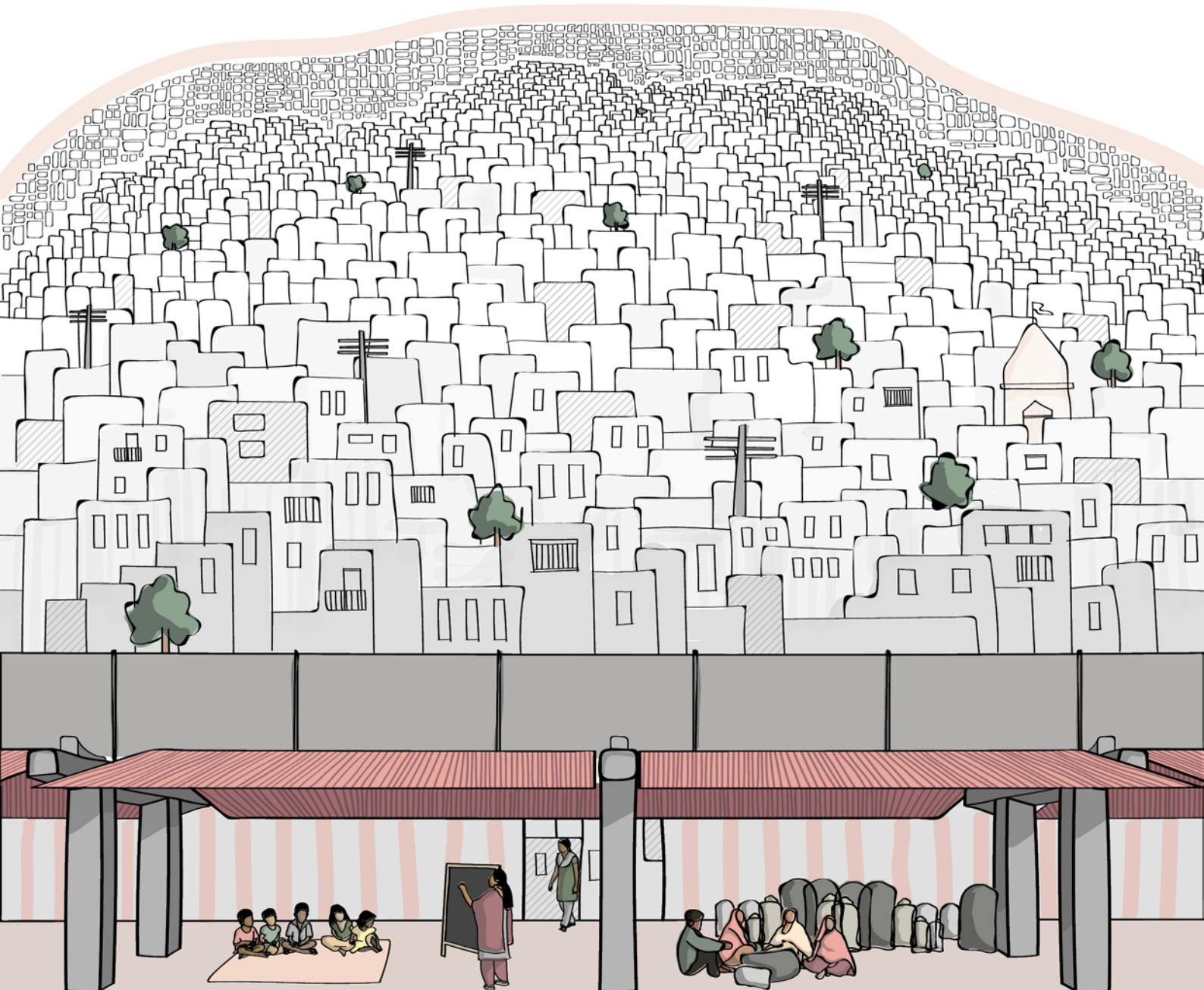


# ਭਾਵ

## INVIGORATING LOST SPACE

The Observation and Action Network  
2020 Grants Program

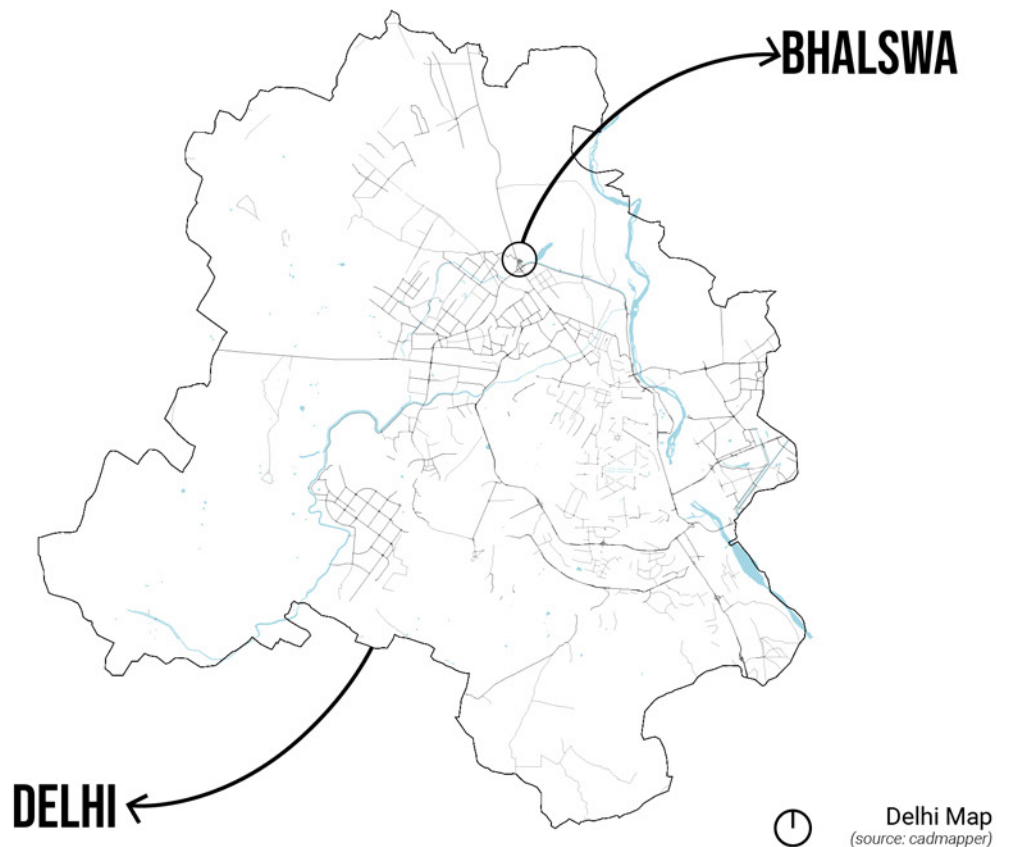


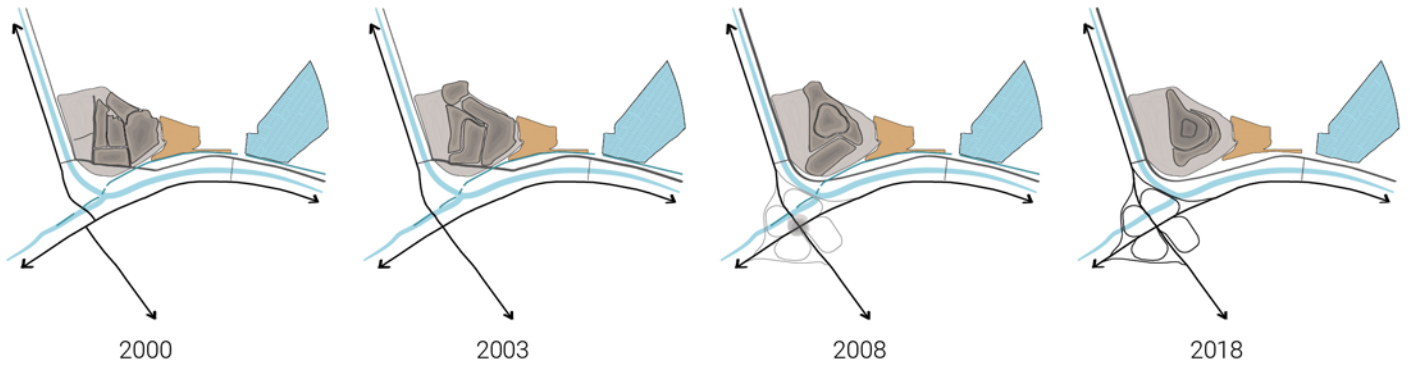


Garbage Sorting at Rajiv Nagar  
*(source: author)*

## ABSTRACT

The proposal seeks to provide a spatial solution for the people of Rajiv Nagar - an informal settlement around the Bhalswa Landfill - one of Delhi's 3 major landfills. Understanding the context and community, the authors realise a lack of dignified open space for the community. In designing, the proposal realises 'lost space' in the settlement and attempts to activate it with an intervention designed around existing infrastructure.





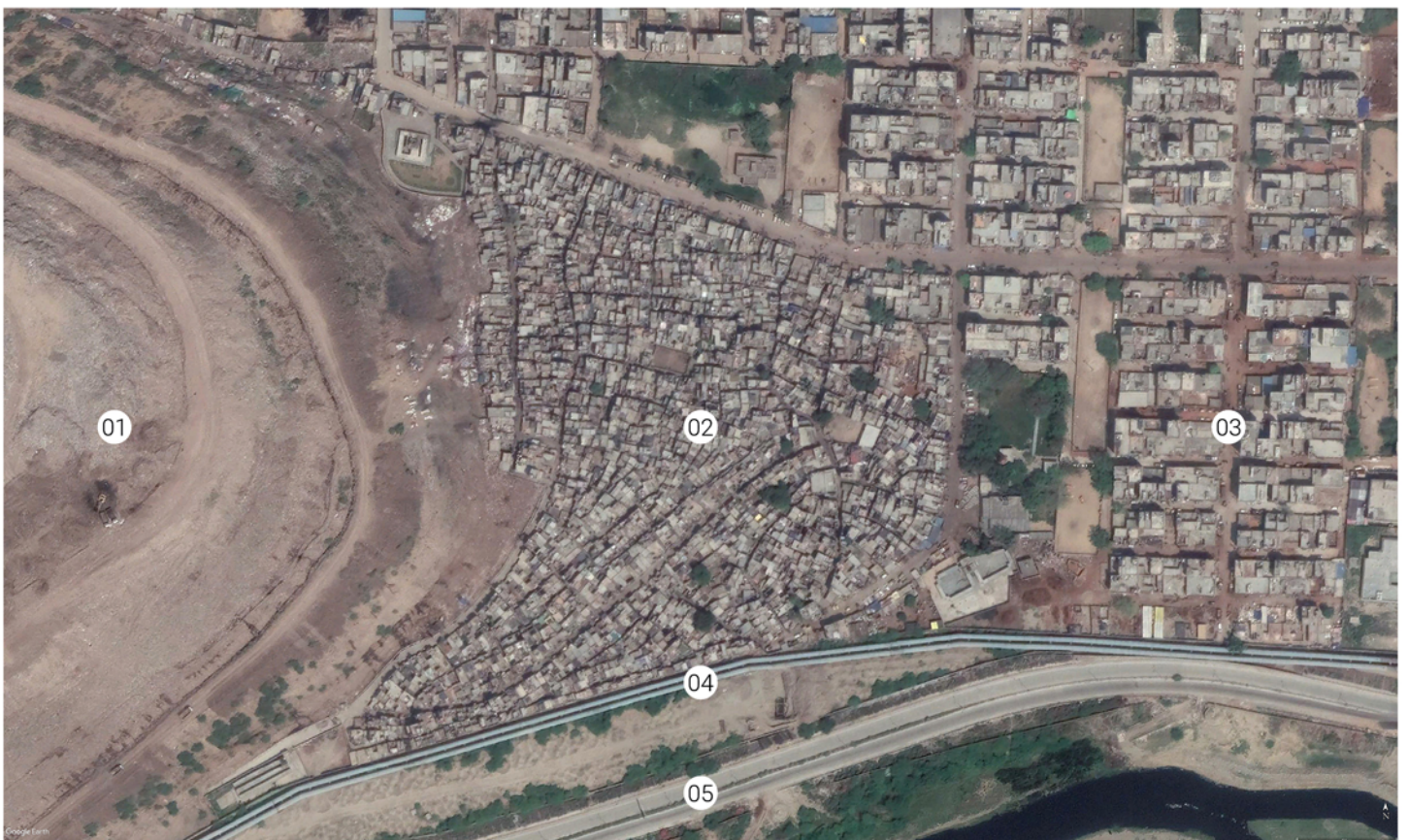
## TWO DECADES

In two decades of urban development, the region has seen the consolidation of the road intersection with signal-free the Mukarba Chowk Flyover strengthening the edge demarcation of the quadrants. The Bhalswa Landfill, under operation since 1984 reached its saturation point in 2009 but observes a continuous use owing to unavailability of an alternate site. With 2000 metric tonnes of garbage being dumped everyday, the landfill continues to grow and poses a health and environmental hazard to residents in the vicinity.

Rajiv Nagar, the informal settlement shares an amoebic relationship with the landfill with its inhabitants relying on the landfill as ragpickers and taking the brunt of its hazards. In the past two decades it experienced a disconnect with the primary access roads with the development of the Mukarba Chowk Flyover in 2005. It is pushed further back with the installation of supply pipes along the road axis.

