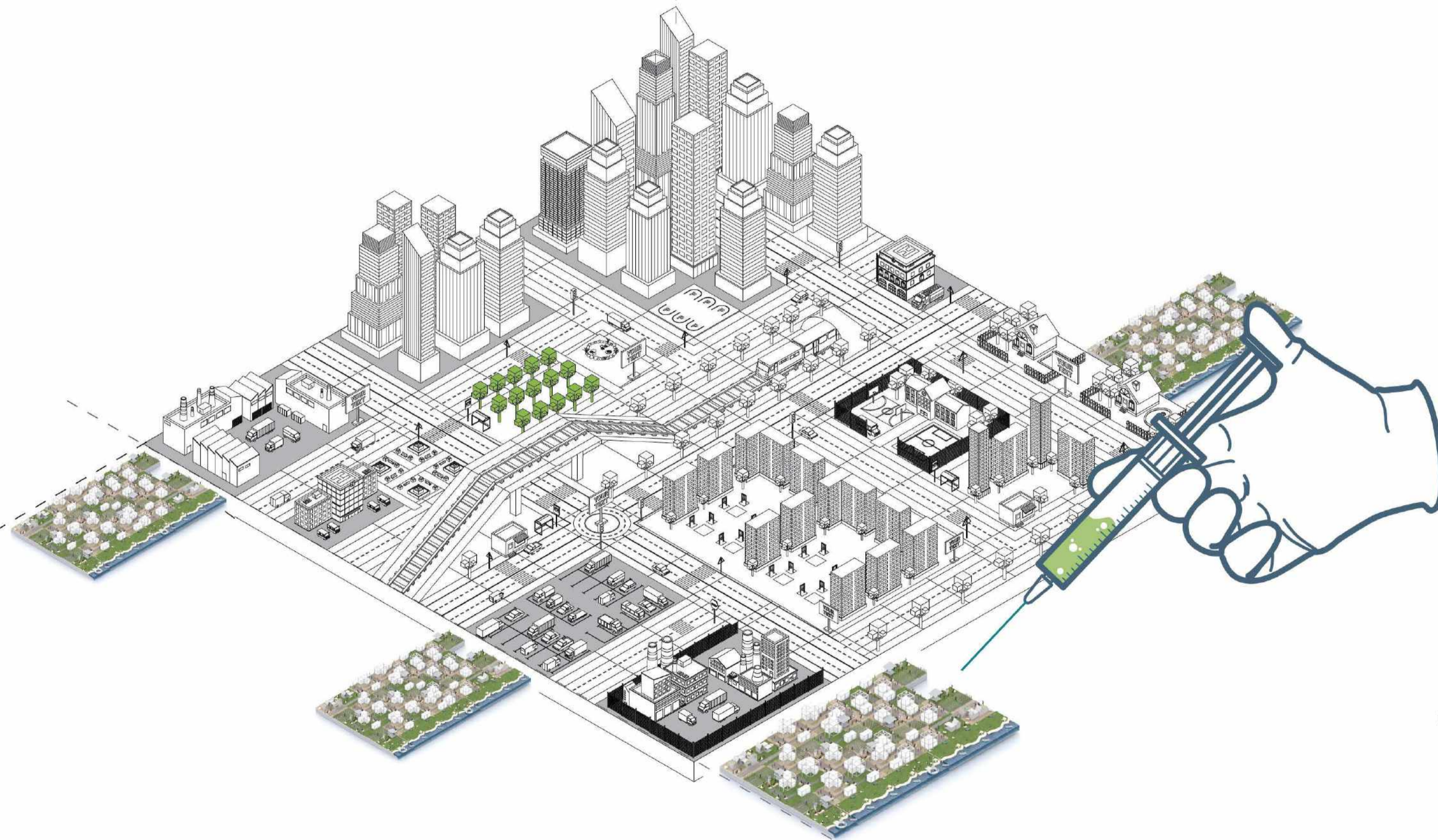


ECO ~~EGO~~-VILLE

Self sustainable, self reliant **eco-pockets**

ARCHITECTURAL DESIGN PROJECT

FINAL YEAR B.ARCH



KARAN AHIRE

AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE

INTRODUCTION

Lets talk about **EARTH!**

We are living on a globe which gives us food, water, oxygen, land and all other necessary resources required for habitation. And what if those resources get finished? What will we do after that? should we find another planet? and how these resources are getting low? there are many questions like that so let's discuss the problems and possible solutions for that.

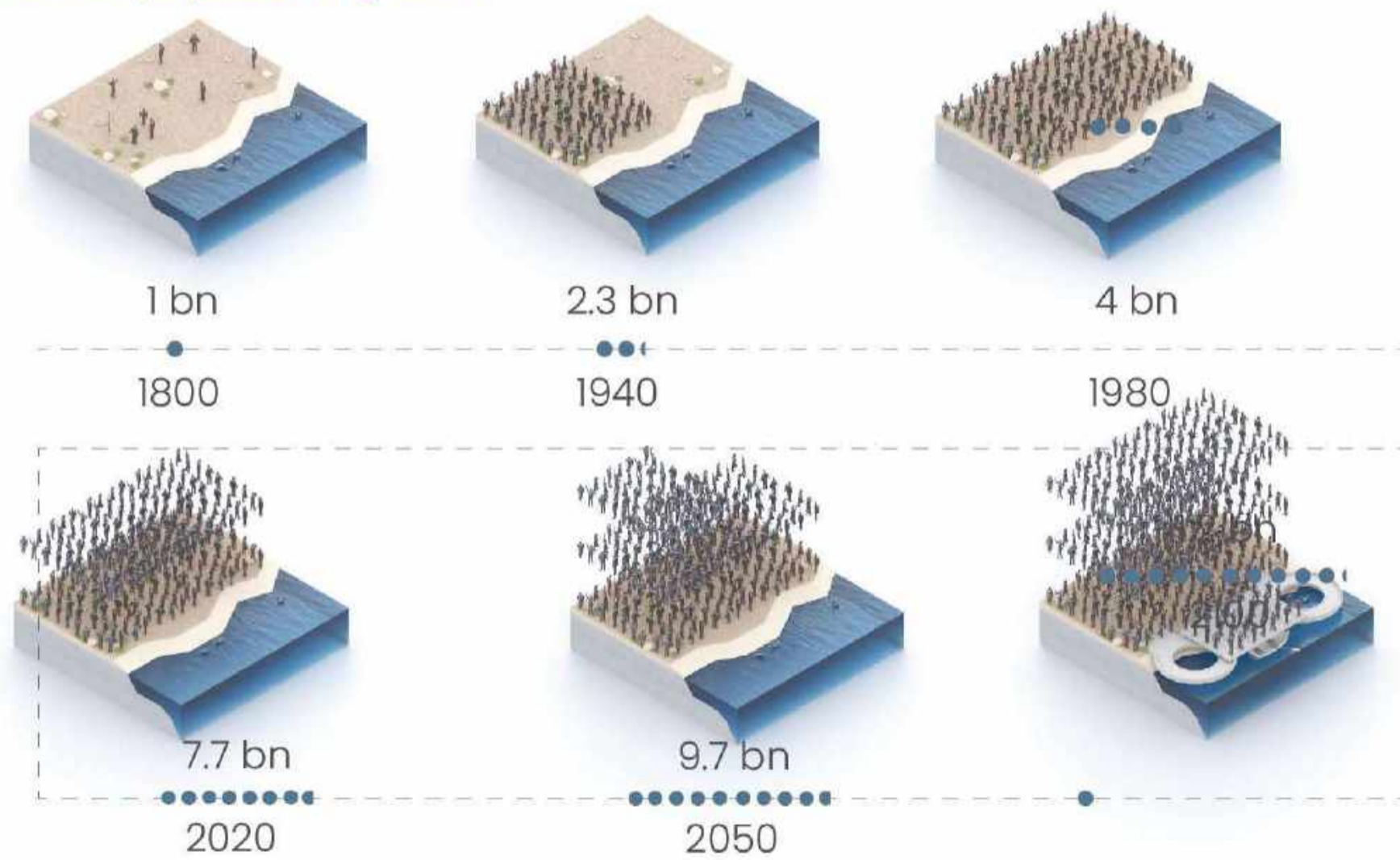


There are many problem earth is facing today like - Soil degradation, Global warming etc. But the most important problem is overpopulation Because it's the root of most of the problem We are facing today.

OVERPOPULATION - The Human Explosion

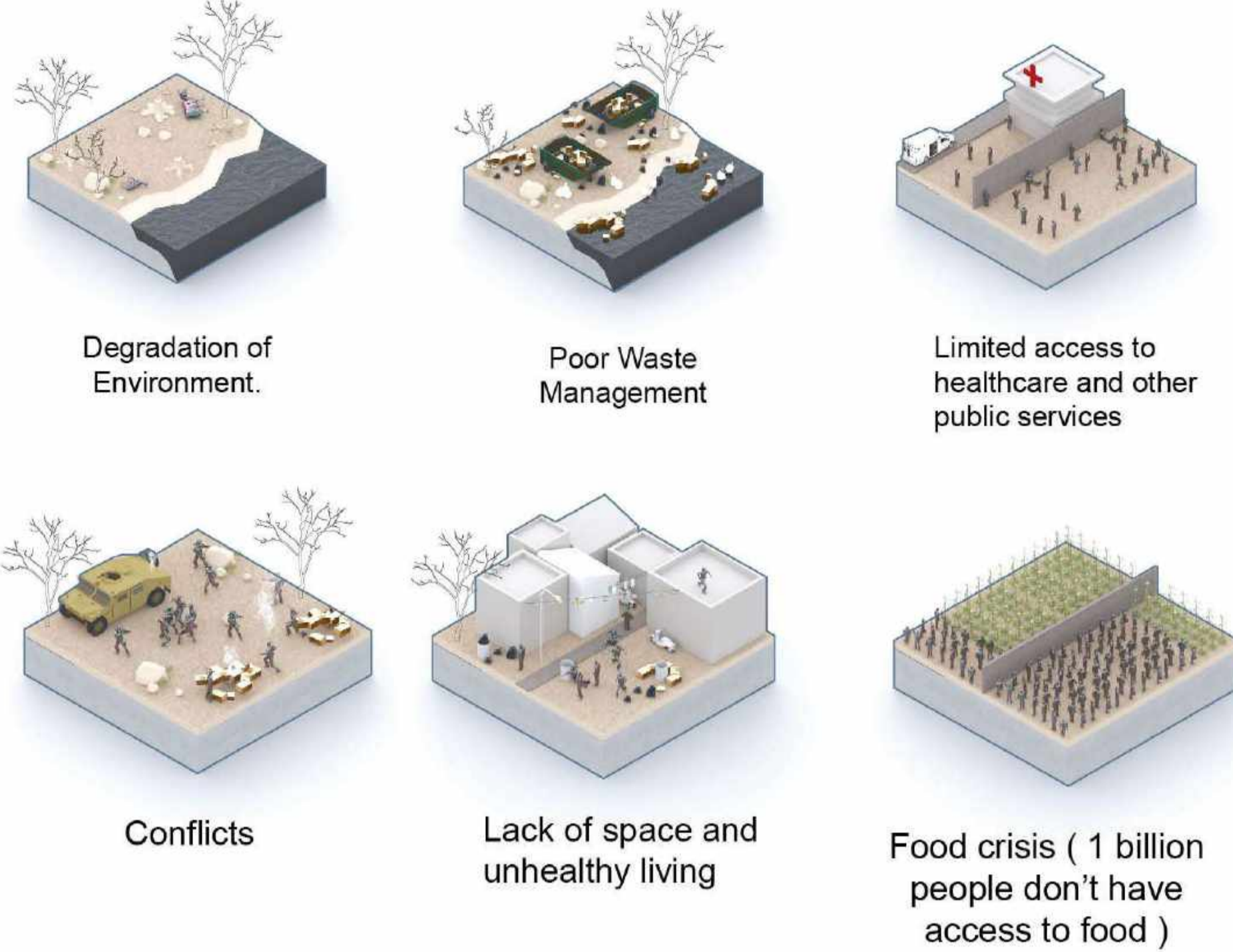
An undesirable condition where the number of the existing human population exceeds the carrying capacity of the earth. Carrying capacity is a little complicated term. But in simple language, carrying capacity means the number of individuals and ecosystem resources like Food, Water, and space can sustain indefinitely. If we see the amount of food production and all other resources provided by the earth, Then 4 billion is a carrying capacity of Earth (4 billion population) But today we are 7.67 billion (2019).. What year it is? It's 2021 and our population is already twice the carrying capacity of the Earth.

Human population growth



Our population is double than the carrying capacity of the earth but we don't face any problem of resources. Because today's technologies like advanced farming (aquaponics/aerponics, advanced machinery), and other technological resources we are able to produce resources to sustain the population. Condition of world is better because of today's advanced technologies.

PROBLEMS :



Other critical problems :

In a world of 7.7 billion people, We have 1 billion people who don't have proper access to the food as well as 80% of the world live on less than 100 rs per day.

Food

In a world of 7.7 billion people, We have 1 billion people who don't have proper access to the food as well as 80% of the world live on less than 100 rs per day.

The way we keep **Food cool** is one of our worst offence against the world. Air conditioners and Refrigerators still largely emits greenhouse gases than much stronger than carbon-dioxide when cooling and transporting frozen good.

Food waste

33% Of our food goes to waste every year, its about 1.5 billion tonnes. Its about 3rd of all our global emission goes to food waste. This is one of the problem where we can individually do something about it.

Transport

Transportation is a backbone of global network. It trades over 18 trillions worth of good and moves the world's population 81 trillion km every year. Currently 95 percent of transportation is fueled by petroleum. According the data (from 2015) transportation accounted for 23% of world green house gas emission. If all cars become electric it will reduce 5 times more emission.

Farming

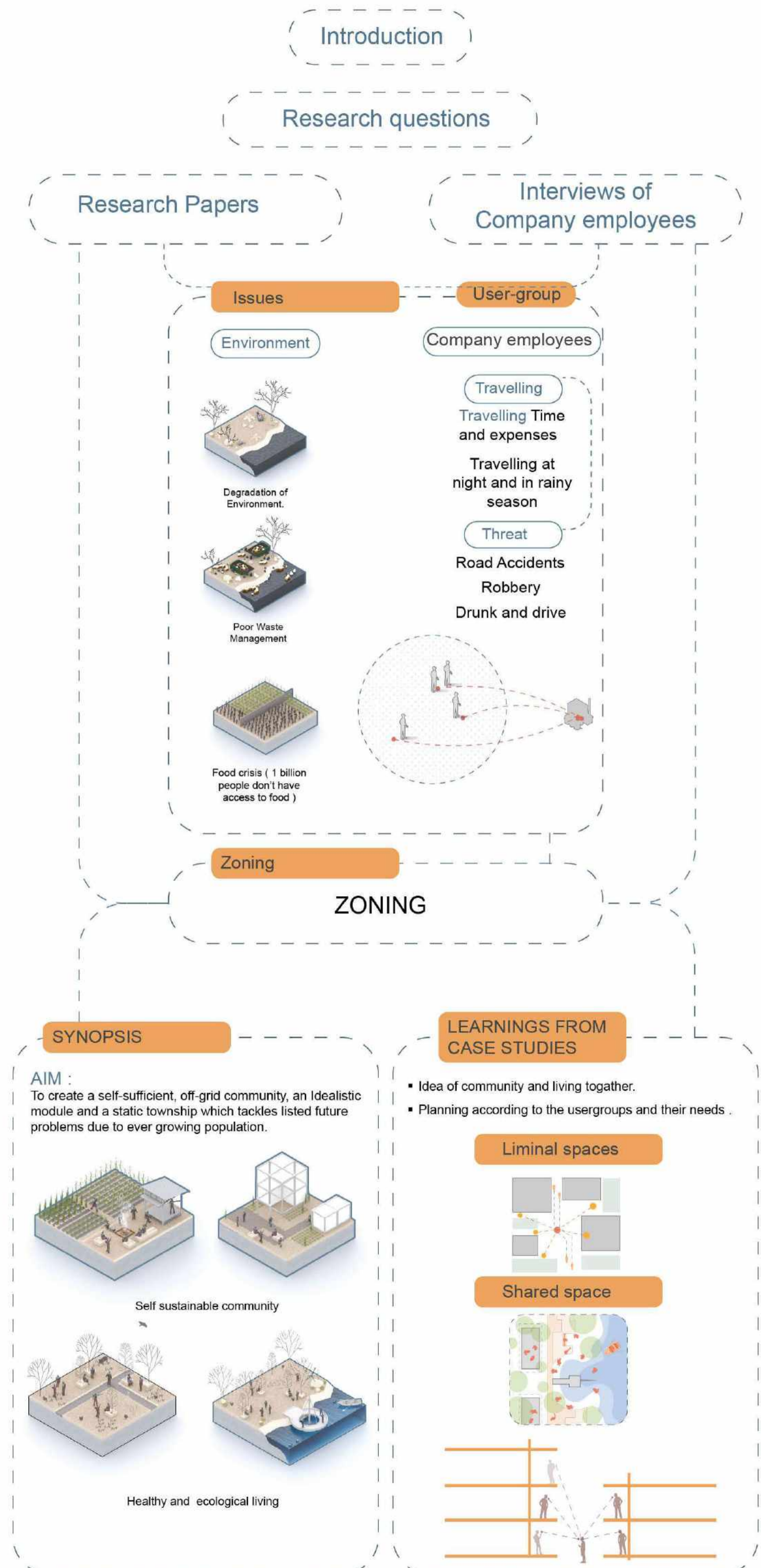
42% Of earth's surface area is used for farming. And farming is one of the Single most powerful driver of deforestation and loss of biodiversity. 70% Of global water consumption is used for farming which is reducing the water level of aquifers.

25% Of the greenhouse gas emission is from the agriculture. (Methane and nitrous oxide)

Habitat

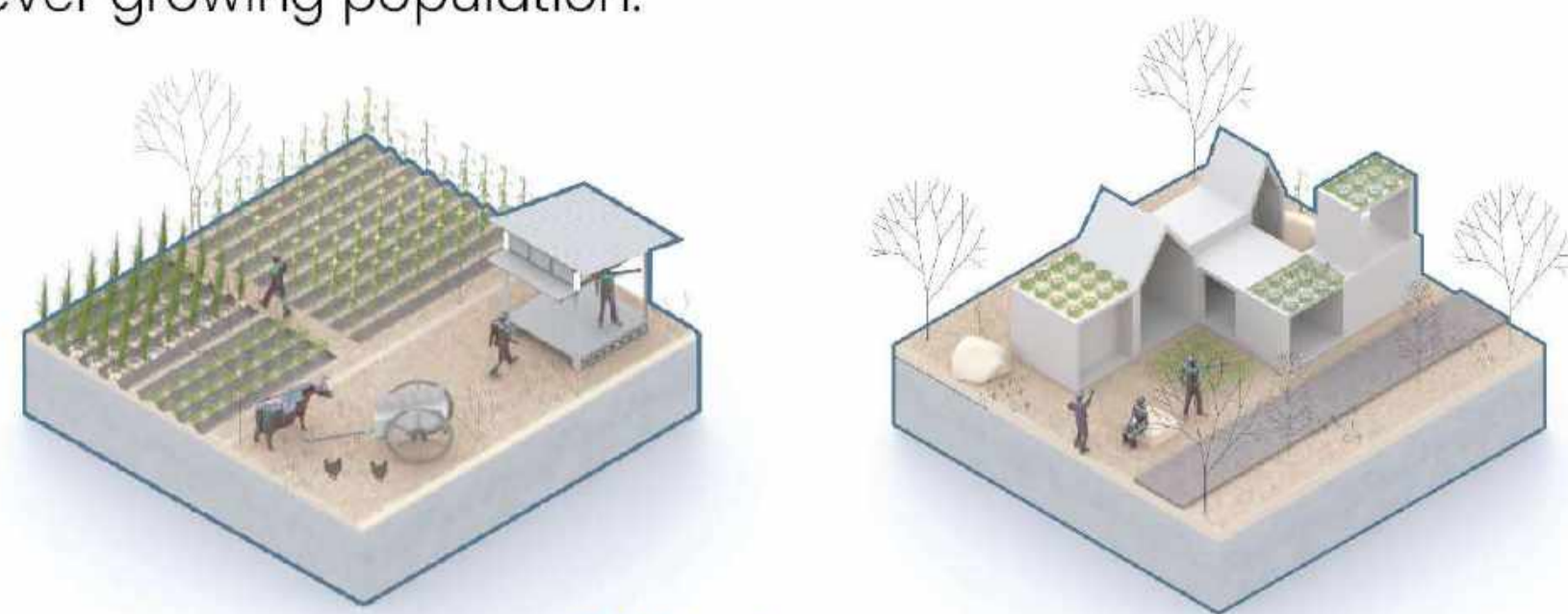
1. Lack of space, Lack of hygiene.
2. No jobs in the city, Families are shifting to bigger cities for work.
3. Communities getting disappeared.

Workflow



AIM :

To create a self-sufficient, off-grid community, an Idealistic module and static township which tackles Listed future problems due to ever growing population.



Objects :

Community :

Creating an idealistic self-sustainable communal neighborhood that can serve all needs of people.

Creating an incremental module for residential units to tackle the future population growth.

Sustainability :

Implementing proven technologies to create sustainable way of living.

Making the user group understand the benefits and advantages of sustainability.

SYMBOLIC AND PHILOSOPHICAL :

Making user aware and increase awareness amongst common people regarding essence, importance and long term benefits of living in self-reliant neighborhood.

Making the people think about the self-reliant lifestyle and adapting it for better future.

METHODOLOGY :

Collection of data according to the project needs and specification.

Literature study for understanding of actual problems.

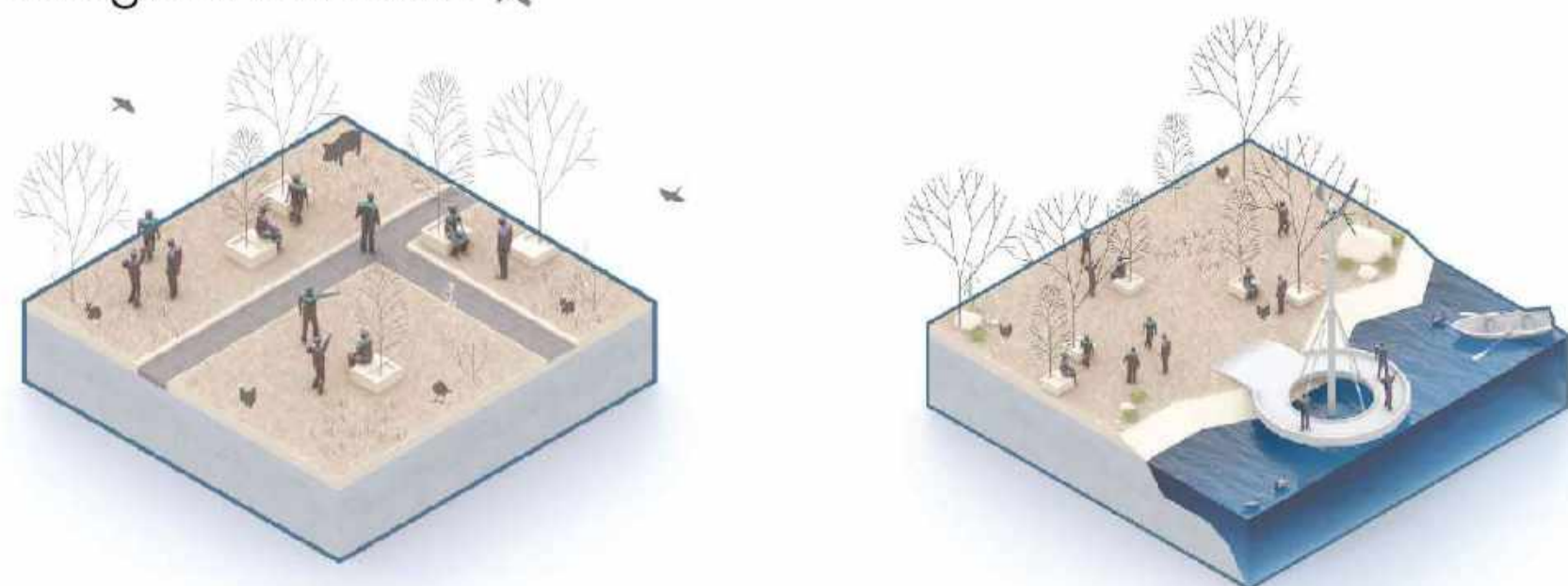
Live and book case study for better understanding of project.

Identification of site according to the project Requirements.

Implementing the overall learnings and analysis in the final design process..

SCOPE AND LIMITATION :

Eco-village is a very vast term which includes variety of interest areas like spirituality, Social cultural, economic aspects etc. So the scope of a project is limited to an idealistic module which will aware the people and user group about the benefits of of living in self-reliant neighborhood. Also covering the social, cultural, economical and ecological benefits.



Healthy and ecological community

What is an ecovillage ? :

An ecovillage is a traditional or intentional community with the goal of becoming more socially, culturally, economically, and/or ecologically sustainable. An ecovillage strives to produce the least possible negative impact on the natural environment through intentional physical design and resident behavior choices.[1] It is consciously designed through locally owned, participatory processes to regenerate and restore its social and natural environments. Most range from a population of 50 to 250 individuals, although some are smaller, and traditional ecovillages are often much larger. Larger ecovillages often exist as networks of smaller sub-communities. Some ecovillages have grown through like-minded individuals, families, or other small groups—who are not members, at least at the outset—settling on the ecovillage's periphery and participating de facto in the community.

What is a Regenerative village ? :

ReGen Villages is a new visionary model for the development of off-grid, Self sustainable and resilient eco-villages that can power and feed self-reliant families around the world.

ReGen stands for regenerative, where the outputs of one system are the inputs of another. The concept has a holistic approach and combines a variety of innovative technologies, such as energy positive homes, renewable energy, Energy storage, door-step high-yield organic food production, vertical farming aquaponics/aerponics, water management and waste-to-resource systems.

ELEMENTS OF REGENERATIVE VILAGE



With the integration of such technologies, ReGen Villages holds a potential in changing some of the challenges of a growing population, increasing urbanization, scarcity of resources, the growing global food crisis as well as reducing the global CO2 emission and reducing the burdens on municipal and national governments in dynamically changing planetary and economic times.

ReGen Villages is all about applied technology. Already existing technologies are simply being applied into an integrated community design, providing clean energy, water and food right off the doorstep. ReGen Villages adds not only environmental and financial value, but also social value, by creating a framework for empowering families and developing a sense of community, where people become part of a shared local eco-system: reconnecting people with nature and consumption with production.

Who Will live in this self reliant community?

For 1st prototype -

As cities are growing vastly these days, and creating many problems. There will be a solution of an idealistic module which is proposed as an alternatives to these cities. Unplanned growth of these cities can be stopped and this type of prototypes can be added in the outskirts.

These idealistic module is inspired by the concept of eco-villages and regenerative village.

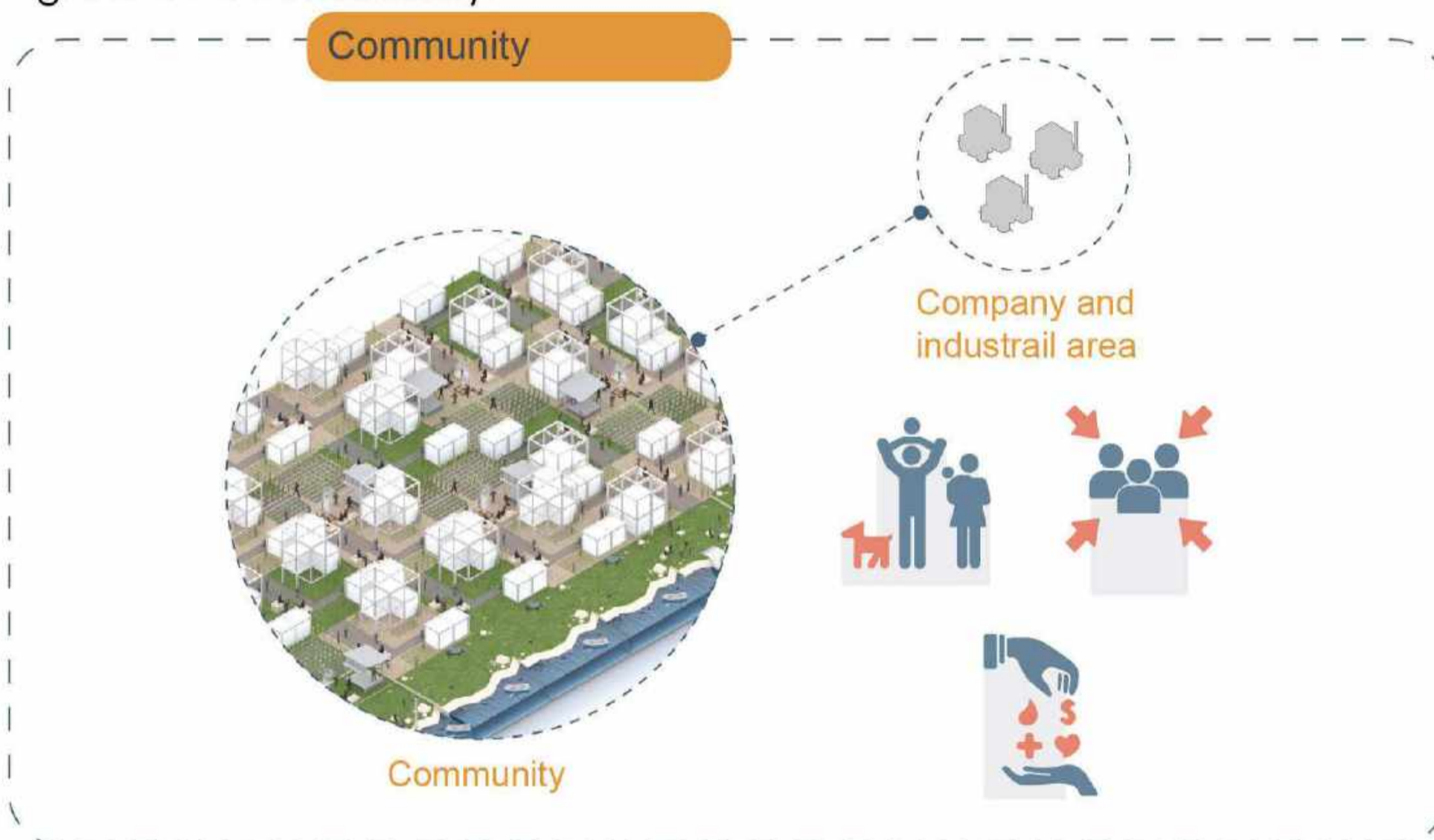
Who is going to adapt this 1st prototype ?

This is an idealistic module, anyone can adapt these self reliant communities,

But for 1st module, we are considering a particular community .

COMPANY EMPOLYEEES

This user group belongs to same profession. They work in a same culture. They share common thoughts, Common interests. They can grow as a community.



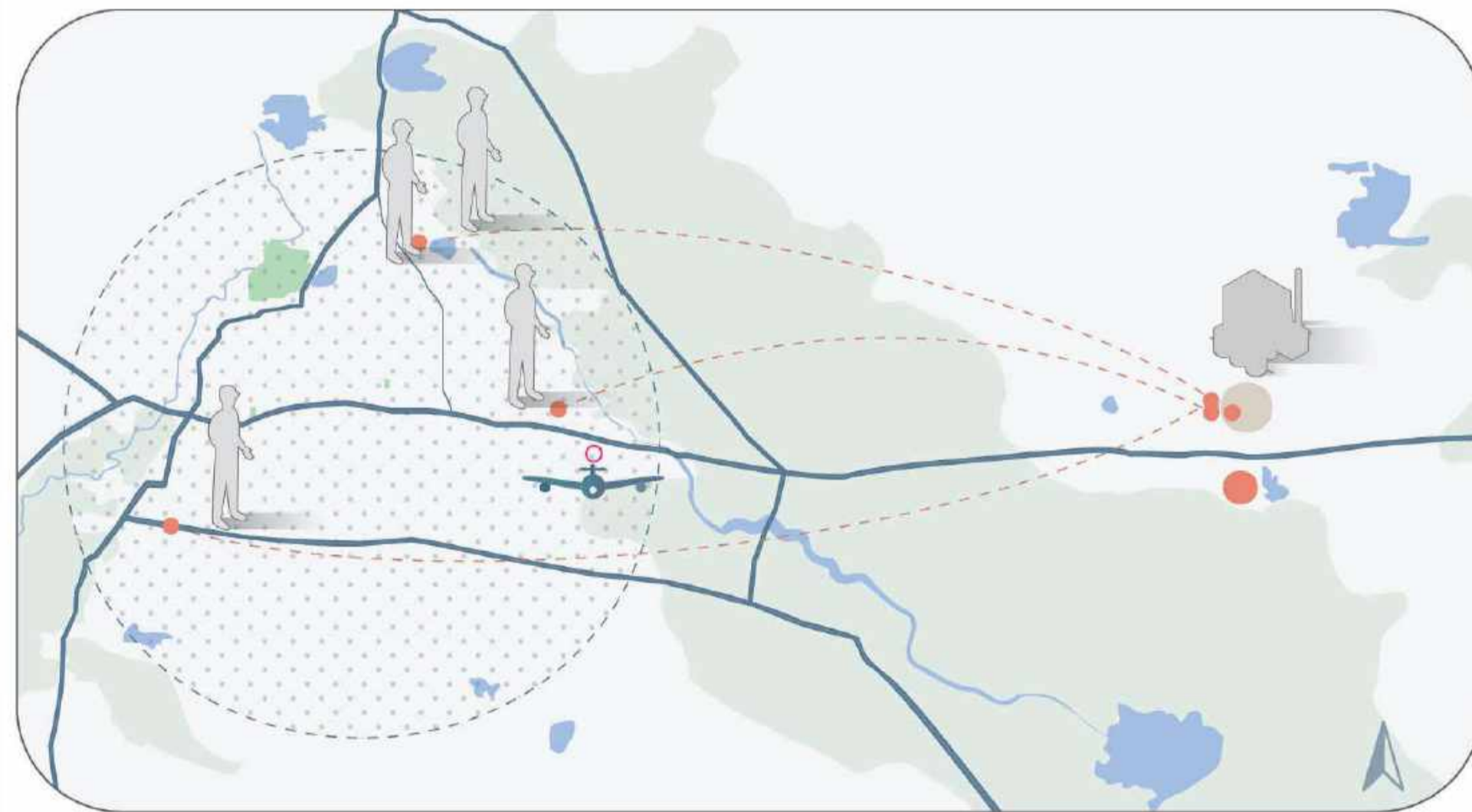
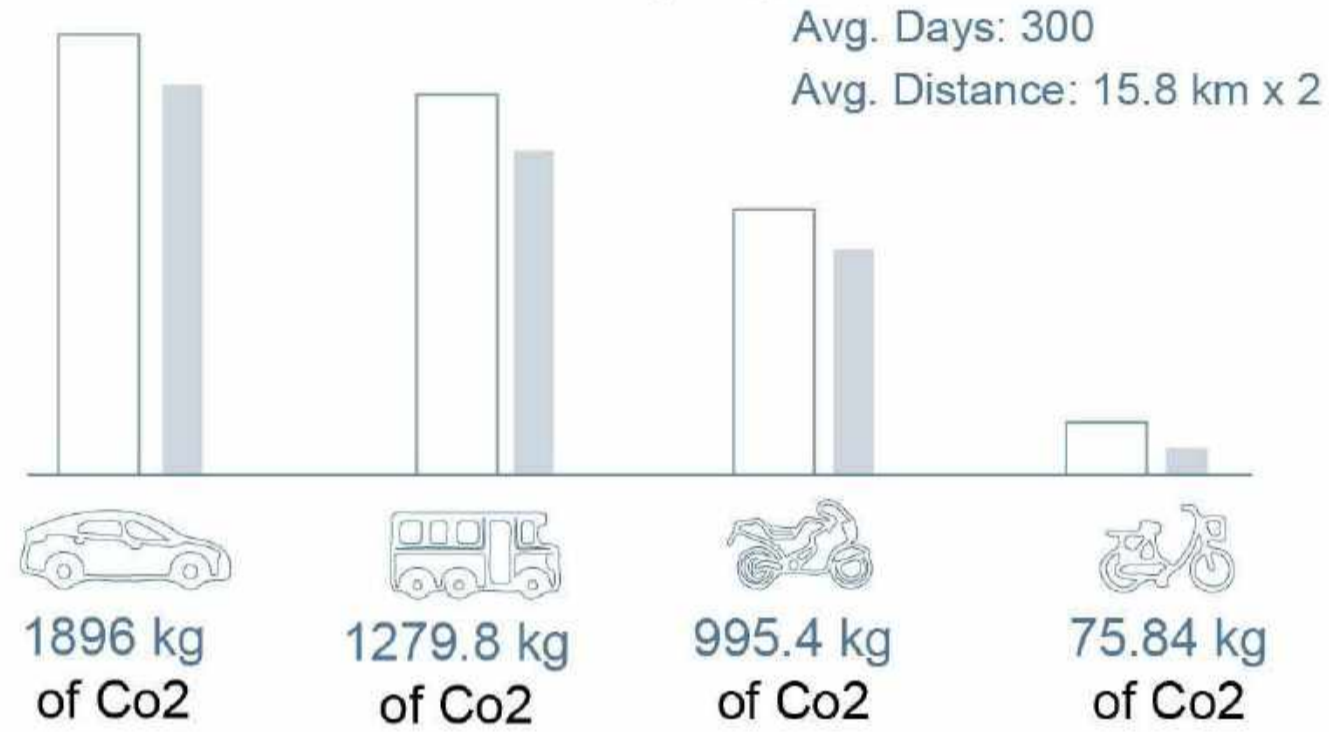
Map showing strategic location of site in the outskirts of city.

Learnings from literature study (interview etc.)

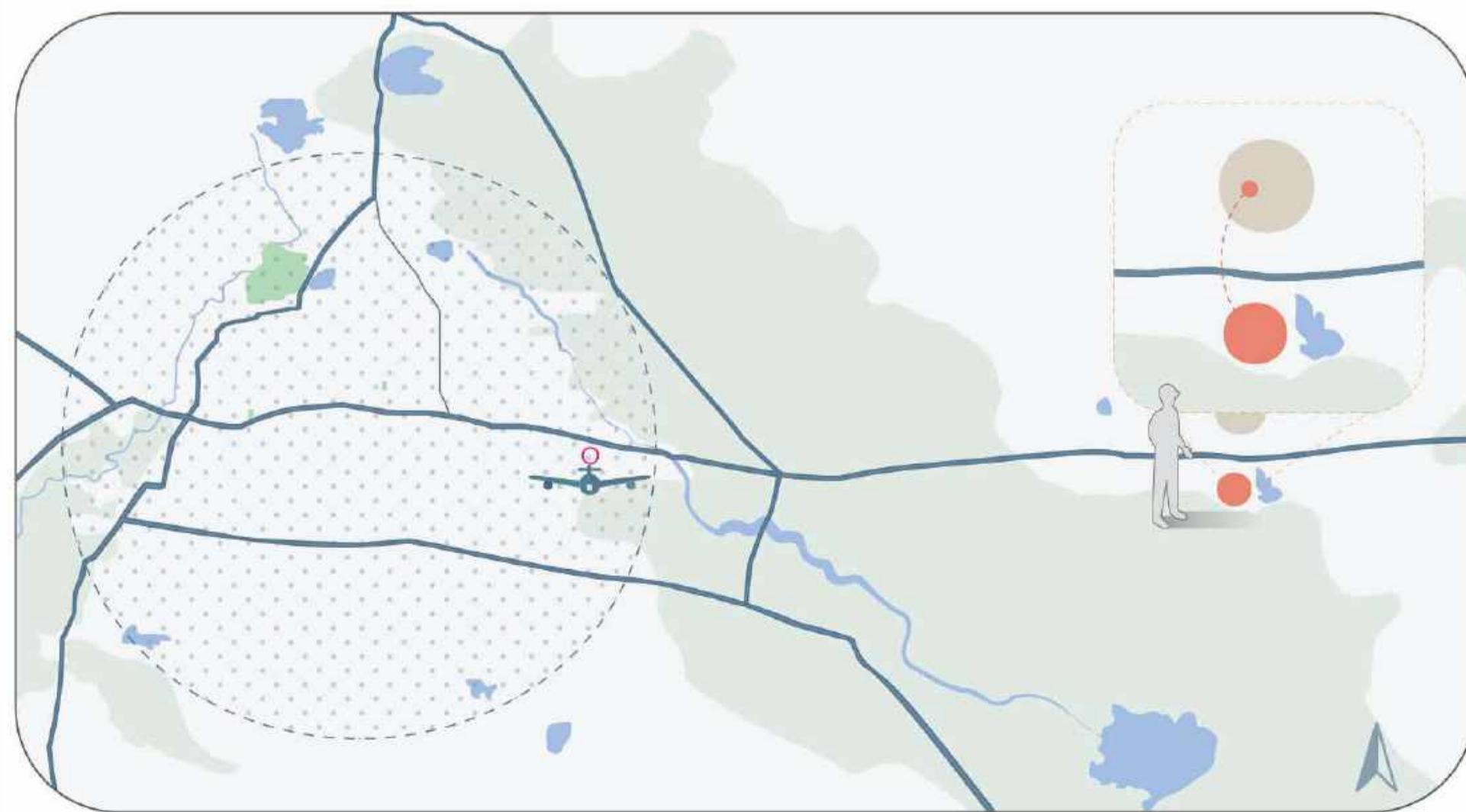
CARBON AND GREENHOUSE GAS EMISSION

- Co2 emission of car per km 101-110 g/km
- Co2 emission of car per km 175-280 g/km
- Co2 emission of bike per km 110-170 g/km
- Co2 emission of bike per km 5-16 g/km (CO2 emissions from the average diet of user)

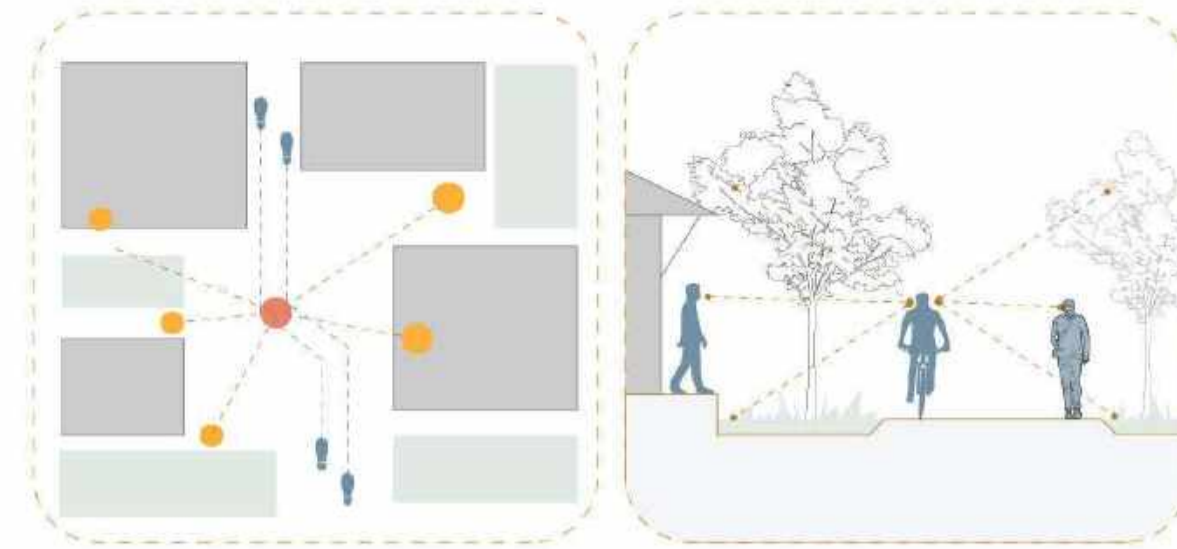
Co2 emission of vehicles per year



Solution ● Site ● Industrial area



Solution and Ideas



Promote walking by providing interesting and interactive passages

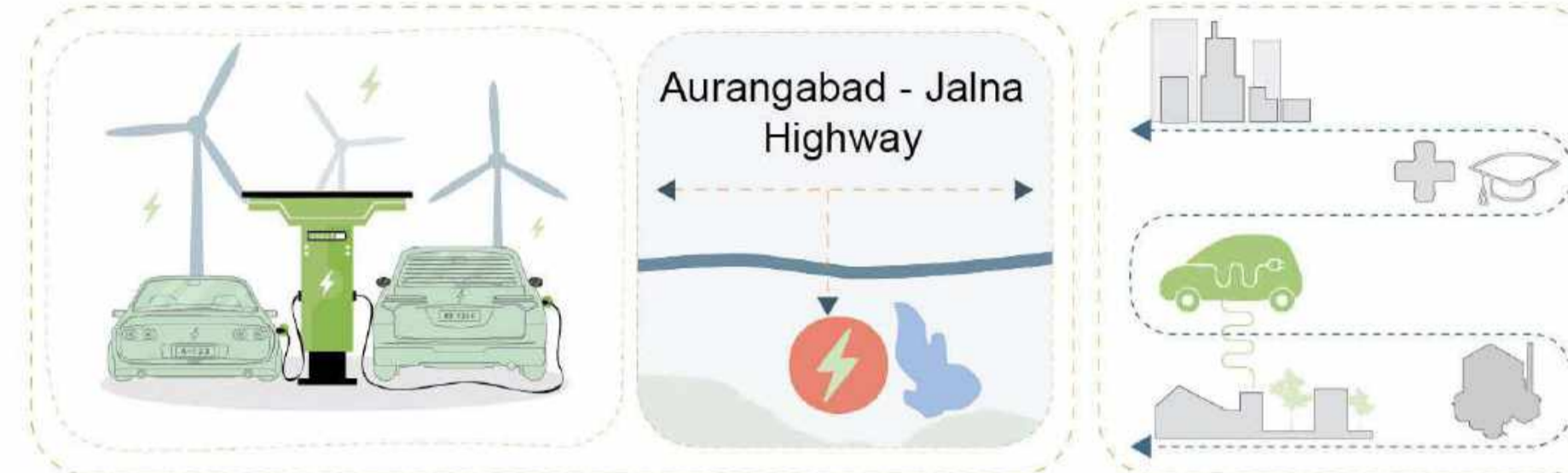
Promote Cycling by Creating interesting journey within the Project.



