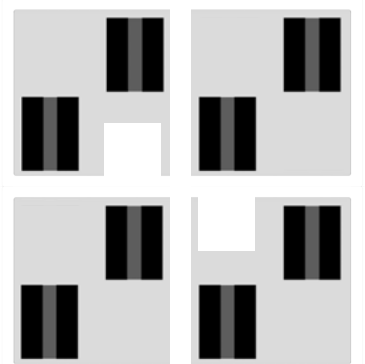
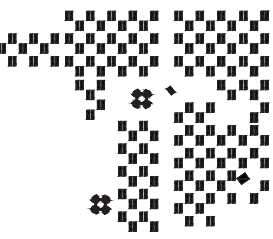
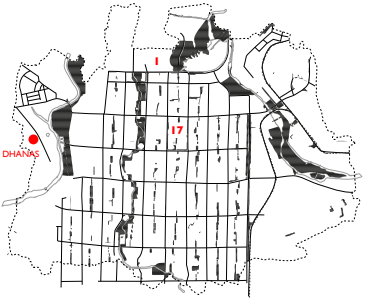
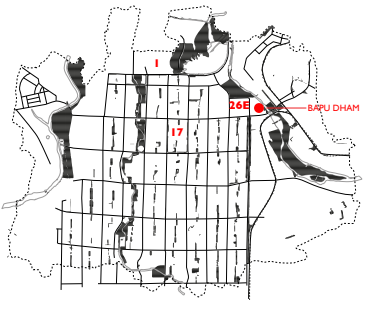




Rehabilitation in site

Prime Minister Jawaharlal Nehru described in its vision of Chandigarh a 'symbol of India unfettered by the traditions of the past, an expression of the nation's faith in the future.' The birth of the new town in fact attracted a lot of people from the surrounding villages, leading to an unexpectedly rapid growth of the city. Poor people still come to Chandigarh in hope of a better future, but in most of the cases they end up in slums, buffer zone, their new starting point in life. Our design team investigated in Chandigarh two different housing figures. First, the figure of 'unauthorized settlements' is characterized by illegal spontaneous, located in most of the time in the periphery of Chandigarh sectorial grid. Babu Dham unauthorized colony, in sector 26 East of Chandigarh served as a case study to understand the spatial and social organization of Chandigarh slum settlements. The second figure is social housing. Two examples among Chandigarh Housing Board interventions for the urban poor were studied : Economically Weakest Sector (EWS) project in Sector 40C (1960s) and Dhanas Rehabilitation Colony (2013) outside the sectorial grid, that stands as a contemporary response to the question of slum settlements.

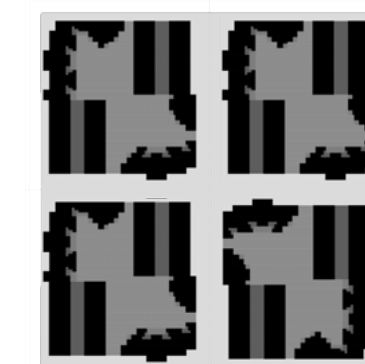
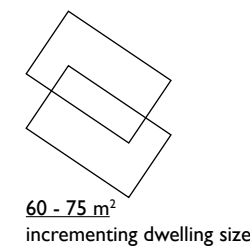
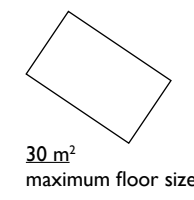
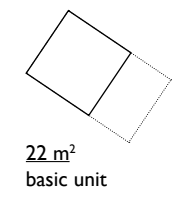
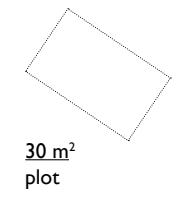
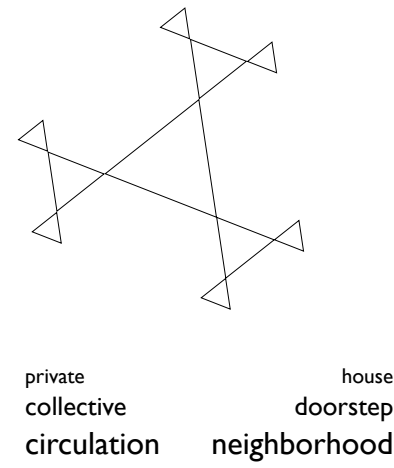


Studying these figures provided an overview of the rehabilitation policy held by Chandigarh Administration towards the slum question. In fact, the 'Slum-Free City' goal described in Chandigarh Masterplan 2013 report has to be understood along with the ambition of preserving Chandigarh's initial identity as 'The city Beautiful'. However, the methods of achieving this goal appeared, through the example of Dhanas, questionable on many respects. Researching an alternative and rather inclusive response to the issue of relocating the urban poor brought up the first intention of our design hypothesis. We chose to take the already settled system that was studied as an 'as found' element, and through an intervention on the existing Dhanas Rehabilitation colony, to propose an improvement of the social conditions of the urban poor within the city of Chandigarh.

With Dhanas Rehabilitation Colony, the Chandigarh Housing Board provides new houses for the dwellers of unauthorized settlements that have been demolished. It is a 40 hectares area delimited by a low fence, neighbouring the Dhanas Village. It is composed with a single type of housing block that is repeated 132 times over the area. Each block contains 64 units of 24 sqm divided in 4 storeys. The current population approximates 40 000 inhabitants. A study of density in Dhanas brought up figures that are good ratios for Indian standards. However, the open spaces does not seem to be exploited. Open spaces in the case of Dhanas cannot be seen 'as a resource', to refer to Charles Correa's article The New Landscape. A clear segregation between open and built spaces was noticed in the existing site. The area is composed with one single type of built spaces and one single type of open spaces that coexist without interacting. This system creates a repetitive and uniform urban pattern. This lack of variety among open spaces also narrows the possibility of various uses and appropriation of these spaces. On contrary, a redistribution following a hierarchy of privacy would enable people to extend their living area over these spaces.

From this analysis and interpretation of current density conditions - calculated as well as felt during the field trip - came our first intention : to reach a variety of open spaces that act as a gradient path from the city scale to the dwelling unit. In that way, the project aims to offer 'space as a resource' for the most defavorised, and with the minimum intervention, to propose a wide range of possible appropriation of it.

The experience we had by meeting with Indian culture, and the constraint of designing for the poorest urged us to think beyond the dwelling unit itself as the space of living. Open space in our vision stands as an extension of the house. Our design strategy was strongly inspired by Correa's definition of hierarchy of spaces in Indian vernacular, enounced in



The New Landscape. The first category Correa describes is the spaces needed by the family exclusively for private use, in other words the dwelling unit itself. The second category is the areas of intimate contact such as a front doorstep where one can have contact with close neighbours. The third are the neighborhood meeting places that can be defined by domestic facilities like a water tap or a village well, and where one can become part of the community. The last one are urban public spaces or 'maidan' used by the whole city.

In order to achieve this redistribution of space, the project was thought as a complement to the already existing housing scheme. A minimum intervention on the existing housing blocks consists in taking away a ground floor unit in order to create a perpendicular connection to the open space, and adding private courtyards to the ground floor units. Looking at Indian traditional housing witnessed during the field trip, as well as examples of designs for poor people such as Charles Correa's Belapur or Balkrishna Doshi scheme for Aranya, a new housing unit was designed, fitting in a plot of 9 x 3,5 meters. The individual ownership of the plot introduces on the site the type of the storey house, in opposition to the stacked units in the existing blocks. The new type is designed with local brick as the main material, and declines in three different layouts that, combined, create intimate shared spaces.

By placing the new housing project in the existing open spaces, the urban scheme is completely redefined. From an open checked pattern, the project re-introduces the scheme of the urban block with an intimate neighbourhood courtyard in its center. Existing blocks and new houses form together a housing cluster around a shared courtyard, and four clusters surrounded by vehicular roads defines a block. The roads inside the blocks are converted into pedestrian streets. The new houses were thus thought to have a double orientation, having the main entrance from the cluster, to satisfy privacy issues, but open towards the street to encourage interaction and variety of uses. The basic house was in fact designed in order to fit an Indian poor family requirements, but offers an adaptative layout that predicts the transformation of the family pattern, or changes of their economical or social status. Therefore, the design allows an incremental growth over time, and the house can be splitted between the two storeys. Commercial or working activity can also be part of the house towards the street.

A toolbox of different pattern generated by the position of the new houses in the cluster was established, creating a panel of various urban situations with different qualities of space, use and materiality. Changing the layout of the cluster defines the behaviour of the block, from very closed to very open. On an urban scale, this toolbox helped to achieve an urban design of the whole Dhanas Township by the combination of these different layouts. The intention is to link the public park in the center of Dhanas to four surrounding elements - the Dhanas village, the Botanical Garden, the government school, and a new clinic - through four diagonals of public space. These elements act as landmarks and anchor points that reconnects Dhanas Rehabilitation Colony to its surrounding context.

As a result, the new Dhanas Township can house 5000 new dwellers. The new design introduces bigger houses that adapts to the needs of the inhabitants and that changes the average built area per inhabitants. Above all, the project is a basic intervention that resonates on a wide range of different scales. It uses space as a resource to improve the living conditions of the poorest, but also, by rethinking the relation between built and open spaces, achieve to transform the whole system of Dhanas township.

"The problem of housing the vast majority of our urban people is not one of finding miracle building materials or construction technologies ; it is primarily a matter of densities, and of balancing land-use allocations."

Charles Correa - The New Landscape.

Chandigarh was conceived as an ideal city, symbol of the new independent India. It attracted a lot of people from the surrounding villages, leading to an unexpectedly rapid growth of the city. Poor people come to Chandigarh in hope of a good future, but in most of the cases they end up in slums, buffer zone, their new starting point in life.

Today, the identity of Chandigarh as a wealthy and clean city is to be preserved, and is even strengthened with the ambitious - if not ideal - 'Slum-Free City' goal that the Chandigarh Administration is aiming for.

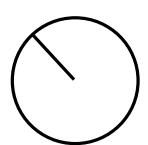
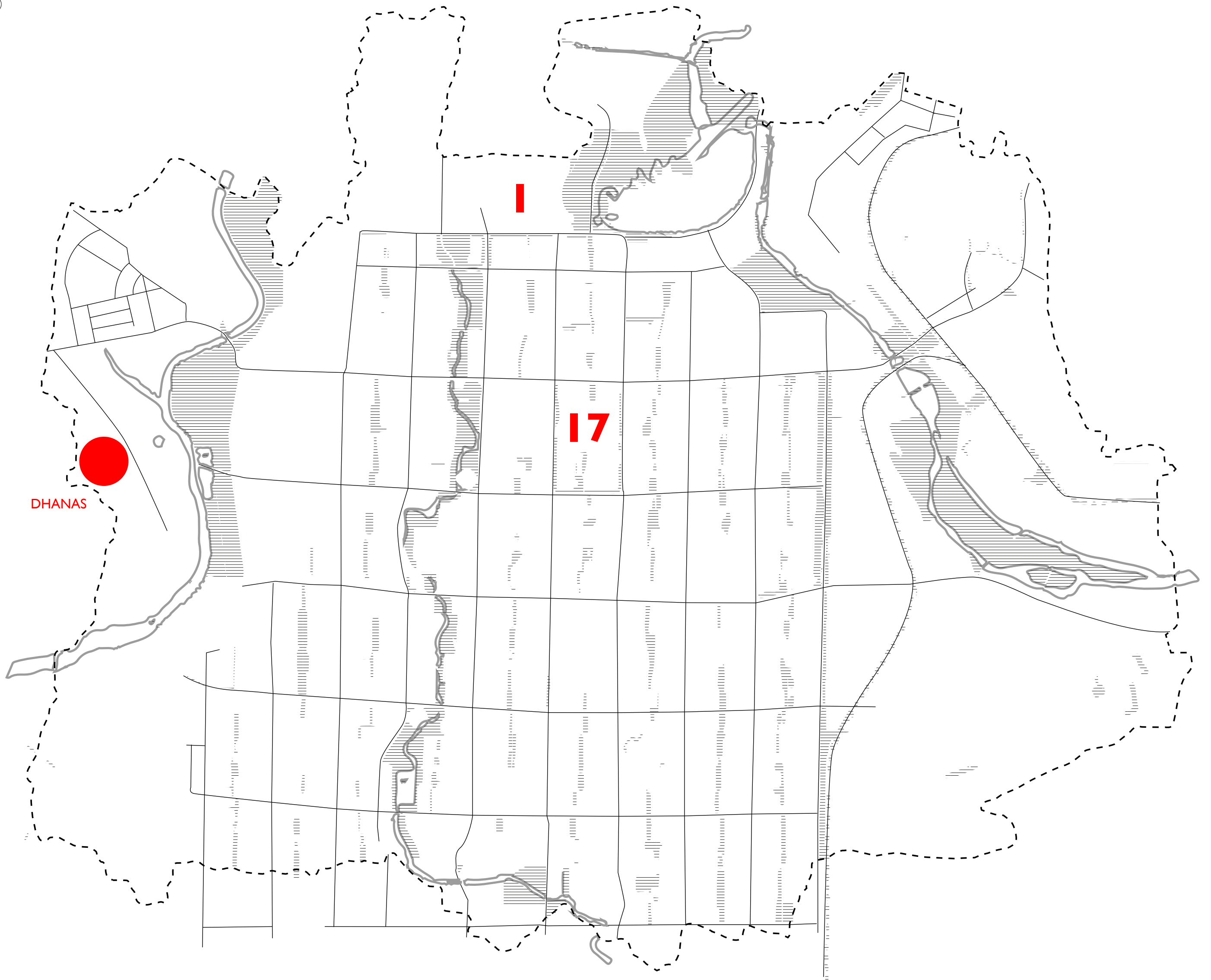
But this rehabilitation policy built up a contradictory pattern by relocating slum dwellers from one edge of the city to another. From Bapu Dham unauthorized settlement in sector 26 East, to Dhanas rehabilitation colony outside the sectorial grid, slum dwellers are transiting around the city center - symbol of justice and inclusion - but without ever reaching it. On contrary they remain in a state of exclusion, geographical as well as social.

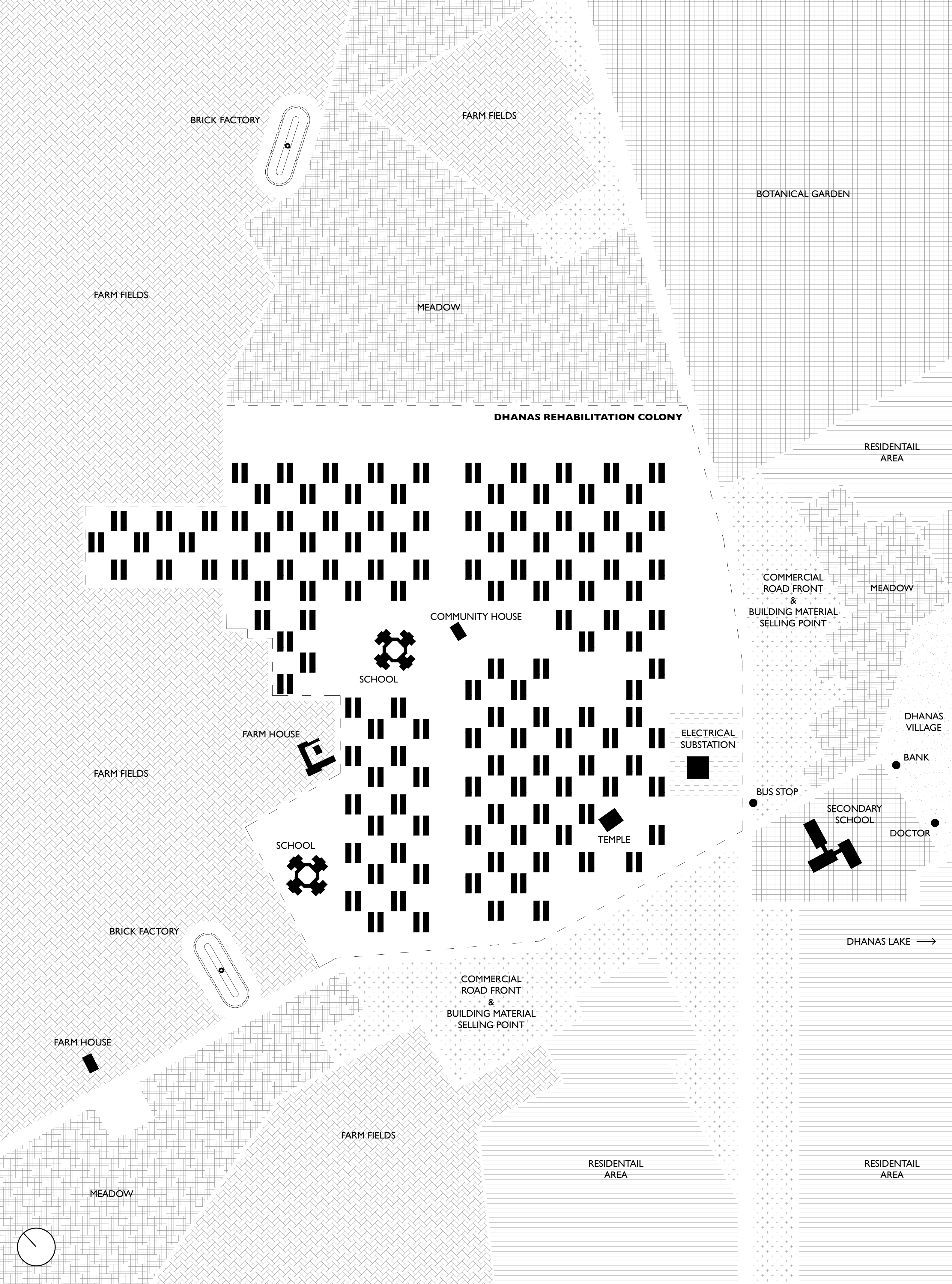
The aim of the project is to merge together these opposite and parallel values of Chandigarh: bringing back the utopia of Chandigarh into the social reality that it faces and claiming an inclusive relocation of the urban poor.



