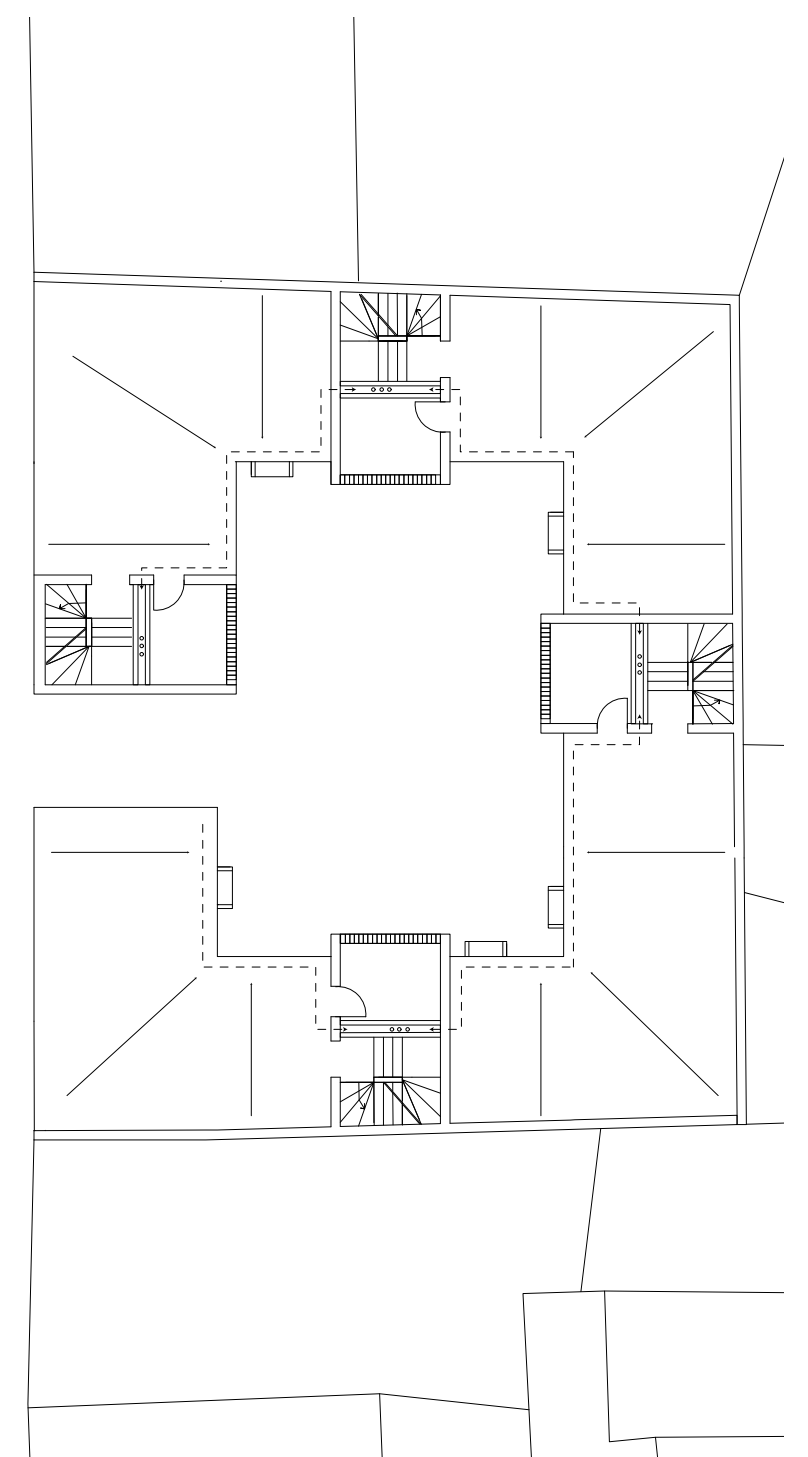
Floor span directions 1:200

CLIMATE CONCEPT

Natural ventilation through perforations in facade
 Veranda works as outside space, as buffer between living space and functions in core (kitchen and bathroom)



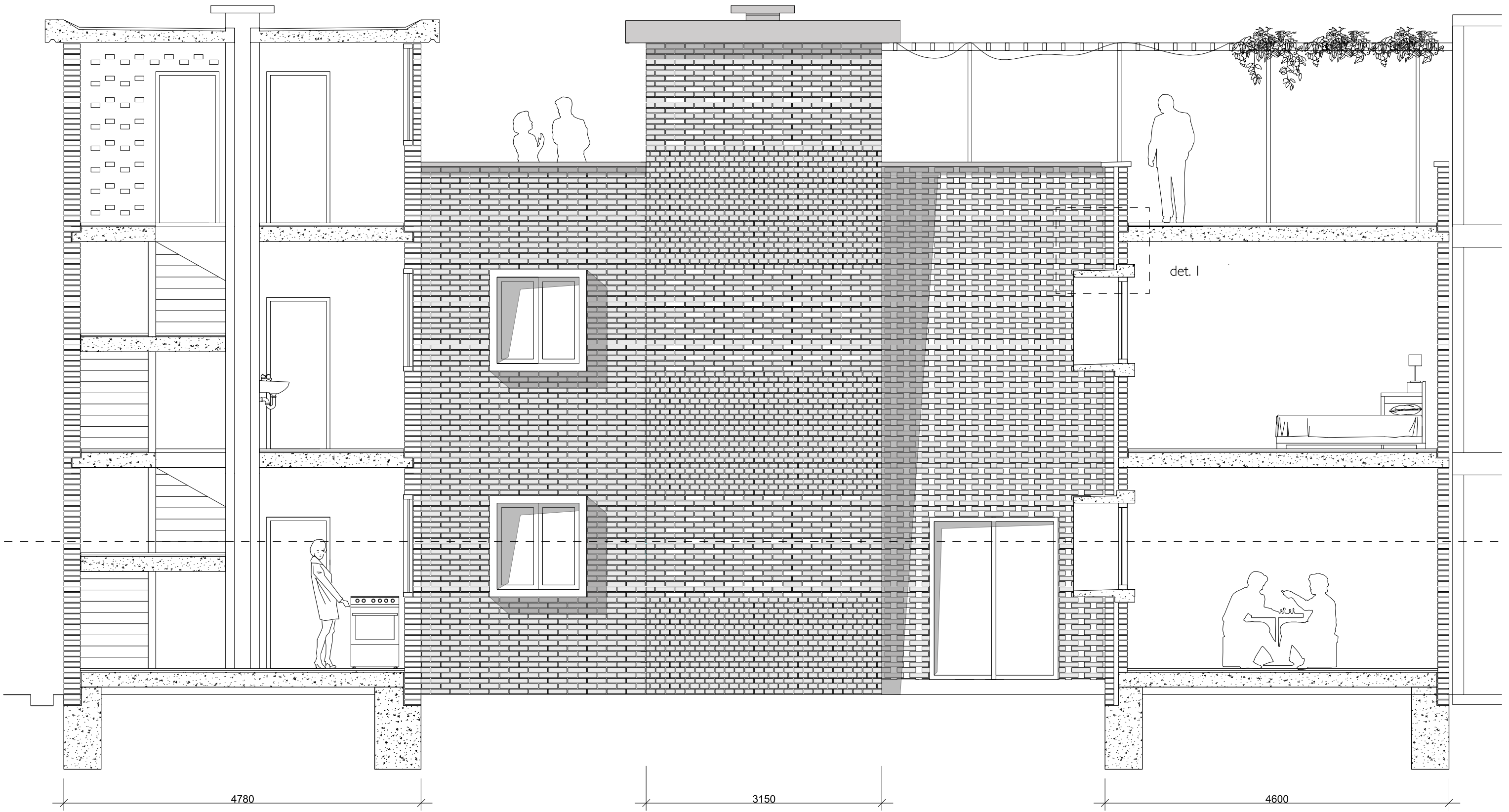
Ventilation through perforated facade of veranda and through core