Promoting use of cycling by providing cycle tracks.

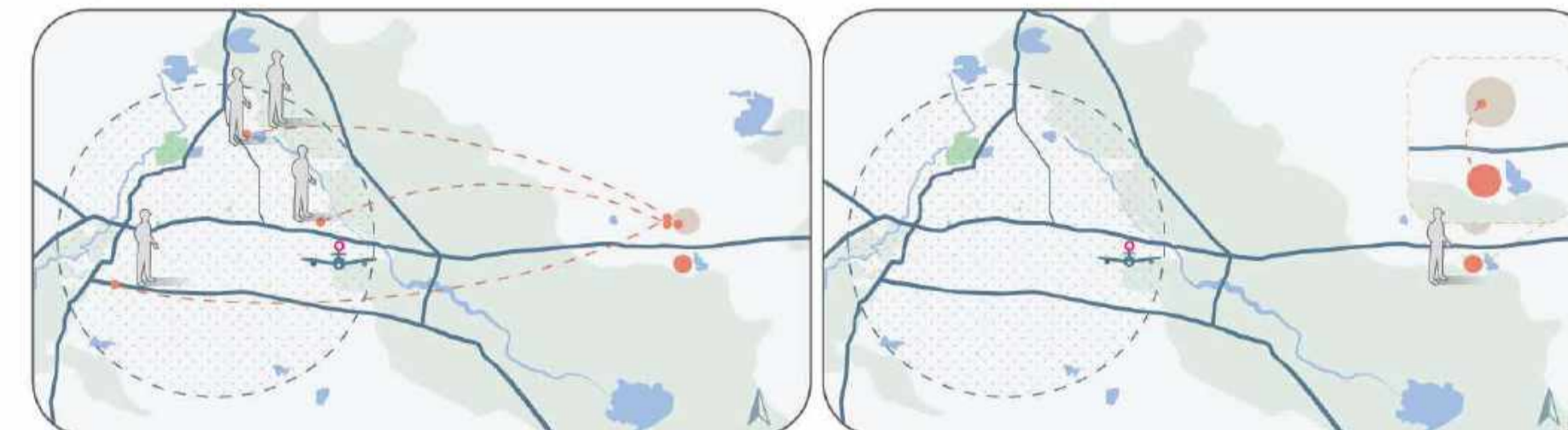


Promoting use of electric car by providing charging station (Electricity will be produced on site)



The charging station will be accessible for outsiders also to promote the use of Electric cars. And the site is located on Aurangabad - Jalna highway so it will be used regularly.

Provision of electric autos from site to the companies and city. (0 Carbon footprint)



Company employees (On an average) spend 1.5 hr to 3 hrs for travelling At a night or day.

The strategic location of the site saves their time and energy. It helps them to do productive work. They can help the community in their free time and also they can spend time with their families.

Problems faces by employees :



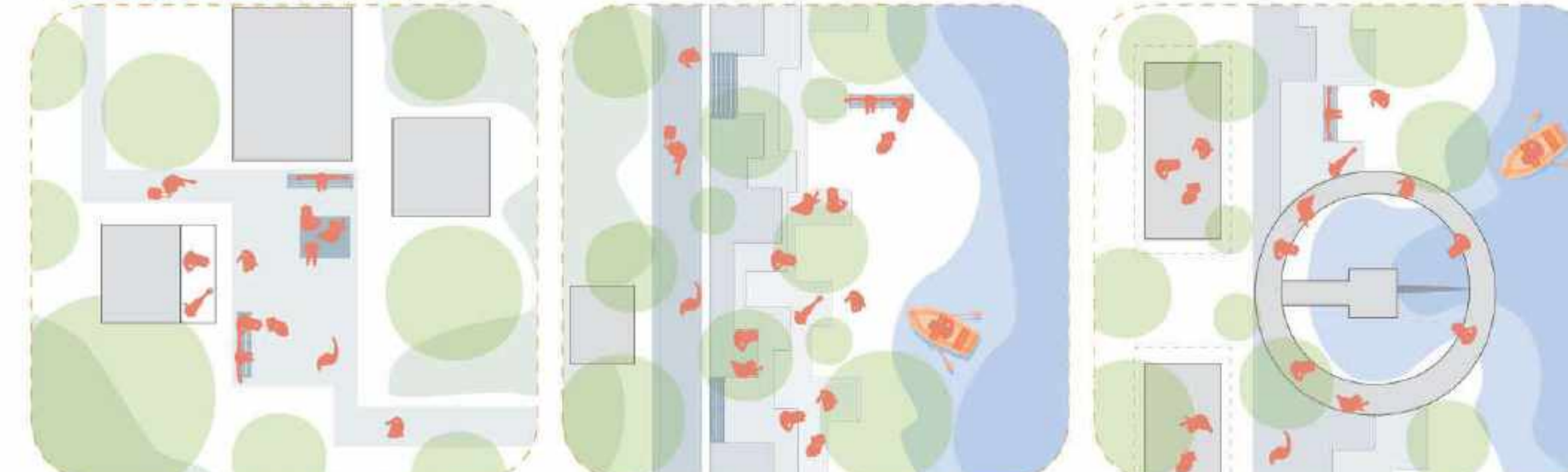
If they save their time :



This will increase the standard of living and create health lifestyle.

Helping community to grow together

Possible solutions :



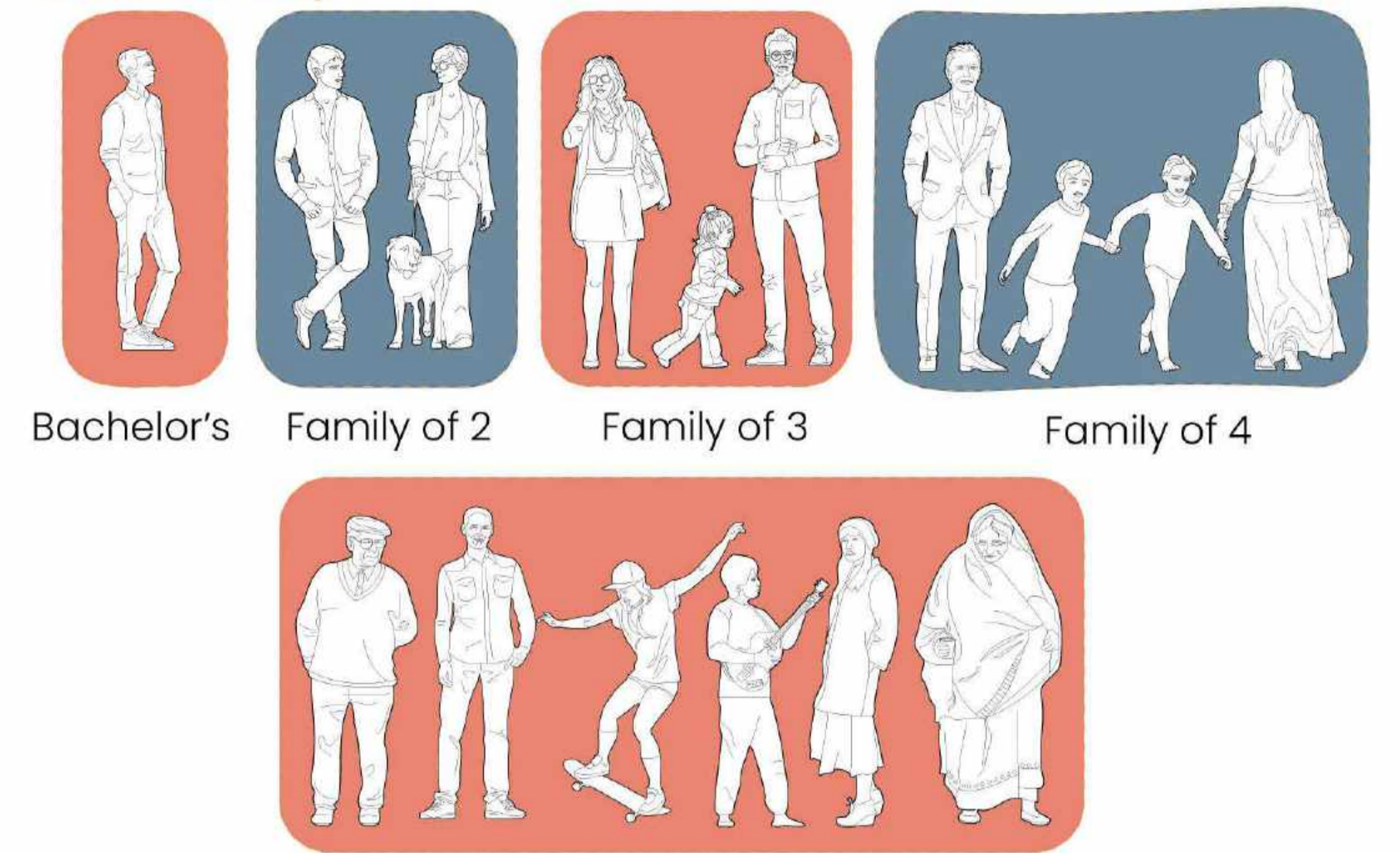
Interactive communal spaces and court-yards

Lakefront development.

Provision of yoga and community center.

EXPENSES

User-Group



Expenses



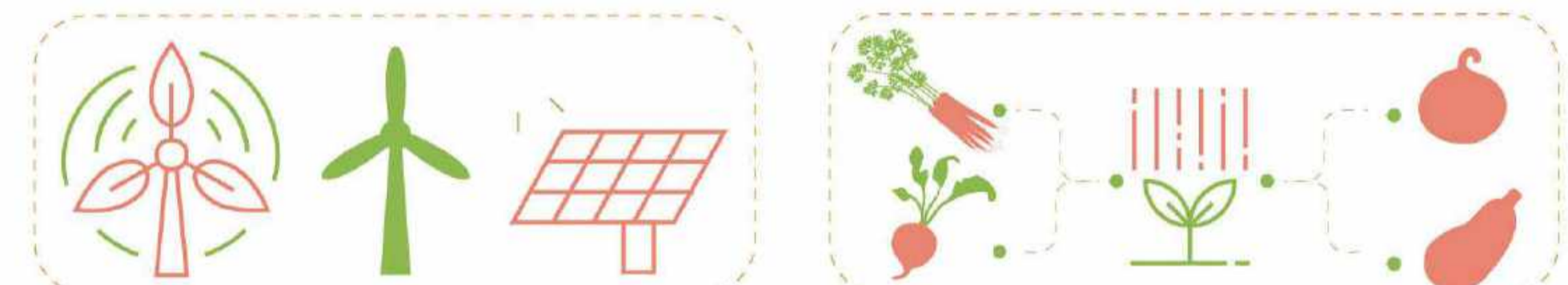
On an average, 33% Of income is spent on household consumption - Food, Water, Energy. And they spent 8-10 hrs paying for this.

Family of 6



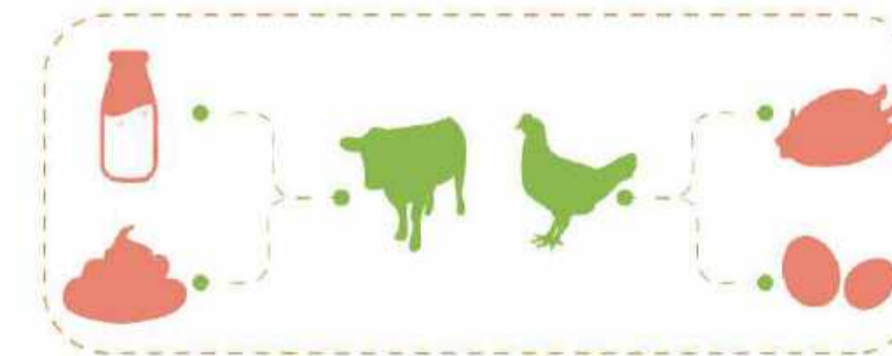
This expenses include electricity bills, water bills, Gas bill, Internet bills, fuel cost, House rent, Auto insurance, gym and yoga fees. Grocery items, milk, eggs, meat etc.

Solution and Ideas

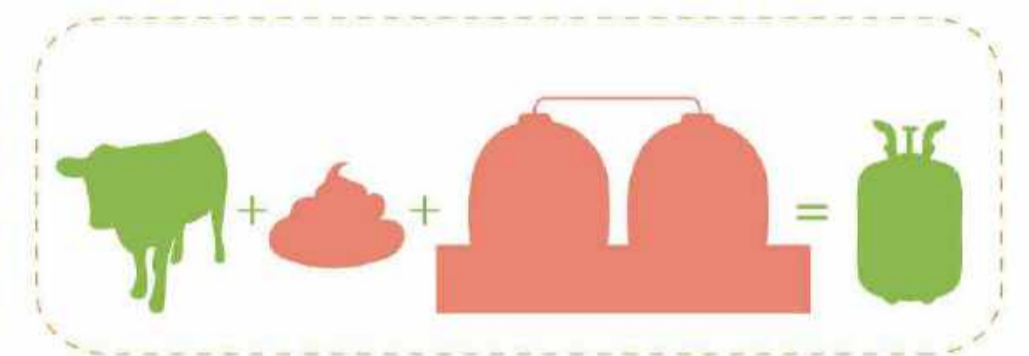


Locally produced green energy (Solar plant, Wind energy, Bio-gas Plant).

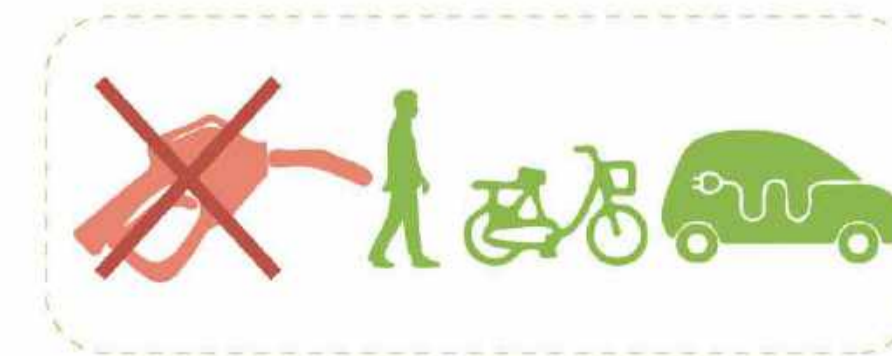
Locally produced high quality food With advanced farming like Aero-ponics and aquaponics



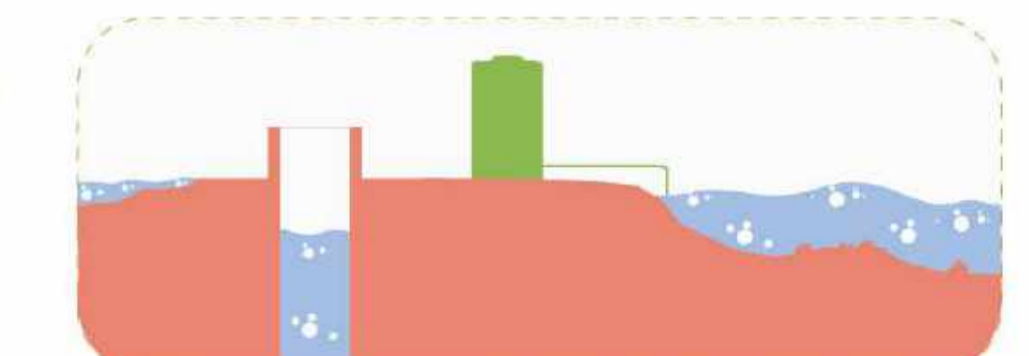
Live stock like chicken (for eggs And meat) and cow (for milk and Cow dung)



Locally produced gas from bio-gas plant which will produce green source of energy and also creates compost.



Fuel cost and use of petroleum will be reduced by promoting electric cars and cycle. This will reduced the Co2 emission.

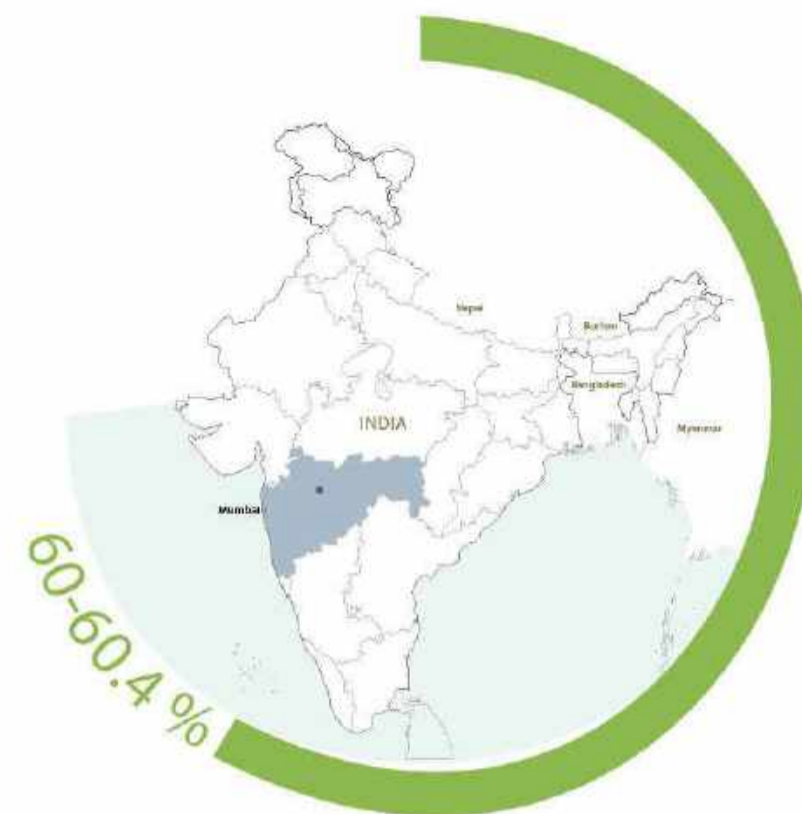


Regionally available water source and filtration plant. This will full-fill water requirements of users and farming. Benefits of rainwater harvesting to increase ground water level

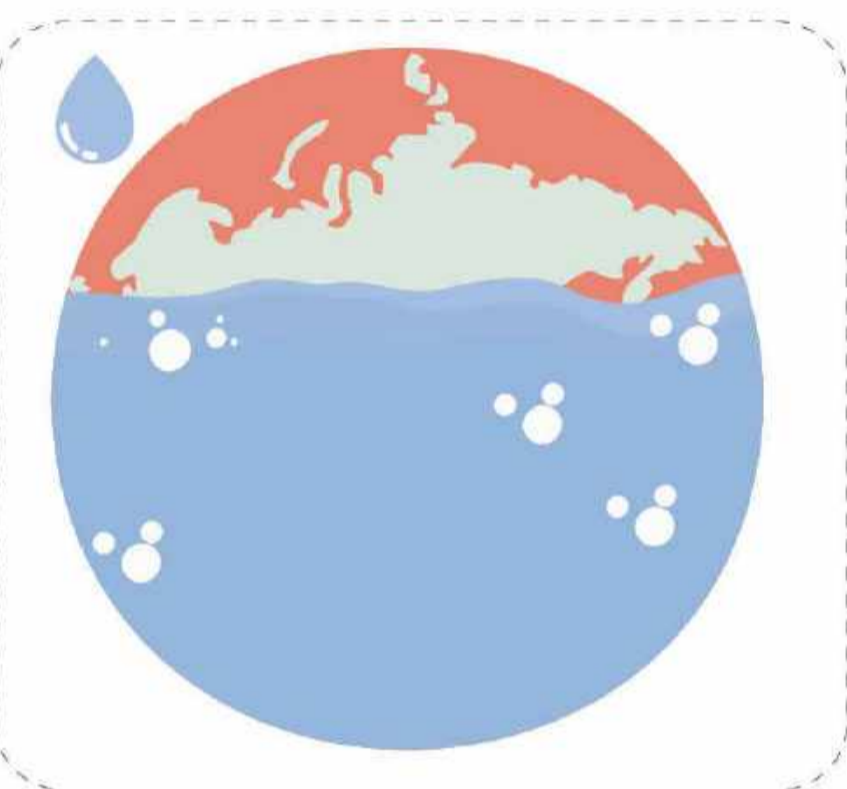
ISSUE - TRADITIONAL FARMING



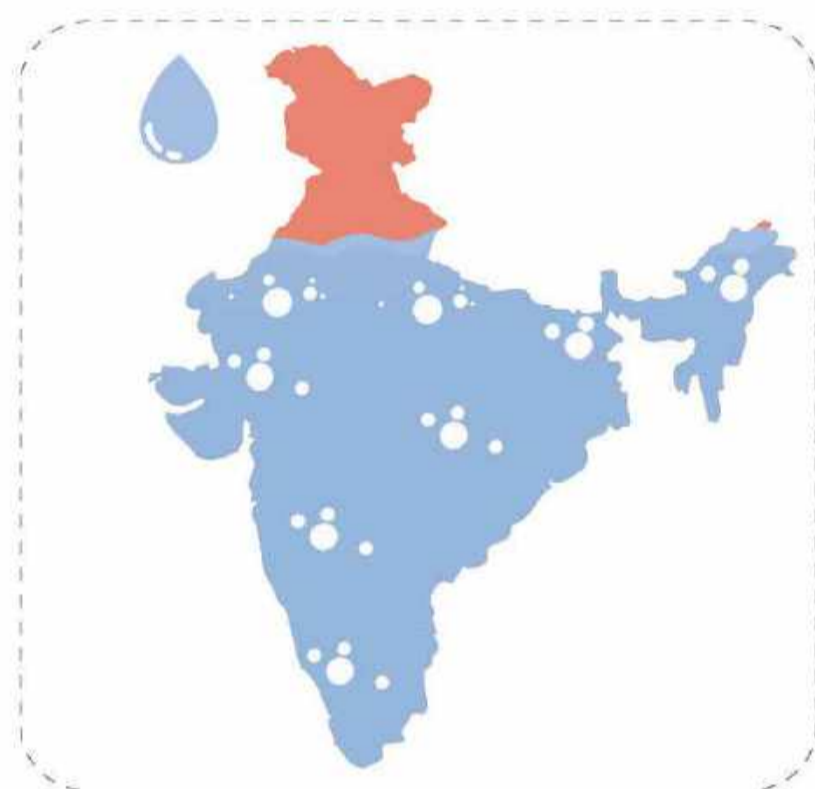
42% Of earth's surface area is used for farming.



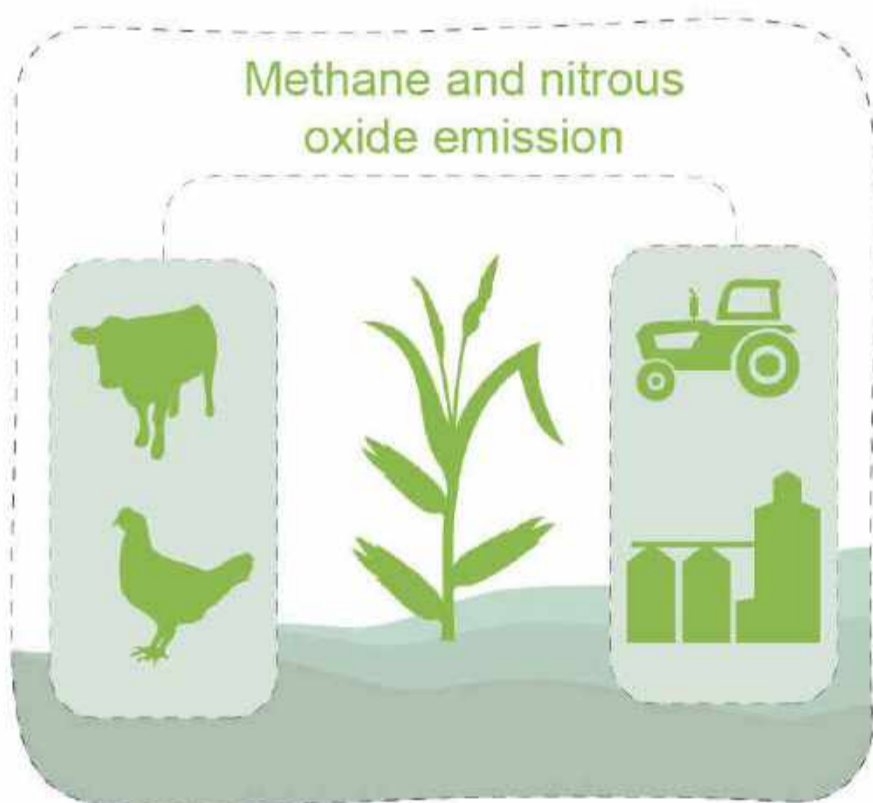
60% Of India's surface area is used for farming.



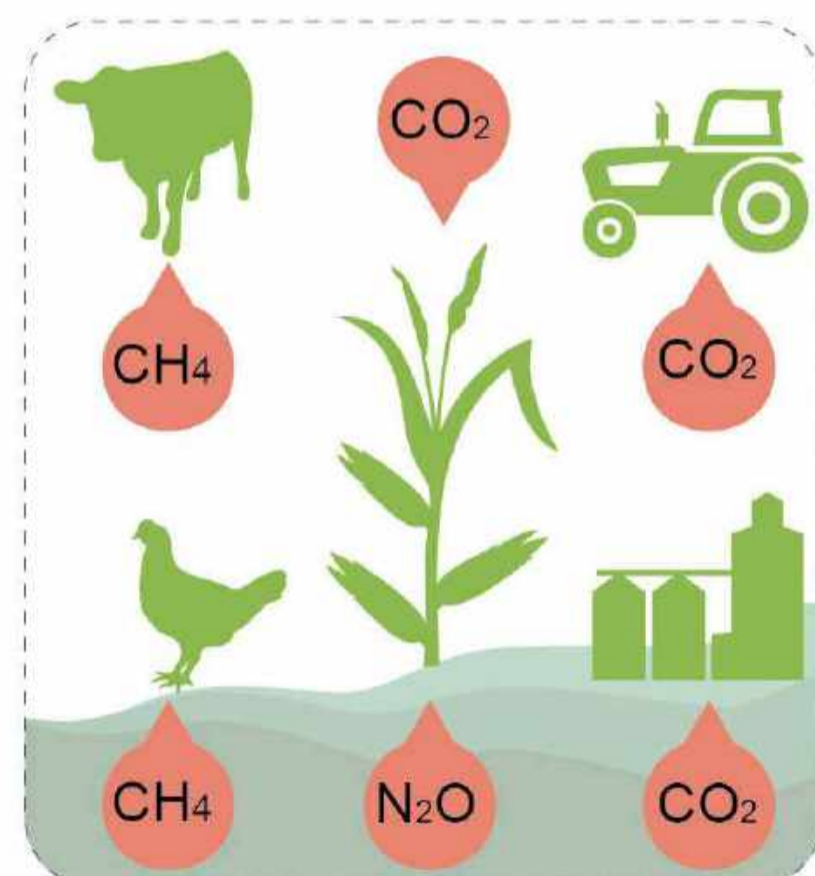
70% Of global water consumption is used for farming which is reducing the water level of aquifers.



India has 18% of world population, having 4% of world's fresh water, out of which 80% is used in agriculture.

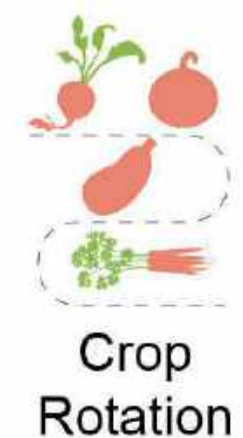
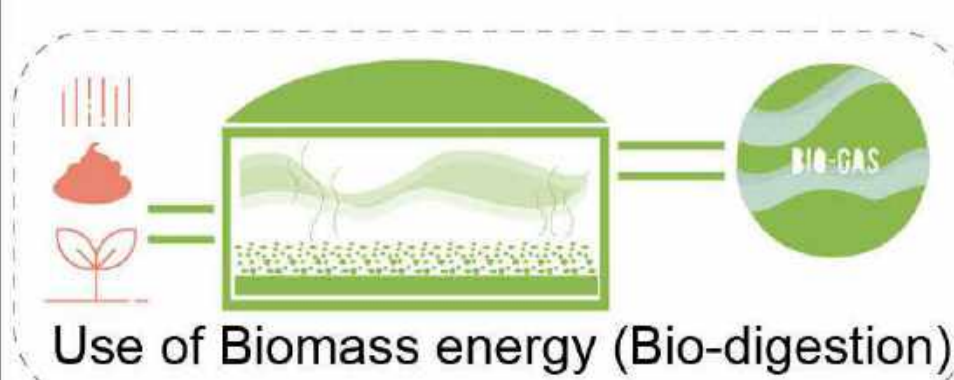


25% Of the greenhouse gas emission is from the agriculture. (Methane and nitrous oxide)



CO₂(Carbon dioxide),N₂O (Nitrous oxide) AND CH₄ (Methane) EMISSION

SOLUTION



SOLUTION

Permaculture

- Permaculture means **permanent agriculture**. The farm created is similar to a forest. And the small areas from the forest are kept for farming or cultivation.
- In permaculture **Trees** are given up-most importance. Trees are beneficial for farming in many ways.
- Trees keeps the temperature controlled in summer and winter season.

Reasons for which farmers cut trees:



Trees cast shadow on crops



Blocks the path of tractor



Trees invite birds and insects

- But in reality, all this factors help environment as well as the farm.

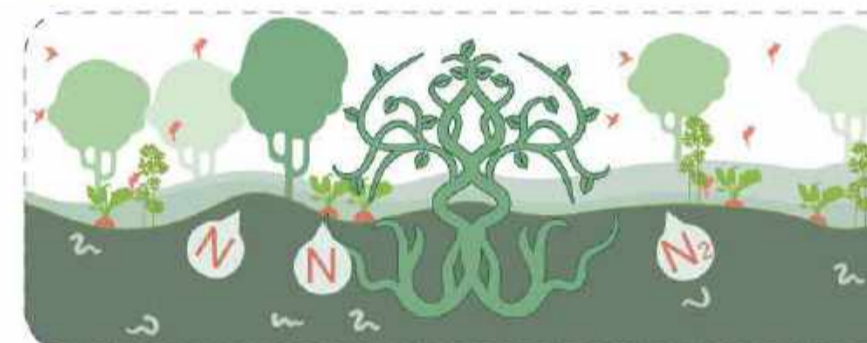
Solution and Ideas:

Most of the agriculture farms are full of annual plants, But it is not normal. What normal is a more forest or semi forest systems in which small forest gardens are inserted.

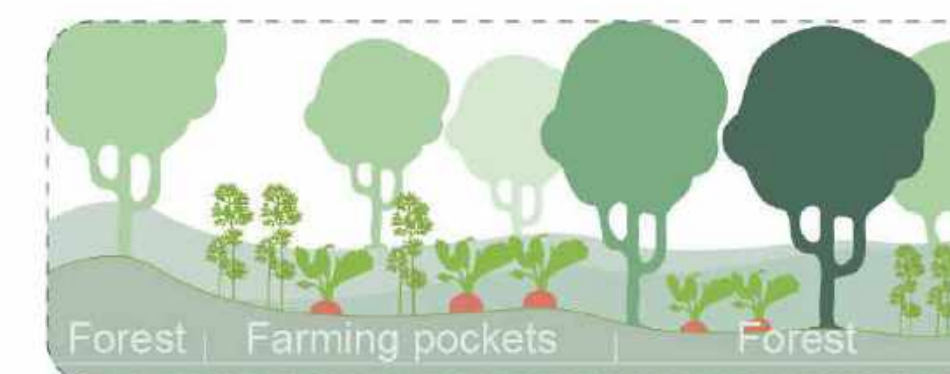
Benefits of having trees in Farm :



Roots of trees penetrate in the ground and aerate soil. Aeration leads to higher water retention capacity of soil.

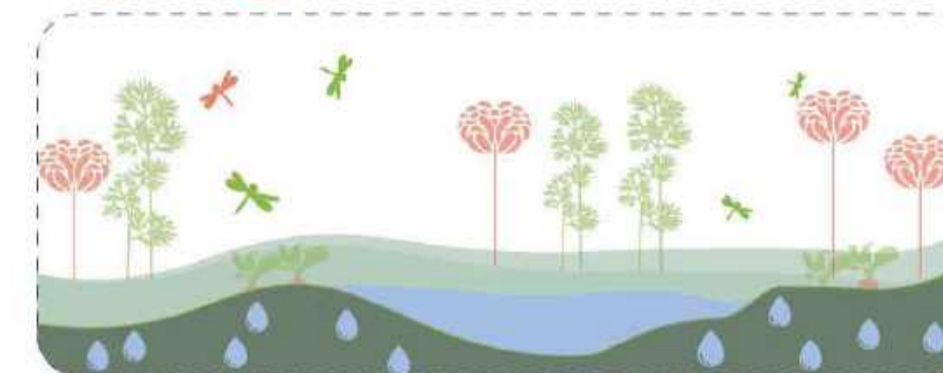


Roots of Trees like banyan and peepal provides fix nitrogen in our soil, So it makes land more fertile and nutritious.



Leaves of trees kept soil covered and unexposed, It result in less evaporation of water and these leaves also provide food for earthworm, Bacteria, and fungi. This boost the fertility of soil.

Capturing rainwater:



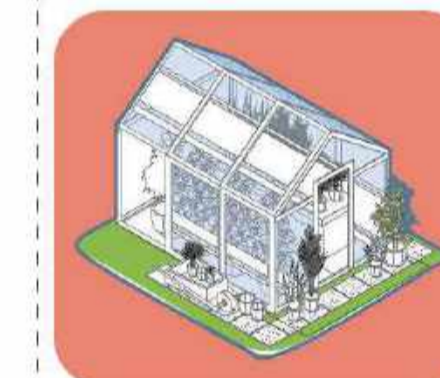
- Capturing rainwater by introducing check dams, small ponds.
- Ground water level starts to increase within two year.

Solution and Ideas:

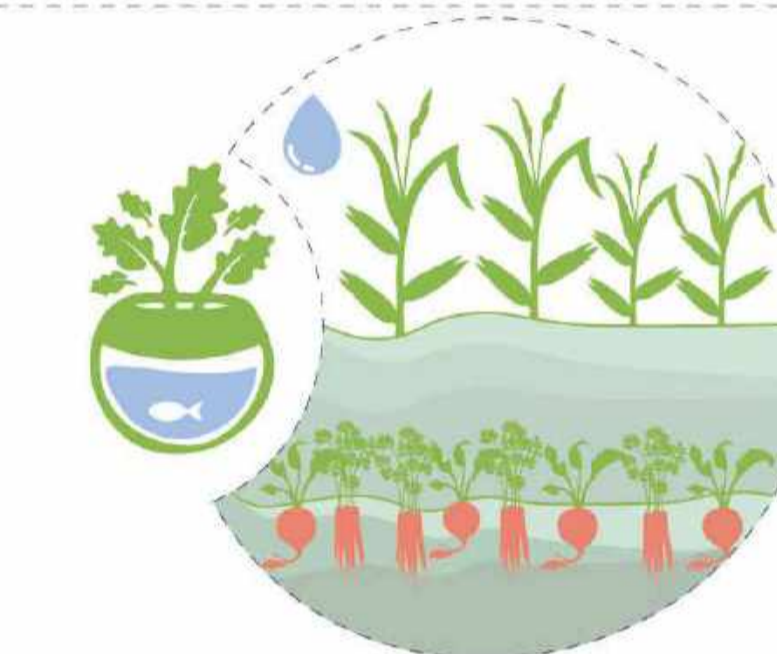
Having a diverse system, It gives us maximum resilience.

ADDITION

Remaining land can be used to plan trees which will encourage flora fauna.

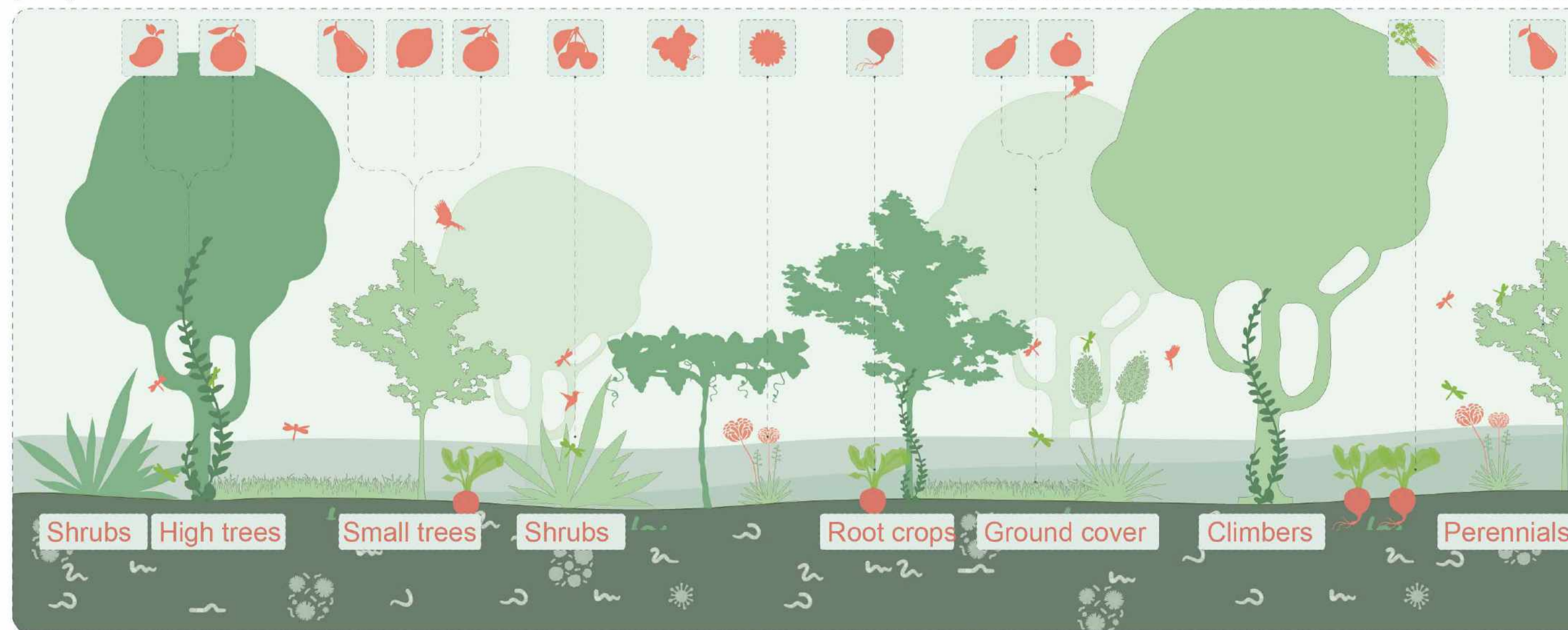


Using Aquaponics and Aeroponics farming system we can save 98% land.



Aquaponics and Aeroponics farming Decreases water consumption by 90%

Illustration showing mixed farming



This illustration showing the idea of permaculture forest.

This system use Direct useful plants, many type of fruit trees, Less common fruit trees, all type of nuts, Tuba crops, Vegetable, Medicinal plants, Timber (grow Things on logs like mushrooms and climbers, In-directive system plants To help system. (That include nitrogen fixing plants, mineral accumulator plant to attract beneficial insects and Improve ecosystem.