- 01. Bhalswa Landfill
- 02. Rajiv Nagar Informal Settlement
- 03. Rajiv Nagar Formal Settlement
- 04. Sewer Pipes
- 05. Access Road

**Rajiv Nagar**  
(source: google earth)



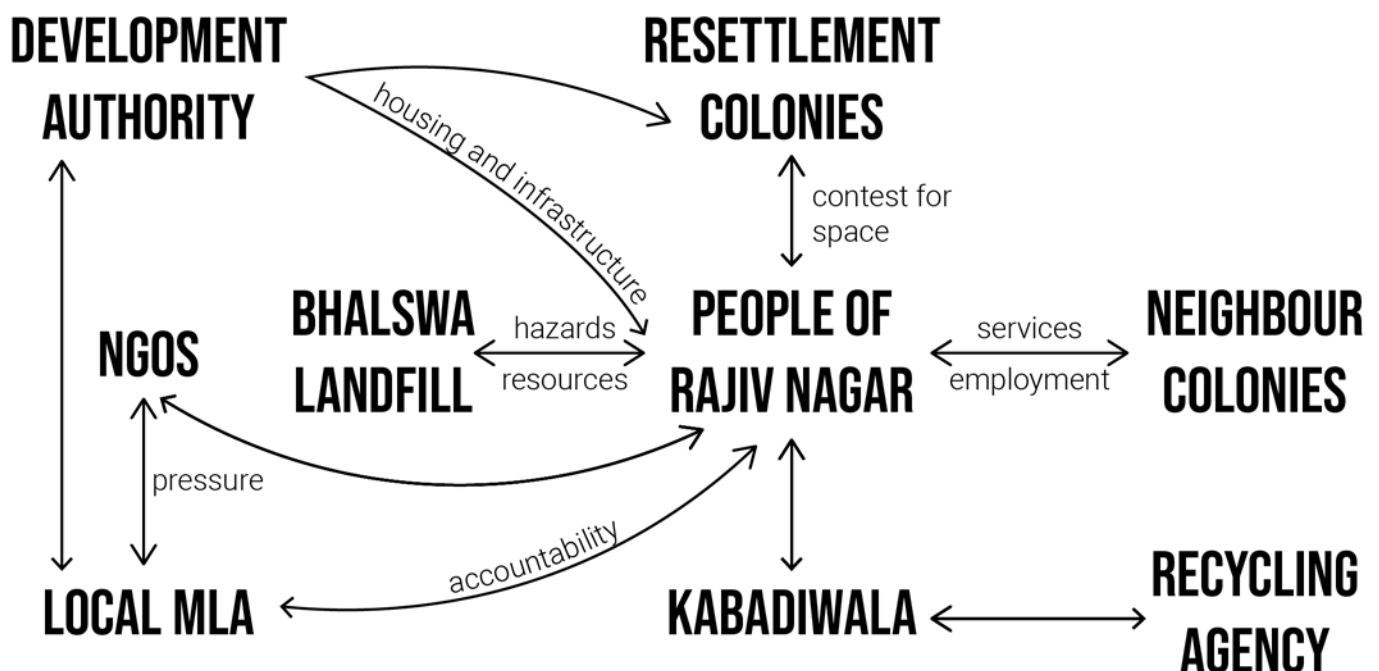


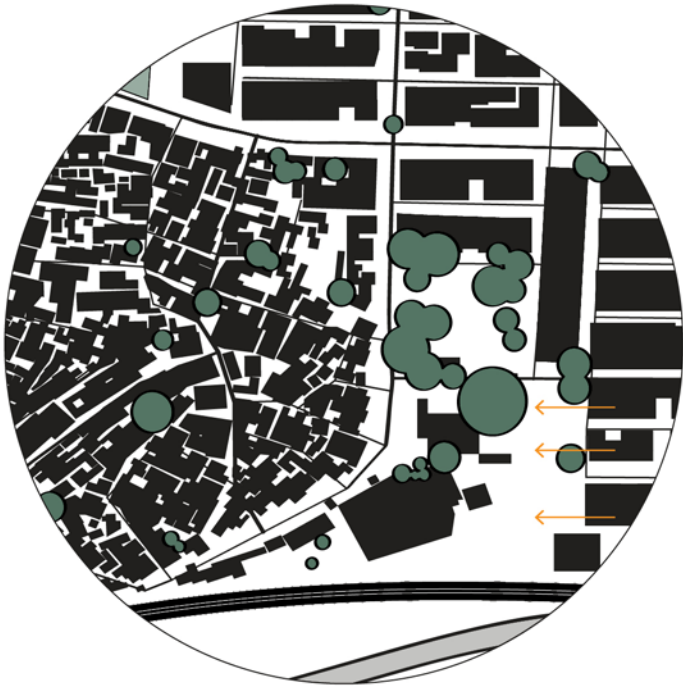
Ragpickers at Bhalswa  
(source: scroll)

## STAKEHOLDER ASSESSMENT

Housing for the worst, Rajiv Nagar sees pitiable living conditions with constant health hazards owing to the Landfill. The residents lack access to a proper water supply and are supplied with inadequate water through municipal tankers. With the groundwater contaminated because of run off toxins from the landfill, the residents rely on purchased water for basing sustenance. Air quality is also a severe issue, with several reports of air-borne diseases like tuberculosis being prevalent in the area.

A constant contest for land with neighbouring resettlement colonies has constrained Rajiv Nagar to its edge in the past two decades. The colony is documented with a 77% ground coverage leaving little to no open space for community activity. Aside from the landfill, the only open spaces around are little parks that are contested for use by residents of more 'formal' neighbouring colonies.





