

DEFINING MIGRANT WORKERS

Migrant laborers are the backbone of India's informal sector and micro, small and medium enterprises. Their crisscrossing of states for jobs signifies economic integration, and also inter-regional and rural-urban disparities. While empowering themselves, they also enrich their home and host states.

Lack of alternate livelihoods and skill development in source areas, locations from where migration originates, are the primary causes of migration from rural areas. Workers migrate seasonally, temporarily, or for a longer period, either within a state or across states. More often than not, they are vulnerable, exploited and work in conditions where their rights are not protected.

(SOURCE: www.hindustantimes.com - Support and empower India's migrant workers, 23 May 2020)

Domestic workers who work in middle class homes in Delhi, drivers working for taxi companies in Gurgaon, the construction worker in Kerala and the agricultural laborer in Punjab in all probability have one thing in common - they are migrants. Nearly one-third of India's population is migrant population. Half of this population has migrated from rural areas to cities in search of work.

EWS IN INDIA

The government of India has mentioned economically weaker section in India is a sub category of people belonging to the general category having an annual income less than Rs.8 Lakh and who do not belong to any category such as SC/ST/OBC across India.

ROLE OF MIGRANT WORKERS

Comprising 20% of the workforce, migrant labour became vital to every economic sector, especially the informal sector and MSMEs, constituting nearly 50% of India's GDP.

Migrant laborers are backbone of modern india and infrastructure building.

(SOURCE: The economic times, 04 June 2020)

KNOWING MIGRANTS

ROUGHLY 100 MILLION MIGRANT WORKERS ARE DIRECTLY RESPONSIBLE FOR 10% OF THE GDP. WHY ARE THEY STILL SO INVISIBLE?

THERE HAS BEEN AN UNWILLINGNESS TO COLLECT BETTER DATA ON CIRCULAR MIGRANTS AND UNDERSTAND HOW THEY AFFECT THE ECONOMY. THIS IS SHOCKING FOR A COUNTRY THAT RUNS ON MIGRANT LABOUR (SOURCE: www.livemint.com - Why India's migrants deserve a better deal, 18 May 2020)

MIGRATION IS CRUCIAL FOR DEVELOPMENT

Labor migration within India is crucial for economic growth and contributes to improving the socio-economic condition of people. Migration can help, for example, to improve income, skill development, and provide greater access to services like healthcare and education. Despite positive outcomes of migration, the process of migration can be very challenging for both male and female migrant workers, whether it is voluntary or distress (forced) migration.

(SOURCE: United nations in India - Decent work for migrant workers in India)

BUT IT CAN BE CHALLENGING...

The challenge is that migrants usually form a class of invisible workers. They work in poor conditions, with no access to government services and schemes, which are usually available to other workers. There are different risks in source and destination areas. Needs of family members, including infants, children, adolescents and elderly who accompany migrant workers or are left behind in source areas also need to be addressed.

(SOURCE: United nations in India - Decent work for migrant workers in India)



Garib kalyan Rozgar Yojana - This is the latest of all the schemes, launched to employ those workers who have returned from cities. The amount set up for this scheme is 50,000 crores. This scheme comes as a relief booster for those migrant workers who had to lose their job during the time of the COVID-19 pandemic. It would play a crucial role in eliminating their financial crisis.

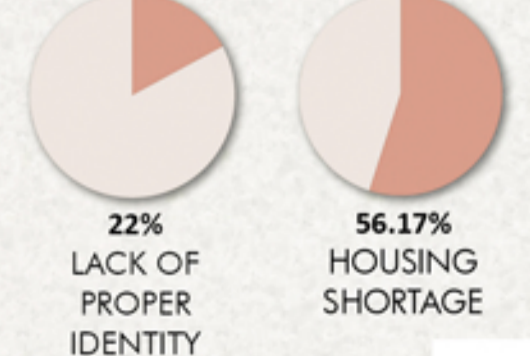
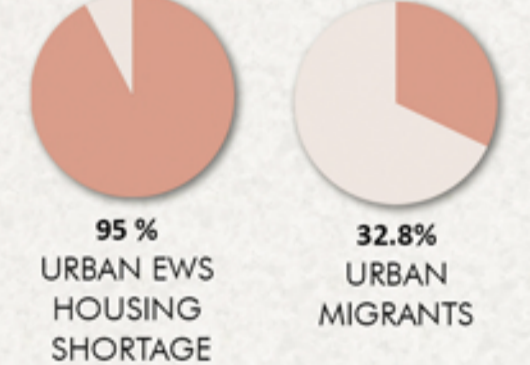
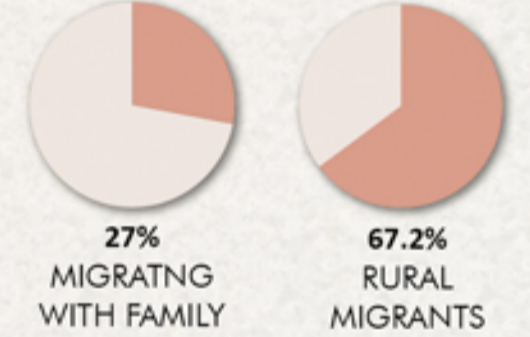
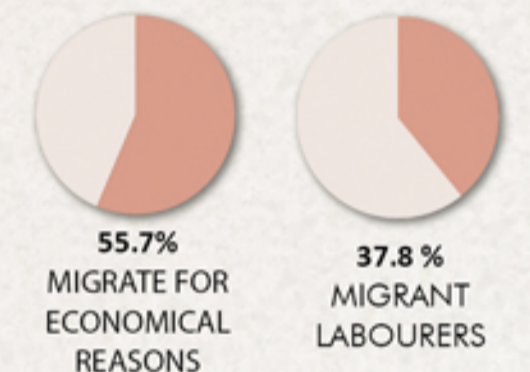
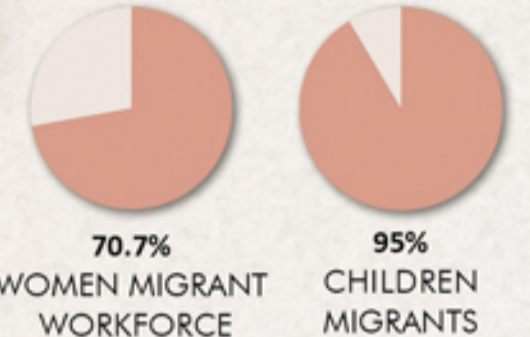
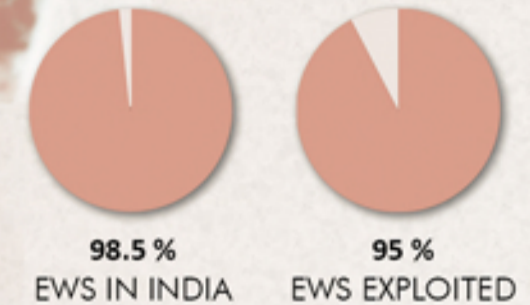
GOVERNMENT SCHEMES

Applicable government schemes Pradhan Mantri Awas Yojana(PMAY).

PMAY is the Government of India's scheme, administered by Ministry of Housing and Urban Poverty Alleviation (MoHUPA) to help the economic weaker section (EWS) and low income group (LIG) to access housing.

Mahatma Gandhi Bunkar Bima Yojana - This is a scheme launched by the government for the interest of the migrant worker involved in the handloom industry. It provides insurance cover against any accident which leads to death, total or partial disability in 2005.

(SOURCE: pib.gov.in, www.india.gov.in, www.pmindia.gov.in, pmaymis.gov.in)



(SOURCE: www.unesco.org, National workshop on Internal Migration and human development in India - Workshop compendium, vol-2 - in collaboration with ICSSR)

A STUDY ON THE INTERNAL MIGRANT LABOUR - ISSUES AND POLICIES by C. Annie Jane
www.researchgate.net, Impact of rural-urban migration on education, A case study of left behind & accompanied migrant children in India, April 2015)

UNAWARE OF RIGHTS AND LACK OF INFRASTRUCTURE





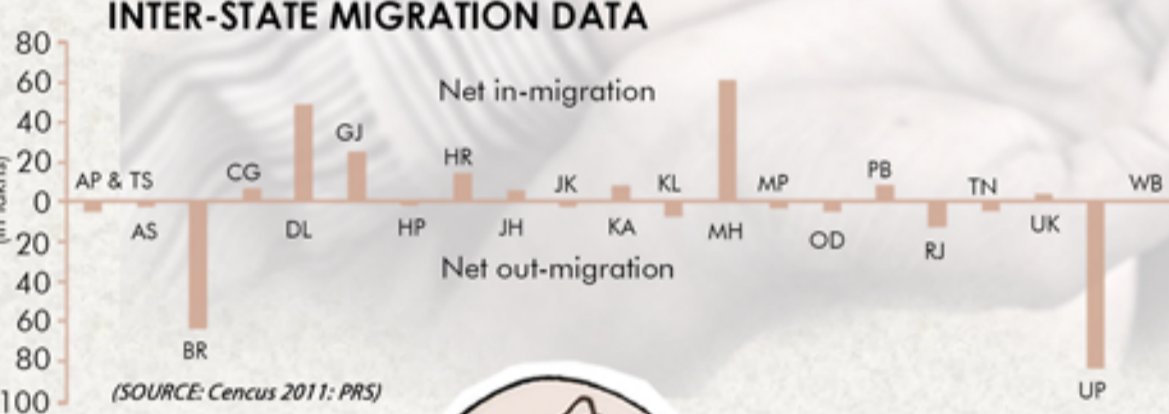
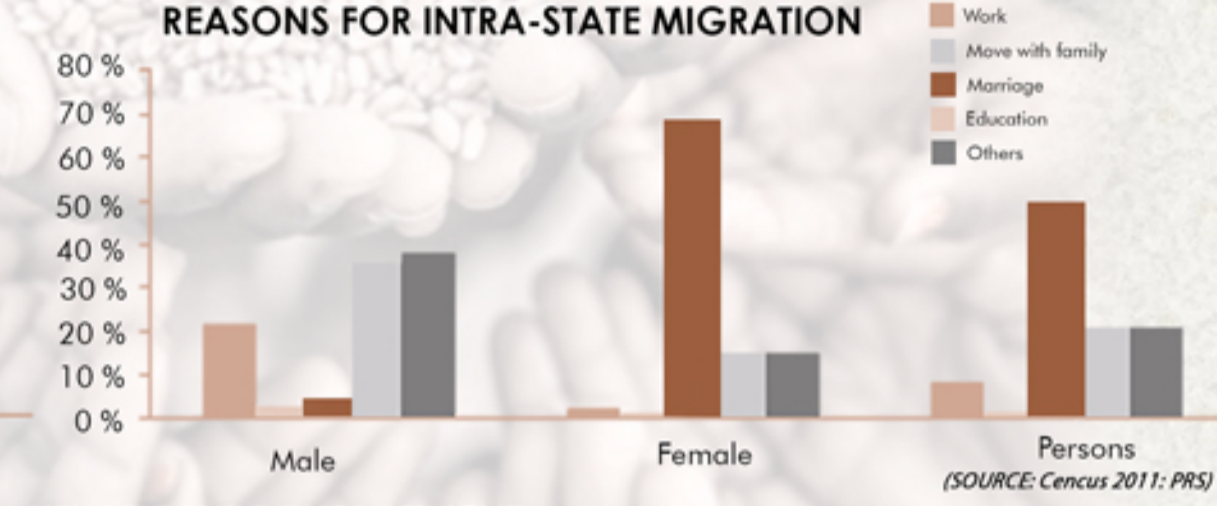
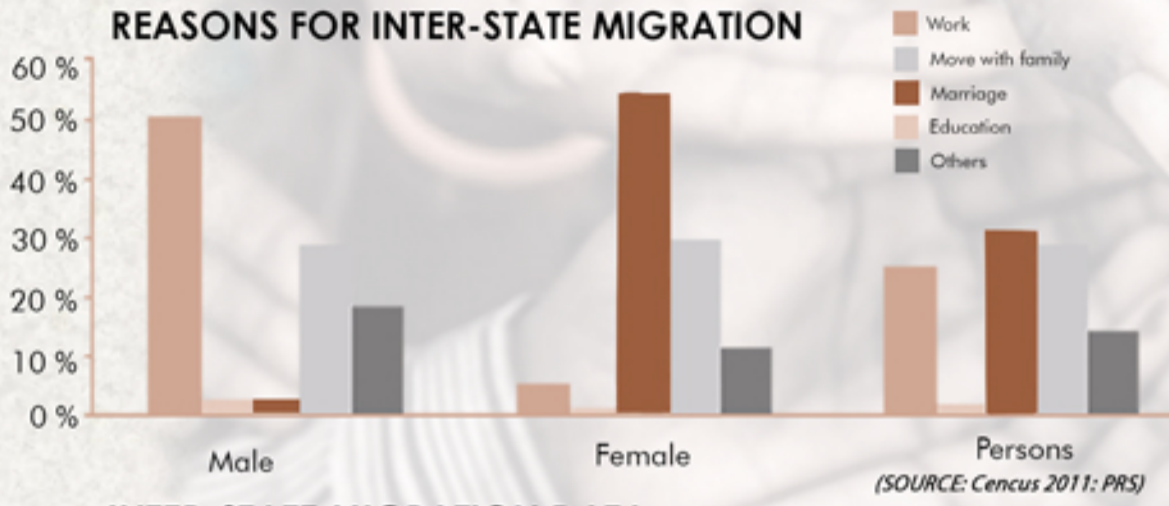
During the spread of Covid-19, the class that was most affected was the labor class. Many workers shifted from the Urban areas to rural areas due to the lack of jobs. The International Labor Organization has predicted that 400 Million migrant workers would be hit by poverty. Steps have been taken by the various Individual States to provide relief to the Migrants workers by passing an ordinance in the State Legislature which involves increasing the working hours of the workers which are introduced to generate foreign investment. The various States have provided the workers with food and shelter through relief camps. The Central Government had started a training facility known as Shramik Special to transport migrant workers, though this was a good initiative it wasn't implemented properly there was no sanitization, no proper water facility, below average food, etc. There were instances that many workers died during the journey they had Covid-19 but weren't detected in the screening.

	Work and business		Education		Marriage		Family related		Others		Total	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Rural to Rural	9.3	6.4	1.9	2.7	61.2	59.0	19.4	24.1	8.3	7.7	56.3	47.4
Rural to Urban	29.9	24.3	4.9	4.8	21.8	22.4	34.5	40.6	8.8	7.9	21.8	22.1
Urban to Rural	14.5	8.9	3.0	2.7	28.1	26.5	42.9	55.6	11.4	7.3	6.6	7.9
Urban to Urban	21.8	17.5	4.3	3.4	21.9	18.4	42.6	47.9	9.5	12.9	15.2	22.6
Total	16.0	13.1	3.0	3.3	44.4	39.1	27.8	35.6	8.8	8.9	100.0	100.0

(SOURCE: Census 2011: PRS)

Industry type	Male				Female			
	Rural		Urban		Rural		Urban	
	Non-migrant	Migrant	Non-migrant	Migrant	Non-migrant	Migrant	Non-migrant	Migrant
Primary	65%	37%	7%	3%	76%	84%	10%	15%
Manufacturing	8%	17%	22%	27%	12%	6%	28%	23%
Public Services	4%	11%	8%	11%	6%	5%	34%	34%
Construction	8%	10%	10%	9%	2%	2%	4%	6%
Traditional	12%	20%	41%	33%	4%	2%	15%	15%
Modern Service	2%	5%	12%	16%	1%	1%	10%	8%
	100%	100%	100%	100%	100%	100%	100%	100%

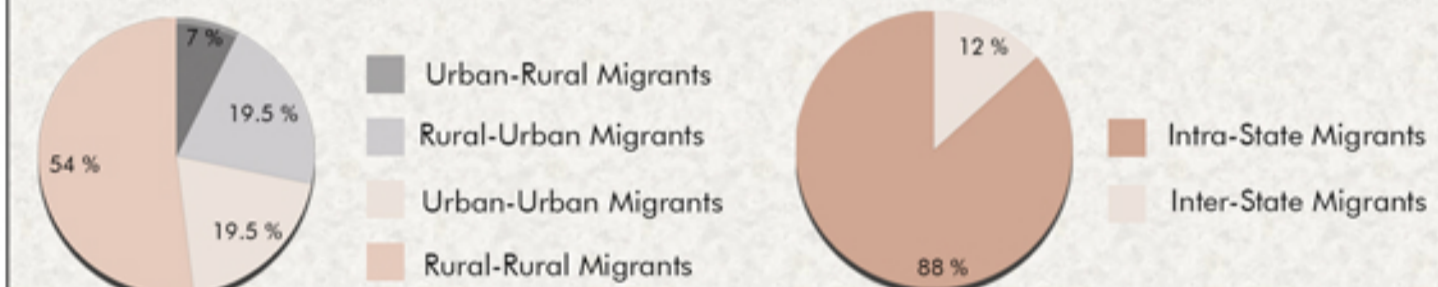
(SOURCE: Census 2011: PRS)



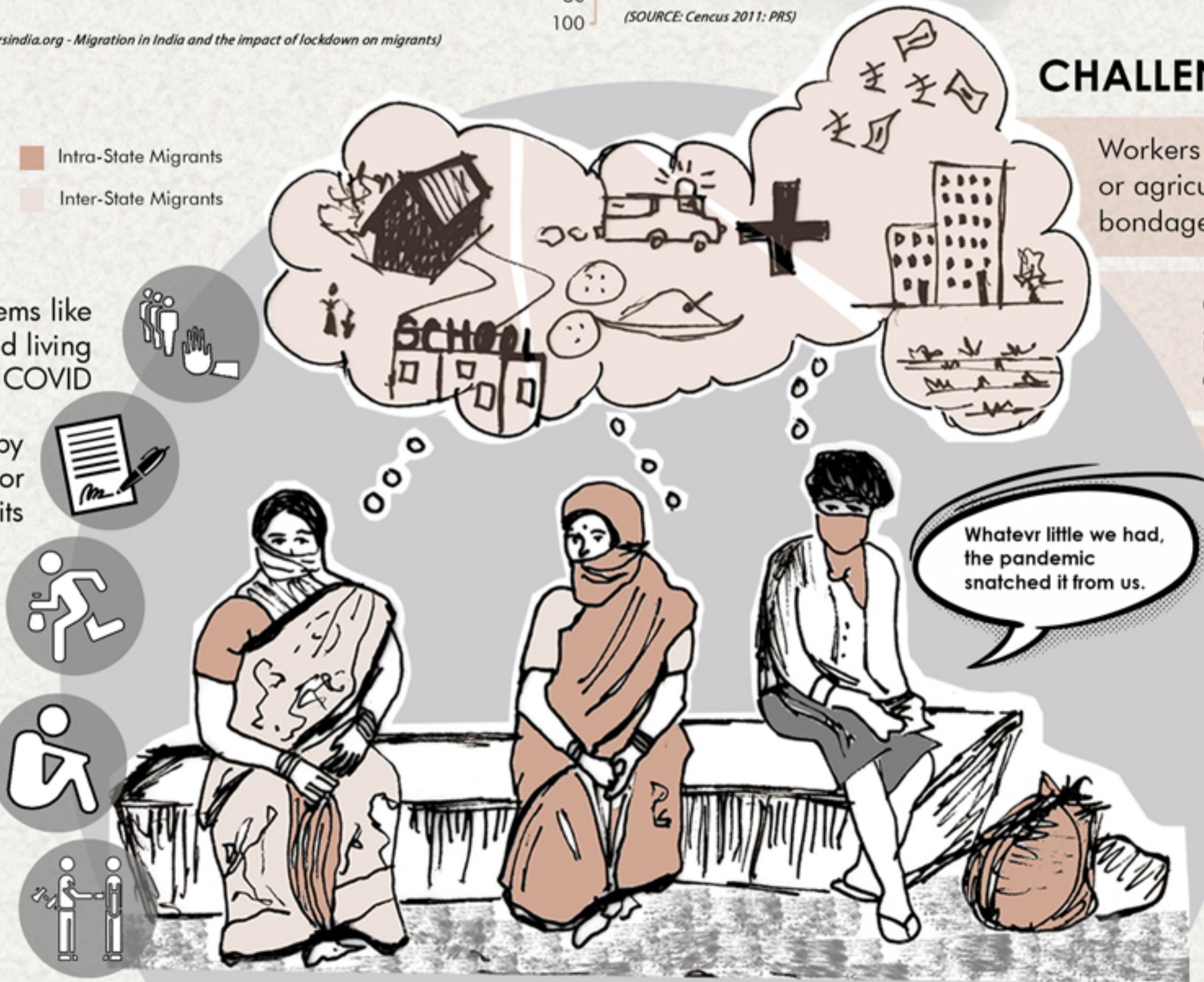
Items	Total	Female	Male
% of salaried/wages employees			
Have no written contract	71.1	72.3	66.8
Have no eligibility for paid leave	54.2	55.2	50.4
Have no eligibility for paid leave	49.6	49.0	51.8

source : SARVEKSHANA (Government of India, 2019)

WORKER MIGRATION DATA (SOURCE: www.prsindia.org - Migration in India and the impact of lockdown on migrants)



- ASSUMPTIONS ABOUT EWS**
- Migrant workers faced problems like untouchability due to their migration and living standards during COVID
 - Common people often take advantage by making false EWS certificates for reservations benefits
 - EWS and Migrant workers are often falsely accused of theft because of their economic conditions
 - Migrant Workers are often boycotted by the society due to their living conditions and practices
 - People discard problems that migrant workers face and remain ignorant towards their living conditions



CHALLENGES

- Workers who engage in seasonal work, such as in brick kilns or agriculture, are often trapped in a situation of debt and bondage
- Greater threat of nutritional diseases, occupational illnesses, communicable diseases, alcoholism, HIV and AIDS amongst migrant populations
- Many migrants, especially young girls and women, are deceived and trafficked
- Poor and unsafe working and living conditions, lack of occupational health and safety
- Lack of awareness among migrants about their rights as 'workers' and as 'migrant workers'



After suffering 6 months of pandemic returned to his security guards job in a housing complex construction site at Newtown as he has a contract of working for 4 years till project completion. Rahul said how this pandemic hit his earning to afford living in city and he was bound to return back to his village Koch Bihar due to lack of affordable housing and low income.

Presently the housing conditions in site is on shared basis inside a temporary structure with very low hygiene and comfortable space to live. With a dependent family of four he is the only earning member living far away from city without home made food and elderly mother which hunts him with emotion and care for his family. He wants to have a tiny space with adequate facility to live with his family in his job City.

Rahul Pashi, Age 29

**Intra State migrant worker - Security guard
Koch Bihar, West Bengal
Working at Newtown, Kolkata**

Supporting a family of five for me being the only earning member with an elderly father who is also a patient having various disease becomes very hard to afford a good rental shelter. I stay under the Belgoria expressway Flyover in illegal settlement and give a rent of 2,000/- for two room tin shed house with no water supply and improper electricity supply. For treatment of my father I need to visit hospital every week and have, sufficient means to spend on living so I cannot have a better house in my salary range from my work of transport Driver at Plastic Pipe Company said Amraish Das resident of Dumdum Area Kolkata.

Amraish Das

**Intra-state migrant worker- Driver
Bolangir, Odisha
Working in Rajarhat, Kolkata**



Working 12 hours a day to feed three children being a widow is difficult and surviving pandemic was no less than getting prepared for death said Aisa Biwi of Rajarhat Kolkata. Earning 12 thousand a month and raising three children is very difficult, having a rent house in city like Kolkata is not affordable. I stay in Kaccha house in Rajarhat slum, which in rain drains every year and we spend nights after night seating on bamboo bed giving rent of Rs 3,000/-. During pandemic facing situation of not getting salary and devastating cyclone Amphan led me to poverty and loss of all minimal savings I had.