PROJECT : Regen Villages
AREA : 15500.0 sqm
PROJECT YEAR : 2016
ARCHITECT : EFFEKT Architects
LOCATION : Almere, The Netherlands



Project information:

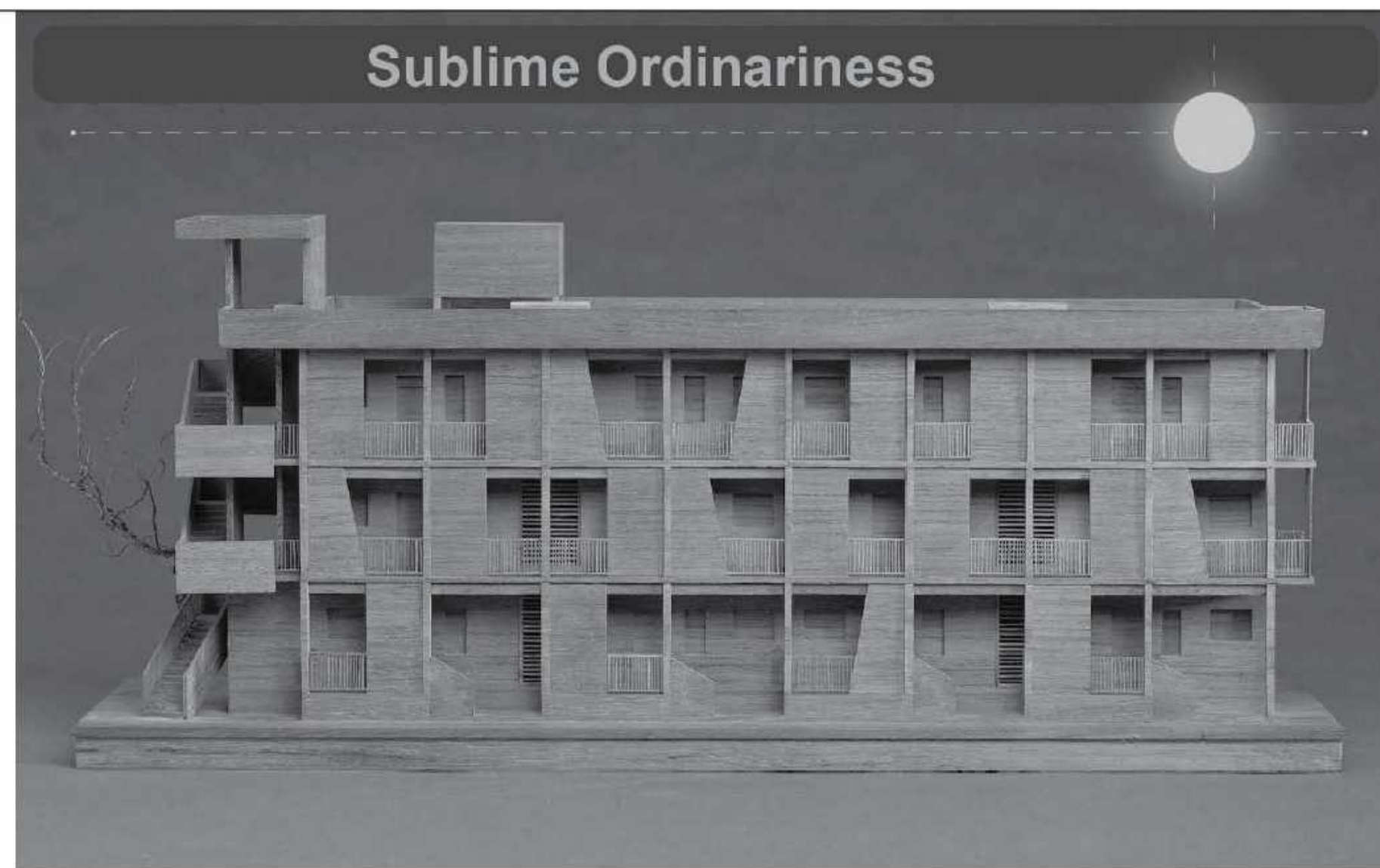
- ReGen Villages is a new visionary model for the development of off-grid, integrated and resilient eco-villages that can power and feed self-reliant families around the world.
- The basic concept was to create a self sustainable, off-grid communal neighborhood.
- Village developed in response to some of the worlds most critical environmental, social and economic issues.
- Problems covered into the project: Global warming, population growth, global food crisis and scarcity of resources. This leads a project team to consider how these innovative developments could offset the dangerous consequences of human inhabitation.
- Concept combines variety of innovative technologies for problem solution:
 1. Energy positive homes
 2. Renewable energy
 3. Energy storage
 4. Doorstep high-yield food production
 5. Vertical farming (Aquaponics).
 6. Water management and waste to Resource management.

Basis of project selection

- To understand the sense of community through architectural spaces.
- To study the aspects of self sustainable and off-grid way of living.
- To understand the process of design in response to some of the worlds most critical environmental, social and economic issues.
- To understand the applied Technologies and its advantage in architecture.

LEARNINGS

- Understanding of Self-sustainable technologies like energy positive homes and Renewable energy.
- Understanding Environmental, financial value & social value by creating empowering families and developing sense of community
- Understanding of different spaces like - Liminal spaces, shared spaces



PROJECT : Sublime Ordinairness
AREA : 3900 Sqm
COMPLETION YEAR : 2019
ARCHITECT : DCOOP Architects

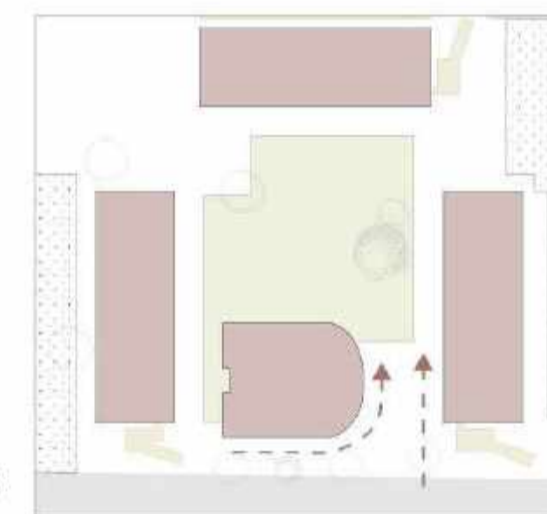


Project information:

This is a community housing project for company employee. located in mumbai. Family, relatives, and community play a critical role in Indian society. The housing has been designed keeping these socio-cultural realities in mind. The idea of the community and living together has been a key intent of this project.

PLANNING :

Design inspiration is taken from "chawl" (Housing typology in Mumbai) Instead of creating a central core, Architect provided a common passage



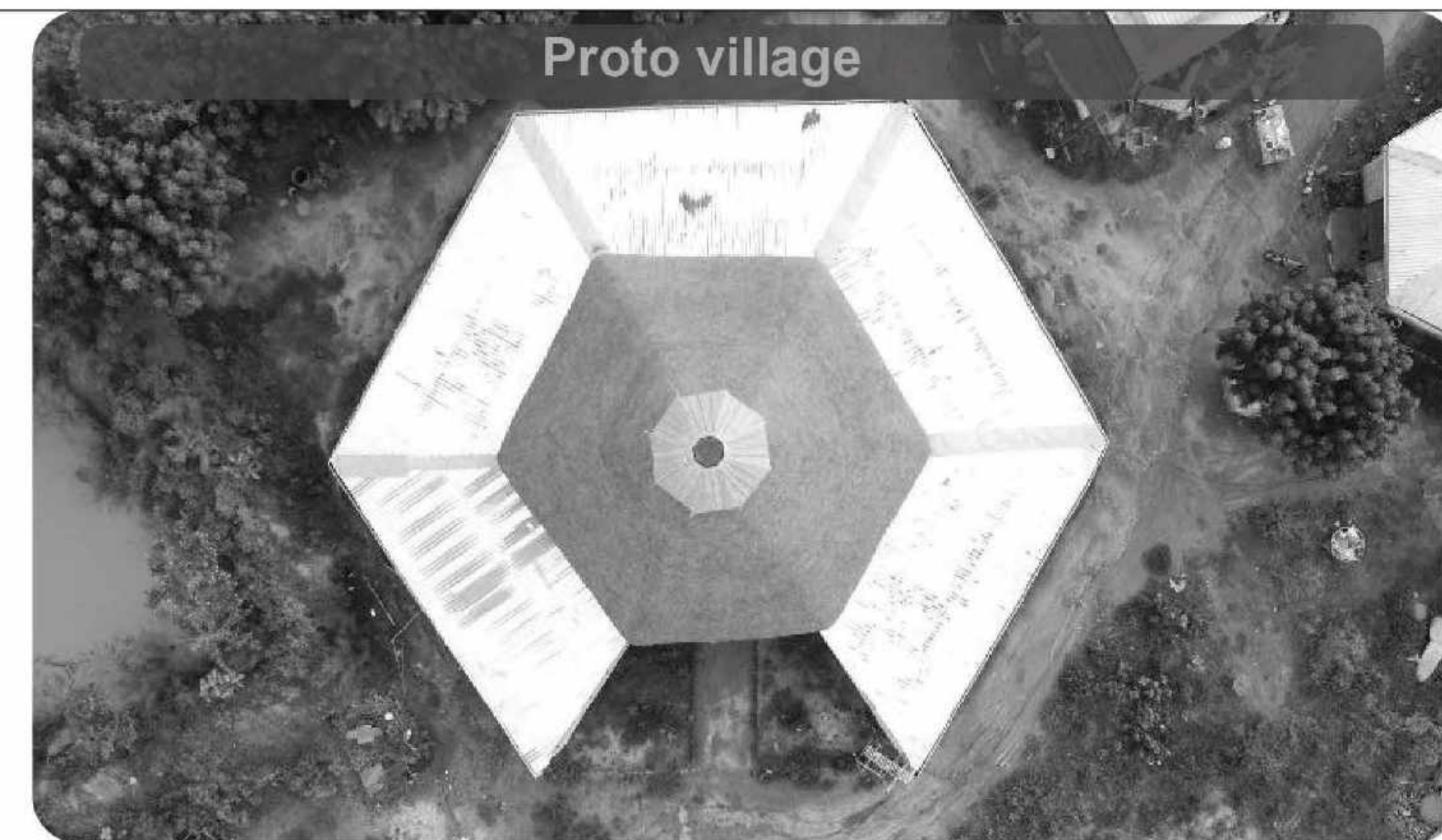
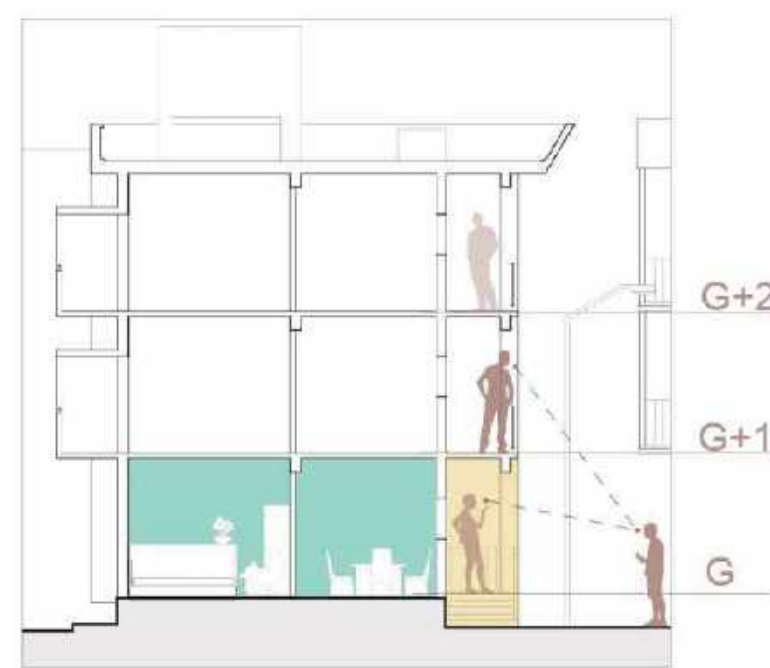
In planning : Three blocks come together along with the semi-round monolithic block to form this large central community space into which all the corridors open.

Basis of project selection

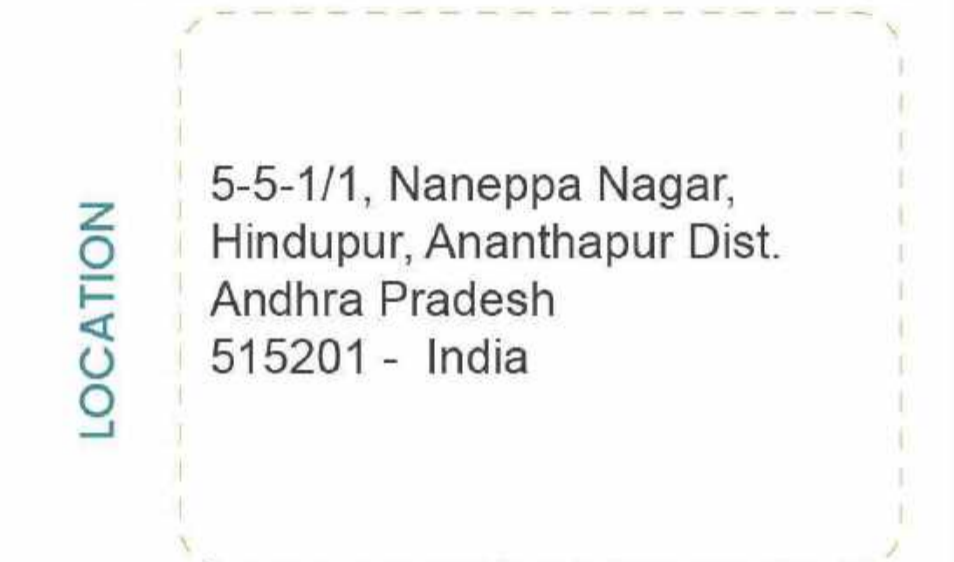
- To understand the sense of community through architectural spaces.
- To study the spatial organization of the cluster planning.
- To understand the overall planning of spaces. To understand the thoughtful process of design considering all problems of the end user group.
- To understand the thoughtful process of designing.

LEARNINGS

- Idea of community and living together. Planning according to the usergroups and their needs
- Transition between public and private spaces
- Understanding of different spaces like - Liminal spaces, shared spaces

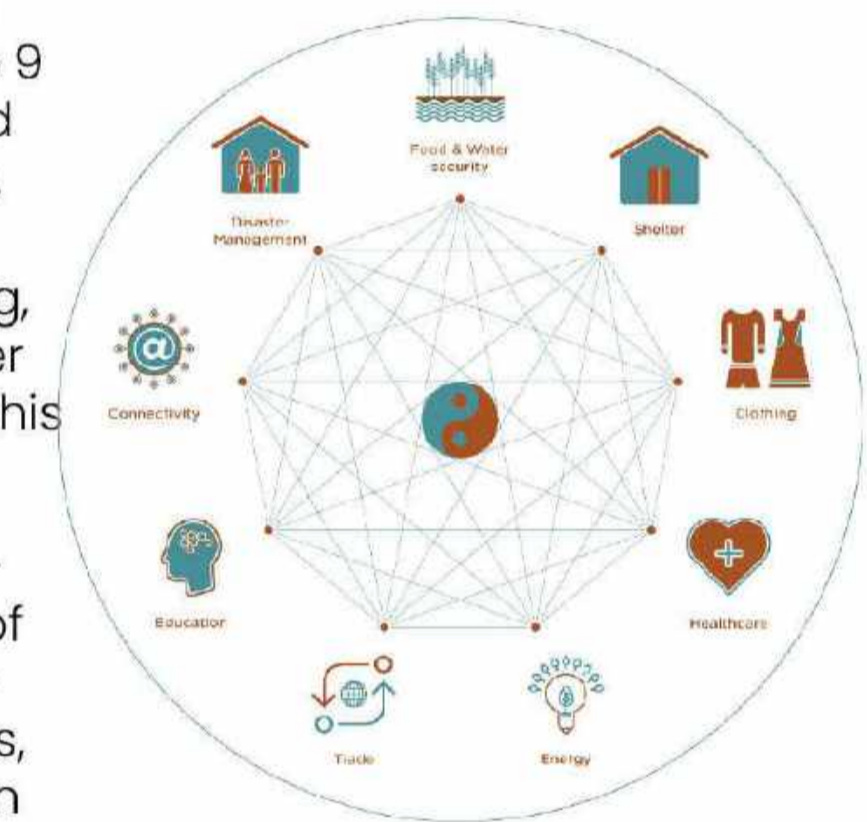


PROJECT : PROTO VILLAGE
AREA : -
COMPLETION YEAR : 2019
ARCHITECT : -



Project information:

- Self-Reliance – The community builds and nurtures the capability to fulfil the 9 basic needs without having to depend on anyone external to the community.
- The community commits to respecting, preserving and nurturing the soil, water and the air in the process of building this self-reliance.
- Interdependence – There's a commitment to learn and practice the ways of mutuality and coexistence, synergistically leveraging each other's strengths, experience and wisdom. It is only when the individual members establish and respect the traditions of interdependence, that the community as a whole can enjoy independence.



Other case studies

- New Eco-Village in Copenhagen. by BIG
- Minihouse hurdal_ hurdal ecovillage_ location : oslo
- White Arkitekter + ReGen Villages Create First Circular, Self-Sufficient Communities _ location : Sweden

Other case studies

- SoLo House _by Perkins&Will
- Self-Sufficient House _by Pieter Brink
- Senbo Resort Hangzhou Tree House



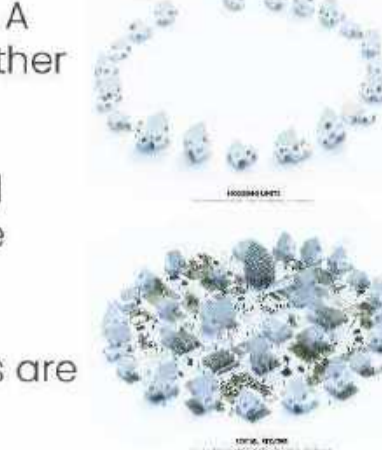
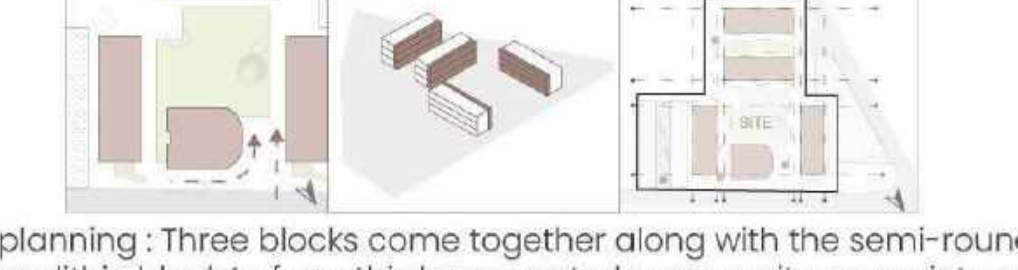

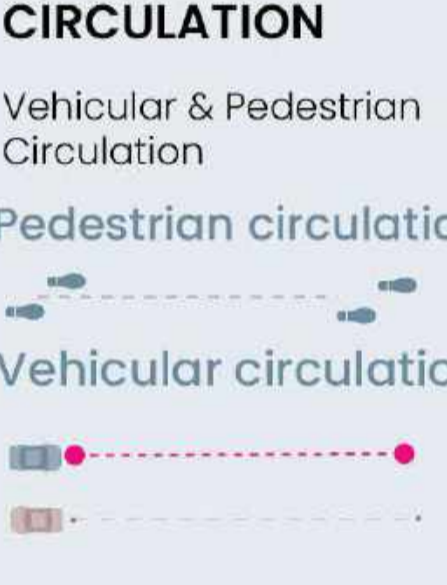
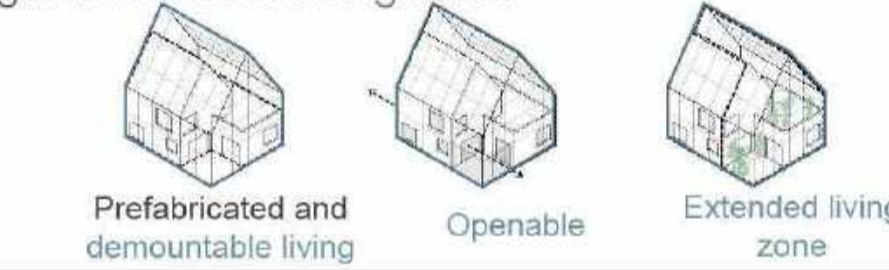
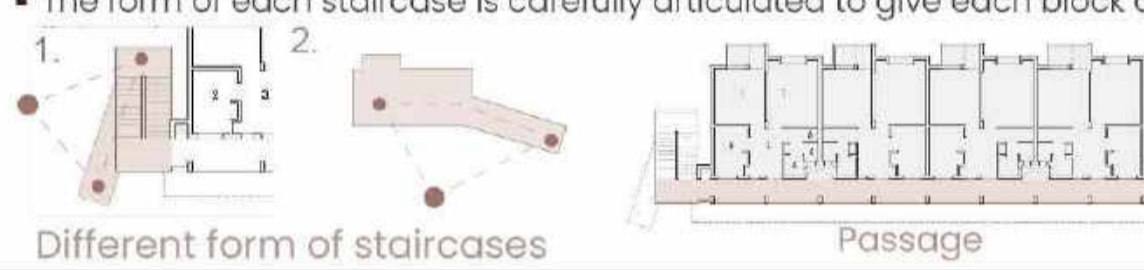
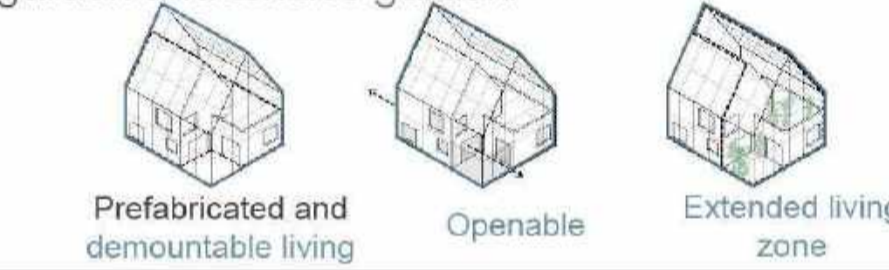
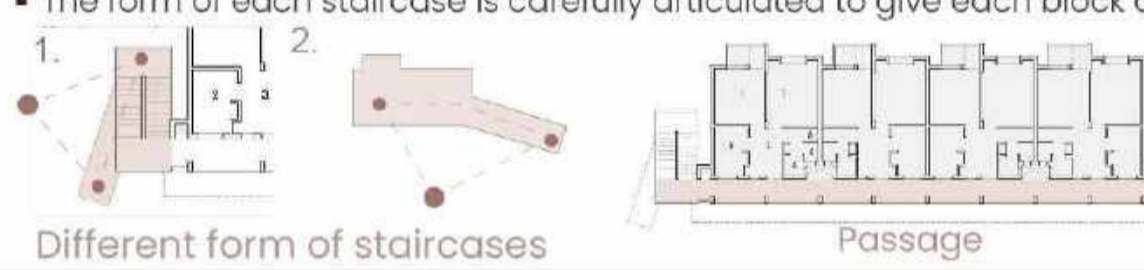


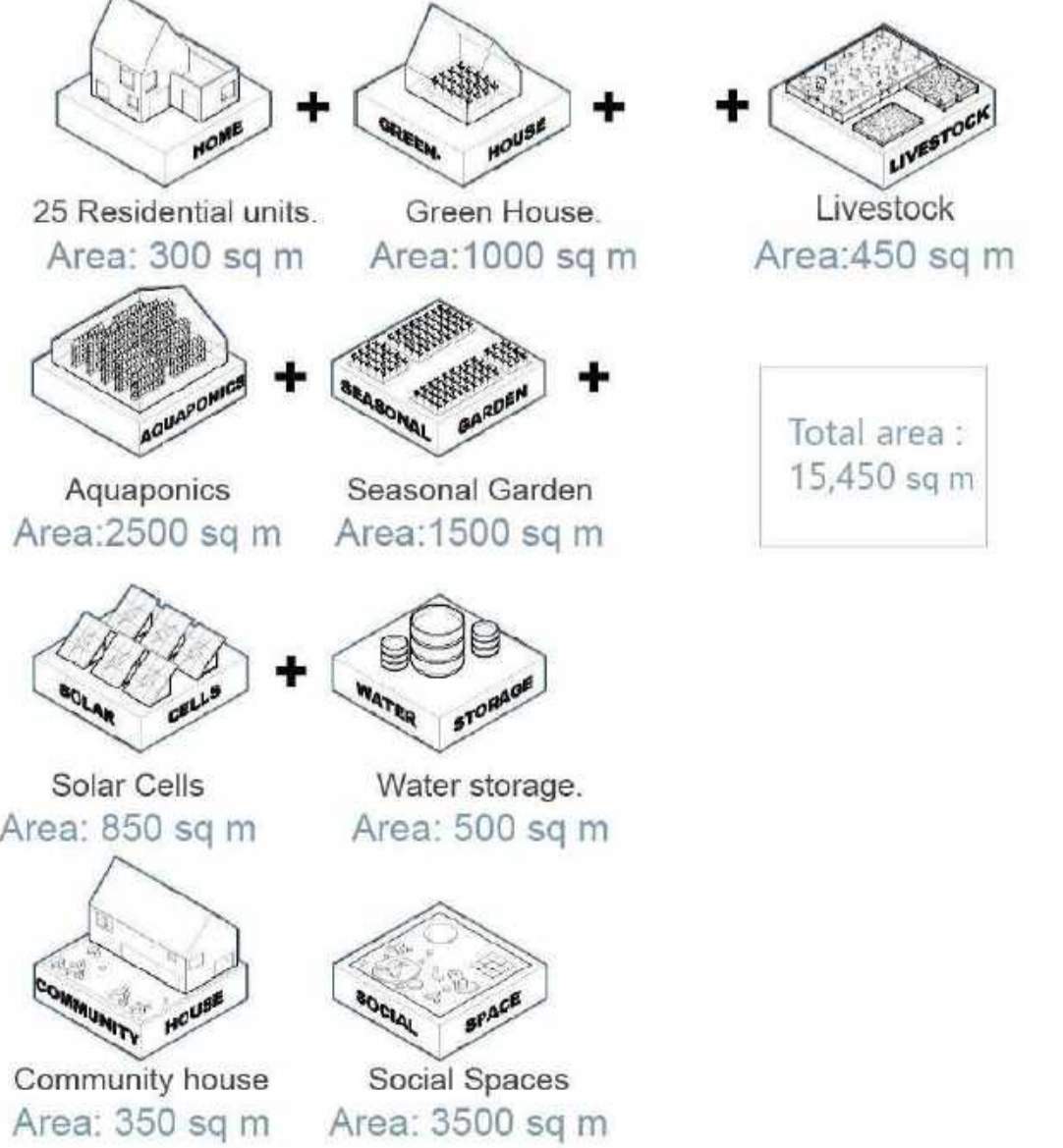



Research paper

RegenVillages – Integrated village designs for thriving regenerative communities

RegenVillages has a global vision to bring science to action research to implement thousands of regenerative, villages within the next decade, as a tipping point for scaling and replicating integrated village designs and retrofits as an urgent call to action for a planet and populations in distress.

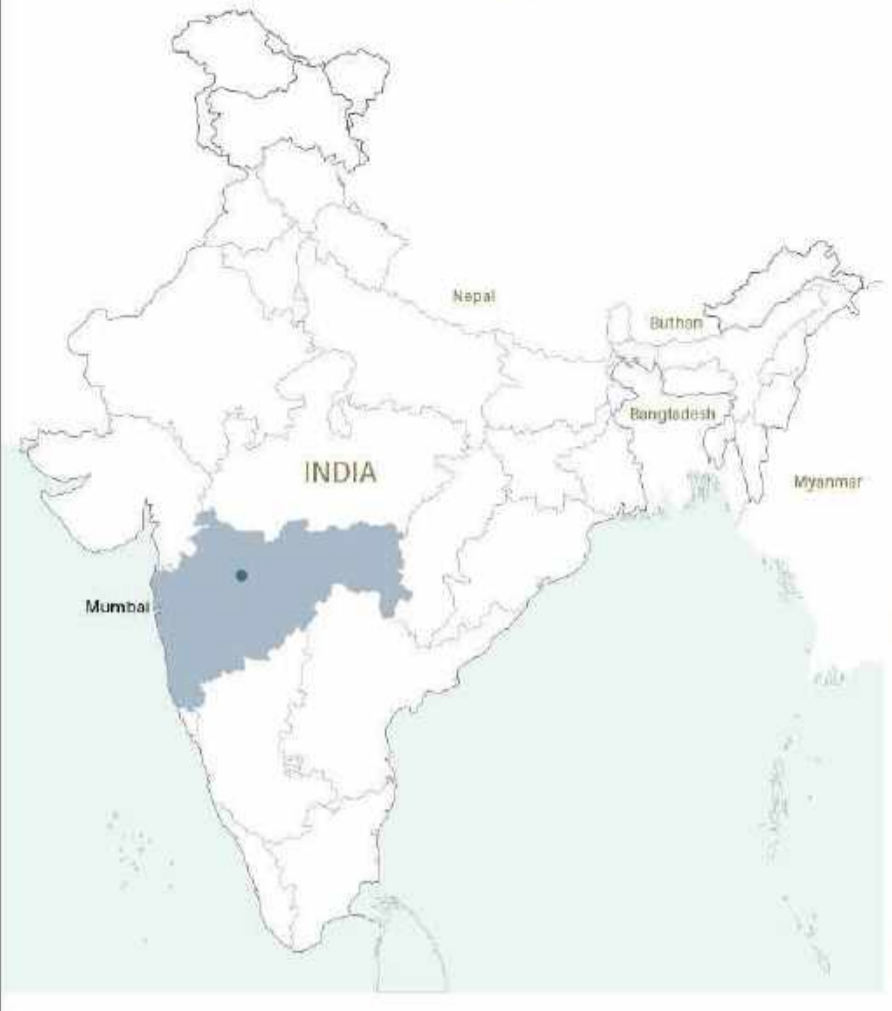
Research paper by -

James Ehrlich, President, ReGen Villages, EIR, Stanford H-STAR Institute, Senior Fellow Opus Novum at NASA Ames, with Professor Larry Leifer PhD and Chris Ford AIA (PhD candidate), Stanford University Center for Design Research.*

REFERENCE	Regen Villages by EFFEKT	Sublime Ordinairiness	REFERENCE	Regen Villages by EFFEKT	Sublime Ordinairiness
<p>Location and Context</p> <p>Approach</p>	 <p>Site is located in Almere, The Netherlands The re-gen project is located about 60 km from the main city Almere. Site is located 200 m in the east from main N 305 highway.</p>	 <p>Site is located in Vasind, Mumbai, India. The housing project is located about 60 km to the north east of Mumbai, In Vasind. Site is located in the JWS steel area.</p>	<p>PLANNING</p>	<ul style="list-style-type: none"> 25 Houses are arranged in a circular form. A big circular space is left in the center for other services and activities. Seasonal gardens, landscape spaces, and main circulation is planned in between the central left-out space. All common spaces and gathering spaces are situated in the center. 	 <ul style="list-style-type: none"> In planning : Three blocks come together along with the semi-round monolithic block to form this large central community space into which all the corridors open. Instead of creating a central core, Architect provided a common passage Design inspiration is taken from "chawl"
<p>BUILT-UP AREA</p>	<p>15500.0 Sq m</p>	<p>3900.0 Sq m</p>	<p>MATERIAL AND TECHNOLOGY</p>	<ul style="list-style-type: none"> Used local engineers and their construction techniques Constructed Modular and pre fabricated steel building. Used reusable materials like Steel, glass and wood. and used Concrete for pathways. 	<p>The construction system is a very simple brick and concrete system using locally available artisans. Used basic RCC beam-column framing.</p> <p>Used materials like Brick, Concrete. Metal and glass in quantity.</p> 
<p>CRITERIA FOR STUDY</p>	<ul style="list-style-type: none"> Context and Response Program and activity Expression and language Sustainable measures 	<ul style="list-style-type: none"> Context and Response Program and activity Expression and language 	<p>CIRCULATION</p> <p>Vehicular & Pedestrian Circulation</p> <p>Pedestrian circulation</p> <p>Vehicular circulation</p> 	<p>ARCHITECTURAL VOCABULARY AND LANGUAGE</p> <p>Structure : prefabricated modules</p> <ul style="list-style-type: none"> Every module including greenhouses and the residential blocks are prefabricated and also dismantable. Metal framework and glass casing give natural Heating in cold conditions. This outer casing also acts as a greenhouse for a kitchen garden and terrace garden. 	<p>Passage : Medium of interaction</p> <ul style="list-style-type: none"> The structural system is carefully calibrated to produce a facade and Front Passage functions as an interactive space. Staircase : Connecting spaces Staircases are opening up into a large public place creating a community spirit and reinforcing a sense of belonging and togetherness. The form of each staircase is carefully articulated to give each block a 
<p>BASIS OF PROJECT SELECTION</p>	<ul style="list-style-type: none"> To understand the sense of community through architectural spaces. To study the aspects of self sustainable and off-grid way of living. To understand the process of design in response to some of the worlds most critical environmental, social and economic issues. To understand the applied Technologies and and its advantage in architecture. 	<ul style="list-style-type: none"> To understand the sense of community through architectural spaces. To study the spatial organization of the cluster planning. To understand the overall planning of spaces. To understand the thoughtful process of design considering all problems of the end user group. 	<p>ARCHITECTURAL VOCABULARY AND LANGUAGE</p>	<p>Structure : prefabricated modules</p> <ul style="list-style-type: none"> Every module including greenhouses and the residential blocks are prefabricated and also dismantable. Metal framework and glass casing give natural Heating in cold conditions. This outer casing also acts as a greenhouse for a kitchen garden and terrace garden. 	<p>Passage : Medium of interaction</p> <ul style="list-style-type: none"> The structural system is carefully calibrated to produce a facade and Front Passage functions as an interactive space. Staircase : Connecting spaces Staircases are opening up into a large public place creating a community spirit and reinforcing a sense of belonging and togetherness. The form of each staircase is carefully articulated to give each block a 
<p>RESPONSE TO CONTEXT AND SITE ANALYSIS</p>	<ul style="list-style-type: none"> The site is situated near existing waterbody like old settlements. Site is carved according to its context. All spaces are inward looking according to the site context. Thoughtful use of natural waterbody, flora, and fauna All structures have a greenhouse effect that will serve natural heating and ventilation. And also create the controlled conditions. 	<ul style="list-style-type: none"> The site is situated in a busy industrial area. According to that, the site is carved and the design is thoughtfully inserted. The built and planning are inspired by traditional Mumbai 'chawl'. Built spaces and courtyards are planned according to site orientation. Building blocks are carefully inserted and oriented on site according to the sun path. 	<p>SUSTAINABLE MEASURES</p>	<ul style="list-style-type: none"> Use of solar cells and smart grid energy system. Aquaponics offers 100% organic food. Use of Aquaponics which produce fish, 10 time more Fruits and vegetables in same foot print, and decrease 90% water consumption. Use of Aquaponics decrease land use by 98% Free space is used for biodiversity and permaculture. Project eliminate transportation by enabling farm-to-table. Abundance production of clean energy, fresh healthy food and water everyday consumption. Applying sustainable technology into architecture. 	<ul style="list-style-type: none"> Maximum usage of natural light and ventilation. Used plastered facade instead of screens which is sustainable in terms of maintenance. Used locally available materials.
<p>DESIGN APPROACH</p>	<ul style="list-style-type: none"> ReGen Villages is a new visionary model for the development of off-grid, integrated and resilient eco-villages that can power and feed self-reliant families around the world. The basic concept was to create a self sustainable, off-grid communal neighborhood. Village developed in response to some of the worlds most critical environmental, social and economic issues. 	<ul style="list-style-type: none"> The basic concept is derived from the planning and form of Mumbai's traditional building type 'chawl'. Family, relatives, and community play a critical role in Indian society so The housing has been designed keeping these socio-cultural realities in mind. The idea of the community and living together has been a key intent of this project. 	<p>LEARNINGS</p>	<ul style="list-style-type: none"> Understanding of Self-sustainable technologies like energy positive homes and Renewable energy. Understanding Environmental, financial value & social value by creating empowering families and developing sense of community Understanding of different spaces like - Liminal spaces, shared spaces 	<ul style="list-style-type: none"> Idea of community and living together. Planning according to the usergroups and their needs Transition between public and private spaces Understanding of different spaces like - Liminal spaces, shared spaces <p>Liminal spaces Shared space</p> 
<p>AREA BRIEF</p>		 <ol style="list-style-type: none"> Pedestrian entrance Vehicular entrance and parking 2BHK units (6 flats) 1BHK units (48 flats) Courtyard 	<p>ARCHITECTURAL EXPRESSION</p>		<ul style="list-style-type: none"> Idea of community and living together. Planning according to the usergroups and their needs Transition between public and private spaces Understanding of different spaces like - Liminal spaces, shared spaces <p>Liminal spaces Shared space</p> 

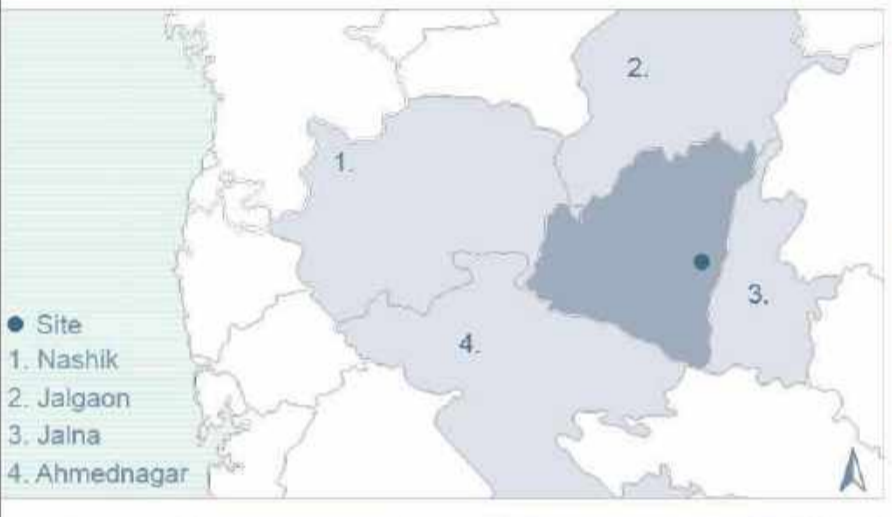
SITE ANALYSIS

Location and context:
Site is located aurangabad, Maharashtra, India.



Location : 19.87395 N 75.32778 E
Altitude : 1860 ft | 566.9 m
The co-ordinates for Aurangabad are N 19° 53' 47" - E 75° 23' 54". The city is surrounded by hills on all directions.

MAHARASHTRA AURANGABAD



Administrative boundaries :
It borders the districts of Nashik to the west, Jalgaon to the north, Jaina to the east, and Ahmednagar to the south. The city of Aurangabad houses the district's administrative headquarters.



Access and Approach :
By Air: Aurangabad airport at Chikalthana, located at a distance of around 10 Km east of the town. Recently international flights are also being made available.
By Bus: Aurangabad is well connected by national highways and state highways to all parts of the country.
By Train: Aurangabad station (station code: AUB) is located on the Secunderabad-Manmad section of the Nanded Division.
Nashik to Aurangabad : 195 km
Jalgaon to Aurangabad : 156 km
Jaina to Aurangabad : 59.9 km
Pune to Aurangabad : 237.1 km
Aurangabad (by air)
Hyderabad, Delhi, Udaipur, Mumbai, Jaipur, Pune, Nagpur, Indore. (International flights are also being made available)



Geography :
Aurangabad District is located mainly in Godavari Basin and its some part towards North West of Tapi River Basin. This District's general down level is towards South and East and North West part comes in Purna-Godavari river basin. The Aurangabad district's North Longitude (Degree) is 19 and 20 and East Longitude (Degree) is 74 to 78.
RIVER:
The main rivers - Godavari and Tapi.
FORESTS:
In Aurangabad district total Forest Area is 135.75 Sq.Km. As compare to Maharashtra the forest area of Aurangabad is 9.03%.
MOUNTAINS:
There are three mountains namely 1) Antur - its height is 826 Mtr. 2) Satonda - 552 Mtr. 3) Abbasgad - 671 Mtr. and Ajintha 578 Mtrs. Average Height of Southern portion is 600 to 670 mtrs.

Climate :
Aurangabad climate type :

Aurangabad features a semi arid climate under the Köppen climate classification. Annual mean temperatures range from 17 to 33 °C, with the most comfortable time to visit in the winter - October to February.
Maximum temperature recorded : 48-49 (°C)
Minimum temperature recorded : 5.6-7.2 (°C)
July with an average rainfall of 157 mm is the rainiest month for the city.