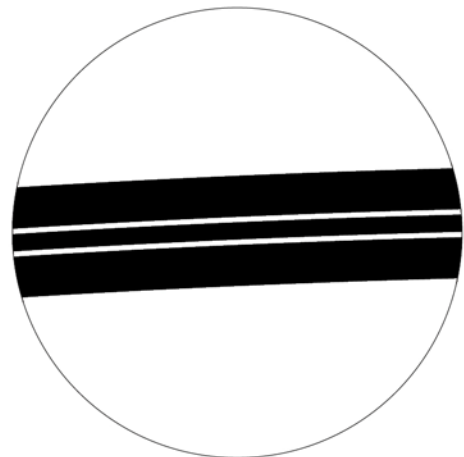
Open Space Mapping I



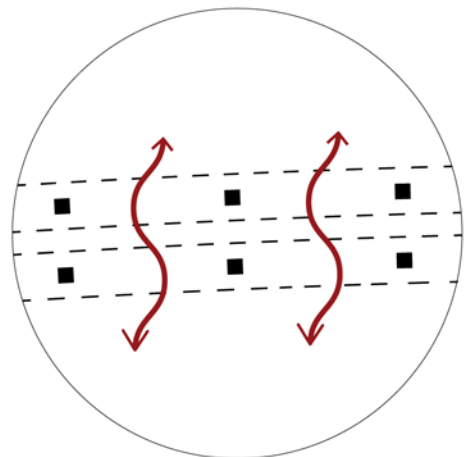
Open Space Mapping II

# FINDING LOST SPACE

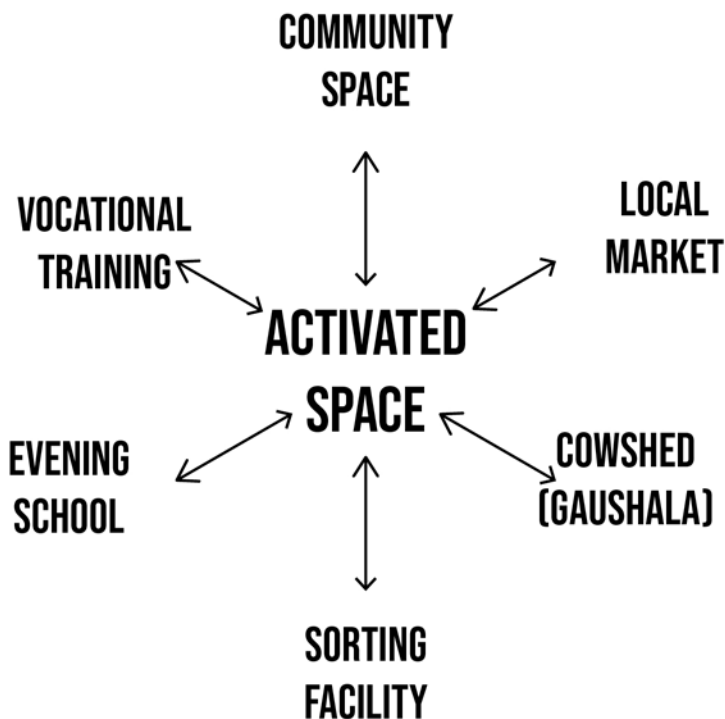
While a conventional figure ground study observes little to no connected open spaces for the colony, with their scale only enabling necessary activities under a gehl framework. A further insight onto the project and a closer to ground study realises the possibility of activating existing space under sewer pipes that pass through the colony with the objective of creating community relevant space.

