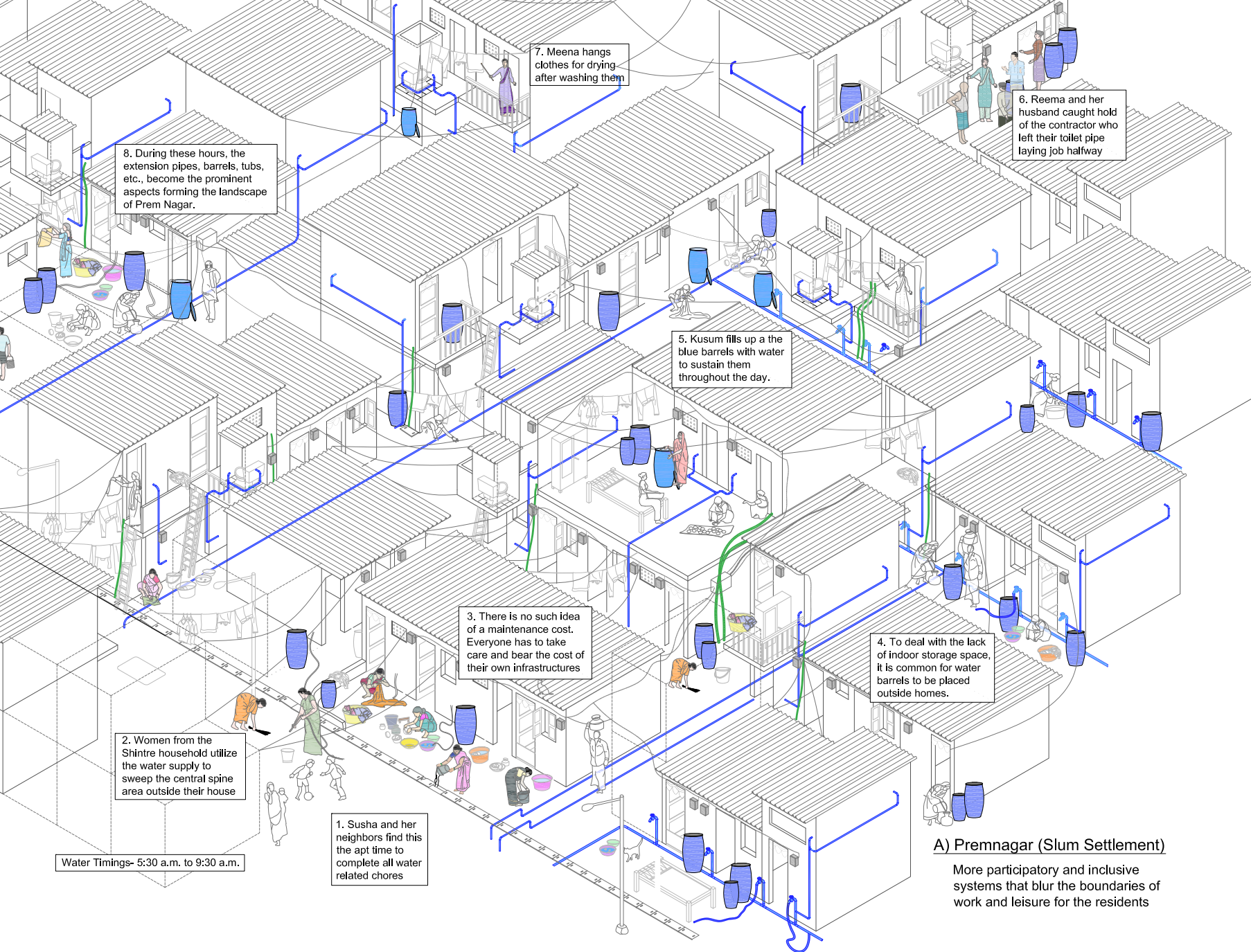
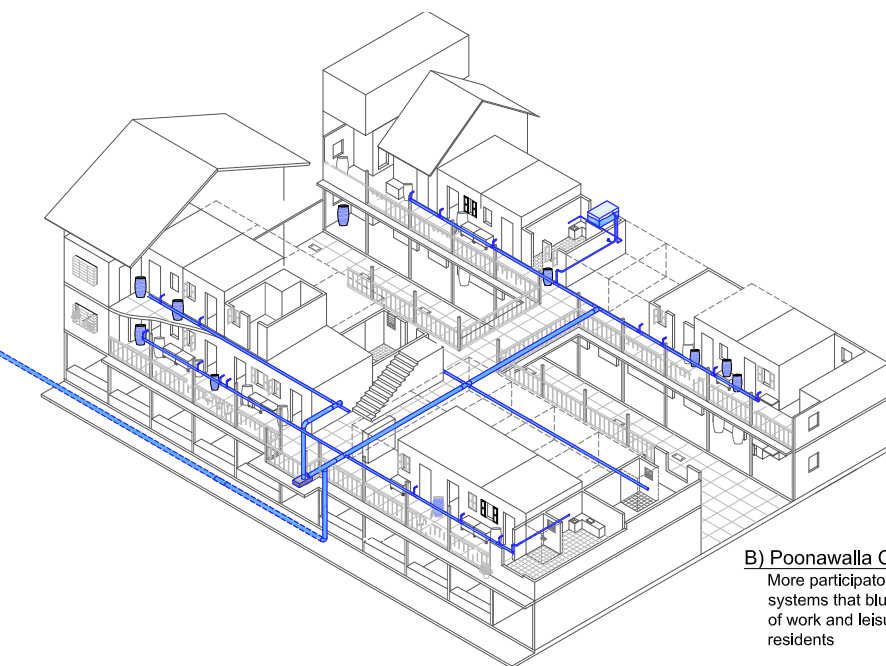