Roof top slopes for rainwater drainage

SECTIONS

Section A 1:50

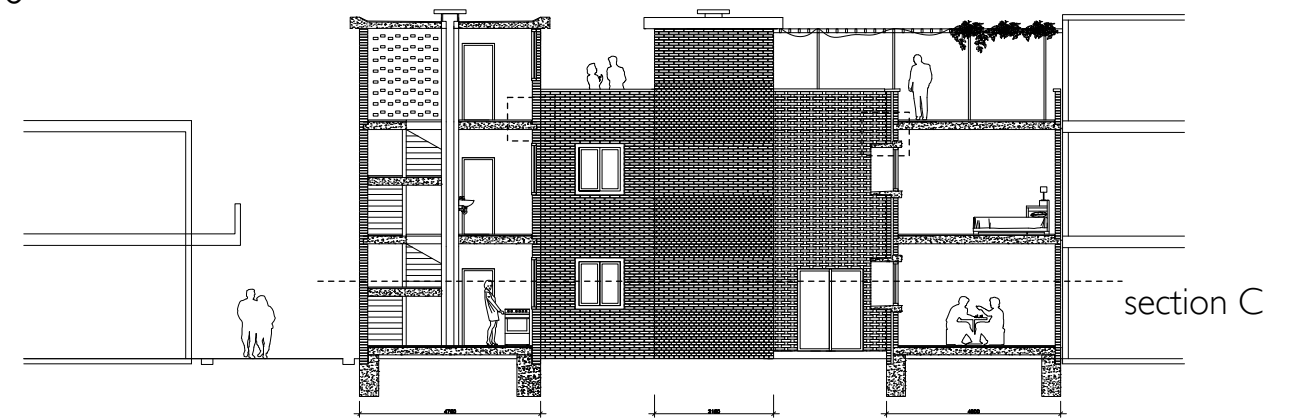


Section B 1:50



OVERVIEW

1:200

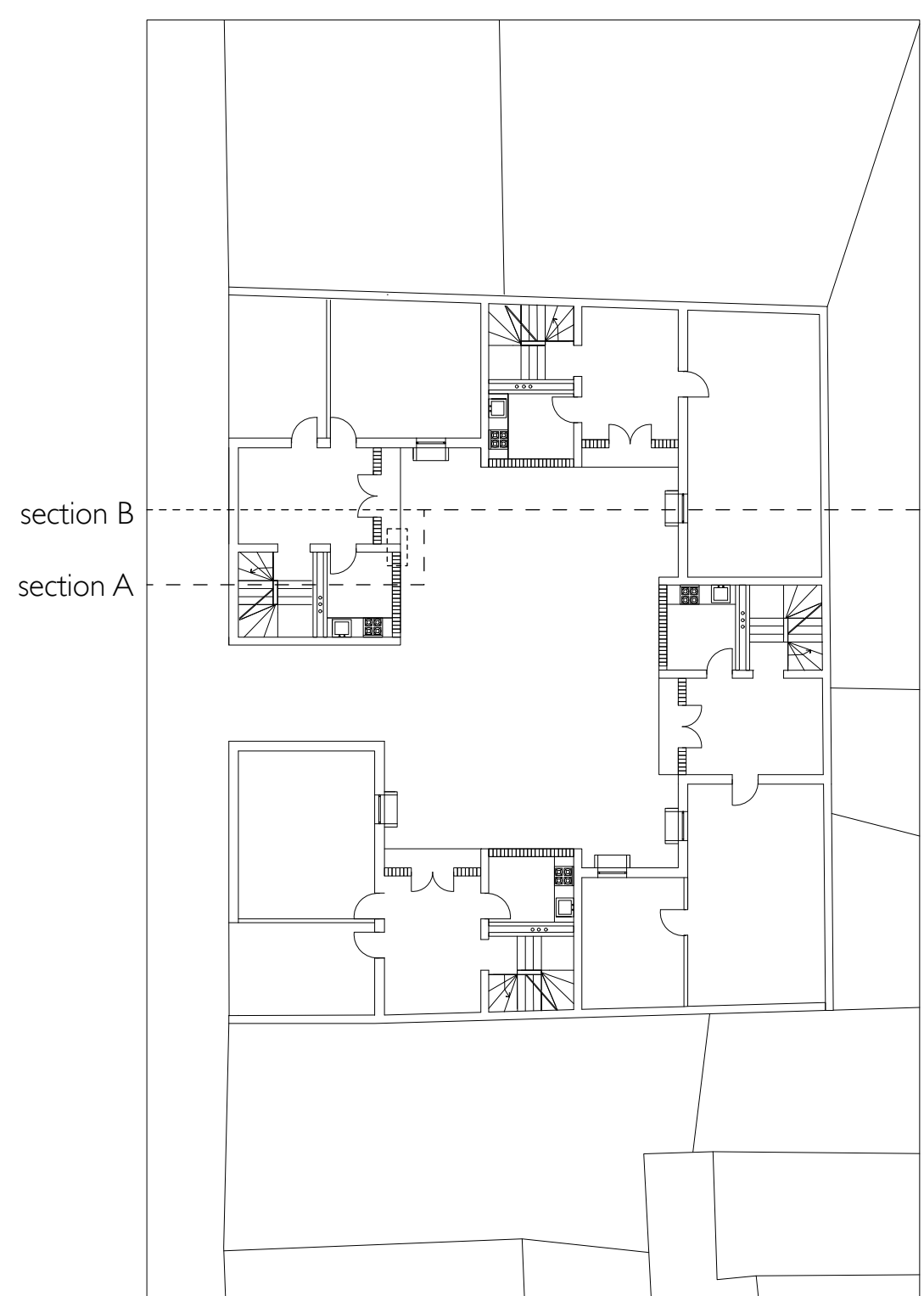


Description

In the courtyard of the permanent typology three different patterns can be recognized:

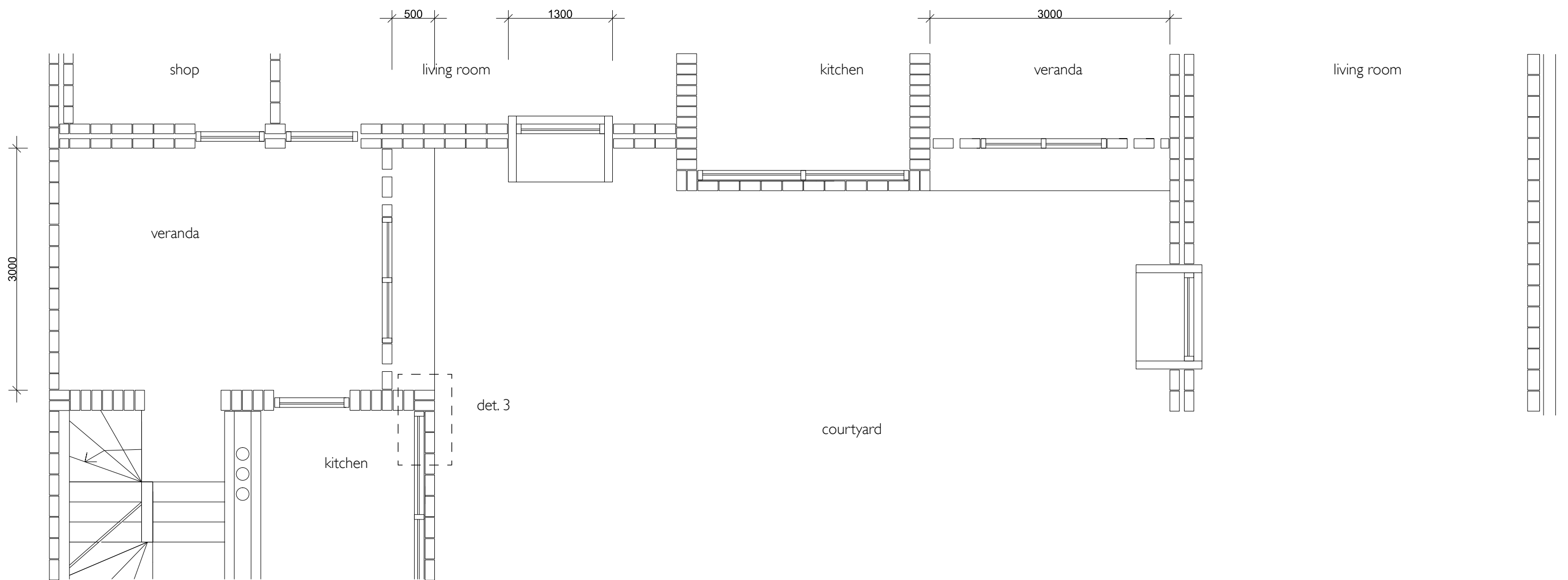
- closed brick (outside facade)
- semi perforated facade (of the core)
- perforated facade (fin the veranda)

The perforations in the veranda are providing for daylight as well as for ventilation.