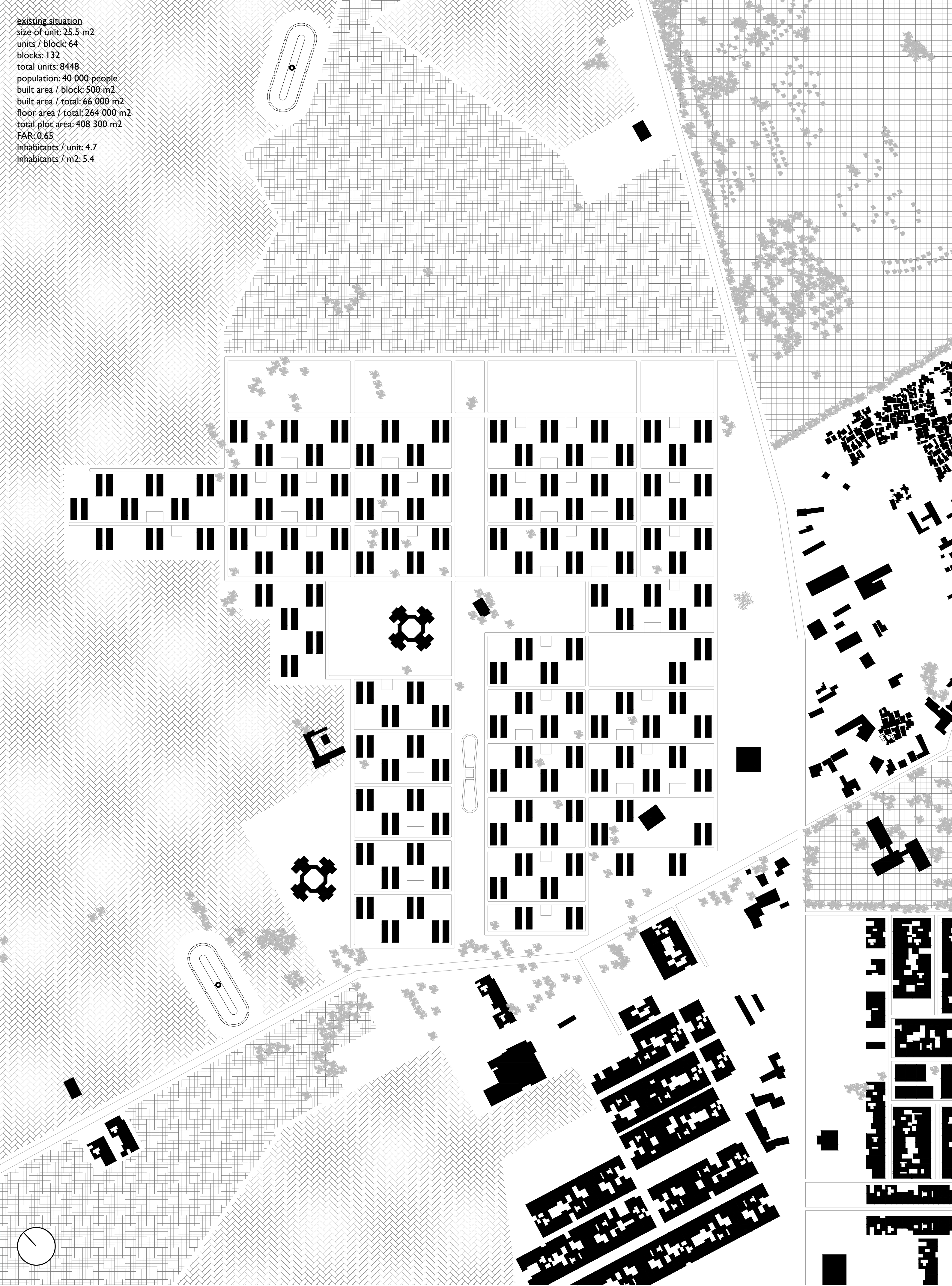




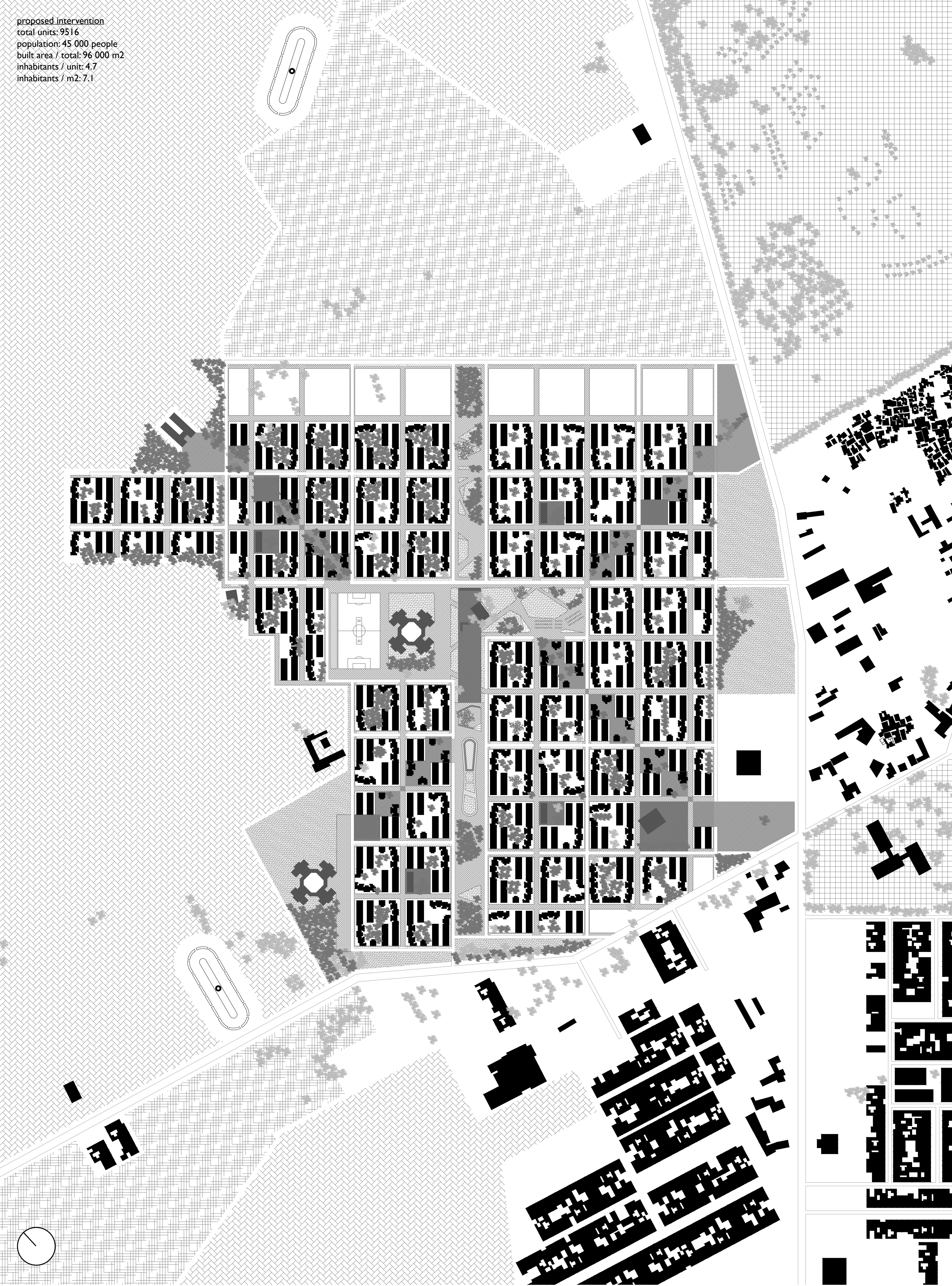




existing situation
 size of unit: 25.5 m²
 units / block: 64
 blocks: 132
 total units: 8448
 population: 40 000 people
 built area / block: 500 m²
 built area / total: 66 000 m²
 floor area / total: 264 000 m²
 total plot area: 408 300 m²
 FAR: 0.65
 inhabitants / unit: 4.7
 inhabitants / m²: 5.4



proposed intervention
total units: 9516
population: 45 000 people
built area / total: 96 000 m²
inhabitants / unit: 4.7
inhabitants / m²: 7.1



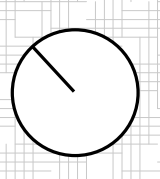


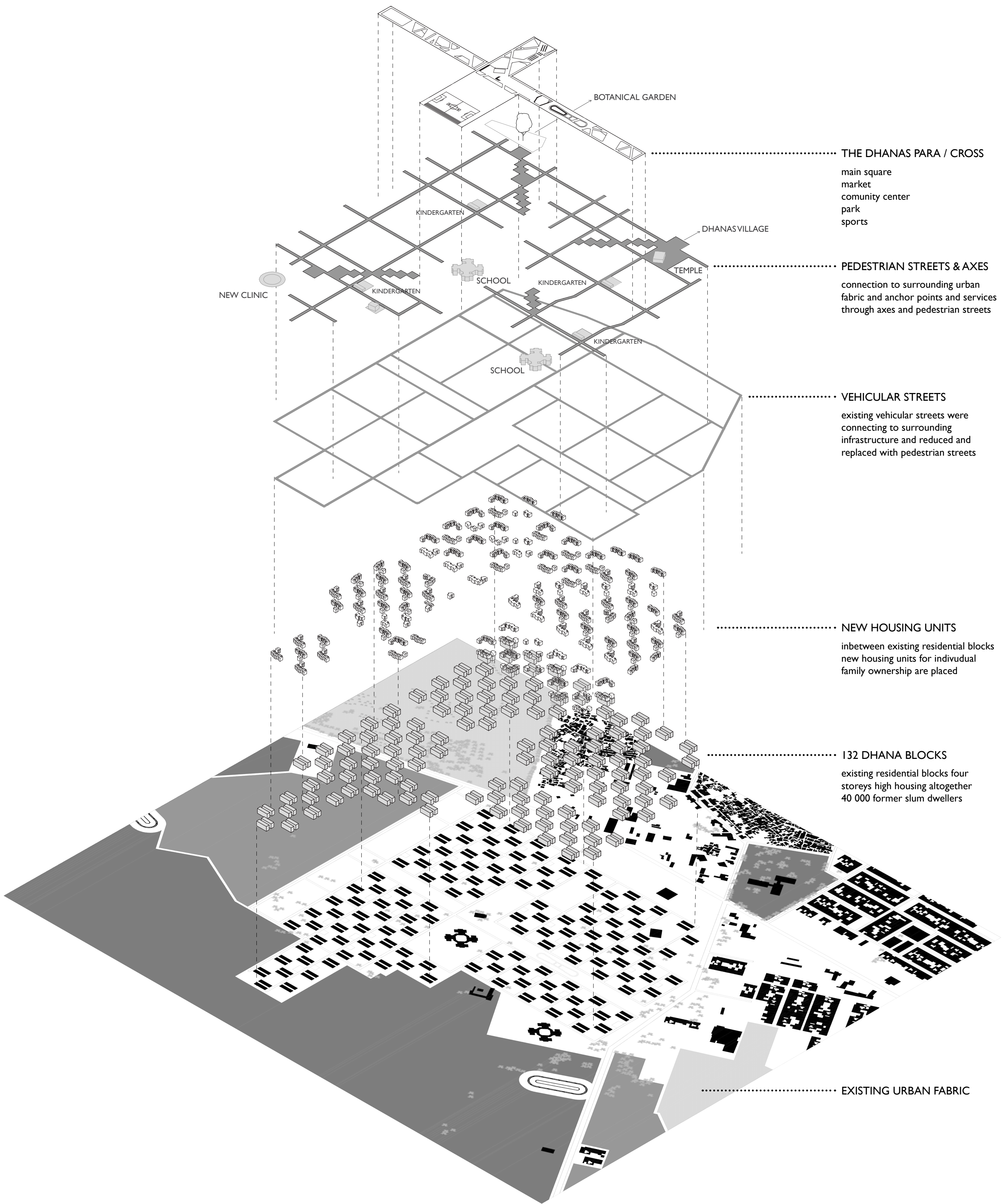
DHANAS TOWNSHIP

NEIGHBOURHOOD

CLUSTER

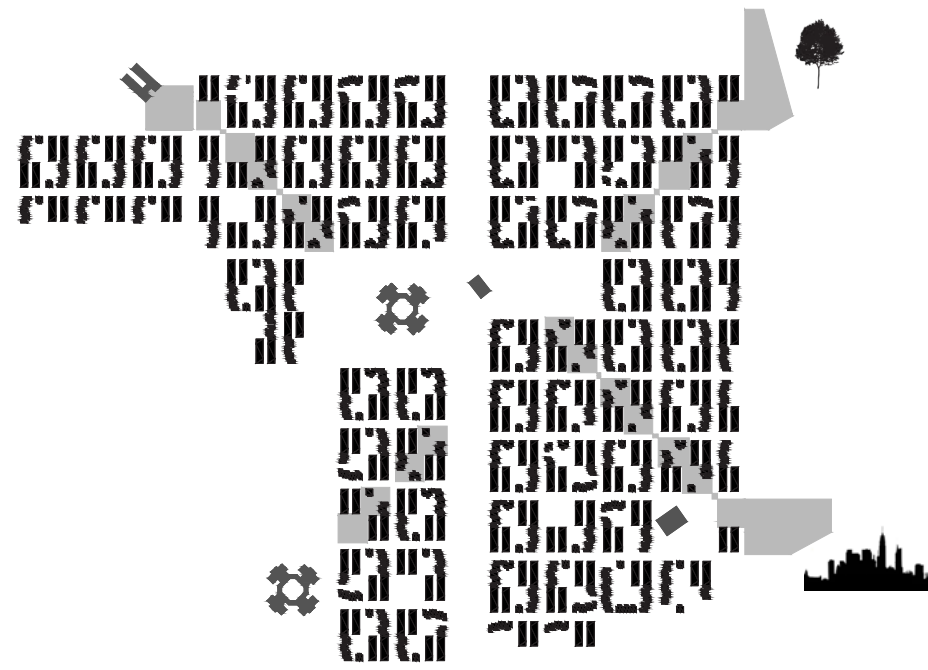
BLOCK







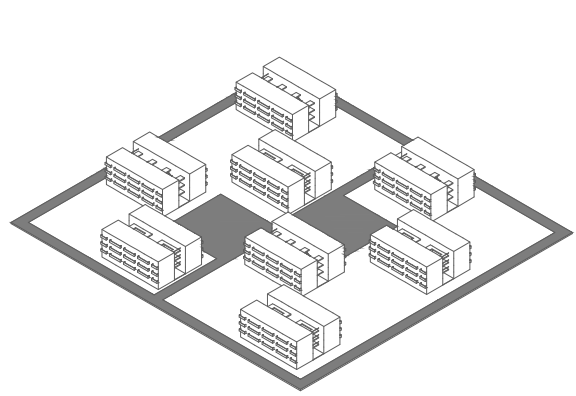
ANCHOR POINTS



AXES



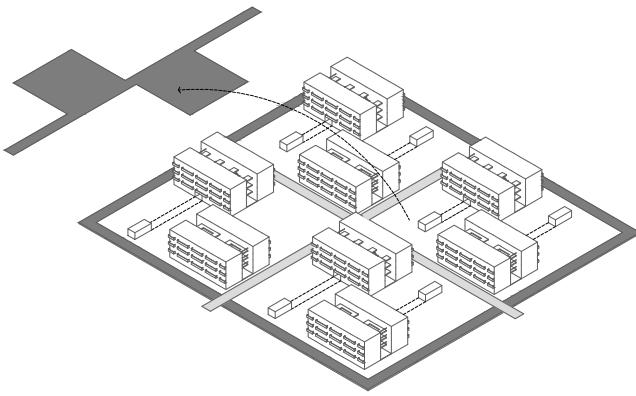
SQUARES & SERVICES



1.

EXISTING URBAN BLOCK

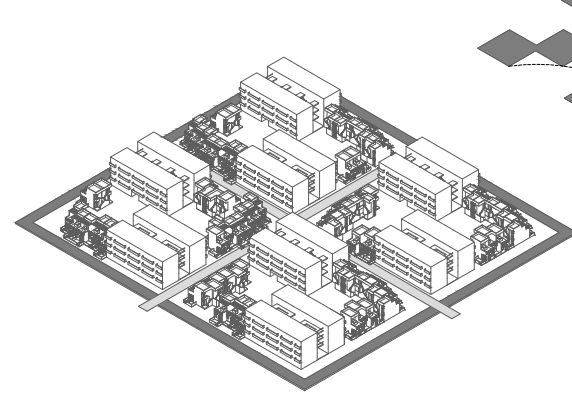
existing urban blocks consisting of 8 residential blocks is penetrated by asphalt vehicular roads and oversized parking lots, hierarchy in public space is missing



2.

STREET HIERARCHY

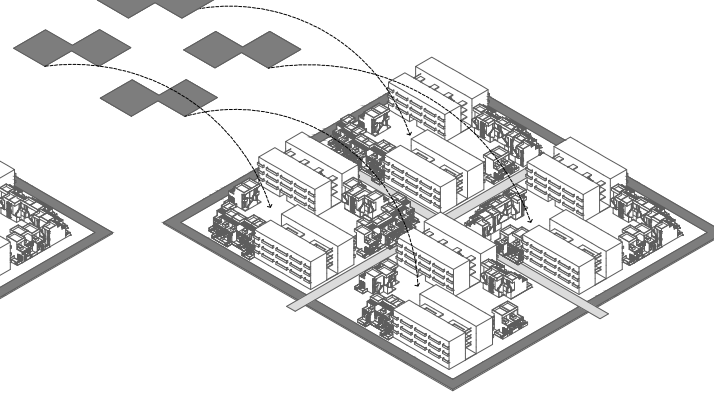
parking lots inside the urban block are converted to a plot area, interior vehicular streets are replaced by pedestrian streets and vehicular streets are kept around the block



3.

NEW HOUSING UNITS

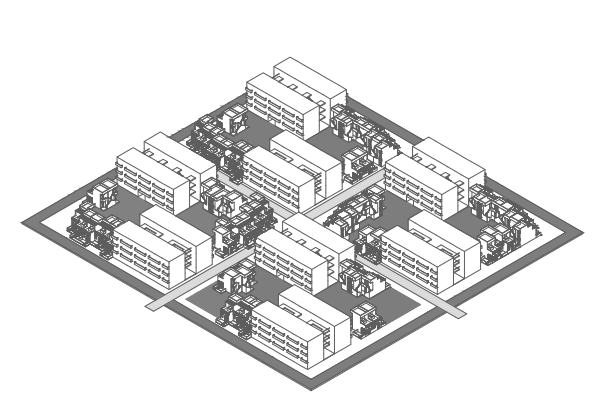
in the space between existing residential blocks are created new plots of an area 31 m² and new housing units are built on these plots



4.

COURTYARDS

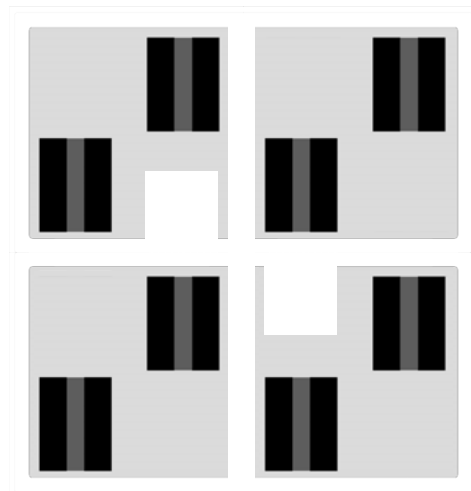
courtyards with different function and different in-fill are introduced to the urban block creating collective spaces or public areas shaded with trees more or less



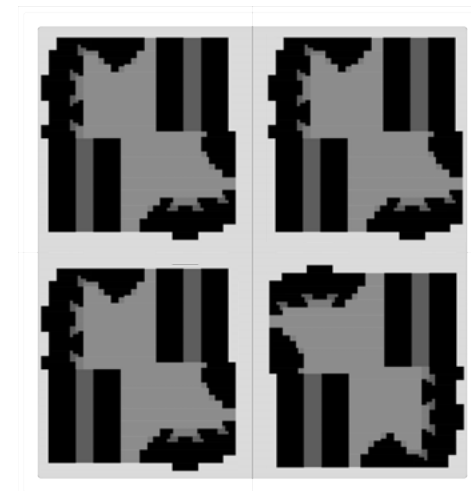
5.