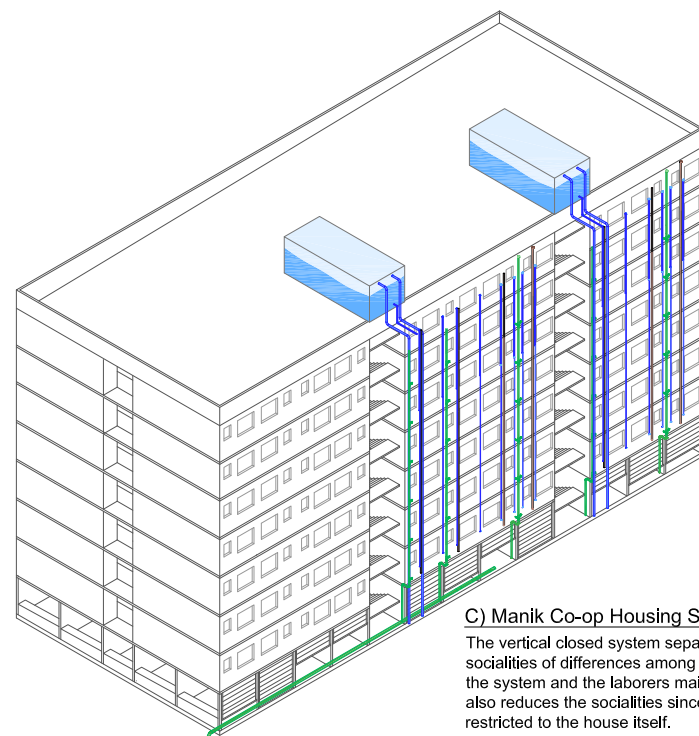


A) Premnagar (Slum Settlement)
More participatory and inclusive systems that blur the boundaries of work and leisure for the residents

Key Findings from Research:



B) Poonawalla Chawl
More participatory and inclusive systems that blur the boundaries of work and leisure for the residents



C) Manik Co-op Housing Society
The vertical closed system separates tends to pro socialities of differences among the residents using the system and the laborers maintaining the syster also reduces the socialities since the activities are restricted to the house itself.

Re-Imagining Social Housing through Everyday Infrastructures

The term 'infrastructure' is primarily used to recognize systems such as water pipelines, electrical systems, waste management, that are installed to ensure the functioning of the city. These same systems at the level of buildings are referred to as 'service systems,' and are considered as the backbone of a building and are responsible for the functioning of the same.

In contemporary times, the highest level of technological advancement in residential building types is often recognised through the infrastructural amenities the building can offer; most popularly in terms of water harvesting, electricity and waste management.

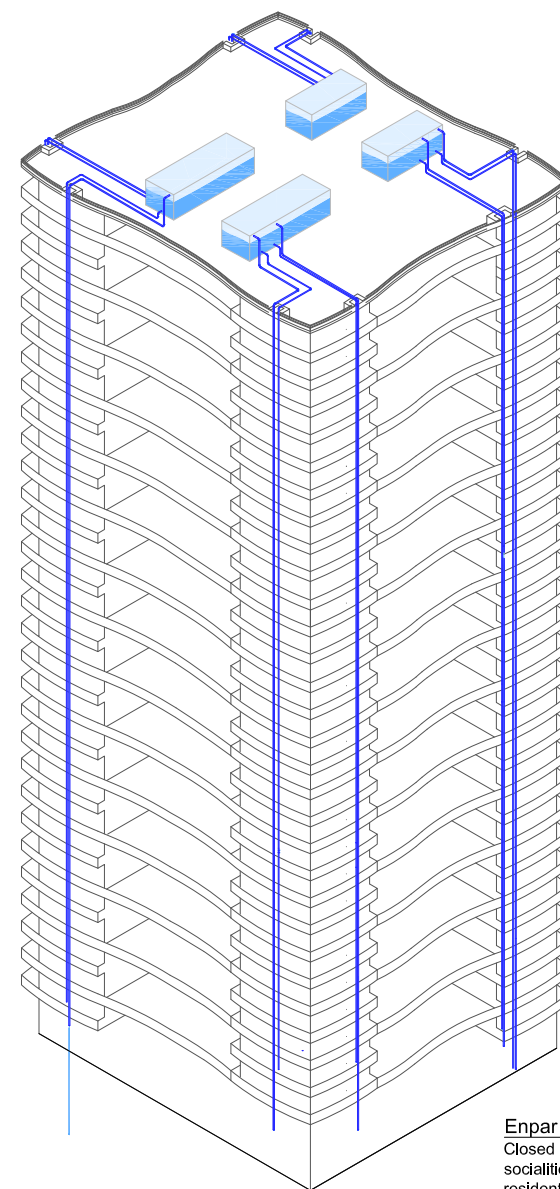
The question that emerges is:

What does this particular technological innovation offer us?

Or instead, are the newer methods of innovation in terms of service infrastructures benefiting all classes of people in terms of both technicality and social impact?

While infrastructural systems are typically perceived and evaluated based on their functional and technical aspects, it is crucial to recognize that these are social systems as well that play a pivotal role in shaping the social dynamics within various housing typologies. It is within these everyday tasks that socialities among neighbours are fostered.

Technological advancements have often led to significant changes in the way people live and the spaces they inhabit. Contemporary residential building-making practices demonstrate a noticeable shift in the formal arrangement of its infrastructural systems and elements. This shift is evident in the way social life revolves around these infrastructural systems.



Enpar Lotus Residency
Closed system which tend to produce socialities of differences among the residents using the system and the laborers maintaining the system.

In today's time, architectural progress is significantly influenced by technological advancements. However, we fail to realise that the methods for achieving these technological advancements in residential building infrastructure are predominantly driven by the developers' logic. This logic tends to perceive these systems as mere efficiency devices, often concealing them in smaller nooks and corners, which require separate maintenance.

When the same infrastructural systems are installed in low-income housing societies, they not only break the socialities that once existed amongst the inhabitants but also tend to fail due to a lack of funds for maintenance. The thesis presents a new approach that integrates both technology and sociality to create a more democratic space for living.

The design question that arises is:

How does one rethink the form of the Co Operative Housing development as a series of Infrastructural Socialities produced by our everyday infrastructures?

The design proposes a cooperative housing society for low income housing through the infrastructural systems of rainwater harvesting, waste management systems and electricity plugins as fundamental systems that bring the building together.

Site

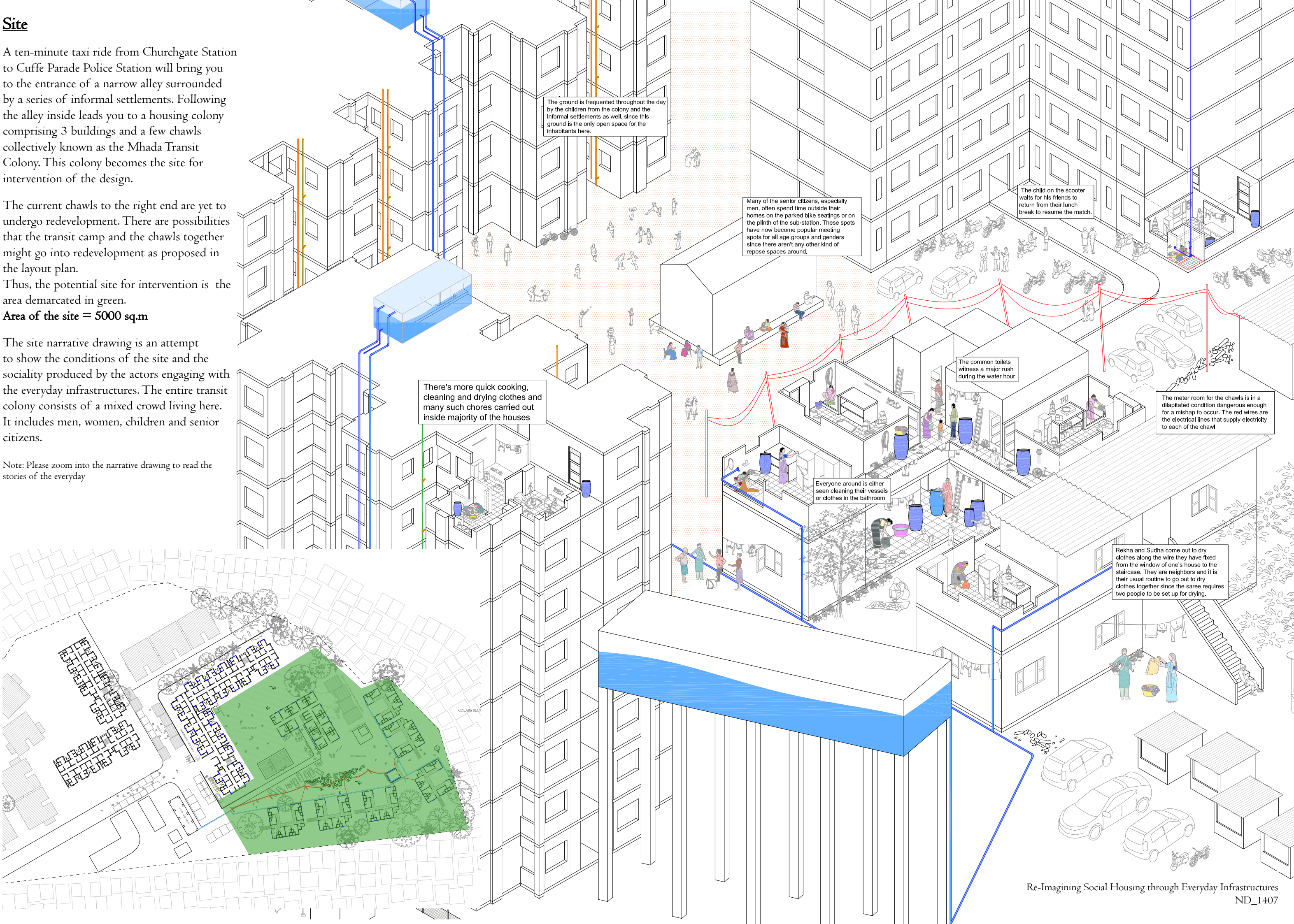
A ten-minute taxi ride from Churchgate Station to Cuffe Parade Police Station will bring you to the entrance of a narrow alley surrounded by a series of informal settlements. Following the alley inside leads you to a housing colony comprising 3 buildings and a few chawls collectively known as the Mhada Transit Colony. This colony becomes the site for intervention of the design.