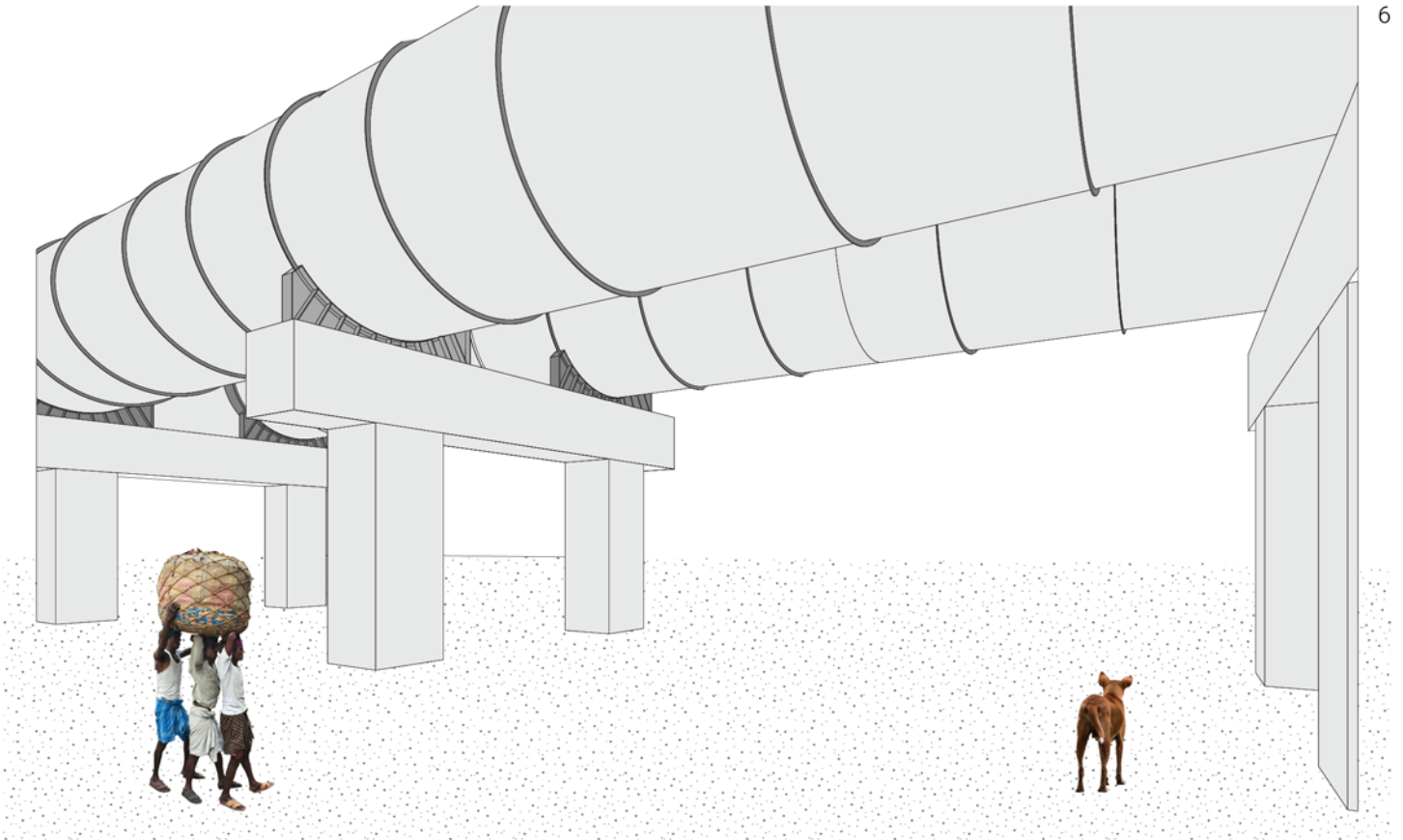


Sewers as infrastructure



Sewers as activated space

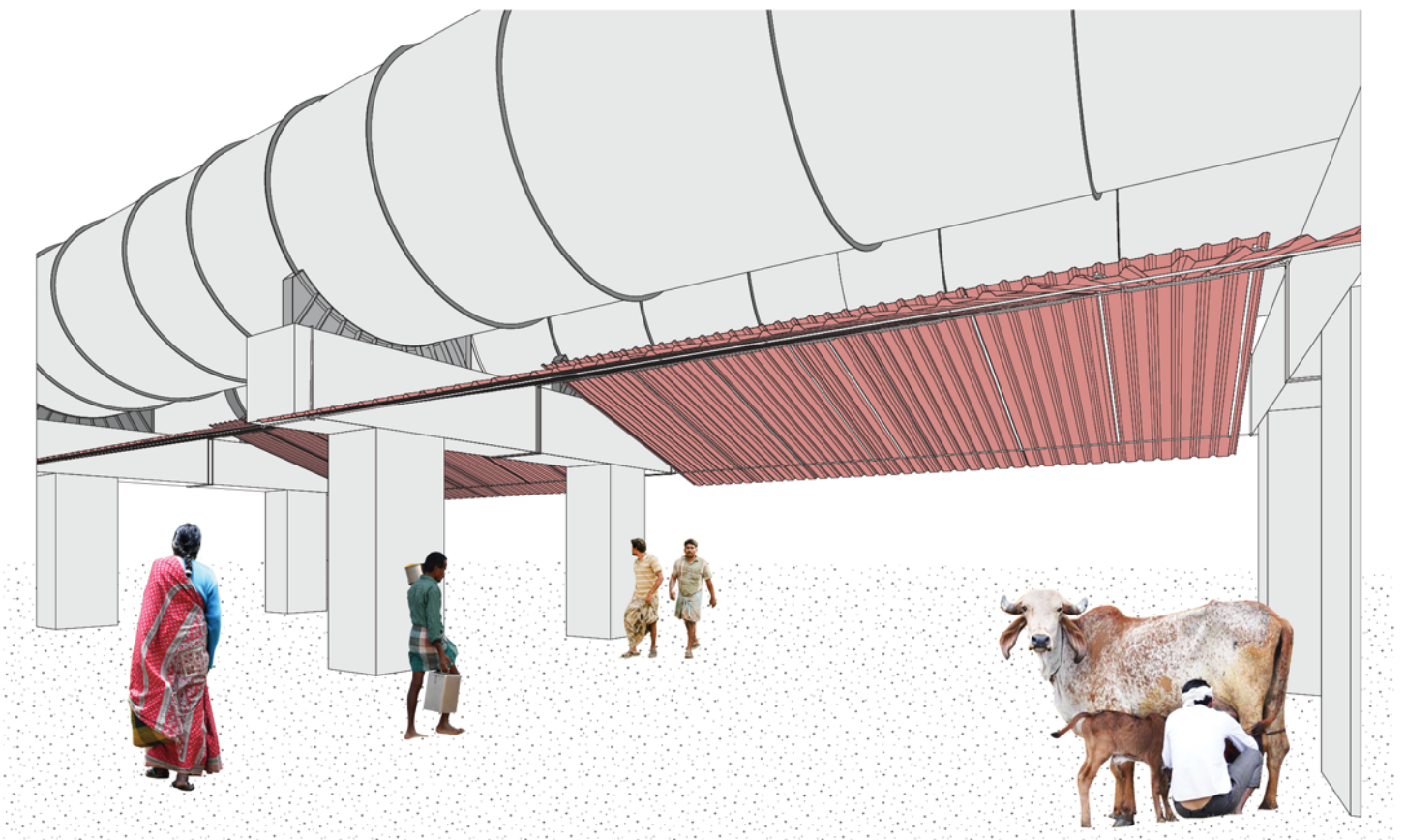


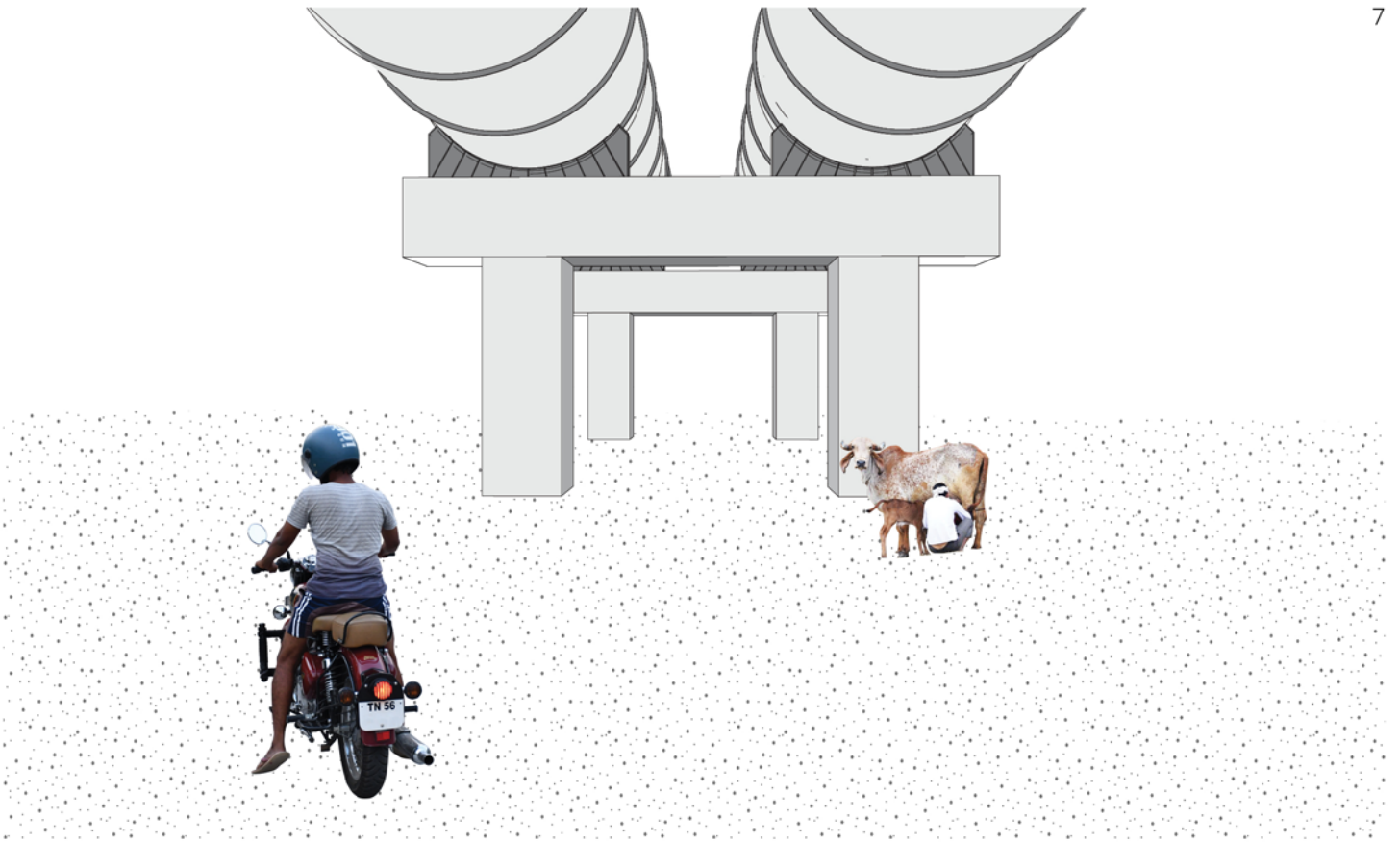


What lies behind this beautiful veil is the ugly truth of a slum. Bhalswa Dairy is an urban slum, completely ignored by the city. The occupants are mainly people who have migrated from nearby villages in search of work and refugees from Bengal. They came with dreams of a better kind of life but soon had to face the harsh realities of the city. Finding no work, and having no home to go back to, they made homes under these mountains of garbage. They go scavenging each day, looking for a plastics of all kinds, milk packets, jute boris, glass bottles, copper wires, anything that can fetch them some money. It is disheartening to see people, especially children, living in such conditions.