NEW URBAN BLOCK

new housing units together with courtyards separate the are into public (pedestrian and vehicular roads) and private (courtyards) area creating a hierarchy in the public space

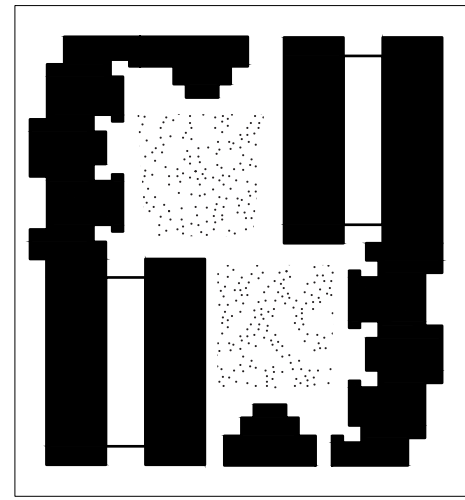
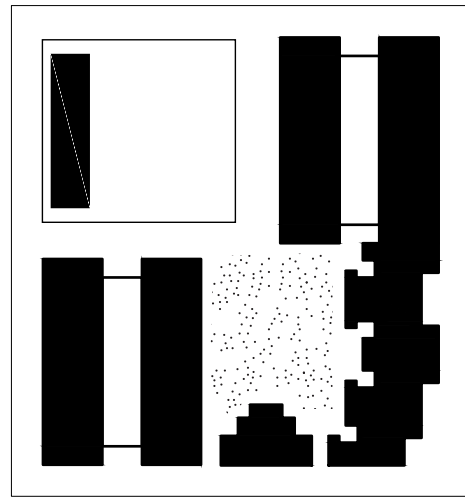
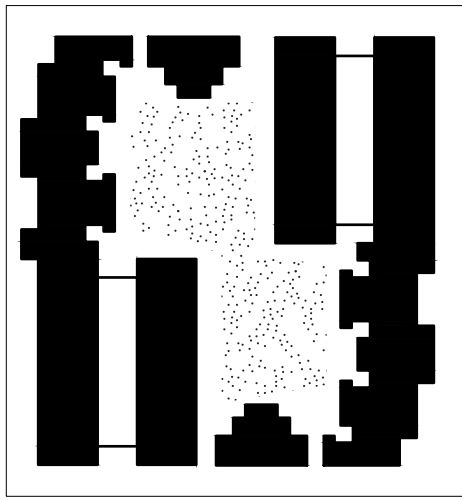
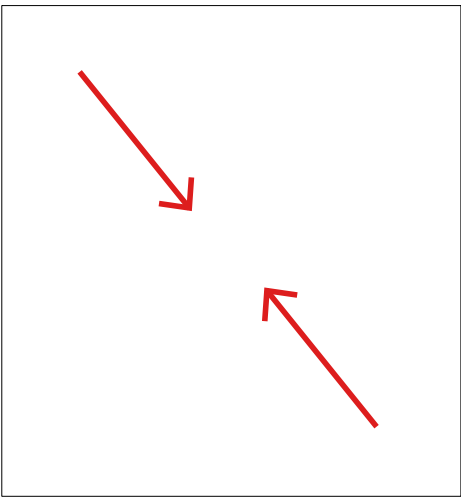
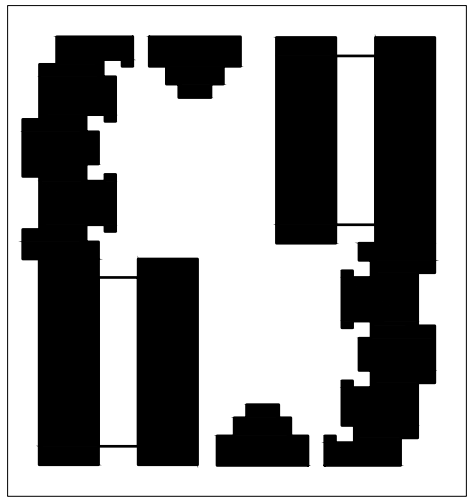


EXISTING SPATIAL HIERARCHY
WITHIN AN URBAN BLOCK



NEW SPATIAL HIERARCHY
WITHIN AN URBAN BLOCK

A



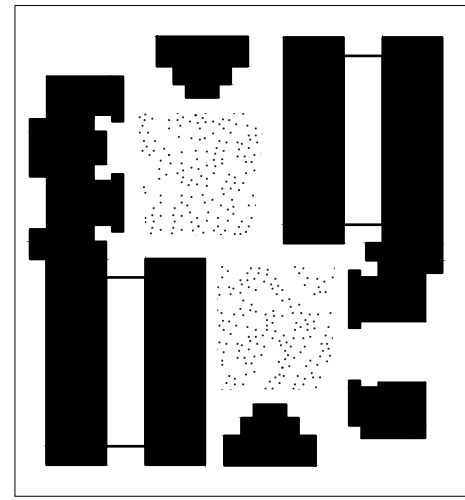
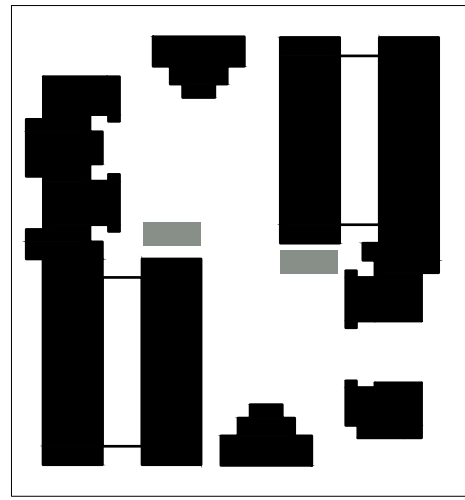
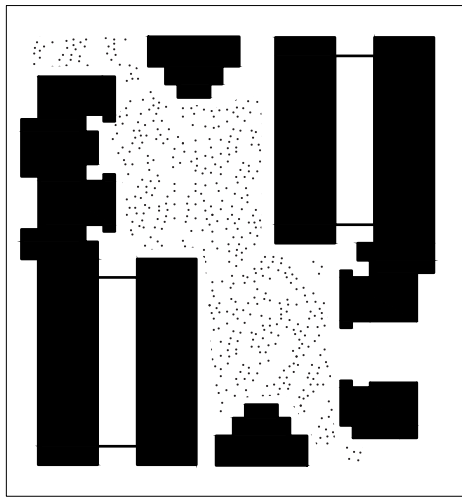
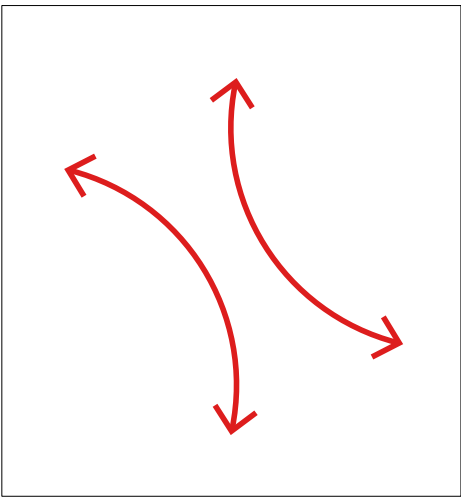
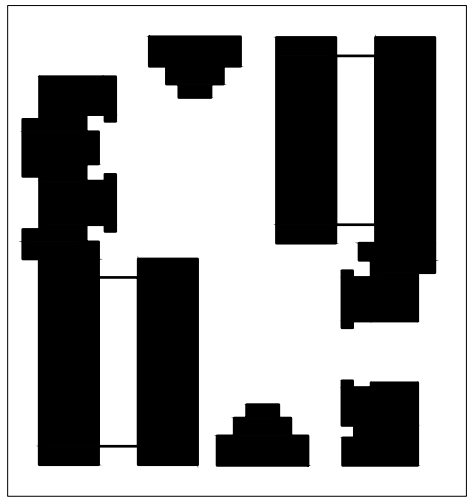
CLOSED

1 GREEN

2 SHARED FACILITIES

3 PAVED

B



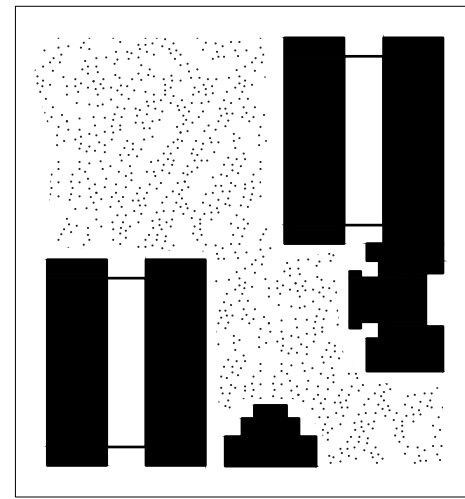
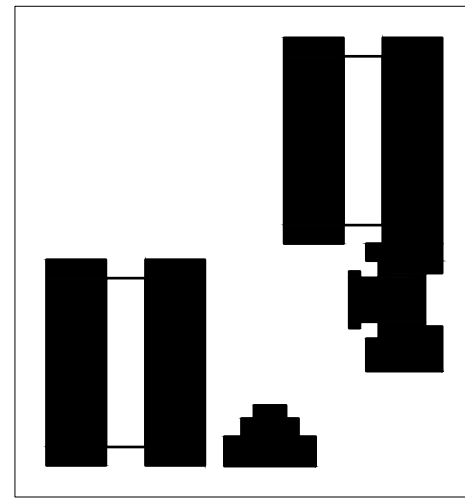
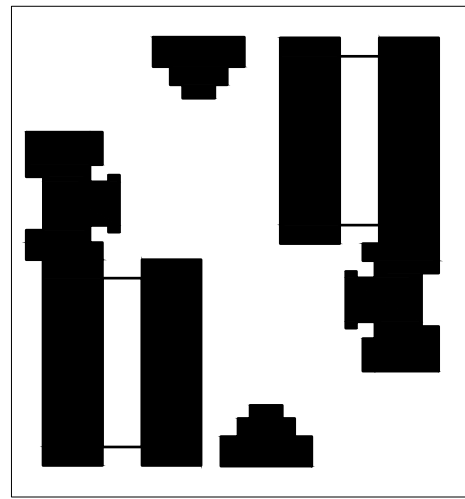
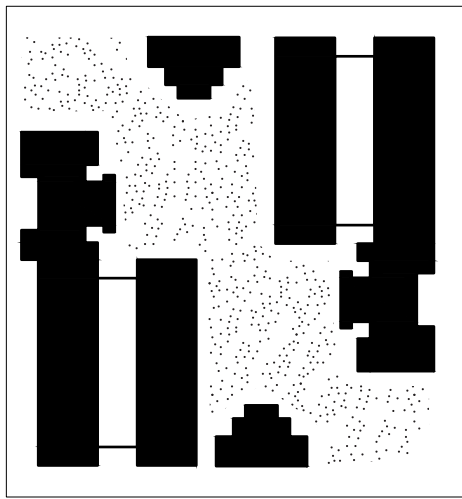
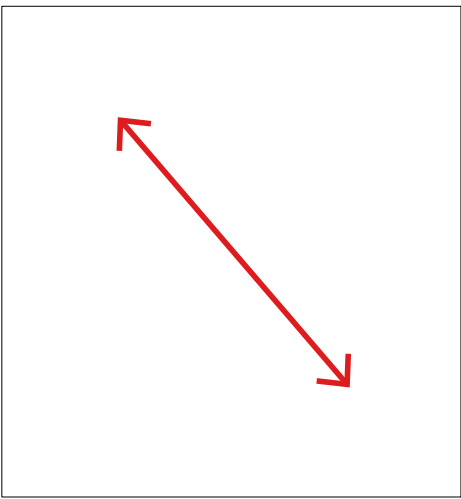
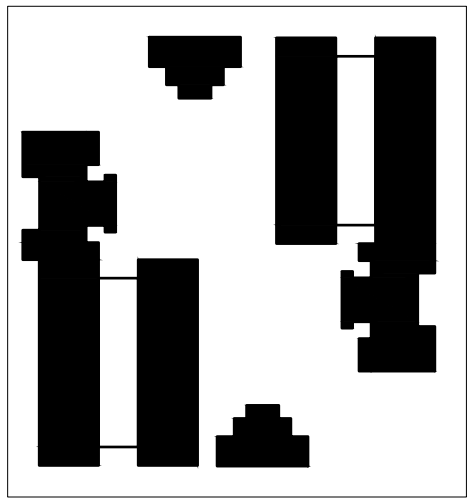
POROUS

1 GREEN

2 SHARED FACILITIES

3 PAVED

C



OPEN DIAGONALY

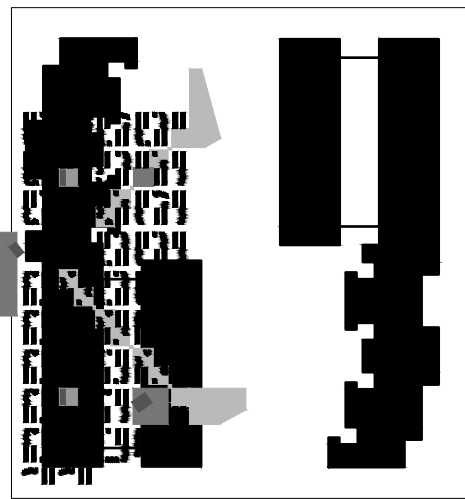
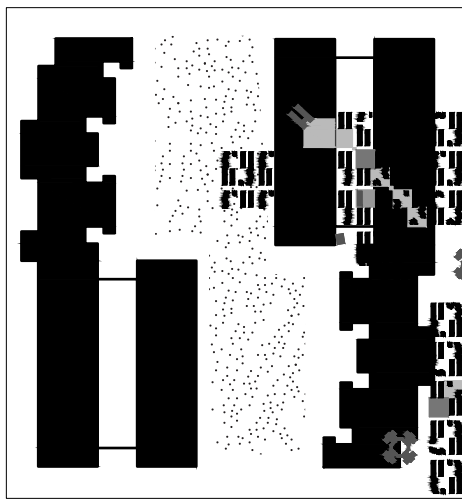
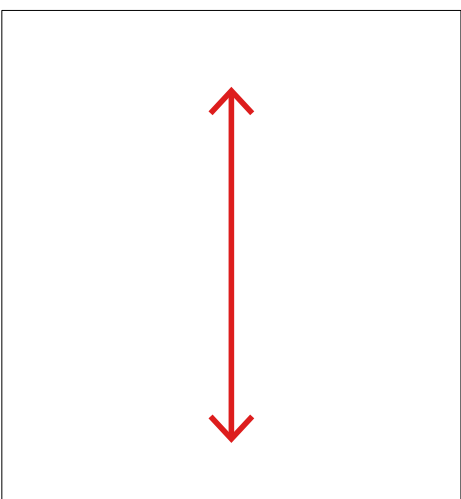
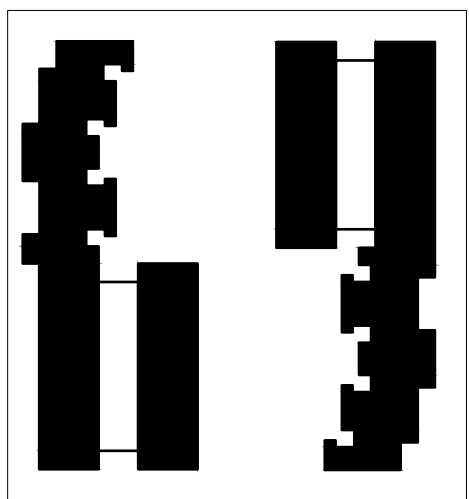
1 GREEN

2 PAVED

3 PLAZA & PAVED

4 OPEN & GREEN

D

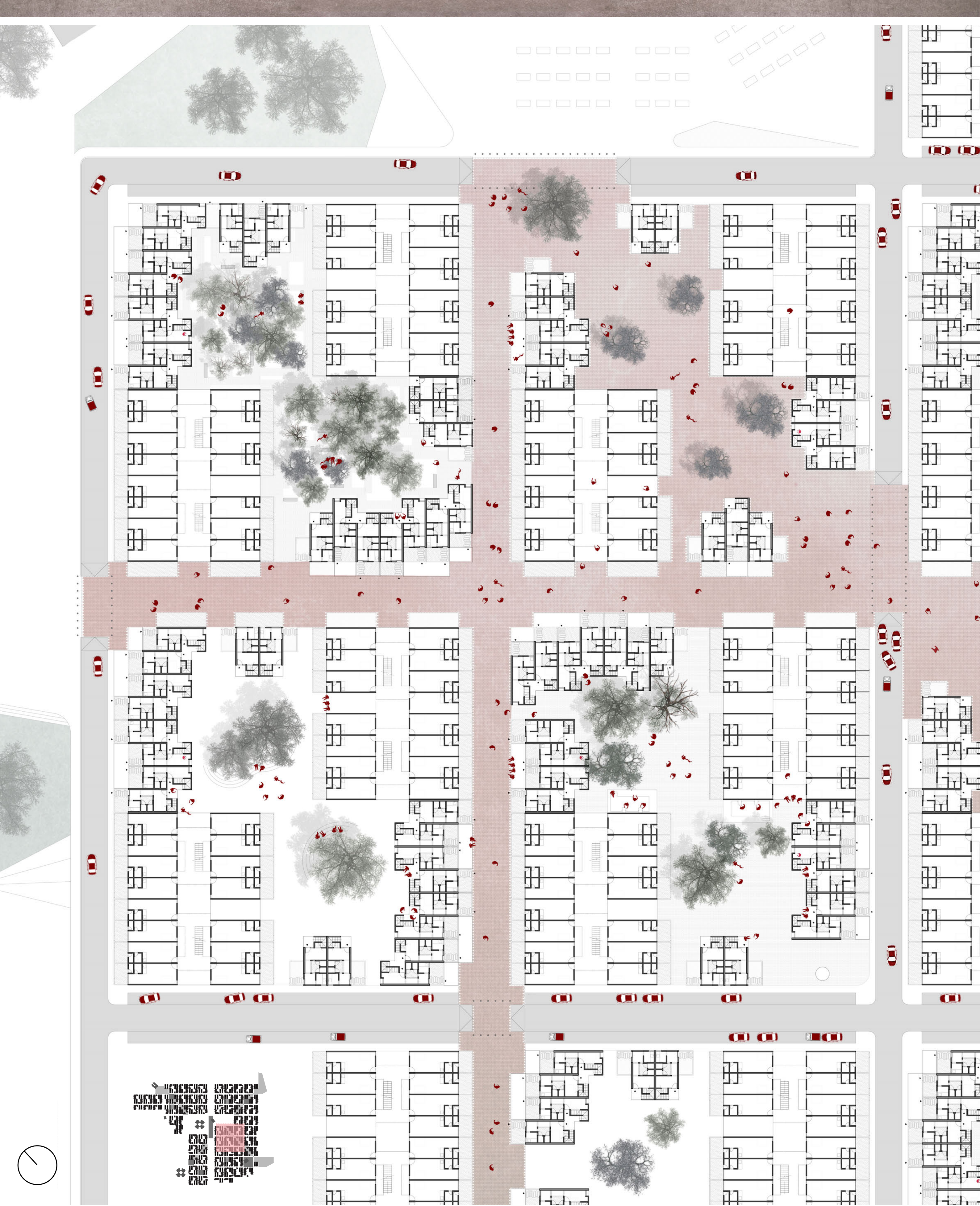
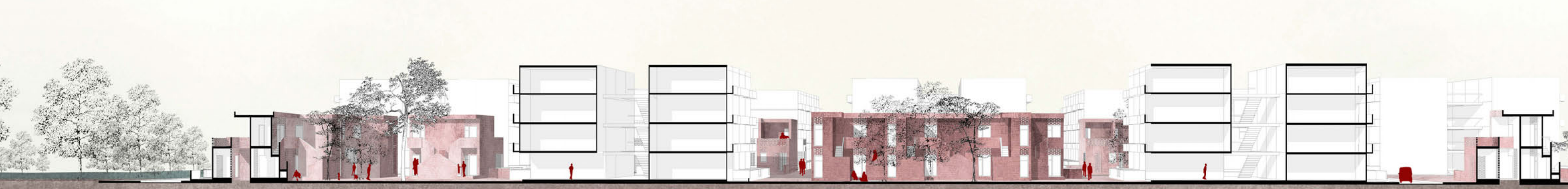