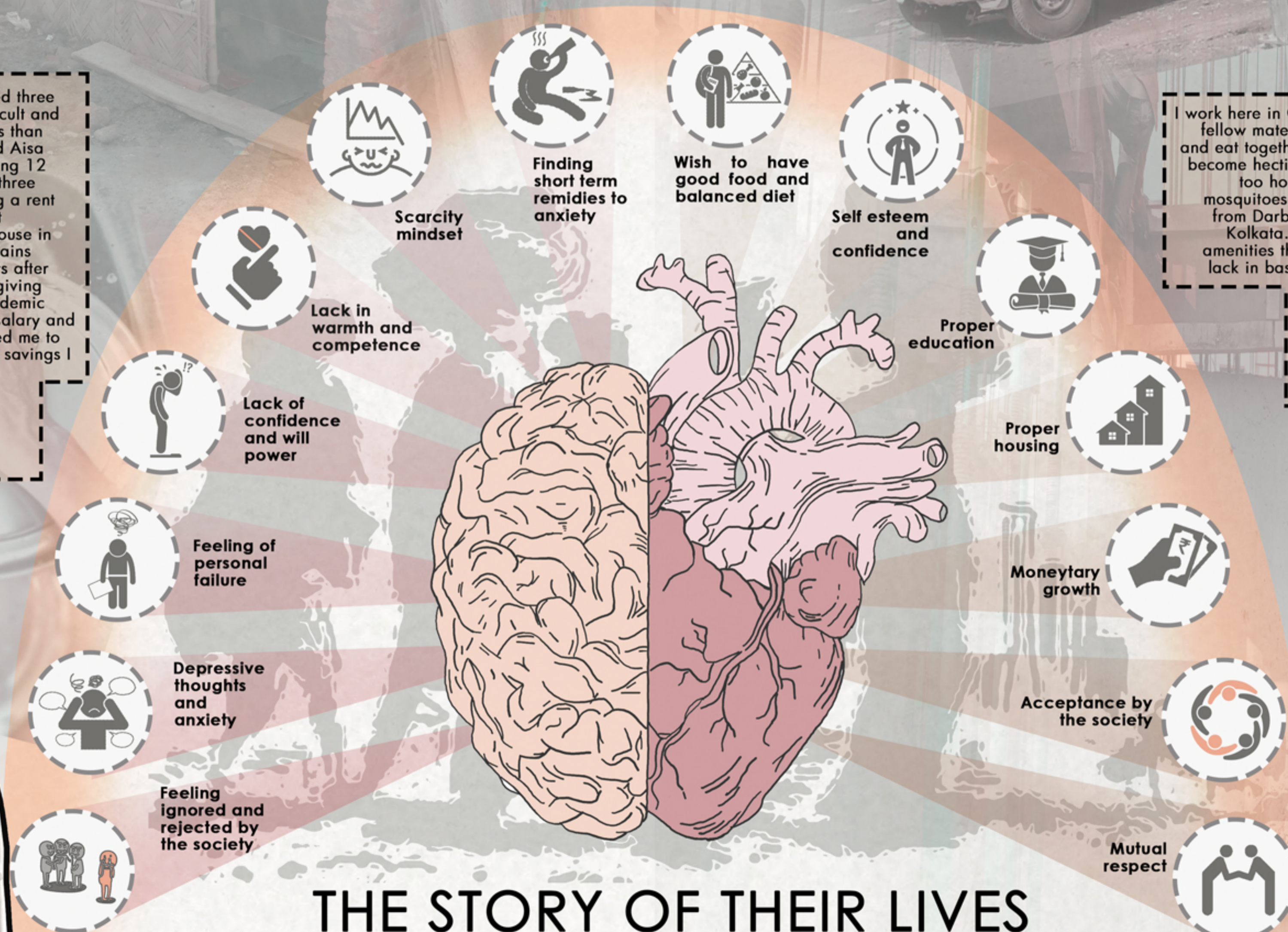
**Aisha Biwi, Age 30
Intra-state Migrant Worker-
Maid
Siliguri, West Bengal
Working in houses at
Rajarhat**



I work here in Construction sites with my own village fellow mates for 10-12 hours a day then we cook and eat together in tin shelter which in rainy season become hectic to stay. In summer times, it becomes too hot inside and we sleep in open air with mosquitoes said Jeevan Deol 36 years aged man from Darbanga Bihar working here in Newtown Kolkata. Living in dormitories with inadequate amenities these people face a lot of problem and lack in basic living needs like shelter, water and comfort habitable spaces.

Jeevan Deol, Age 36

**Inter-state Migrant worker- Labor
Darbanga, Bihar
Working in Newtown, Kolkata**



THE STORY OF THEIR LIVES

[SOURCE: Primary study]



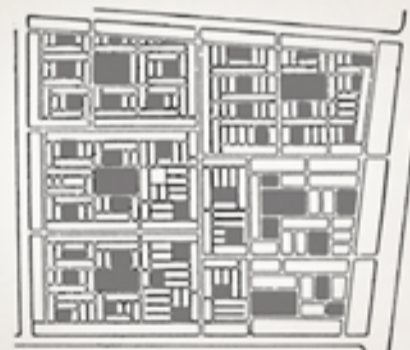
CASE STUDY 1

ARYANA HOUSING PROJECT

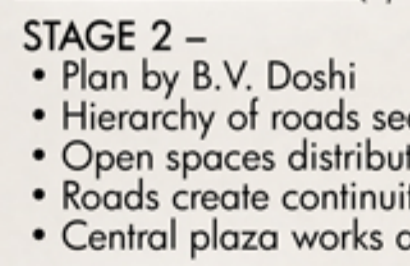
SOURCE: aranya - 3-Details 1146 -pdf, documents.pub_aranya-low-cost-housing



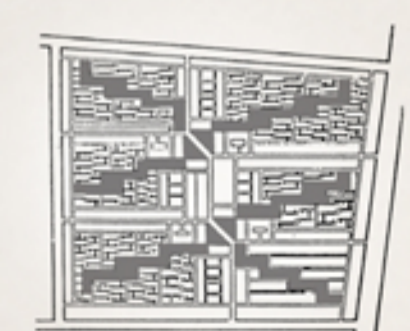
EVOLUTION/DEVELOPMENT OF MASTER PLAN –



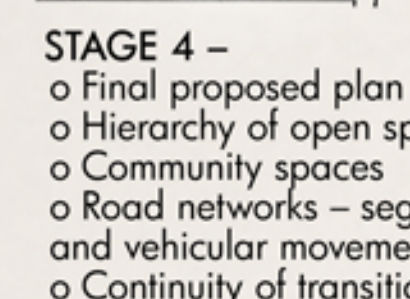
- STAGE 1 –**
- Plan proposed by Indore development authority
 - Typical grid plan
 - Without concept of hierarchy, open spaces and community.



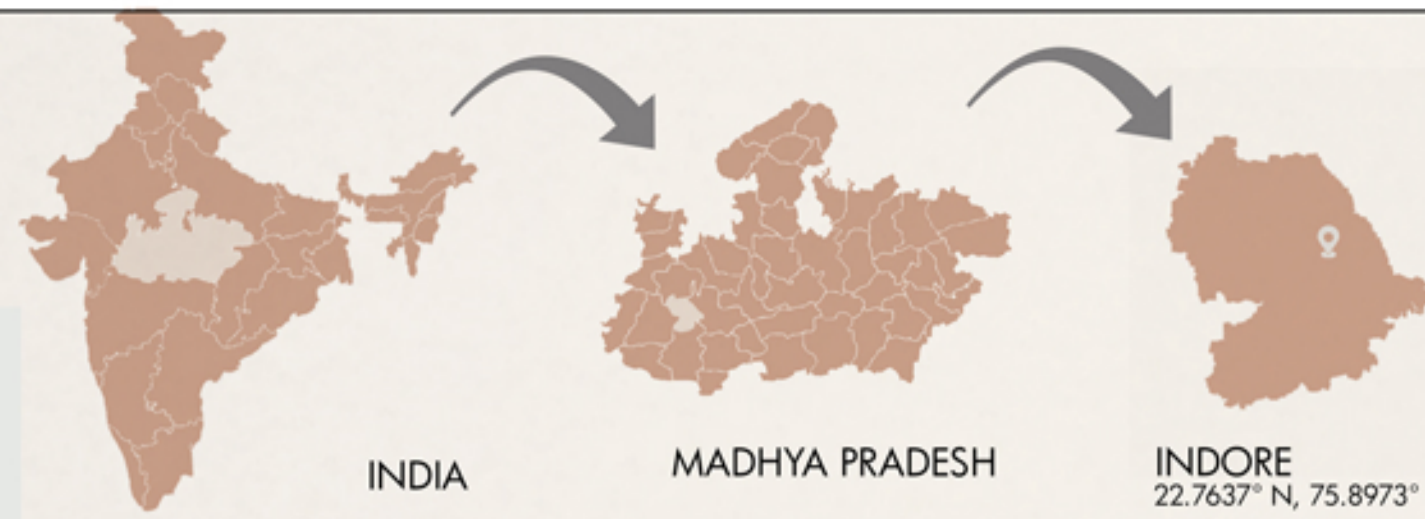
- STAGE 2 –**
- Plan by B.V. Doshi
 - Hierarchy of roads seen
 - Open spaces distributed
 - Roads create continuity & activity spaces.
 - Central plaza works as a market place



- STAGE 3 –**
- Land distribution according to economical section.
 - Orientation of houses according to sun-path.
 - Thus, reduced heat gain.



- STAGE 4 –**
- Final proposed plan
 - Hierarchy of open spaces
 - Community spaces
 - Road networks – segregation of pedestrian and vehicular movement.
 - Continuity of transitional spaces

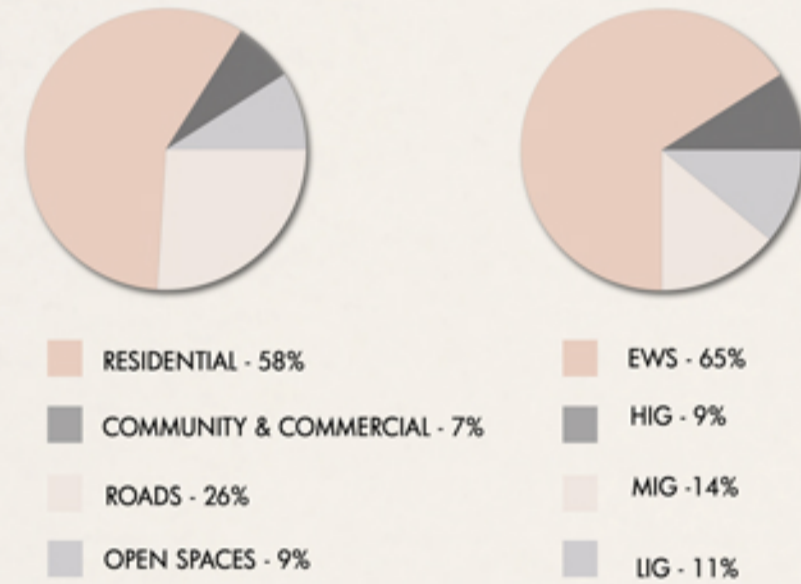


LOCATION: Aranya Nagar, Vijay Nagar, Indore
ARCHITECT: B.V. Doshi & The Vastu Shilpa Foundation
SITE AREA: 85 hectares (100,000 sq. m)
COST: Rs. 100 Million
YEAR OF COMPLETION: 1989
POPULATION: 65000

OBJECTIVES -

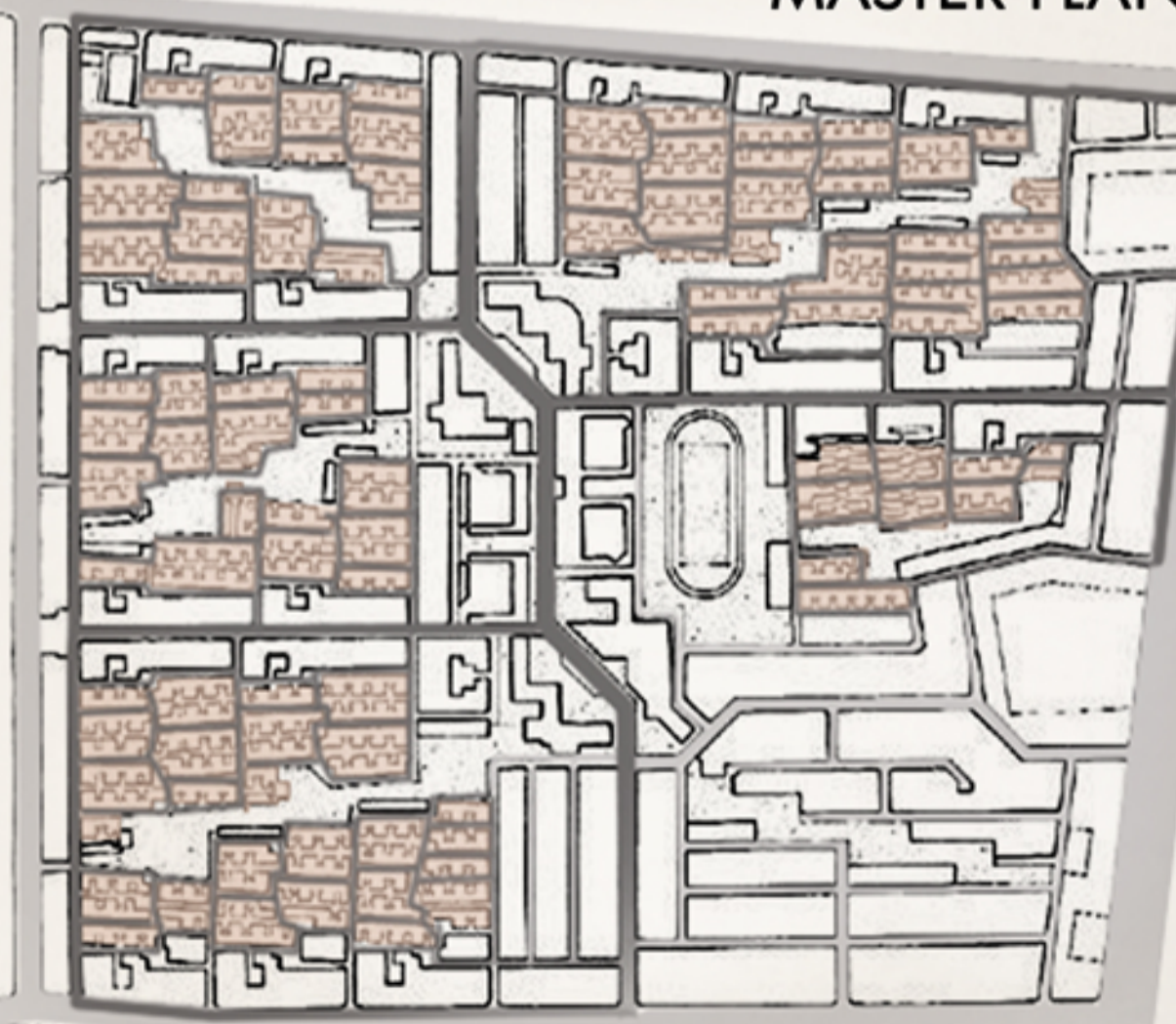
To improve and upgrade existing slum areas.
 To provide sites for new developments instead of building complete houses.
 To create a balanced community of different socio-economic groups and develop a framework through design.
 To create a township with sense of continuity and fundamental values of security.

LAND USE HOUSING DISTRIBUTION



ENTRY/EXITS -

Agra-Bombay highway (east) – 60 m wide
 Main road (north) – 30 m wide



ROADS LANES EWS HOUSING

CHARACTERISTICS

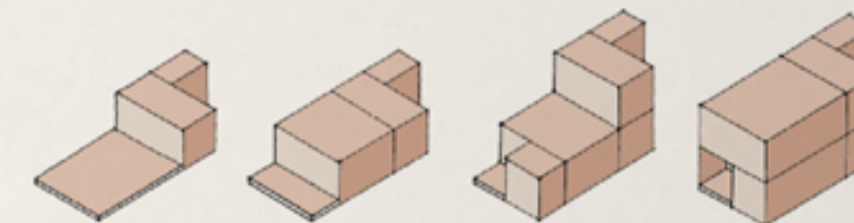


CLIMATE RESPONSIVE FEATURES -

- Opening in north and south on the site permits cross ventilation and natural light.
- Buildings are clustered in low-rise blocks in small size plots.
- Longer façade of building oriented in the north-south axis to reduce solar radiation.
- Houses have common walls and minimum exposure to wall surface.
- Building height to street width ratio provides shade to roads mutual shading.
- Courtyards and public squares are shaded due to the placement of buildings.
- Opening at front and back maximizes airflow



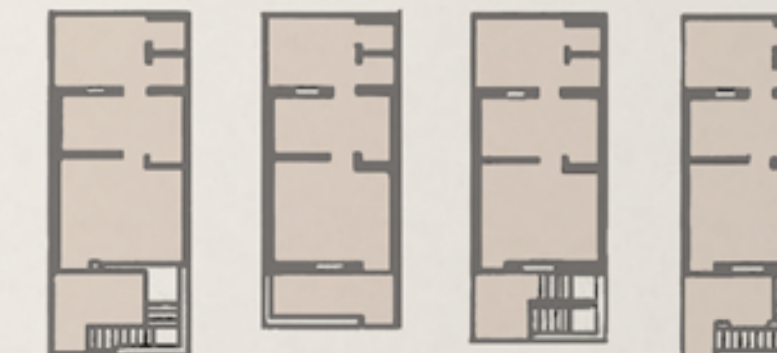
MUTUAL SHADING



ISOMETRIC VIEW OF PROTOTYPES



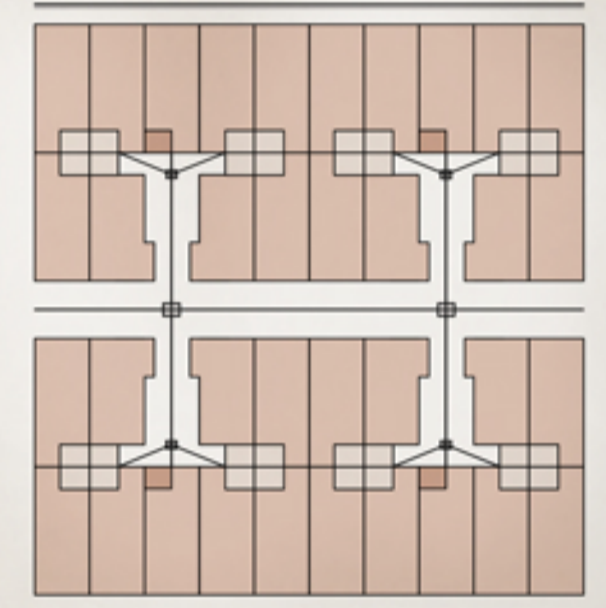
ELEVATIONS OF PROTOTYPES



PLANS OF PROTOTYPES

CONSTRUCTION MATERIALS

- Local materials
- Load bearing walls
- Cement concrete floors
- CRF roofs
- Pile foundation because of black cotton soil
- Doors, windows and grills are made by residents.



SERVICES -

- EACH FAMILY
- Water tank
- Sewerage connection
- Paved access
- Storm water drainage
- Clusters in group of 10 houses.
- Septic tanks for every 2 clusters
- 20 toilets connected to 1 manhole
- 1 service line serves 4 rows of houses.
- Well and lift station near manhole to discharge waste water into treatment plan.

INFERENCE -

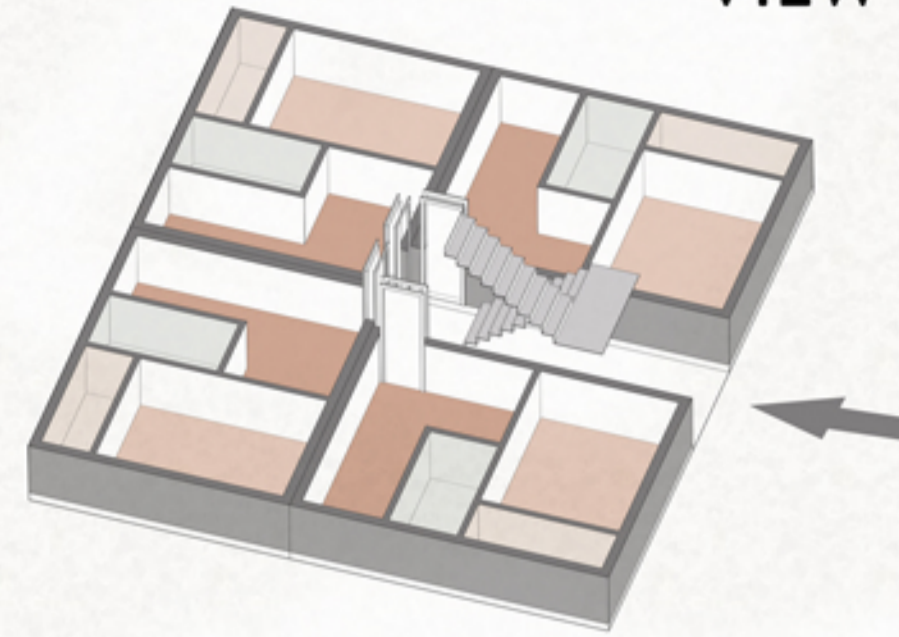
The zoning has established a mutual relationship among spaces segregating it according to the housing typology and the design approach is minimalistic yet very efficient with locally available materials and resources.

CASE STUDY 2

CHANDBERIA EWS HOUSING

BY - HIDCO
PRIMARY CASE STUDY (SOURCE : Primary case study)

BLOCK ISOMETRIC VIEW



- LIVING AND KITCHEN
- BEDROOM
- BALCONY
- WASHROOM

COMMUNITY STRATEGIES:

The central playground acts as a multi-purpose space for gaming activities as well as community events such as meetings and celebration of festivals which are done by constructing temporary pavilion like structures.



MANAGEMENT SYSTEM:

Internal drains run along the internal roads and they all are connected to the main drain that run under the main road.



PEOPLE:

People residing in this housing are engaged in various activities for living who are residing here in the last 4 years.



COMMUNITY:

480 families reside in this EWS housing. Each family has 3-7 members residing in a 350 sq ft 1BHK flat.



AMENITIES:

- a) Central playground for common use and community gathering.
- b) Parking of vehicle such as cycles and auto-rickshaws on the internal roads.



SWOT ANALYSIS

STRENGTH:

The central playground provides ample space for recreational activities.
The building blocks are arranged in such way that all the units receive ample natural light and ventilation
The surrounding areas are quite safe



WEAKNESS:

Poor hygienic environment due to lack of maintenance
Lack of organized parking
Water logging occurs in the monsoon season at the plinth level entrance to the building.



OPPORTUNITY:

Local market and adjacent lake provide scope for revenue generation of the residents.
The site has potential for future expansion



THREAT:

Poor maintenance renders the site unhygienic and makes it a breeding ground for insects and rodents which makes the surroundings disease



INTEGRATIONAL RELATIONSHIP:

There is a local market located 1km away from this housing which aids in sustenance of the people residing in this housing as well as is a source of their income generation. Many people residing in this complex put on stalls in the market of varied items. Fish rearing takes place in the adjacent lake which also is an employment sector for the people residing in this housing.



Name of the project: Chandberia EWS Housing
Location: Newtown, Action area-I, Kolkata 700156
Site Area: 16,315.5 sqm
No. of Flats: 480
No. of families: 480
No. of Blocks: 30
No. of flats in each block: 16
Area per flat: 350 sq ft



MASTER PLAN

INFERENCE

With regular use and lack of maintenance the surroundings can become unhygienic and a breeding ground for diseases. Hence measures should be taken and areas which can be easily maintained should be provided. Water logging is a measure in Kolkata during monsoon, hence proper measures should be taken in mind keeping in mind the problems that may occur during the monsoon season.

HOMELESS HOMEMAKERS

WEST BENGAL GOVERNMENT SCHEMES FOR MIGRANT WORKERS

- West Bengal State Workers welfare Schemes.
- SamajikSurahsha Yojana
- Building & other Construction workers Scheme
- West Bengal Transport workers social security scheme
- Beedi Workers Welfare Scheme
- Financial Assistance to the workers of In-Locked out Industrial Unit

(SOURCE: Labor Commissionerate, Labor department, Govt of West Bengal - <https://wbic.gov.in>)

Beedi Workers Welfare Scheme

West Bengal Beedi Workers' Welfare Scheme under labour department's resolution no. 658-LW/2B-02/07 dated 23.08.2007 is a detailed scheme in which beedi workers are entitled to uniform subsidy @ Rs. 20000/- per Beedi Worker w.e.f. 1st April, 2013 in addition to the central grant for construction of houses.