Temperature by month (1998-2020_en.climate-data.org)

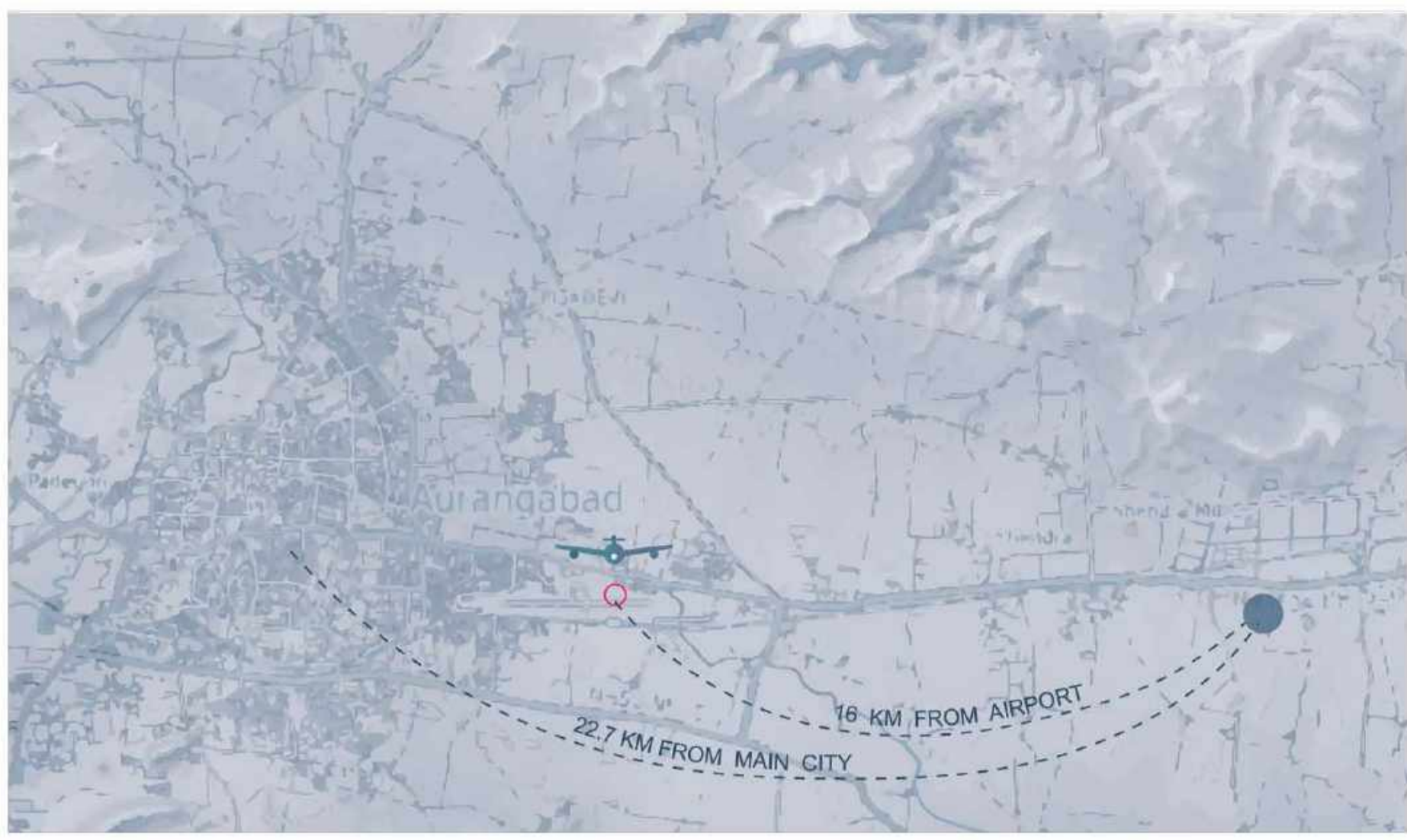
	Jan	Feb	March	April	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Avg. temp (°C)	21.6	24	27.8	31	32.4	28.9	25.8	25.2	25.3	25.4	23.1	21.3
Min. temp (°C)	14.1	16.1	19.9	23.7	25	23.2	21.9	21.2	20.9	19.4	16	13.7
Max. temp (°C)	29.2	31.9	35.7	38.4	39.8	34.7	29.7	29.2	29.8	31.5	30.2	28.9
Rainfall (mm)	2	2	5	5	19	135	179	161	149	54	21	9

Heritage :
City of gates :

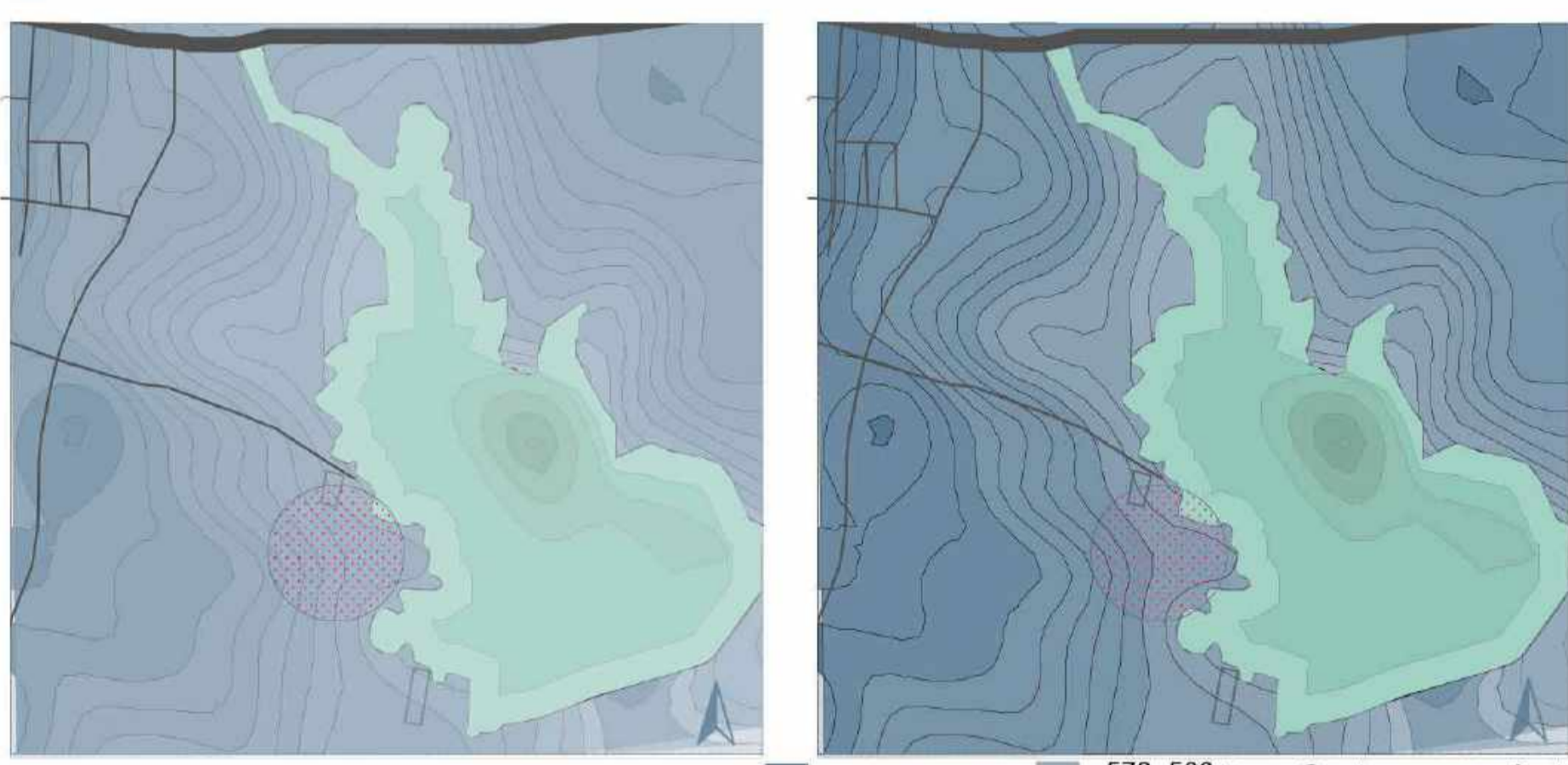


The City is surrounded By Historic Monuments:
The city is a tourism hub in a Maharashtra State and has a lot of historical places & monuments to see. As we know the city is known as "City of Gates" as it has 52 gates in the city. And also has UNESCO World Heritage Sites like Ajanta & Ellora Caves. The city is having historic places to visit like Bibi Ka Maqbara, Panchakki, Aurangabad caves etc.
The City has a rich Cultural Heritage:
Aurangabad is having a rich cultural heritage that is reflected in the arts & handicrafts that are sold out in the city. Aurangabad's Bidri work is famous all over the country and abroad as well. Flowers, Human figures, geometric designs & leaves are some of the most common patterns of Bidri work. Himroo products are also very famous here.

CONTEXT MAP



Context plan showing site location and hydrology : Relief map of context :



Contours on selected site are varies from 568-572

SELECTED SITE (Shown in red) :
Total site area : 86,153 sq.m (21 acre approximate)
Site boundaries and adjacent plots:

- A- Site is accessible by 3M wide road from north side
- B- Natural water-body / lake on the east side of the site.
- C- West side of the site is covered by barren and partly farming land.
- D- South side of the site is covered by barren and partly farming land.

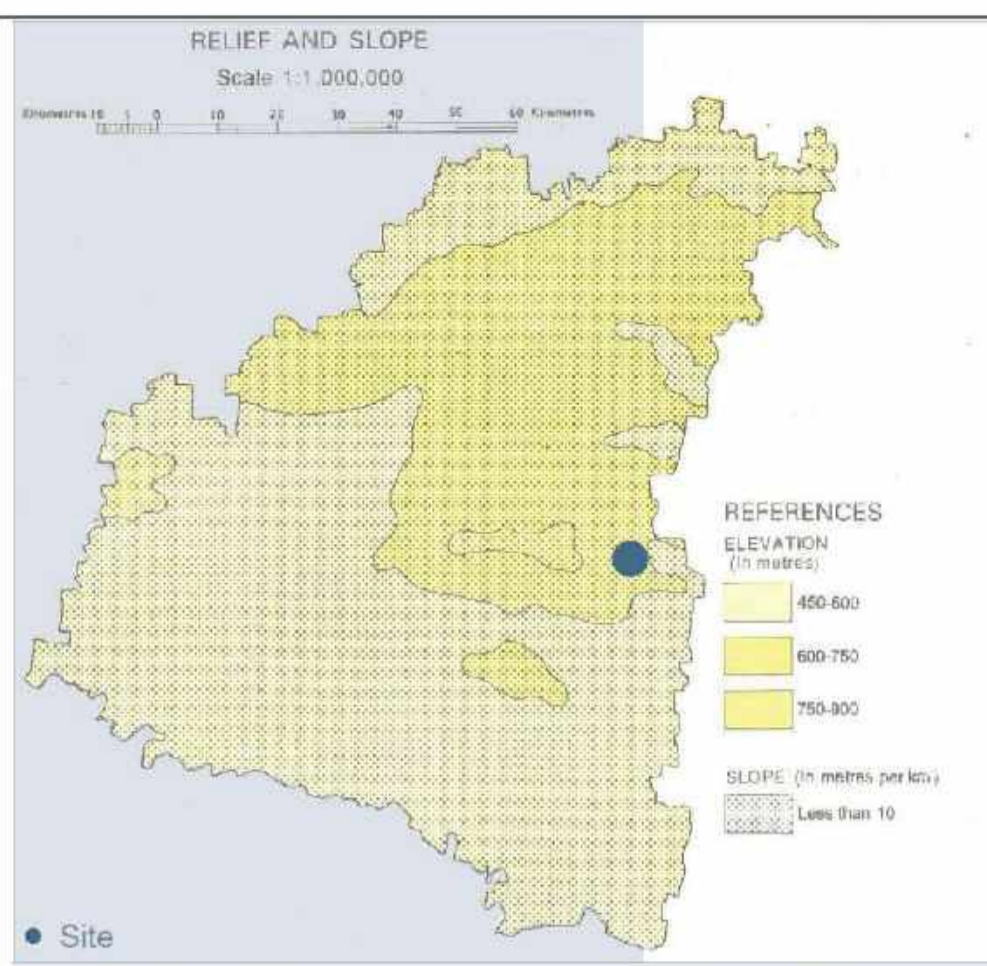
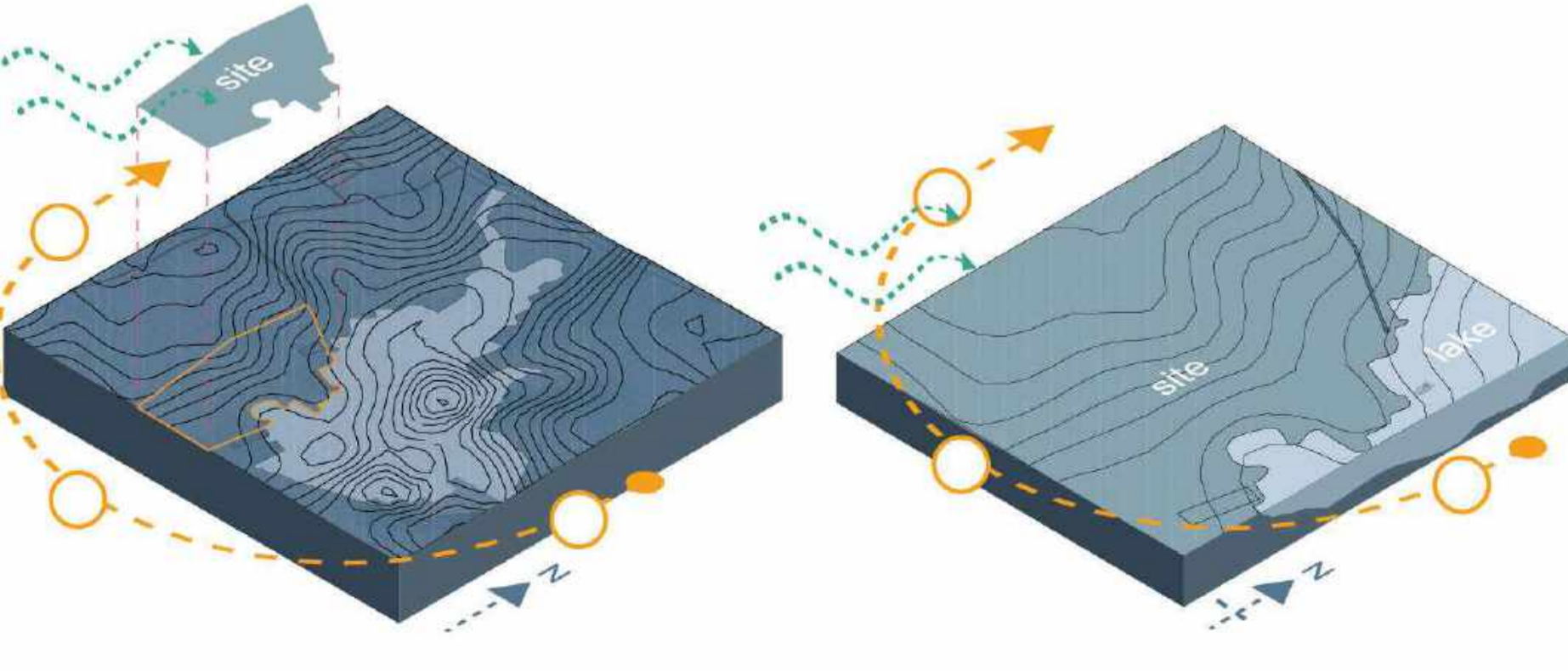
Hivea village on south east direction -



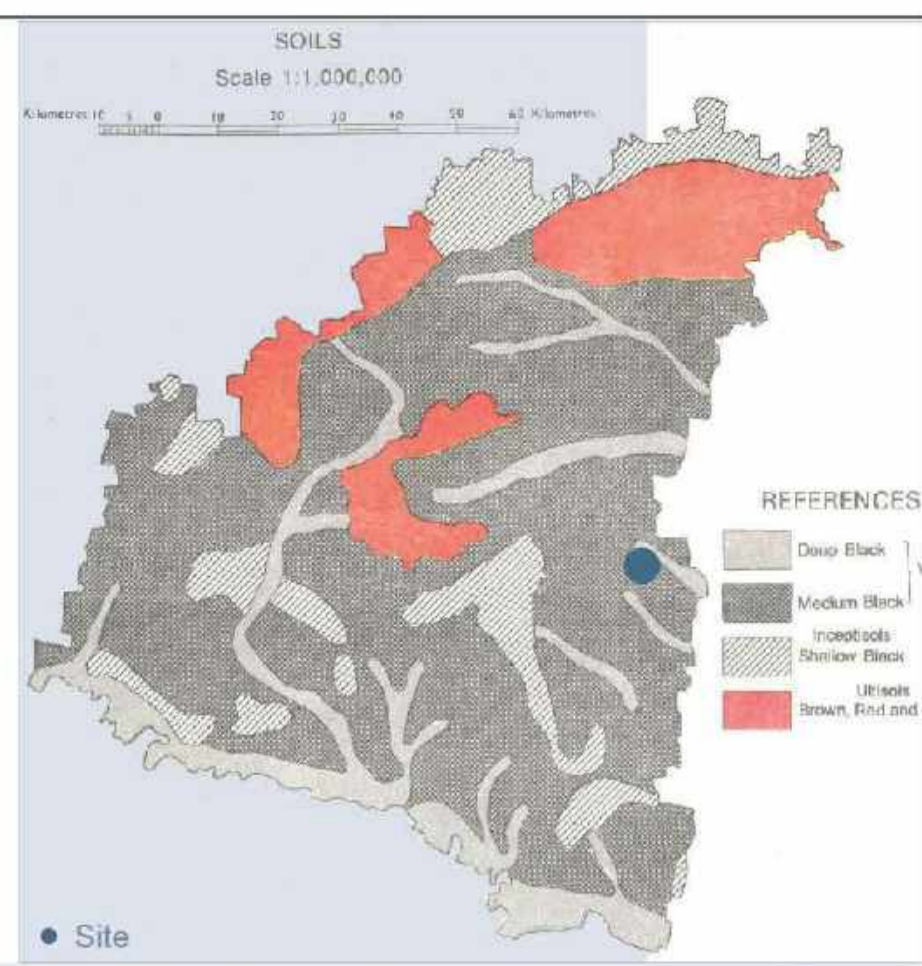
Isometric view of site showing sun-path and wind direction

DP PLAN

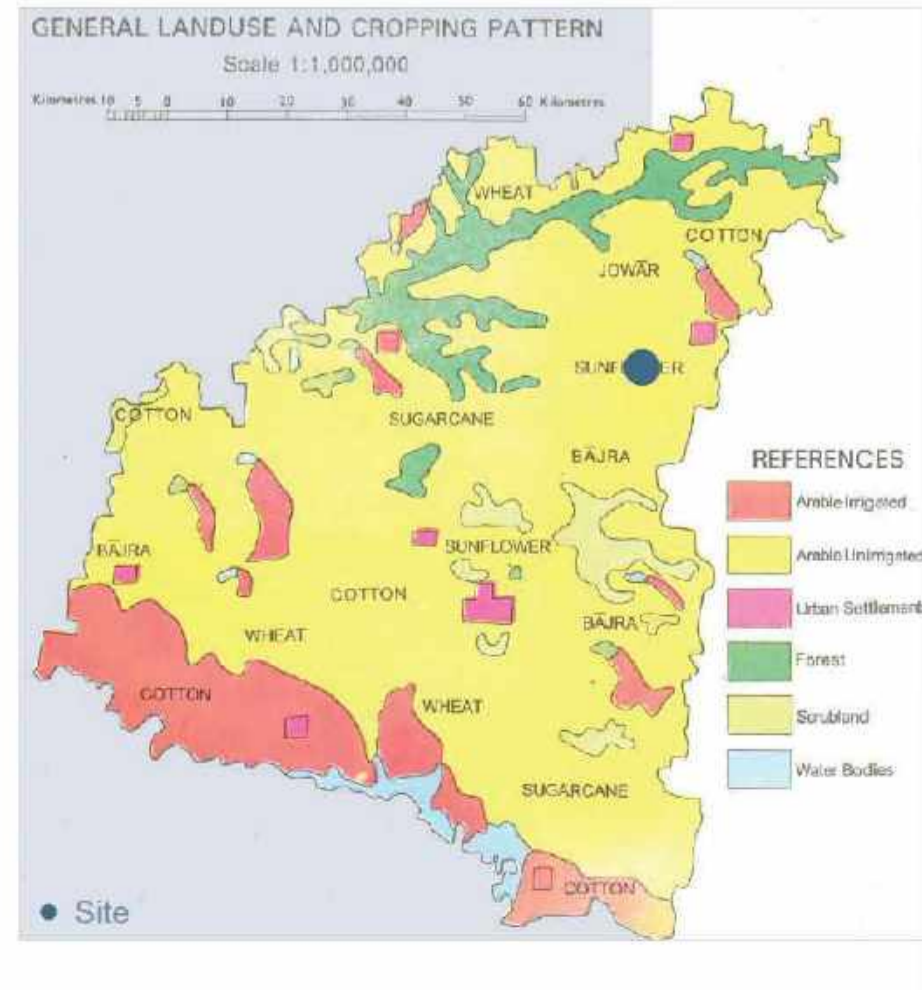
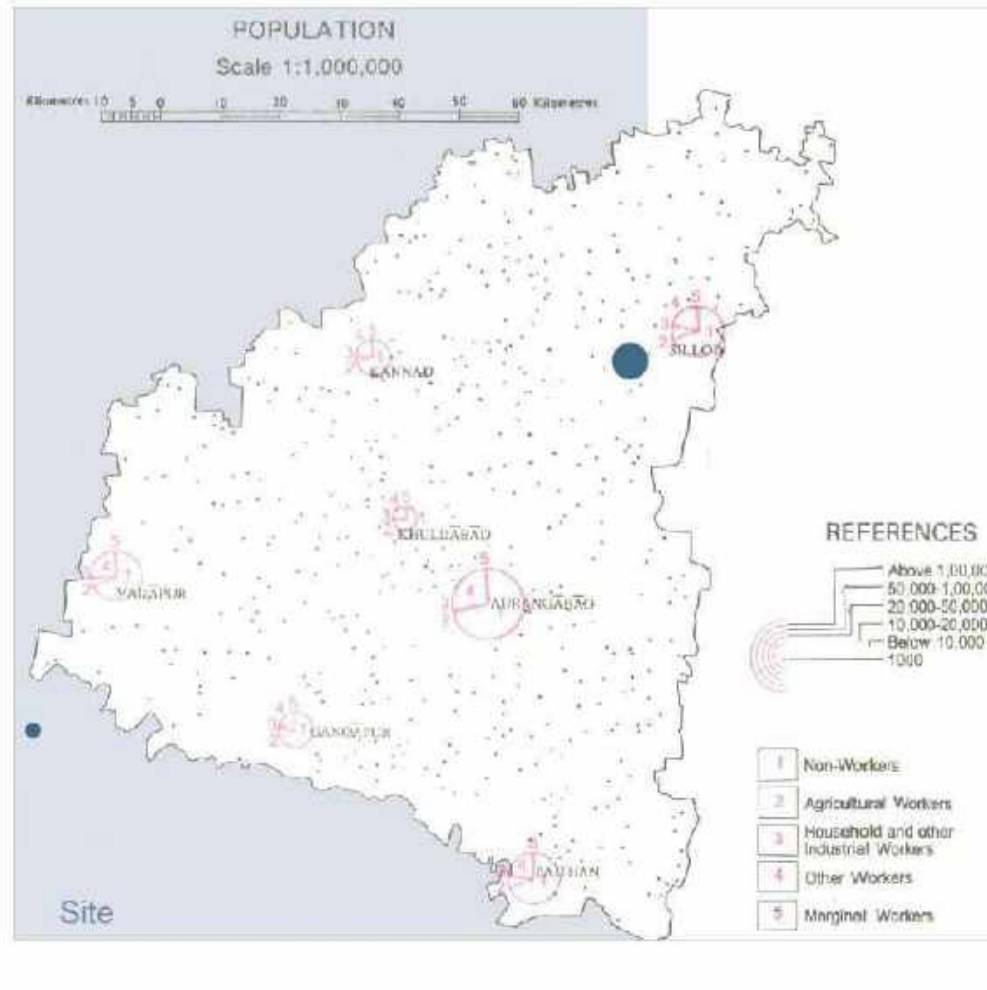
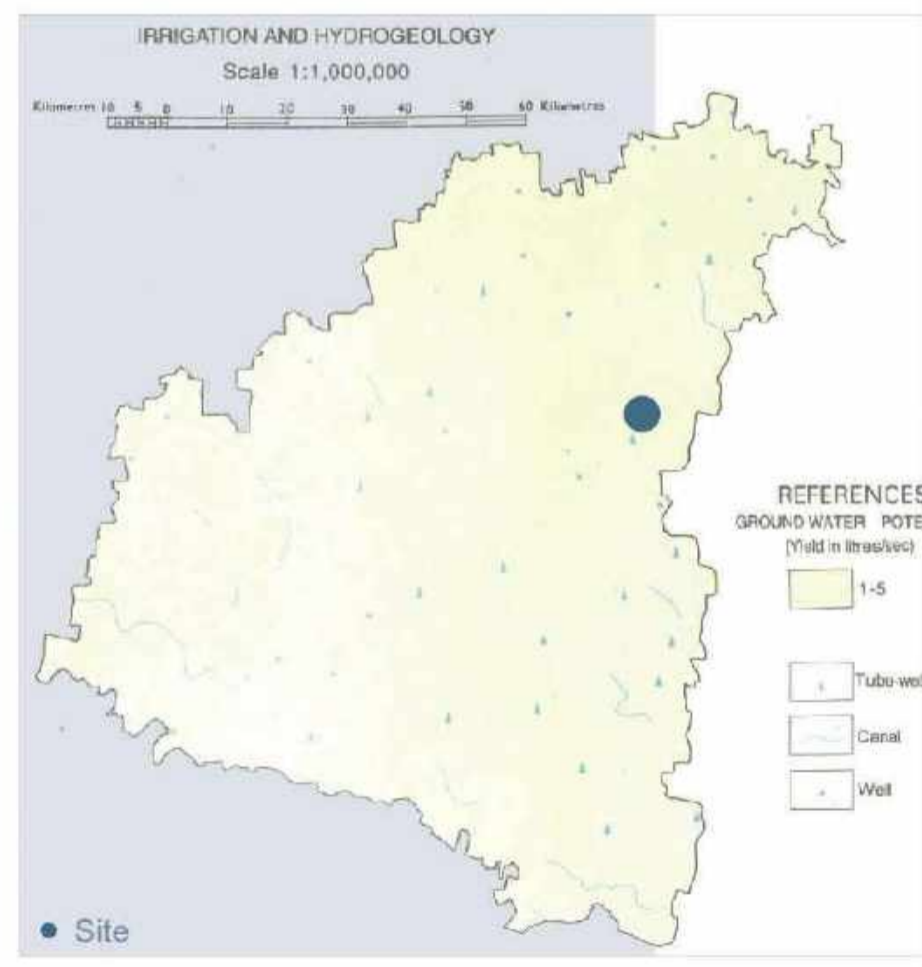
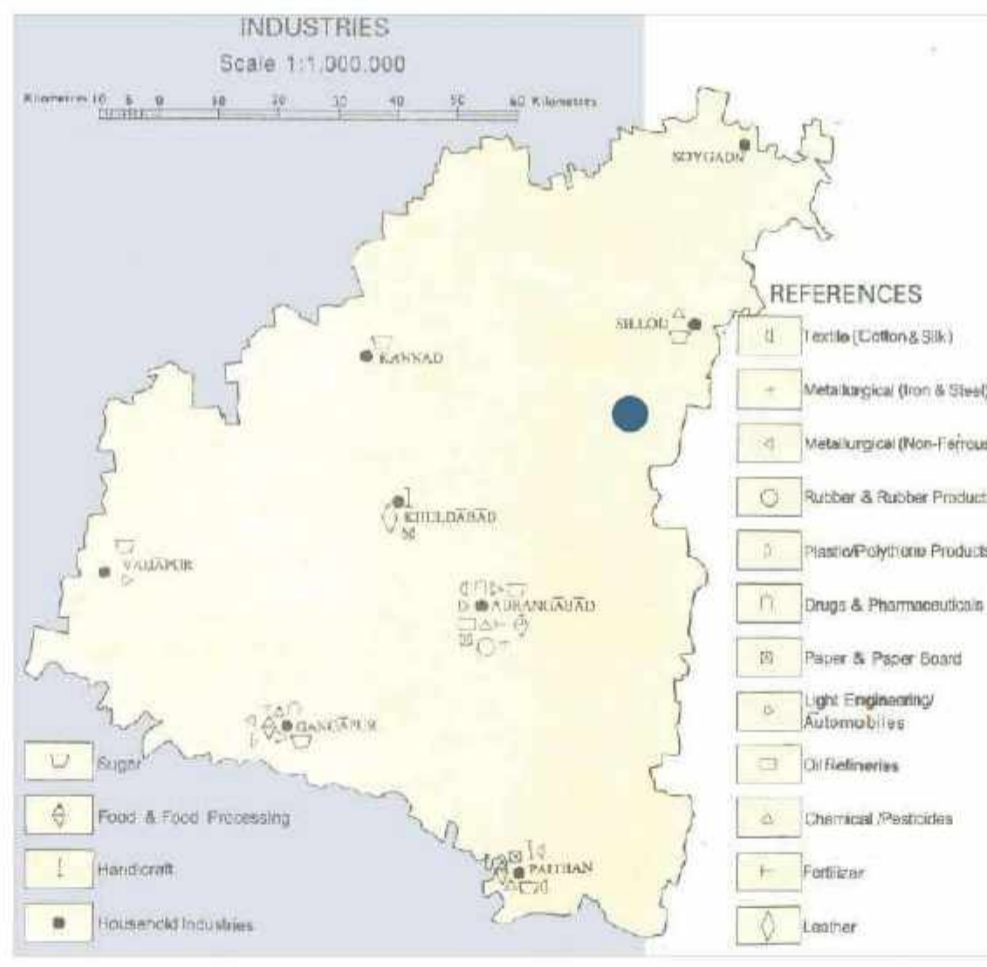
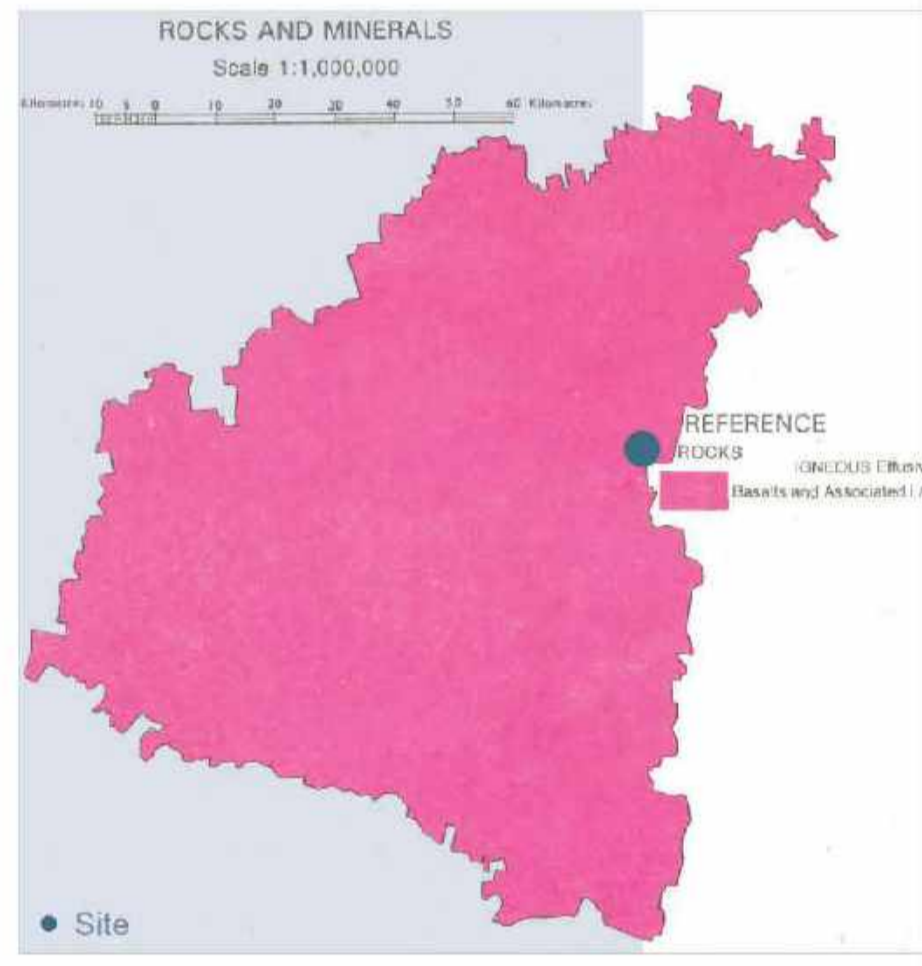
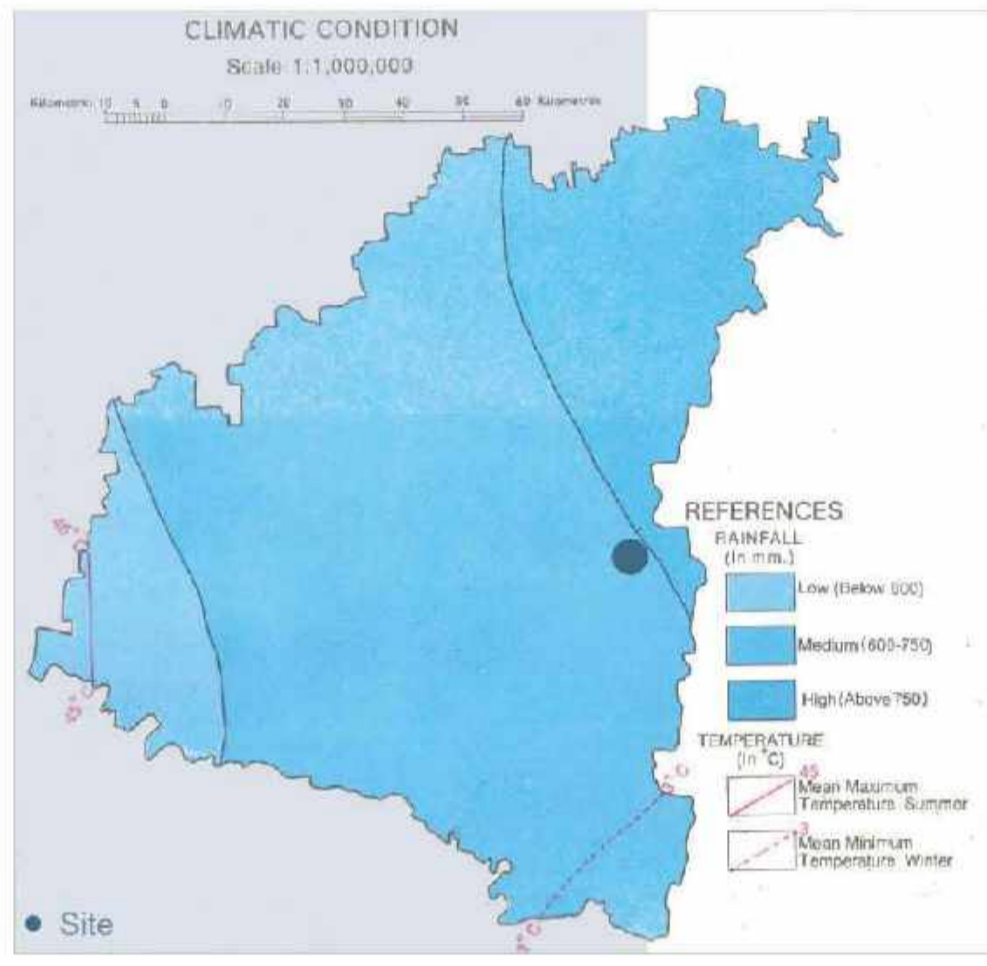
Isometric view of site surrounding



Relief and Slope :
Site is located in on 750-900 m level and land slope is less than 10m per km.



Soil condition(on site) :
Deep black and medium black soil is found on site which is perfect for farming.



SELECTED SITE (Shown in red) :

Total site area : 86,153 sq.m (25 acre approximate)

Site boundaries and adjacent plots:

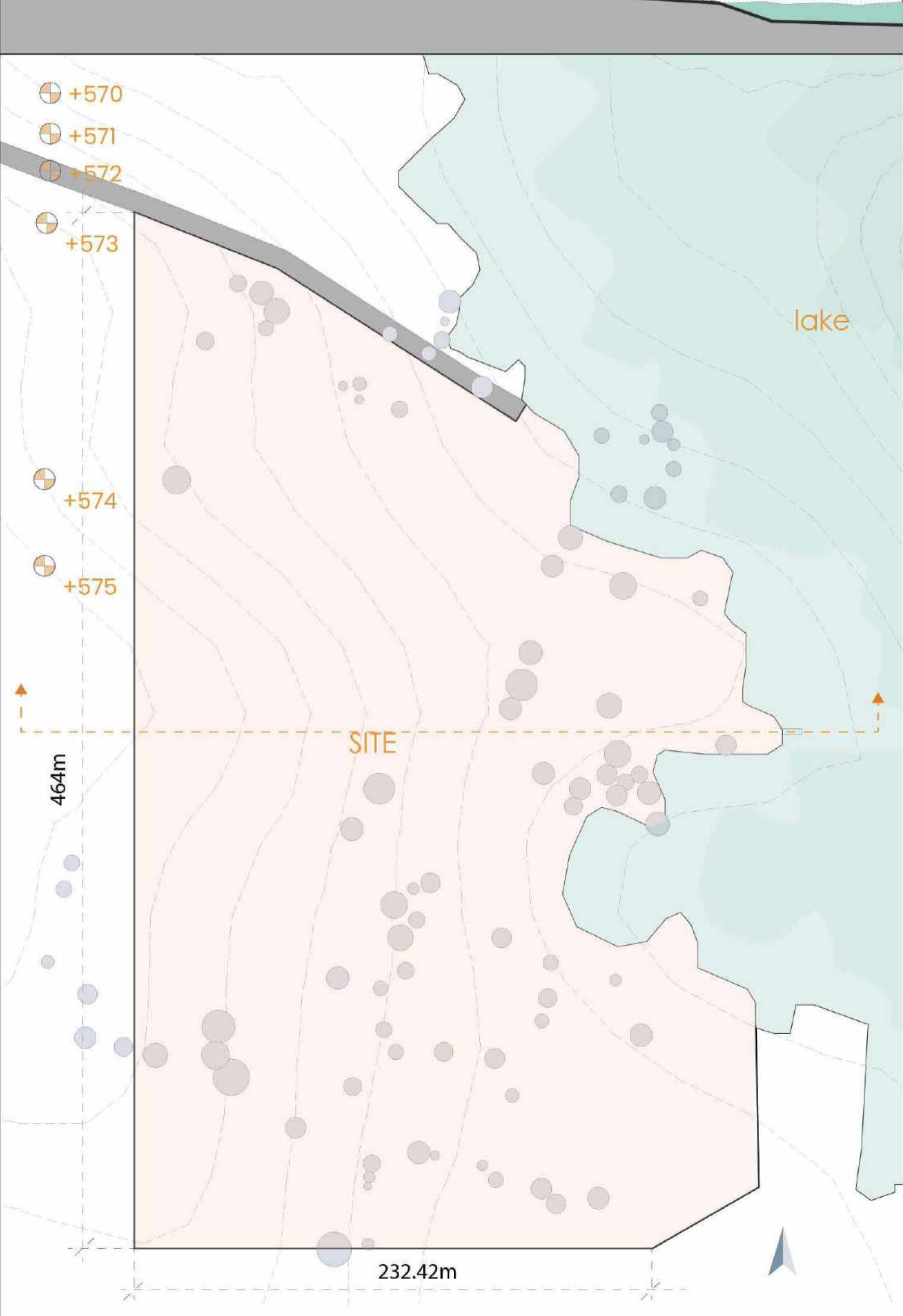
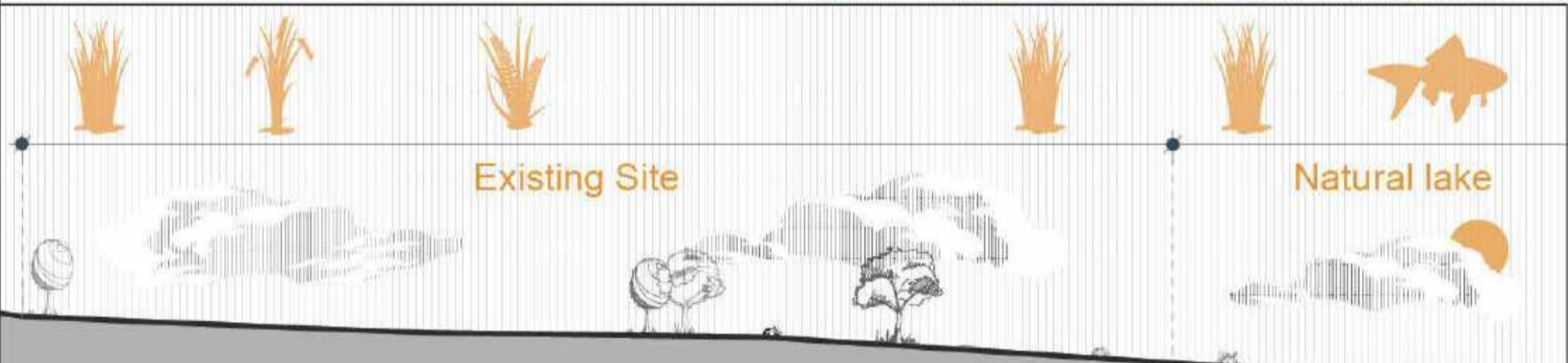
A- Site is accessible by 3M wide road from north side

C- West side of the site is covered by barren and partly farming land.