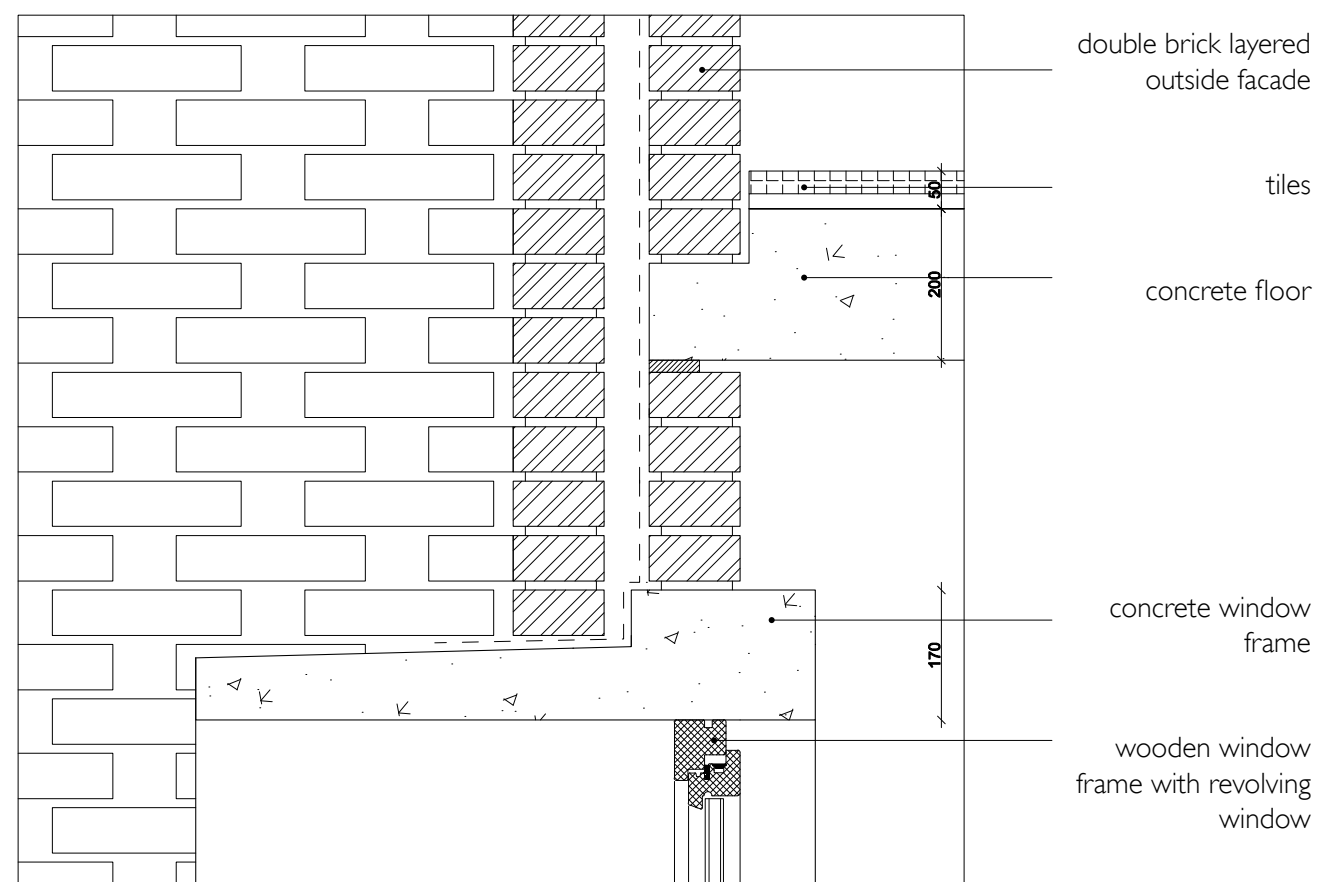
SECTIONS

Section C 1:50



DETAILS

1:10



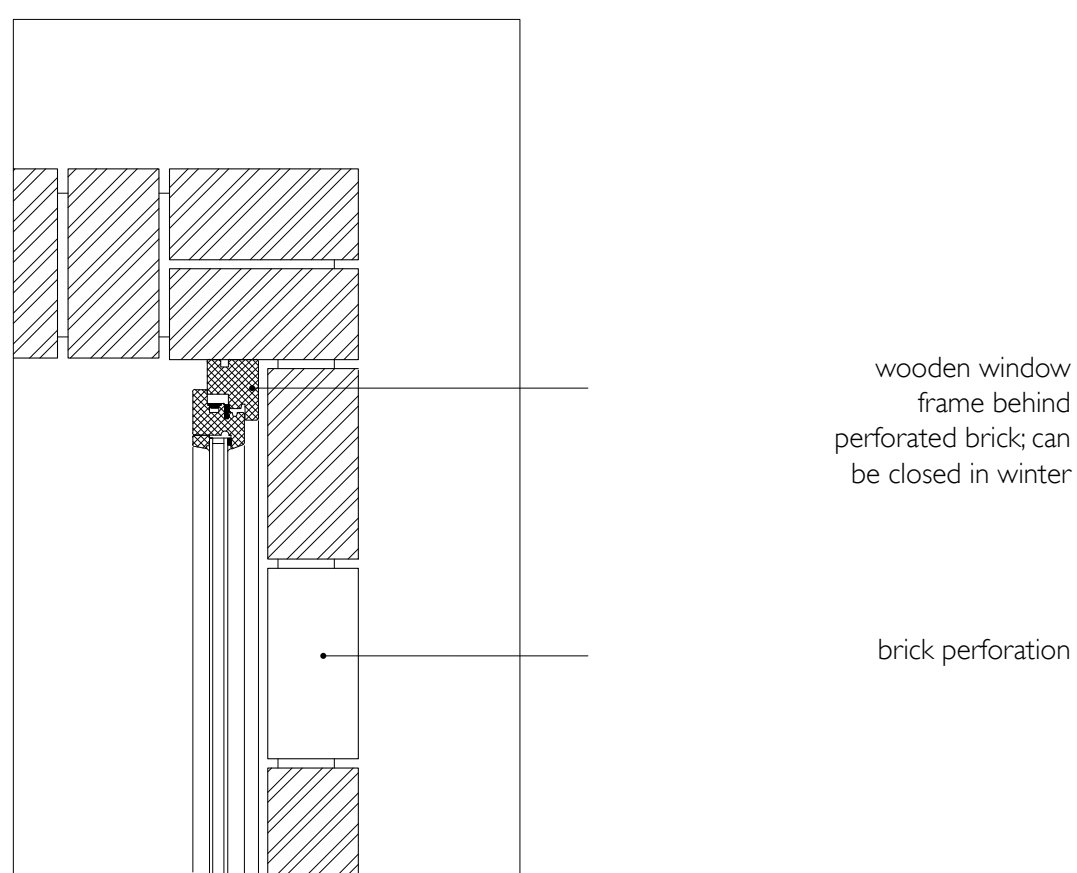
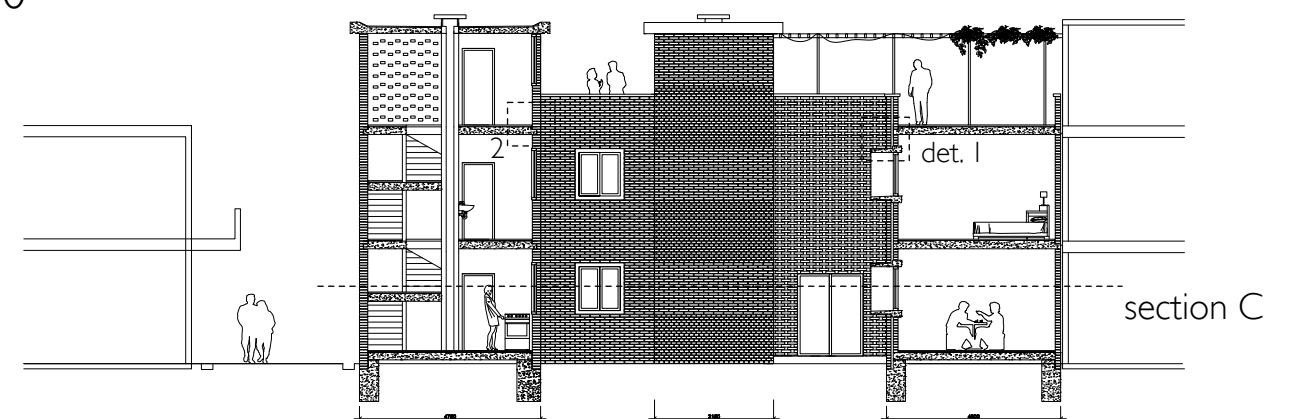
detail 1)