(SOURCE: Labor Commissionerate, Labor department, Govt of West Bengal - <https://wbic.gov.in>)

LIVING CONDITIONS OF MIGRANT WORKERS IN KOLKATA

TYPE OF SLUMS

- Notified slum - 66.8%
- Non-notified slum - 17.1%
- Dwellings at site - 0.0%
- Open space - 6.4%
- Others - 9.7%

TYPE OF SHELTER

- Squatter hut - 2.4%
- Katcha house - 14.0%
- Semi pucca house - 47.6%
- Pucca house - 21.3%
- Open space - 10.0%

Kolkata, is the 3rd largest city of India in terms of population. The city's population in 2001 was 13.2 million and rose to 14.62 million by 2011. Kolkata is one of the destinations for interstate migrants. Approximately 1/3rd of the population of Kolkata lives in slums. A total number of 39658 houses has been recruited for the population among which 69.3% live in rental houses.

(SOURCE: Press Information Bureau, Government of India, 2011 Indian States - million plus states in India as per census 2011)

PERCENTAGE OF POPULATION BY RESIDENTIAL STATUS, SEX IN WEST BENGAL AS PER 2011 CENSUS



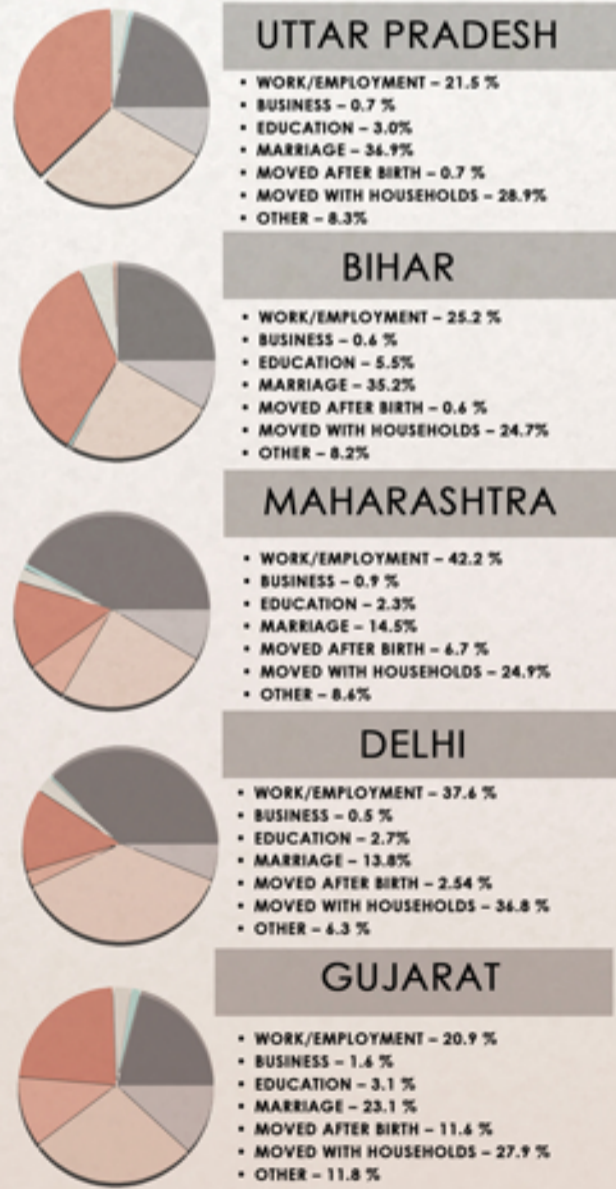
(SOURCE: Database on labour & employment statistics of West Bengal - 2014)

LABOUR FORCE PARTICIPATION (PER 1000 PERSONS) UNDER PRINCIPAL & SUBSIDIARY STATUS IN WEST BENGAL



(SOURCE: Database on labour & employment statistics of West Bengal - 2014)

STATES WITH MAXIMUM MIGRANT POPULATION



(SOURCE: Migrant data- Census of India, 2011)

It is planned to have rental housing with adequate habitat facility in the Action Area IIC EWS Project considering the labour migration population in Newtown contributing to build the smart city of which majorly involved in Construction and manufacturing industries. Rental scheme is published in HIDCO website after consulting and getting the architectural design with all details.

(SOURCE: Primary info collected at HIDCO helpdesk at HIDCO BHAWAN NEWTOWN KOLKATA)

THE TIMES OF INDIA

January 24, 2021

WEST BENGAL AFFORDABLE HOUSING PLAN IN NEWTOWN KOLKATA

KOLKATA: The Housing Infrastructure Development Corporation (HIDCO) plans a consultant to prepare architectural design along with detailed estimate and bid documents to set up affordable housing of LIG and EWS category on about 7.6 acres in New Town.

Officials said that the authorities have been taking up work of various types of construction in New Town under the Smart City project and that developing housing schemes is one of the features of a Smart City to cater the need of affordable housing.

"The plan is to provide EWS and LIG housing in large numbers to become inclusive vibrant and affordable to a large section of people to which an area has been embarked in Action Area IIC", said an official.

(SOURCE: timesofindia.indiatimes.com)

HIDCO, KOLKATA

WEST BENGAL HOUSING INFRASTRUCTURE DEVELOPMENT CORPORATION

West Bengal Housing Infrastructure Development Corporation (WBHIDCO) plans and executes development projects in the entire 6,000-7,000-hectare area in Rajarhat, Kolkata, west Bengal. The erstwhile planning area of WBHIDCO is divided into four Action Areas namely Action Area I, Action Area-II, Action Area-III. There is another area in between Action Area I & II known as Central Business District (CBD)

WBHIDCO is trying to develop Rajarhat, New Town as a futuristic smart city. WBHIDCO has prepared the LUDCP and it is developing all infrastructure like roads, drains, sewerage line, water supply lines, major beautification works and other related major works as per master plan. With multinational IT giants are setting up campuses in the area, the civic body wants to make infrastructure full-proof.

HIDCO currently has purposed an affordable housing plan in New Town Kolkata considering the population of EWS migrant workers in the growing sector of New Town.

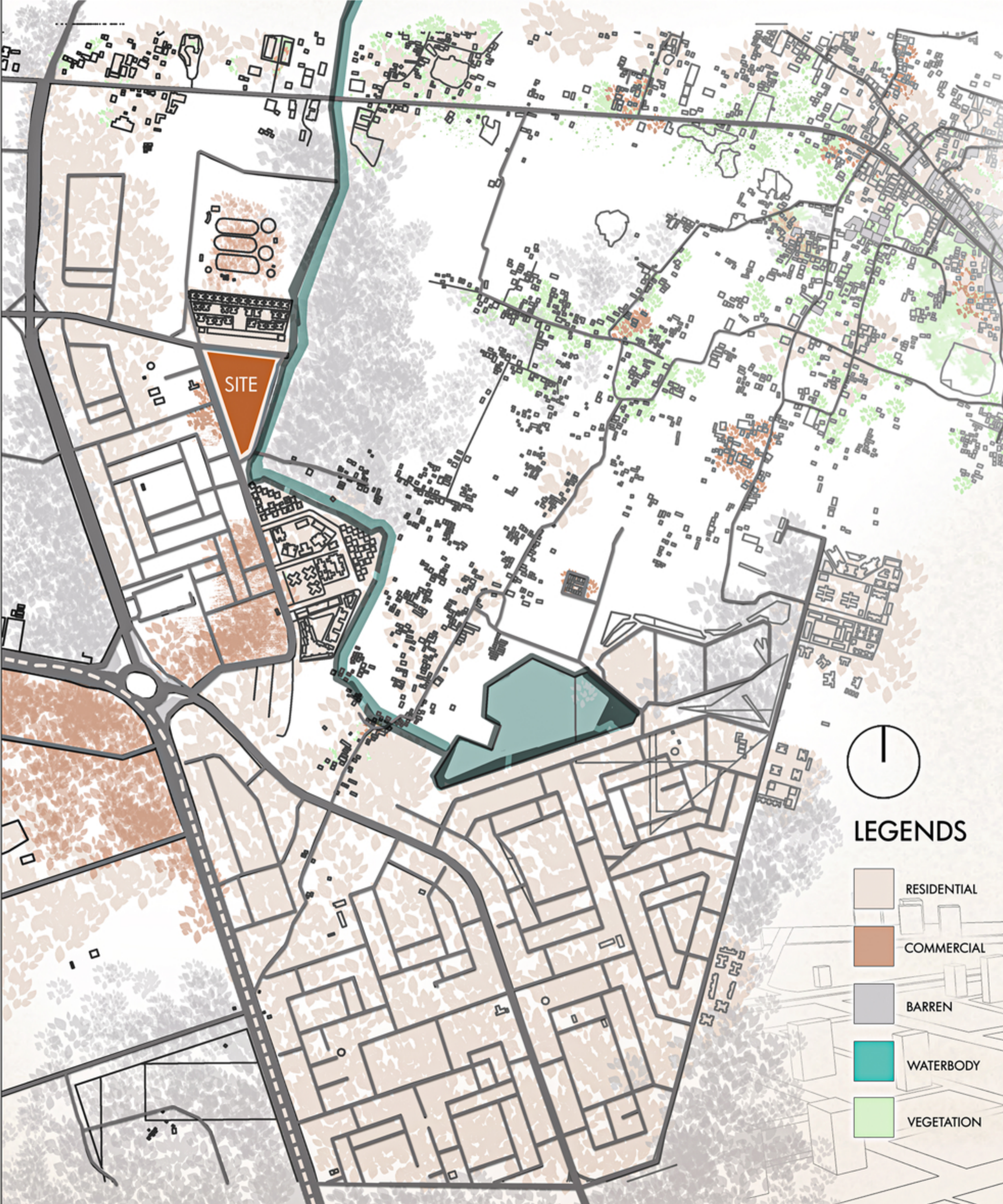
(SOURCE: www.wbhidcoindia.com)



6 HUDCO TROPHY | 2020-21

63HUD-1





WHY NEWTOWN?

Newtown being the new emerging planned urban agglomeration of Kolkata, the construction industry is facing a new employment transformation to cope up with the need of human capital in construction sector, nearly employing 42% of the entire construction workers requirement in the state with demand of employment in various sectors soon in upcoming years.

ROADS AND TRAFFIC

25M wide Biswa Bangla Sarani passes through all the action areas connecting them well to inter zone roads of average 9m.



NODES

Major nodes connect various action areas of Newtown with Biswa Bangla Sarani which itself divides the entire Newtown into zones.



CONSTRUCTION SITES

Emerging as new Kolkata the Newtown is facing an infrastructure development transformation with construction all around.



LANDMARK

Newtown has both manmade and natural landmarks. Natural landmarks are defined by the presence of wetlands and water bodies.



DENSITY

HIGHEST DENSITY
MEDIUM DENSITY
LOWEST DENSITY



VEGETATION

Due to soil fertility, thick vegetation is seen spread across Newtown with many man made vegetation for recreational in form of parks.



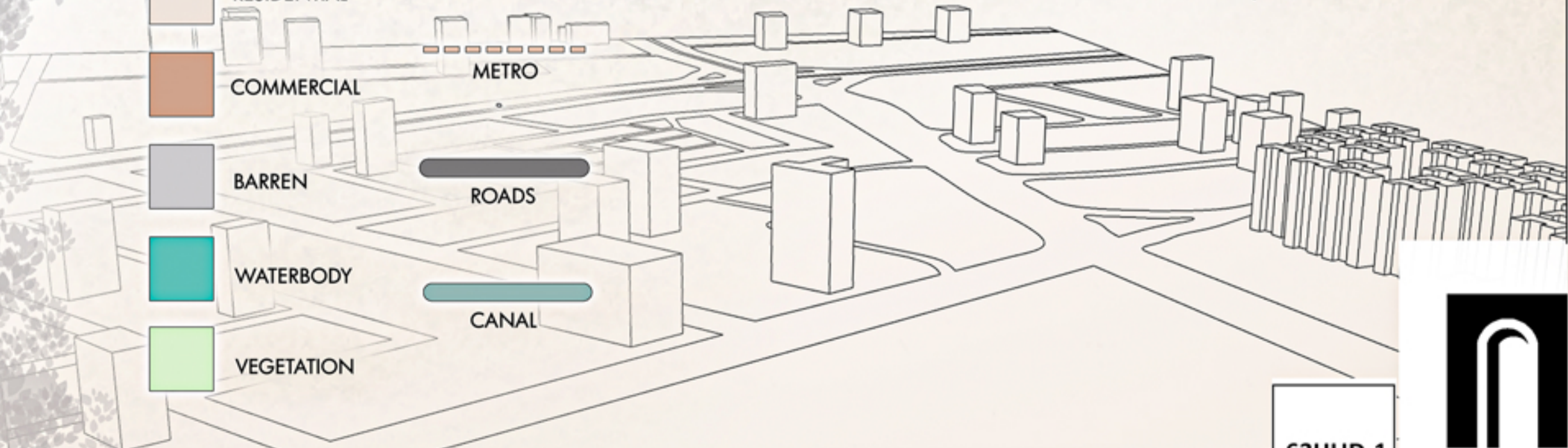
LEGENDS

- RESIDENTIAL
- COMMERCIAL
- BARREN
- WATERBODY
- VEGETATION

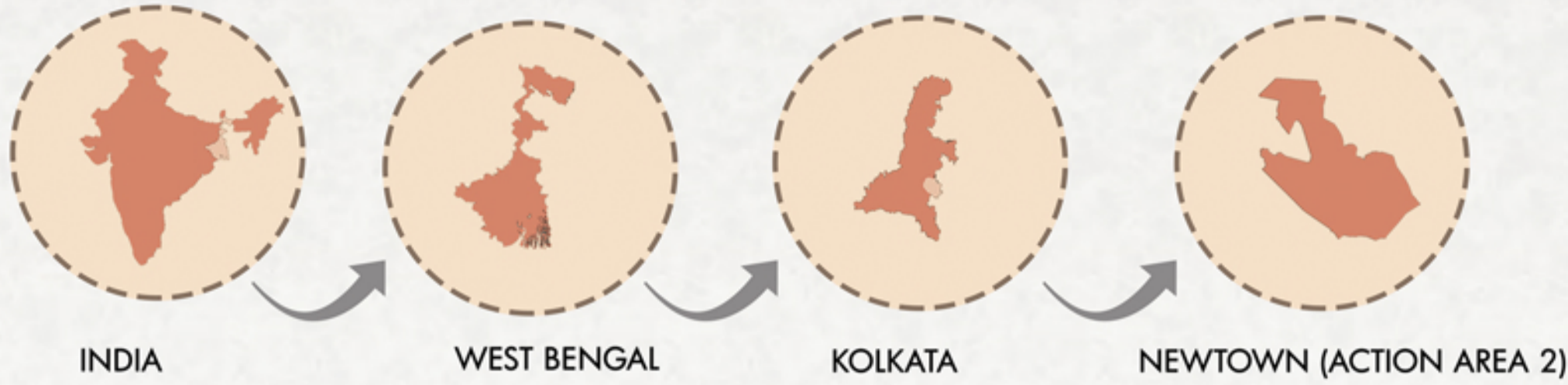
METRO

ROADS

CANAL



SITE ANALYSIS



The site is located on Action Area IIC of Newtown area, Kolkata West Bengal. The site is surrounded by residential complex and few community service buildings and falls under residential zone of Planned Newtown. The site is located near Action Area IIC community market and on the and on the Fertile Alluvial soil with a small canal on east side.

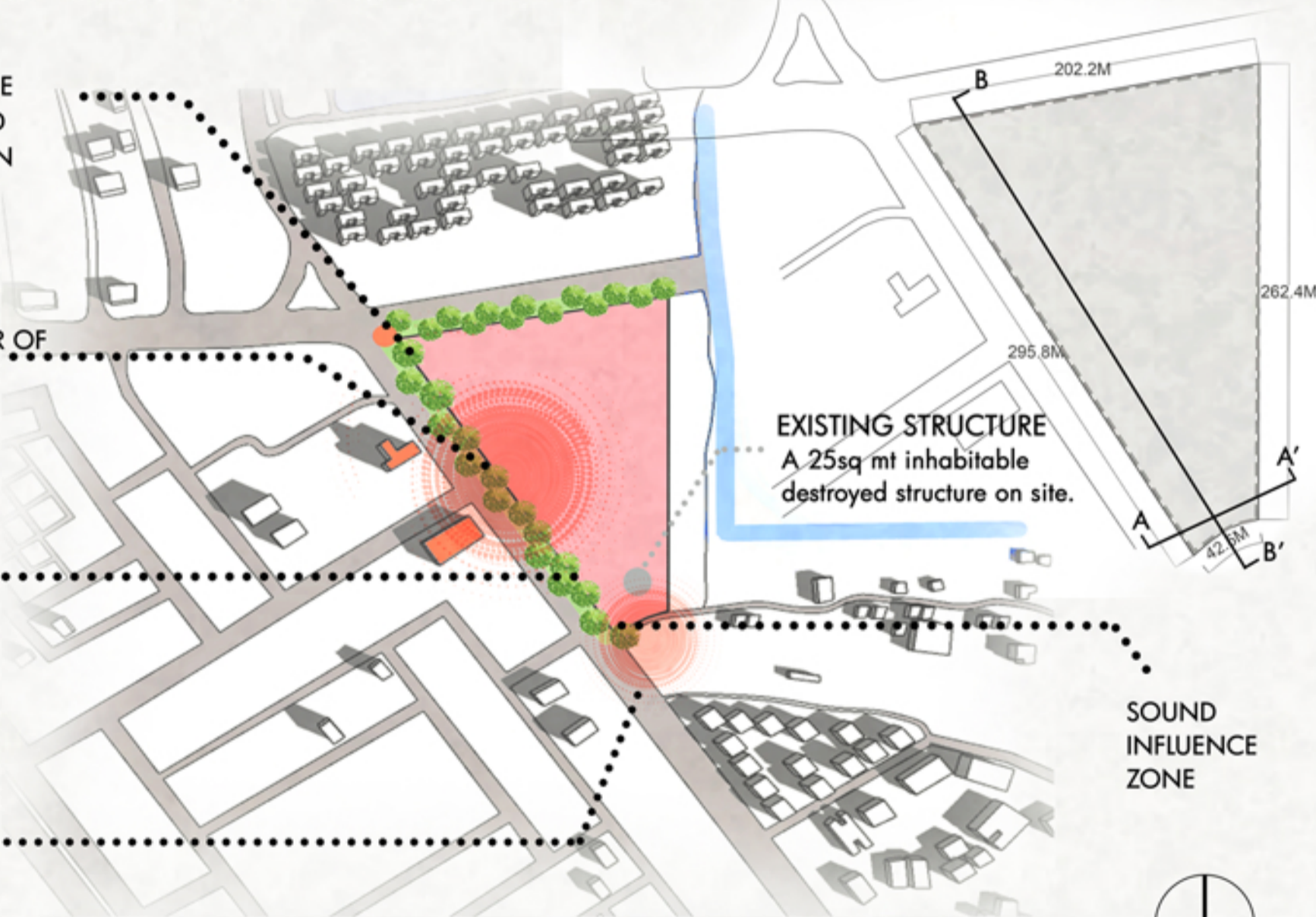
LOCATION - 22°37'35.1"N 88°28'01.2"E
SITE AREA - 7.6 ACRES
ROAD WIDTH - 25M STREET NO 626

PLANTING TREES NEAR THE DEVELOPING AND PRESERVING VEGETATION

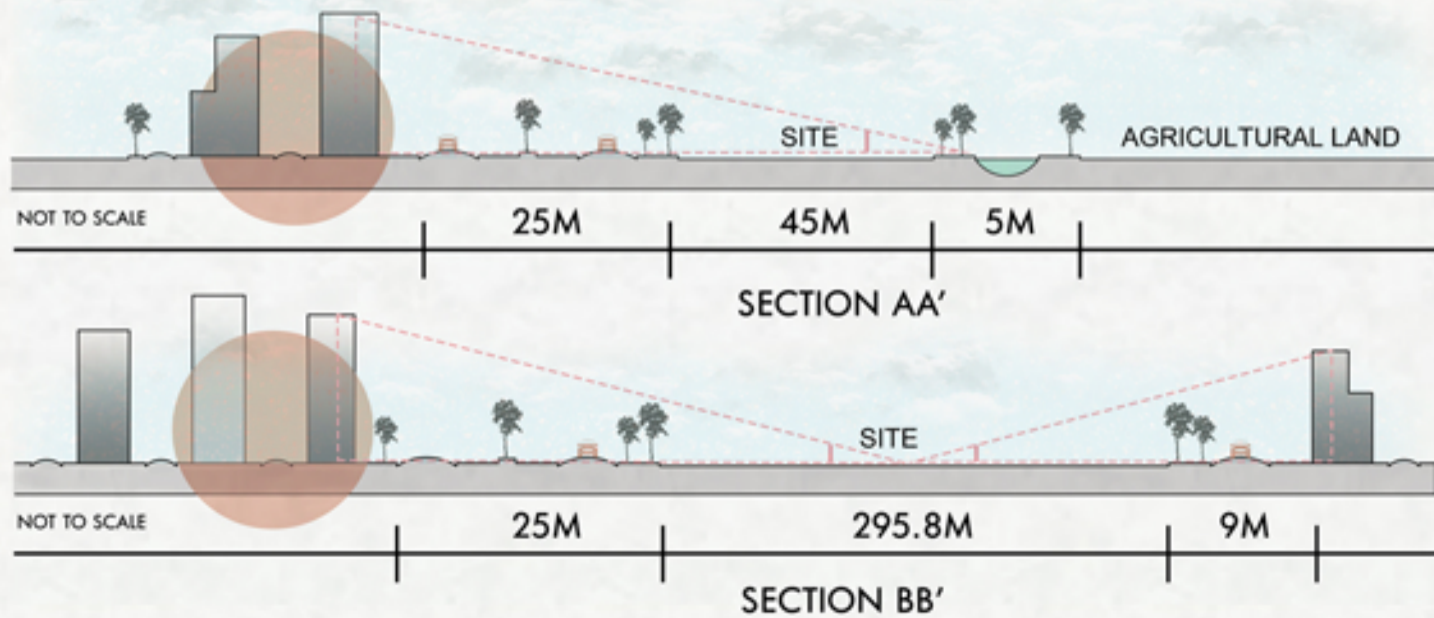
PROVIDING DOUBLE LAYER OF TREES FOR ACOUSTIC AND SOUND

PROVIDING PERMEABLE PAVERS.

DEVELOPING STREET FRONT



EXISTING STRUCTURE
 A 25sq mt inhabitable destroyed structure on site.



GEOGRAPHY

Newtown in the extreme north of Kolkata lying between kestopur canals connected with several branches and connecting Kolkata Wetlands is a planned extension of river city Kolkata with The Ganges on its west with various Agricultural lands in Peri urban is one of the fastest growing city in India.

MANMADE FEATURES

Electrical posts & pedestrian walk way.

NEIGHBORHOOD

Medium dense residential area with NKDA community market and Action area IIC electrical sub station.

NATURAL FEATURES

The site is covered by few vegetation and is currently used as ground.



LAND USE

All surrounding structure are residential with few community service buildings.



CONSTRUCTION SITE

All around site construction plots are available which demands heavy migrant worker flow in Newtown.



ROADS

Access road width is 25M street no 626



SERVICES

Underground Drainage, electrical & water supply is by HIDCO along the abutting street no 626 of site.



TOPOGRAPHY

9M above mean sea level Fertile Alluvial soil is available throughout the city.



SOUND INFLUENCED ZONE

Due to traffic load on abutting road of 25M in coming years there will be enough sound on the west side of Site.