Mangesh Mani, *Life in a Toxic Urban Slum*, Youth Ki Awaaz  
January 2018

<https://www.youthkiawaaz.com/2018/01/to-bhalwsa-dairy-an-urban-slum-of-rag-picking-and-toxic-waters/>





Sayantana Ghosh, Story of a flawed urban system, Millenium Post  
December 2017

<http://www.millenniumpost.in/sundaypost/inland/story-of-a-flawed-urban-system-276322>

We have cleared the drains ourselves and also made new drains by hiring machines and people. But, nothing worked properly as we do not know the civic plans and the random attempts worsened the situation," she said. The residents explained that the non-communication between the Delhi government and the civic agencies have made the situation worse. "Constructing drains come under the corporation but the construction of roads come under the Delhi government. The local counsellor and the MLA are not ready to sit together even after many requests," said Nazma. Both the officials were unavailable for comments.

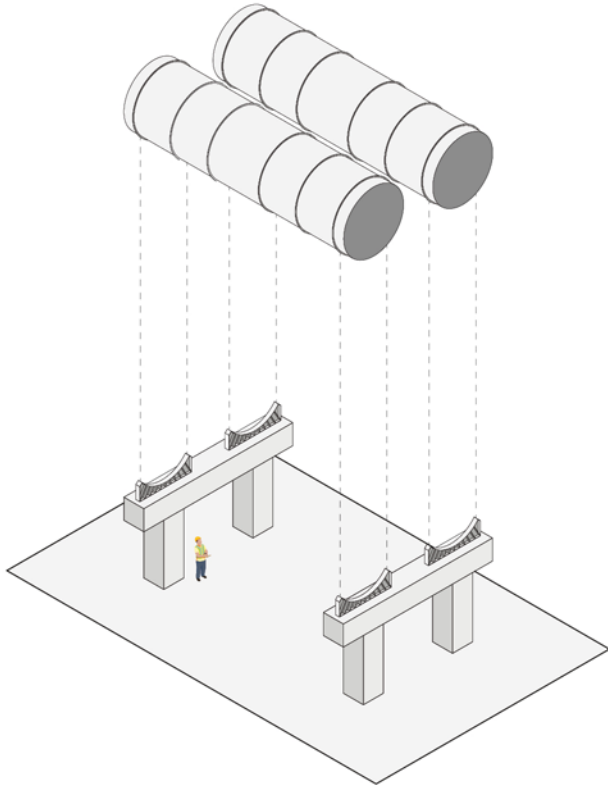


# CONSTRUCTION PROCESS

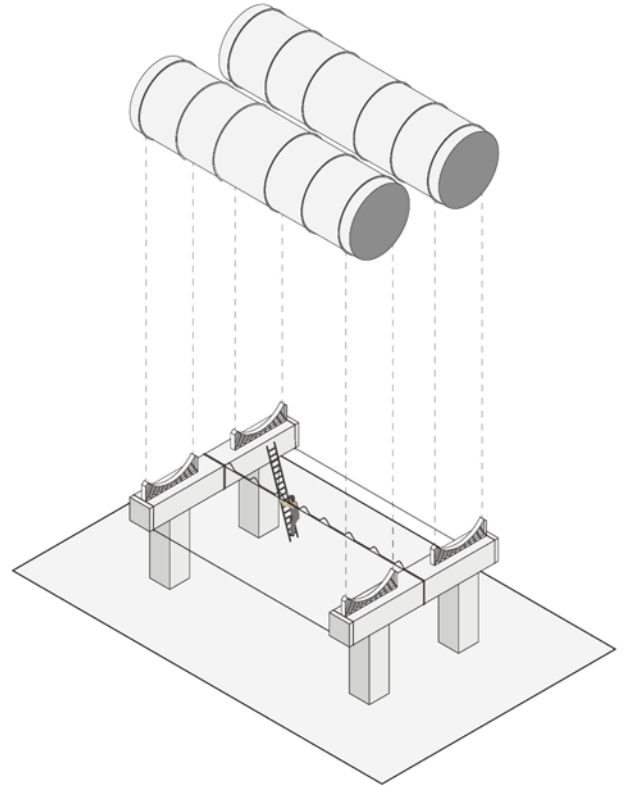
A simplistic stage wise construction process allows for intrinsic design development through community feedback. It can be carried out on site with minimal technical know how and skillset.

Steel reinforcement acts as an effective method to span the distance between the existing columns. A cranked bar helps achieve

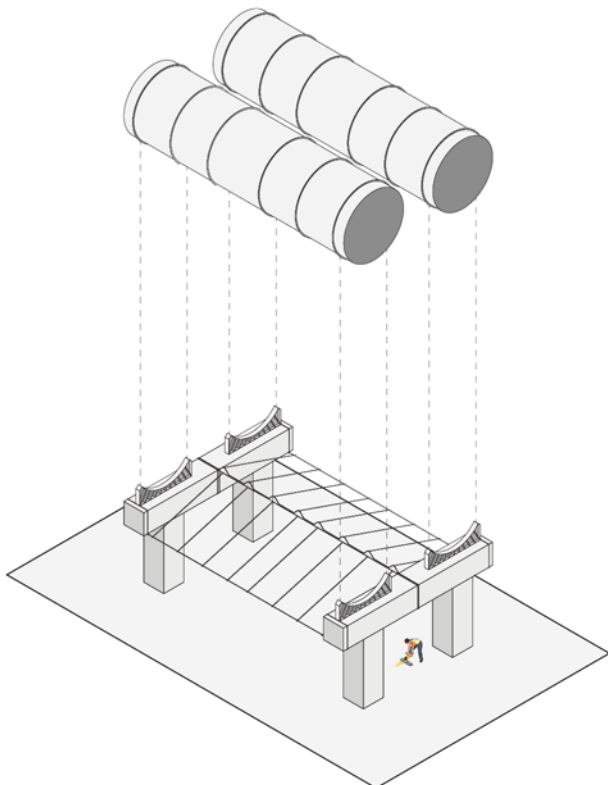
an opening for ventilation purpose. The corrugated sheet is mounted on top with nuts and bolts on flat steel rafters, and as an industrial solution caters to rainfall and dripping sewage water without weathering. Hand woven bamboo chick mats cater to privacy and shade considerations for certain activities and can be rolled up when not needed.