The current chawls to the right end are yet to undergo redevelopment. There are possibilities that the transit camp and the chawls together might go into redevelopment as proposed in the layout plan. Thus, the potential site for intervention is the area demarcated in green.

Area of the site = 5000 sq.m

The site narrative drawing is an attempt to show the conditions of the site and the sociality produced by the actors engaging with the everyday infrastructures. The entire transit colony consists of a mixed crowd living here. It includes men, women, children and senior citizens.

Note: Please zoom into the narrative drawing to read the stories of the everyday



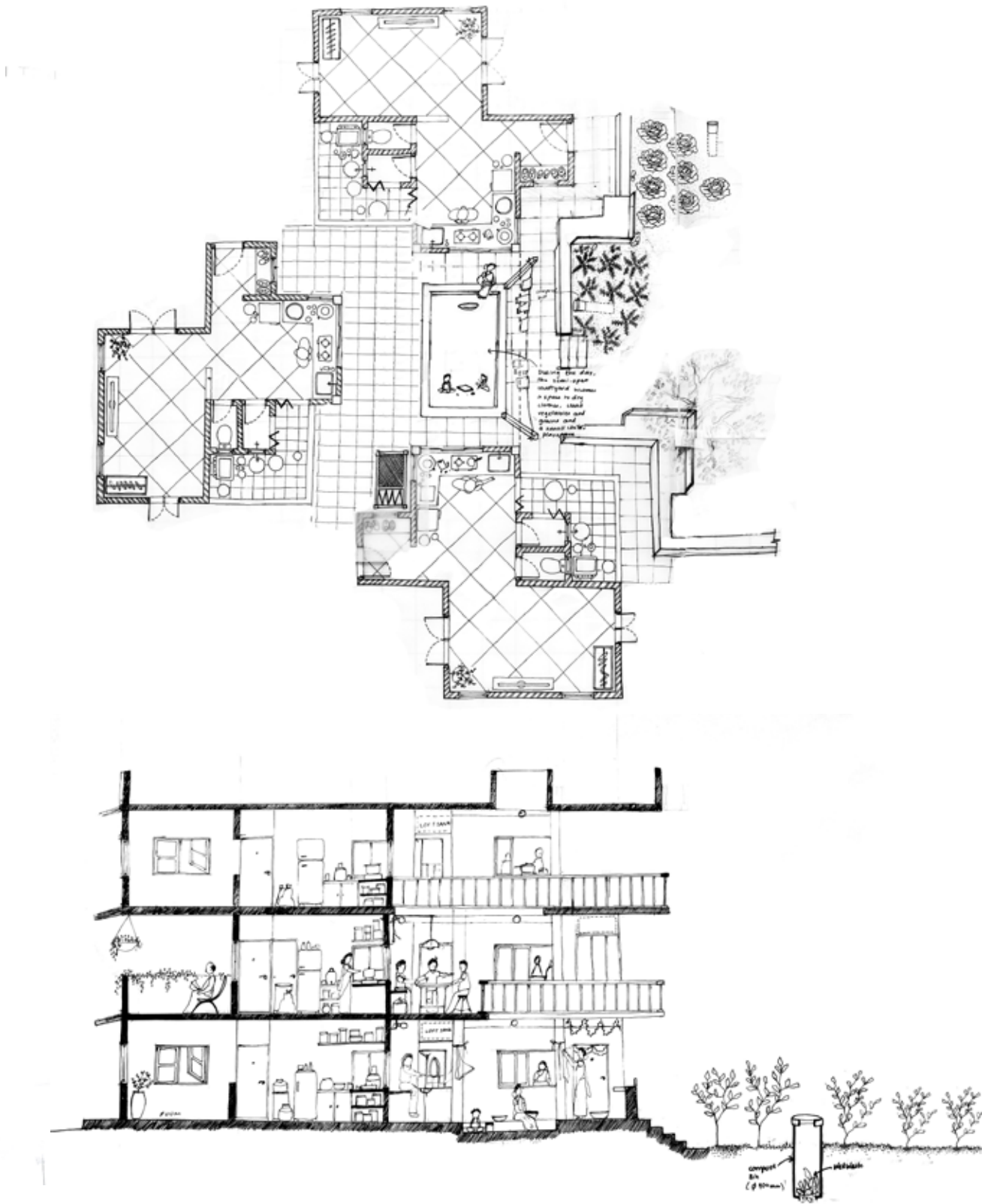
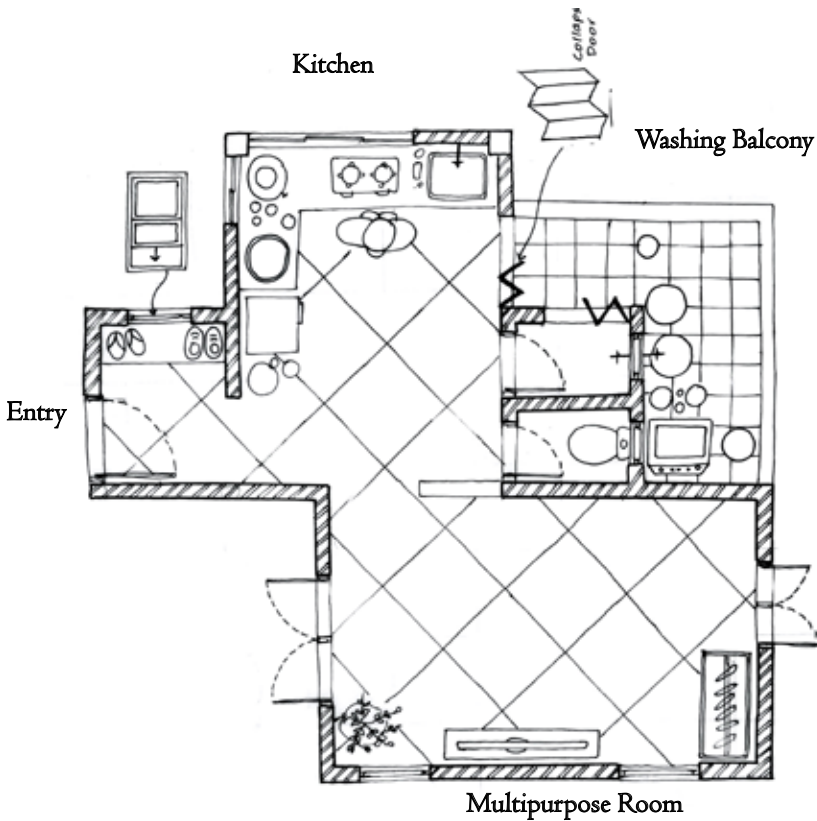
Housing Unit

The design conversations with the residents living in the Mhada Transit Colony were translated to work out a nuanced design.

The housing unit is designed such that the cooking space is placed upfront and bathroom and toilet spaces are adjacent to the cooking space.

A washing balcony offsets itself from the toilet and bathroom area.

This small intervention enables the bathroom and kitchen to expand and open into the washing balcony, creating a more comfortable and spacious area for carrying out household chores with maximum natural light entering into the most active zones of the house.