NODES



LANDMARKS

TRAVEL DISTANCES



AIRPORT
6.4KM



BUS STAND
1KM



METRO
1.2KM
(UPCOMING AKHANKHA)



AUTO
0.6KM



HOSPITAL
4.7KM



MARKET
0.1KM



ATM
0.7KM

STRENGTH

- Well connected & central Hub
- Proximity to utilities, services & transit nodes
- Markets are easily available
- Site orientation gives scope of maximized air flow.
- Hospital and institutional buildings are in proximity
- Located in smart city with future development scope.
- Linear land giving maximum exposure to nature and views.
- Well living environment due to proper planning of zones
- Favorable microclimate due to more open spaces all around
- Proximity to religious building as well

WEAKNESS

- Green spaces are not uniformly distributed
- Traffic load will increase for present commercial and institutional zones.
- Warm and Humid climate does not support Outdoor activity
- Current transportation is not fully adequate
- Air quality index is high due to heavy construction all around
- Noise and smoke pollution occur during peak hours
- Heavy rainfall often leads to water logging

OPPORTUNITY

- Adequate space for Urban Farming
- Employment is highly growing in all sector in Newtown
- Can Support in rapid Urban development
- Has potential to create community spaces

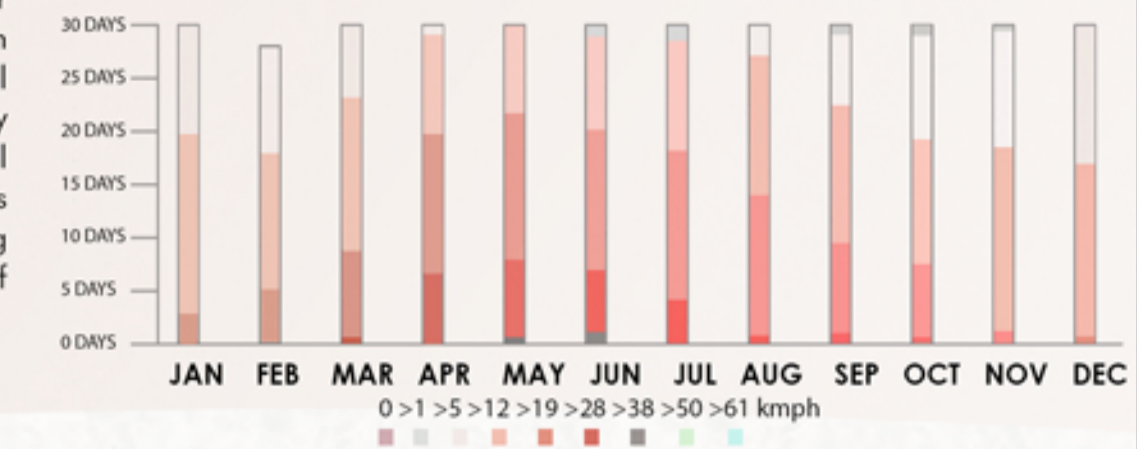
CHALLENGES

- Underdeveloped water body around site and low maintenance of canal
- Recurring and maintenance cost is high
- Traffic congestion around site in future will create noise & air pollution

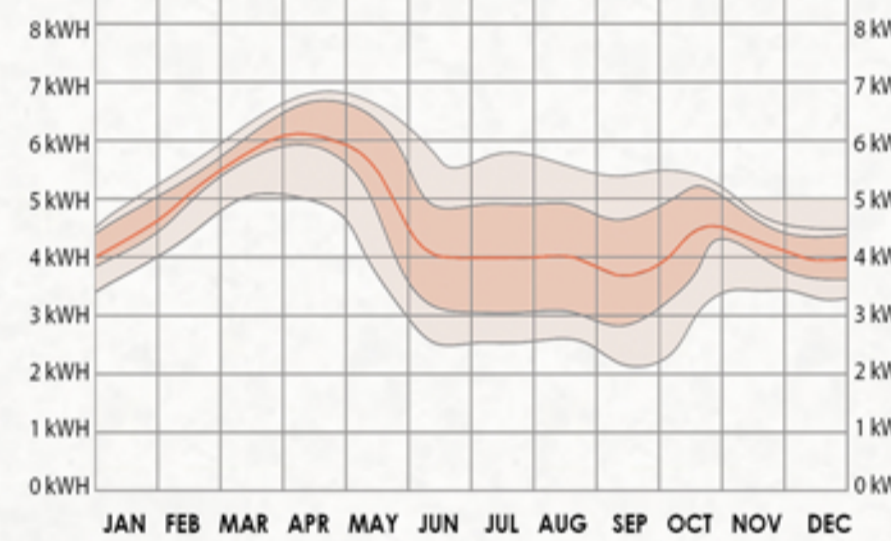
The climate in Kolkata is Tropical wet and dry. The hot summer starts in Mid-March and goes till mid of July with average temp of 36°C and achieve max 41°C in May. The humid monsoon starts from end of July and persist until end of September with an average precipitation of 1600mm with frequent thunderstorm. Annual Rainfall is about 1582mm. The cool dry winter starts in late November and lasts till end of February. Winters are sometimes very cool but not so pleasant touching 16°C average. The coolest time is end of December every year.

CLIMATE ANALYSIS

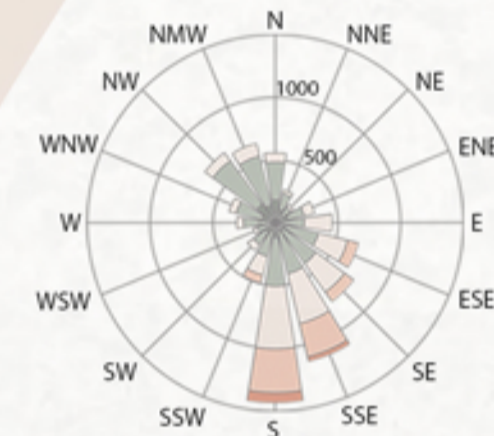
WIND SPEED



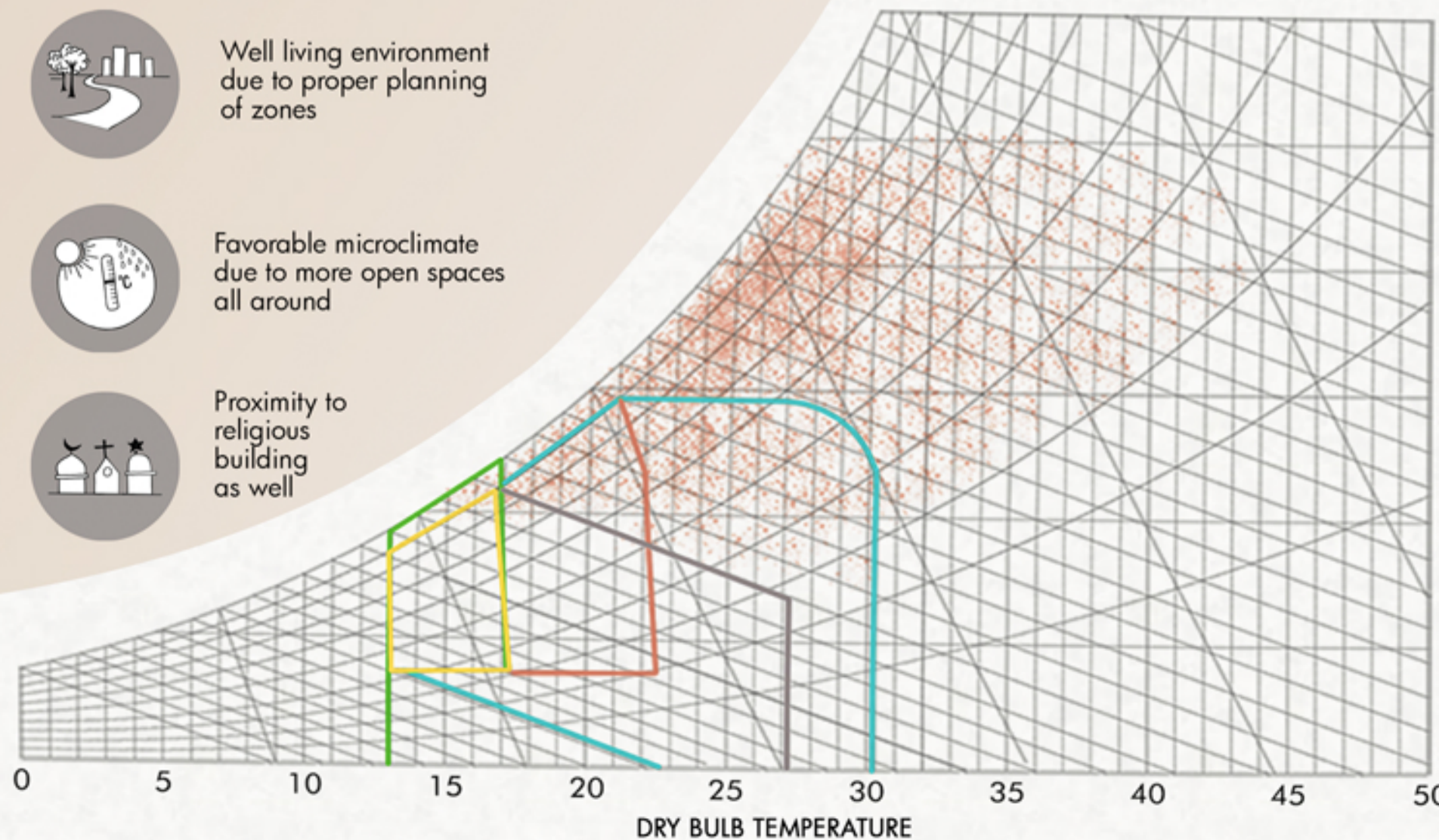
AVERAGE DAILY INCIDENT SHORTWAVE SOLAR ENERGY



WIND ROSE

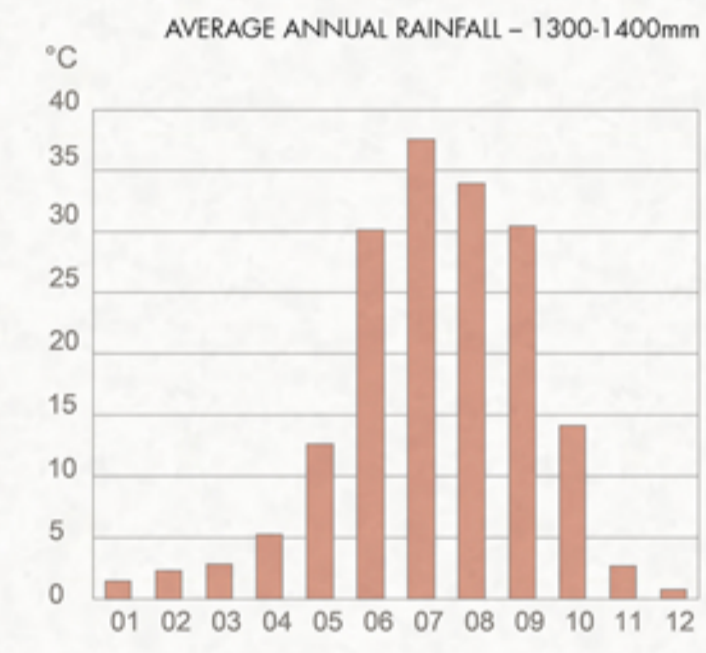


PSYCHOMETRIC CHART

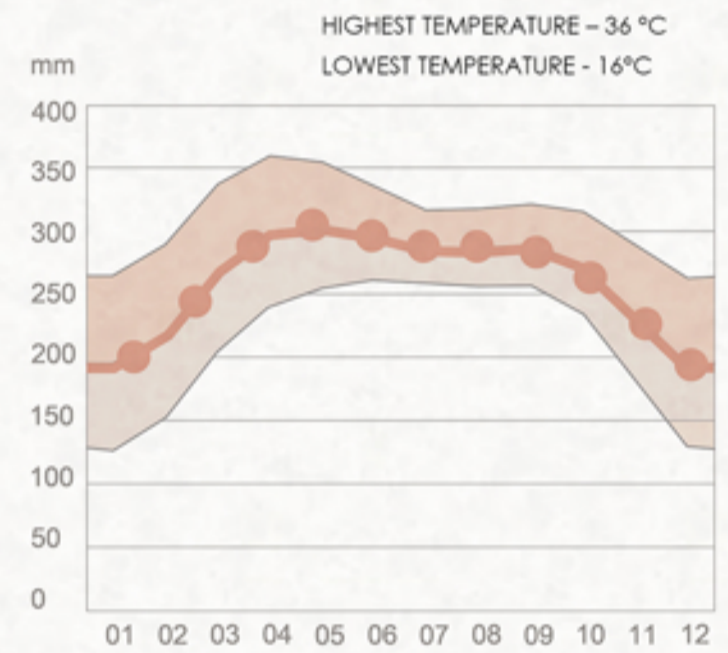


■ DIRECT EVAPORATIVE COOLING ■ INDIRECT EVAPORATIVE COOLING ■ PASSIVE SOLAR HEATING ■ NATURAL VENTILATION ■ COMFORT ZONE

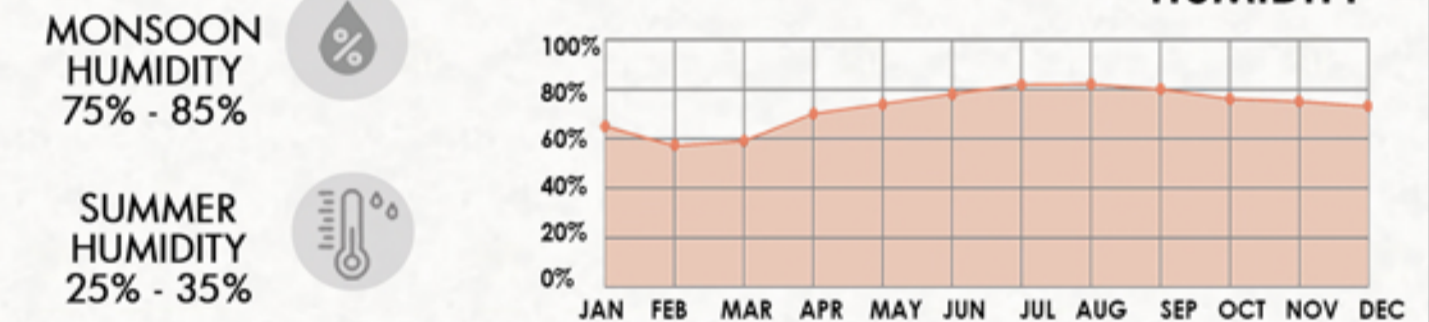
RAINFALL



TEMPERATURE

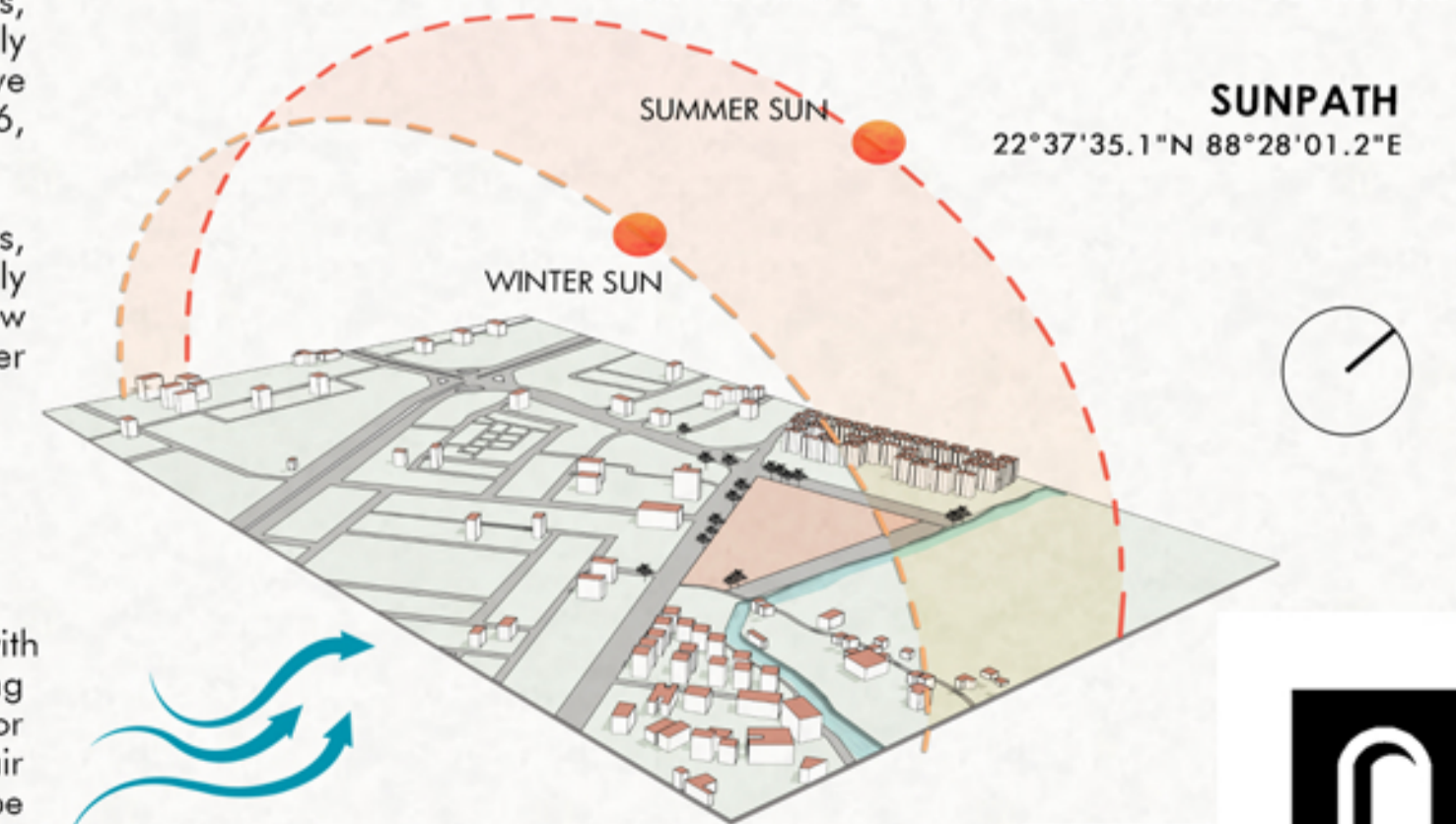


HUMIDITY



SUNPATH

22°37'35.1"N 88°28'01.2"E



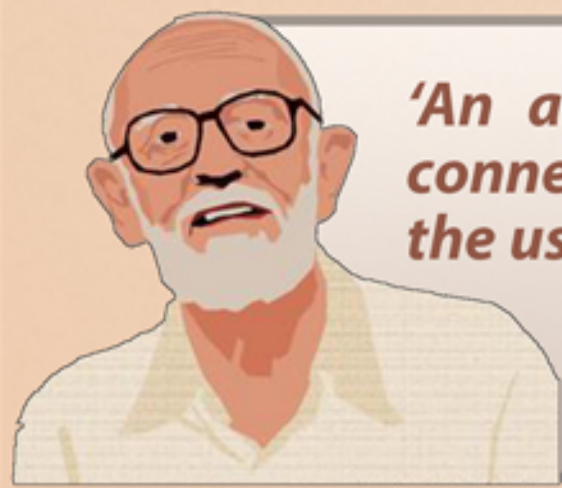
The average daily incident shortwave solar energy experiences some seasonal variation over the course of the year has been studied to install solar panel and calculate the amount of energy to be generated to minimize the dependence on conventional sources of energy.

The brighter period of the year lasts for 2.2 months, from March 7 to May 13, with an average daily incident shortwave energy per square meter above 6.1 kWh. The brightest day of the year is April 16, with an average of 6.7 kWh.

The darker period of the year lasts for 4.0 months, from June 11 to October 9, with an average daily incident shortwave energy per square meter below 4.5 kWh. The darkest day of the year is September 15, with an average of 4.0 kWh.

MICROCLIMATE

The building should be oriented on East West axis with longer façade facing North-South to utilize prevailing wind breeze with cross ventilation with protection for hot breeze from south-west. To maximize air movement and ample cross ventilation opening to be made on south façade and proper thermal insulation and west façade to minimize heat gain.

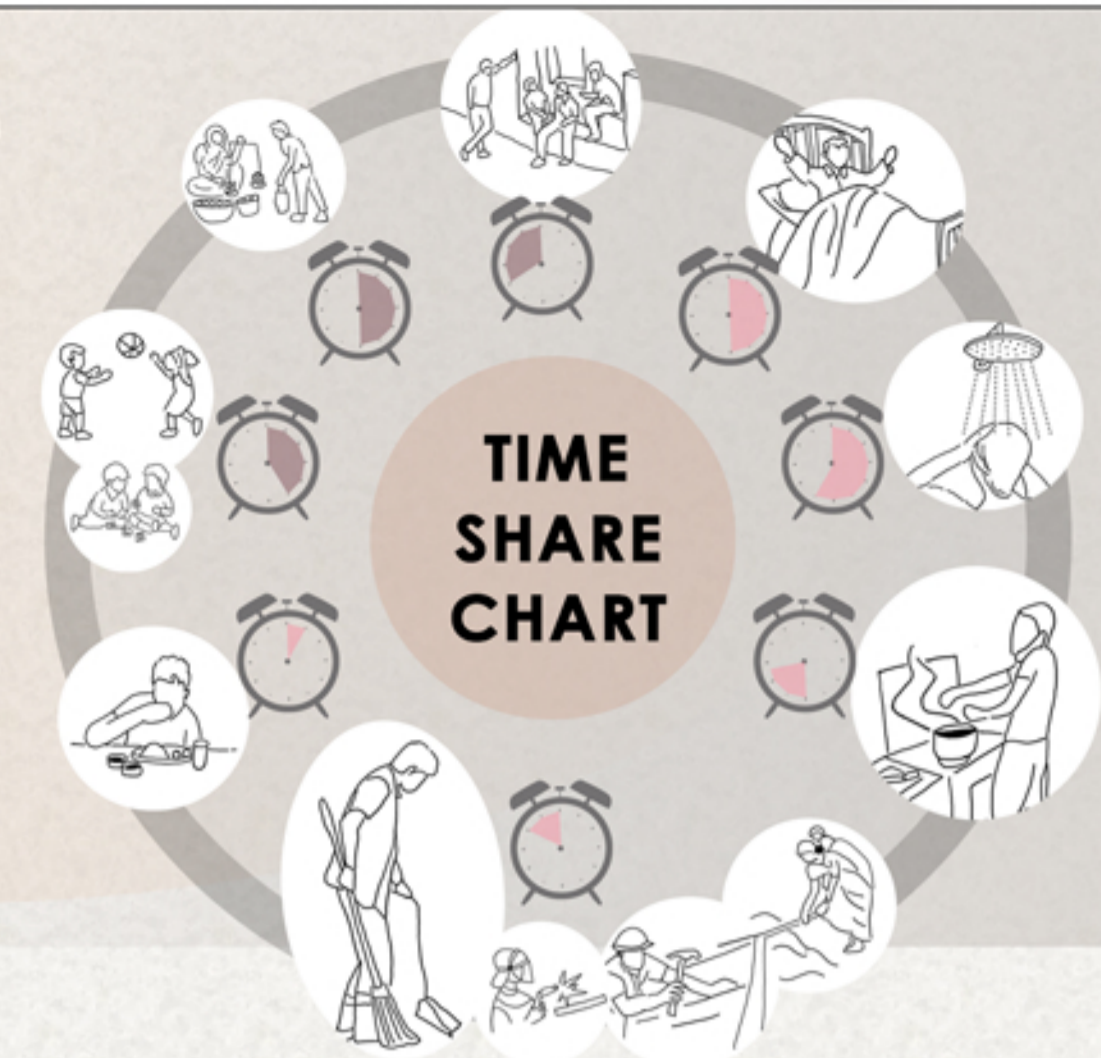


'An architect should connect the Soul of the user'

-AR. LAURIE BAKER

CONCEPT AND DESIGN STRATEGIES

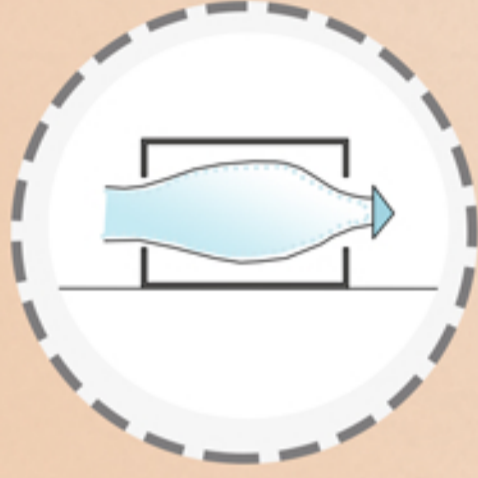
With well-known facts of present scenario of labour housing and settlements in urban region, our concept evolved following their time-share and living environment of community. Redefining their habitat by incorporation various community spaces as common and incorporating shared activity makes efficient utilization of spaces with a low and shared maintenance and economic viability in an urban scape like growing Kolkata with shortage of land. Adding passive strategies and non-compact modular planning gives them a better habitat with proper natural air and light utilization with incorporated recreational space forming a society with all involved for proper development of the neglected and unseen section of society. With the triangular shaped land (Called Goumukh site), our concept evolved with Forming open cluster with proper orientation of blocks to have distinct barrier between public and private spaces with giving a sense of community living and visual connectivity respecting each dwelling's private and shared public space with community.