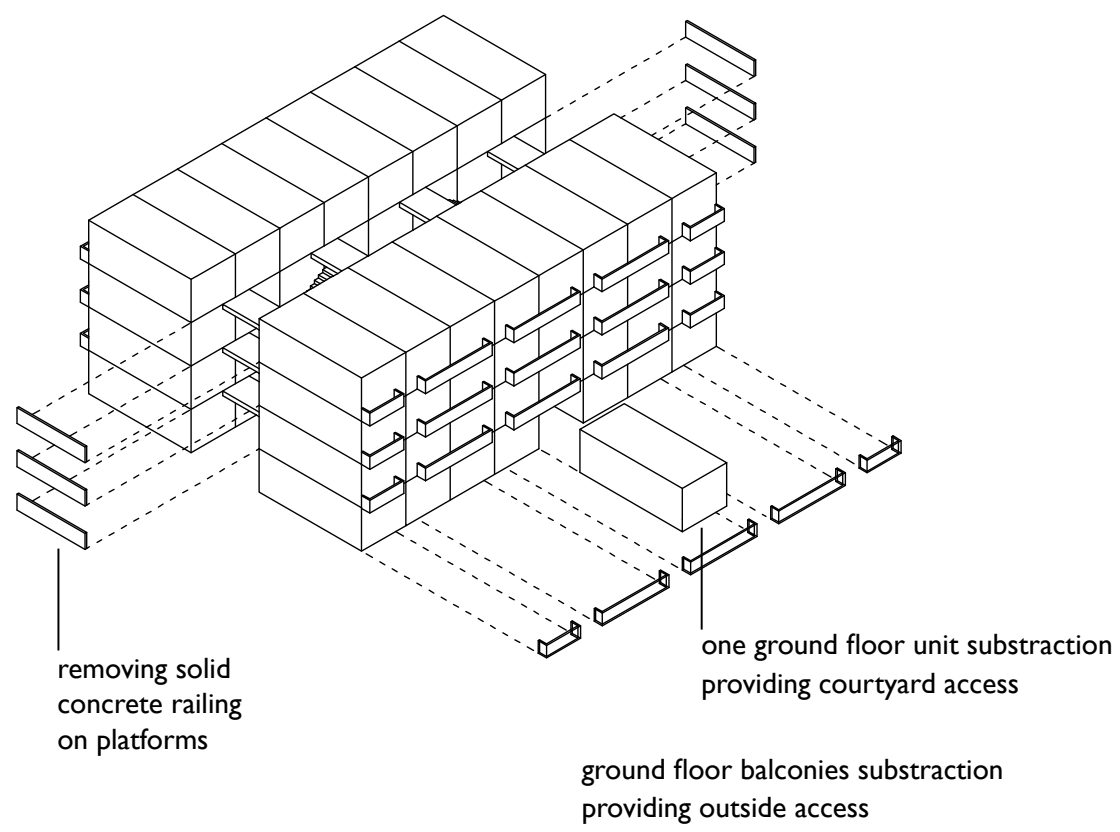
OPEN STRAIGHT

1 GREEN

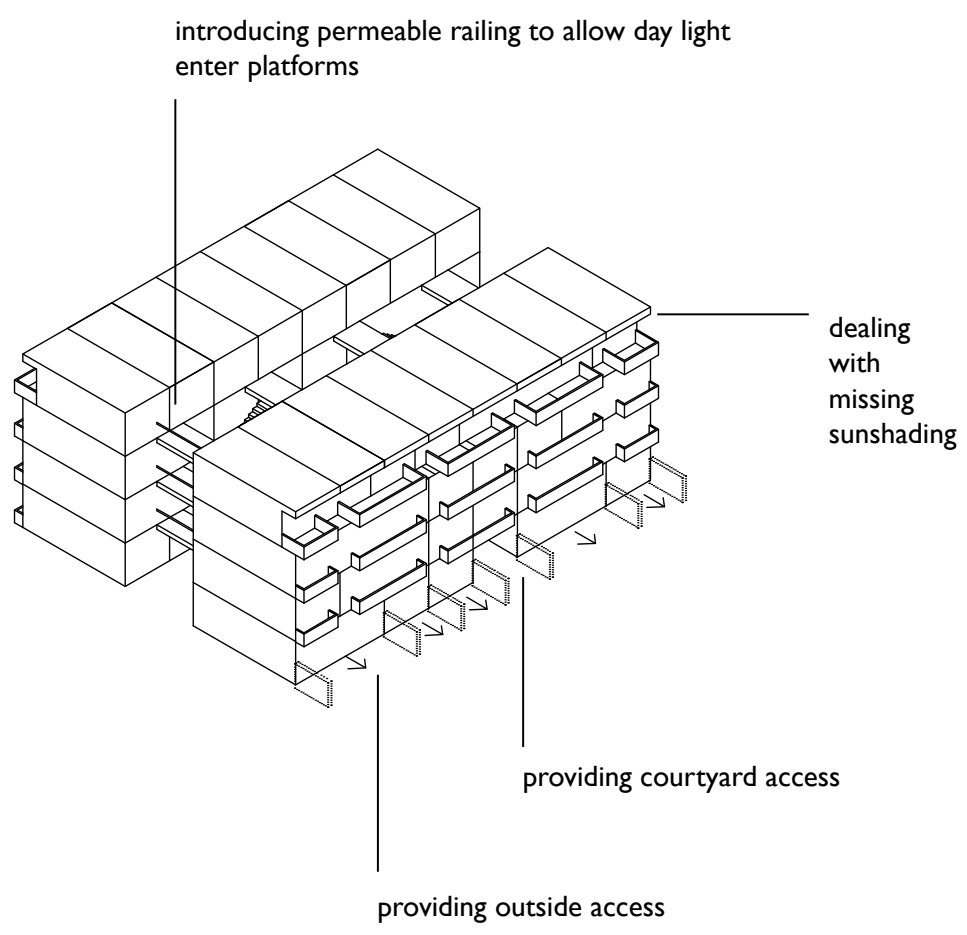
2 PAVED

COURTYARDS HAVE DIFFERENT FUNCTION AND DESIGN BASED ON THEIR LOCATION WITHIN THE DHANAS TOWNSHIP

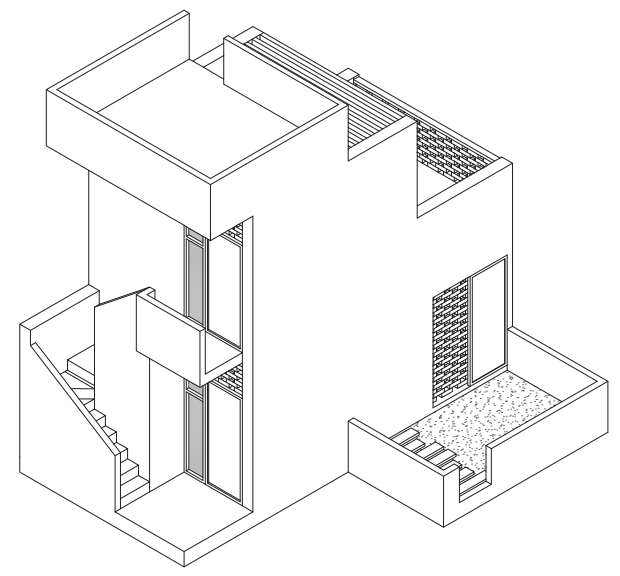




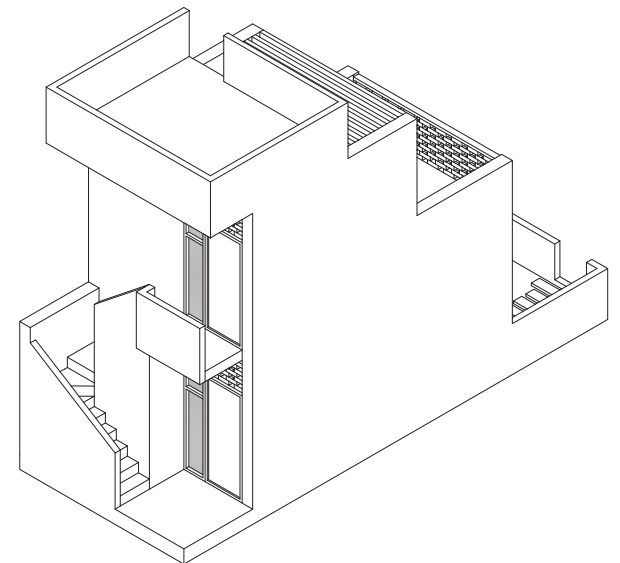
1. SUBSTRACING FROM EXISTING RESIDENTIAL BLOCK



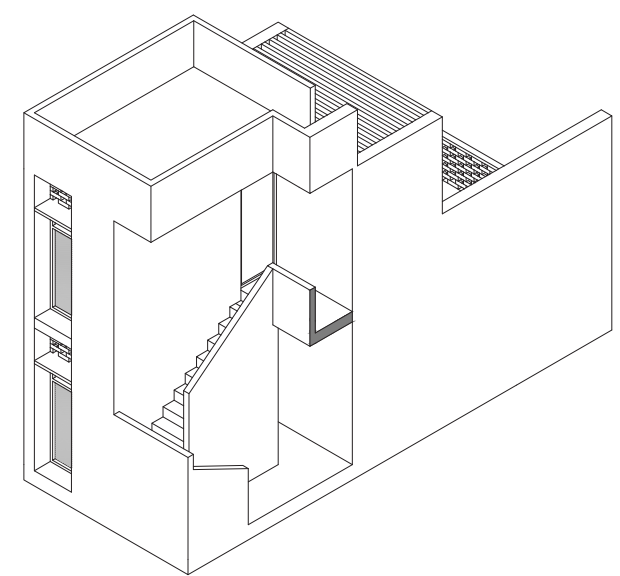
2. ADAPTING THE EXISTING RESIDENTIAL BLOCK