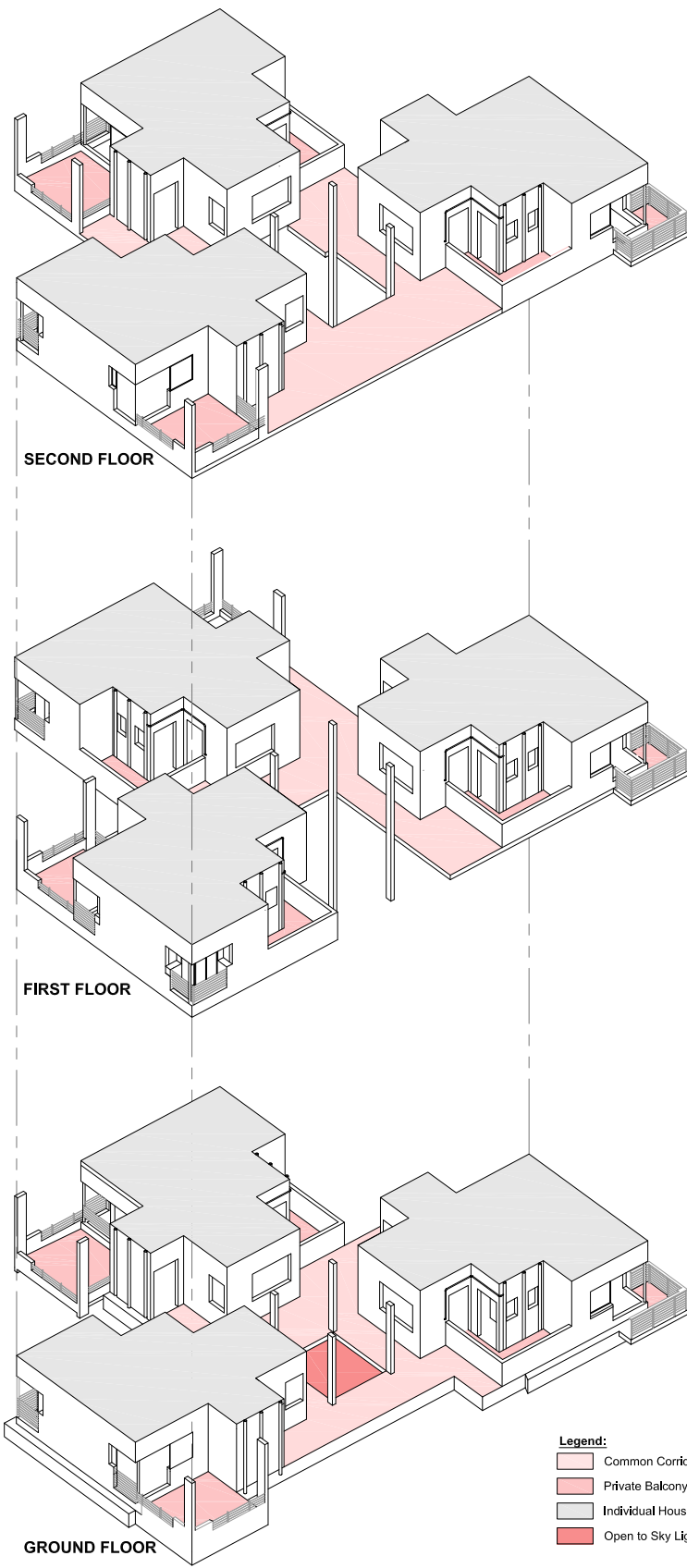
Cluster of 3 Houses

This house was rotated and repeated two more times to create a cluster of three houses.

The logic of the rotation of the houses is such that the cooking space for all three houses opens up into the common corridor and the washing balconies adjacent to it can maintain visual interactions at different levels while carrying out their tasks.

Corridor

The corridor is one of the most important aspects of the building. It is designed to create a light well that illuminates all the corridors throughout the day. At the same time, the play in the corridor not only creates double-height spaces regulating light and ventilation but also the thickening of the corridor at certain parts allows for everyday social life to spill outside the home.



Plans

Taking ahead the idea of the 3-house cluster, a housing scheme is proposed. The arrangement of the buildings in the housing scheme is with the help of the idea of the 'Service Courtyards.' Two-three buildings share common compost gardens and their inbetween spaces then start becoming the service courtyards. These service courtyards hold compost gardens where the organic waste generated in homes allows for a kitchen garden to thrive. This garden eventually becomes an extension of the homes and in the evenings becomes a place for repose.



GROUND FLOOR PLAN

CUT AT +1.5 M
SCALE 1:200

Sections

The sections give one an overall idea of the form, and how the play in the corridors and the overlooking workspaces generate everyday socialities around infrastructures. Zooming into the sections one can read out stories around infrastructures of the compost gardens, service balconies and common corridors.

Note: Please zoom into the narrative drawing to read the stories around infrastructures