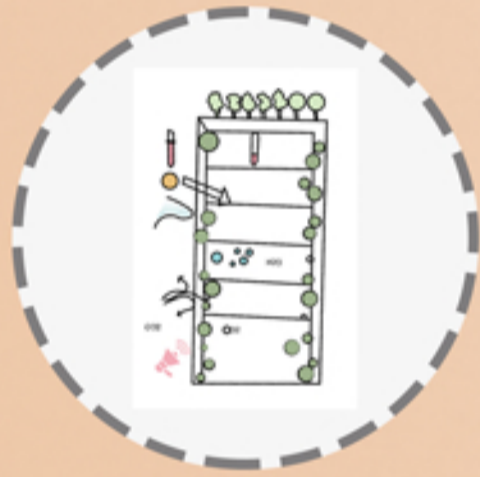
REDEFINING HABITAT



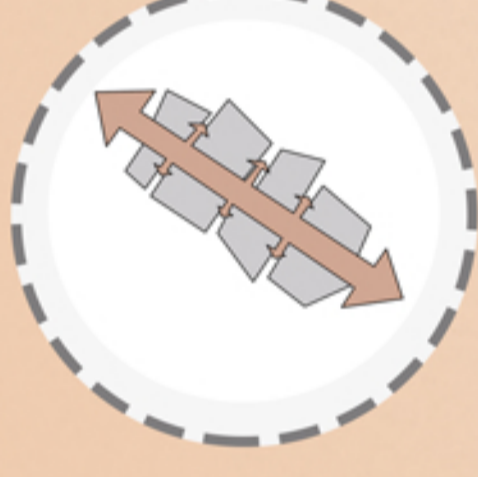
Utilizing Optimum Natural Lighting



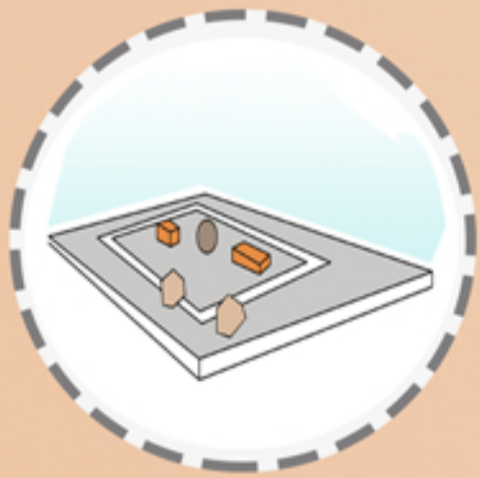
Enough Natural Ventilation



Microclimate regulation



Street corridors



Flexible spaces



Large public areas

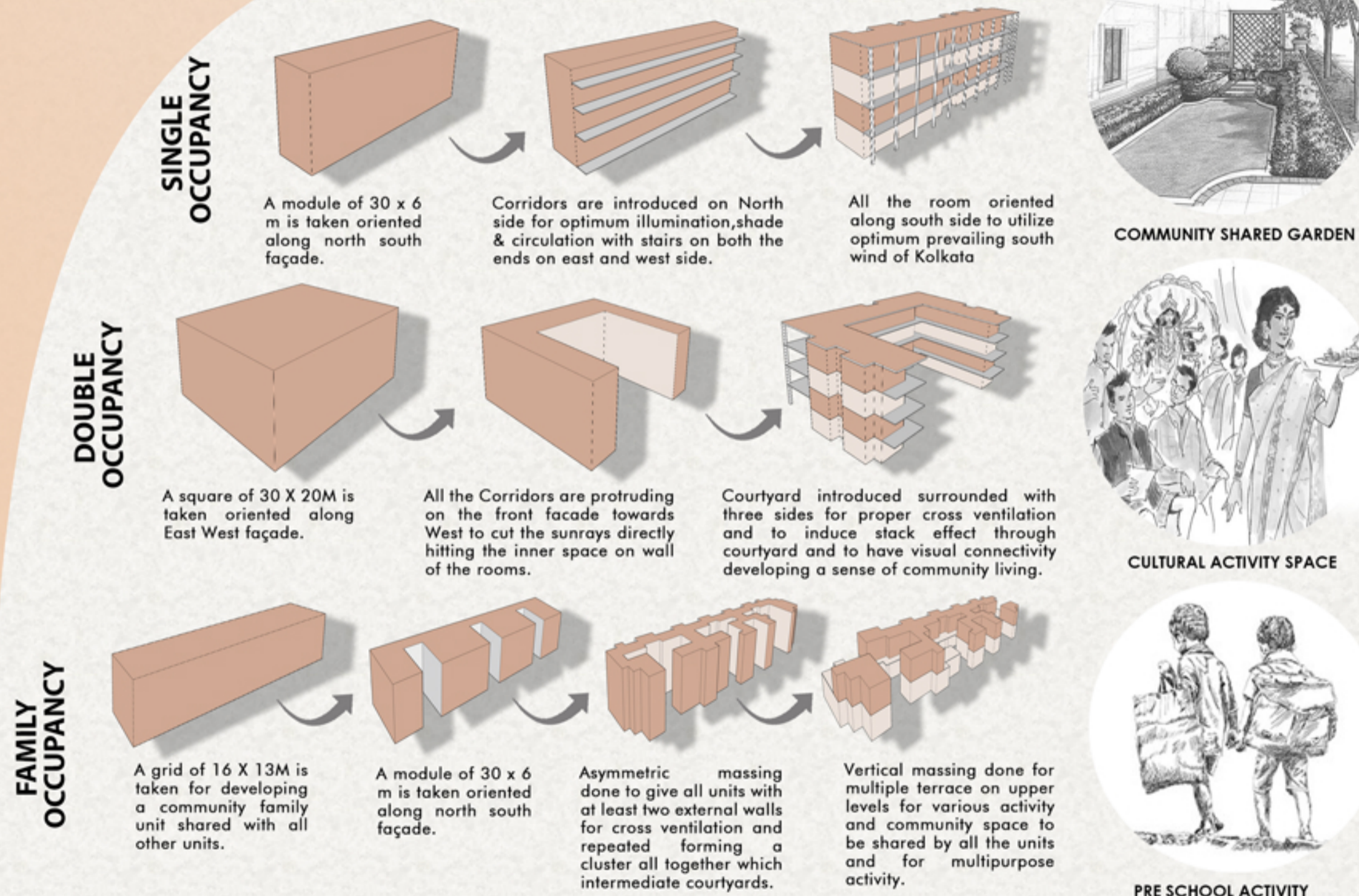


Proper orientation

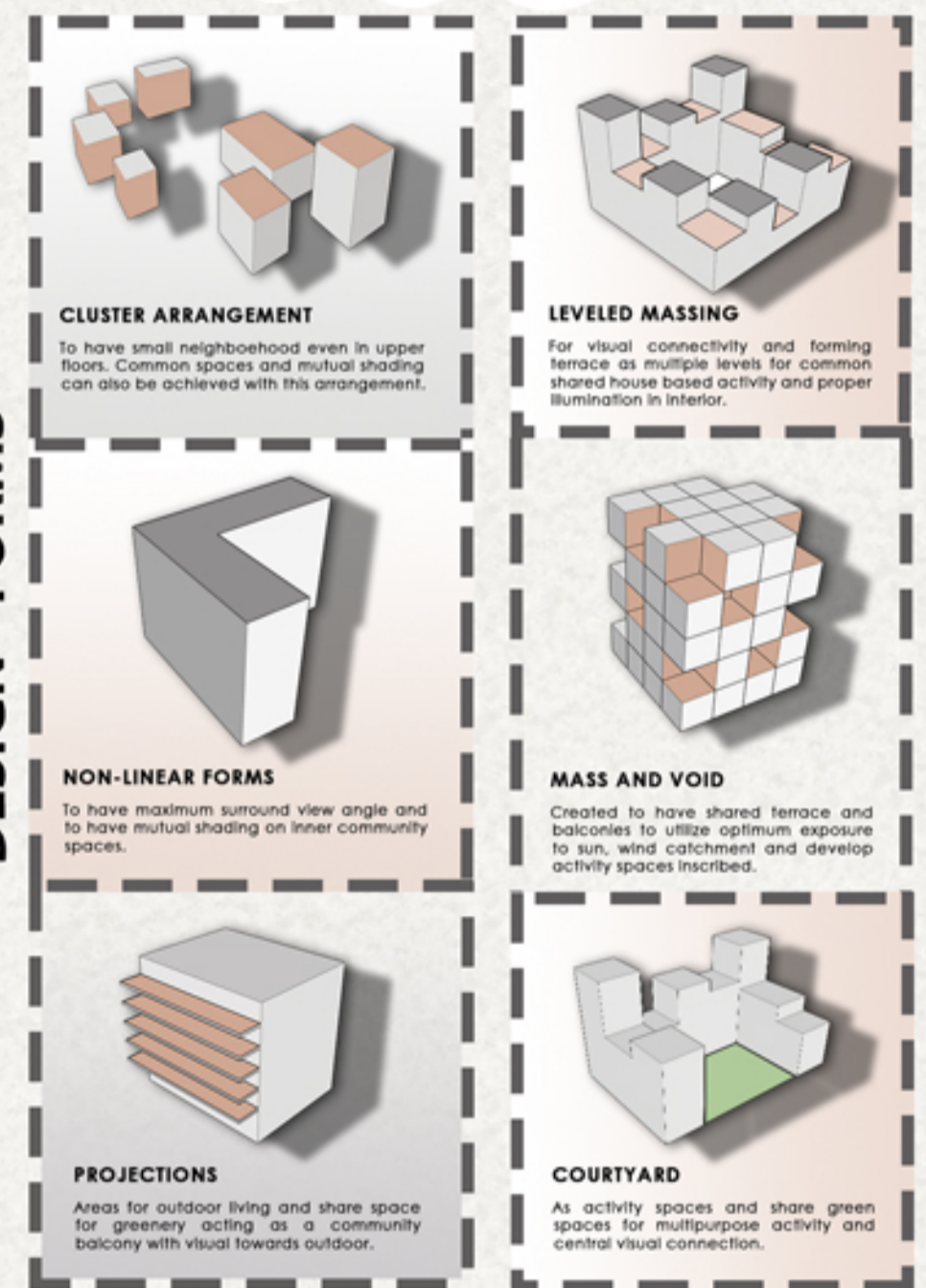


Nature spaces and fitness parks

FORM DEVELOPMENT



DESIGN FORMS

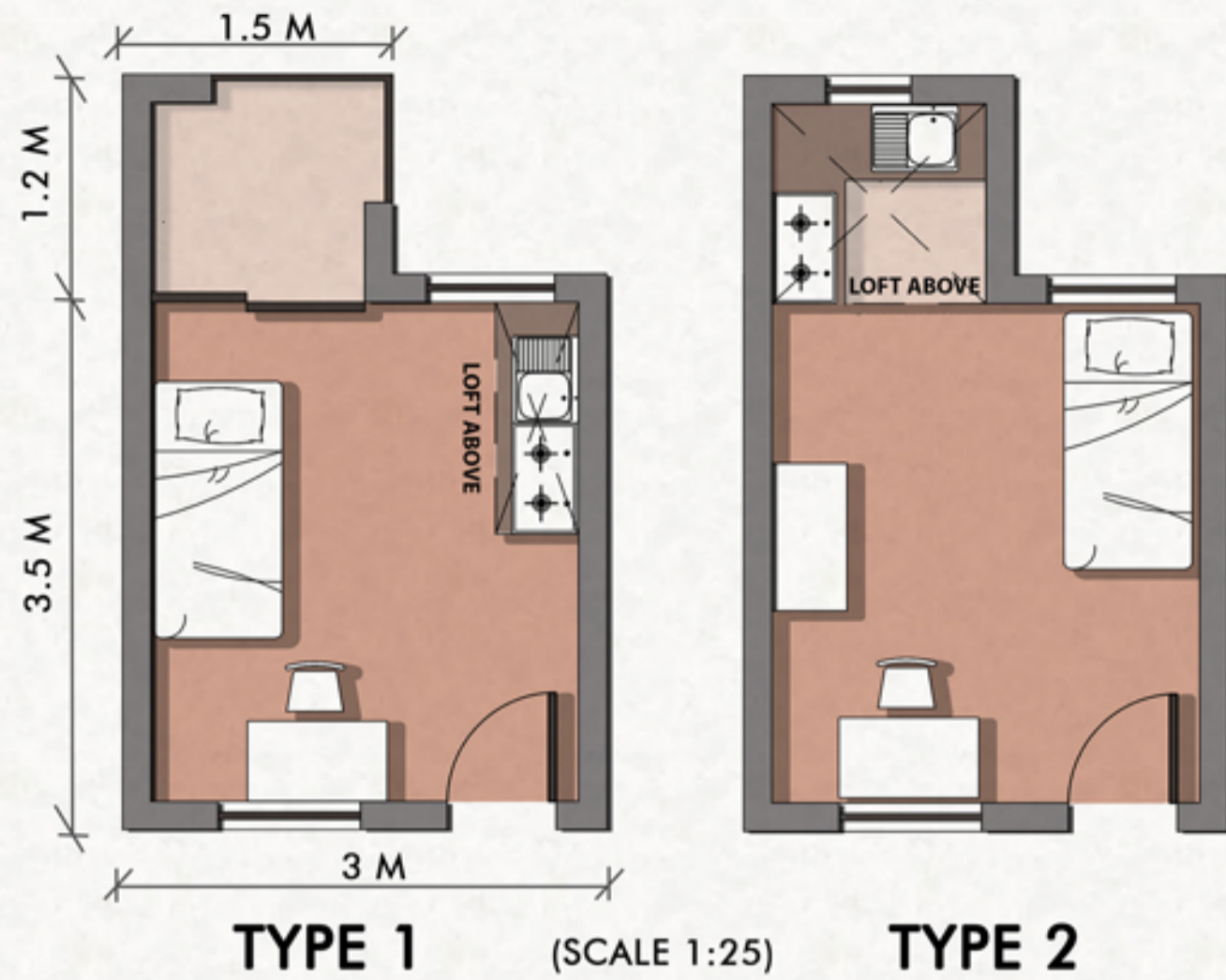


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63HUD-1

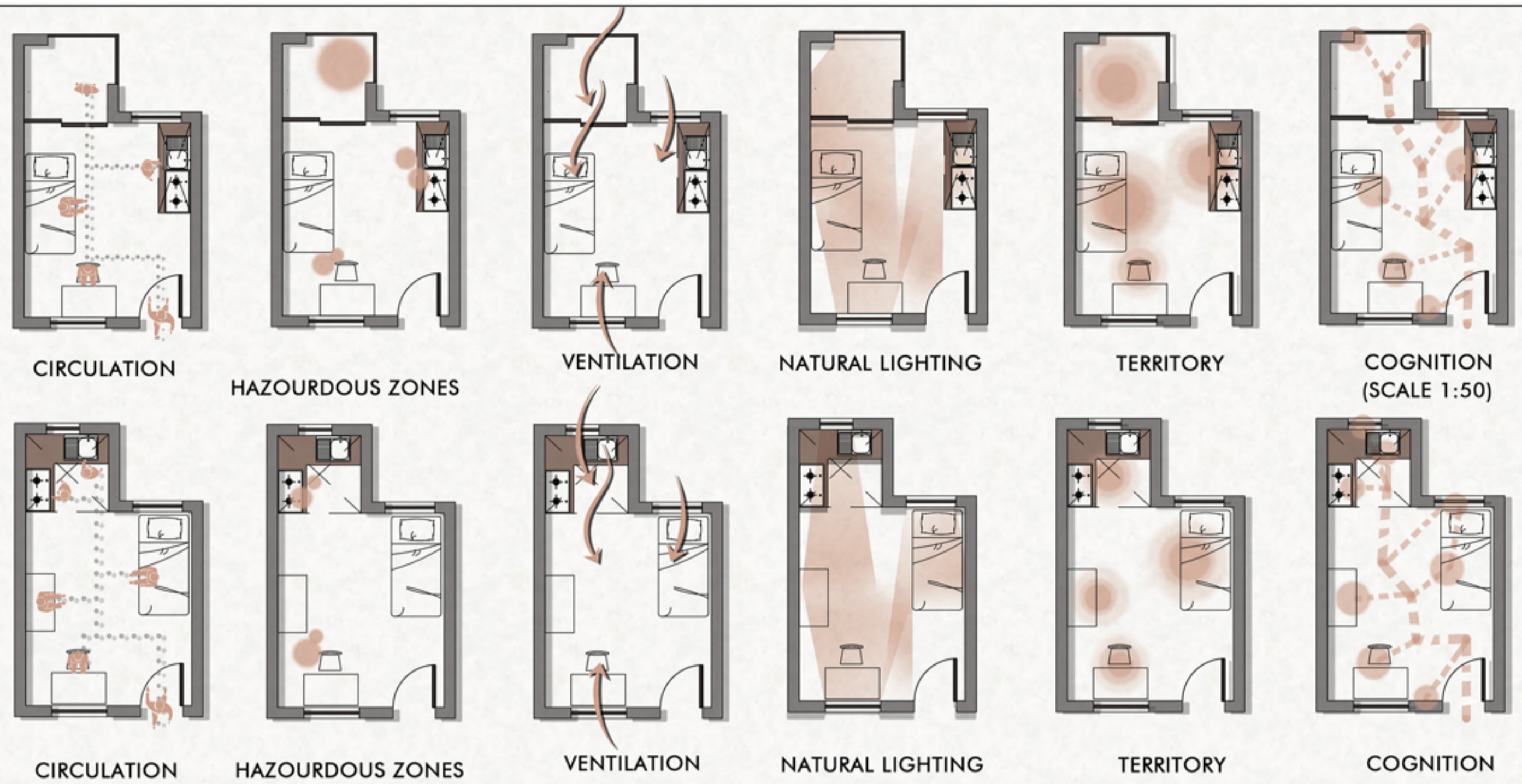


SINGLE OCCUPANCY UNIT

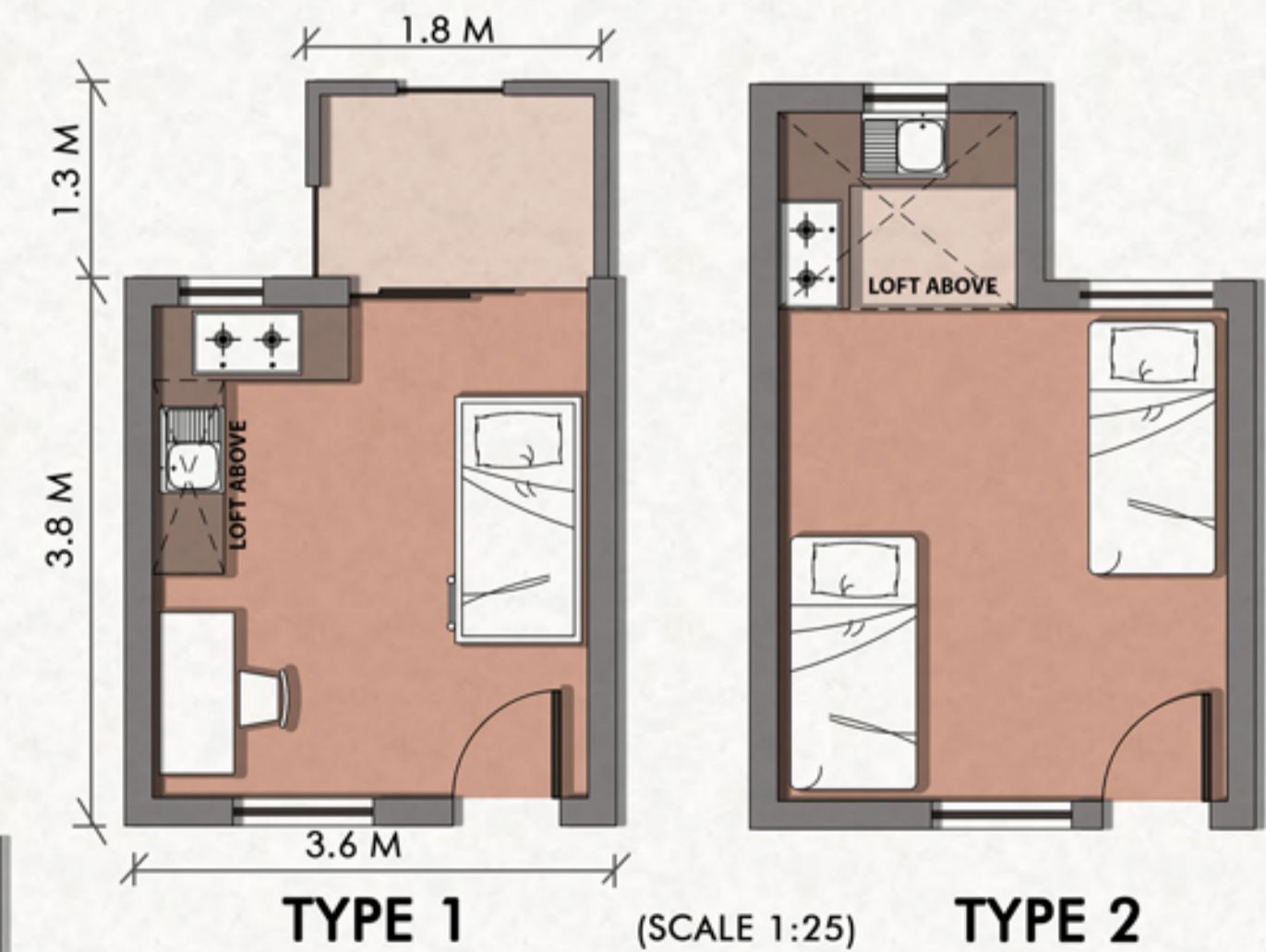
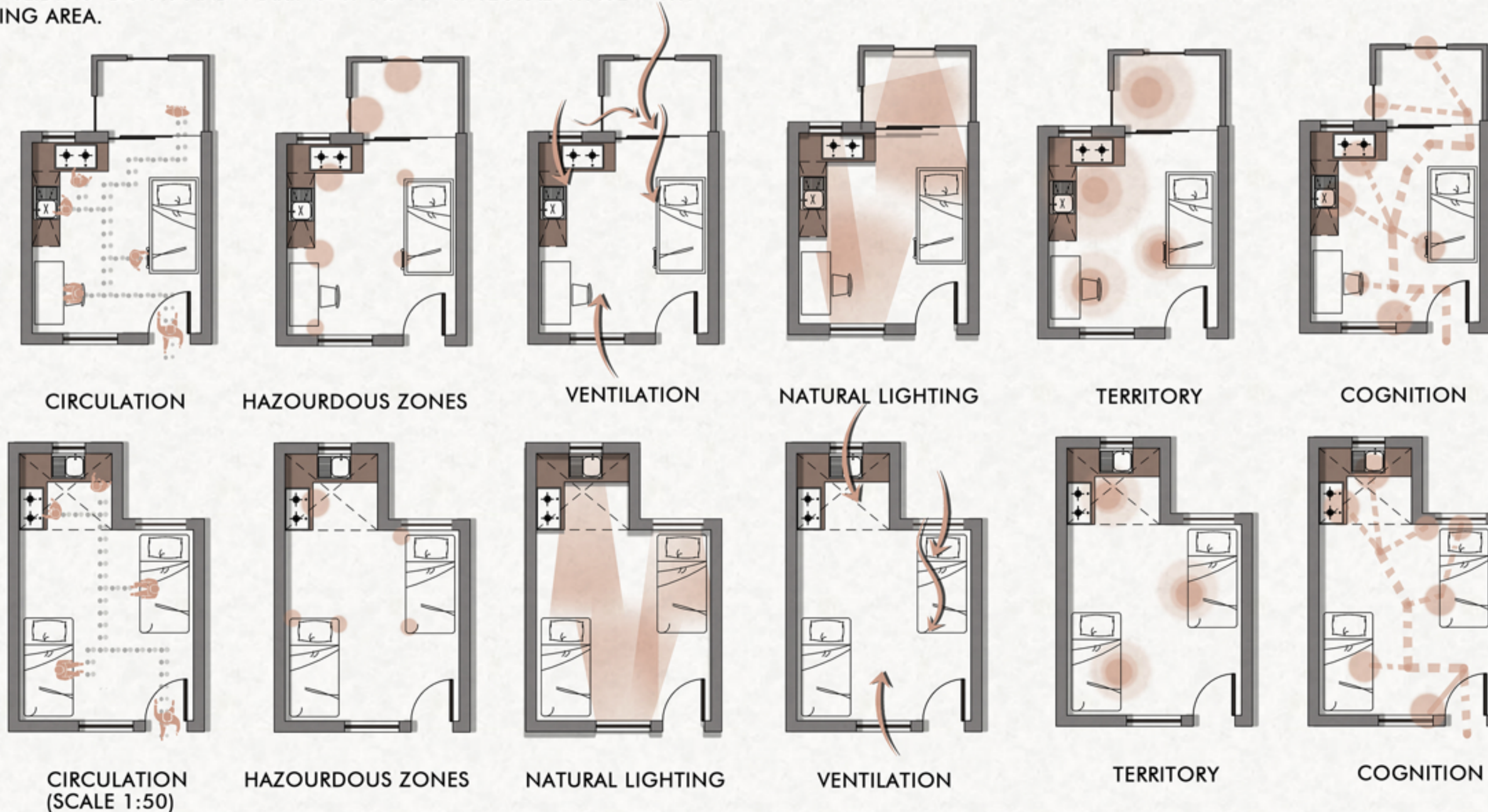


AREA :- 12.3 SQM

TWO TYPES OF SINGLE OCCUPANCY UNIT IS DESIGNED ACCORDING TO USER'S NEED OF SPACE REQUIREMENT WITH BALCONY AND WITHOUT BALCONY WHICH CAN BE ALTERED ANYTIME WITH REMOVAL OF SLIDING DOOR AND MAKING IT AS AN INTEGRAL SPACE WITH LIVING AREA.