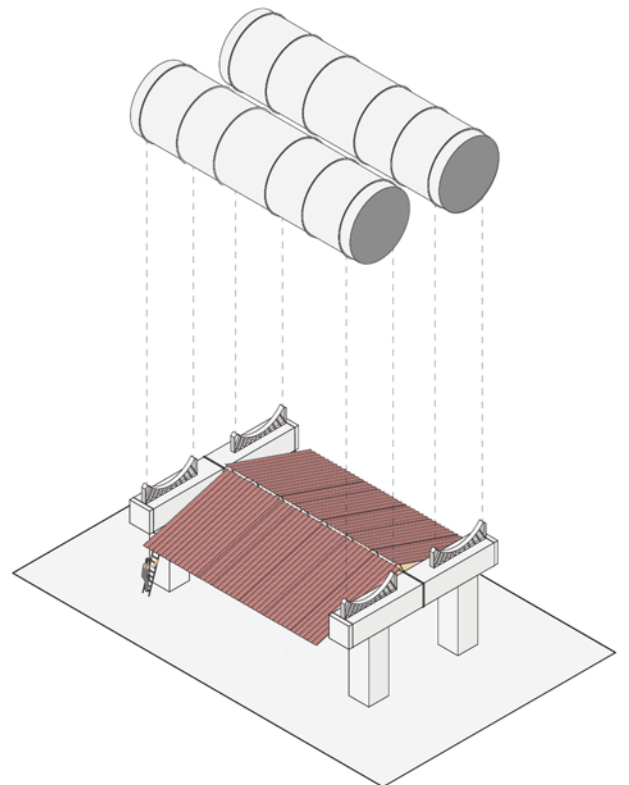
01. Existing Infrastructure



02. Steel Reinforcements



03. Steel Rafters



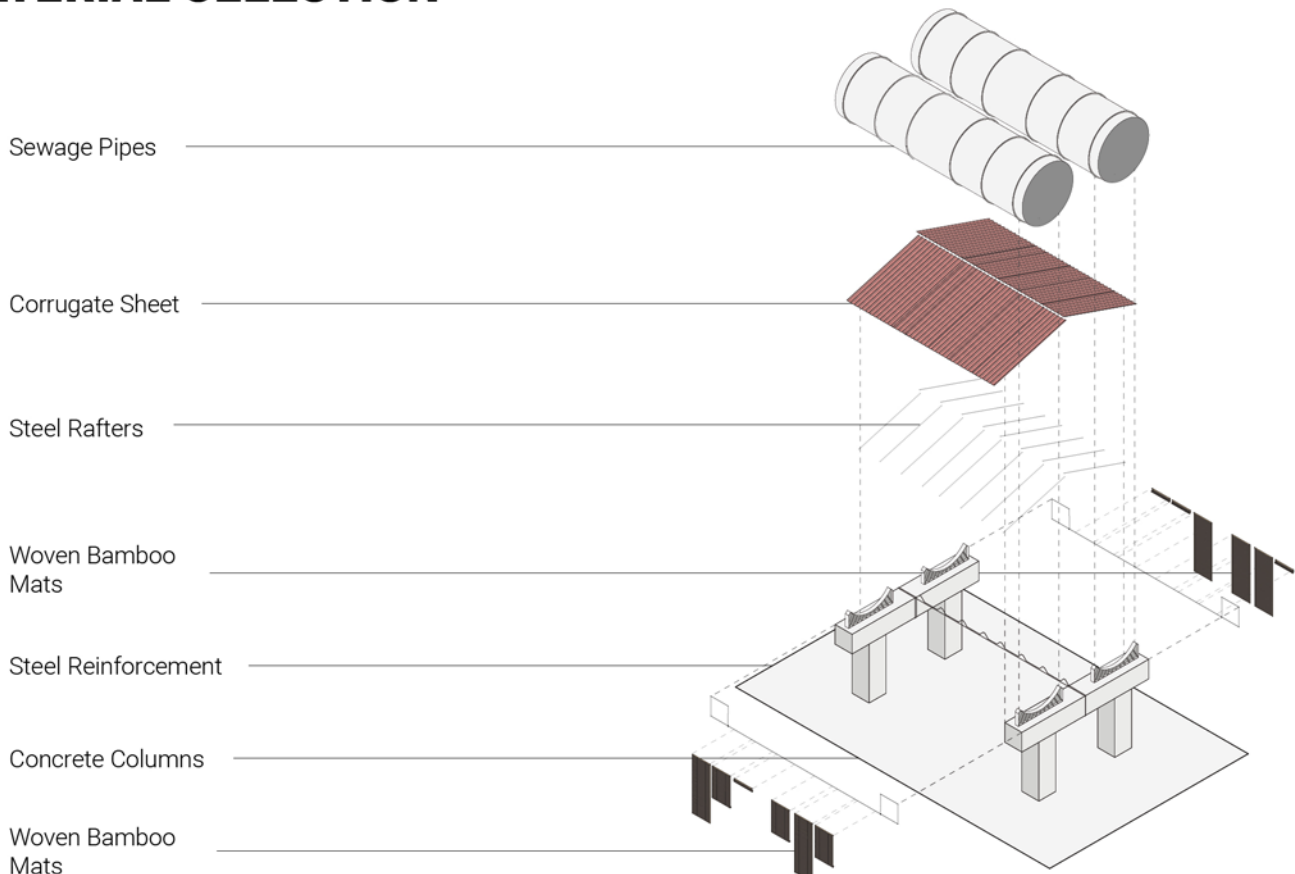
04. Corrugate Sheet

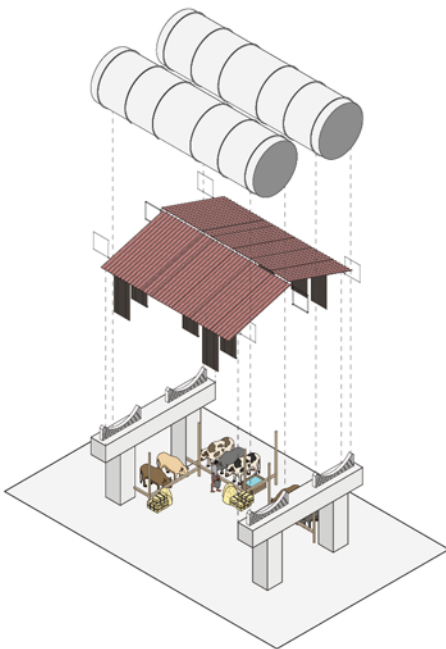


# COST ESTIMATION

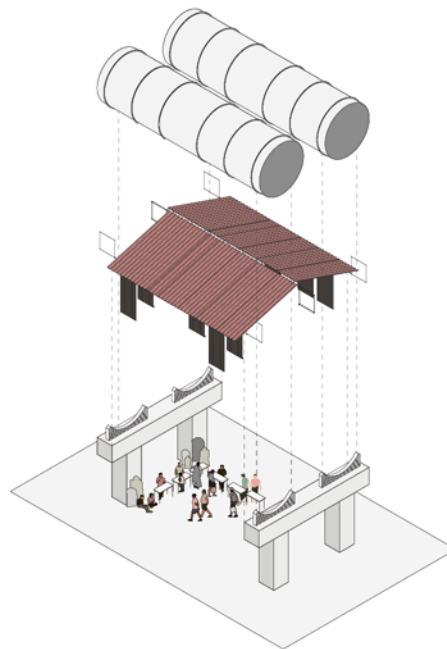
Serial	Material	Description	Unit	Price	Quantity	Cost
1	Steel Reinforcement	16mm TMT Steel Reinforcement	Cost per metre	72	50	3600
3	Corrugated Sheet	0.5mm corrugate sheet	Cost per sheet	900	16	14400
4	MS Flat Section	50mm width, 2.5mm thickness	Cost per metre	40	62	2480
5	Red Oxide	Rust preventive coating over steel	Cost per litre	120	5	600
6	DUCO Paint	Finished coating over steel	Cost per Litre	150	5	750
7	Nuts and Bolts		Cost per kg	300	2	600
<b>Total A</b>						<b>₹21,830</b>
1	Chick Mat	Woven Bamboo Mat	Cost per mat	1050	8	8400
<b>Total B</b>						<b>₹8,400</b>
1	Semiskilled Workers		wage per day	679	5	3395
2	Unskilled Workers		wage per day	558	5	2790
<b>Total C</b>						<b>₹6,185</b>
<b>Total A+B+C</b>						<b>₹36,415</b>
						<b>\$ 486</b>

# MATERIAL SELECTION

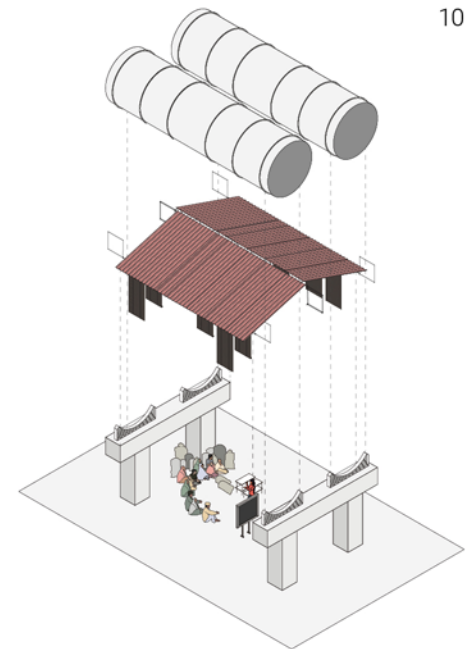




Animal Shed