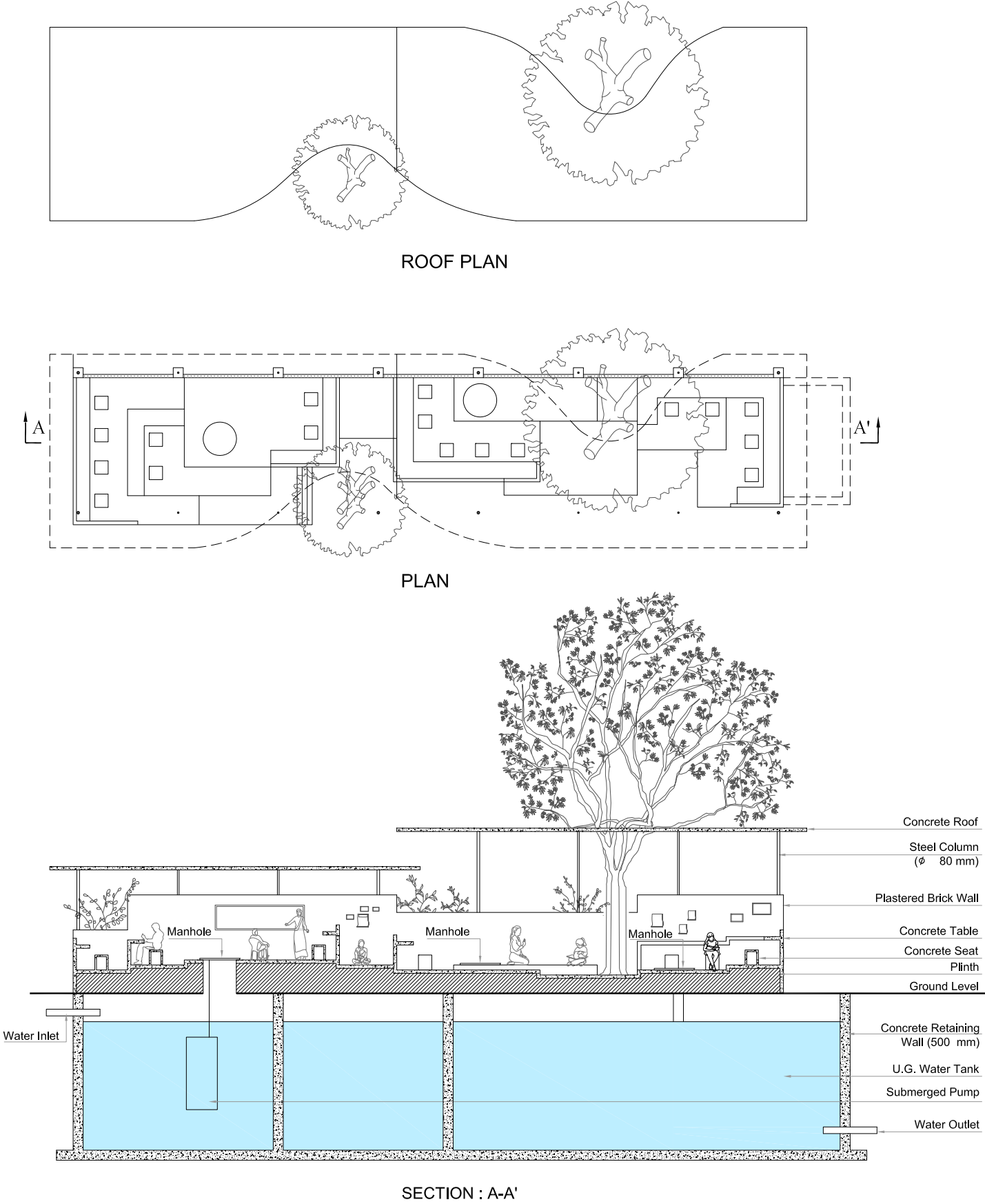
Section AA'



Section DD'

The overall design intervention is thus able to create a more inclusive and a democratic space with respect to everyday infrastructures and thereby is able to question the everyday practices of society through the lens of class, difference and caste.

Rainwater Tank as Study Space and Compost Gardens Calculations:



Rain Water Calculation:

Formula to Calculate Maximum Rainwater Harvesting Capacity:

Maximum rain harvesting capacity (in liters)

■ Roof area (in sq. meter.) x Annual average rainfall (in mm)

Area of the roof of one cluster = 232 sq.m

Maximum rain harvesting capacity (in liters) = Roof area*Annual rainfall

= 242*2213 = 5,35,546 liters per block

Multiplying the runoff factor,

Maximum rain harvesting capacity (in liters) = Roof area*Annual rainfall

= 242*2213 = 5,35,546 liters per block

Multiplying the runoff factor,

Maximum rain harvesting capacity for 1 block (in liters)

= 5,35,546 liters * 0.9

= 4,81,992 litres (per year)