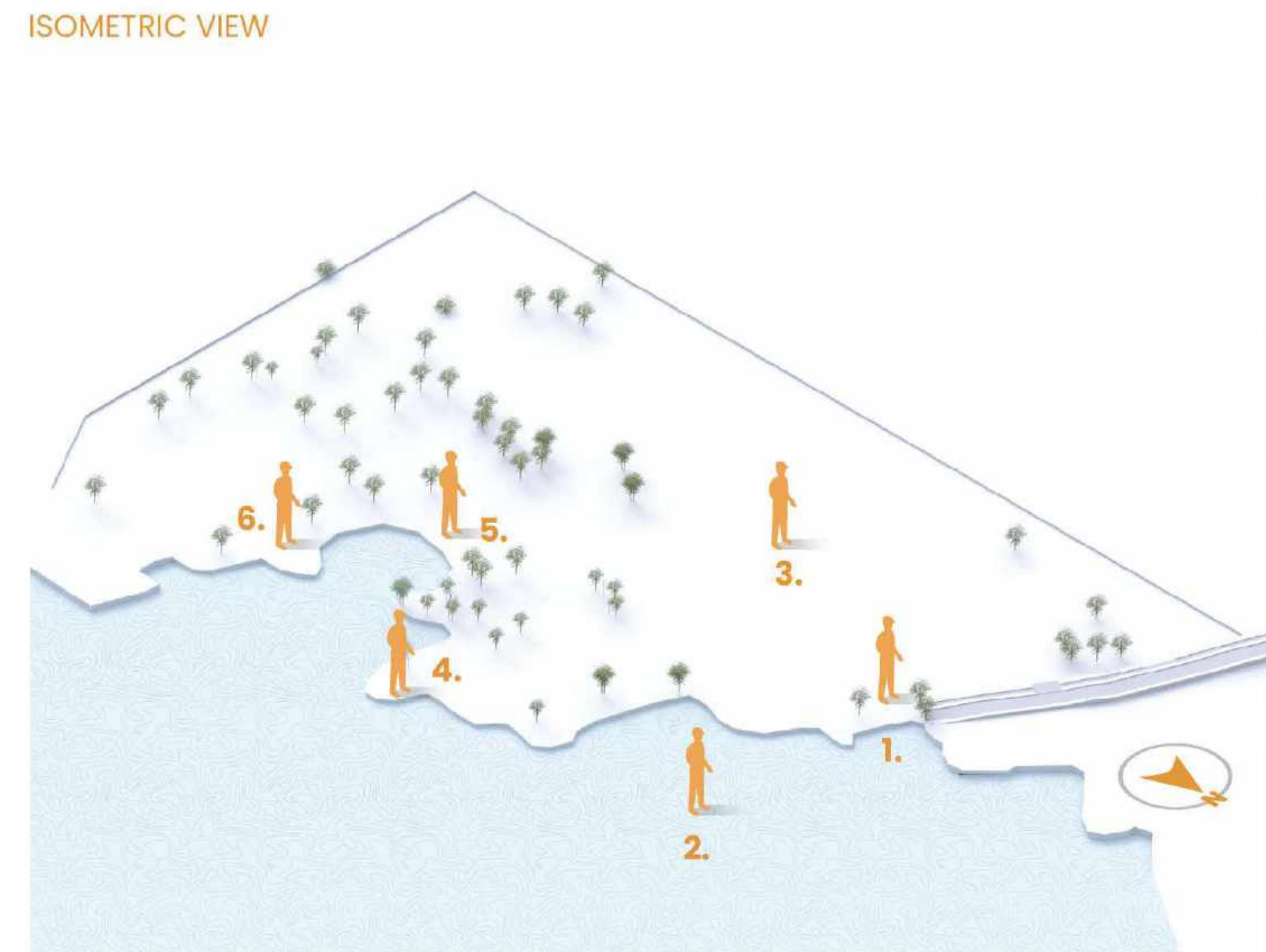
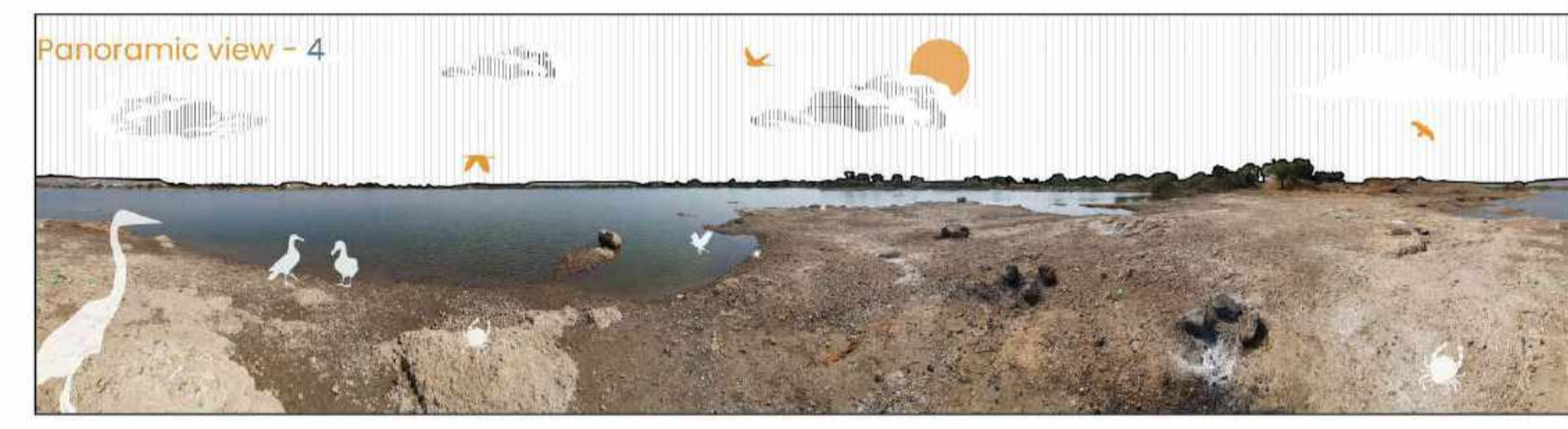
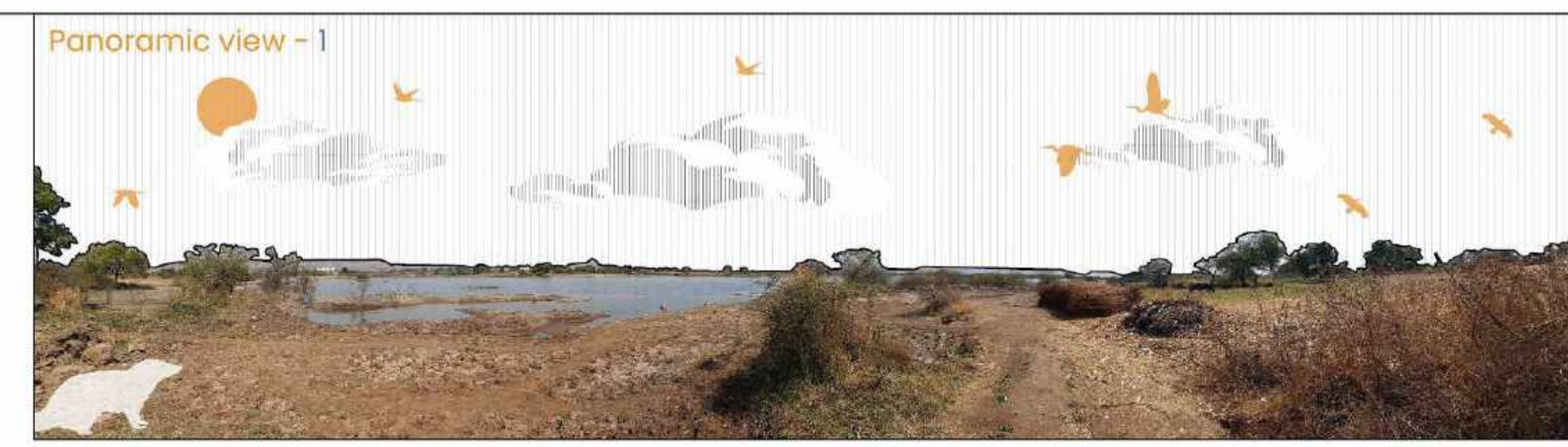
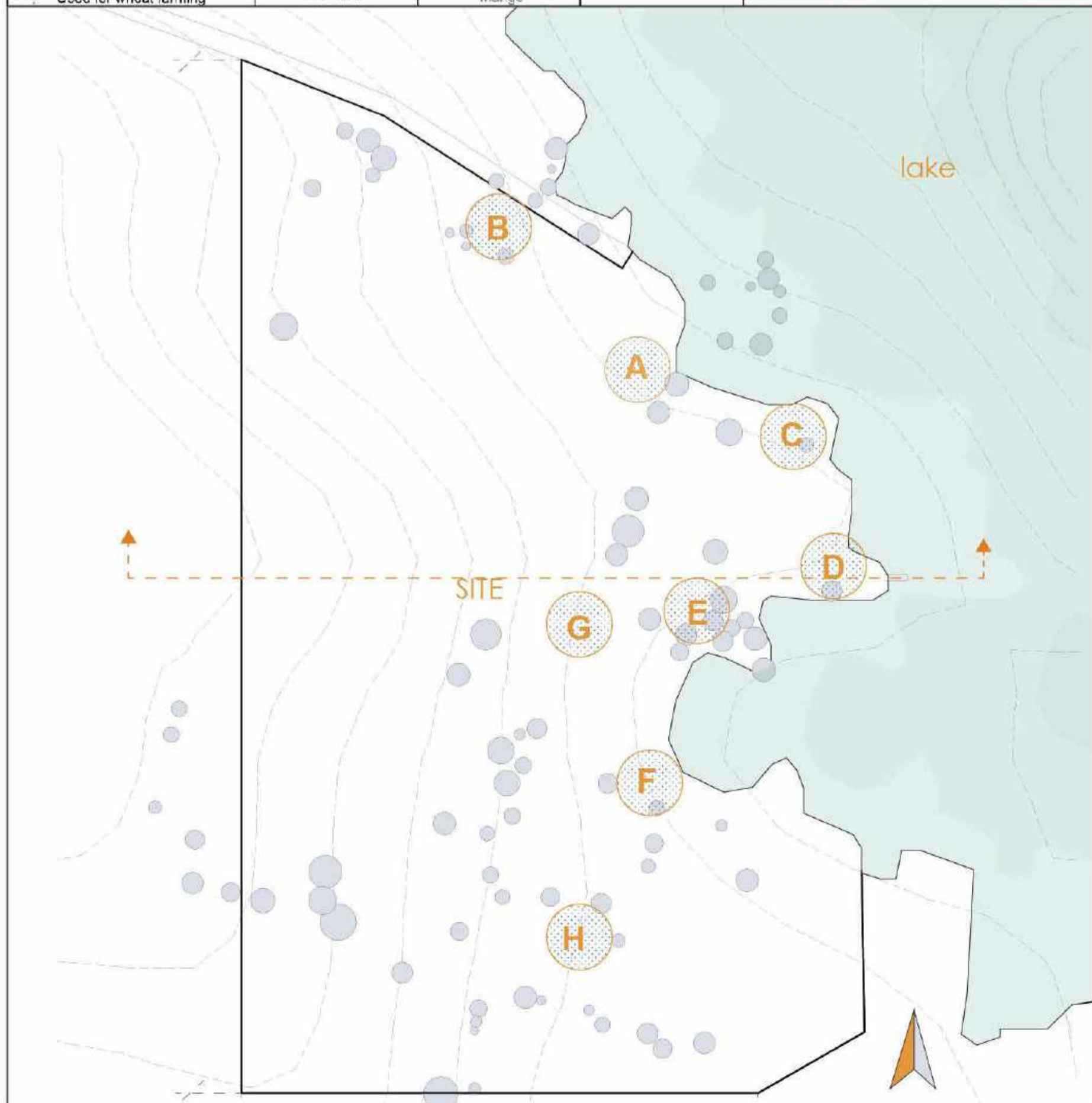
B- Natural water-body / lake on the east side of the site.

D- South side of the site is covered by barren and partly farming land.

Hivea village on south east direction -



SOIL TYPE	NATURAL TREES AND PLANTS FOUND ON SITE			N	MAP	Farming Soil
A Murum and black soil mixed. Not suitable for farming.	A-1 Vachella nilotica - Babul	A-2 River tamarind - Subabul	A-3 Corn farming in north west and central zone		A1 A2 A3	
B Murum and Silt mixed. Lake side soil	B-1 Vachella nilotica - Babul	B-2 River tamarind (Subabul) Calotropis gigantea (Ruf)	B-3 Wheat farming + Amaranthus (Rajgira)		B-1 B-2 B-3	
C Murum and Silt mixed. Lake side soil	C-1 Azadirachta indica - Neem	C-2 Vachella nilotica - Babul	C-3 No farming zone (Area underwater)		C-1 C-2 C-3	
D Murum and Silt mixed. Lake side soil	D-1 Vachella nilotica - Babul	D-2 Azadirachta indica - Neem	D-3 No farming zone (Natural waterbody)		D-1 D-2 D-3	
E Black Soil. Used for wheat farming	E-1 Azadirachta indica - Neem	E-2 Ficus religiosa - Peepal tree	E-3 Wheat farming		E-1 E-2 E-3	
F Murum and Black Soil. Black soil for onion farming	F-1 Tamarind - Chinha Tree	F-2 River tamarind Subabul	F-3 Onion seed farming		F-1 F-2 F-3	
G Murum and Rocky patch.	G-1 River tamarind Subabul Azadirachta indica - Neem	G-2 River tamarind Subabul	G-3 Sugarcane farming		G-1 G-2 G-3	
H Black Soil. Used for wheat farming	H-1 River tamarind Subabul	H-2 Mangifera indica - Mango	H-3 Onion farming		H-1 H-2 H-3	



P.NO
8

SITE ANALYSIS

ADP - ECOVILLE - self reliant re-gen community
 NAME : AHIRE KARAN V - YEAR B. ARCH
 AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE

Flora mapping

Existing Trees and plants on site : (All trees and plants on site are native.)



Farming practice on site and near by site :



Flora mapping Birds



Animals :



FLORA AND FAUNA MAPPING

This site is enriched with wide variety of fauna. But because of the farming practice there are very less trees on site. If we provide more food and habitat to this fauna, it will build a strong ecosystem.

Birds species found nearby site:

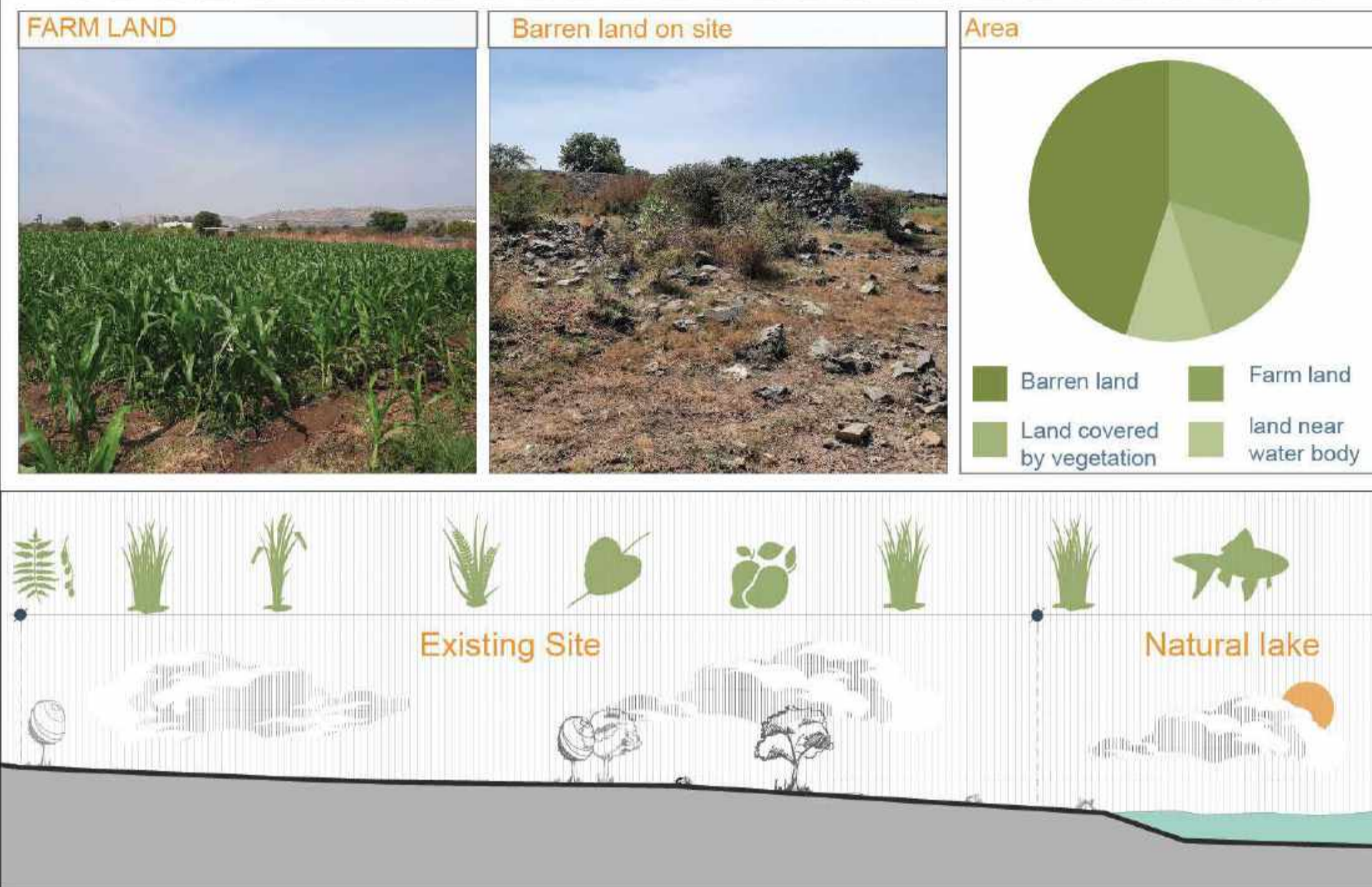
variety of Birds: Rock Pigeon (Blue Rock Pigeon), Laughing Dove (Little Brown Dove), Asian Koel, Rose-ringed Parakeet, Red-vented Bulbul, White-throated Kingfisher, Purple-rumped Sunbird, Indian Spot Duck, House Crow, White Herons.

Animals nearby the site:

Bandicoot rat, Dogs, Goat, Cypriniformes (Carp and minnows) fish, crab.

Reptiles nearby the site:

monitor lizards (ghorpad), lizard, Indian cobra, Rat snake (Ptyas mucosa), Sand boa, Boa (mandul)



FLORA - FAUNA MAPPING

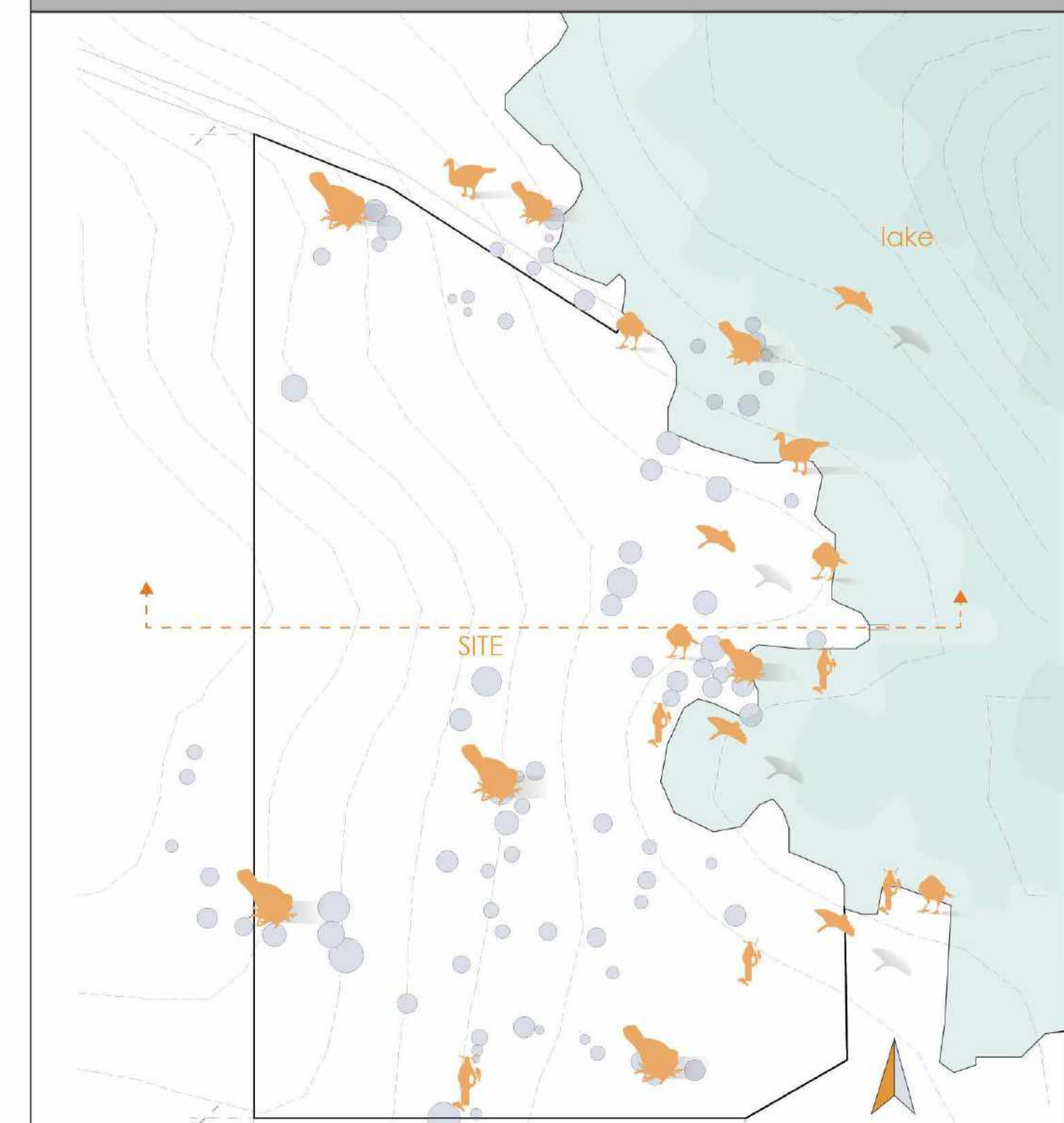
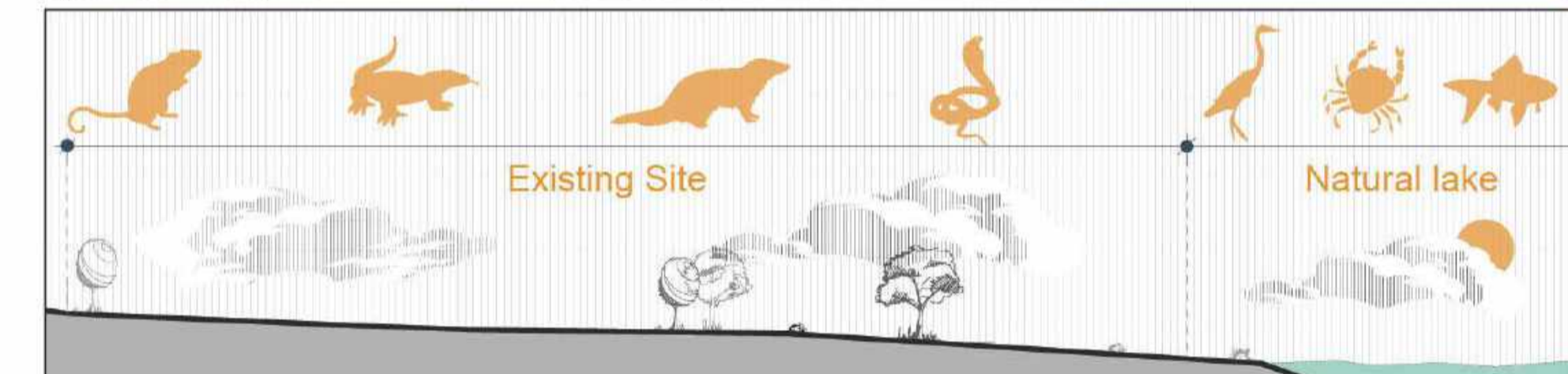
The landscape of the site varies according to the area. There is a natural lake on the east side of the site. In that region, only a few Trees are grown along the lakeside. The waste side of the site is used for farming and most of the part is barren because of toxic and infertile soil.

Plans species found nearby site:

variety of plant species that include Jamun (Syzigium cumini), Palas (Butea monosperma), Shisam (Dalbergia latifolia), Kate sawar (Bombax ceiba), Neem (Azadirachta indica), Teak (Tectona grandis), Dhawada (Anogeissus latifolia), Mango (Mangifera indica), Acacia spp, Awala (Emblica officinalis), and many more.

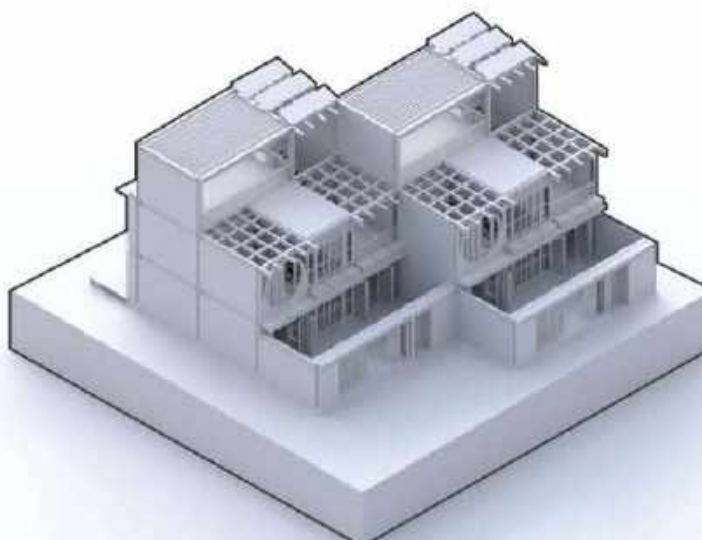
Farming nearby the site:

The major crops of kharip season are - Cotton, Bajra & Corn and that of rabbi season are - Jawar, Wheat & Gram.




Space program

ACTIVITY	Information	SPACE	AREA	QTY	CAPACITY	TOTAL AREA	TOTAL CAPACITY	
COMMUNITY								
RESIDENTIAL UNITS	Main residential modules are incremental. Design and area can be changed according to the user's needs.	Typology 1 (Incremental module)	36-40 Sq.M	29	3-4	1,160 Sq.m	100-120 People	
			+ 36sqm of varandha + 36 sqm courtyard 108 Sq.M	29		3,248 Sq.M		
		Typology 2 (Incremental module)	60-75 Sq.M	29	4-5	2,175 Sq.m	145-150 People	
			+ 36sqm of varandha + 20 sqm courtyard 116 Sq.M	29		3,364 Sq.M		
	Typology 2 (Incremental module)	130-145 Sq.M	23	6-8	3,335 Sq.M	130-160 People		
		+ 36sqm of varandha 180 Sq.M	23		4,140 Sq.M			
	Co-living unit for bachelors, with sharing living and kitchen.	Co-Living Unit	Common areas (living kitchen, formal informal seating) Sleeping area(rooms)	500 Sq.M	15	25-45	500 Sq.M	45-50
				25 Sq.m			375 Sq.m	
		4 co-living unit					x 4	x 4
							3500 Sq.M	200
Total:						14,352 Sq.M	650-700	
Administration area and information center		Administration area	Office and work area	25 Sq.M	1	25 sqm		
		Information center and waiting	45 Sq.M	1	45 sqm			
		Staff quarters	25 Sq.M	8	200 sqm			
Total:						270 Sq.M		
COMMUNITY CENTER	Spaces for communal activities	Space for communal activity (Festivals)	500 Sq.M	1	—	500 Sq.M		
		Indoor play are / game station	100 Sq.M	1	—	100 Sq.M		
		Amenities (Gym , yoga center)	200 Sq.M	1		200 Sq.M		
		Total:						800 Sq.M
Daycare and preschool	This can be used by nearby settlements.	Teaching area	50 Sq.M	2		100 Sq.M		
		Staff area	15 Sq.M	2		30 Sq.M		
		Total:						130 Sq.M
Primary healthcare center	This can be used by nearby settlements.	Ward	100 Sq.M	1		100 Sq.M		
		Checkup room	25 Sq.M	2		50 Sq.M		
		Restroom	30 Sq.M	1		30 Sq.M		
		Pathology lab	50 Sq.M	1		50 Sq.M		
		Medical store	25 Sq.M	1		25 Sq.M		
		Toilet	30 Sq.M	1		30 Sq.M		
		Other spaces (Store, passage etc.)						
Total:						300 Sq.M		
Market		Grocery Shop and Distribution unit	100 Sq.M	1		100 Sq.M		
		Storage	25 Sq.M	4		100 Sq.M		
		Selling unit	75 Sq.M	4		75 Sq.M		
		Storage	25 Sq.M	4		100 Sq.M		
		Total:						375 Sq.M
FOOD								
SEASONAL FARMING		Permaculture Small pockets of farming						
Live stock		Chicken, Duck, Bee Farming	Built space : 100 Sq.M open space : 290 Sq.M	2		200 Sq.M		
		Cow, buffalo	Built space : 450 Sq.M open space : 200 Sq.M	1		450 Sq.M		
Aeroponics		Greenhouse for Aquaponics	600 Sq.M	2		1200 Sq.M		
Aquaponics		Greenhouse for Aeroponics	600 Sq.M	3		1800 Sq.M		
SERVICES								
ELECTRICITY		Solar panels and storage						
		Wind turbines						
		Bio-gas plant						
WATER		Rainwater Harvesting						
		Filtration plant	Space provided-900 Sq.M (30X30m)					
WASTE		S.T.P.	Space provided-900 Sq.M (30X30m)					
		Waste treatment / compost plant	Space provided-400 Sq.M					



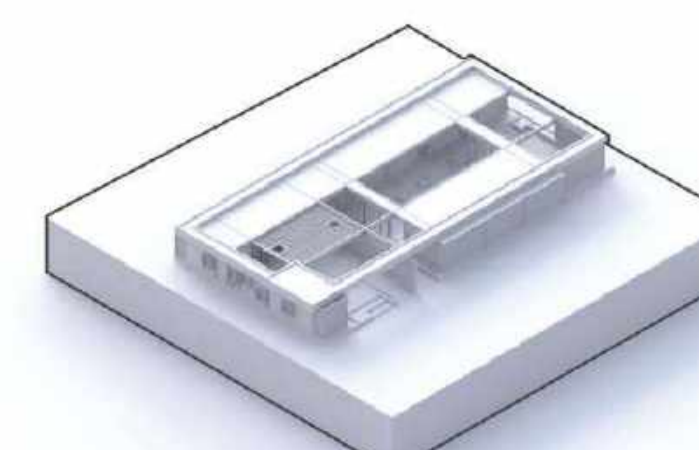
RESIDENTIAL UNIT

81 UNITS
AREA:
10,752 Sq.m



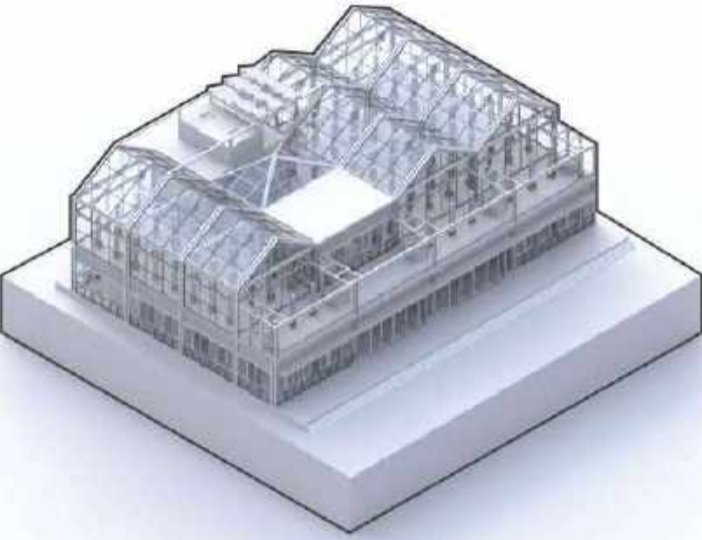
CO-LIVING UNIT

4 UNITS
AREA:
3500 Sq.m



Administration area and information center

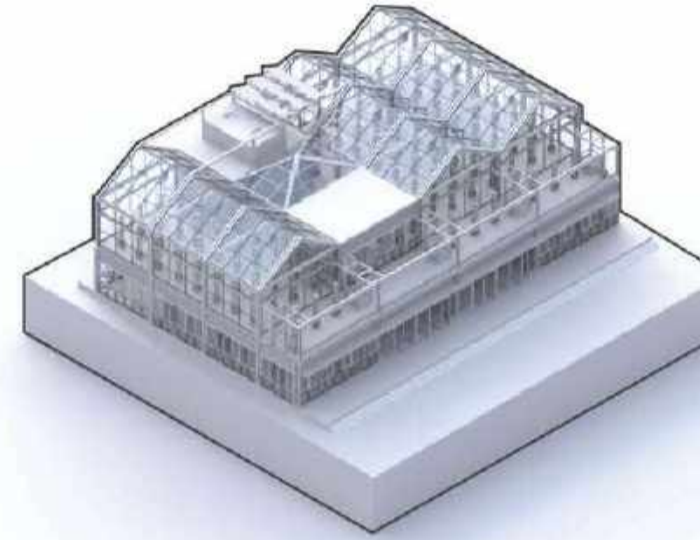
1 UNITS
AREA:
3500 Sq.m



AQUAPONICS

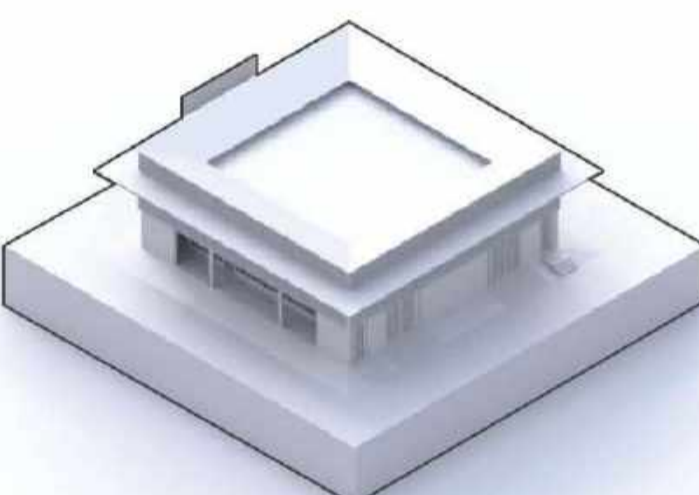
2 UNITS
AREA:
1200 Sq.m

Restaurant and community spaces below
AREA:
600 Sq.m



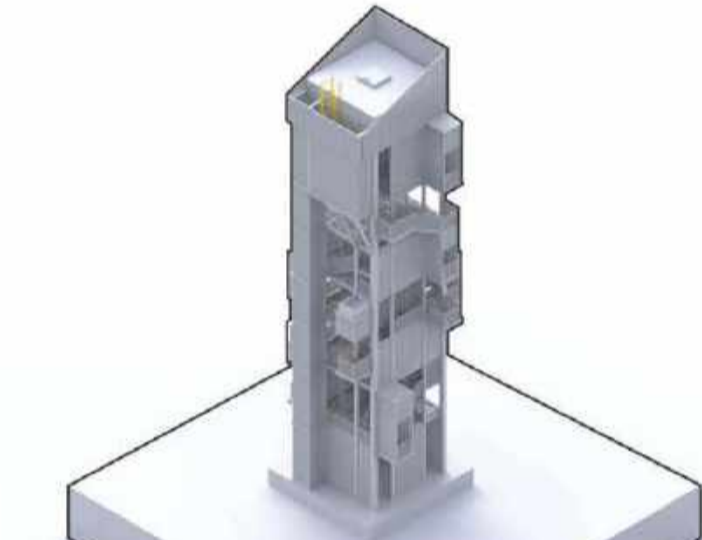
AEROPONICS

3 UNITS
AREA:
1800 Sq.m



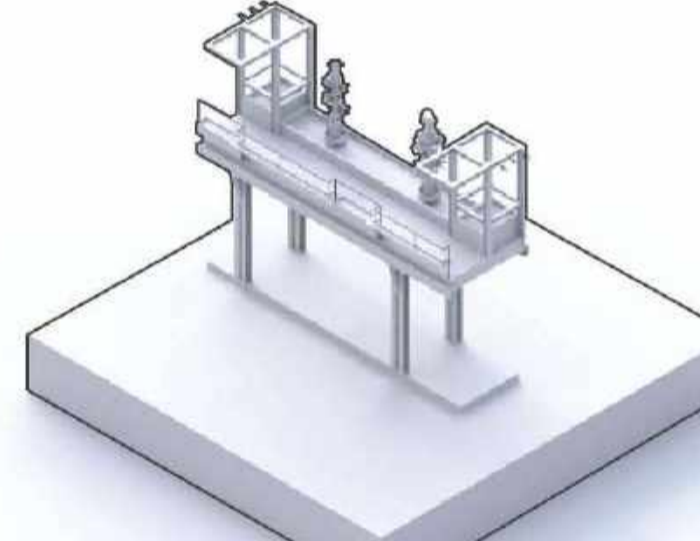
LIVE STOCK

1 UNITS
AREA:
650 Sq.m



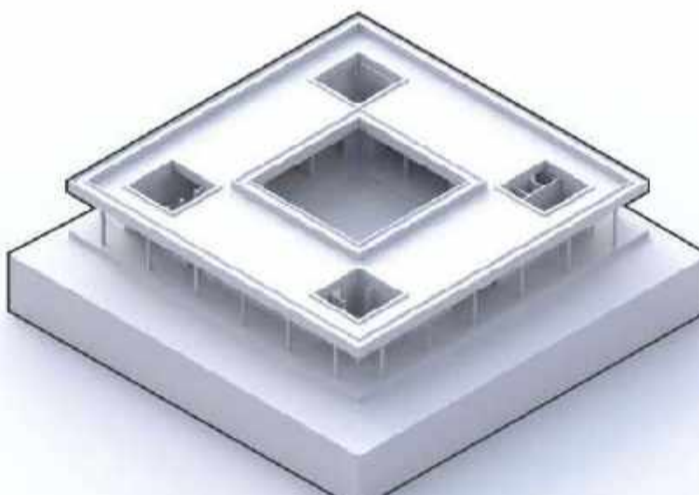
ECO- TOWER

5 UNITS



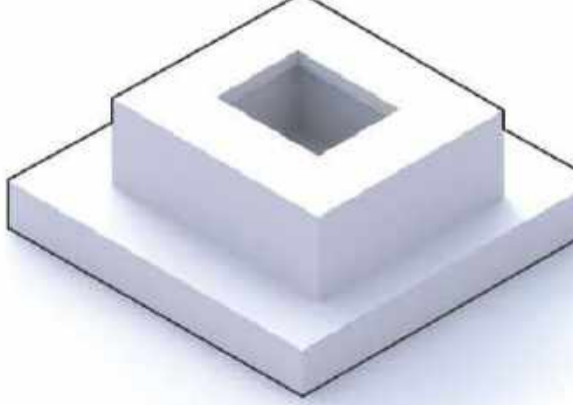
ECO - BRIDGE

AREA:
595 Sq.m Area cover on Site



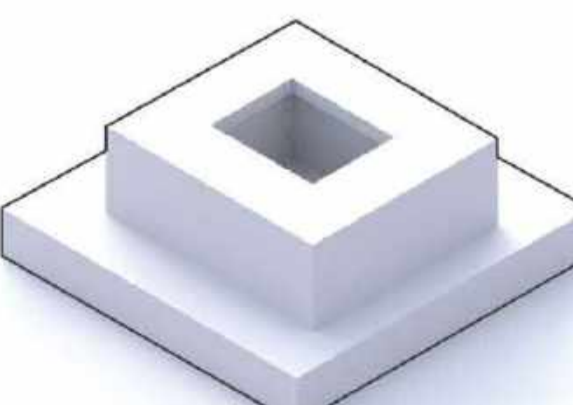
PRIMARY HEALTHCARE CENTER

AREA:
300 Sq.m



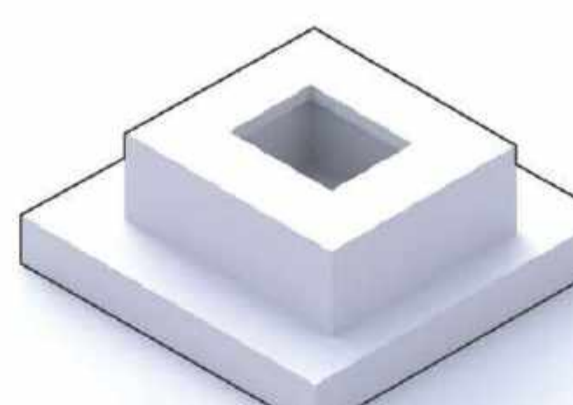
DAY CARE CENTER AND PRE SCHOOL

AREA:
130-150 Sq.m



MARKET AND DISTRIBUTION AREA.

AREA:
375 Sq.m



TOTAL BUILT-UP AREA	TOTAL BUILT-UP AREA (Food)	8500 Sq.M	Rest of the area will be used for incremental module, seasonal farming, vegetables gardens, solar farming, animal shades and services.
	TOTAL BUILT-UP AREA (Community)	16,200 Sq.M	

SELECTED SITE (Shown in red) :

Total site area : 1,00,450 sq.m
(25 acre approximate)

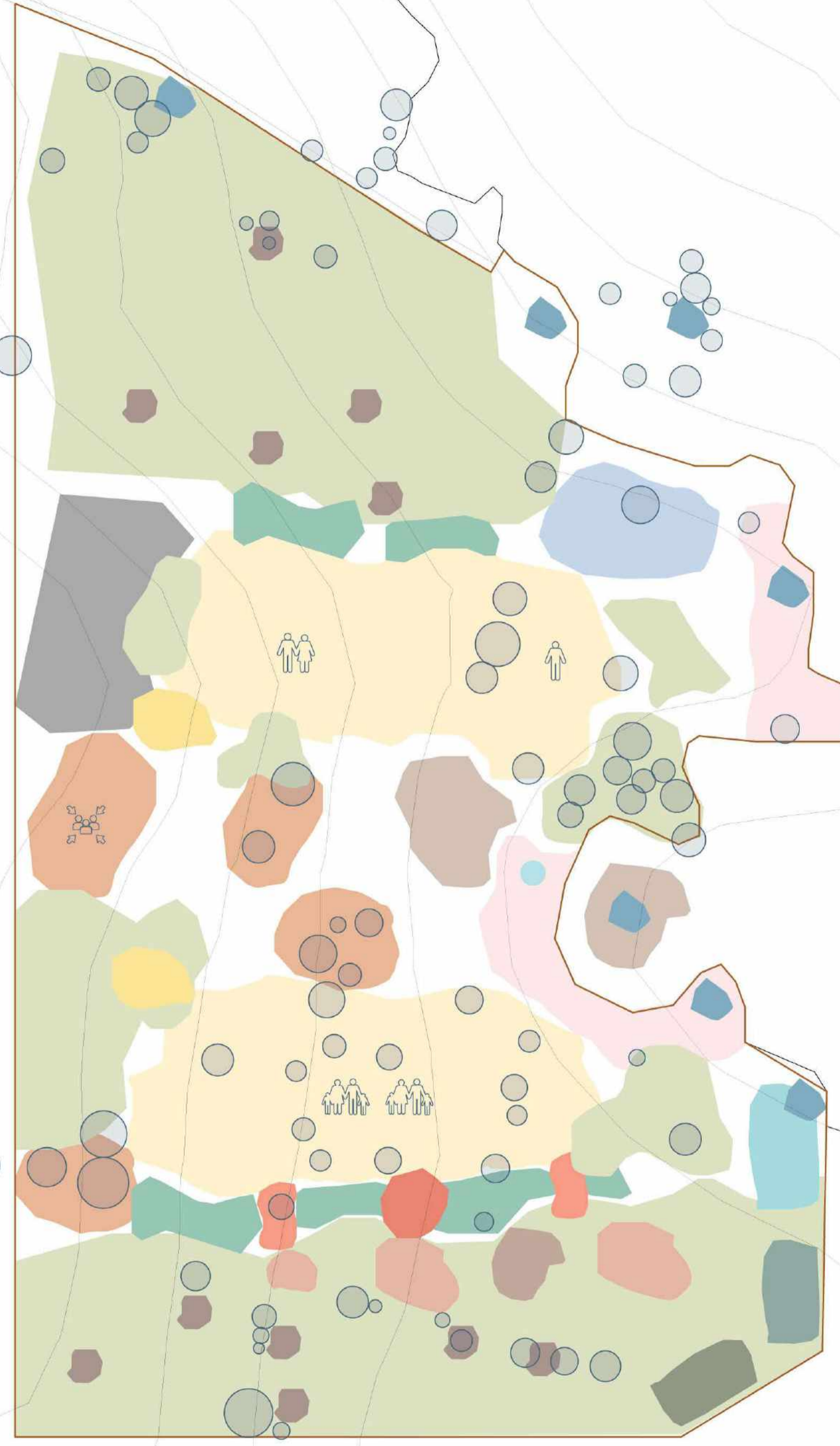
Site boundaries and adjacent plots:

Community

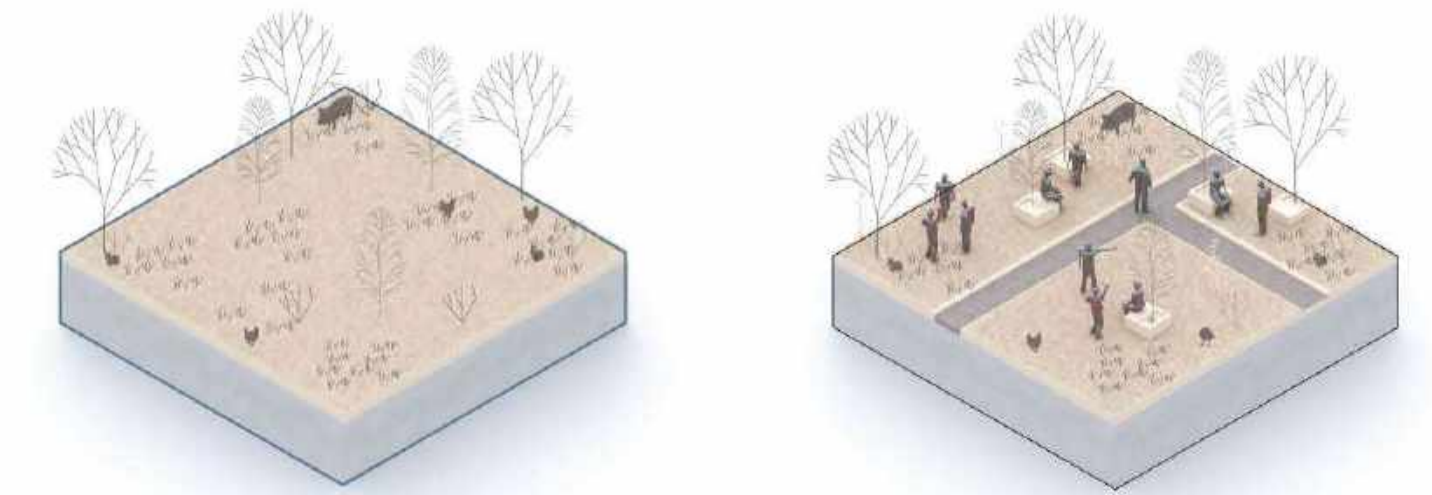
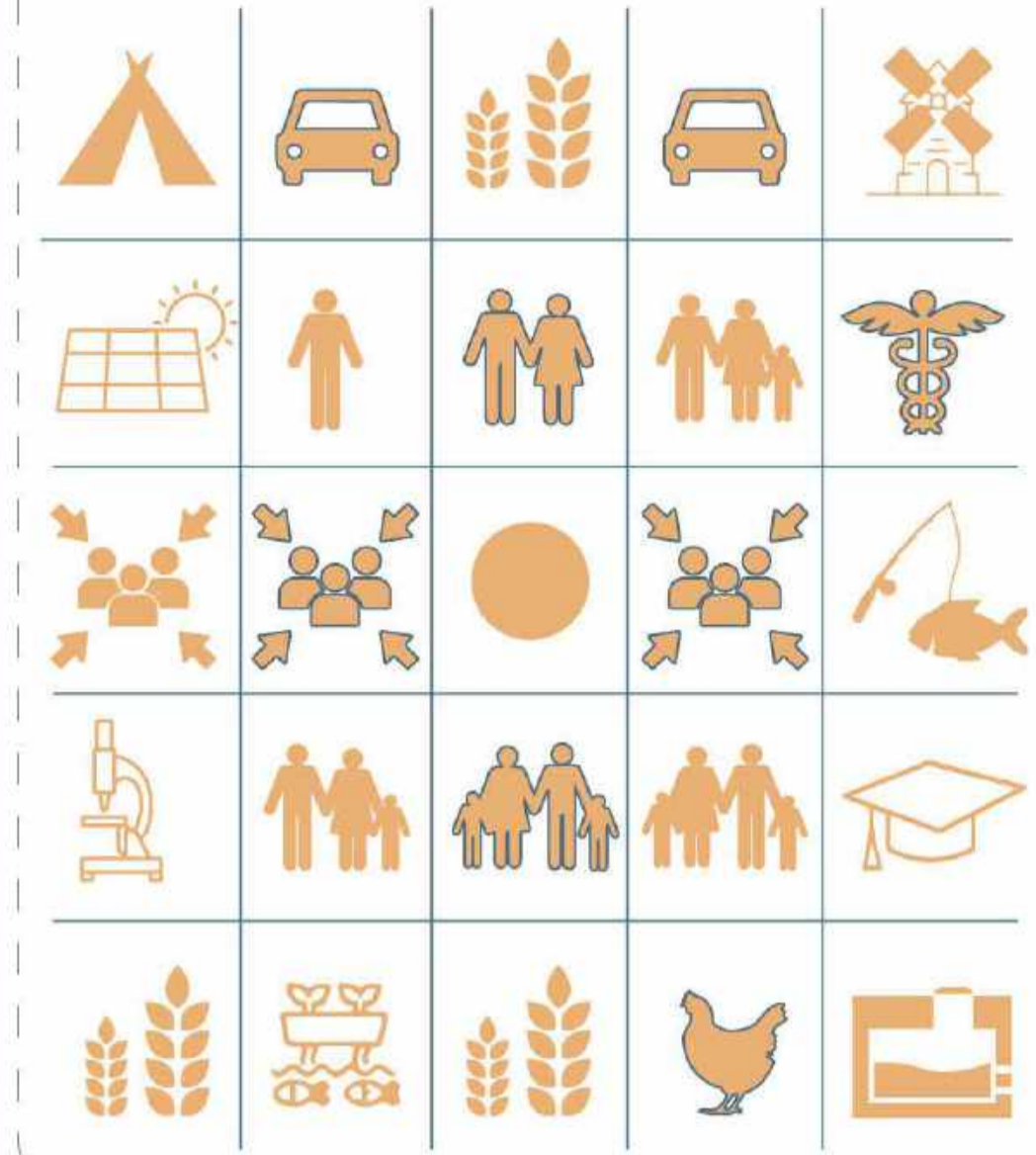
- Residential zone
 - Community Spaces
 - Daycare Facility
 - Primary Healthcare Center
 - Grocery store and Distribution unit
- Food
- Seasonal Farming
 - Aquaponics and Aeroponics Farming
 - Live Stock