Description

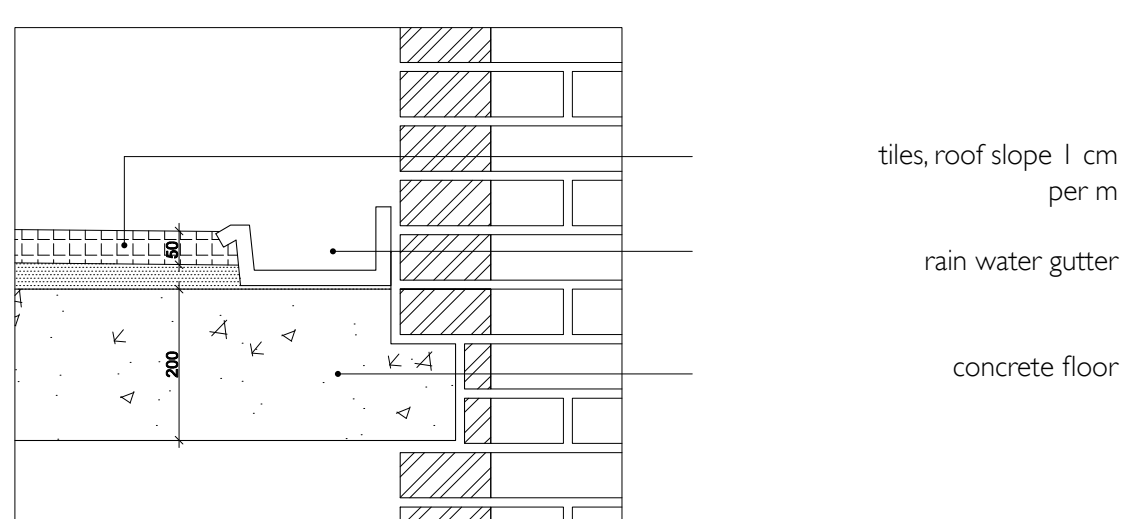
The vertical section shows how the inner facade of the permanent courtyard is designed. Playing with different layers of brick we achieved variants in the facade pattern as well as in climate and structure. By using one single material, brick, we were able to do this. The thickness of the wall depends on being a load-bearing structure or outside wall, or serving as screen for natural ventilation and daylight.

OVERVIEW

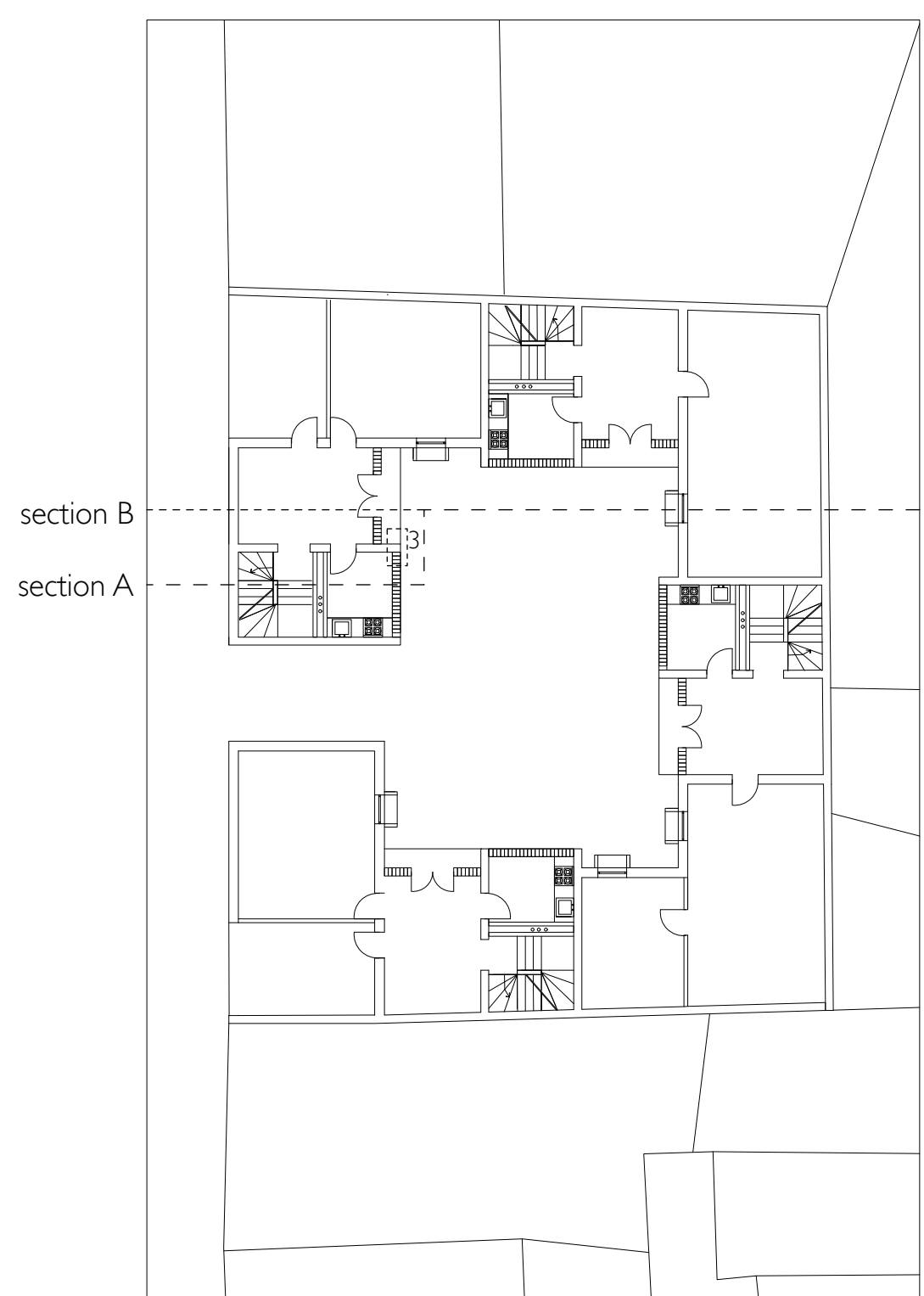
1:200



detail 2)