house IA

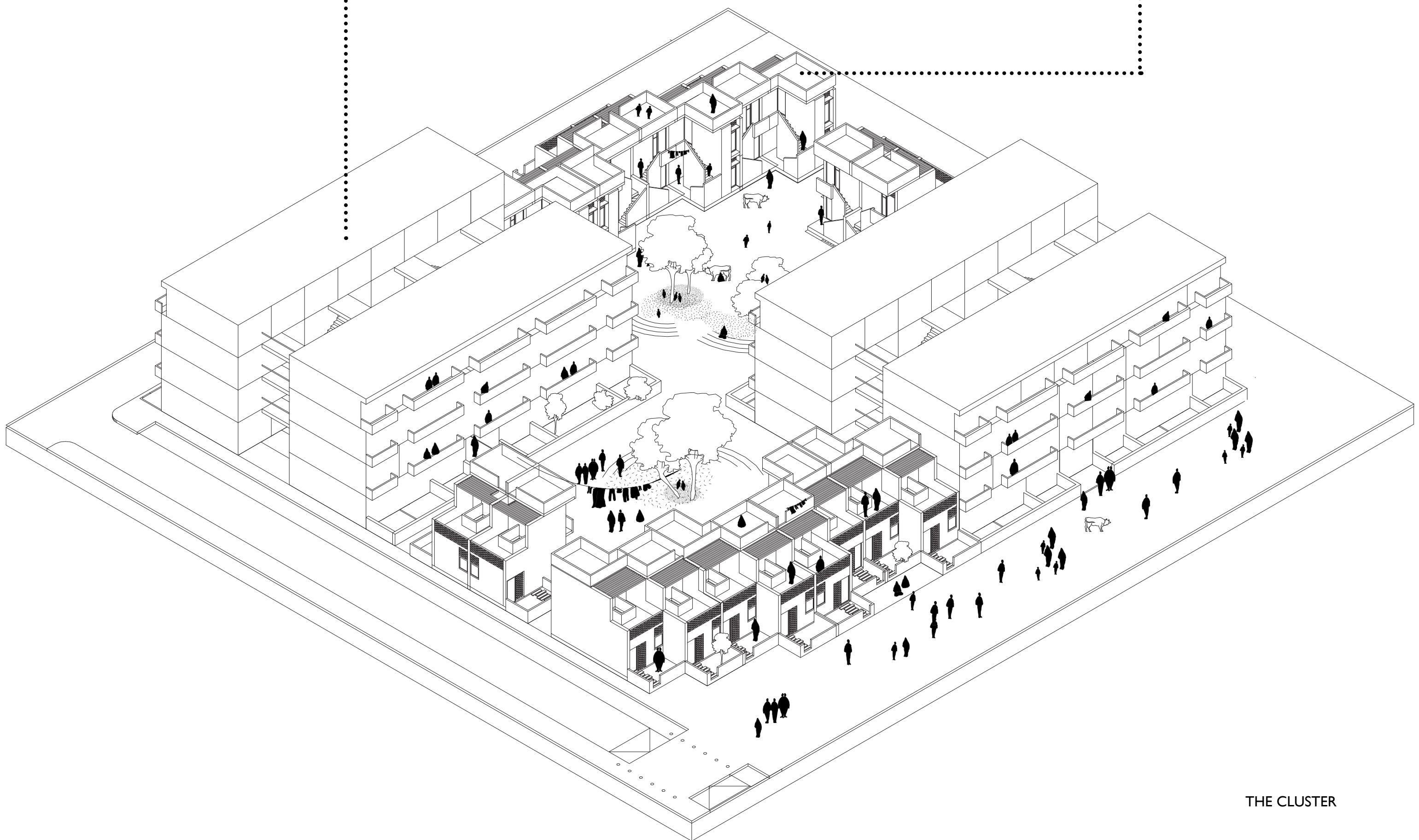


house IB

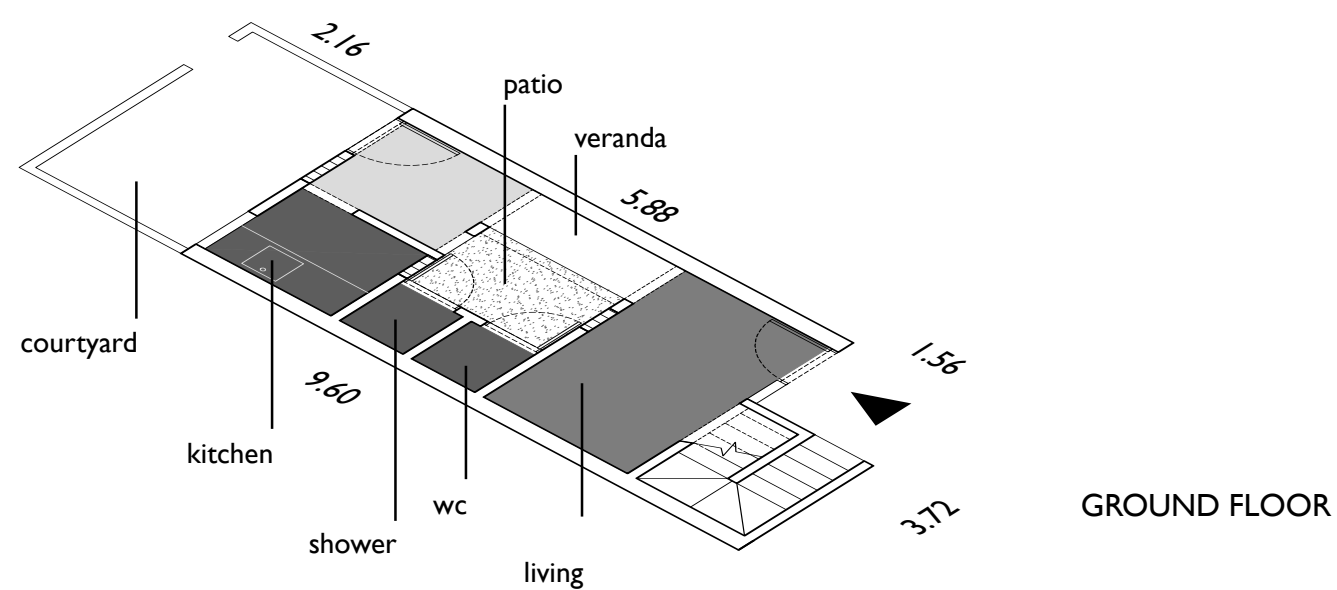
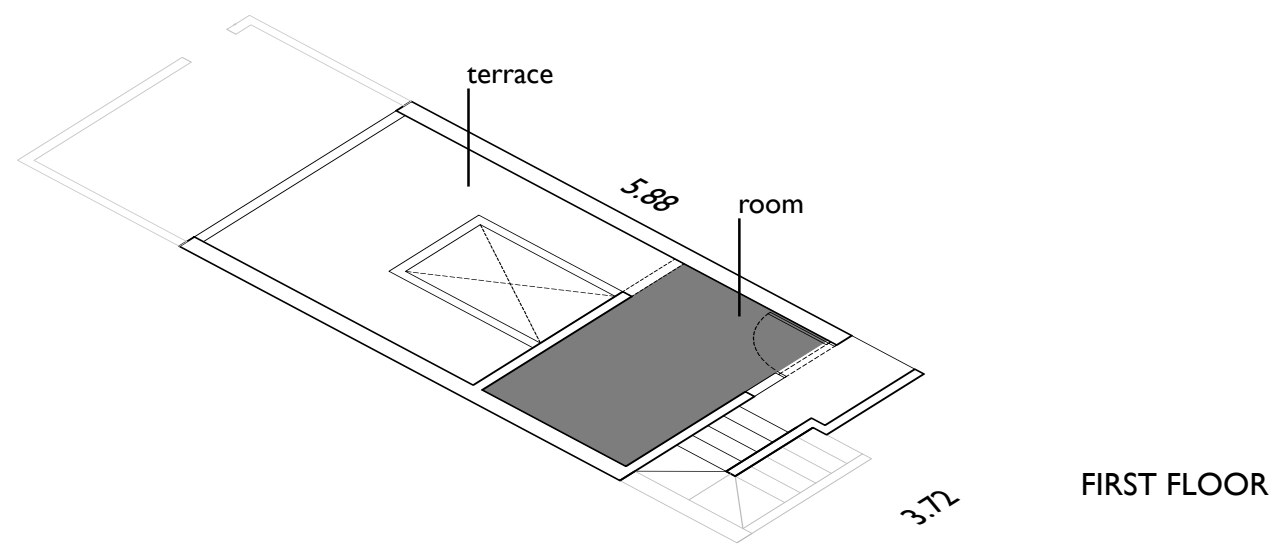
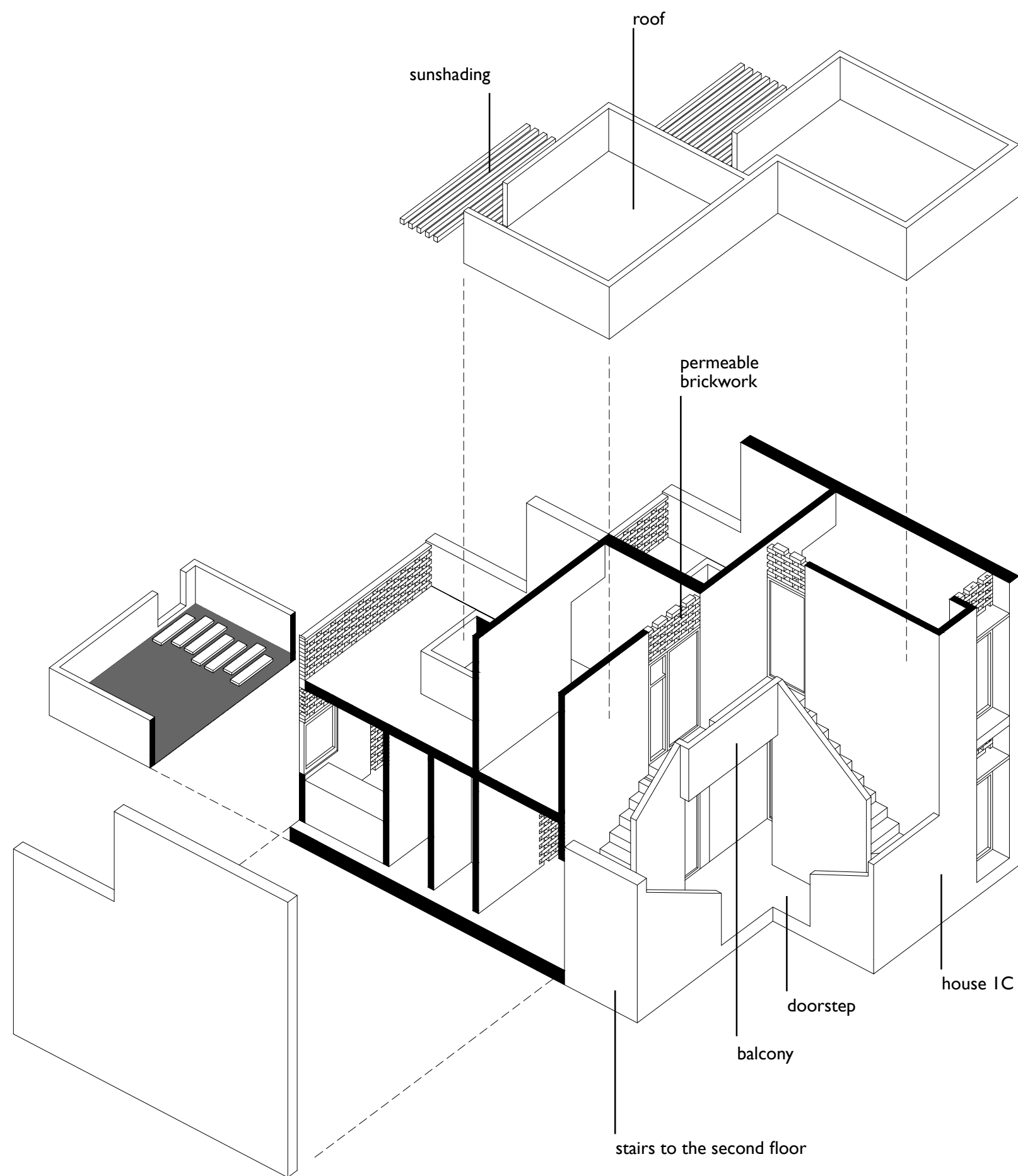


house IC

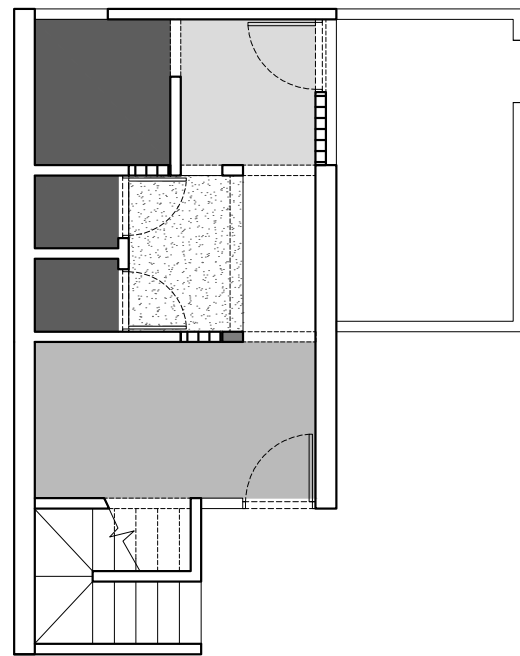
3. NEW HOUSING UNIT



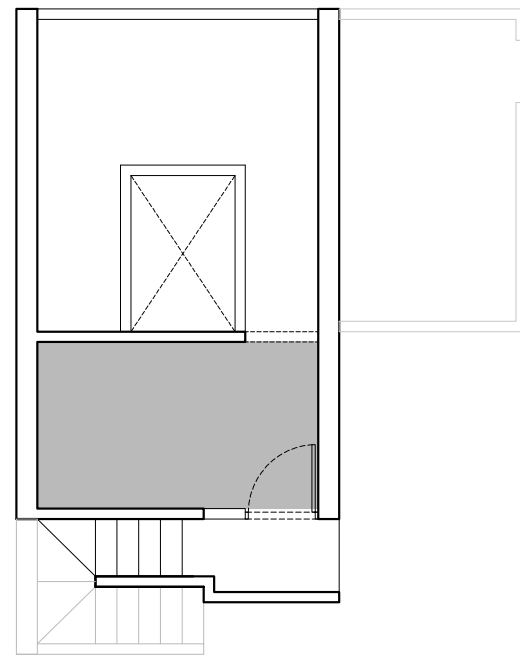
THE CLUSTER



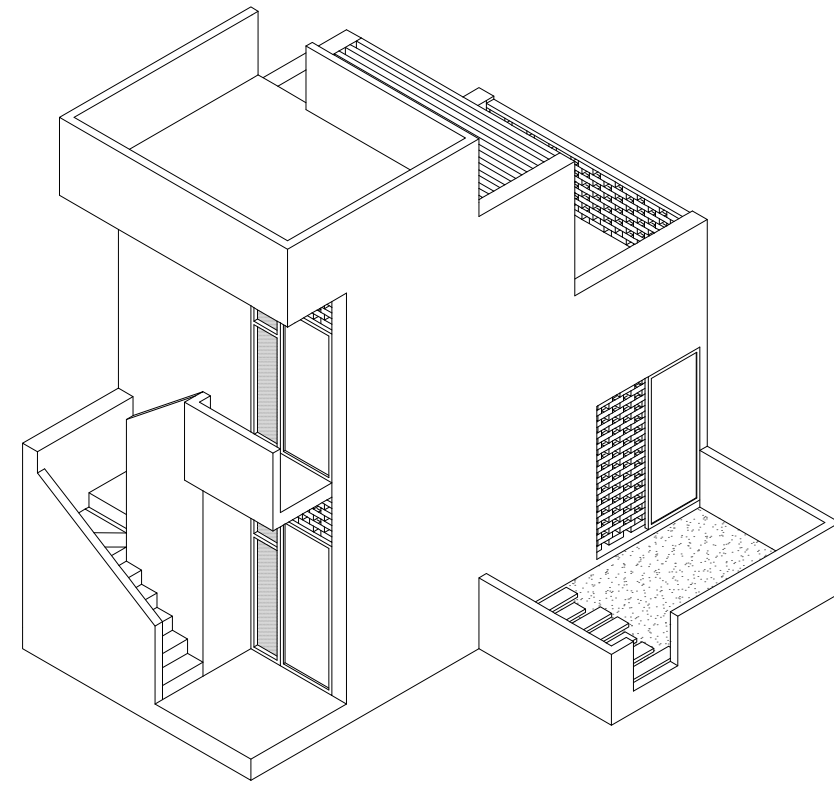
FLOORPLAN TYPE 1A



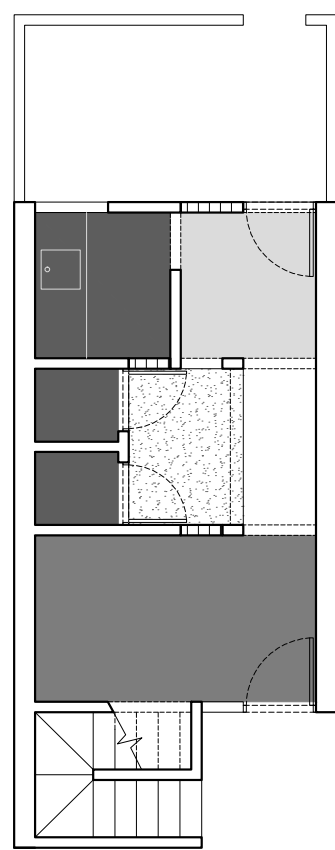
GROUND FLOOR



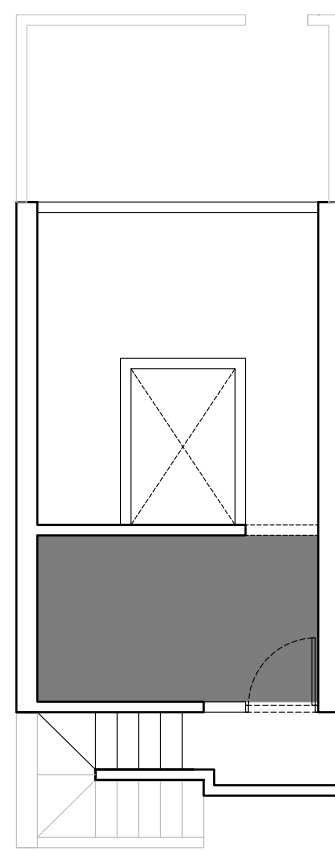
FIRST FLOOR



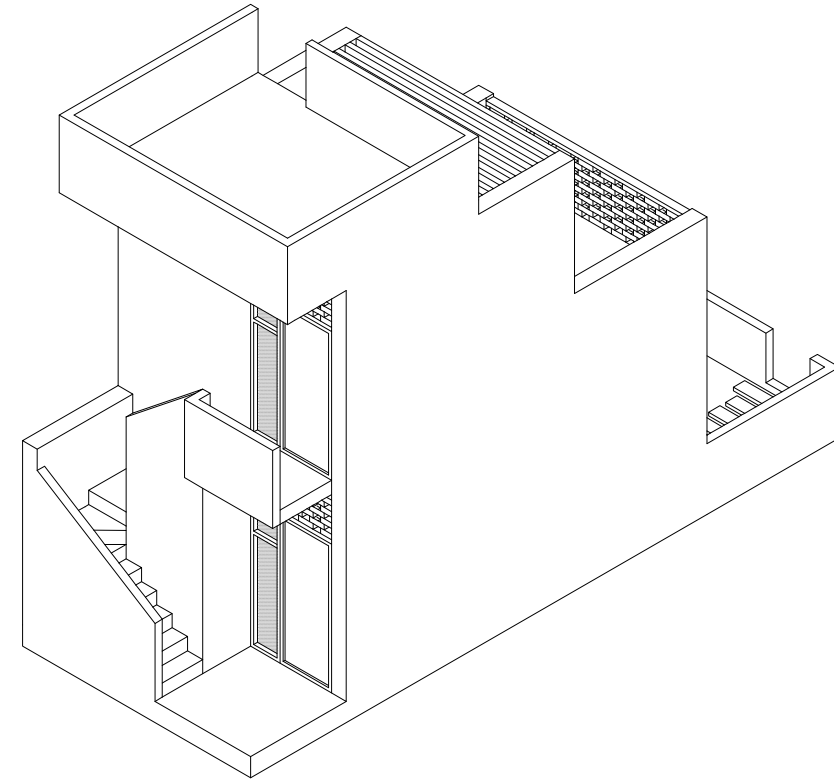
FLOORPLAN TYPE 1B



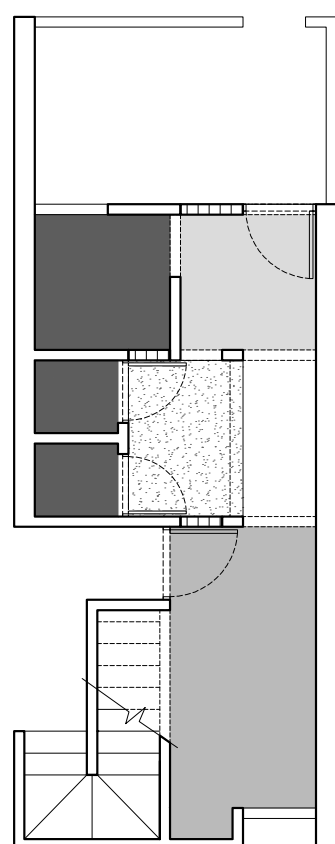
GROUND FLOOR



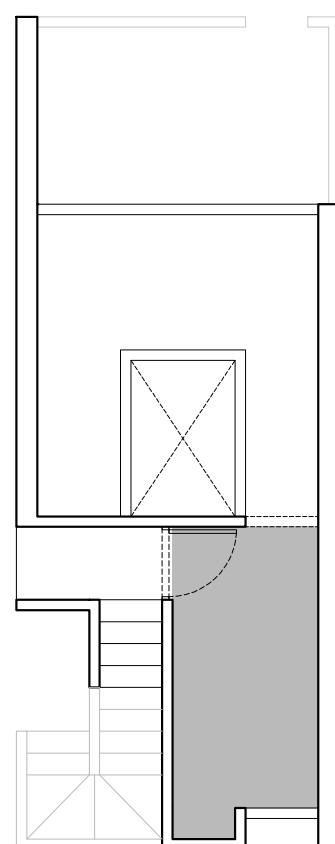
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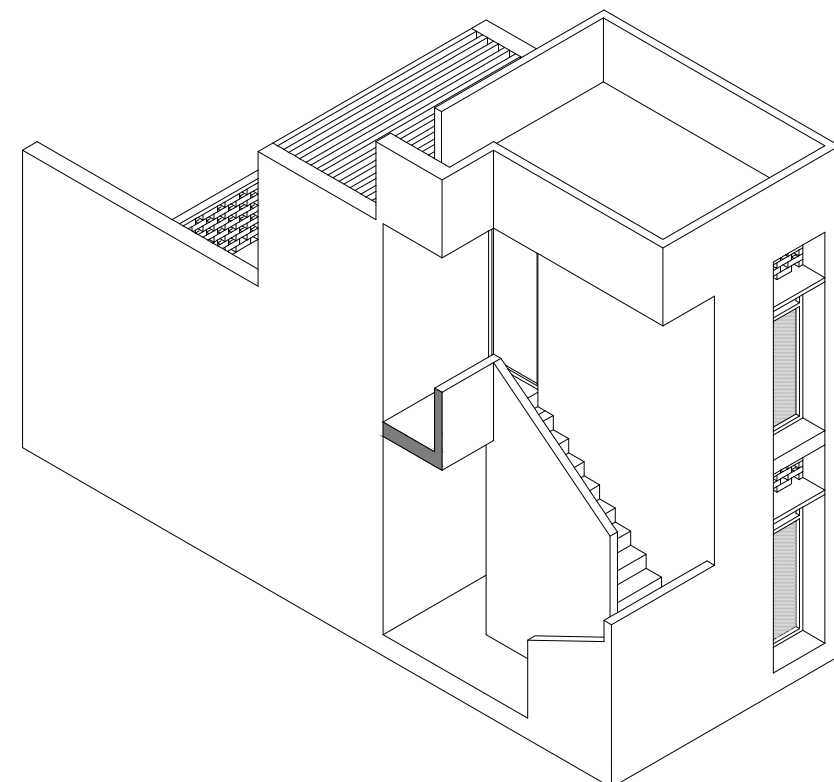
FLOORPLAN TYPE 1C