Services

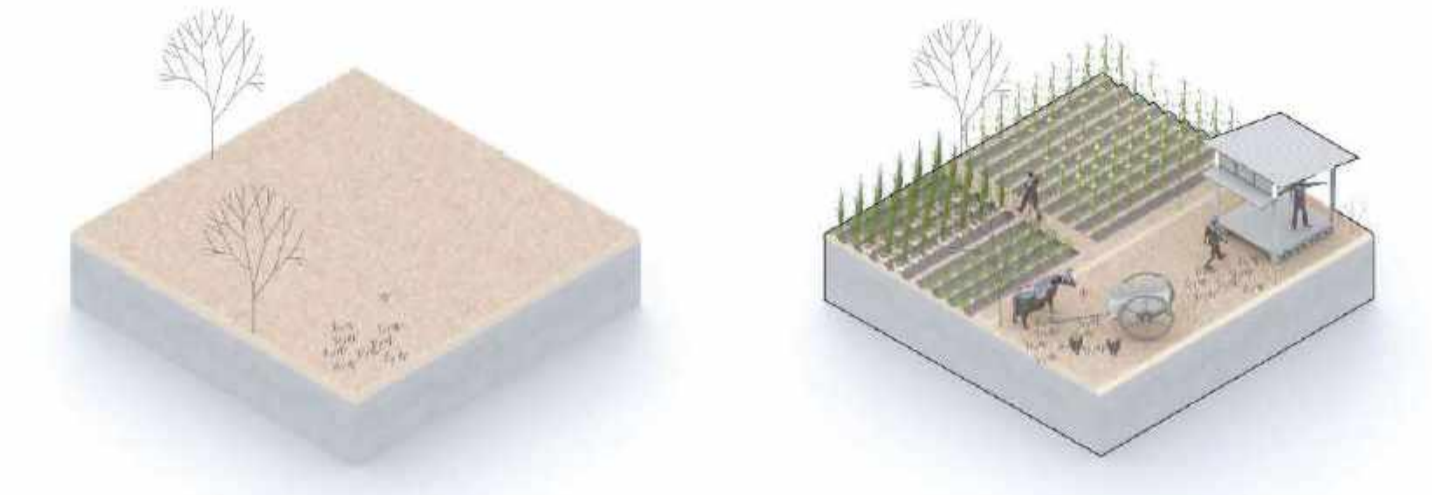
- Solar Farming and Storage
 - Bio-gas plant
 - Wind Turbines
 - Water filtration plant
 - Compost plant (Waste treatment)
- Services
- Communal Dining and activity center
 - Workshop Areas



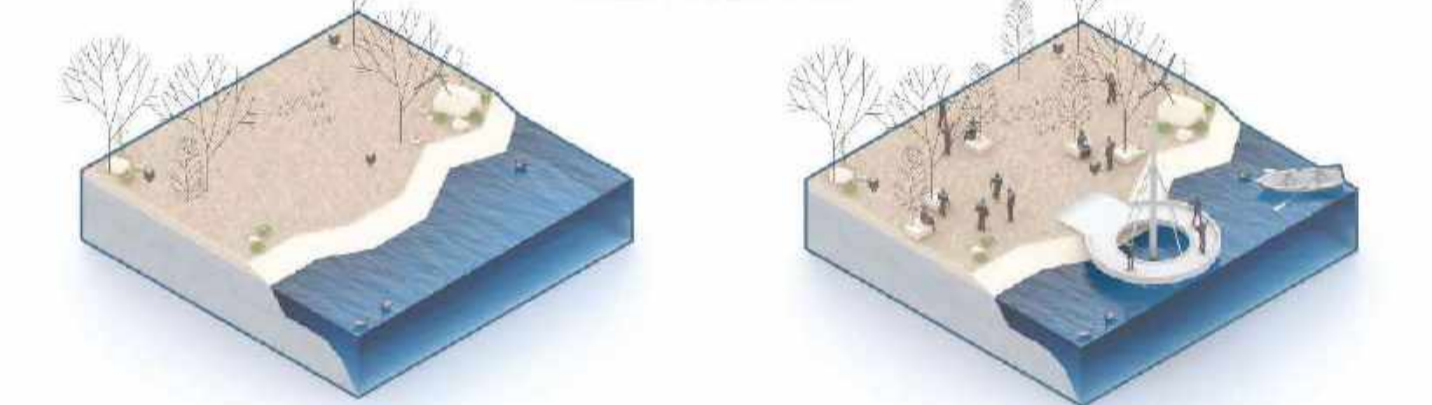
Zoning:



Areas with dense vegetation can be proposed as public, Gathering spaces for interaction.

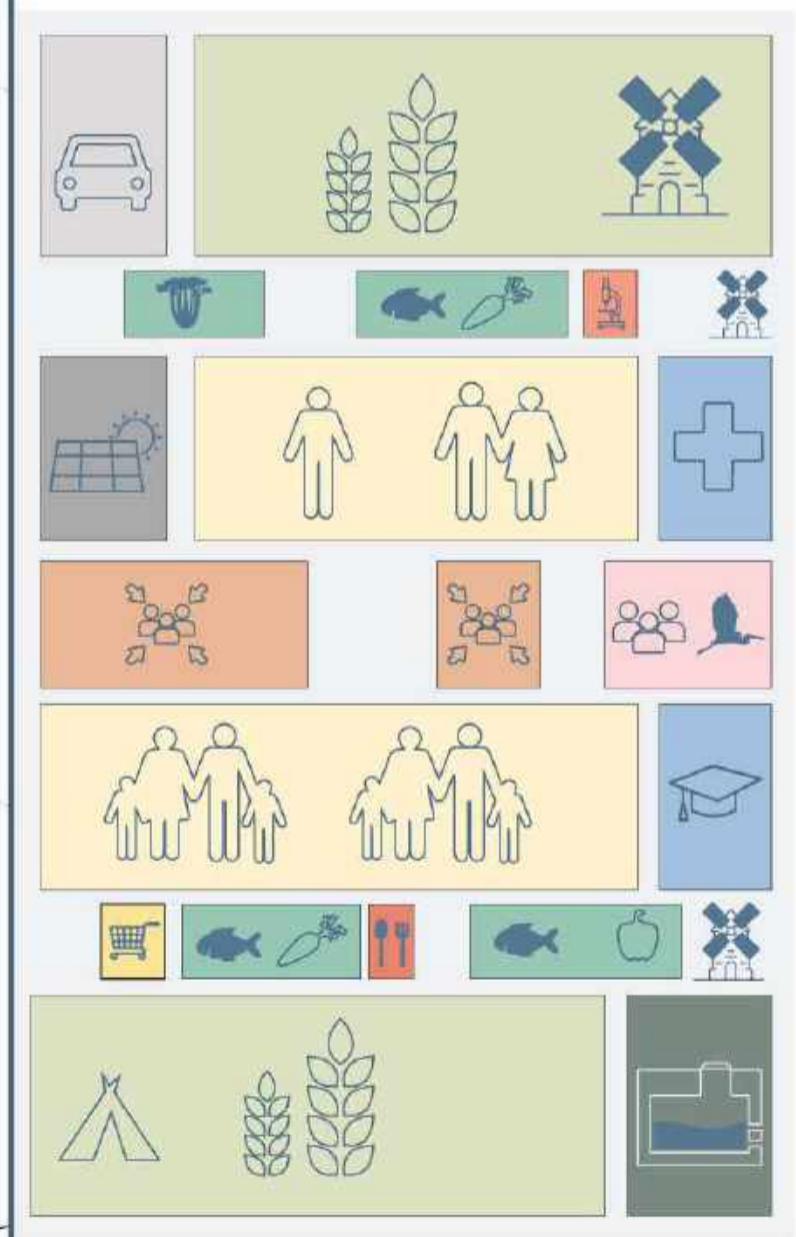


Areas having scarce foliage can be used for farming and Cultivation as such open spaces are less preferred for habitation.



Proposal of informal spaces near the water bodies. Such Landscape areas will encourage flora and fauna too.

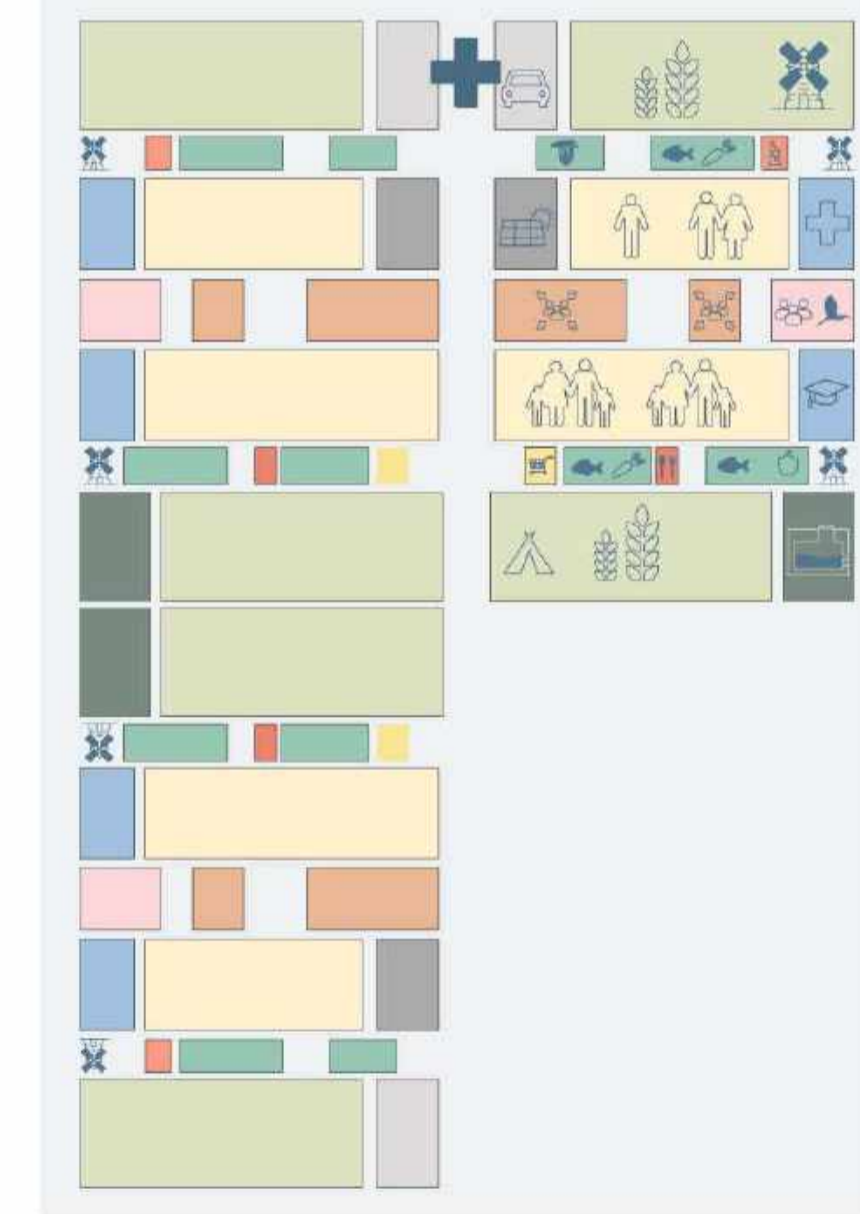
Phase 1



All the seasonal farming zone (●) kept on the outer Side so there is change of repeating that module and having farming areas together (shown in phase 2 and 3)

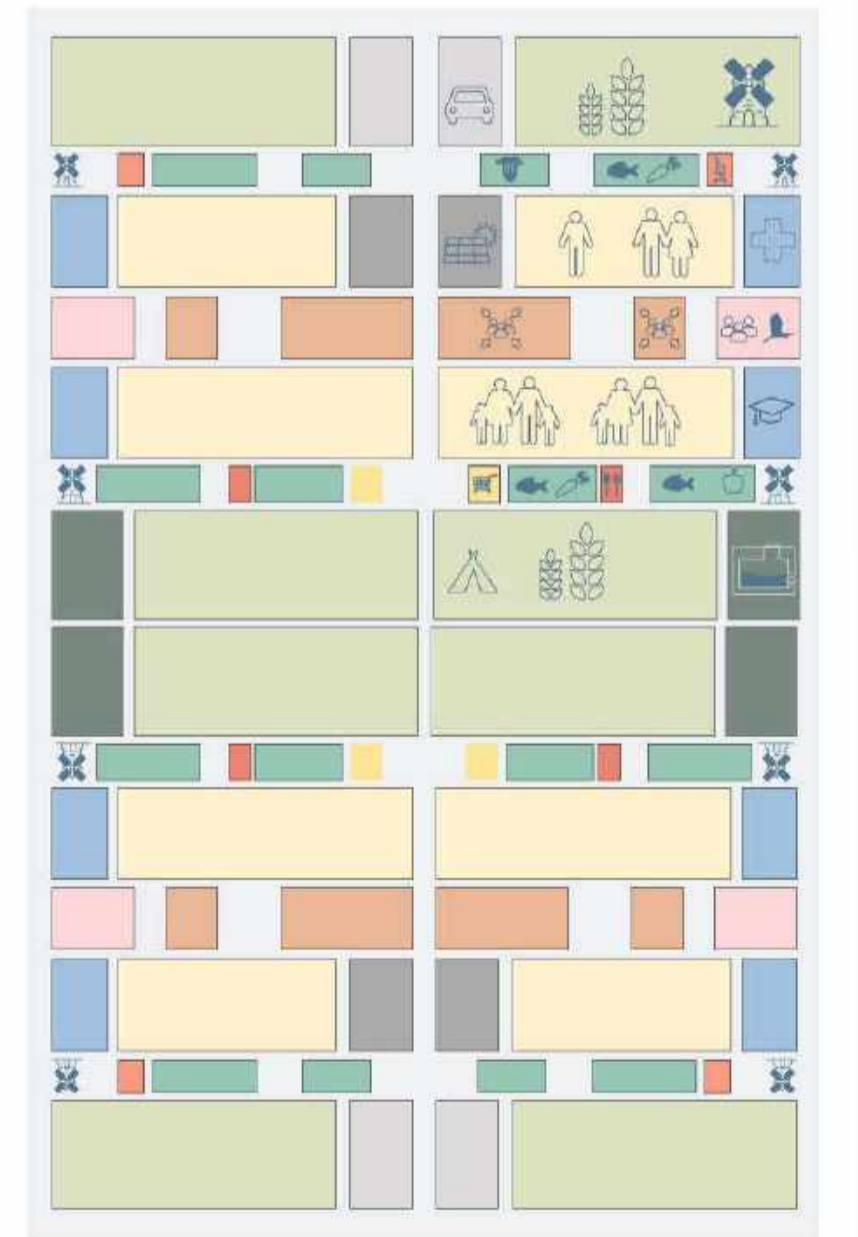
Service areas (●) are also kept in the corner so that services can be clustered together.

Phase 2



Semi built or Built structures (●) like greenhouse for aquaponics and cow shades are places in between the residential zone and farming zone, this will create a visual and functional balance.

Phase 3



All gathering spaces and public zones (●) are kept in the central area or near the waterbody. Phase 3 is showing the continuity and hierarchy of open and gathering spaces.

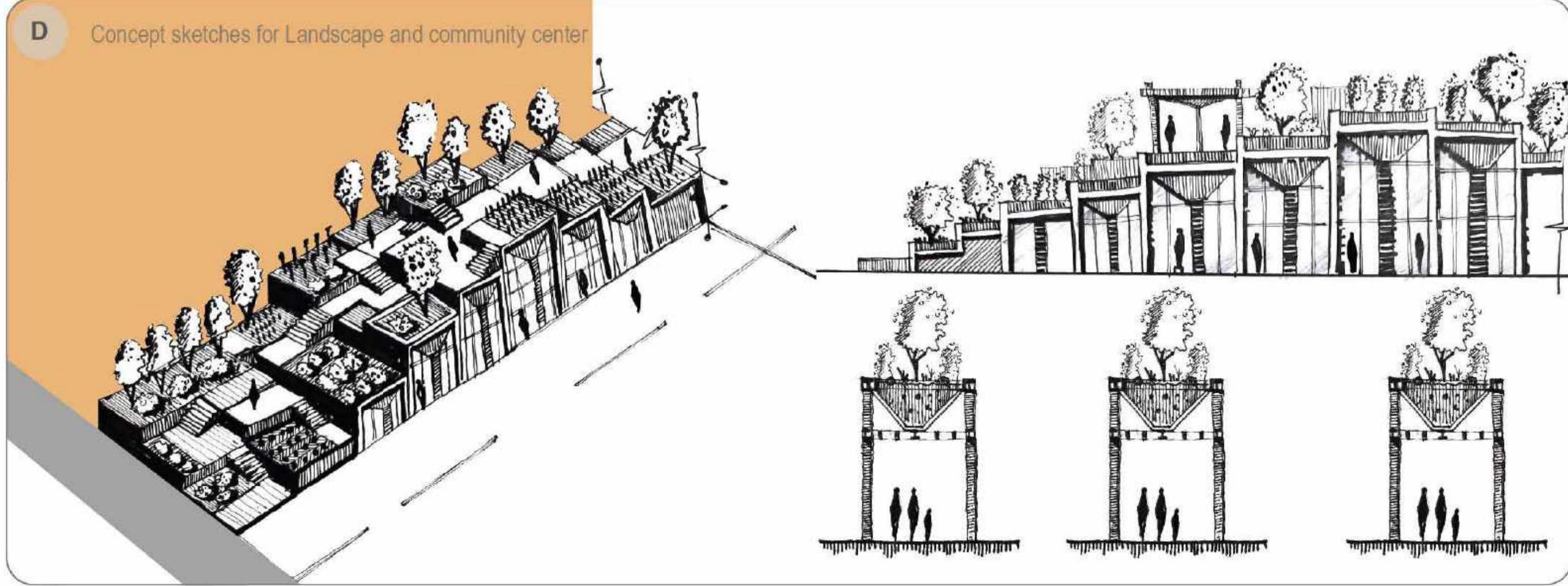
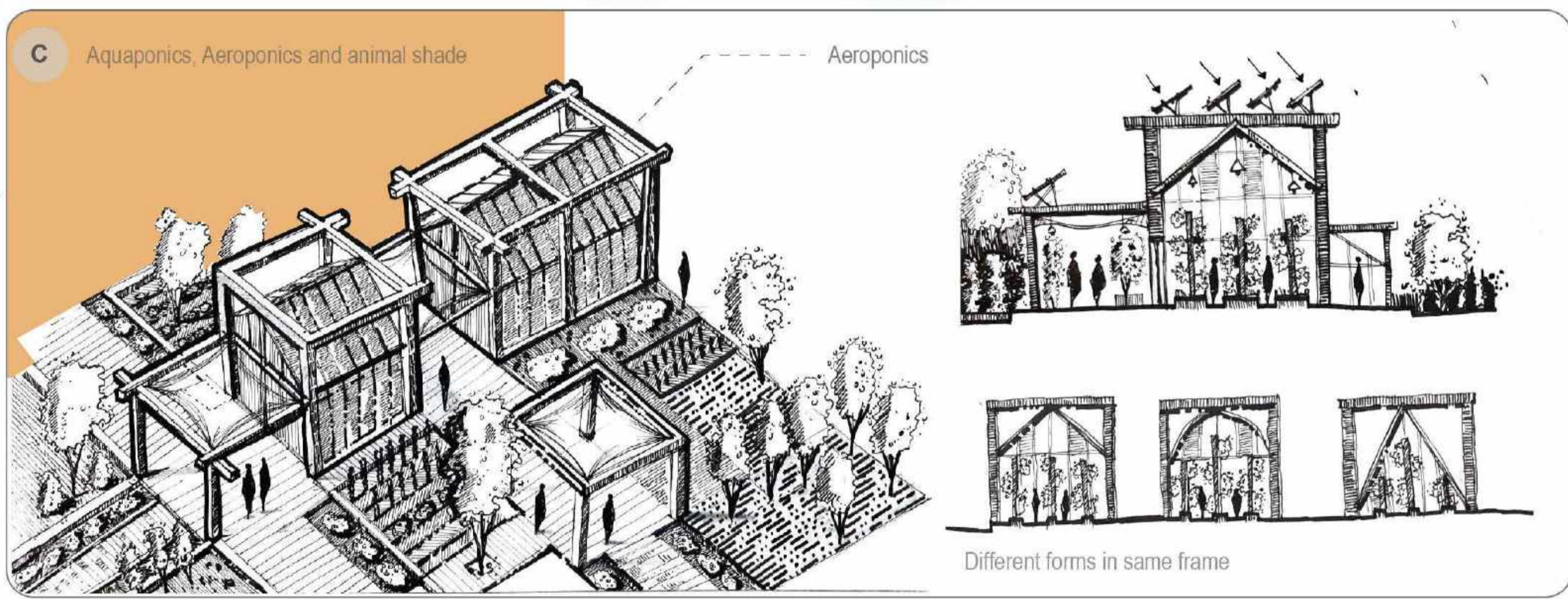
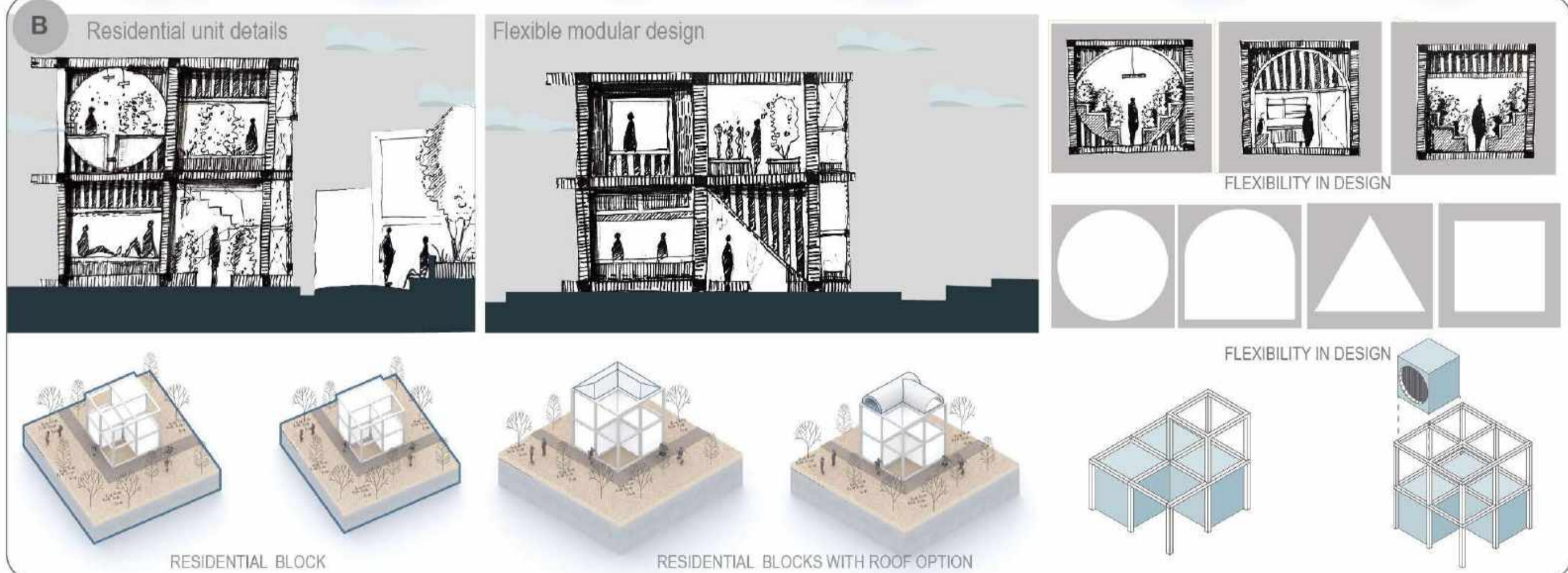
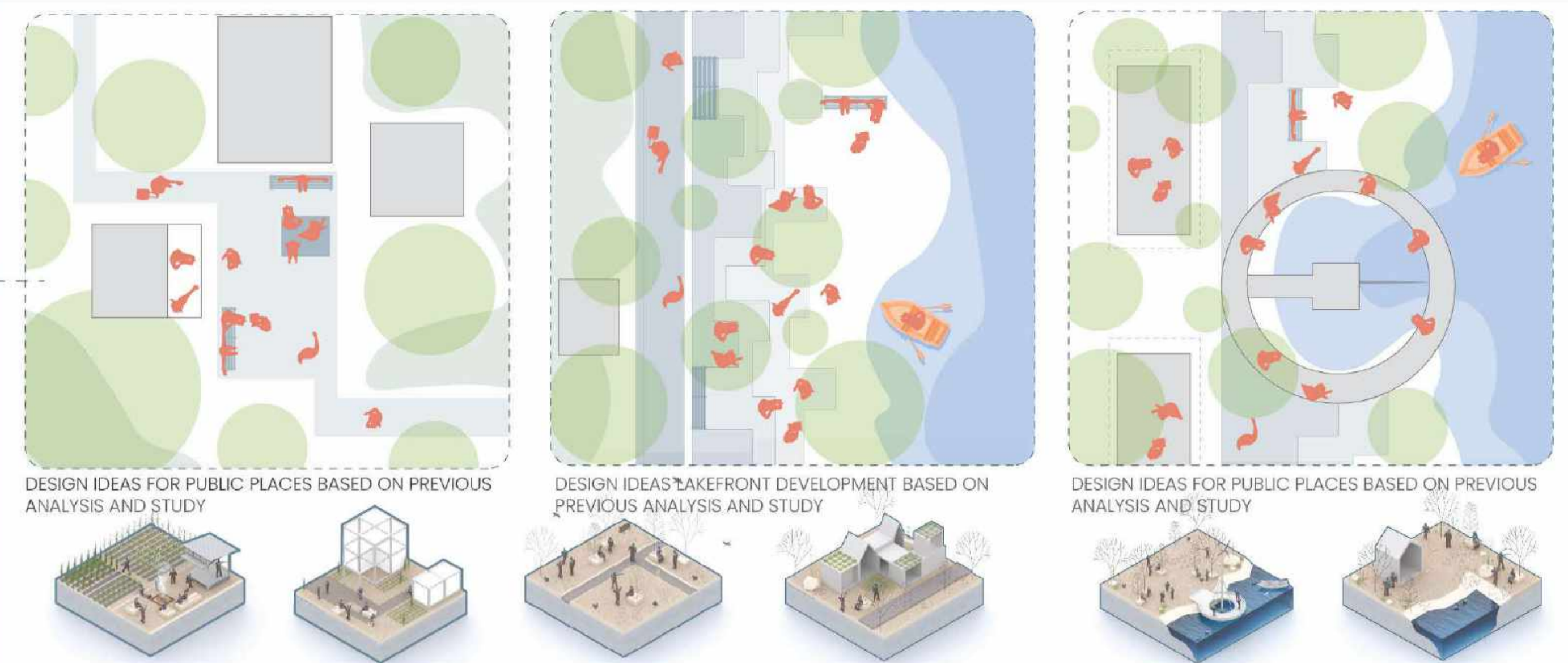
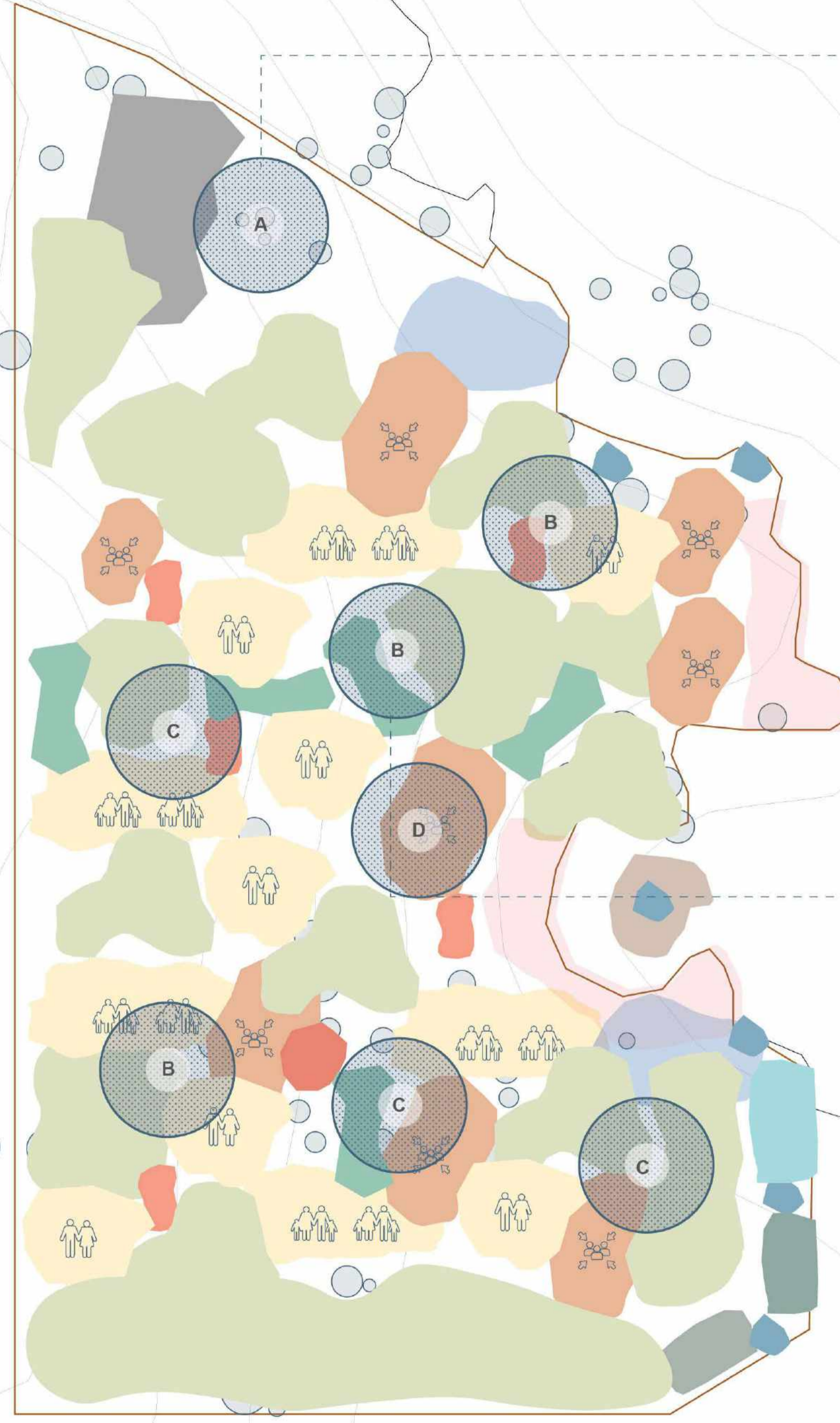
Residential zone (●) is kept in the central space so it can be repeated in horizontal direction. This gives the connectivity of central open spaces and common spaces (showed in orange color).



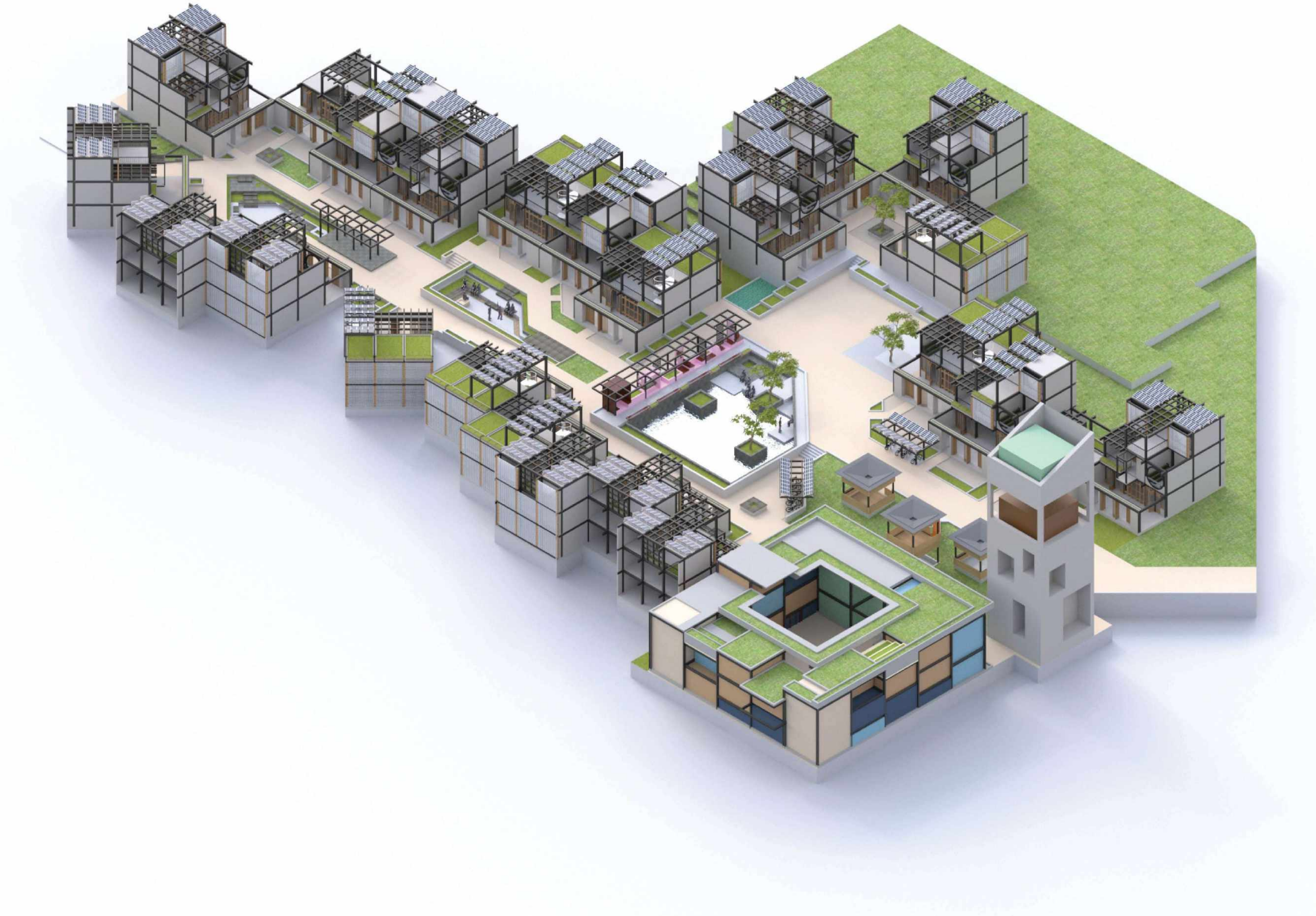
SELECTED SITE (Shown in red) :

Total site area : 1,00,450 sq.m
(25 acre approximate)
Site boundaries and adjacent plots:

- Community**
 - Residential zone
 - Community Spaces
 - Daycare Facility
 - Primary Healthcare Center
 - Grocery store and Distribution unit
- Food**
 - Seasonal Farming
 - Aquaponics and Aeroponics Farming
 - Live Stock
- Services**
 - Solar Farming and Storage
 - Bio-gas plant
 - Wind Turbines
 - Water filtration plant
 - Compost plant (Waste treatment)
- Services**
 - Communal Dining and activity center
 - Workshop Areas



ARCHITECTURAL DESIGN PROJECT



KARAN AHIRE

Flora mapping

Existing Trees and plants on site : (All trees and plants on site are native.)



Farming practice on site and near by site :



This fauna creating a beautiful environment and attracting wide variety of Birds and animals. But It is getting harmed and disturbed due to existing farming activities.

Flora mapping Birds

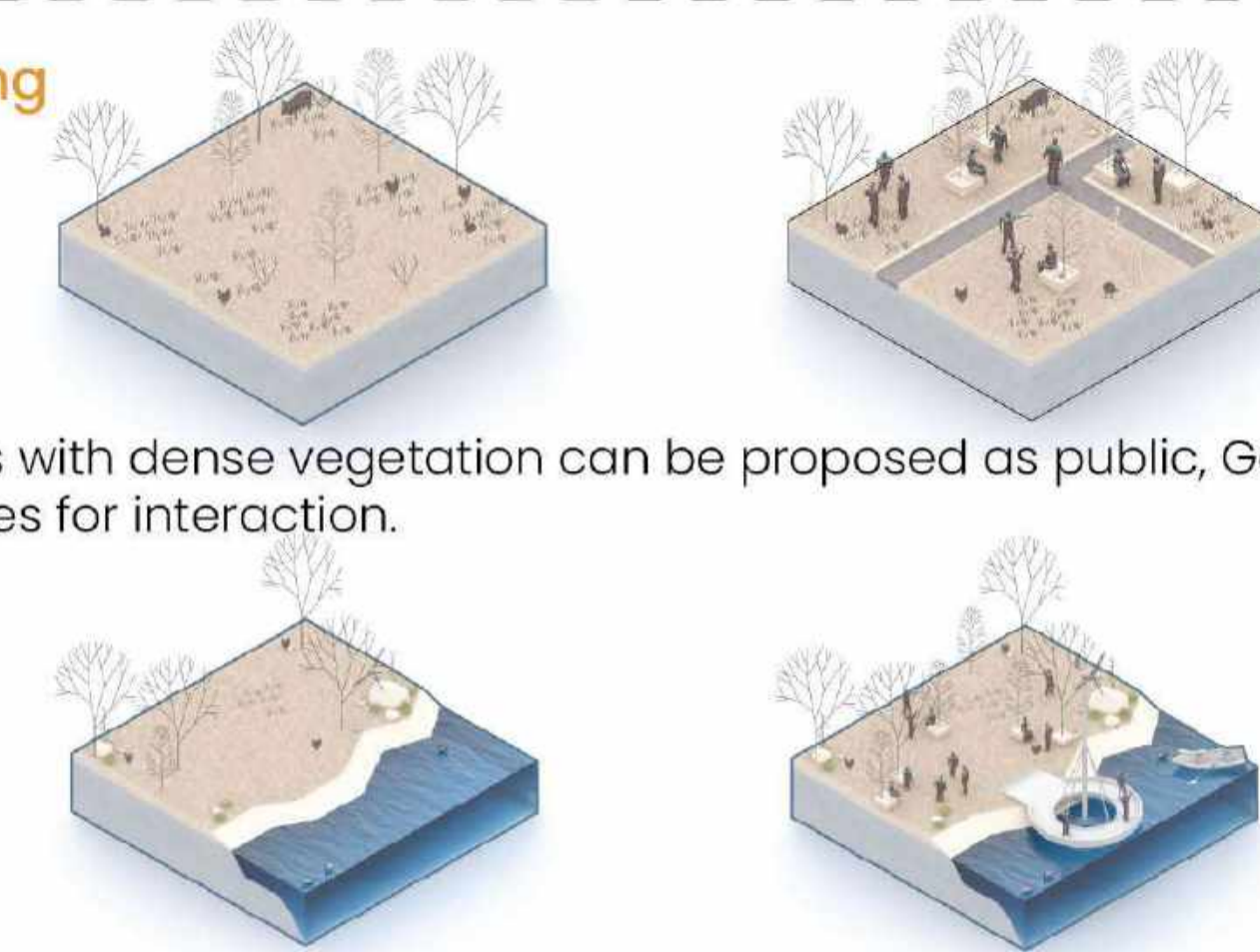


Animals :



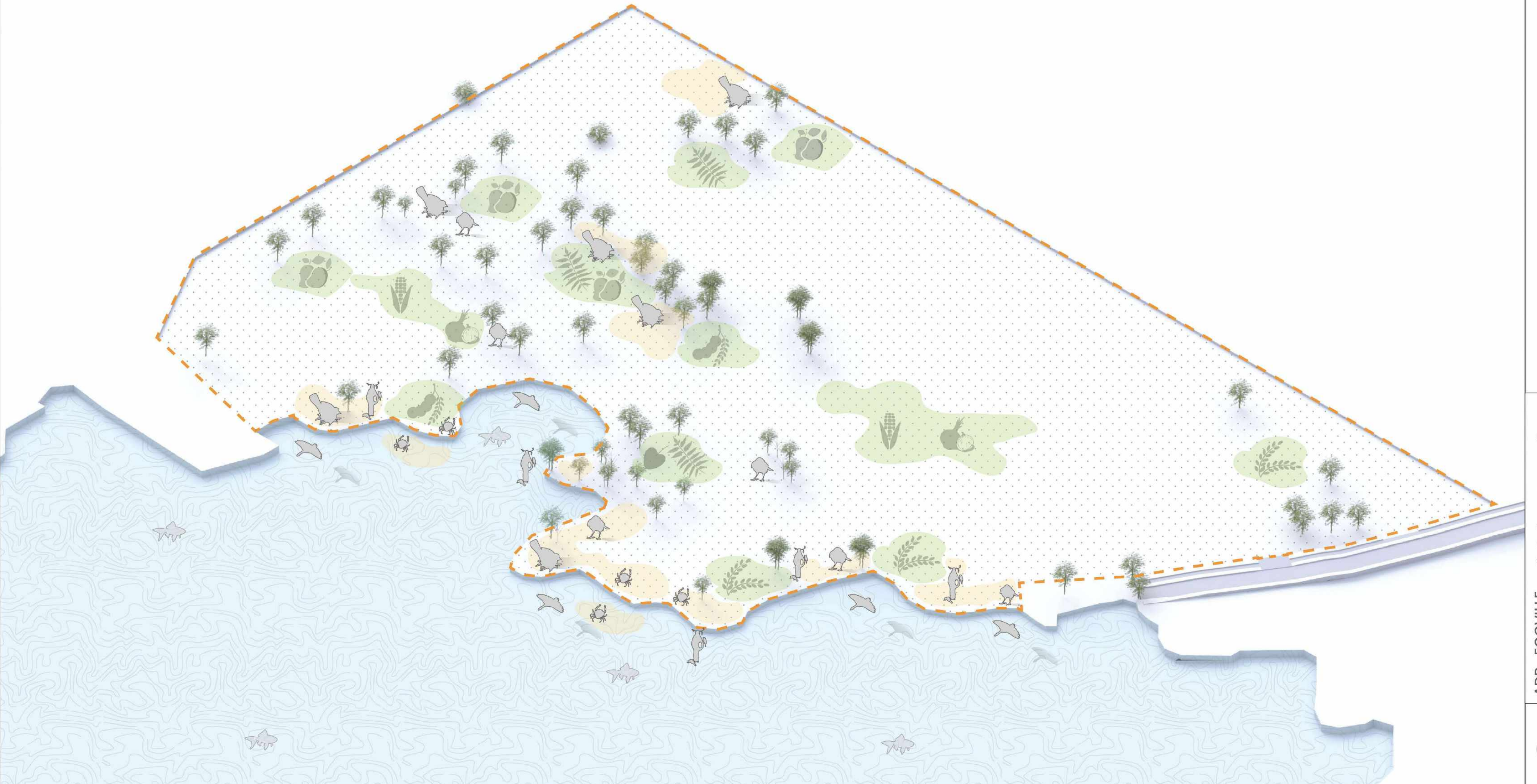
This site is enriched with wide variety of fauna. But because of the farming practice there are very less trees on site. If we provide more food and habitat to this fauna, it will build a strong ecosystem.