DOUBLE OCCUPANCY UNIT



AREA :- 15.5 SQM

TWO TYPES OF DOUBLE OCCUPANCY UNIT IS DESIGNED FOR SPACE ENHANCEMENT WITH BUNK BED AND INCORPORATING CONVERTABLE BALCONY WITH TEMPORARY PARTION DOOR

63HUD-1

SINGLE OCCUPANCY UNIT



2.7SQM KITCHENETTE IS PROVIDED ON EXTERNAL WALL WITH A SINK



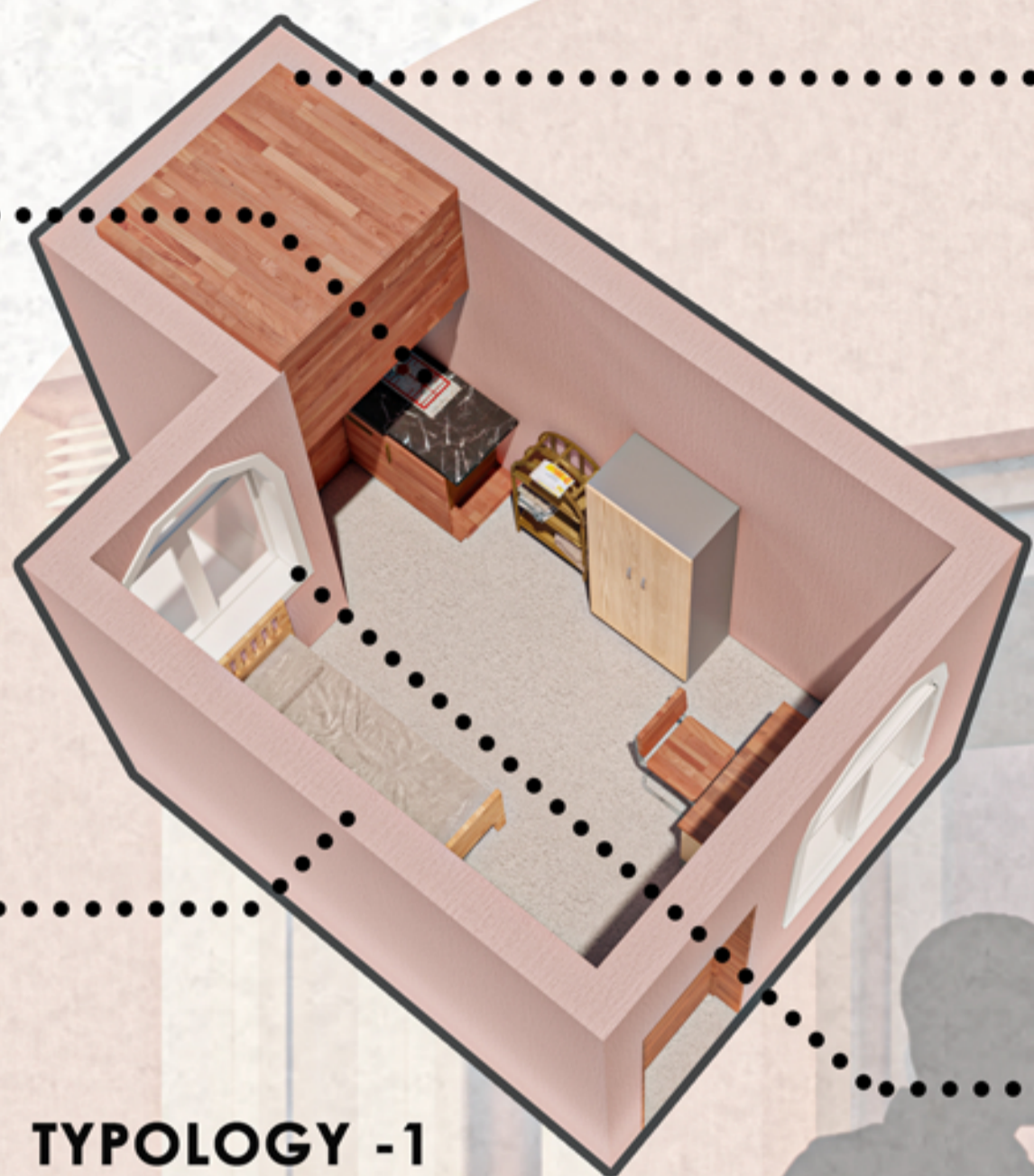
BED IS POSITIONED WITH WINDOW CONSIDERING ENOUGH CROSS VENTILATION



KITCHENETTE WITH VENTILATION AND CUSTOMIZED STORAGE SPACE



A LOFT IS PROVIDED OVER KITCHENETTE FOR STORAGE



TYPOLGY -1



TYPOLGY -2



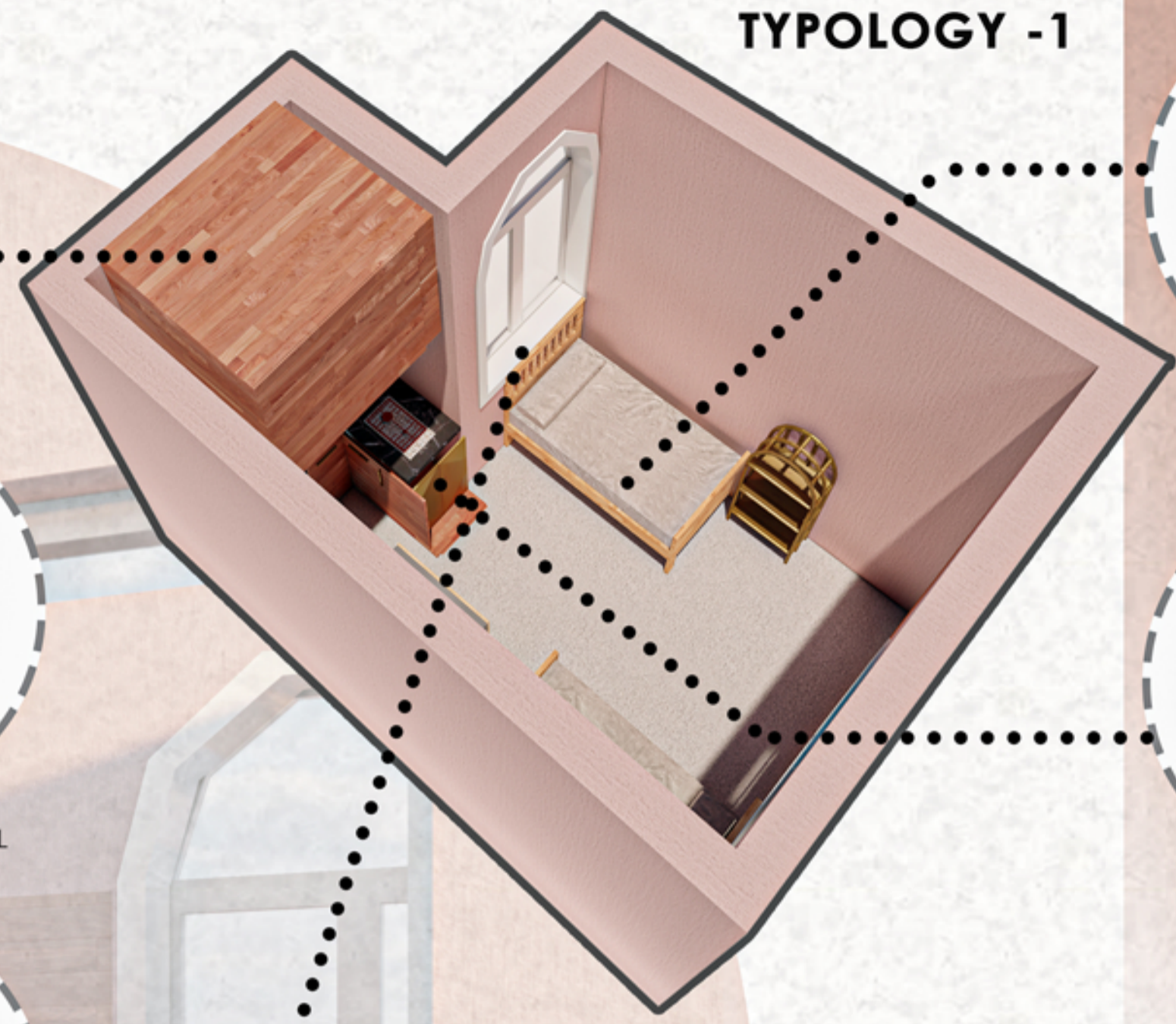
LOFT PROVIDED IN ALL UNITS FOR STORAGE



ARCHED WINDOWS TO AVOID LINTEL



BALCONY PROVIDED WITH SPACE COSTUMIZATION AND LARGE GLASS DOORDS FOR NATURAL ILLUMINTION



TYPOLGY -1



SEPERATE BED OPTION WITH PROPER CIRCULATION



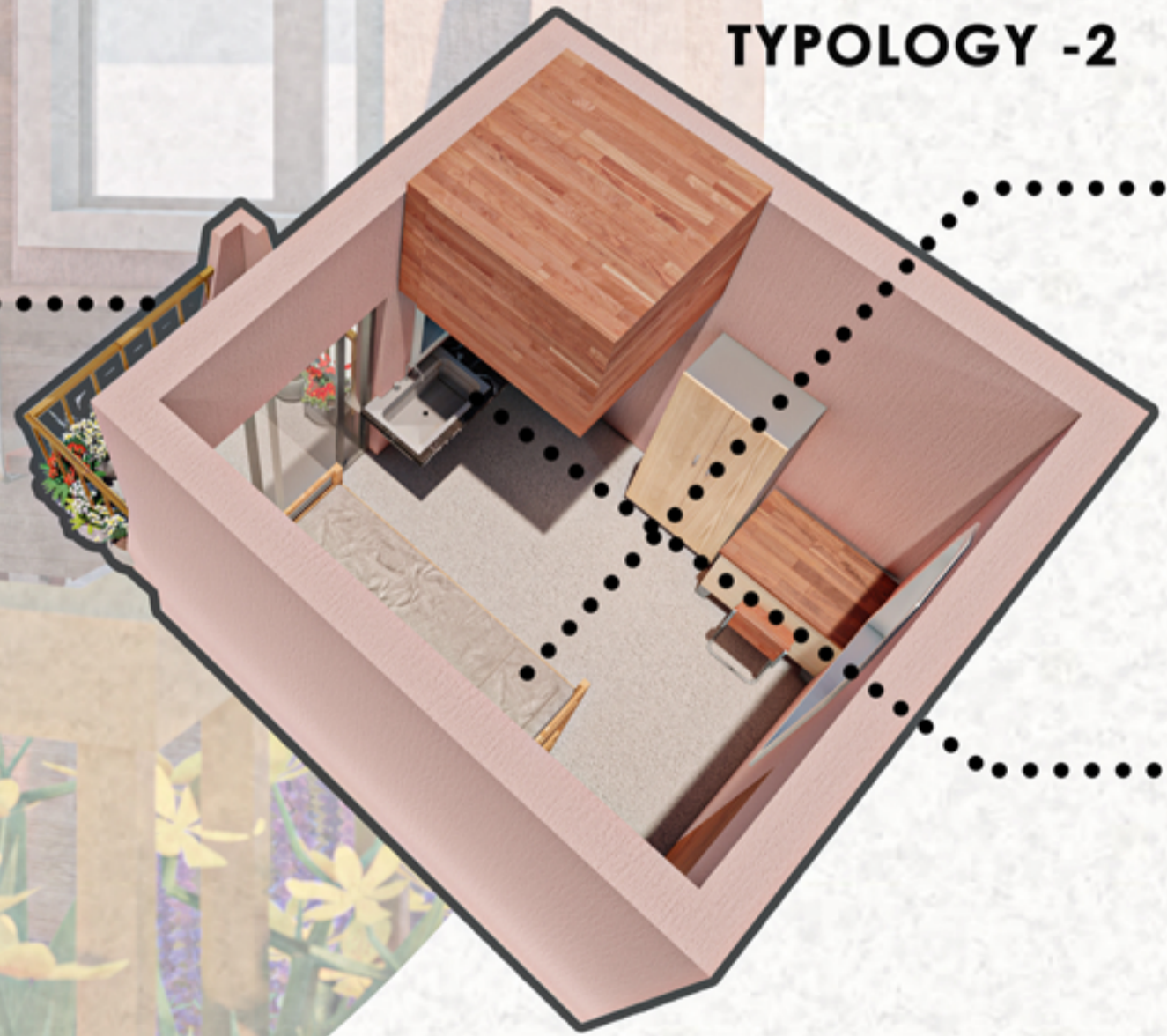
LOFT ABOVE KITCHENETTE FOR STORAGE SPACE



BUNK BED OPTION FOR SPACE ENHANCEMENT



PROPER WATER SUPPLY IN KITCHEN



TYPOLGY -2

DOUBLE OCCUPANCY UNIT

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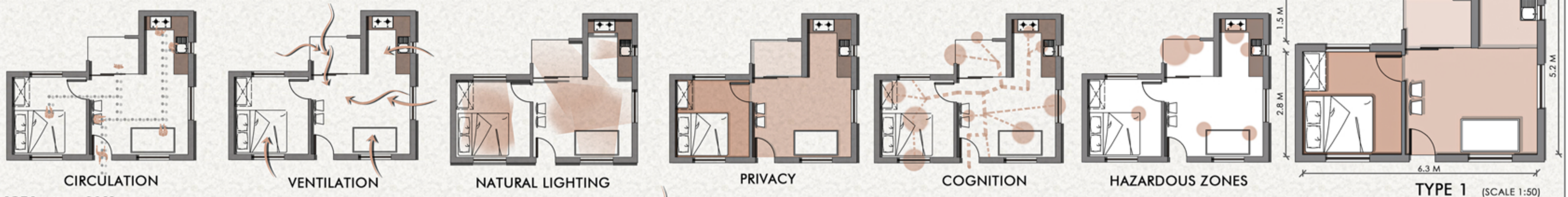
63HUD-1



FAMILY UNIT

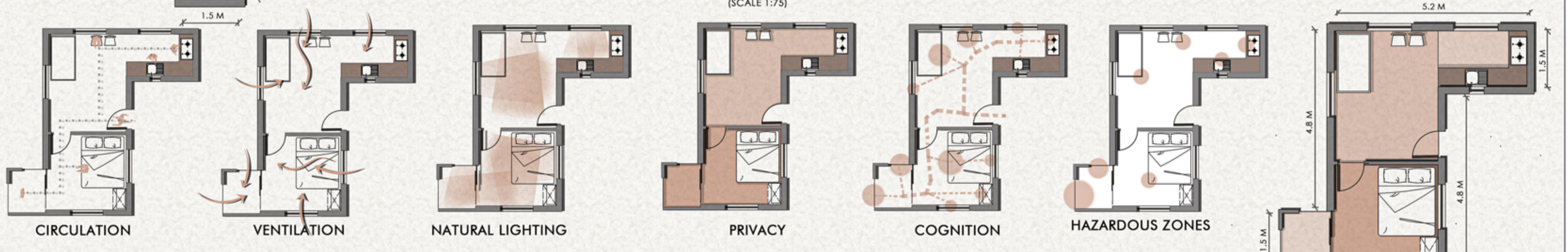
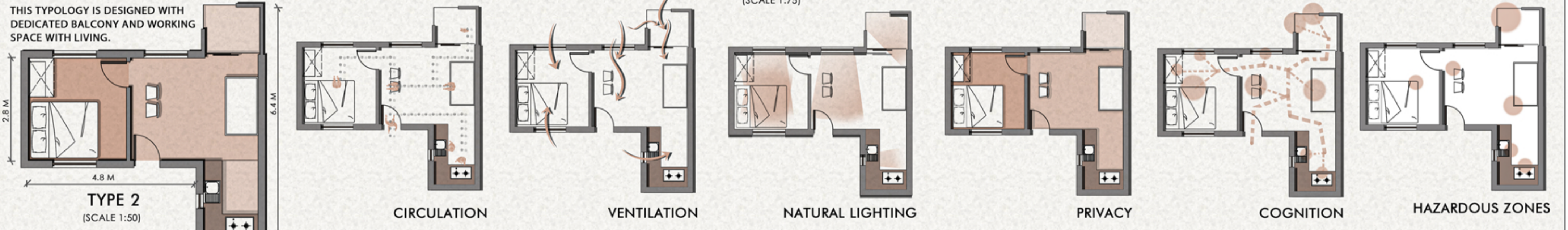
AREA - 21.8 SQM

THIS TYPOLOGY IS DESIGNED WITH CONVERTIBLE BALCONY SPACE INTEGRATED WITH LIVING SPACE.



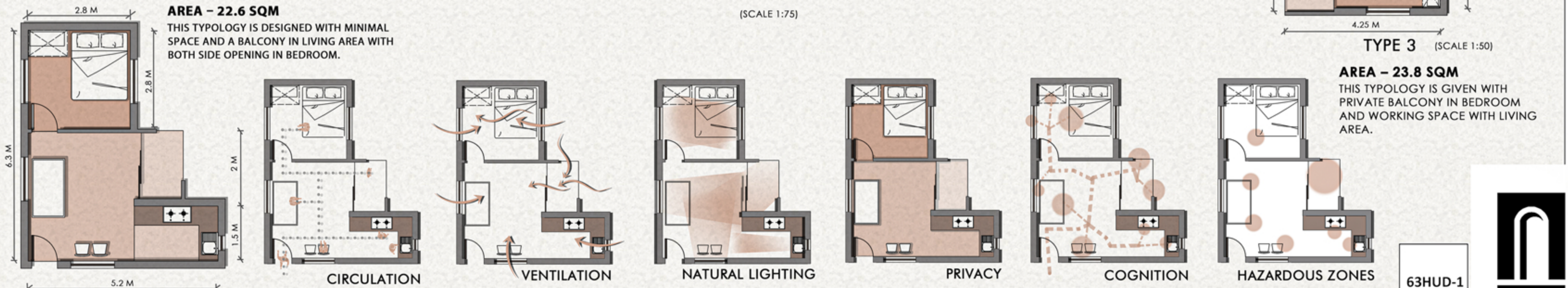
AREA - 24.5 SQM

THIS TYPOLOGY IS DESIGNED WITH DEDICATED BALCONY AND WORKING SPACE WITH LIVING.



AREA - 22.6 SQM

THIS TYPOLOGY IS DESIGNED WITH MINIMAL SPACE AND A BALCONY IN LIVING AREA WITH BOTH SIDE OPENING IN BEDROOM.



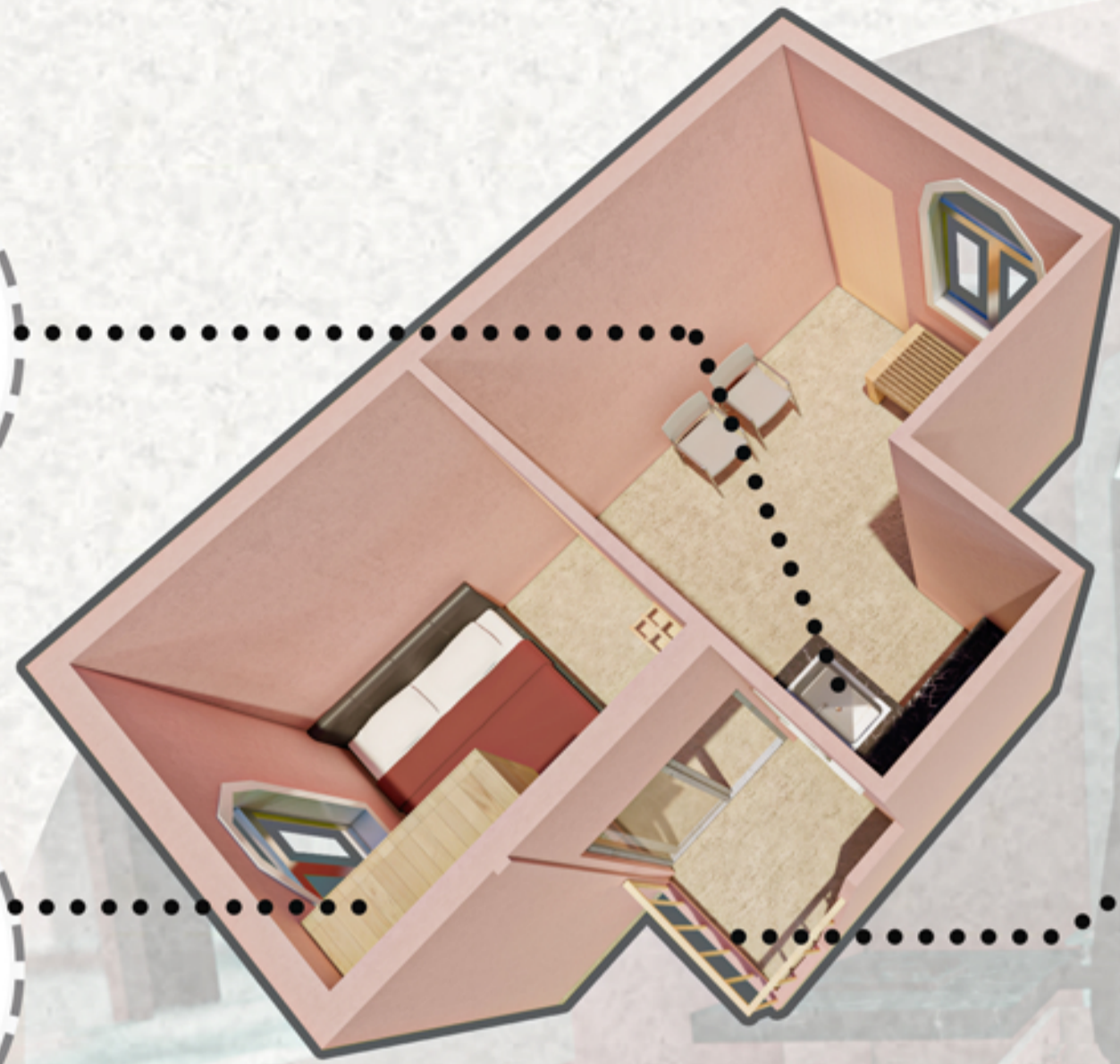
AREA - 23.8 SQM

THIS TYPOLOGY IS GIVEN WITH PRIVATE BALCONY IN BEDROOM AND WORKING SPACE WITH LIVING AREA.