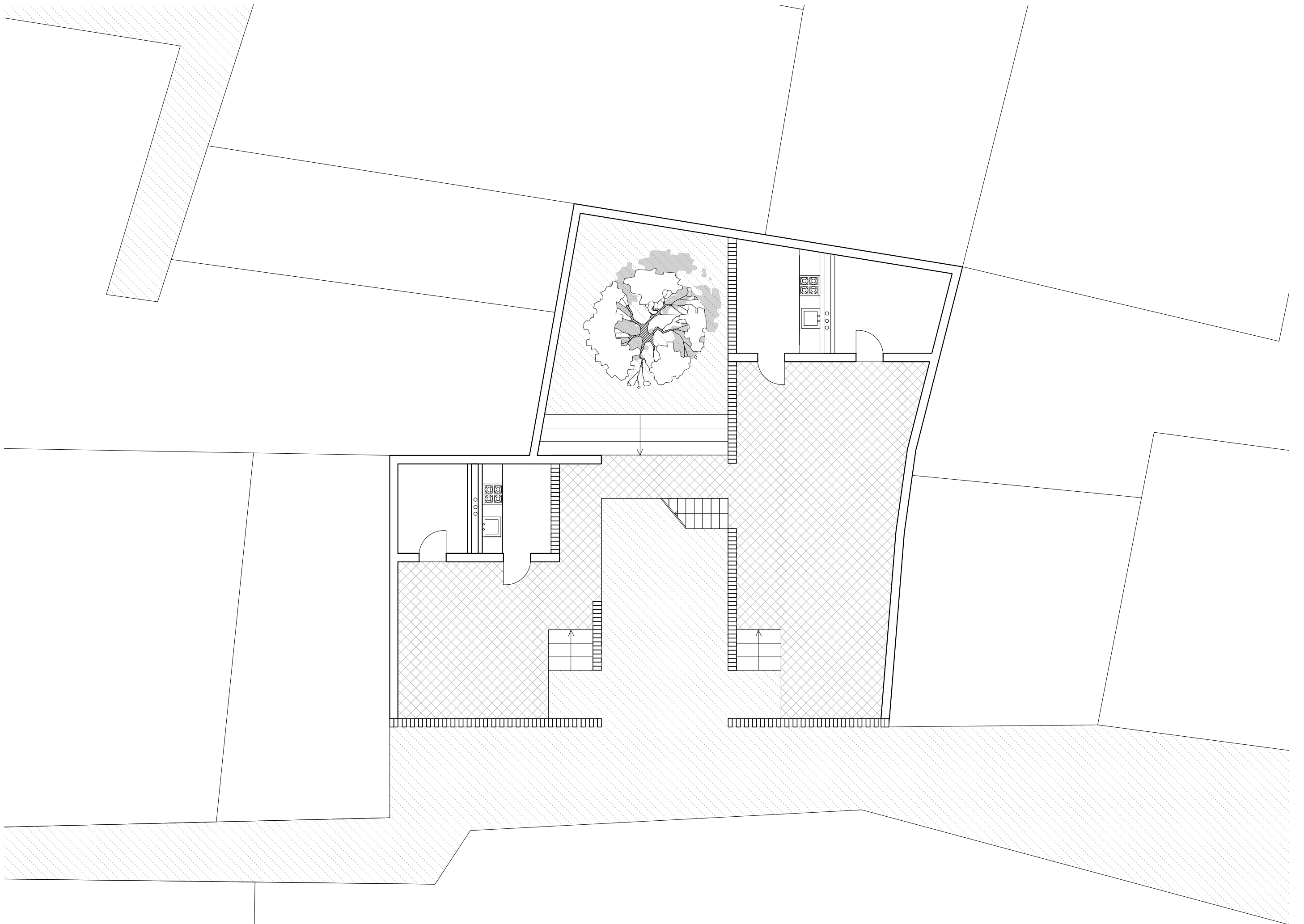
detail 3)