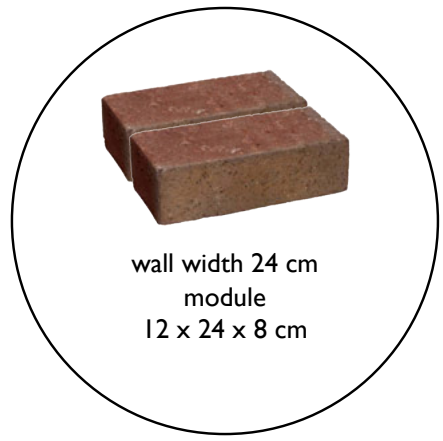


GROUND FLOOR



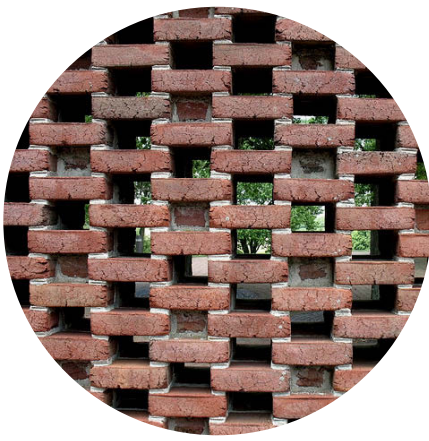
FIRST FLOOR





wall width 24 cm
module
12 x 24 x 8 cm

Chandigarh brick as the basic
element for the load bearing
structure



penetrated brick work
for ventilation through the
house and glass substitution



painted brick wall



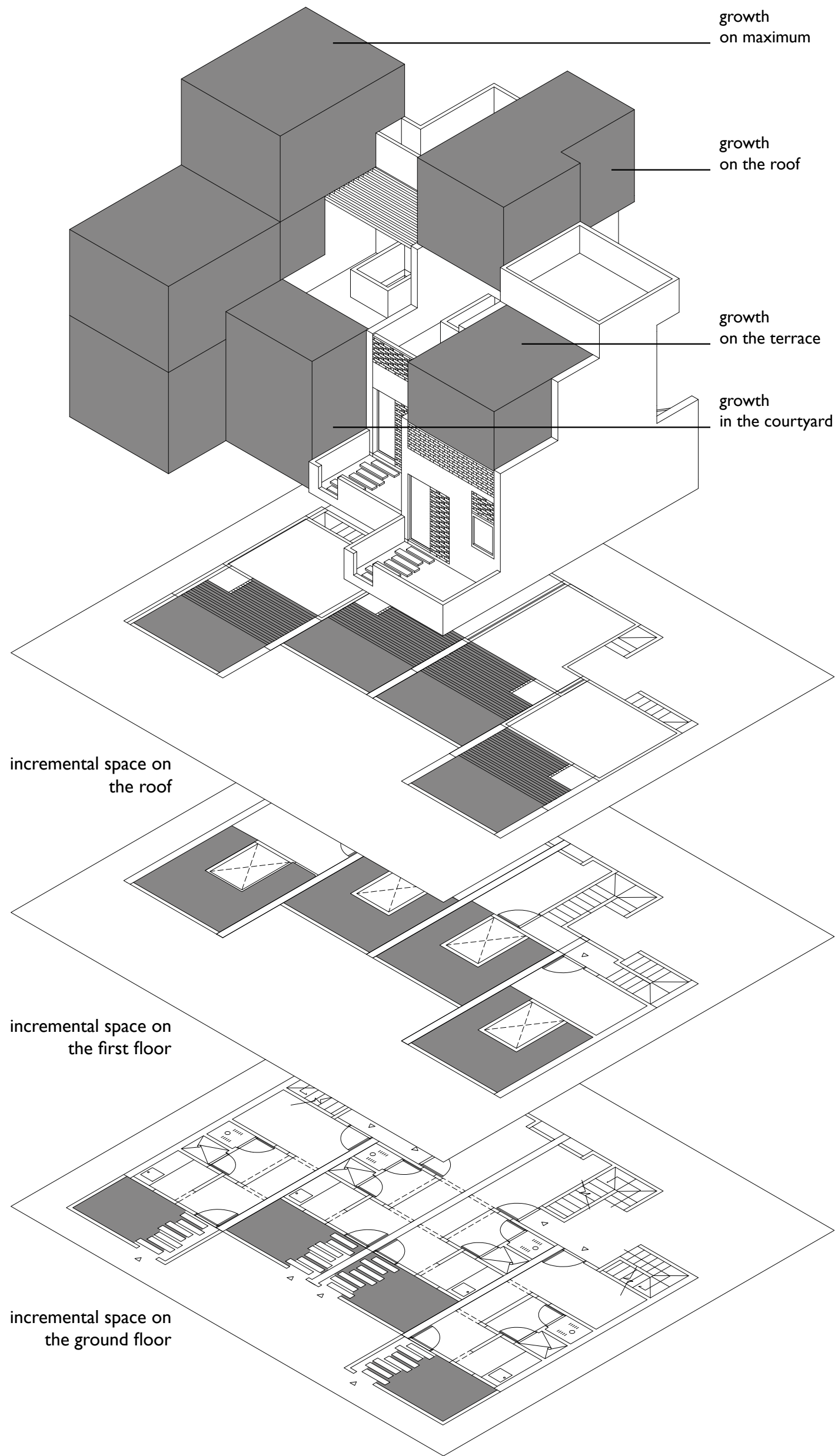
brick wall



wooden door and window
shutters instead
of expensive glass



concrete reinforced ceiling



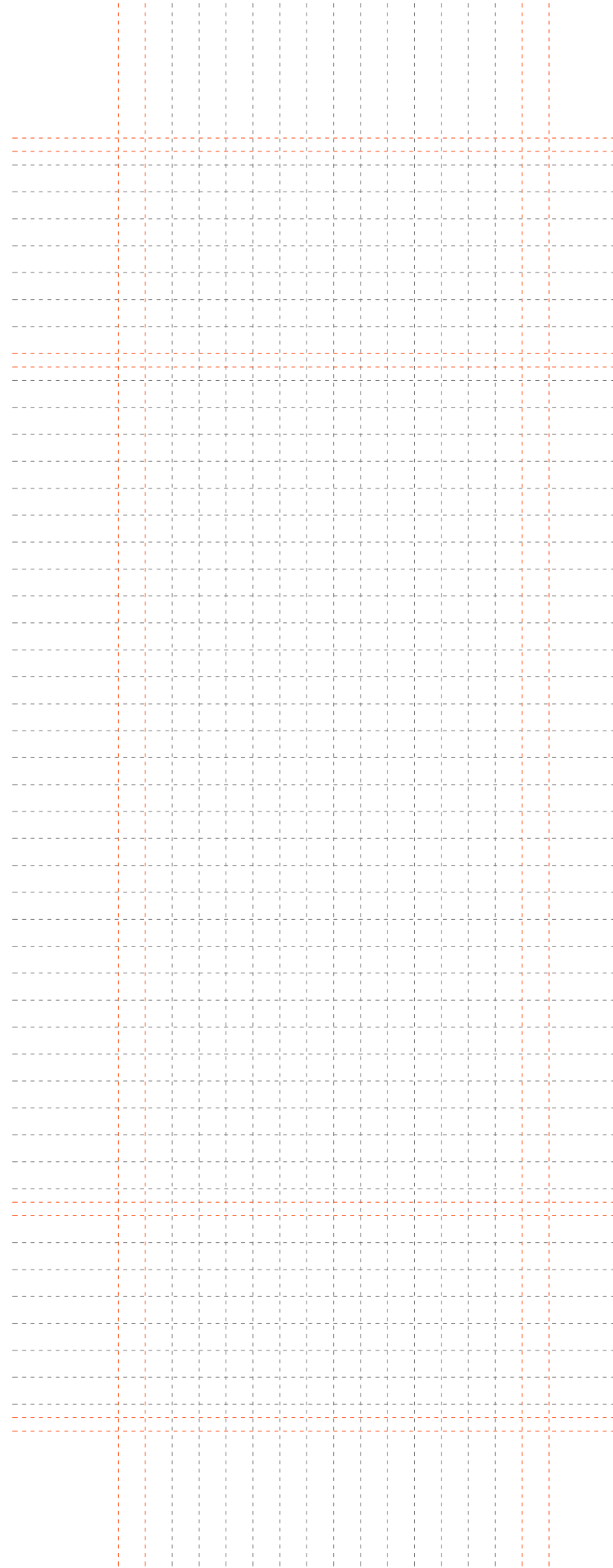


1 brick
as the basic element
12 x 24 x 8 cm

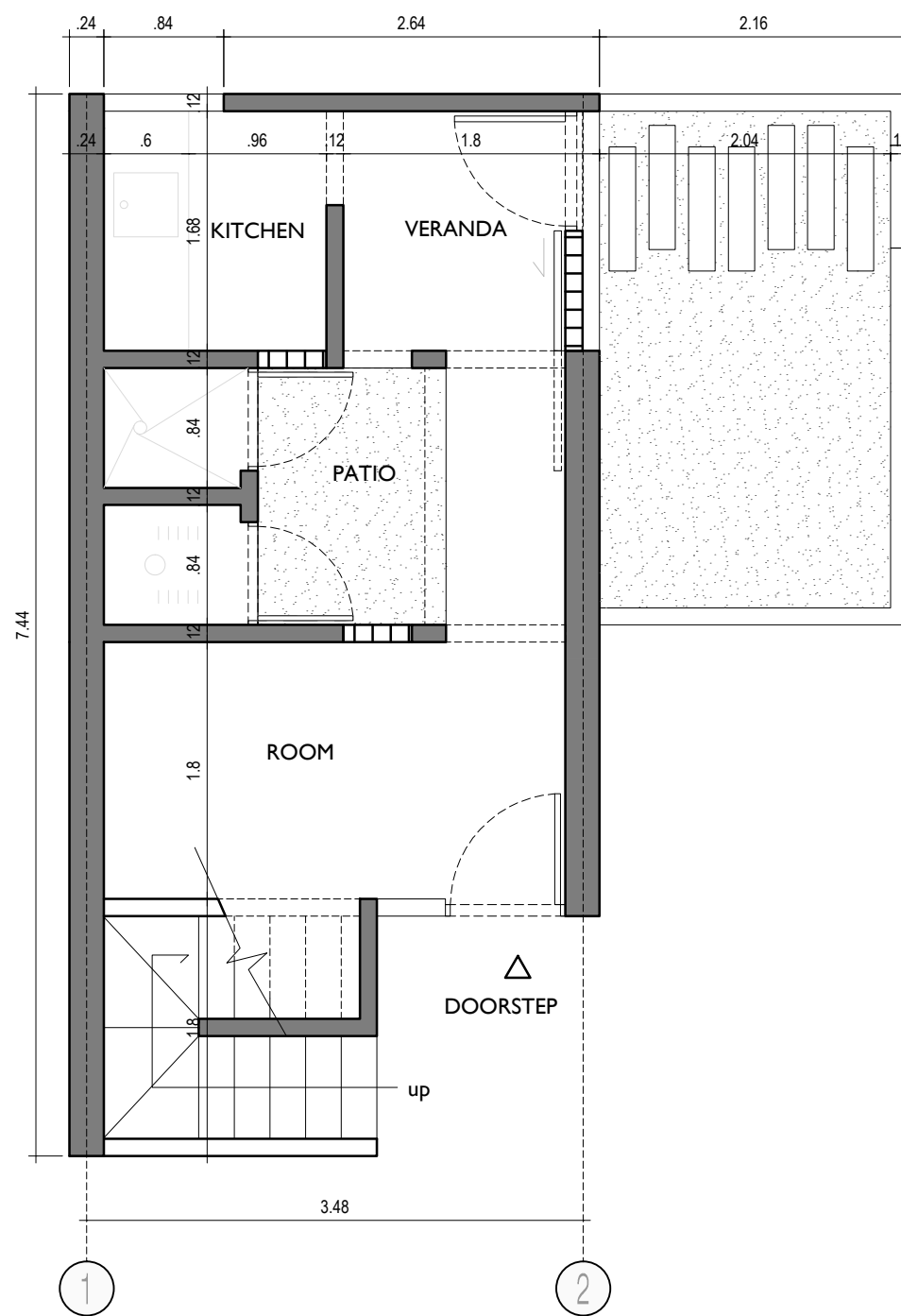


2 bricks
used for the load bearing walls
wall width 24 cm

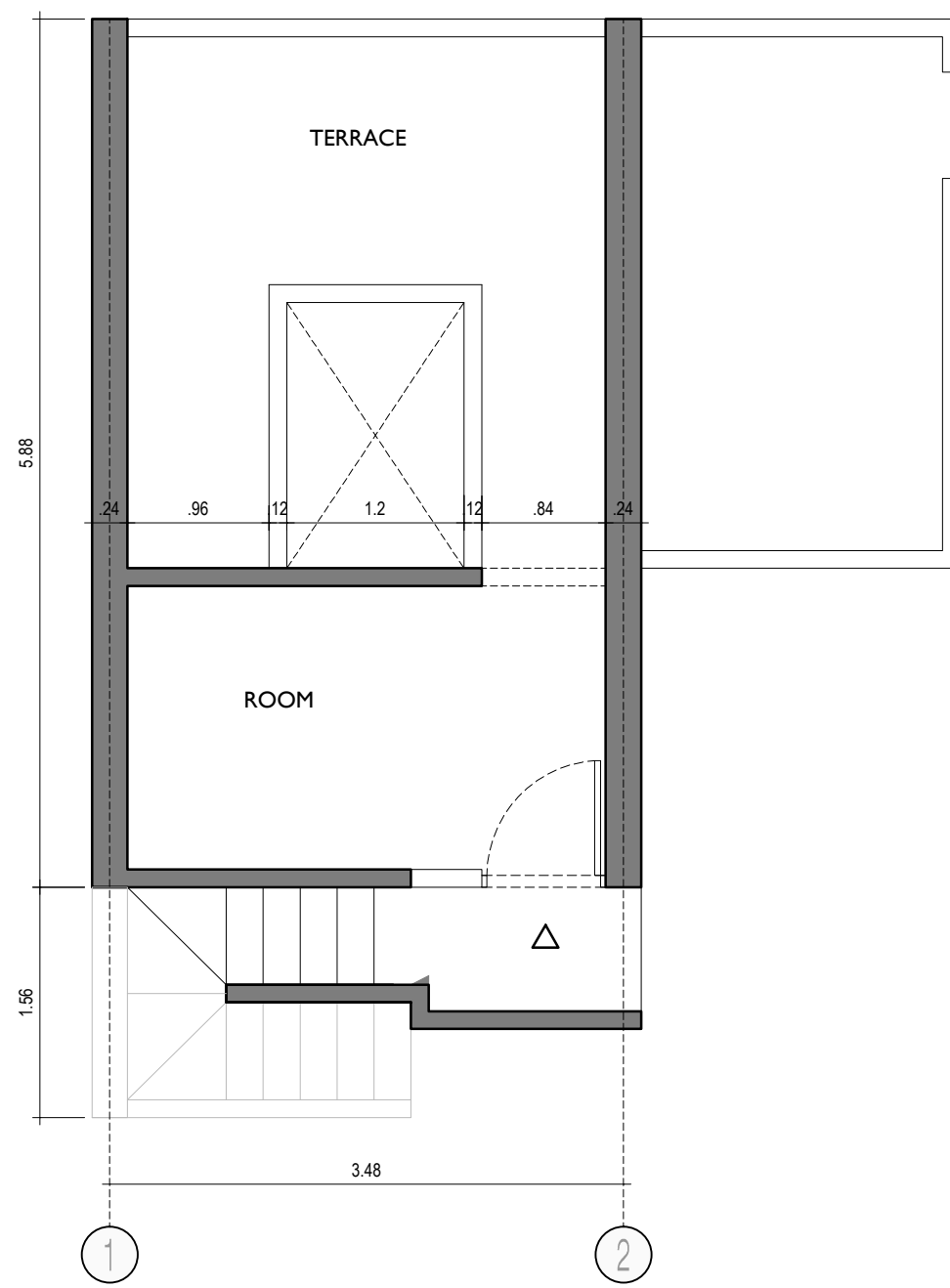
CHANDIGARH BRICK



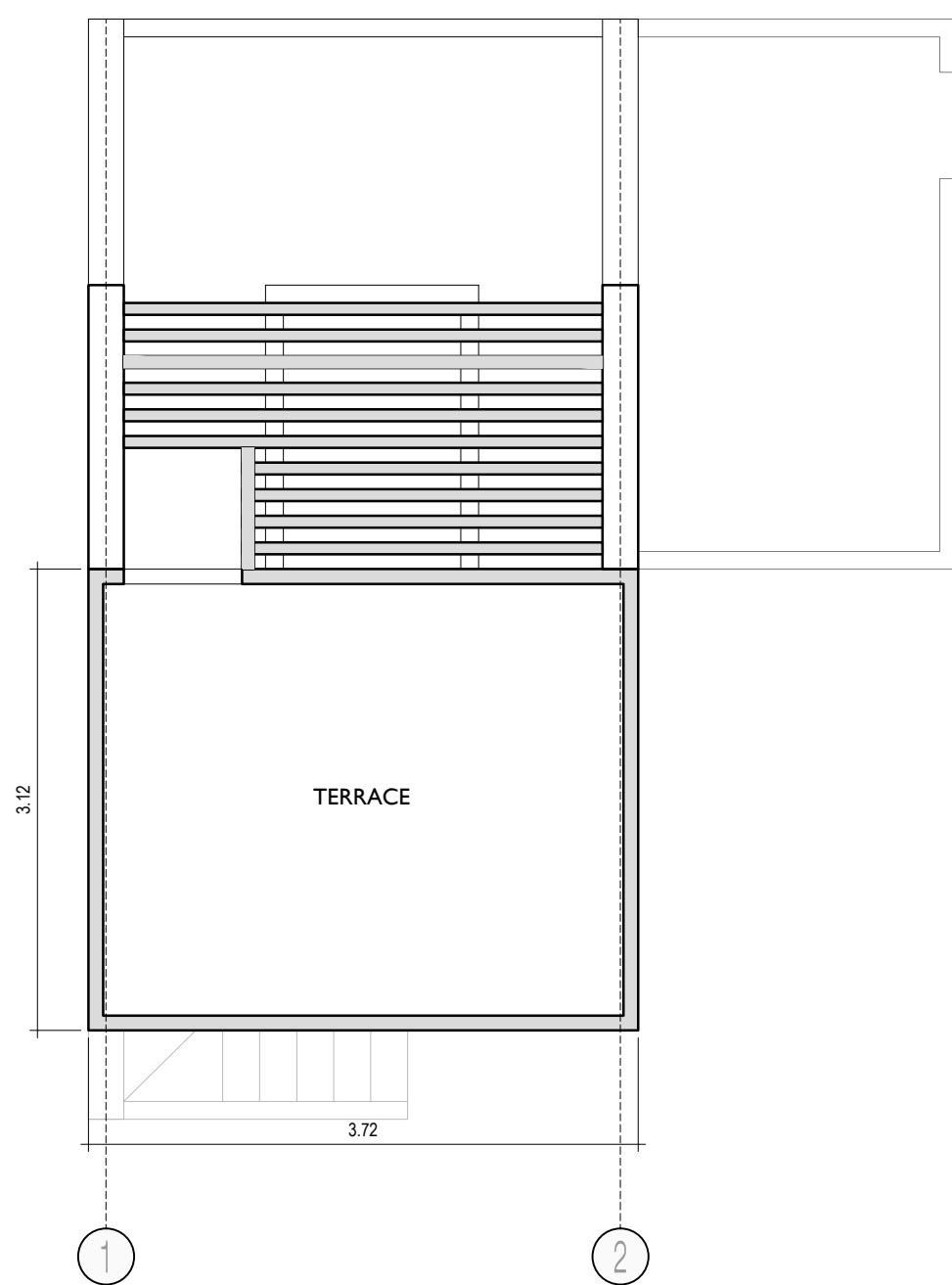
HOUSES ARE BUILT ON A MODULAR GRID 240 x 240 MM