63HUD-1



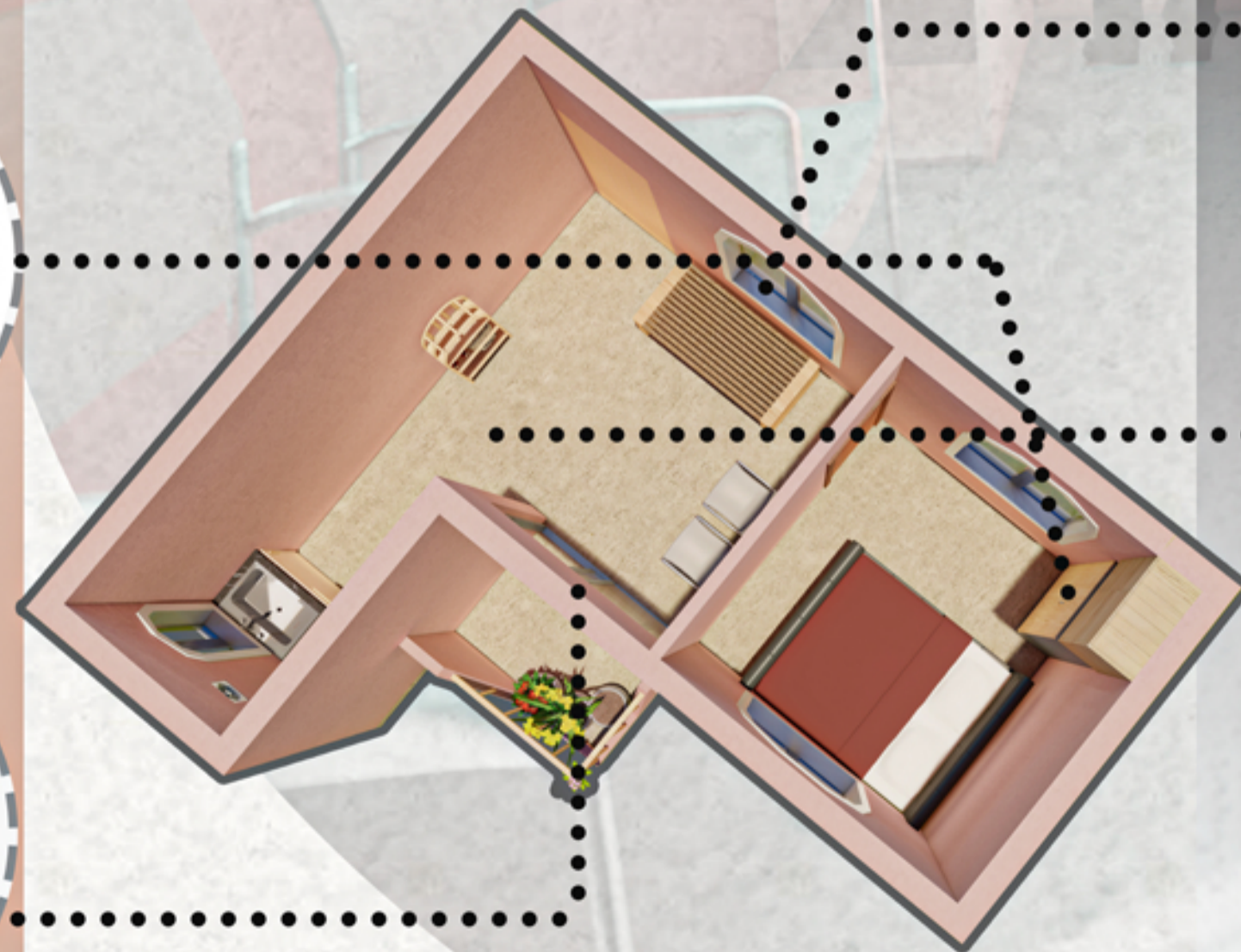
FAMILY OCCUPANCY UNIT



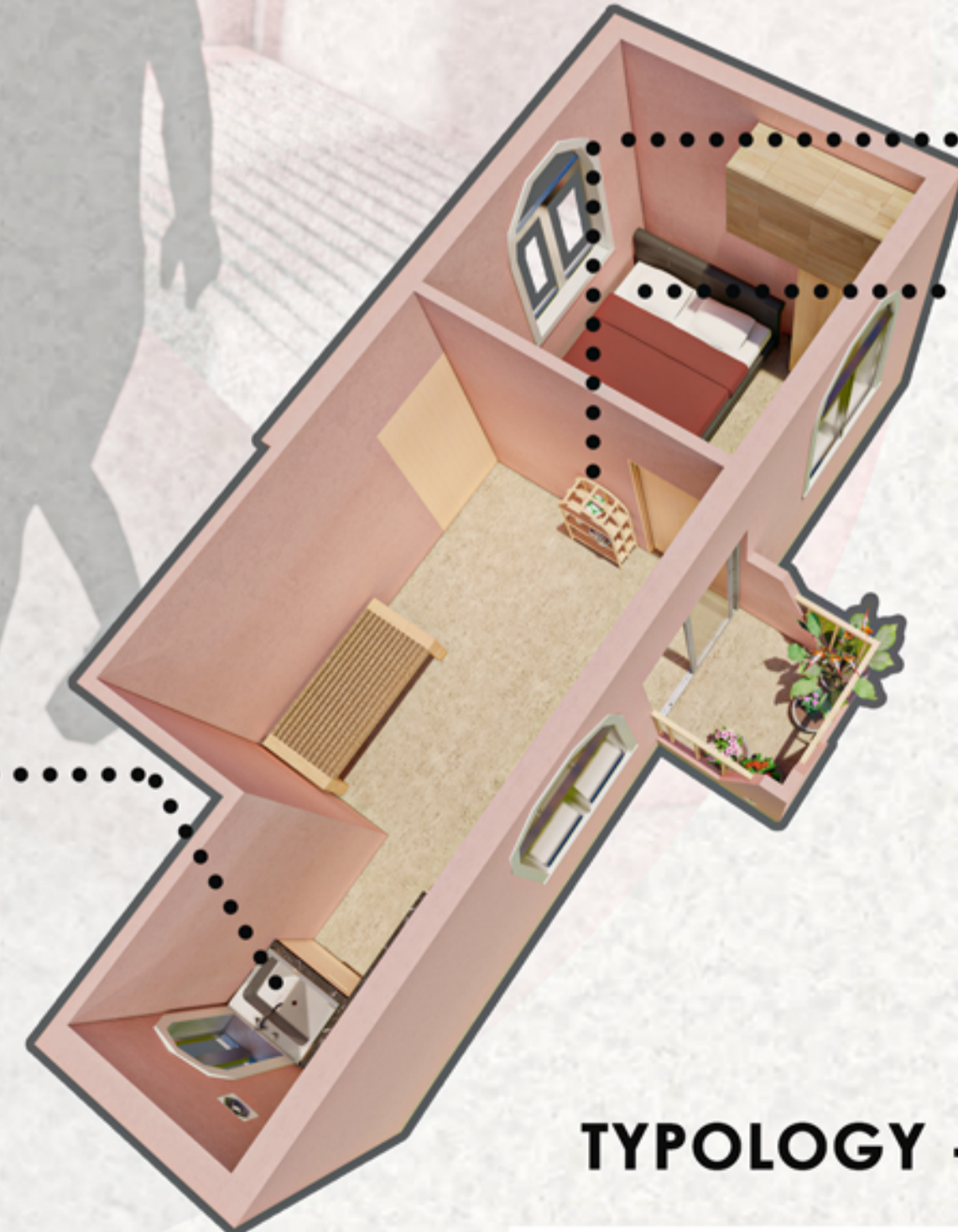
TYOLOGY -1



TYOLOGY -2



TYOLOGY -3



TYOLOGY -4



3.3 SQM KITCHENETTE IS PROVIDED ON EXTERNAL WALL WITH A SINK



A LOFT IS PROVIDED WITHIN LIVING AREA FOR STORAGE



BUILT IN CUPBOARD FOR SPACE MANAGEMENT



GLAZED SLIDING DOORS FOR NATURAL LIGHT



BALCONY PROVIDED WITH SPACE COSTUMIZATION



ARCHED WINDOWS TO AVOID LINTEL



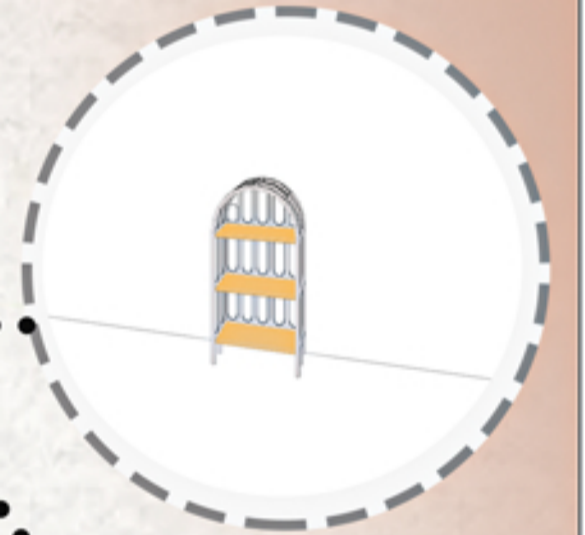
A LOFT IS PROVIDED OVER KITCHENETTE FOR STORAGE



GLAZED SLIDING DOORS FOR NATURAL LIGHT



SPACE PROVIDED FOR EXTRA BED



AMPLE SPACE FOR FURNISHING LIVING SPACE



BED SPACE PROVIDED

DOUBLE OCCUPANCY UNIT

SINGLE OCCUPANCY UNIT

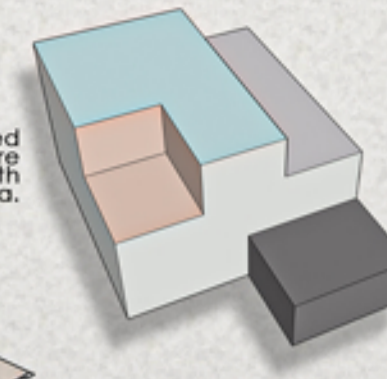
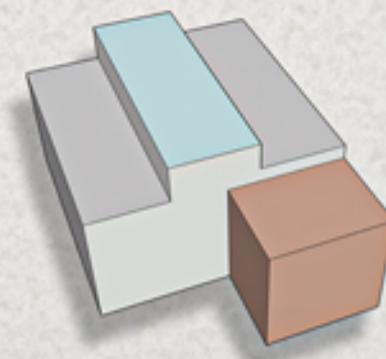
UNIT TYPOLOGIES

TYPE A

Separate single bed unit with kitchenette and wash area with either side opening for cross ventilation and illumination.

TYPE B

Double Bunk bed provided with balcony and more space in living area with kitchenette and wash area.



Living, Dine & Bedroom Integrated Area 11.5 SQM
Space designed to accommodate a single bed with working & sitting space

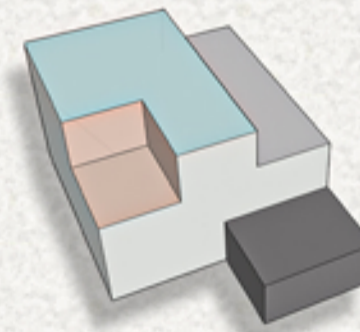
Kitchenette + Wash Area Area 3 SQM
Open to dining Kitchenette is designed to accommodate an L shapes slab with a sink

Balcony Area 1.8 SQM
Space for sitting and planter or any kind of house hold activity



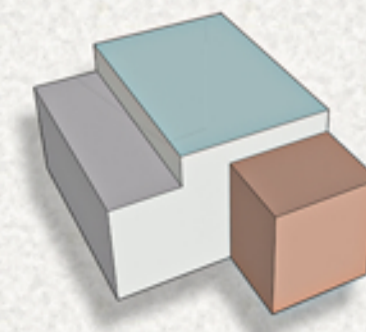
- CIRCULATION
- BUNK BED TYPE
- DOUBLE BED TYPE
- TOILET
- SERVICES
- VERTICAL CIRCULATION

UNIT TYPOLOGIES



TYPE A

Unit designed with Balcony also used as wide opening for ventilation and illumination with integrated kitchenette place in living area.



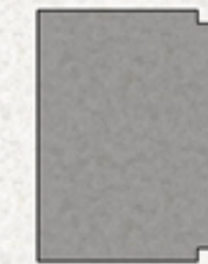
TYPE B

Unit without balcony and more area for home based work in living area and kitchenette with wash area.



Living, Dine & Bedroom Integrated Area 10.5 SQM
Space designed to accommodate a single bed with working & sitting space

Kitchenette + Wash Area Area 2.1 SQM
Open to dining Kitchenette is designed to accommodate an L shapes slab with a sink.



Balcony Area 1.8 SQM
Space for sitting and planter or any kind of house hold activity.



SECTION - AA'
(SCALE- 1:250)



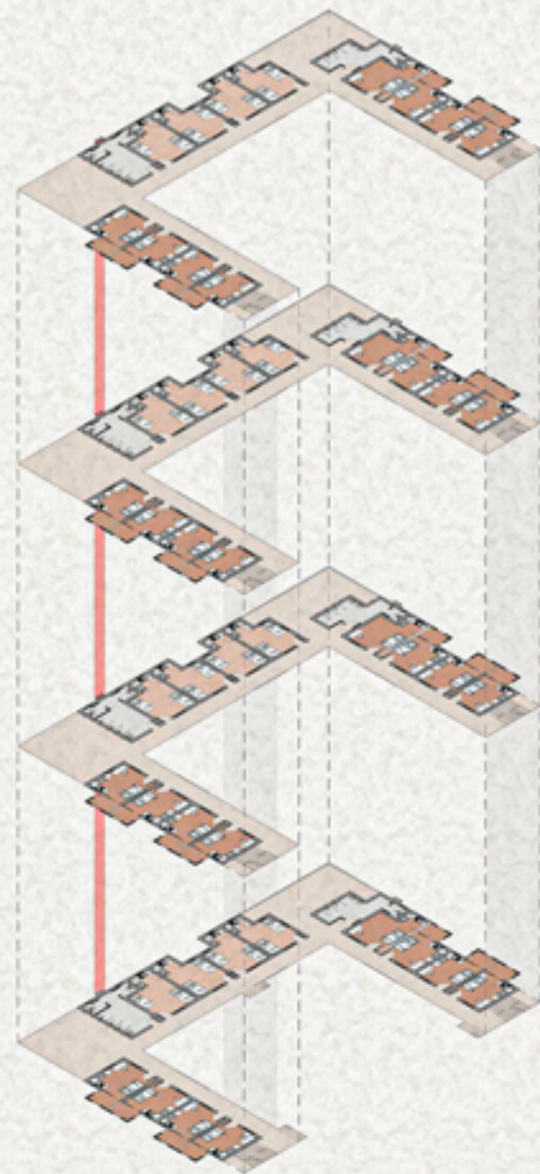
FIRST FLOOR PLAN
(SCALE- 1:250)



GROUND FLOOR PLAN
(SCALE- 1:250)



FRONT VIEW



SECTION - BB'
(SCALE- 1:250)



FIRST FLOOR PLAN
(SCALE- 1:250)

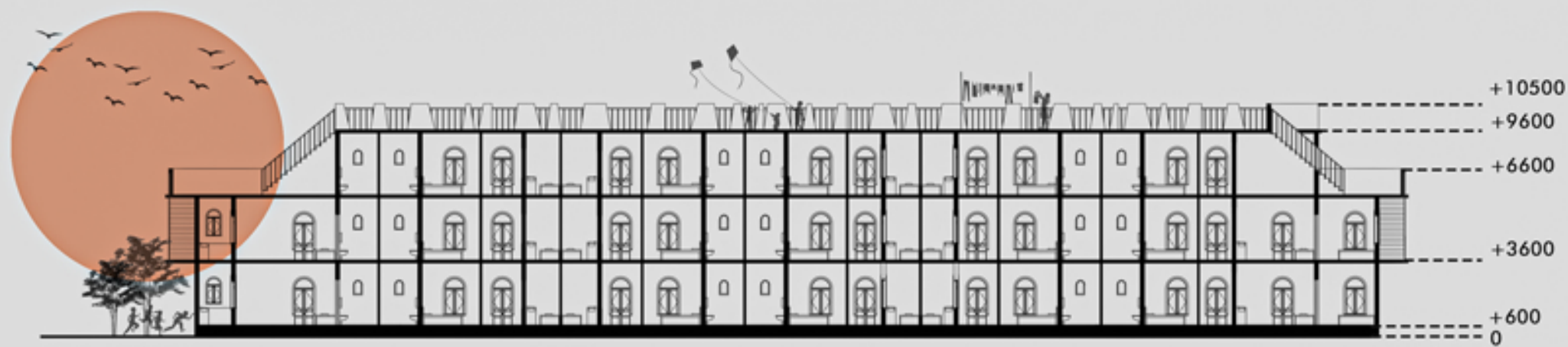


GROUND FLOOR PLAN
(SCALE- 1:250)



FRONT VIEW

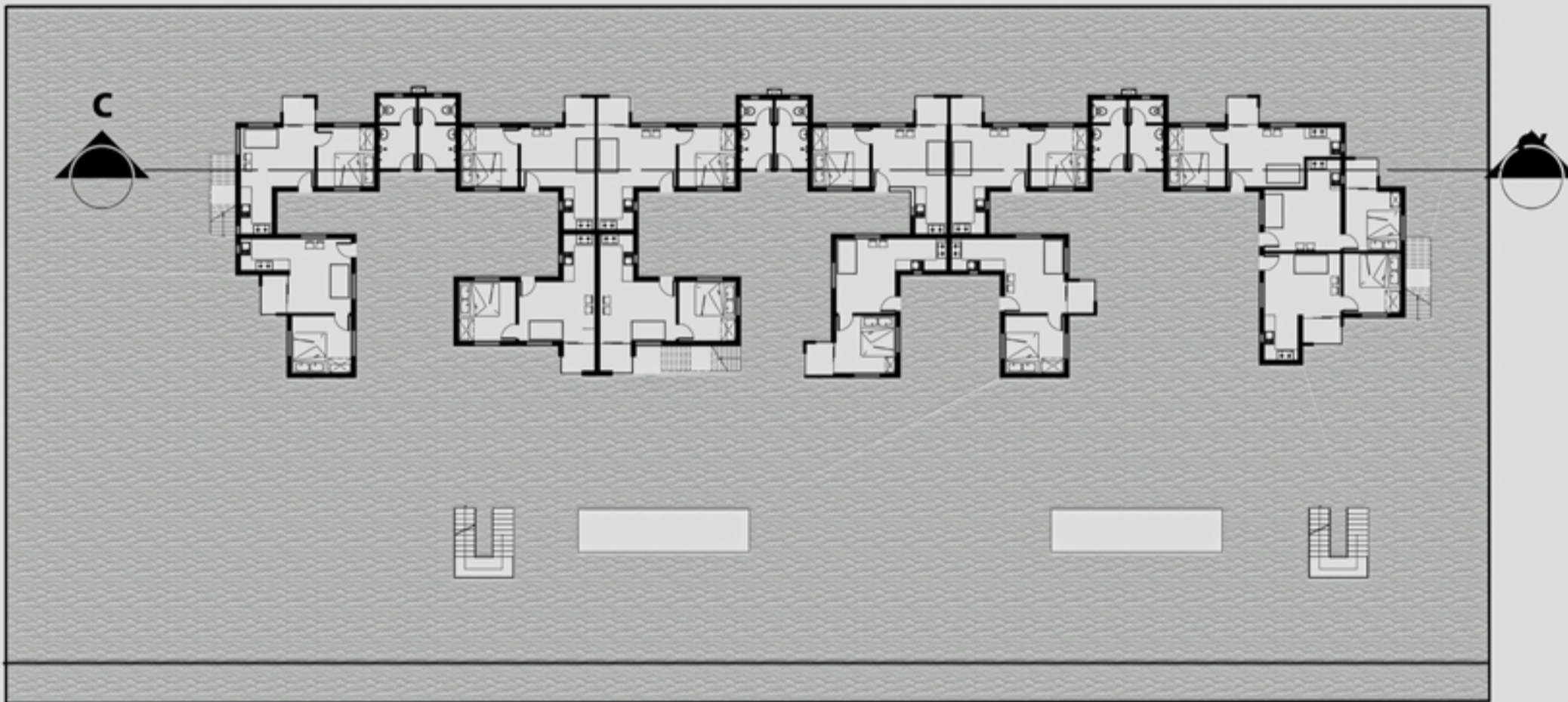




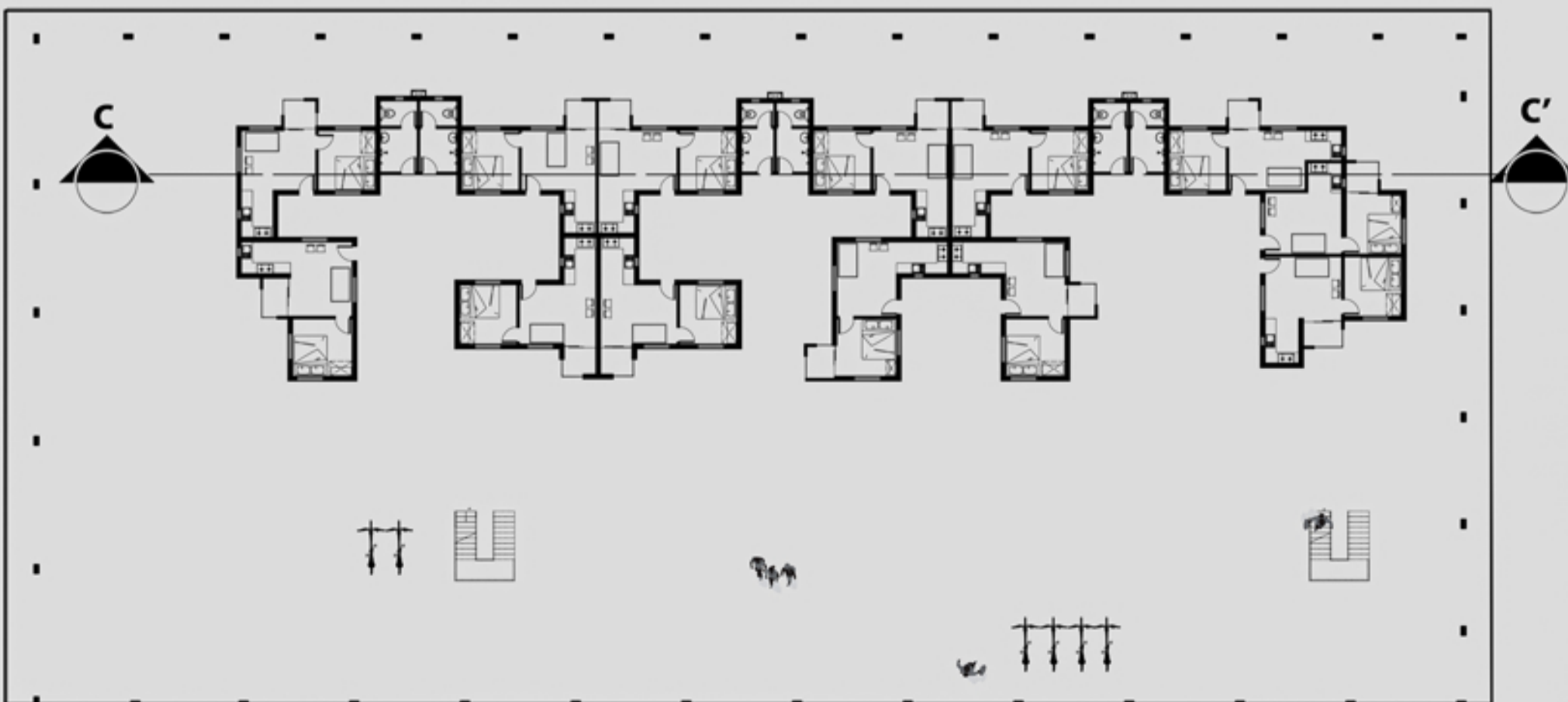
SECTION - CC' (SCALE- 1:250)