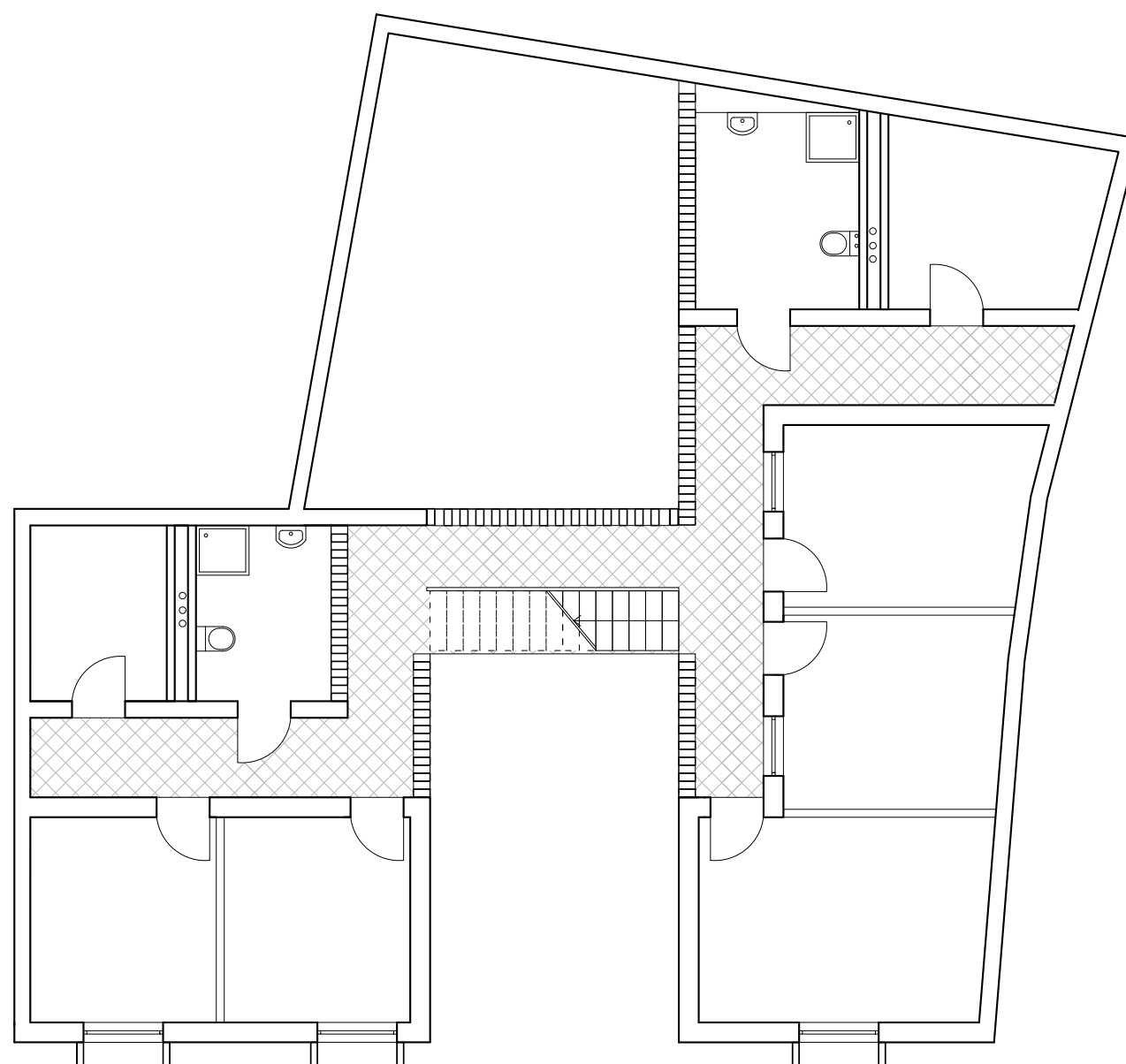
PLANS

Temporary typology 1:100

Individual apartments around semi-private courtyard



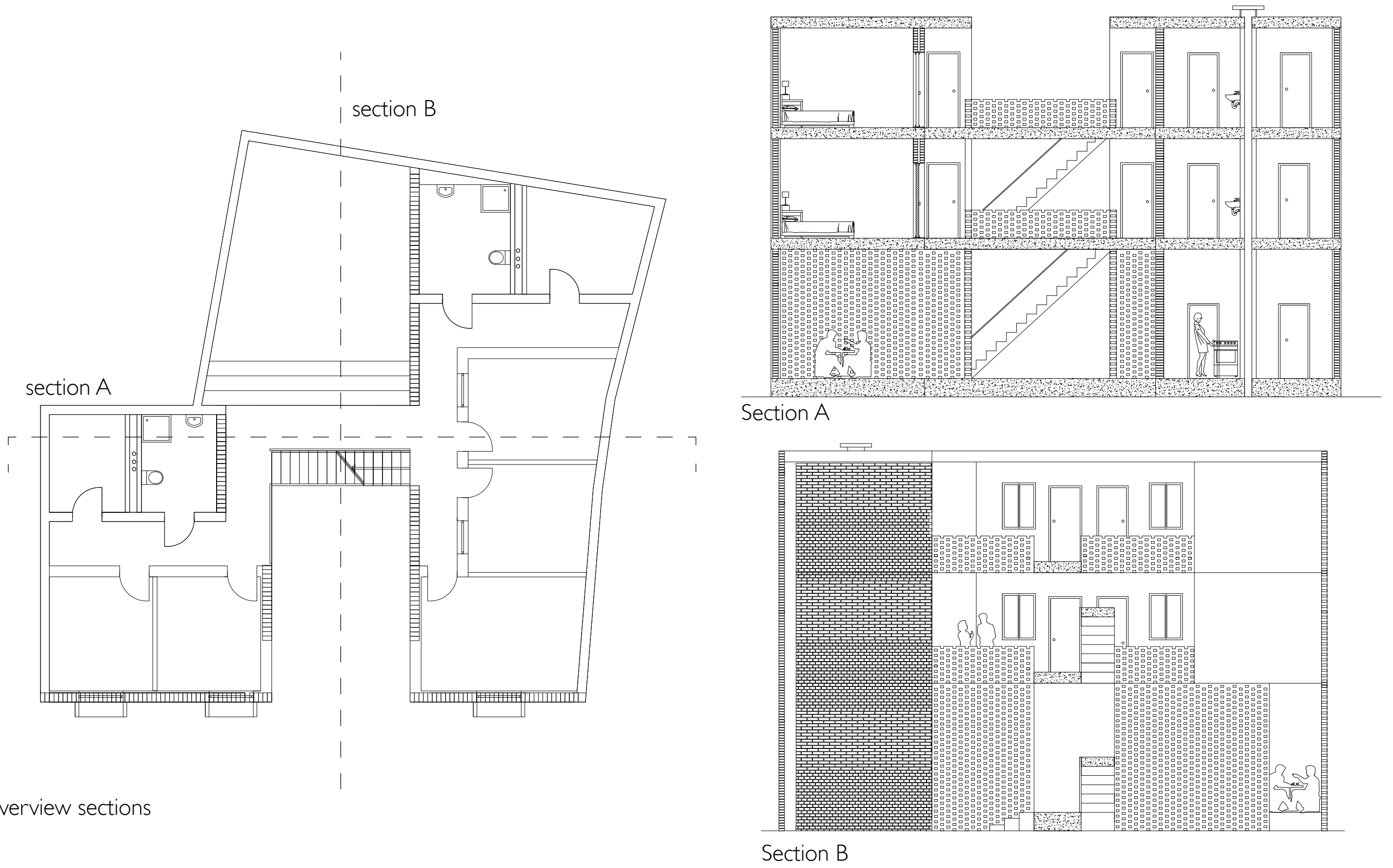
Ground floor



First floor and second floor

SECTIONS