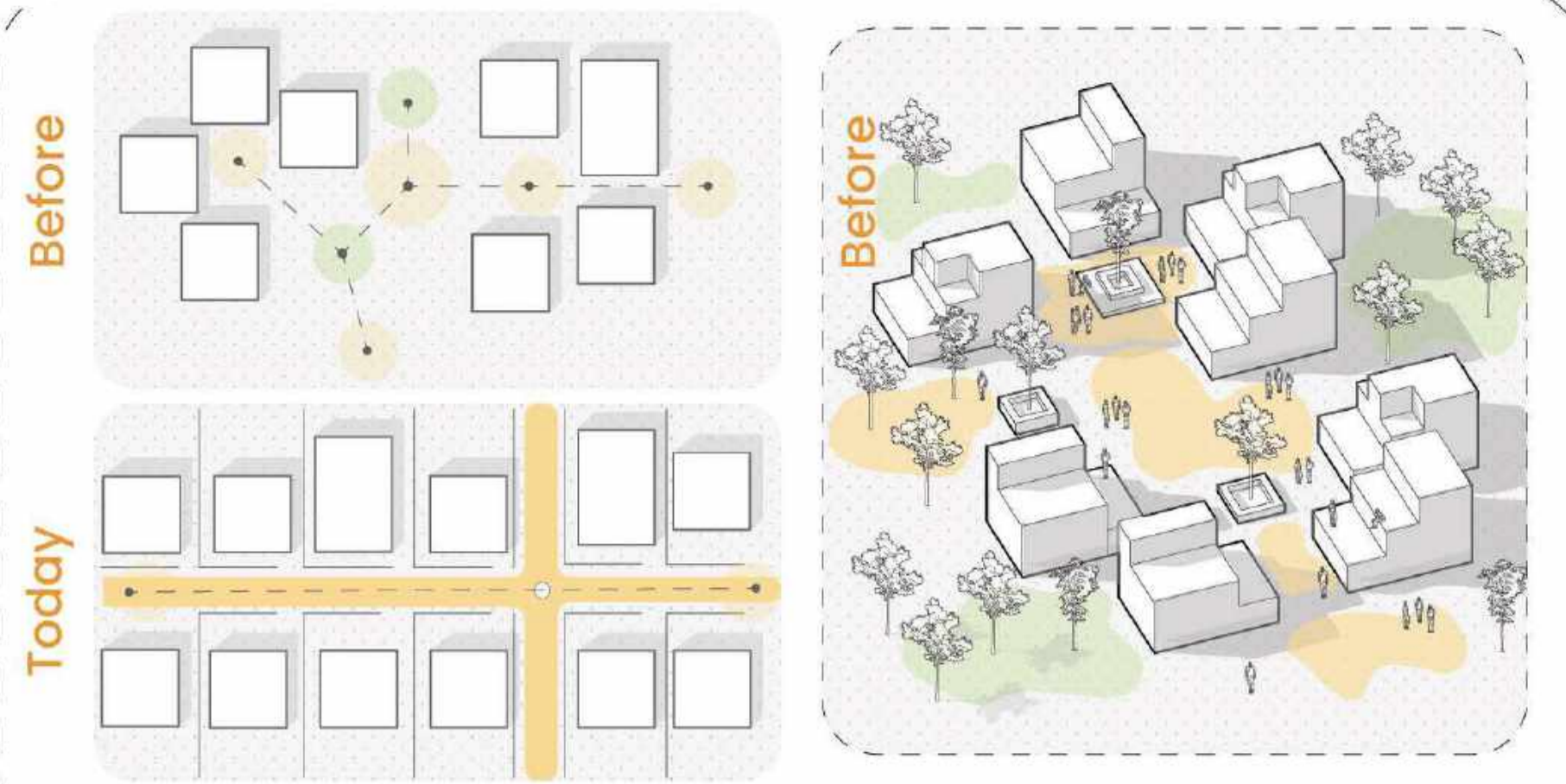
Zoning



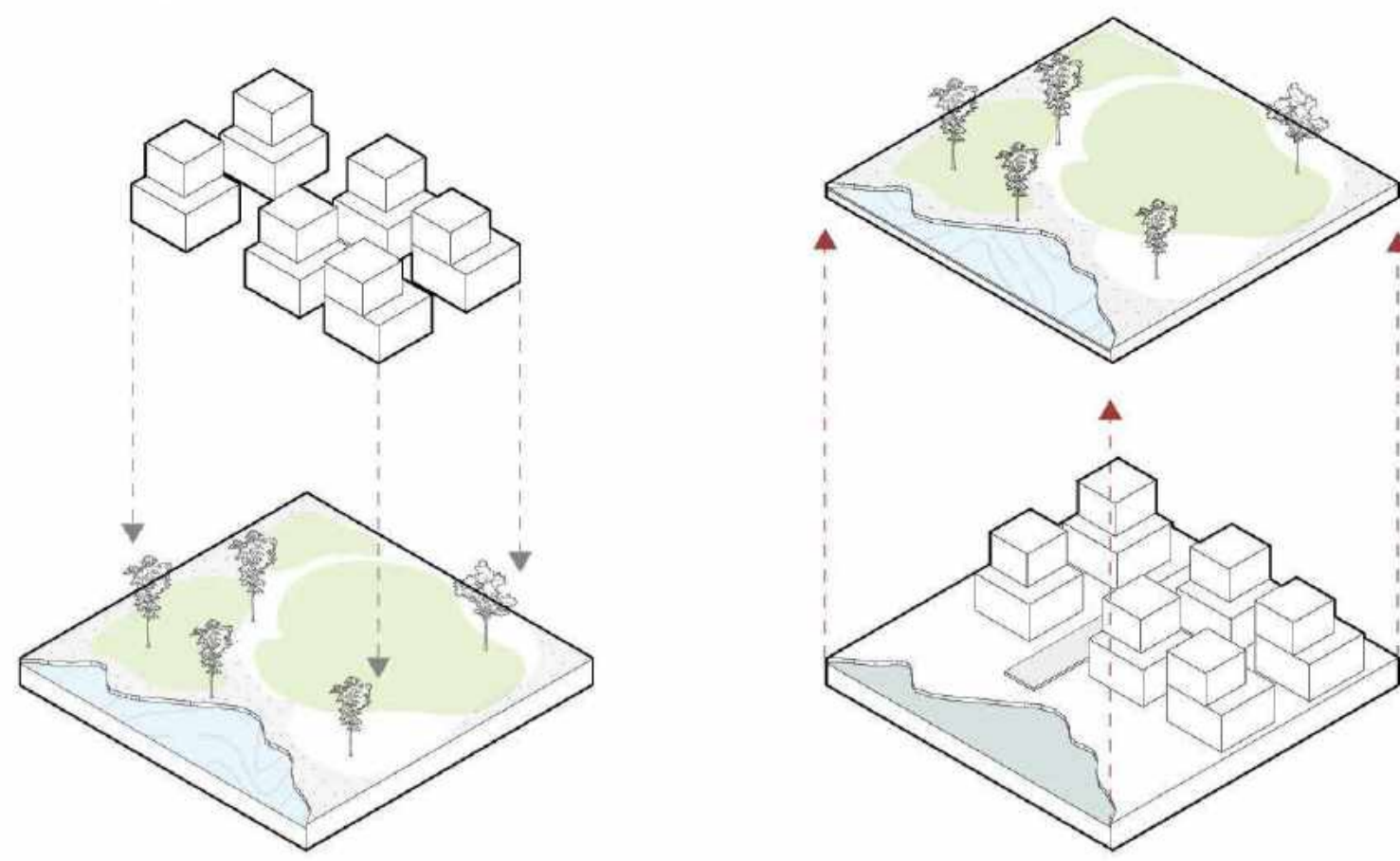
Areas with dense vegetation can be proposed as public, Gathering spaces for interaction.

Proposal of informal spaces and landscape near the water bodies. Such Landscape areas will encourage flora and fauna too.

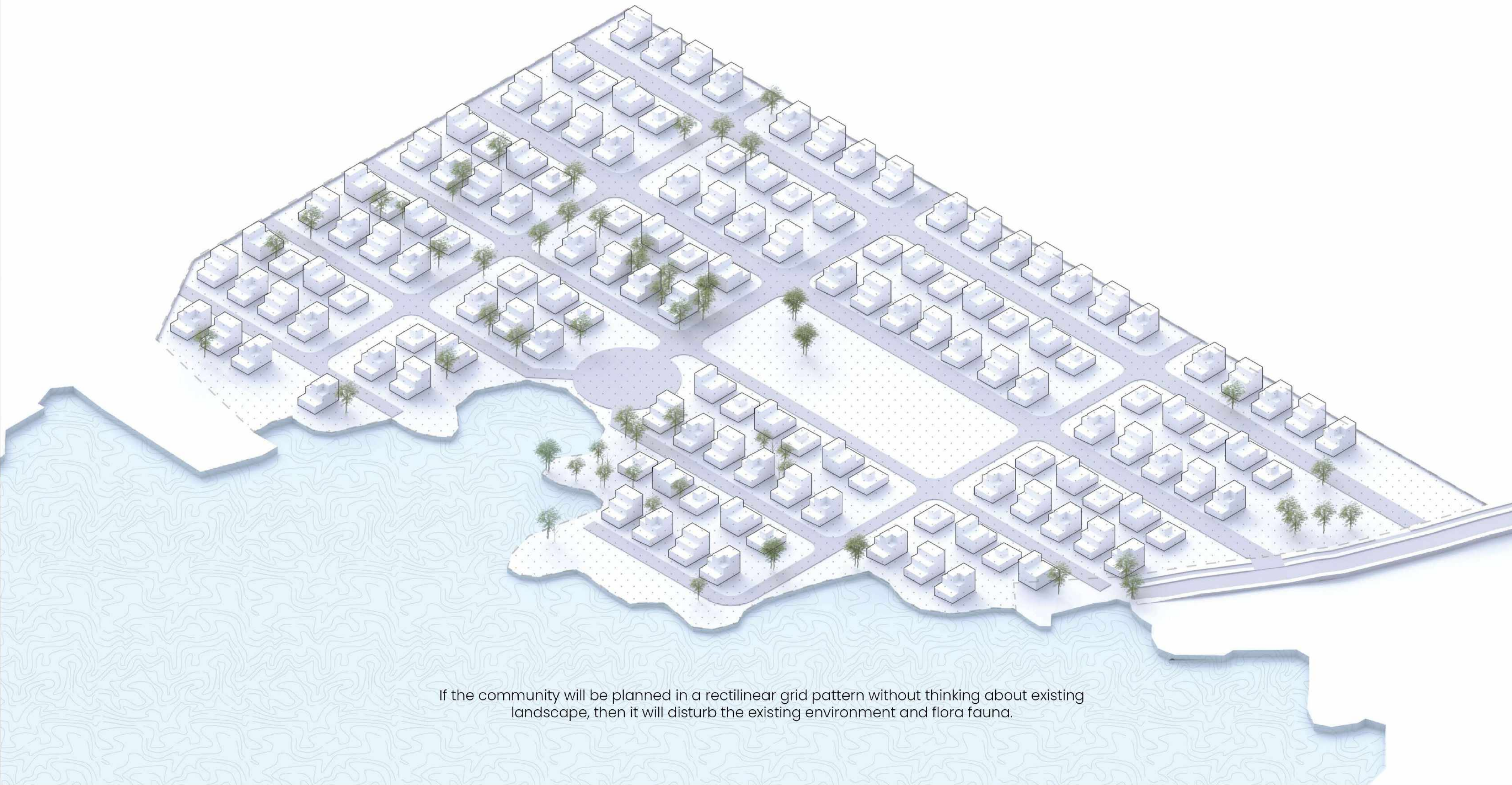




Population increased, Villages become towns and houses became further isolated from public interactive spaces. Neighborhood spaces transformed into non-flexible areas.

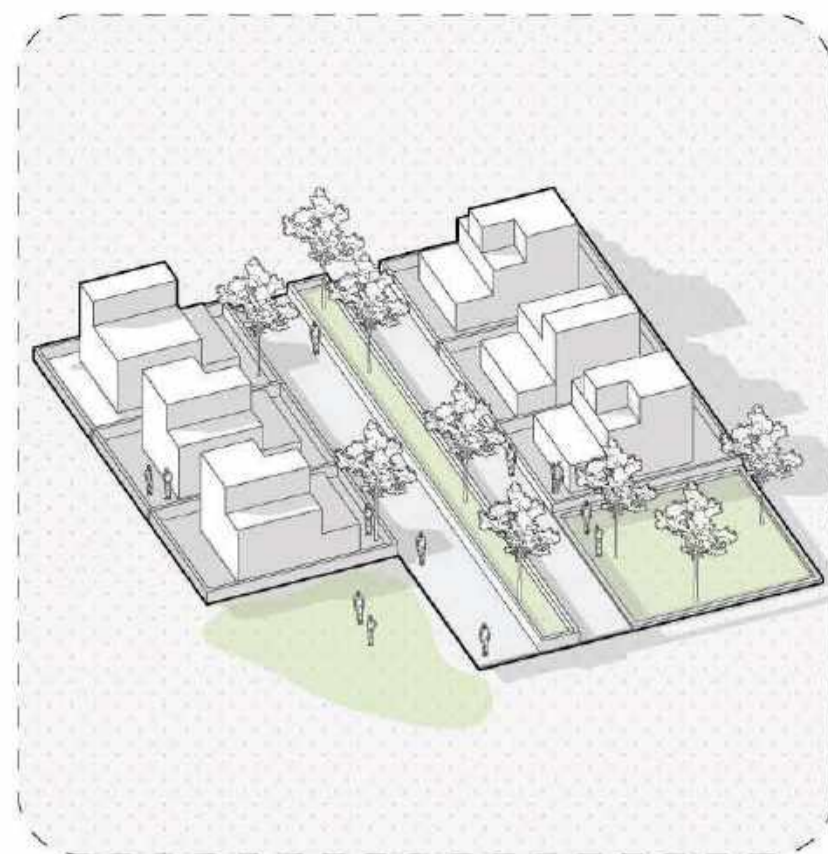
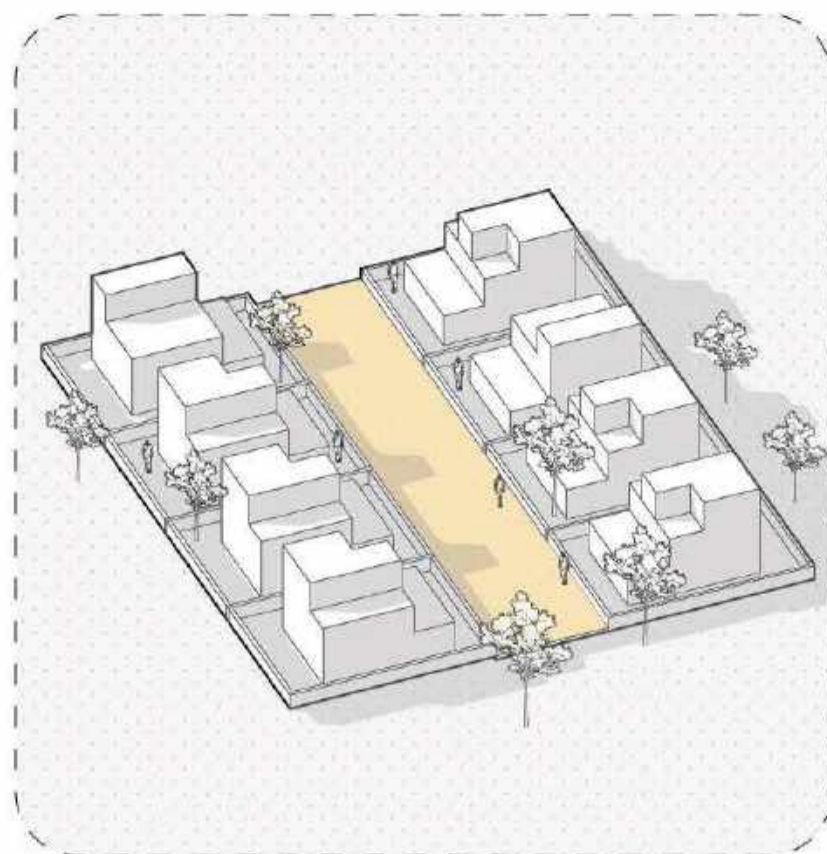


Cities started being planned in a rectilinear grid patterns which results in rigidity. It also Resulted in deforestation.

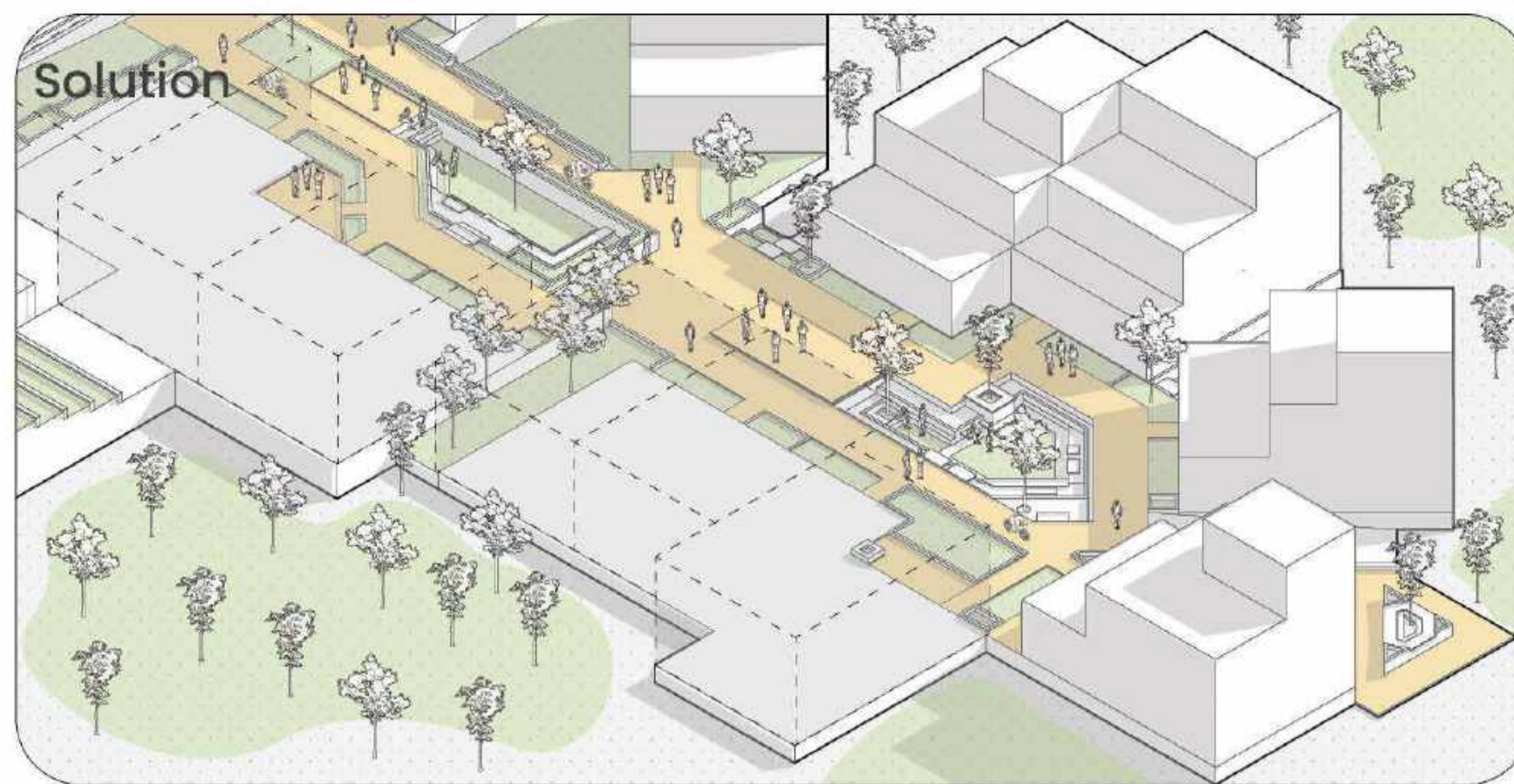


If the community will be planned in a rectilinear grid pattern without thinking about existing landscape, then it will disturb the existing environment and flora fauna.

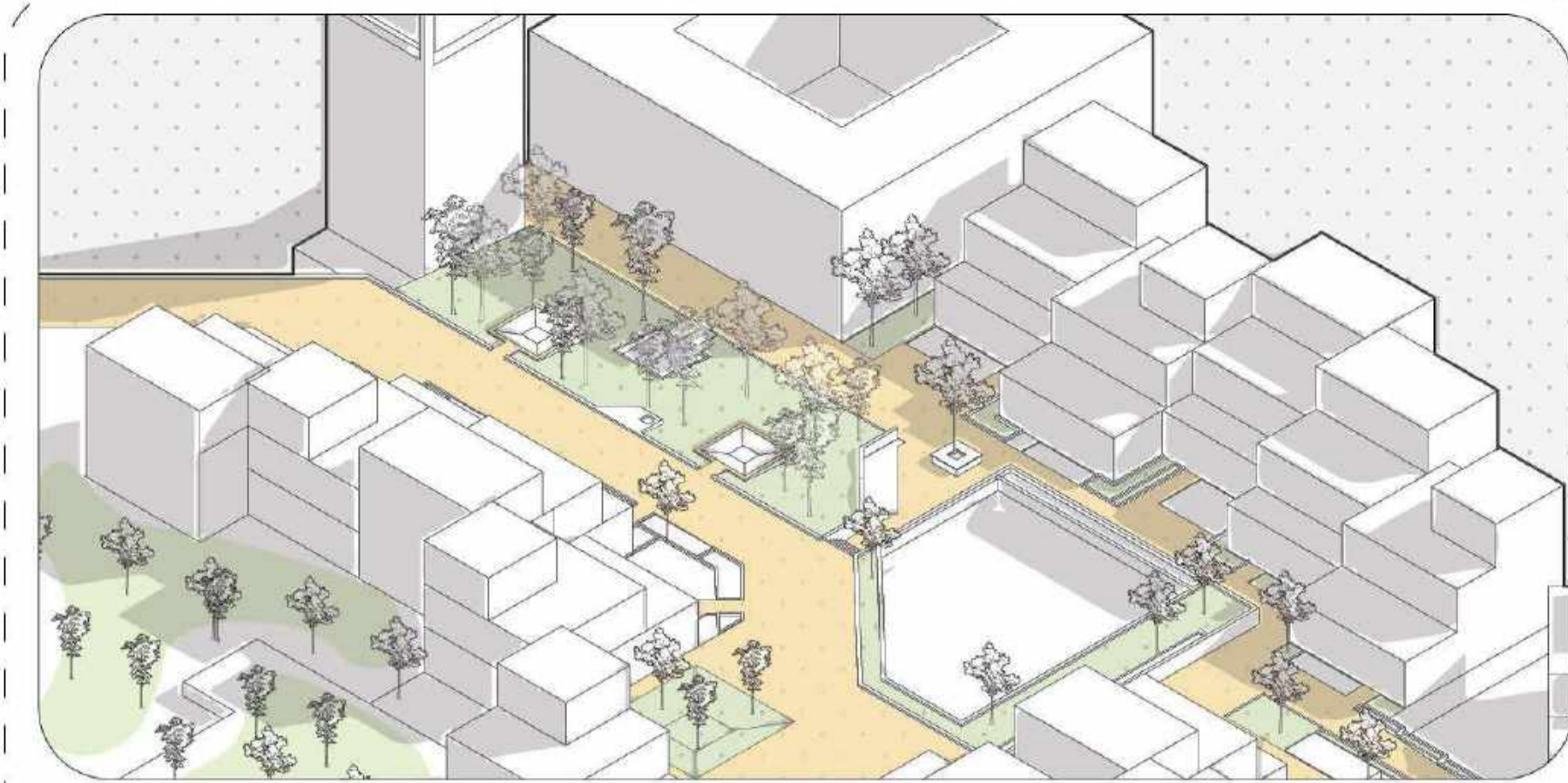




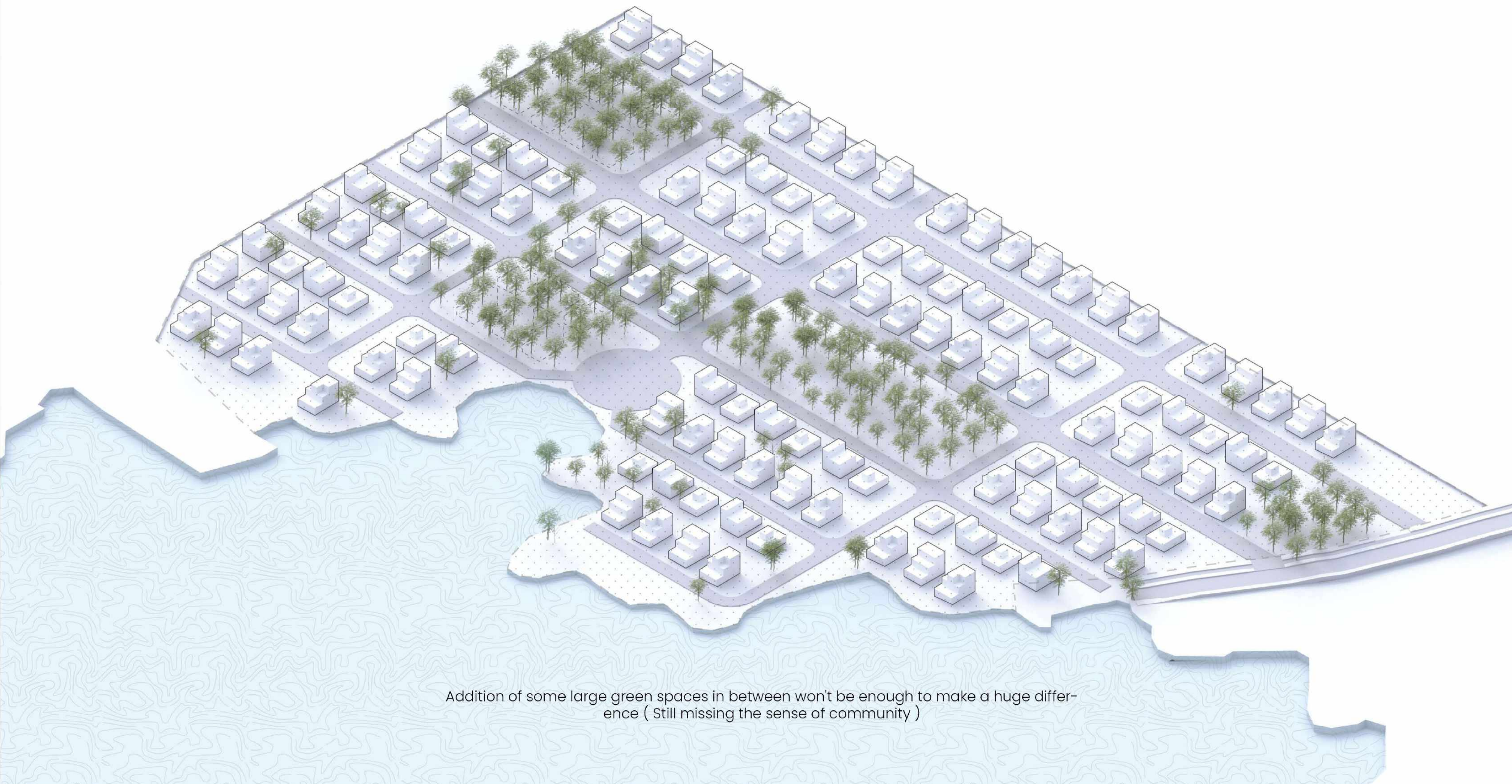
If we add some large green open spaces in between. It Will not make a large difference.(Still missing the sense of community)



Rectilinear and monotonous planning lacks in livable streets, secure and Healthy space. We should provide transition in spaces.



Neighborhood should provide comfort and sense of belonging to occupants.



Addition of some large green spaces in between won't be enough to make a huge difference (Still missing the sense of community)



Social Needs

Passive and Active mode of Interaction are also important for well being of Residence .

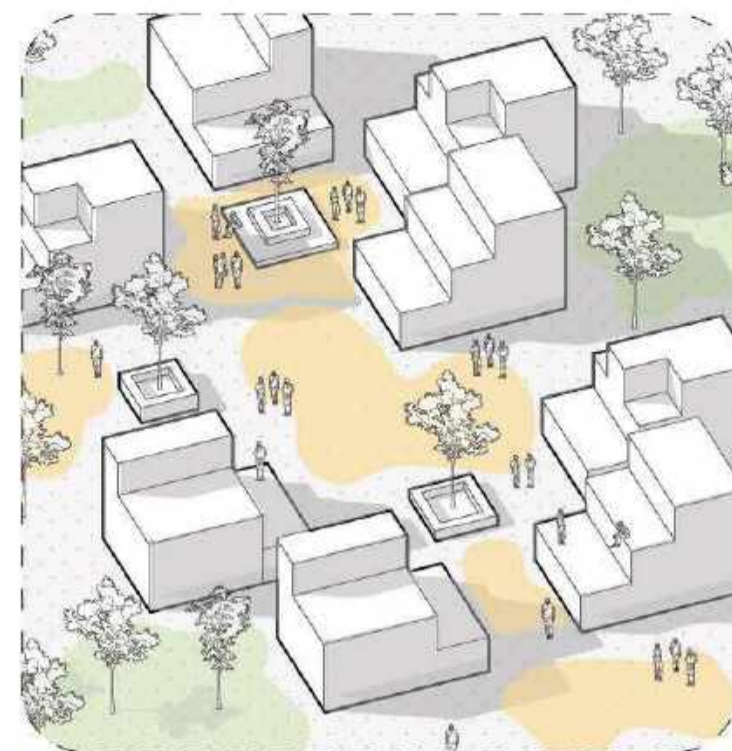
Public and community gathering spaces are important.

Public seating in pedestrian walkway.

Gradual Transition With visual relief and Spacial character .

Hierarchy in spaces .

Spacial Hierarchy - Streets squares and transition areas .



Spacial Hierarchy and relation with Sky and ground.

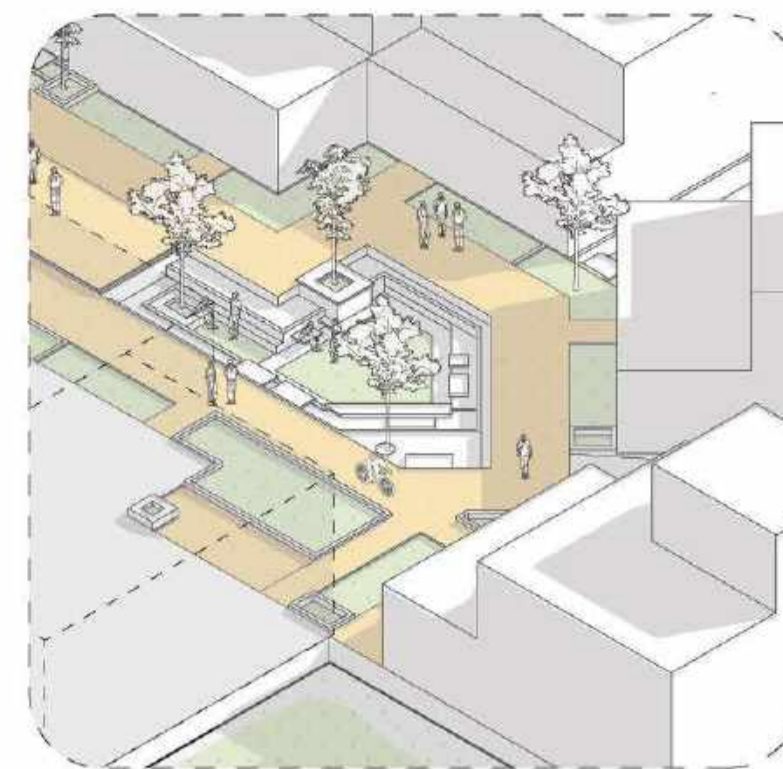
Physiological Needs

Privacy Safety and Territoriality .

Idea of safety is important for Physiological needs

Protection of Children and elders from vehicular movement

Idea of safety is important for Physiological needs



We should provide safe and Enjoyable Pedestrian movements.

Physical Aspects

Climatic comfort of closed and open spaces.

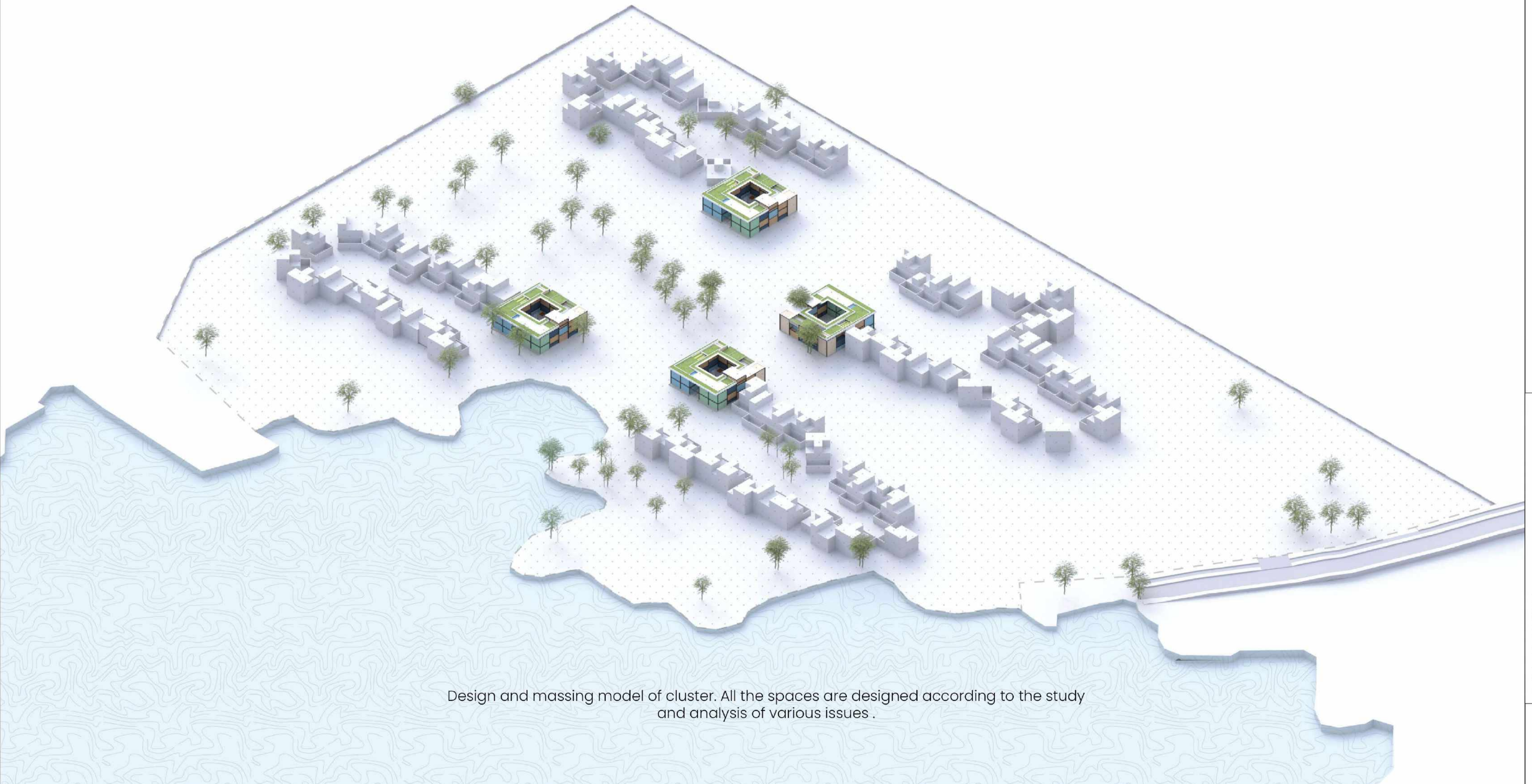
Pleasant Indoor and outdoor living spaces suited to the social condition of inhabitants.

Climate, Heat, Sunshine and wind must be managed depending on the regional condition.

Physical comfort depends on Form, planning, Orientation of Open spaces with respect to sun and prevailing winds .

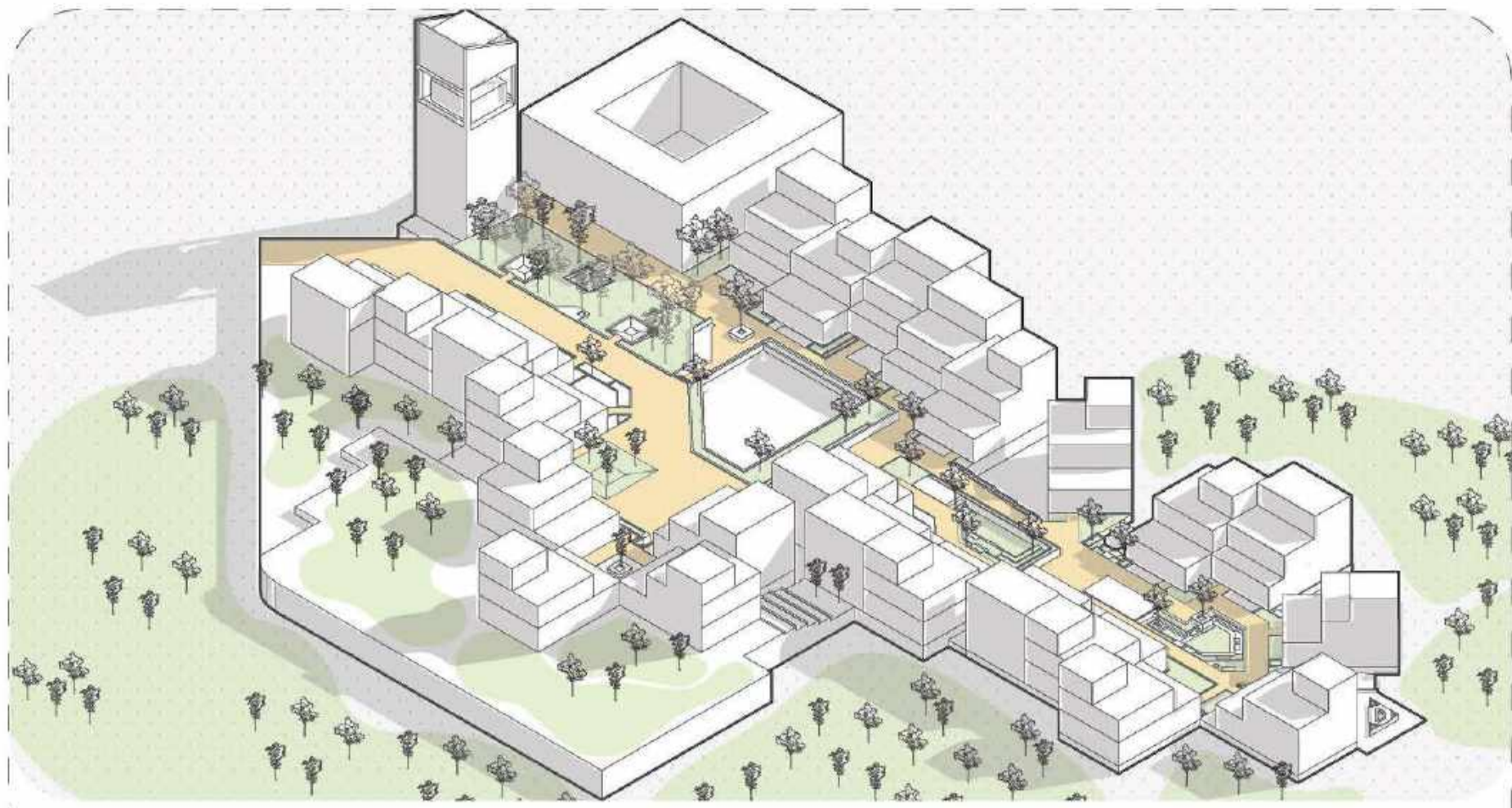


Climatic comfort of closed and open spaces.