SECOND FLOOR PLAN (SCALE- 1:250)



FIRST FLOOR PLAN (SCALE- 1:250)



GROUND FLOOR PLAN (SCALE- 1:250)

BLOCK AXONOMETRIC

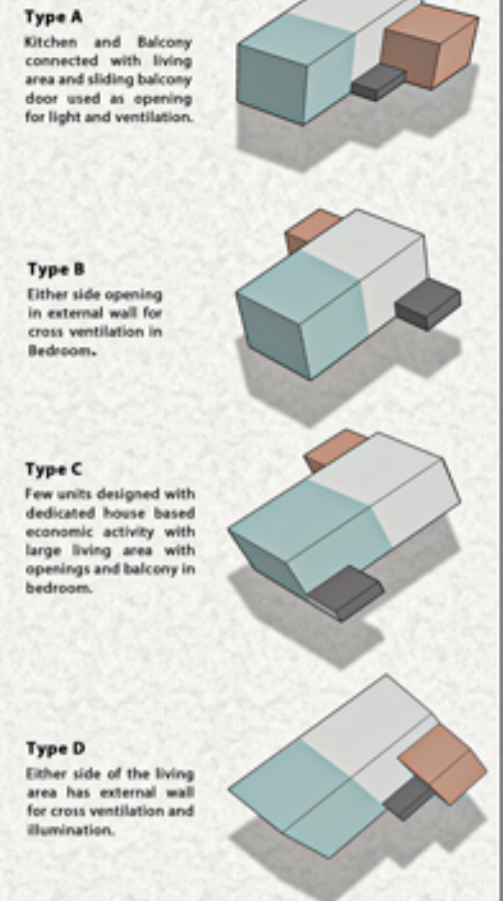
- TYPE A
- TYPE B
- TYPE C
- TYPE D
- TOILET
- CIRCULATION
- VERTICAL CIRCULATION
- SERVICES



FAMILY UNIT

Family unit is clubbed with single and double occupancy by sharing a platform on first floor level for extended community living sharing various activities like laundry in common shared wash area, community kitchen, open gym, shared garden area, informal gathering space etc. Below the platform office space is given with parking of space for advertisement of vacancies and other management spaces with individual block. Pump rooms and electric distribution control room. Solar cookers area given to promote a sustainable approach of using energy and creating awareness. Open terraces are designed on multiple levels to create mass and void and community space which could be utilized for various purposes also as work space and giving natural light and wind circulation.

UNIT TYPOLOGIES



FRONT VIEW



BEDROOM LIVING ROOM KITCHEN BALCONY



All rooms are well ventilated with oriented according to windward direction with optimum natural lighting inside with workspace in living spaces to integrate working space for home based economy.

63HUD-1



MATERIAL SPECIFICATIONS

NON-VOLATILE PAINT

The use of non – VOC paints improves indoor air quality, needs less maintenance, reduce toxic fumes and increases durability. Low VOC paints reduce the exposure to potentially dangerous chemicals for those applying the product and those living and working in the space after it is painted. This makes buildings and their occupants healthier.



MILD STEEL

FILLER SLAB

Enhances thermal comfort inside the building due to heat-resistant qualities of filler materials and the gap between two burnt clay tiles. Makes saving on cost of this slab compared to the traditional slab by about 23%. Reduces use of concrete and saves cement and steel by about 40%. Thermal insulation the air pocket formed by the contours of the tiles makes an excellent thermal insulation layer.

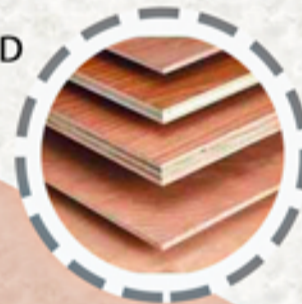
AAC BLOCKS



GRASSCRETE PERMEABLE PAVEMENT

Grasscrete Permeable Pavement from is a cast-on-site cellular reinforced concrete permeable paving system that is an effective Water Sensitive Design solution to reduce impervious surfaces and promote infiltration. This permeable paving system essentially allows grass to grow in between steel reinforced concrete, which mimics natural processes and allows storm water to infiltrate into the ground, where it percolates through the soil and is naturally filtered approach.

PLYWOOD



SOLAR PANELS

Installing photovoltaic cell to make less dependence on conventional energy source and a sustainable approach. Solar Panels are used for power consumption by common areas and in site for less economic power generation and low maintenance purpose. Solar power is pollution free and causes no greenhouse gases to be emitted after installation so is a very sustainable approach.

GLASS



FLY ASH BRICK

Due to high strength, practically no breakage during transport and use. Due to uniform size of bricks, mortar required for joints and plaster reduces almost by 50%. The ash of burnt coal is used as an input, thus reinforcing the idea of turning waste into wealth, which is an eco-friendly green material and very sustainable approach.

MAKING AFFORDABLE HOUSING SUSTAINABLE



With sustainable material selection and design, preference induces energy optimization on structure. Orientation of building according to wind direction and study of Sun path gives proper power consumption strategy with cross ventilation and proper illumination on interiors making less dependence on conventional energy source. Making provision for sustainable use of resources like solar power and storm water management on site level improves efficient resource usage.

ENERGY EFFICIENCY APPROACHES



GRIHA FOR AFFORDABLE HOUSING



- CRITERION 1: LOW IMPACT DESIGN
- CRITERION 2: DESIGN TO MITIGATE UHIE
- CRITERION 3: PRESERVATION AND PROTECTION OF LANDSCAPE DURING CONSTRUCTION
- CRITERION 4: STORM WATER MANAGEMENT
- CRITERION 5: REDUCTION IN AIR AND SOIL POLLUTION DURING CONSTRUCTION
- CRITERION 6: ENVELOPE THERMAL PERFORMANCE
- CRITERION 7: OCCUPANT VISUAL COMFORT (DAYLIGHT)
- CRITERION 8: EFFICIENT LIGHTING
- CRITERION 9: ENERGY EFFICIENT EQUIPMENT
- CRITERION 10: RENEWABLE ENERGY
- CRITERION 12: EFFICIENT USE OF WATER DURING CONSTRUCTION
- CRITERION 13: OPTIMIZATION OF BUILDING & LANDSCAPE WATER DEMAND

- CRITERION 14: WATER REUSE
- CRITERION 17: POST CONSTRUCTION WASTE MANAGEMENT
- CRITERION 18: REDUCTION IN ENVIRONMENTAL IMPACT OF CONSTRUCTION
- CRITERION 19: USE OF LOW-ENVIRONMENTAL IMPACT MATERIALS IN BUILDING INTERIORS
- CRITERION 21: LOW VOC PAINTS, ADHESIVES, SEALANTS AND COMPOSITE WOOD PRODUCTS 2 POINTS
- CRITERION 22: ZERO ODP MATERIALS MANDATORY
- CRITERION 23: FACILITIES FOR CONSTRUCTION WORKERS
- CRITERION 24: UNIVERSAL ACCESSIBILITY

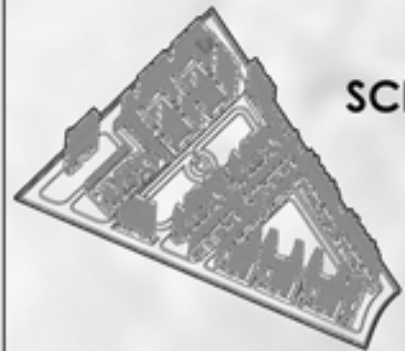
- CRITERION 25: PROXIMITY TO TRANSPORT AND BASIC SERVICES
- CRITERION 26: ENVIRONMENTAL AWARENESS
- CRITERION 27: TOBACCO SMOKE CONTROL MANDATORY
- CRITERION 28: WATER QUALITY MANDATORY
- CRITERION 29: PROVISION OF ACCESS TO CLEAN SOURCES OF COOKING FUEL

(IN COMPLIANCE TO GRIHA FOR AFFORDABLE HOUSING ABRIDGED MANUAL - V1)





SCIOGRAPHY



NATURE SPACE



FUTURE EXPANSION



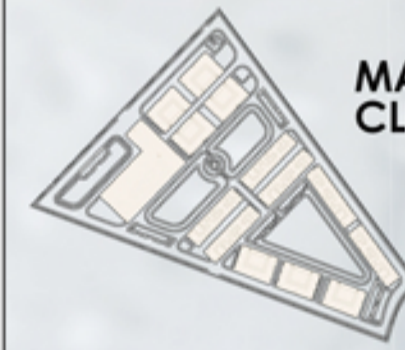
HARD AND SOFT SCAPE



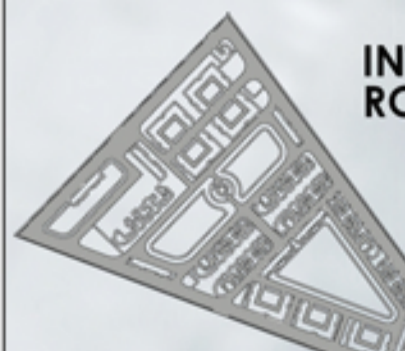
STREET COORIDOR



MACRO CLUSTER



INTERNAL ROADWAYS



OPEN GROUND



PRIMARY SCHOOL



SPACES FOR CULTURAL ACTIVITY



COMMUNITY HALL



PUMP ROOM



ELECTRIC TRANSFORMER



STREET COORIDORS



INNER COURTYARDS



USING SOLAR PANELS



SEWAGE TREATMENT PLANT



ELECTRIC TRANSFORMER



SHADED PARKING



OPEN COMMUNITY SPACES

202.2 M

262.4 M

295.8 M

42.5 M

SITE PLAN

SITE AREA: 30756 SQM
 BUILT UP: 28457 SQM
 FAR: 0.92
 GROUND COVERAGE: 30%



(SCALE- 1:750)

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TYPOLOGY	PLINTH AREA (SQ M)	SUPER BUILT UP AREA (SQ M)
G		
SINGLE OCCUPANCY (7 BLOCKS)	938	1344
DOUBLE OCCUPANCY (7 BLOCKS)	2100	2800
FAMILY OCCUPANCY (7 BLOCKS)	1960	3388
COMMUNITY HALL (1 BLOCK)	48	72
PRE- SCHOOL (1 BLOCK)	68	100
G + 1		
SINGLE OCCUPANCY (7 BLOCKS)	938	1344
DOUBLE OCCUPANCY (7 BLOCKS)	2100	2800
FAMILY OCCUPANCY (7 BLOCKS)	1960	3388
G + 2		
SINGLE OCCUPANCY (7 BLOCKS)	938	1344
DOUBLE OCCUPANCY (7 BLOCKS)	2100	2800
FAMILY OCCUPANCY (7 BLOCKS)	1960	3388
G + 3		
SINGLE OCCUPANCY (7 BLOCKS)	938	1344
DOUBLE OCCUPANCY (7 BLOCKS)	2100	2800

TYPOLOGY	TOTAL BUILT UP AREA (SQ M)
SINGLE OCCUPANCY (7 BLOCKS)	5376
DOUBLE OCCUPANCY (7 BLOCKS)	11200
FAMILY OCCUPANCY (7 BLOCKS)	10167
COMMUNITY HALL (1 BLOCK)	72
SCHOOL (1 BLOCK)	100

COST ESTIMATION

BOUNDARY WALL & GATES

TYPOLOGY	QUANTITY (IN UNITS)	COSTING (RS PER UNIT)	AMOUNT
BOUNDARY WALL	456 CUBIC M	3000 PER CUBIC M	1368000
MS STEEL GATE (8 M)	3	95800	287400
TOTAL			1655400

TYPOLOGY	TOTAL PLINTH AREA (SQ M)	COST (RS PER SQ M)	AMOUNT
SINGLE OCCUPANCY (1 BLOCK)			
GROUND FLOOR	192	12700	2438400
1ST FLOOR	184	12700	2336800
2ND FLOOR	184	12700	2336800
3RD FLOOR	184	12700	2336800
TOTAL FOR 1 BLOCK			9448800
DOUBLE OCCUPANCY (1 BLOCK)			
GROUND FLOOR	400	12700	5080000
1ST FLOOR	384	12700	4876800
2ND FLOOR	384	12700	4876800
3RD FLOOR	384	12700	4876800
TOTAL FOR 1 BLOCK			19710400
FAMILY OCCUPANCY (1 BLOCK)			
GROUND FLOOR	484	12700	6146800
1ST FLOOR	457	12700	5803900
2ND FLOOR	457	12700	5803900
TOTAL FOR 1 BLOCK			17754600
FOR 7 NO OF FAMILY, SINGLE & DOUBLE OCCUPANCY UNITS			
			328396600
COMMUNITY HALL (1 BLOCK)			
	72	12700	914400
SCHOOL (1 BLOCK)			
	100	12700	1270000
TOTAL AMOUNT			330581000

PLUMBING & ELECTRIC

TYPOLOGY	QUANTITY (IN UNITS)	COSTING (RS PER UNIT)	AMOUNT
SANITARY (WC)	242	3800	919600
SANITARY (BASIN)	241	1000	241000
SANITARY (SHOWER & TAP)	350	800	280000
SANITARY (SINK)	770	1300	1001000
LED TUBE LIGHTS	777	300	233100
WALL LIGHTS	1100	300	330000
DOWN LIGHT	880	250	220000
EXHAUST FAN	921	600	552600
STREET LIGHTS	214	2000	428000
TOTAL			4205300

SERVICES LAYOUT



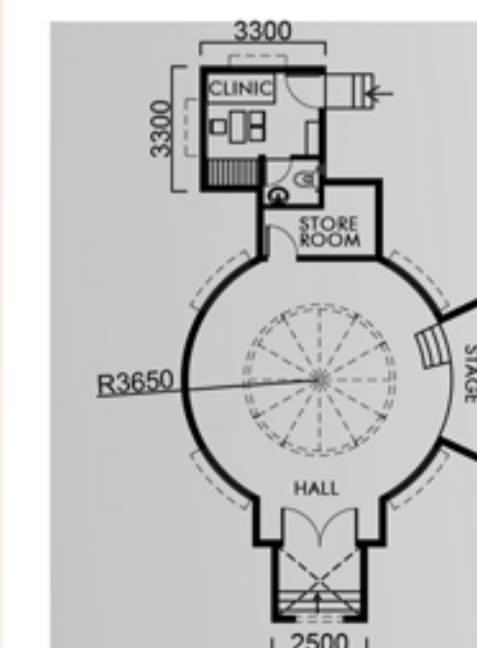
FAMILY UNIT - MIXED



DOUBLE OCCUPANCY UNIT



SINGLE OCCUPANCY UNIT



COMMUNITY HALL
(SCALE - 1:200)

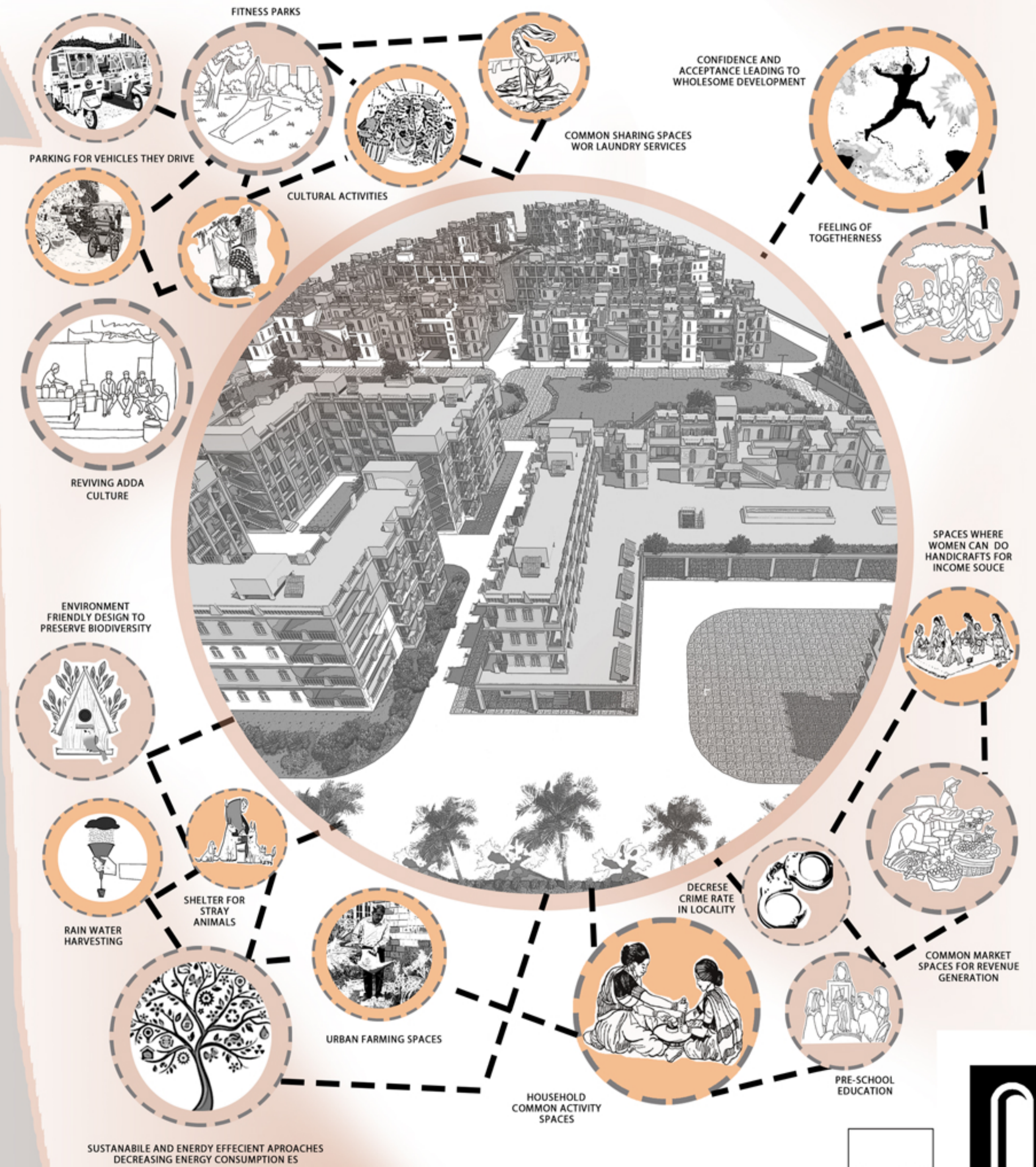
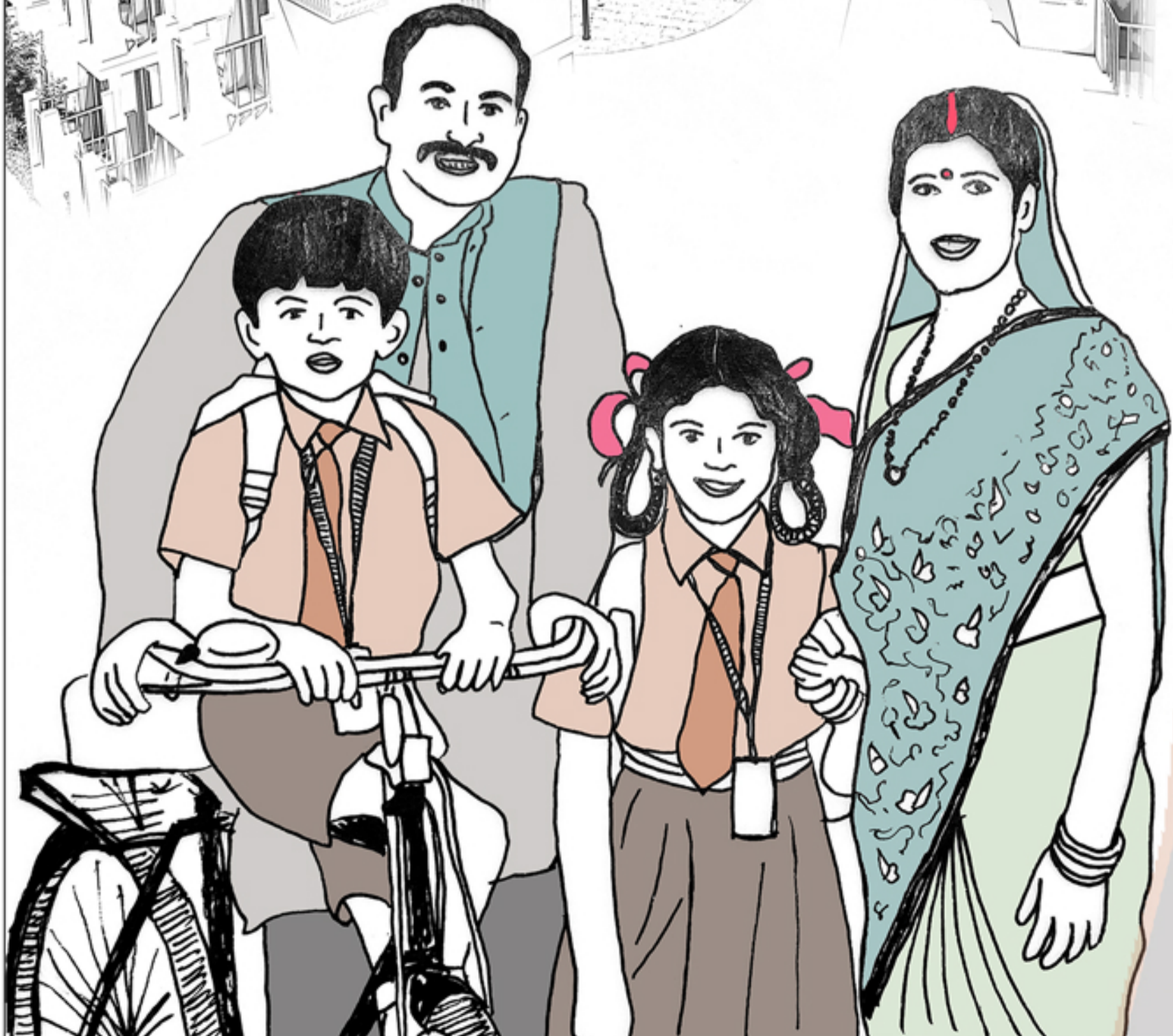


PRE-SCHOOL
(SCALE - 1:200)

63HUD-1

Giving adequate living facilities in organized manner in an economical way enhances livelihood with shared management and a sense of community living. Providing all the facilities like preschool, first aid centre and house based economic space with common areas for informal gathering, recreational, playing, fitness provides a wholesome housing facility to the much needed section of the society in Newtown.

POST DESIGN IMPACT



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