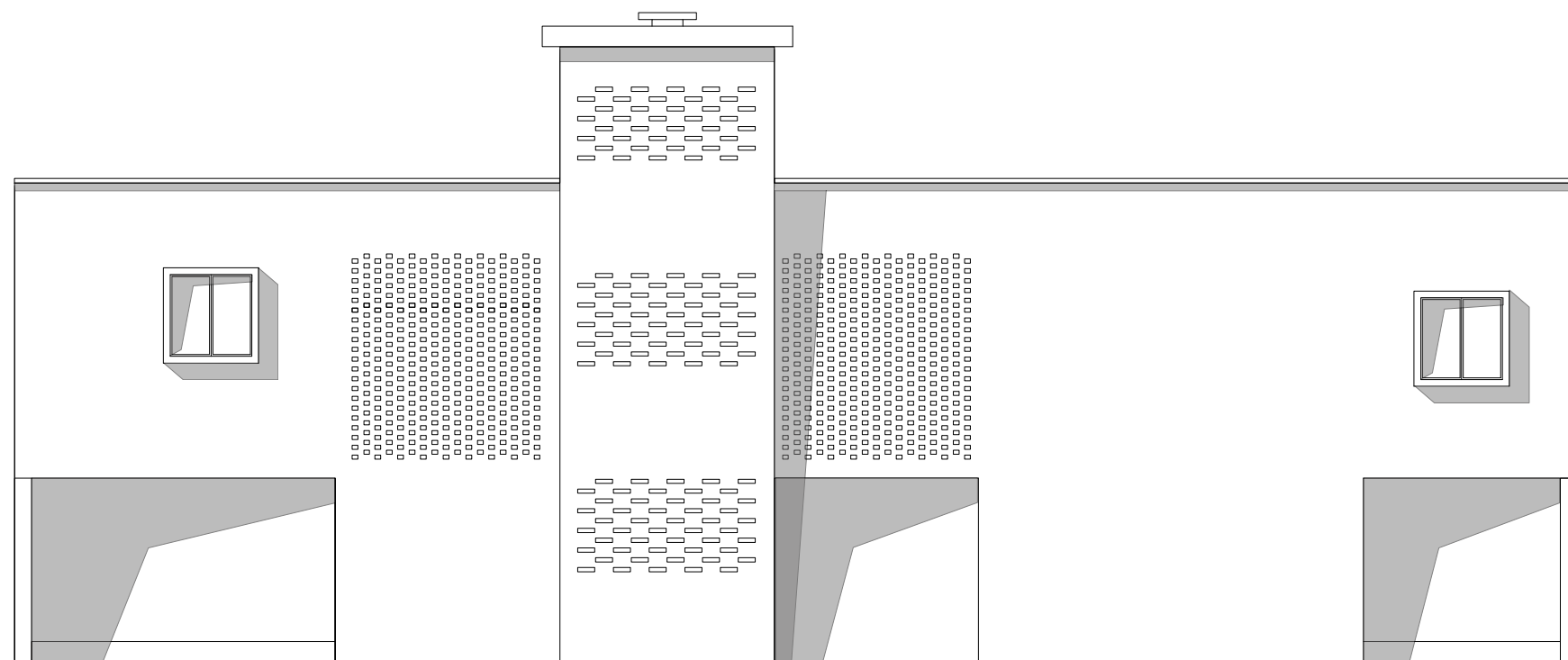
Temporary typology 1:100



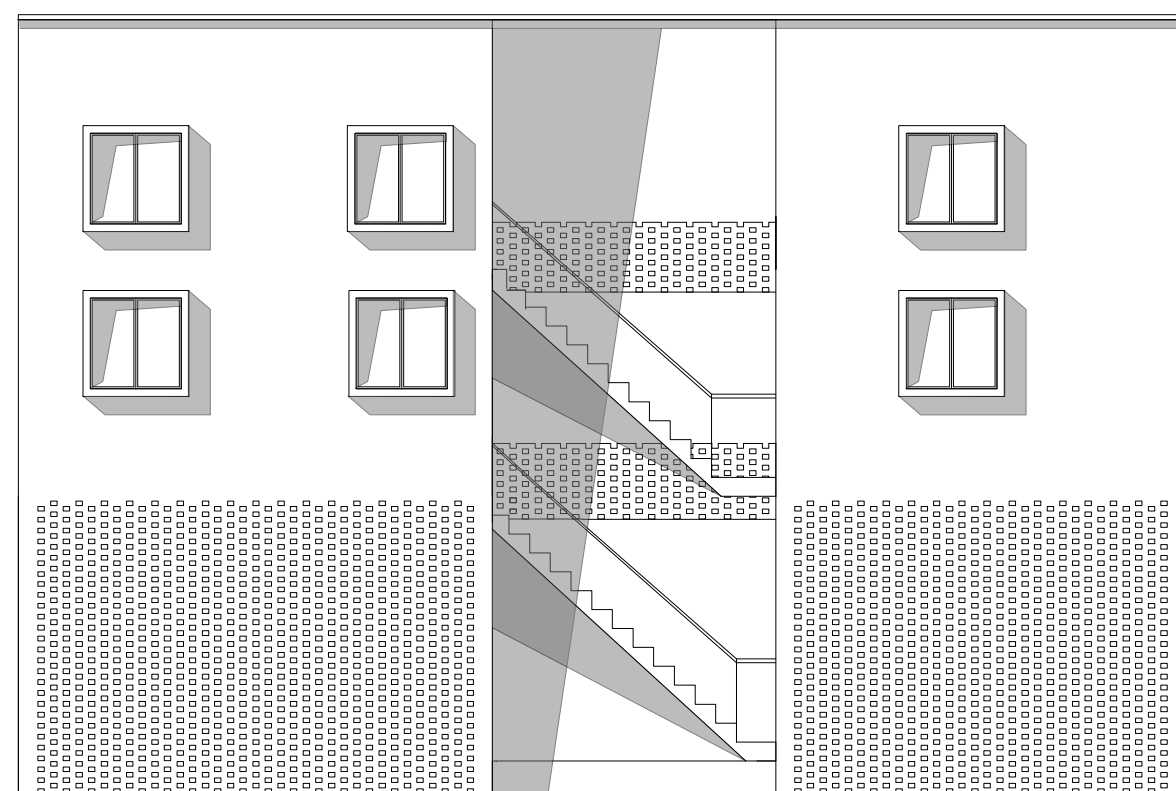
Overview sections

FACADES

Temporary typology 1:100



Inside courtyard view



Street view

EXPLODED AXONOMETRY

Temporary typology