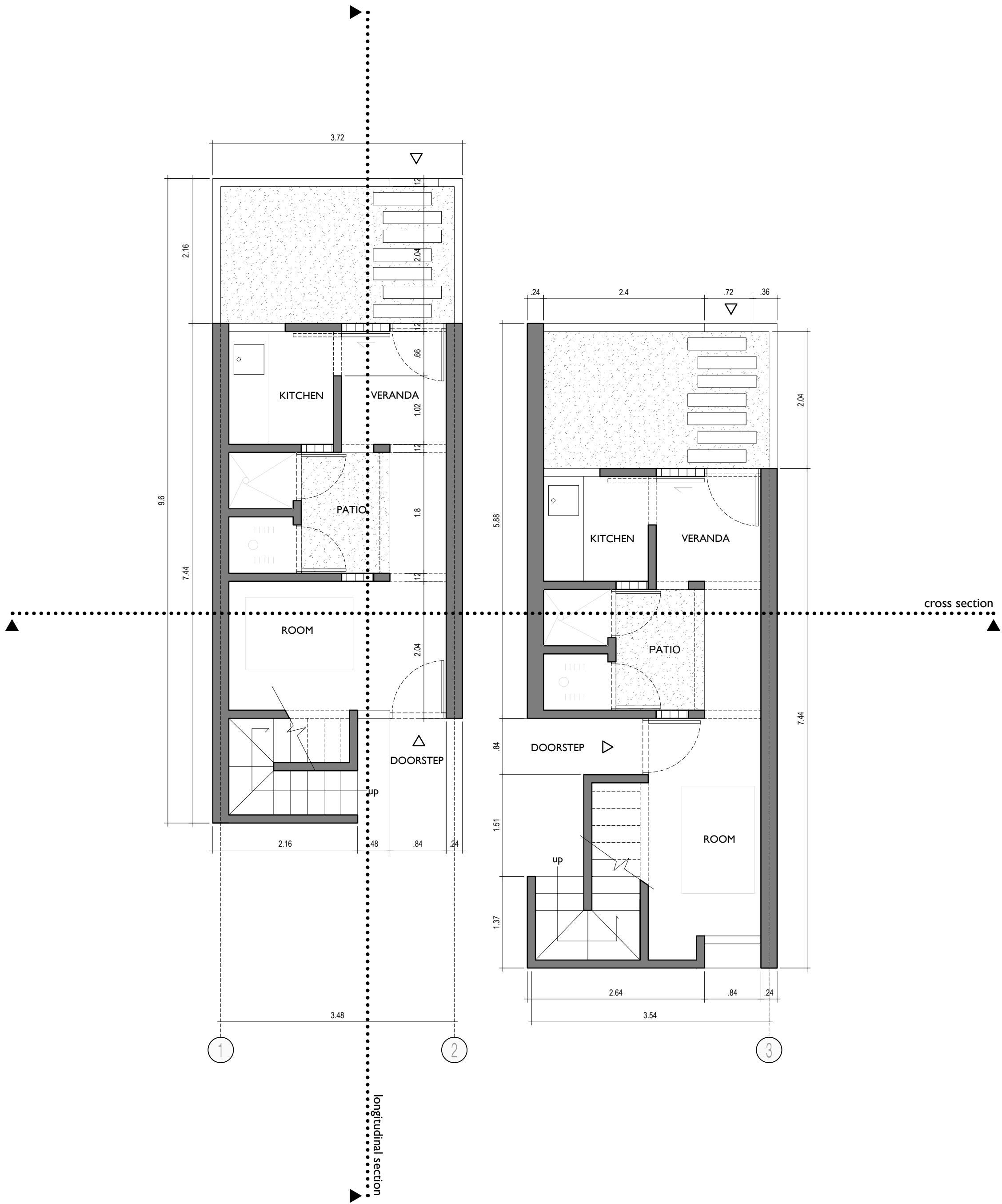
GROUND FLOOR



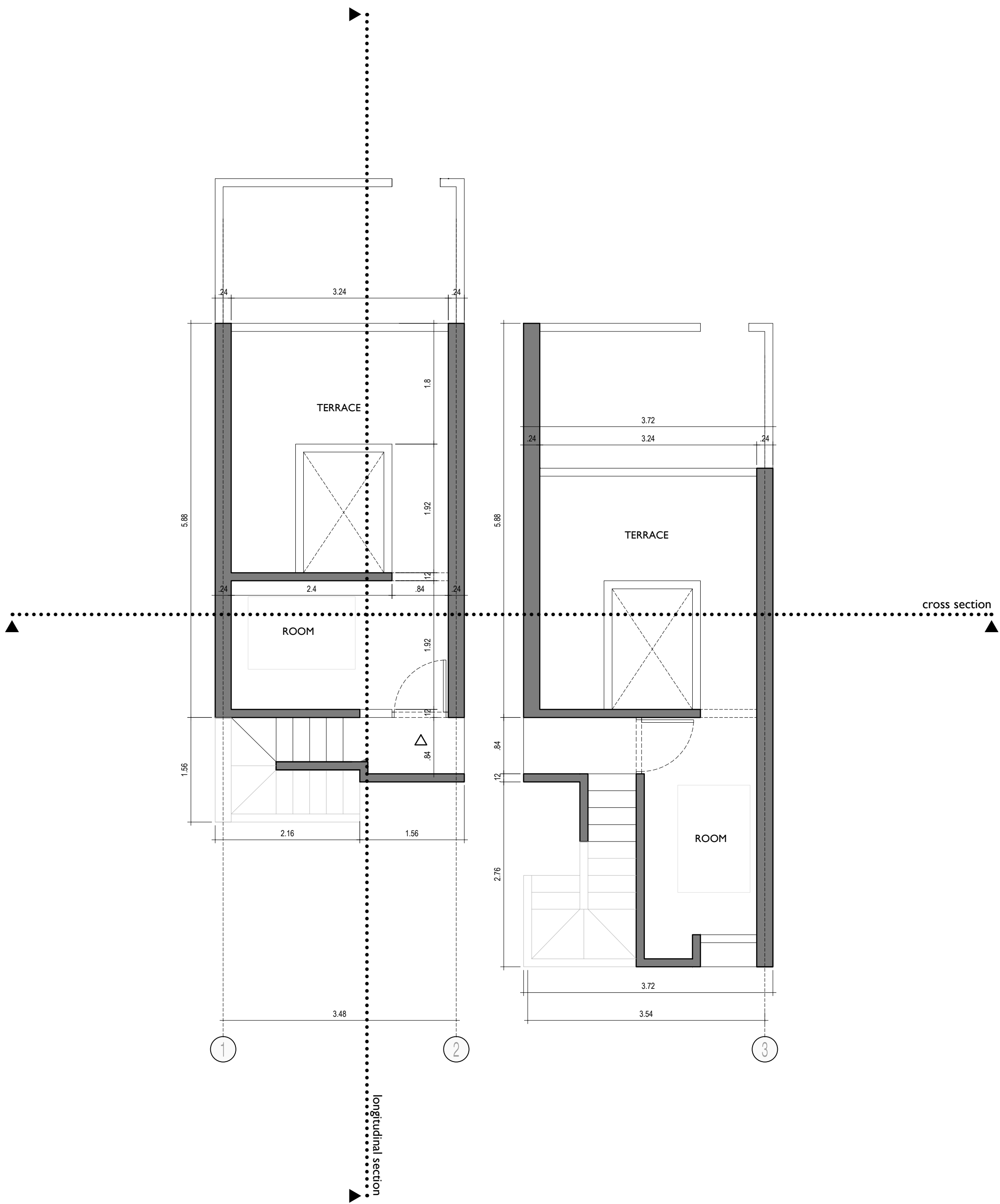
FIRST FLOOR



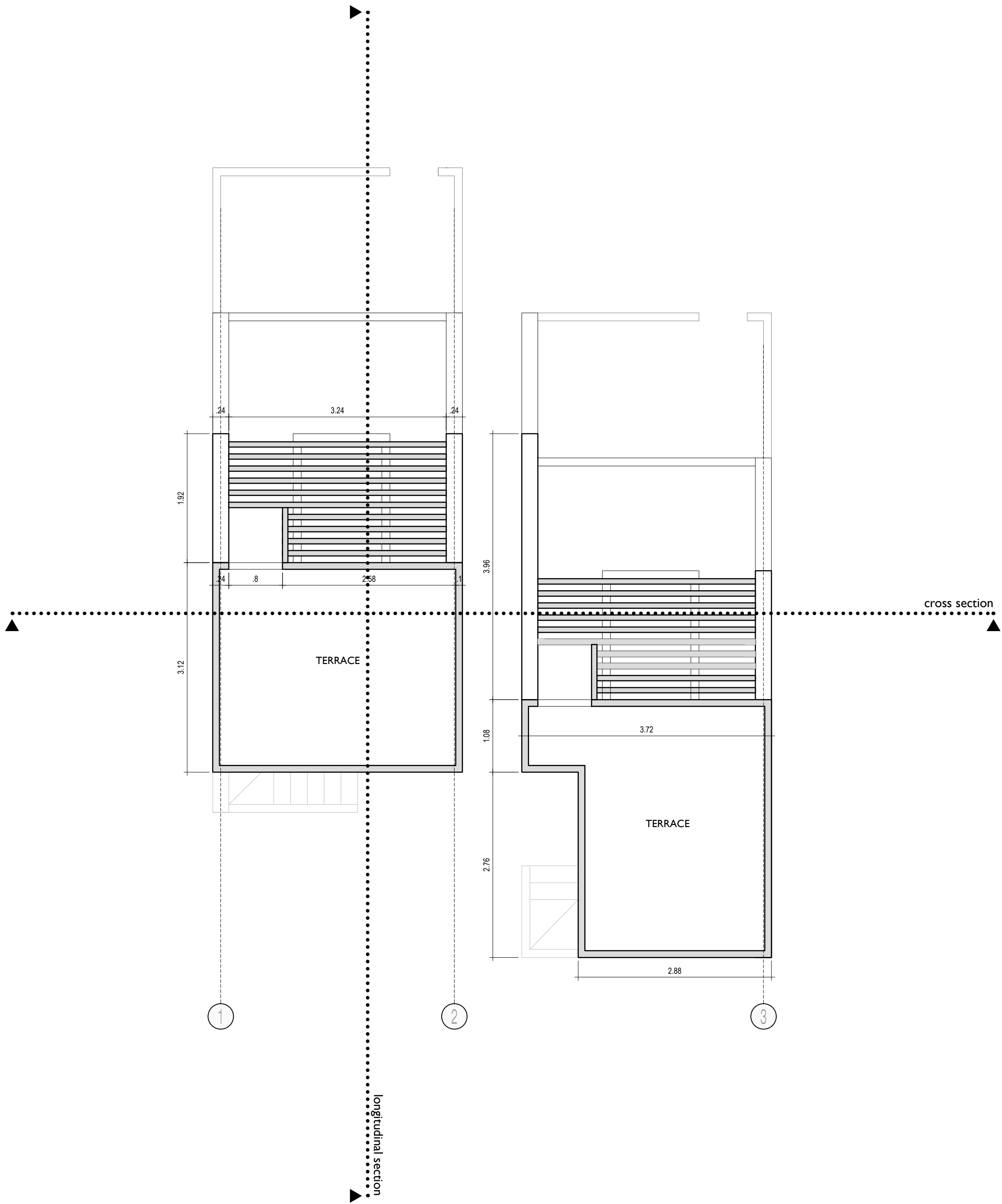
ROOF



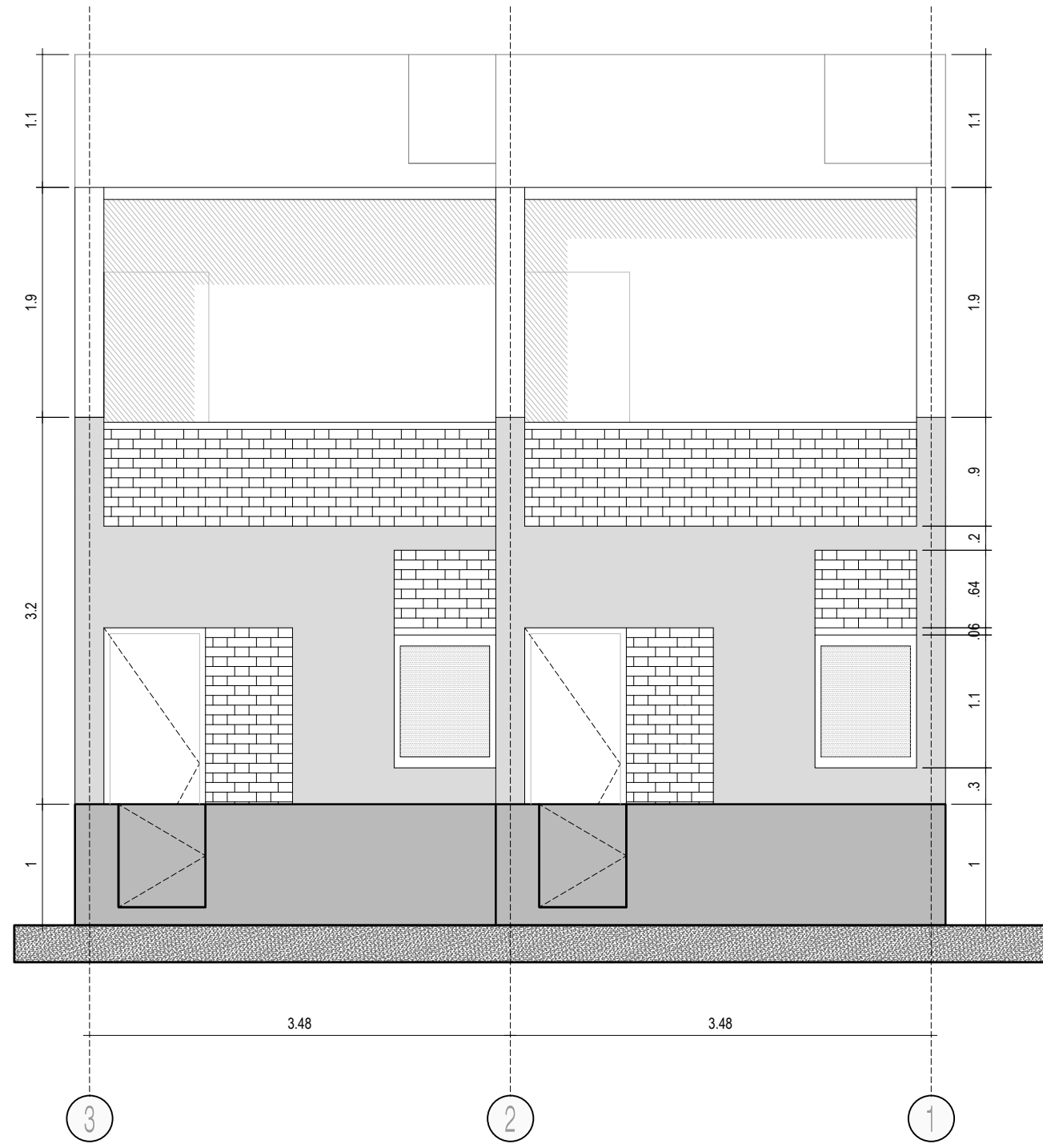
GROUND FLOOR



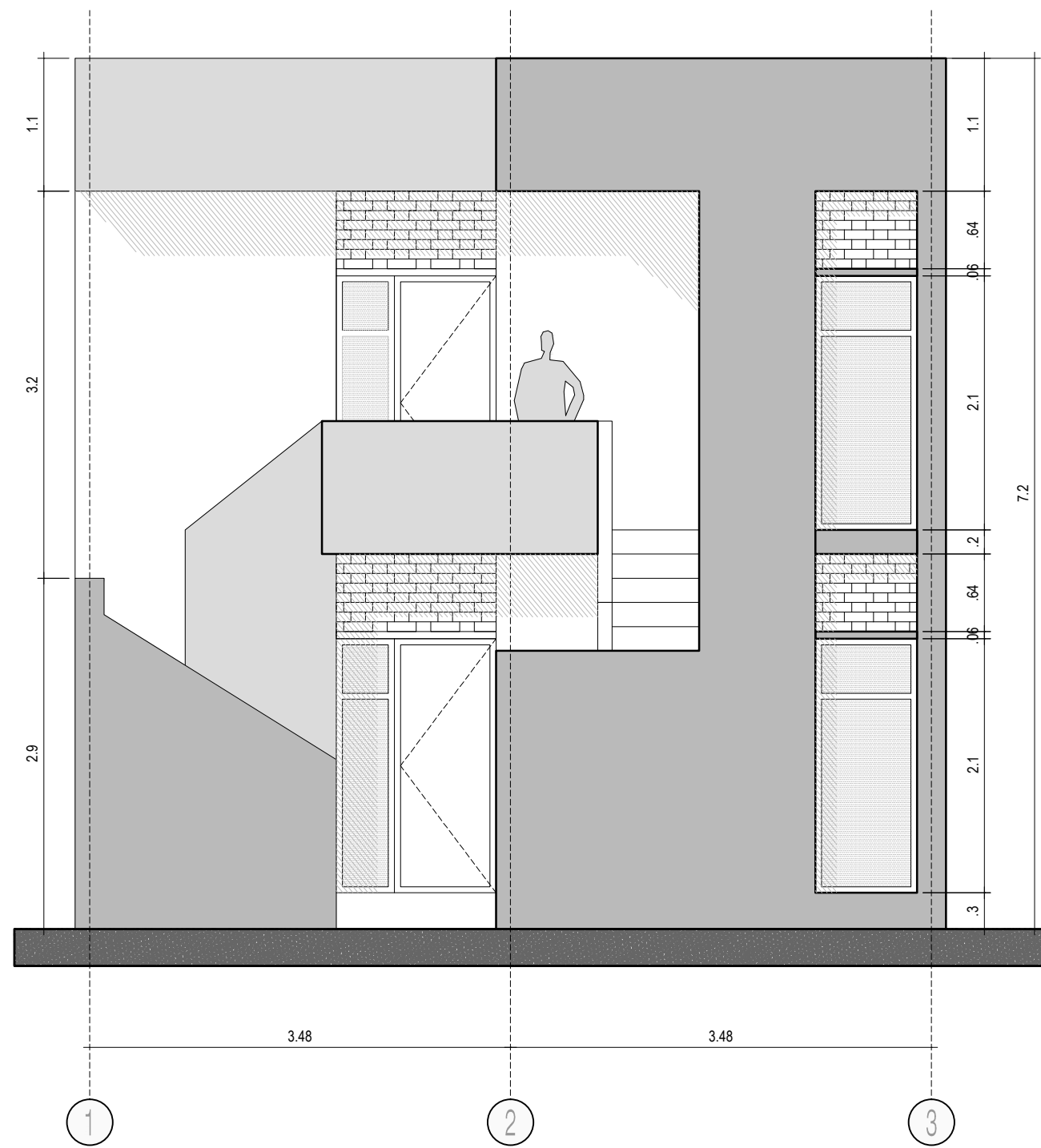
FIRST FLOOR



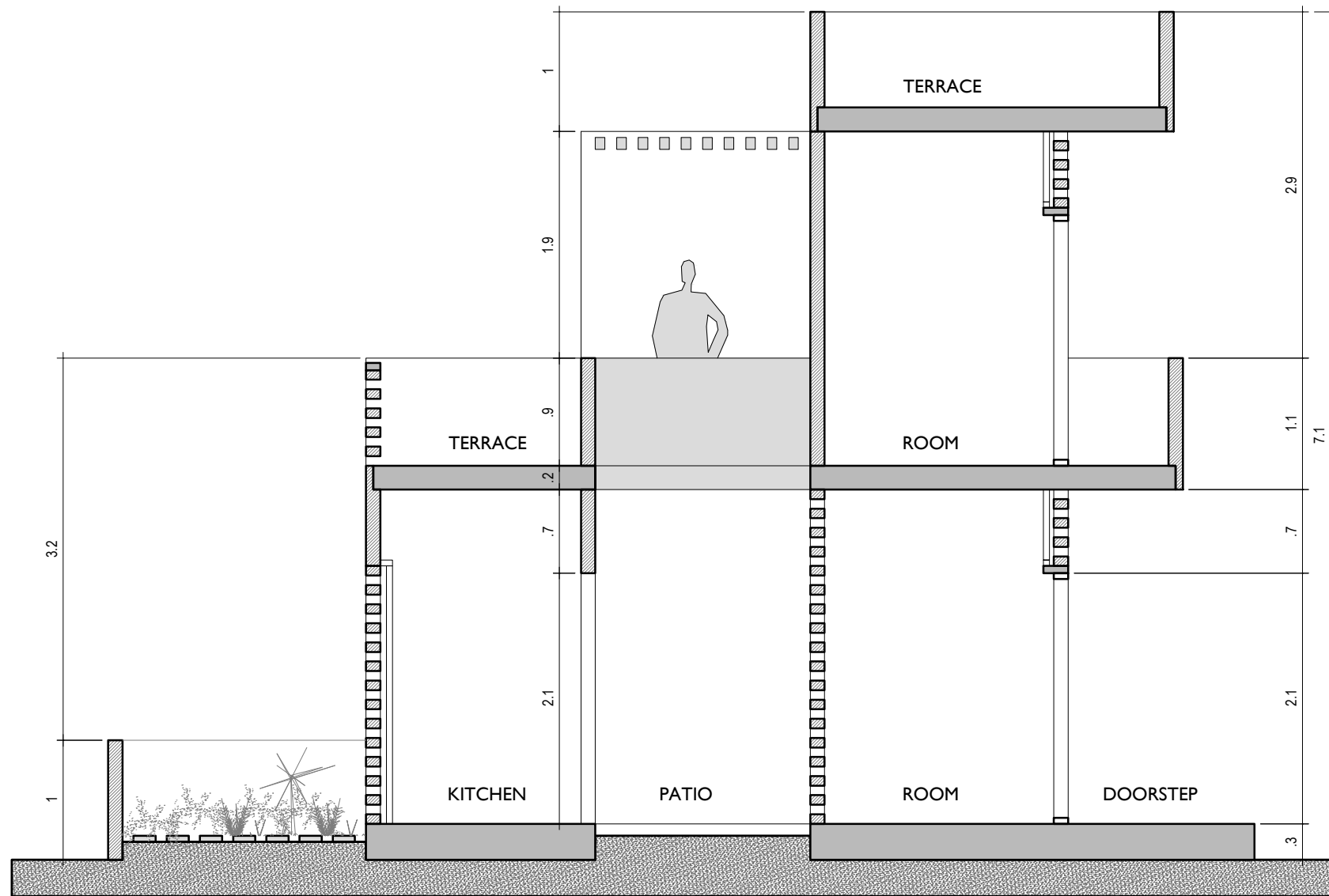