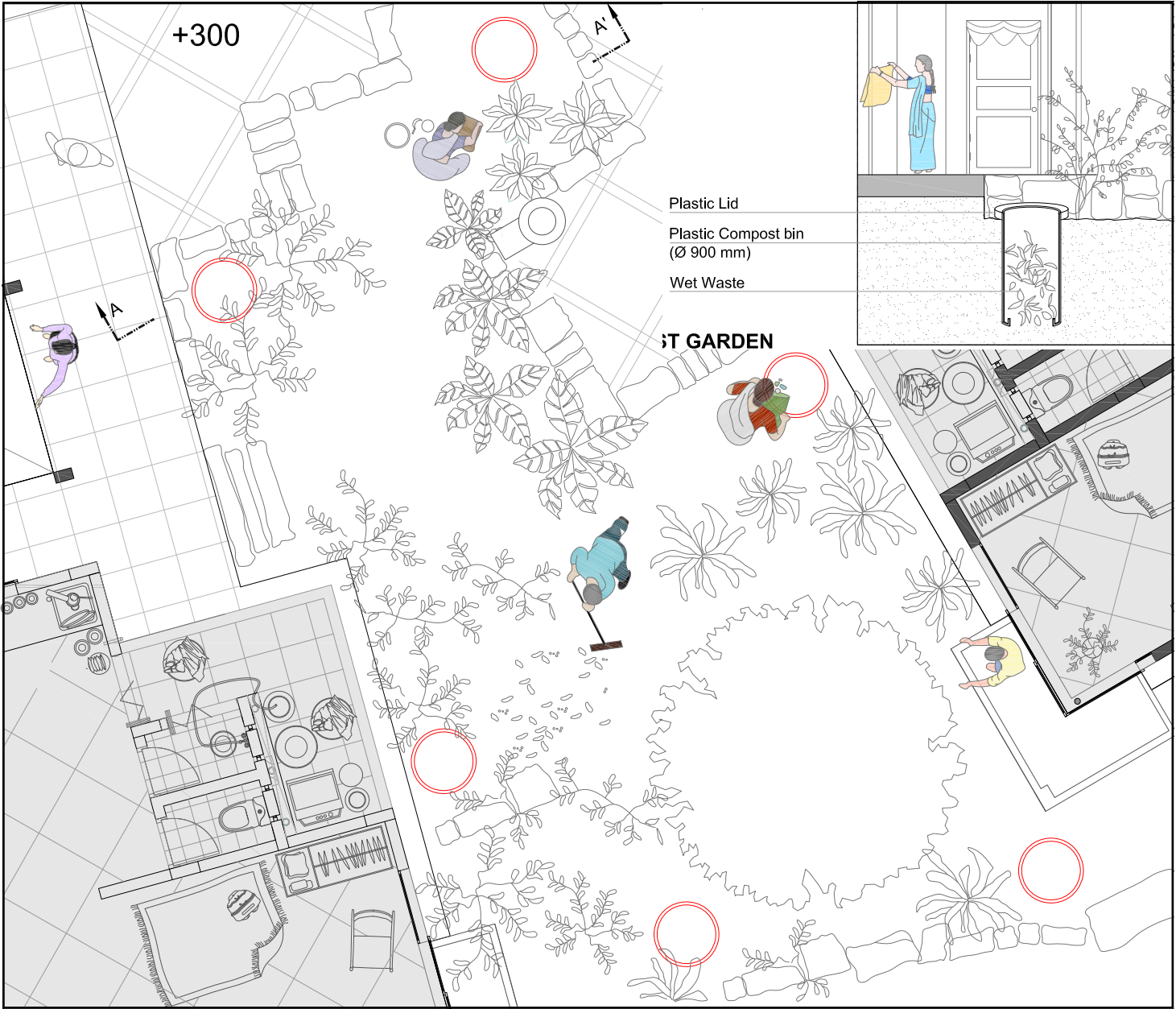
Now, there are 9 blocks, thus,

Maximum rain harvesting capacity for 9 blocks (in liters)

= 4,81,992 liters * 9

= 43,37,925 liters

Water tank size for one building = 12*8.5*5 m3



Compost Bin Calculation:

Wet waste generated by one family each day = Anything between 750 gms to 1.5 kg (1)

Therefore, average waste generated by a family of 4 is taken to be = 1 kg

According to the above information, a compost bin of size 50" H x 25" B x 31.5" W will be able to store around 2.5 to 3 kgs of waste daily.

The dimensions in meter are 1.270 (H) x 0.635 (B) x 0.800 (W)

Thus, the volume of the bin is = 50*25*31.5
= 39,375 cu.in ... i.e.
= 0.65 cu.m

To design a cylindrical bin that is able is at least 0.65 cu.m of volume or more:

Diameter of the cylinder (d) = 0.8 m
Radius of the cylinder (r) = 0.4 m
Height of the cylinder (h) = 1.5 m
Volume of the cylinder = $\pi r^2 h$
= 3.14*0.4*0.4*1.5
= 0.75 cu.m

Thus, a compost bin of diameter 0.8 m and a height of 1.5 m will be used to collect waste from 3 families.

Compost Bin Size for Dried Leaves Calculation:

According to the above information, a compost bin of size 51.4" x 32" Diameter will be able to store the dried leaves that fall off from the compost garden.

This bin can, then be installed above the ground in 2 -3 locations of compost garden depending on the area of the garden.

Vegetables and Flowers that can be harvested:

Vegetables:

- 1) Tomato
- 2) Capsicum
- 3) Lemon
- 4) Coriander
- 5) Curry Leaves
- 6) Mint Leaves
- 7) Okra
- 8) Chilli
- 9) Bitter Gourd
- 10) Bottle Gourd

Flowers:

- 1) Hibiscus
- 2) Mogra
- 3) Jui
- 4) Frangipani
- 5) Marigold