Community Market



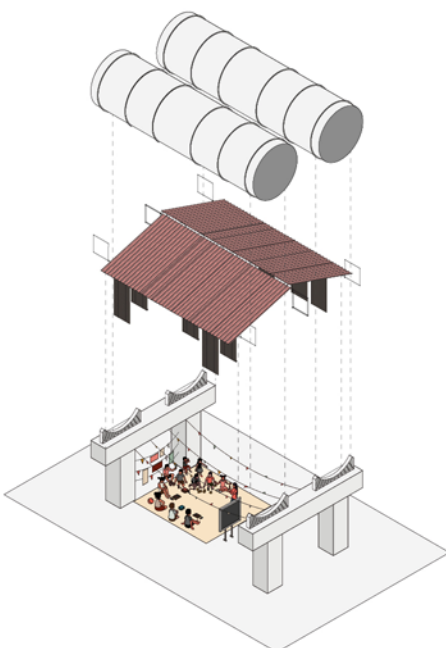
Vocational Training

## STAKEHOLDER ENGAGEMENT

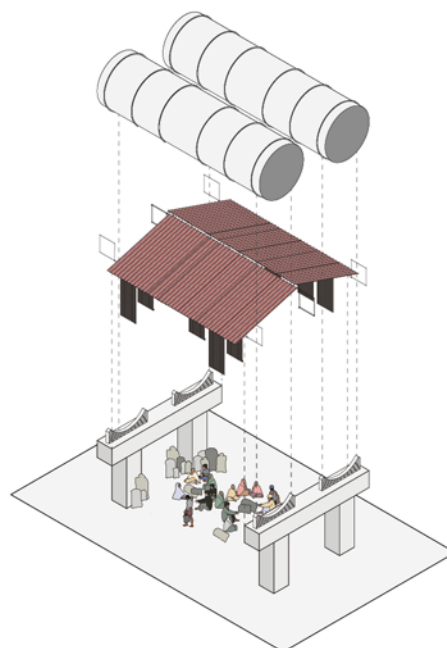
The proposal aims at a week long construction program with the community and a stage wise construction t By proposing a flexible use of open space that is community upgradable, the design gives to the community a space that is theirs to use and adapt to their needs.

In using material that's readily available in the market and a construction process that doesn't require construction expertise,

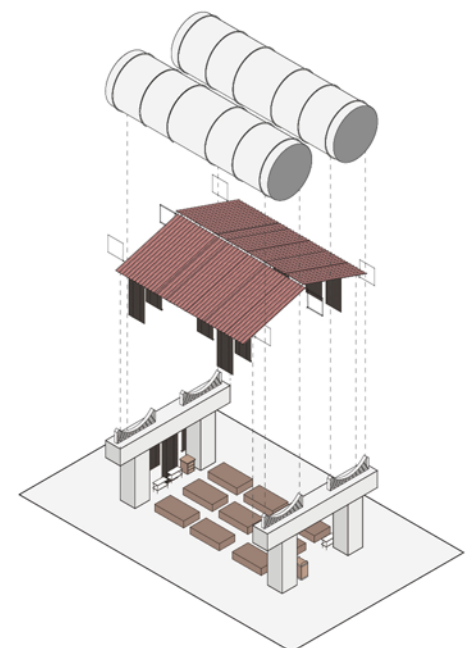
the project finds itself to be easily replicable and incremental. While the OAN grants program enables funds for a single module, the project looks at crowdfunding and social media campaigns for the development of more modules along the existing infrastructure. In doing a single module, the process acts as a catalyst in creating dignified open spaces for the community providing them with essential know-how to develop their own solutions through frugal innovation.



Evening School



Sorting Facility



Isolation Ward