ROOF



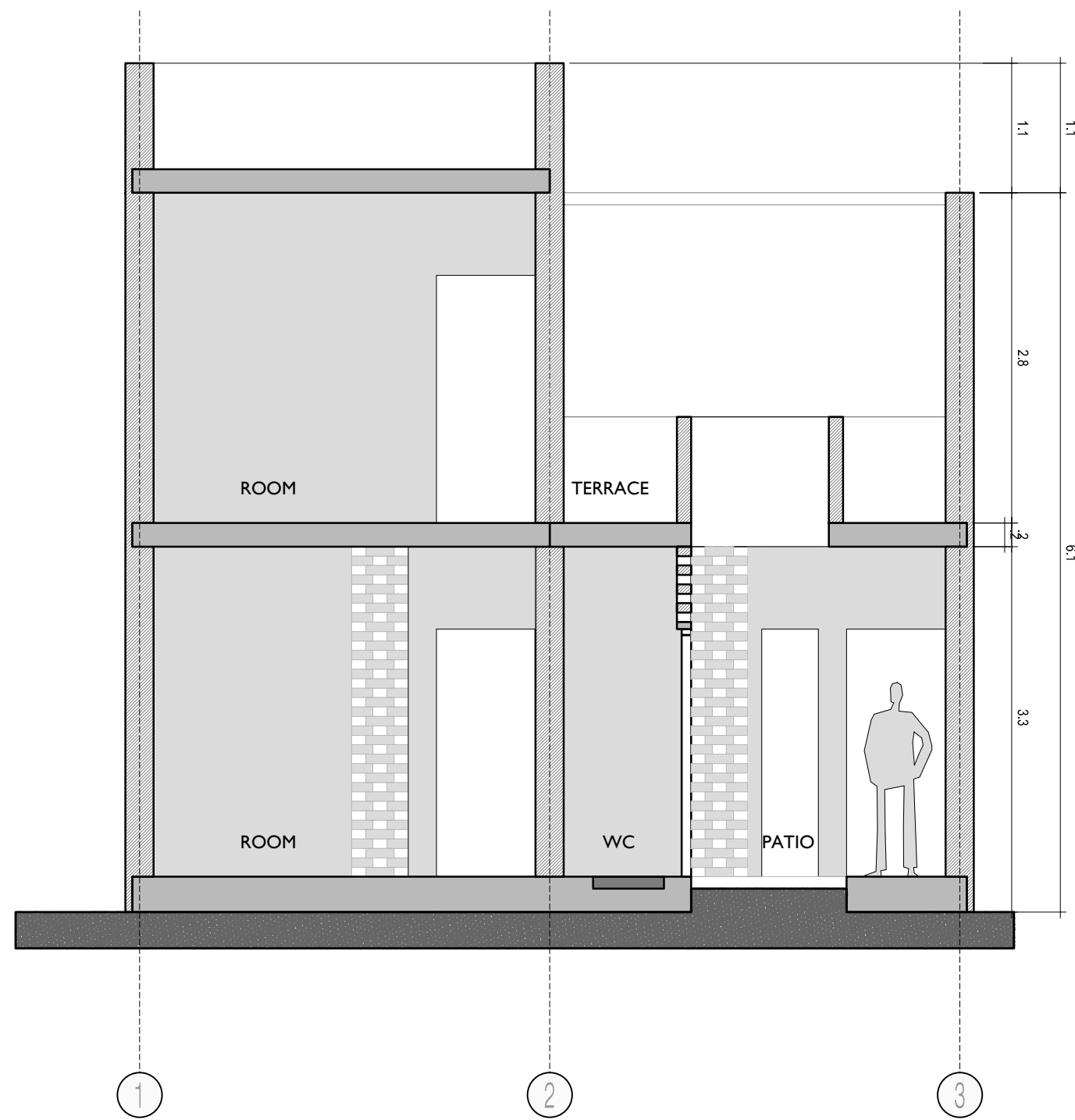
STREET ELEVATION



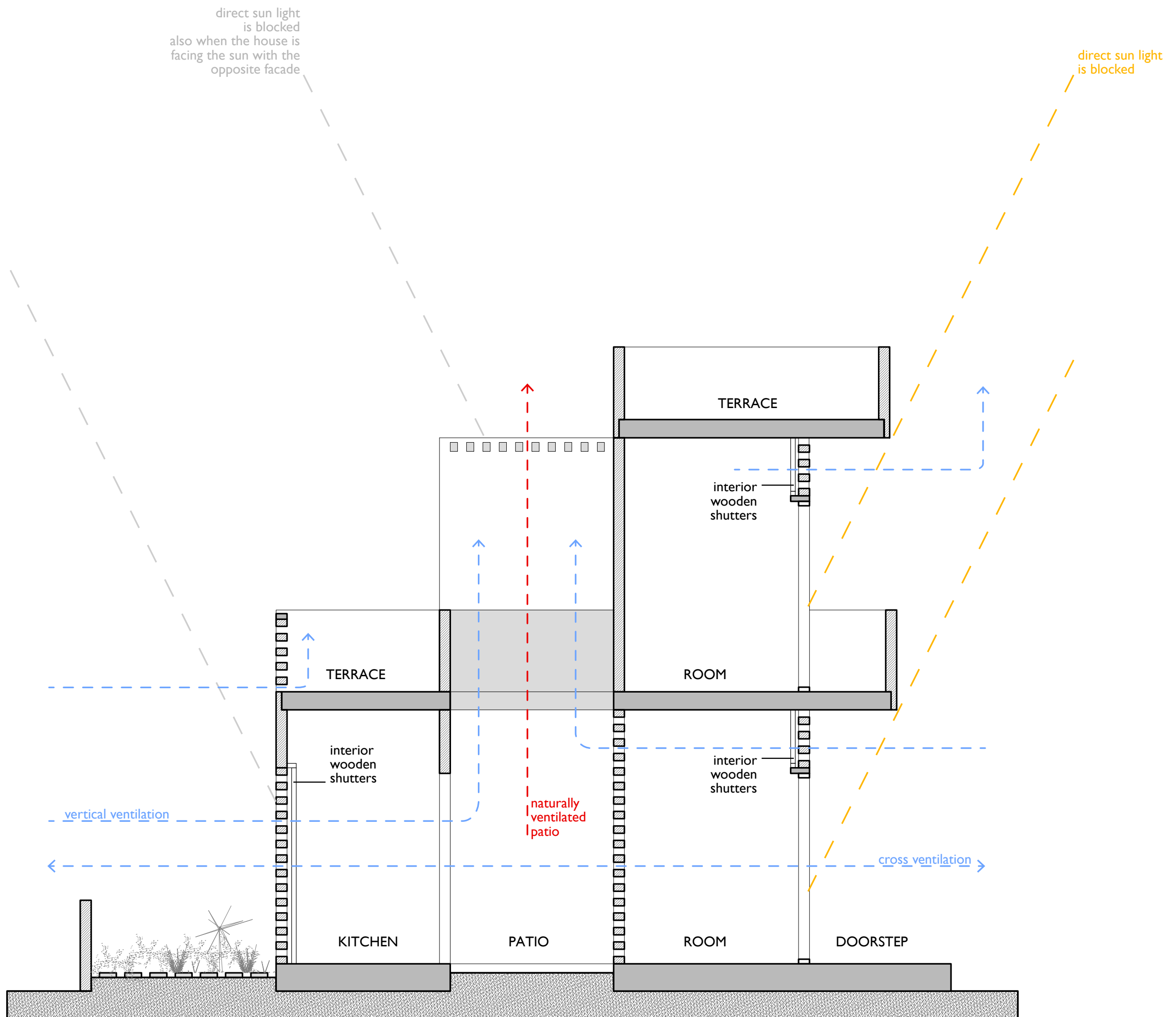
CLUSTER COURTYARD ELEVATION

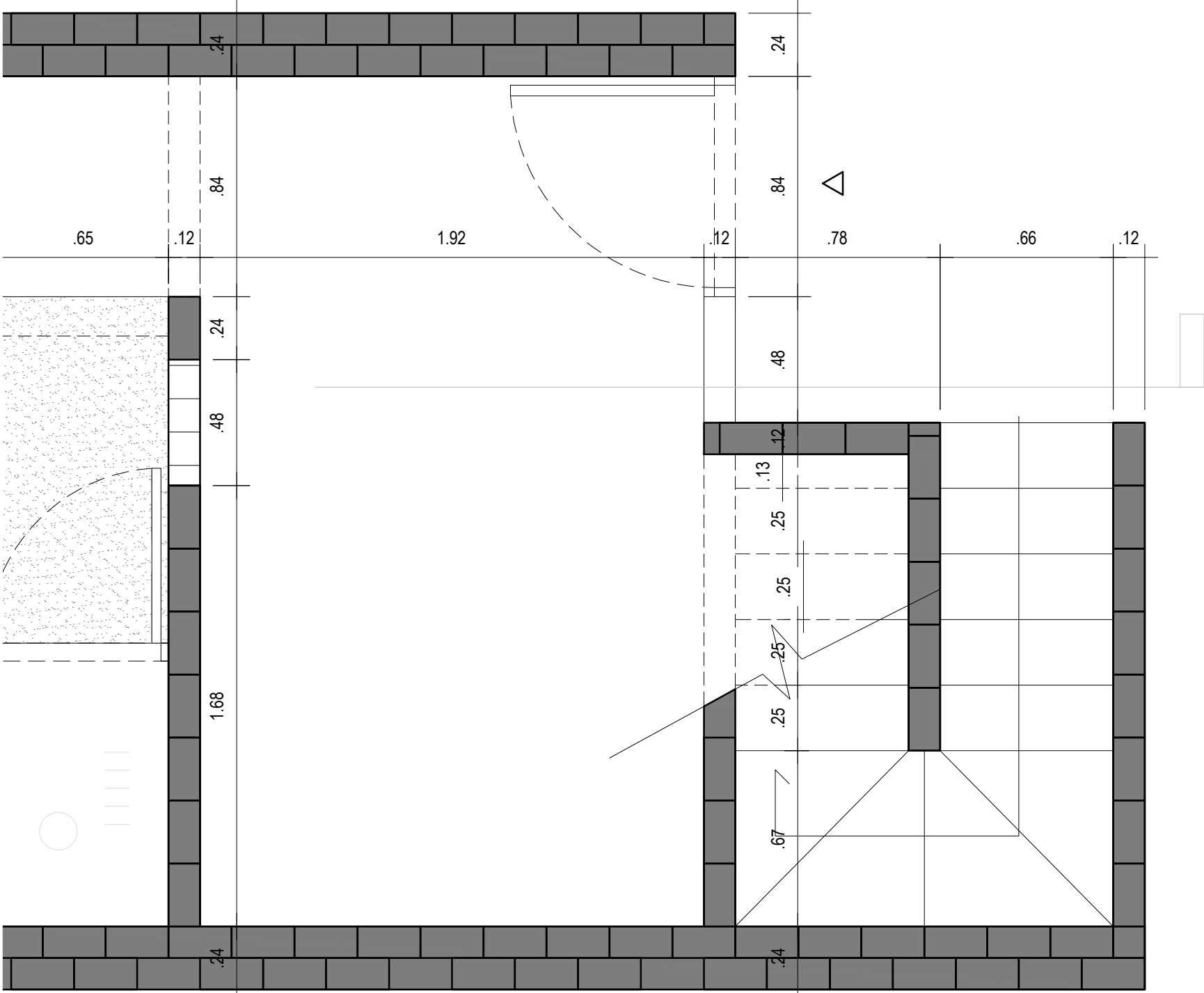


LONGITUDINAL SECTION

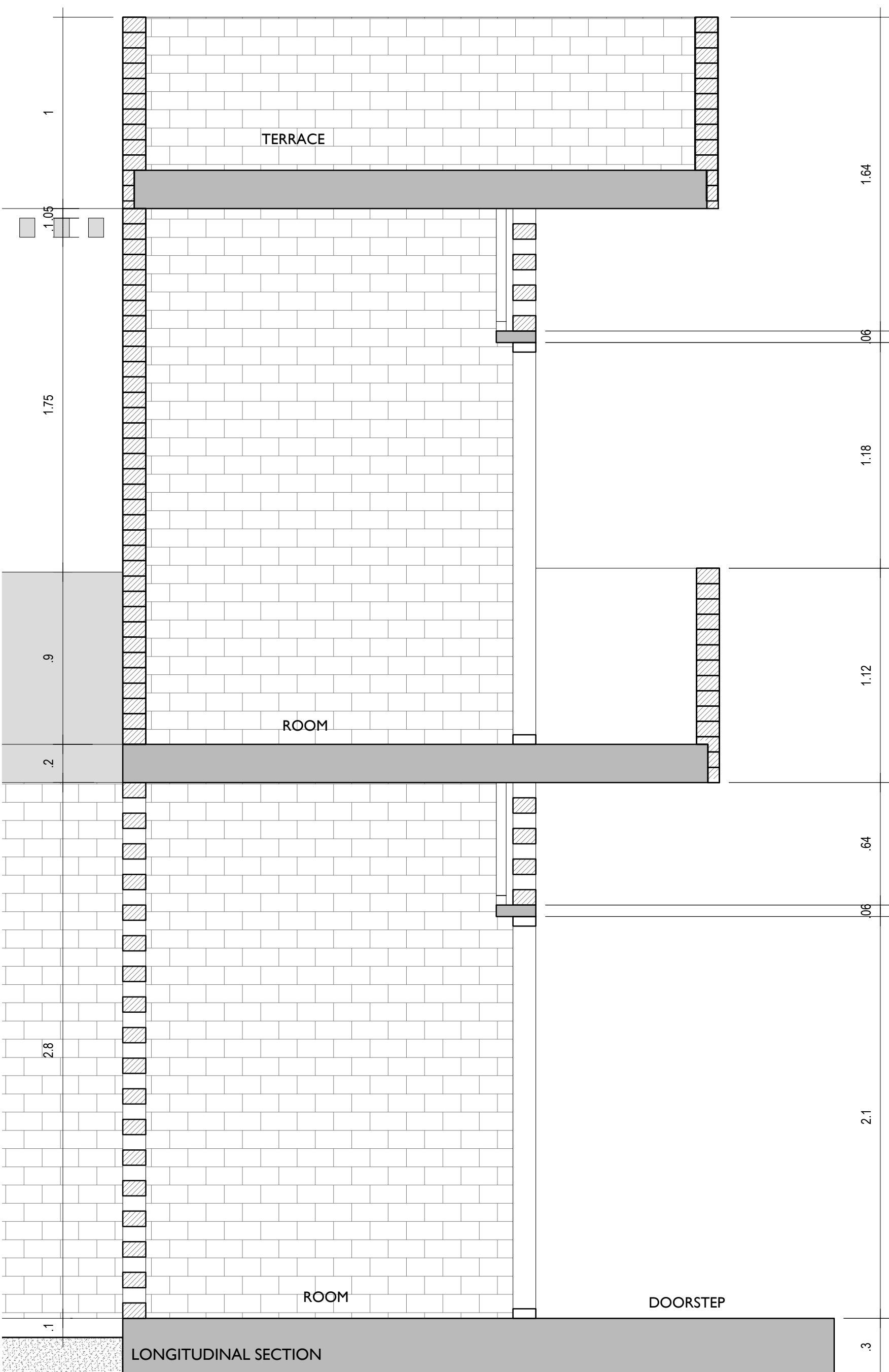


CROSS SECTION





FLOORPLAN



LONGITUDINAL SECTION