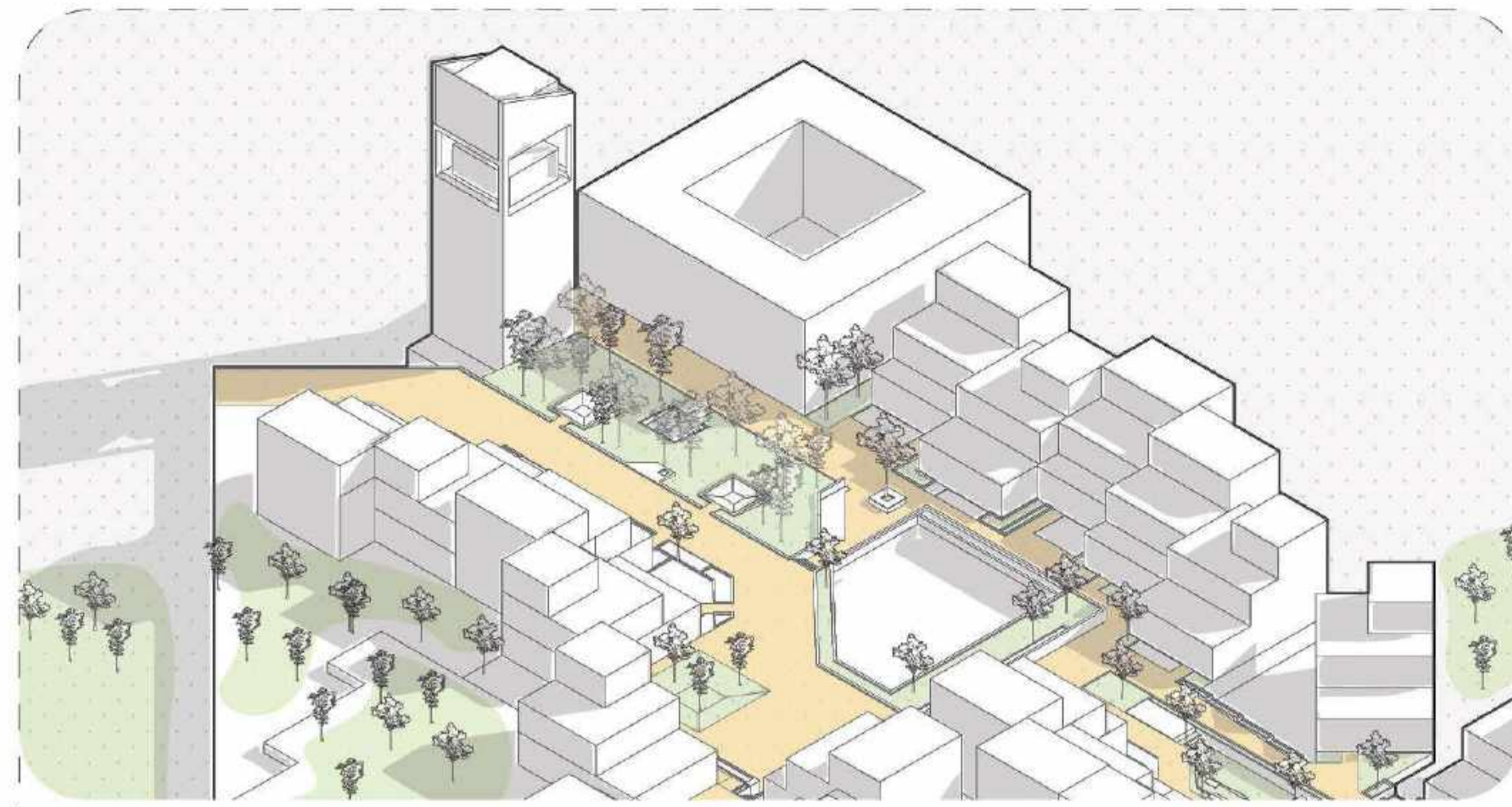


Design and massing model of cluster. All the spaces are designed according to the study and analysis of various issues .

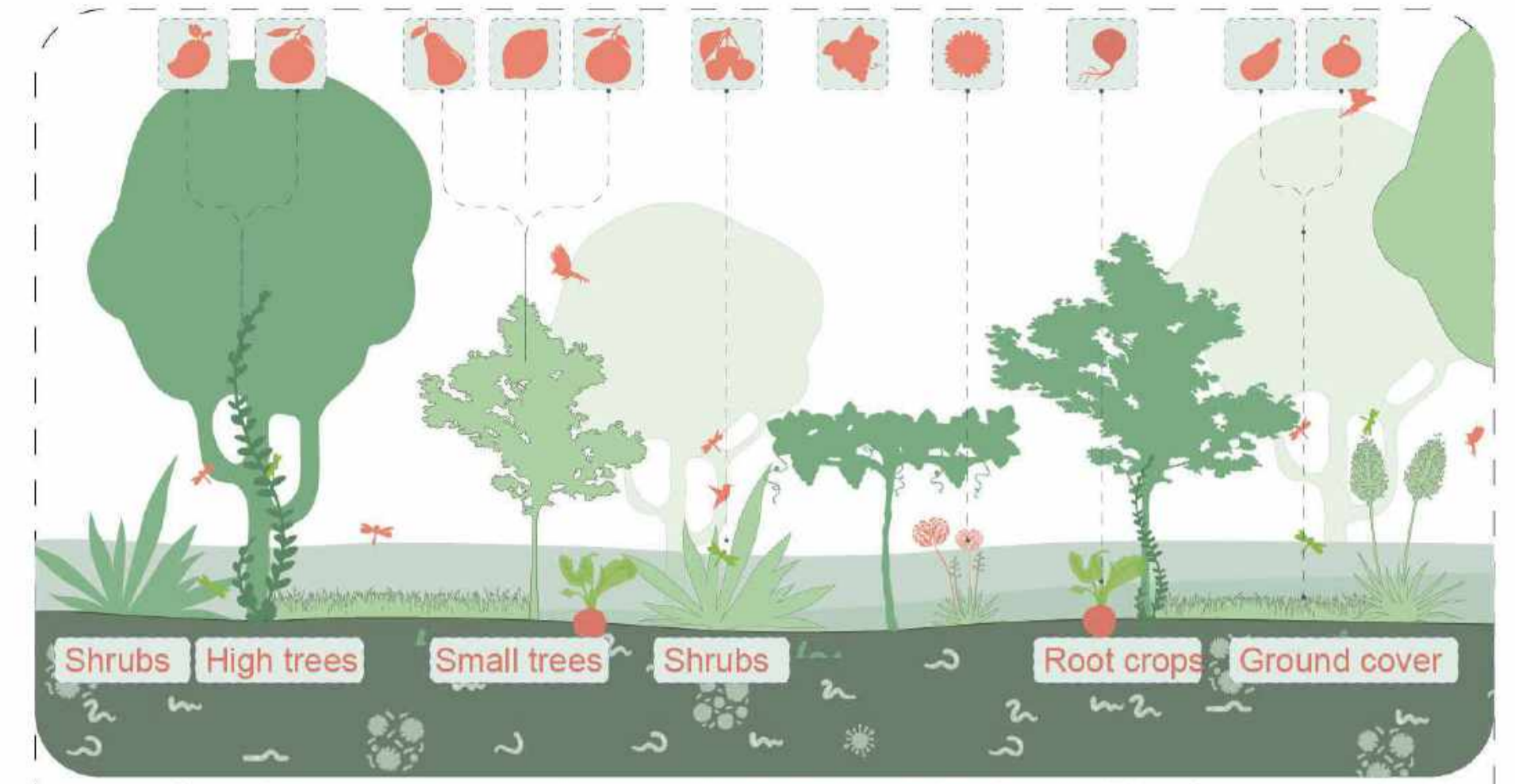




Cluster planning



Integrated green spaces



From farming to permaculture **permanent agriculture**. The farm created is similar to a forest. And the small areas from the forest are kept for farming or cultivation.



Instead of Regular farming practice, we can introduce permaculture in between the clusters.



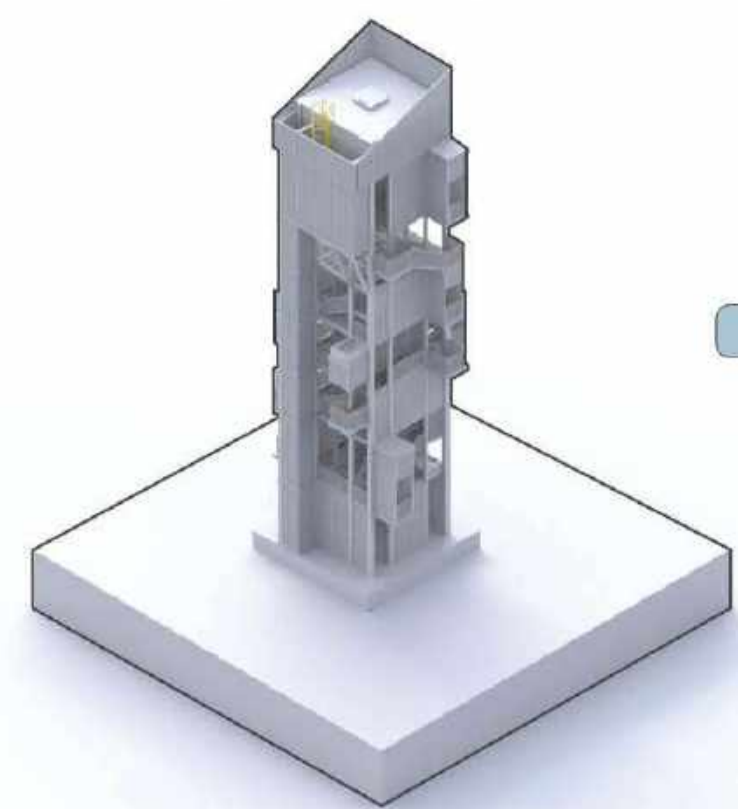
MASSING MODEL

ADP - ECOVILLE - self reliant re-gen community

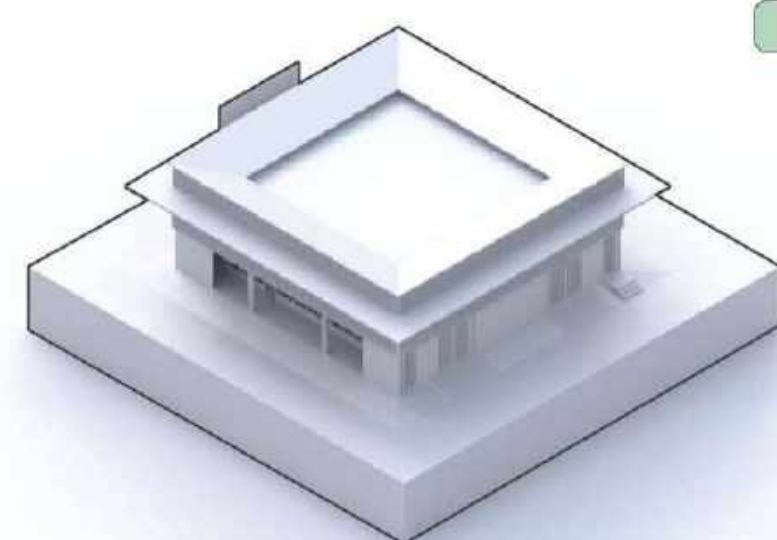
NAME : AHIRE KARAN V - YEAR B. ARCH

AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE

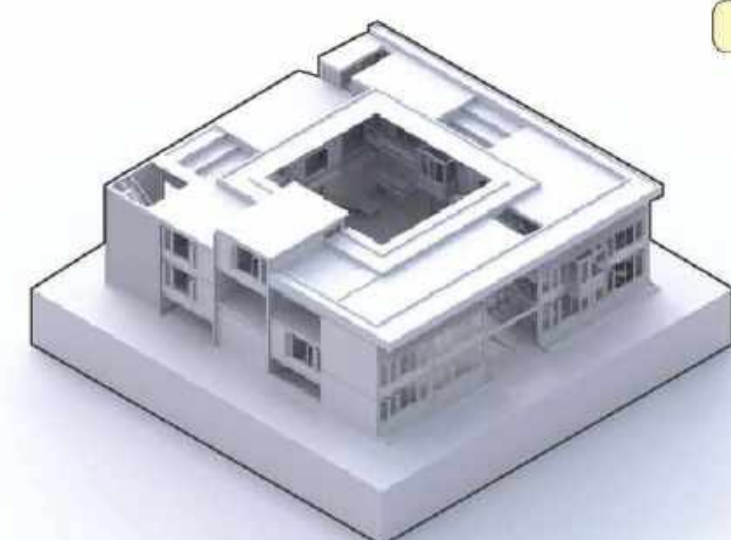




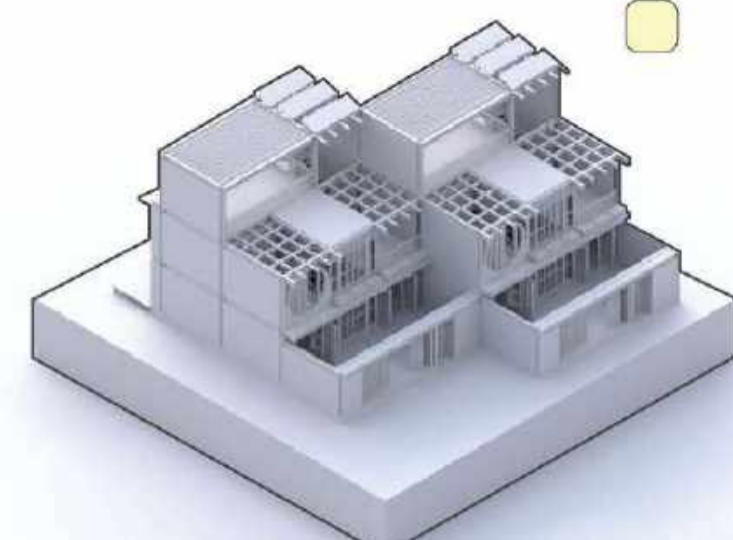
Eco - Tower
O.H.T water tank



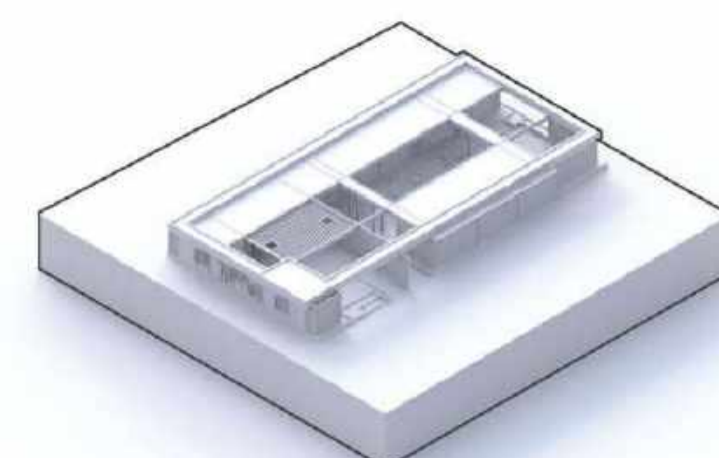
Live Stock



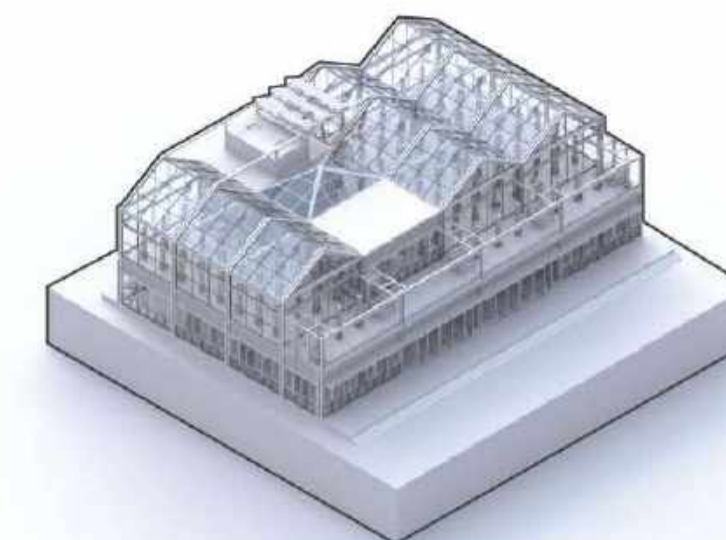
Co-Living unit



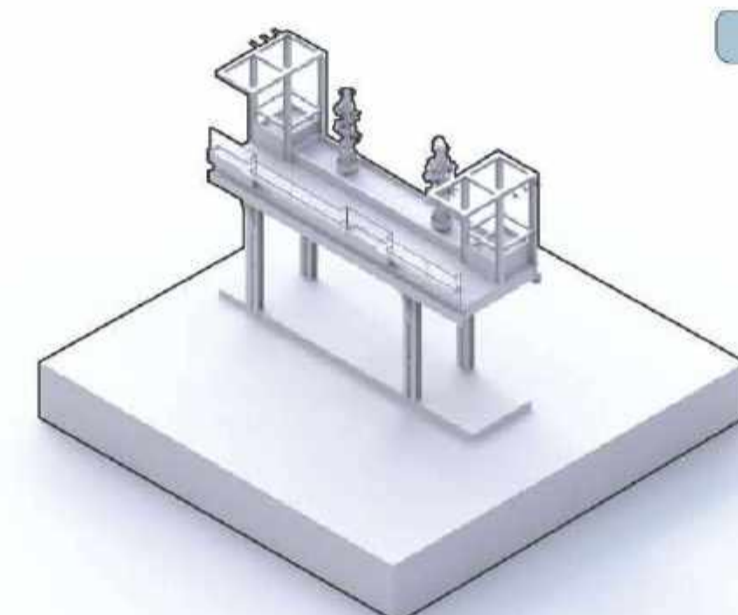
Residential unit



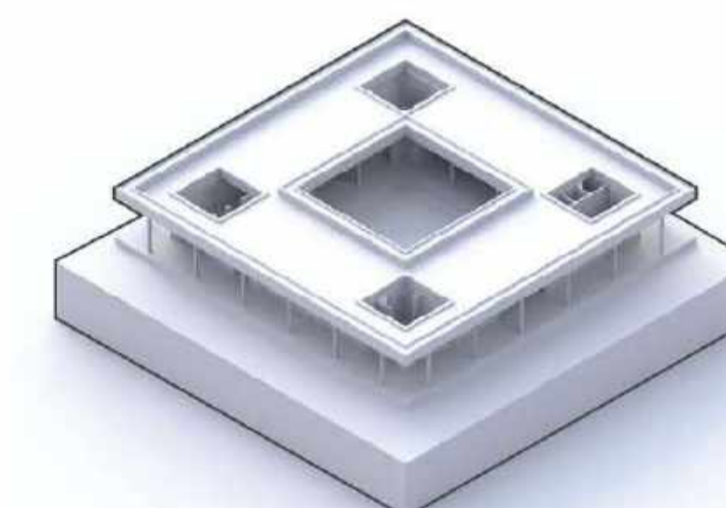
Administration area and
information center



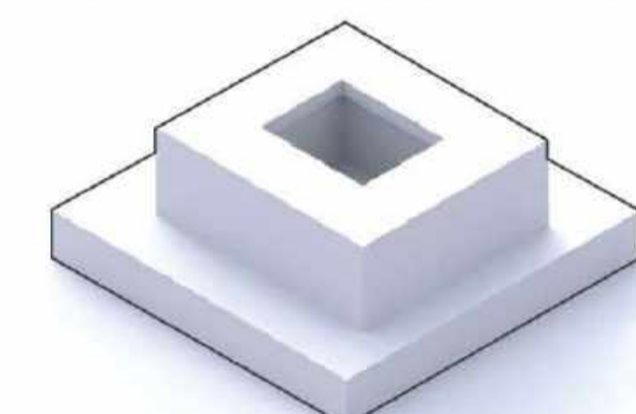
Aeroponics -
Aquaponics Farm



Eco - Bridge



PRIMARY HEALTHCARE
CENTER



DAY CARE CENTER AND
PRE SCHOOL



- Public zone
- Residential zone
- Food supplies
- Community spaces
- Permacultrue and seasonal gardens.
- Service area

ZONING DIAGRAM

ADP - ECOVILLE - self reliant re-gen community

NAME : AHIRE KARAN V - YEAR B. ARCH

AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE



575

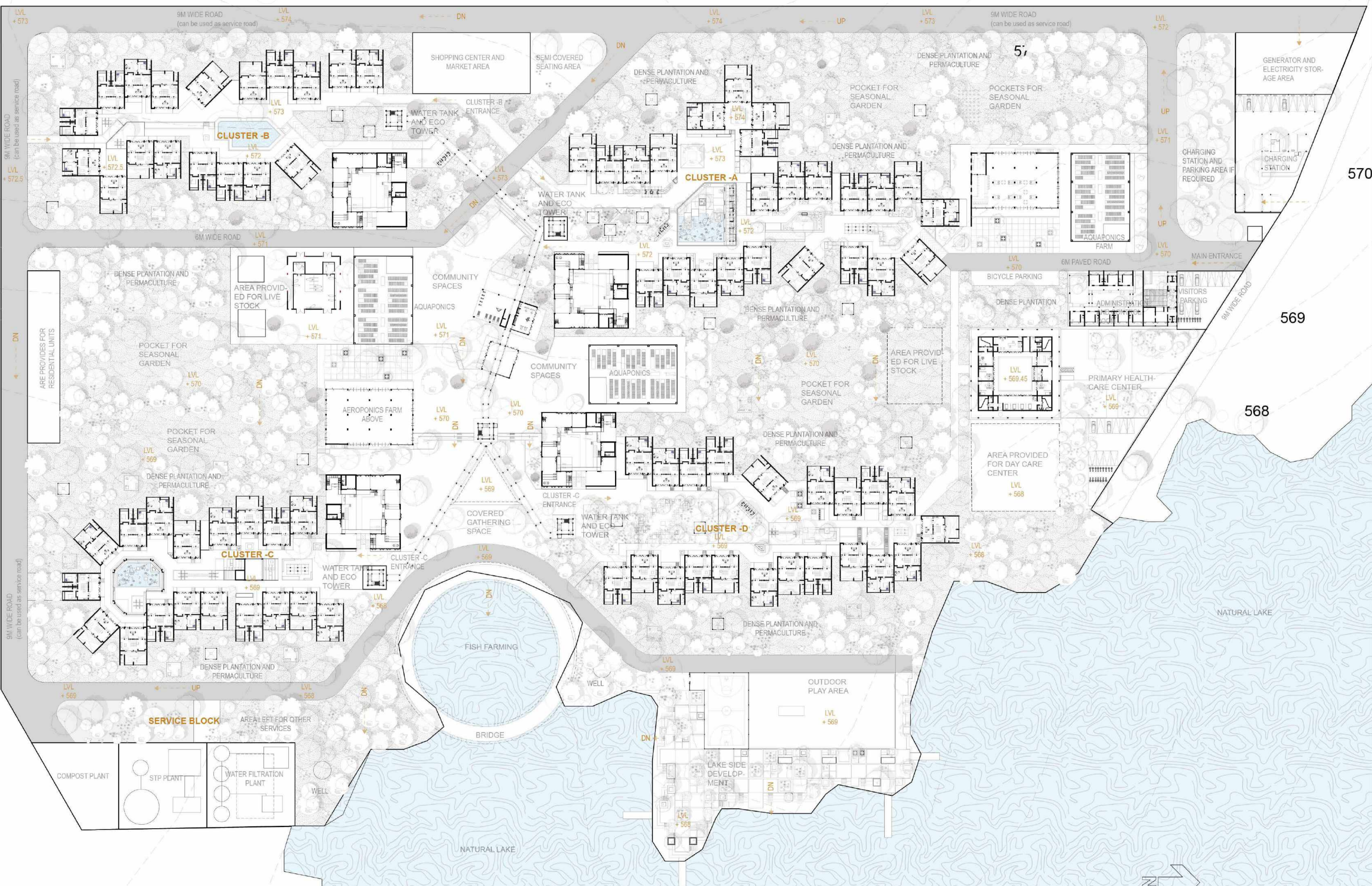
574

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569

568



SITE PLAN
SCALE 1:600

SITE PLAN
SCALE 1:600

ADP - ECOVILLE - self reliant re-gen community
NAME : AHIRE KARAN V - YEAR B. ARCH
AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE

575

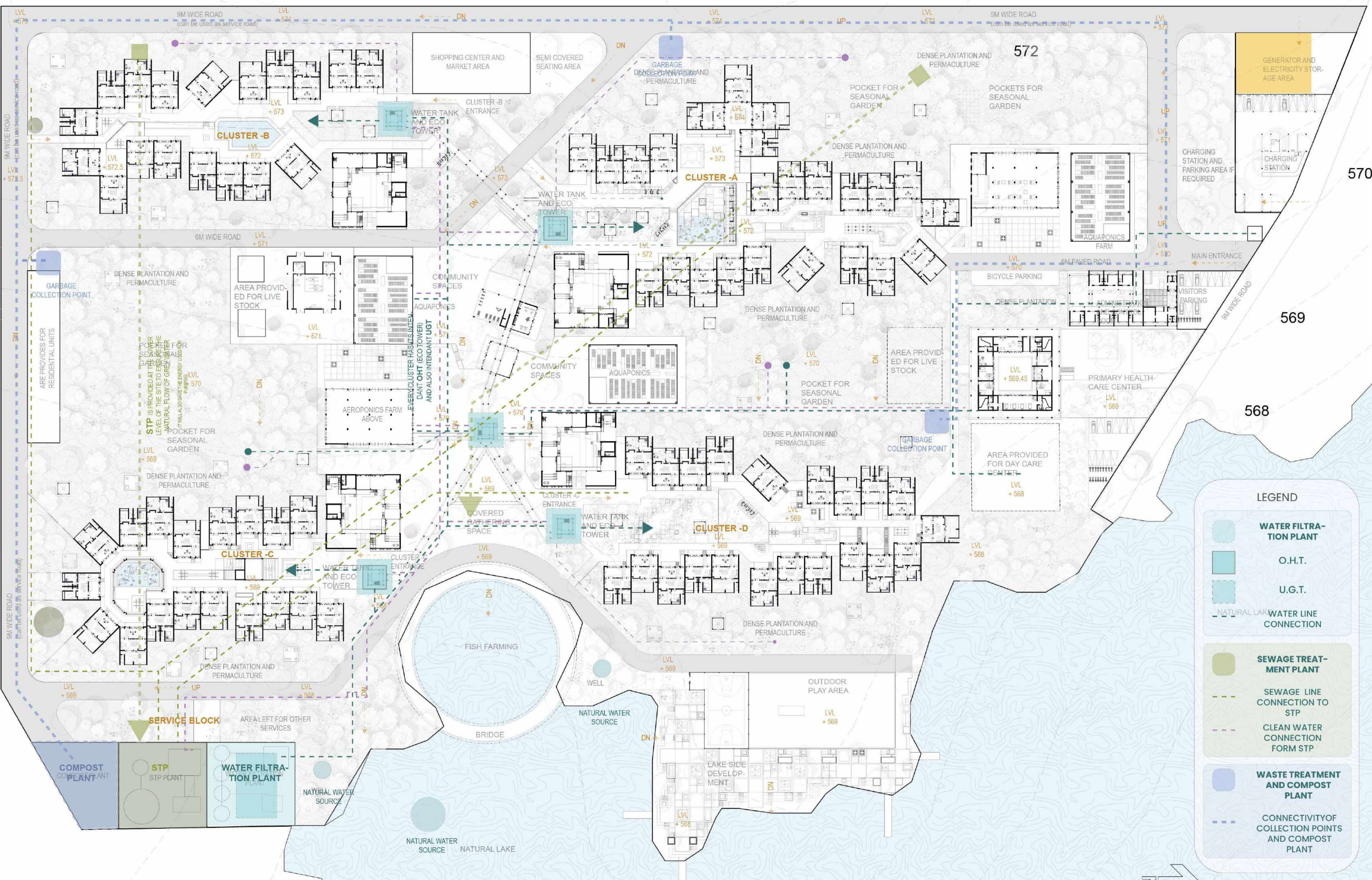
574

573

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568



LEGEND

- WATER FILTRATION PLANT
- O.H.T.
- U.G.T.
- NATURAL LAKE WATER LINE CONNECTION
- SEWAGE TREATMENT PLANT
- SEWAGE LINE CONNECTION TO STP
- CLEAN WATER CONNECTION FORM STP
- WASTE TREATMENT AND COMPOST PLANT
- CONNECTIVITY OF COLLECTION POINTS AND COMPOST PLANT

SITE PLAN
SCALE 1:600

*DOTTED LINES ARE JUST SHOWING THE DIFFERENT CONNECTIONS AND NOT ACTUAL PIPELINES

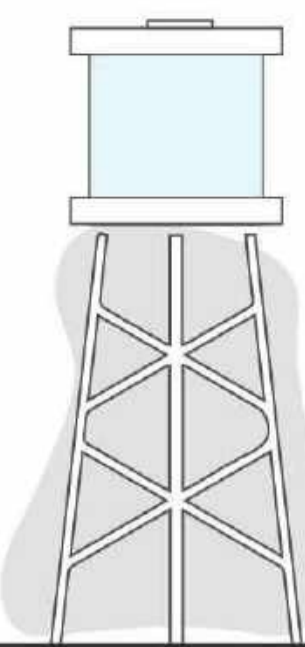
SERVICE LAYOUT

ADP - ECOVILLE - self reliant re-gen community

NAME : AHIRE KARAN V - YEAR B. ARCH

AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE



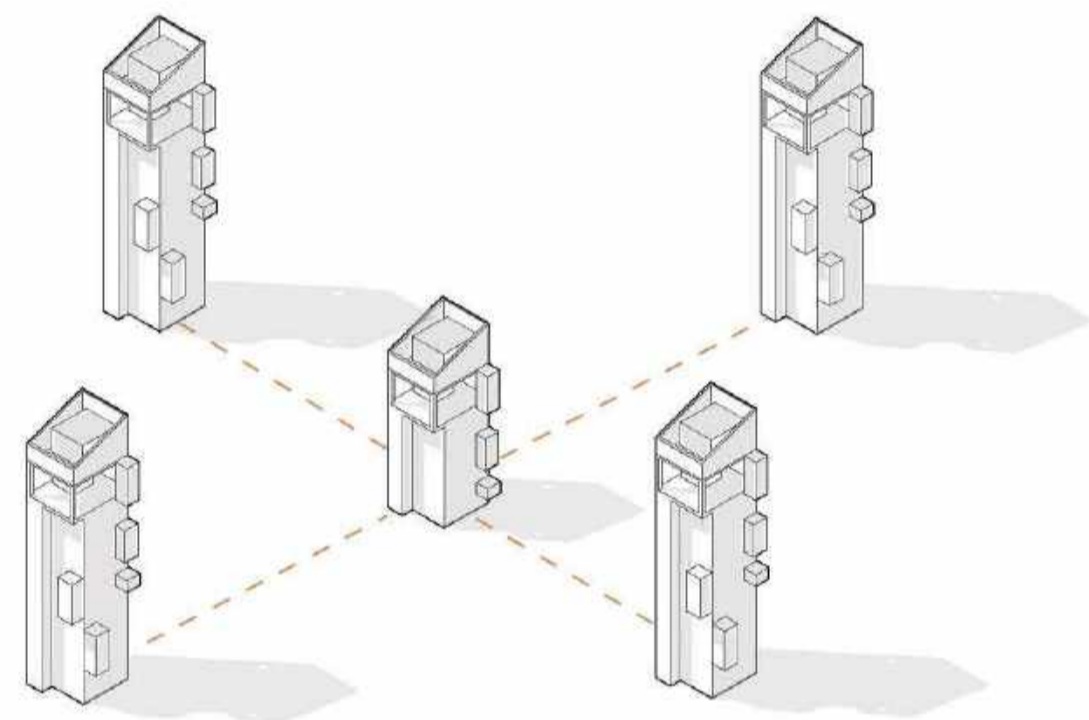
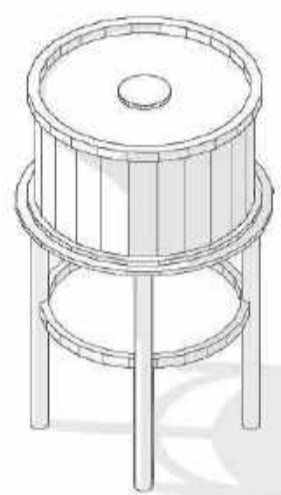


Water tank

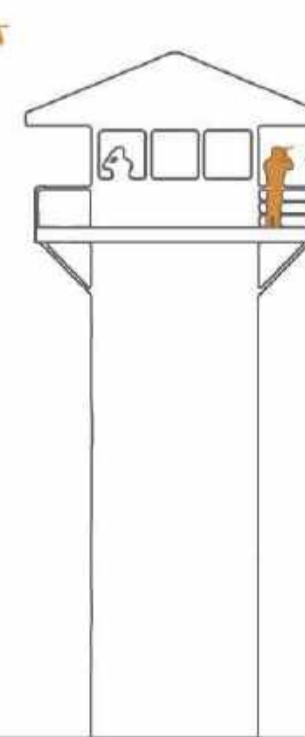


Eco tower

Eco tower is a water tank with community spaces below. Usually spaces below the water tanks are unusable and it becomes the unpleasant element in residential areas.



Instead of providing one big water tank, we can split it into the smaller tanks and we can dedicate it according to the cluster.



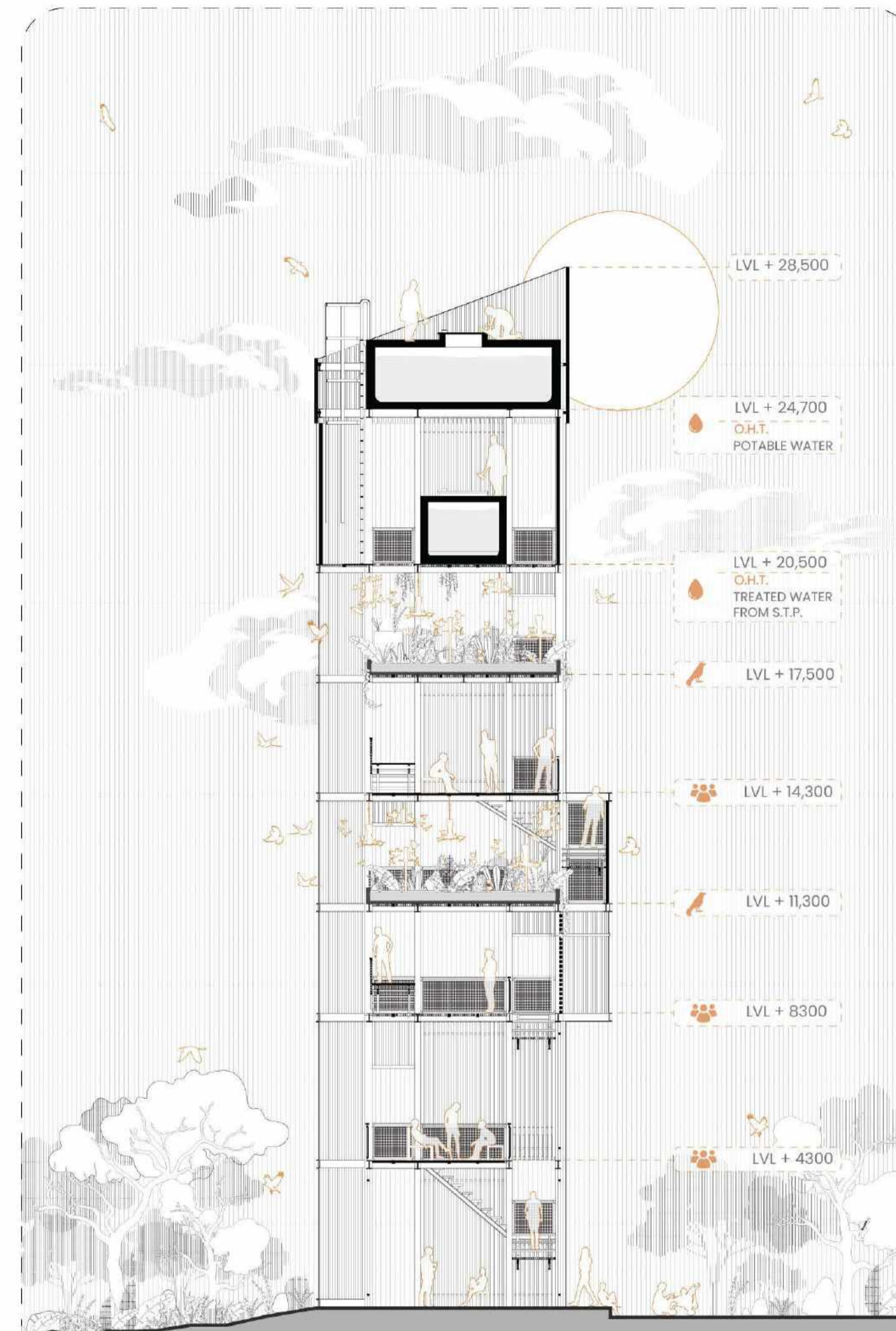
Watchtower



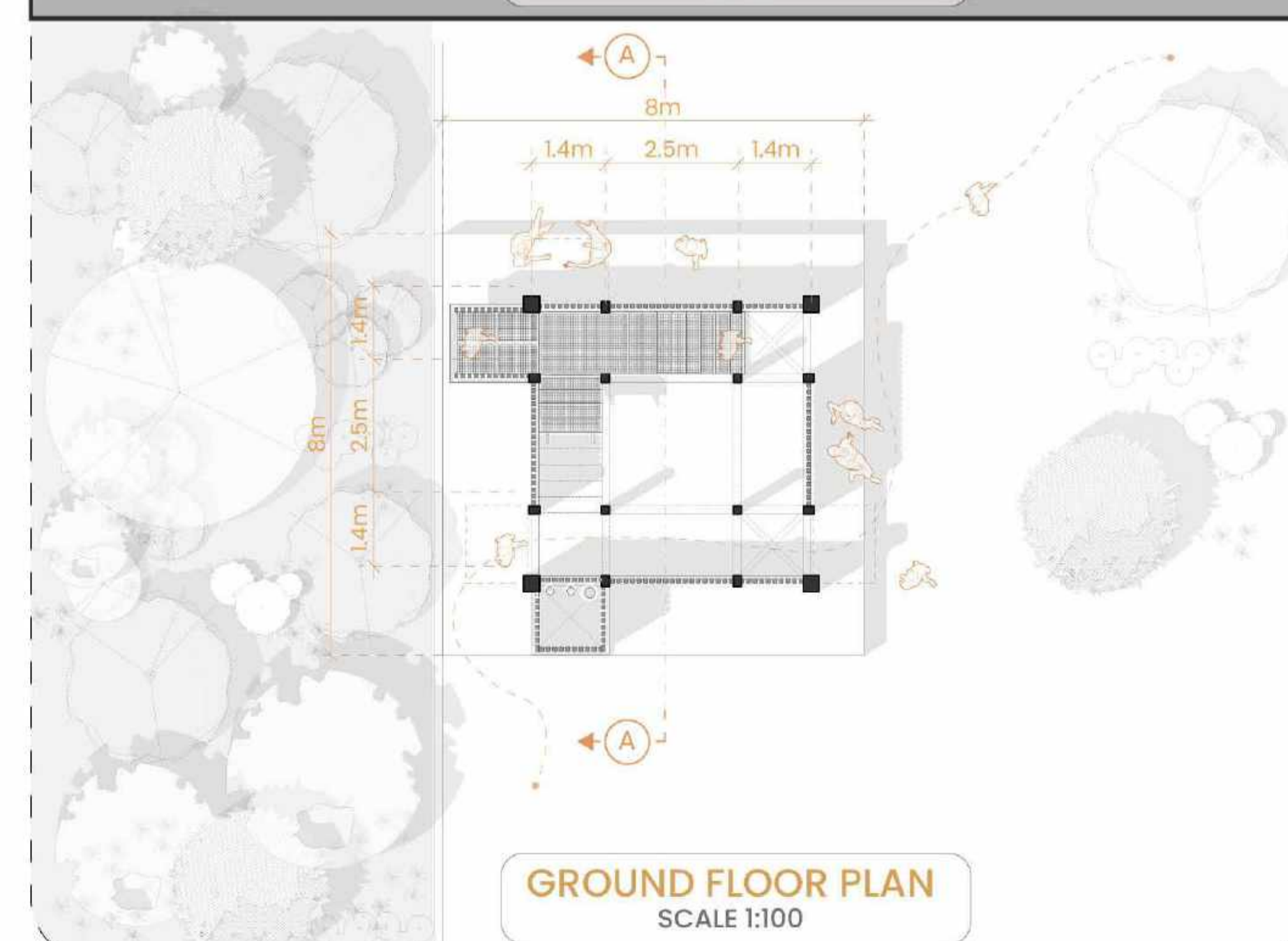
Eco-Tower



EXPLODED ISOMETRIC VIEW



SECTION A-A
SCALE 1:100

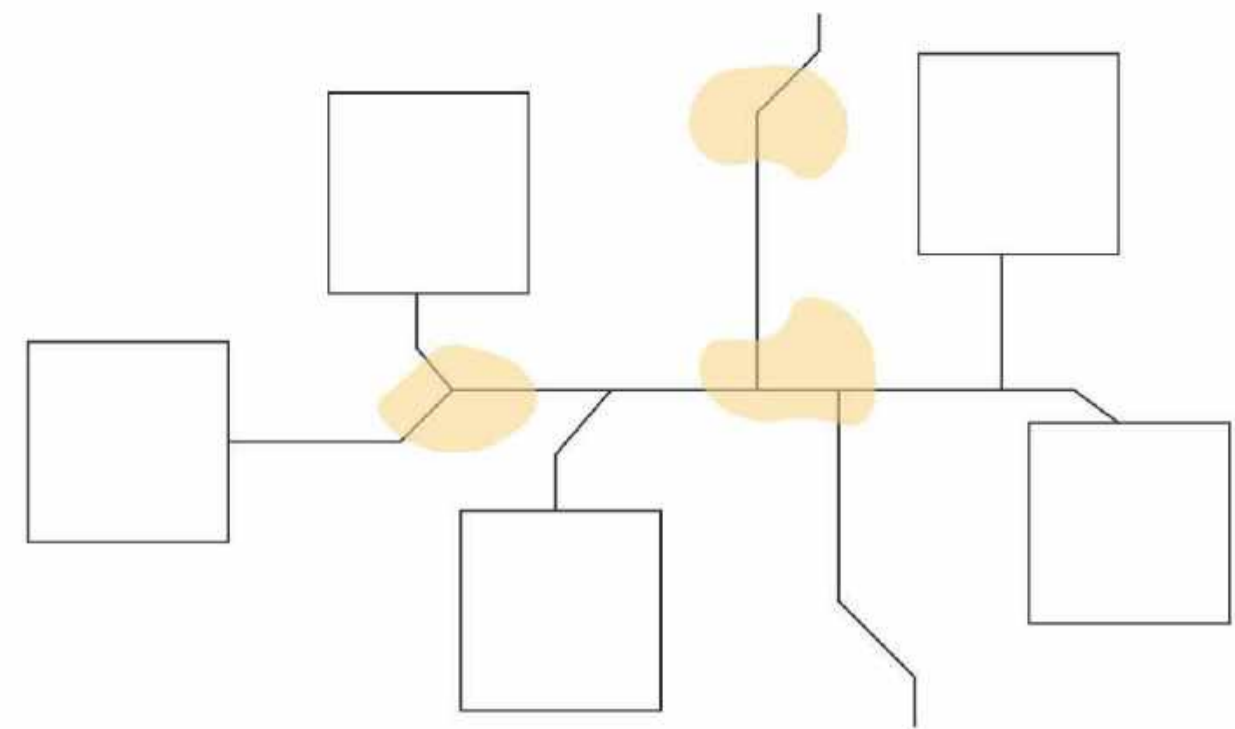


GROUND FLOOR PLAN
SCALE 1:100

ECO-TOWER

ADP - ECOVILLE - self reliant re-gen community
NAME : AHIRE KARAN V - YEAR B. ARCH
AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE





These bridges are provided in a central public area. Connecting all the clusters and Dividing central area into different interactive areas. It's also creating a covered passage between different clusters.

Flexibility



Space above the bridge can be used as an interactive area.

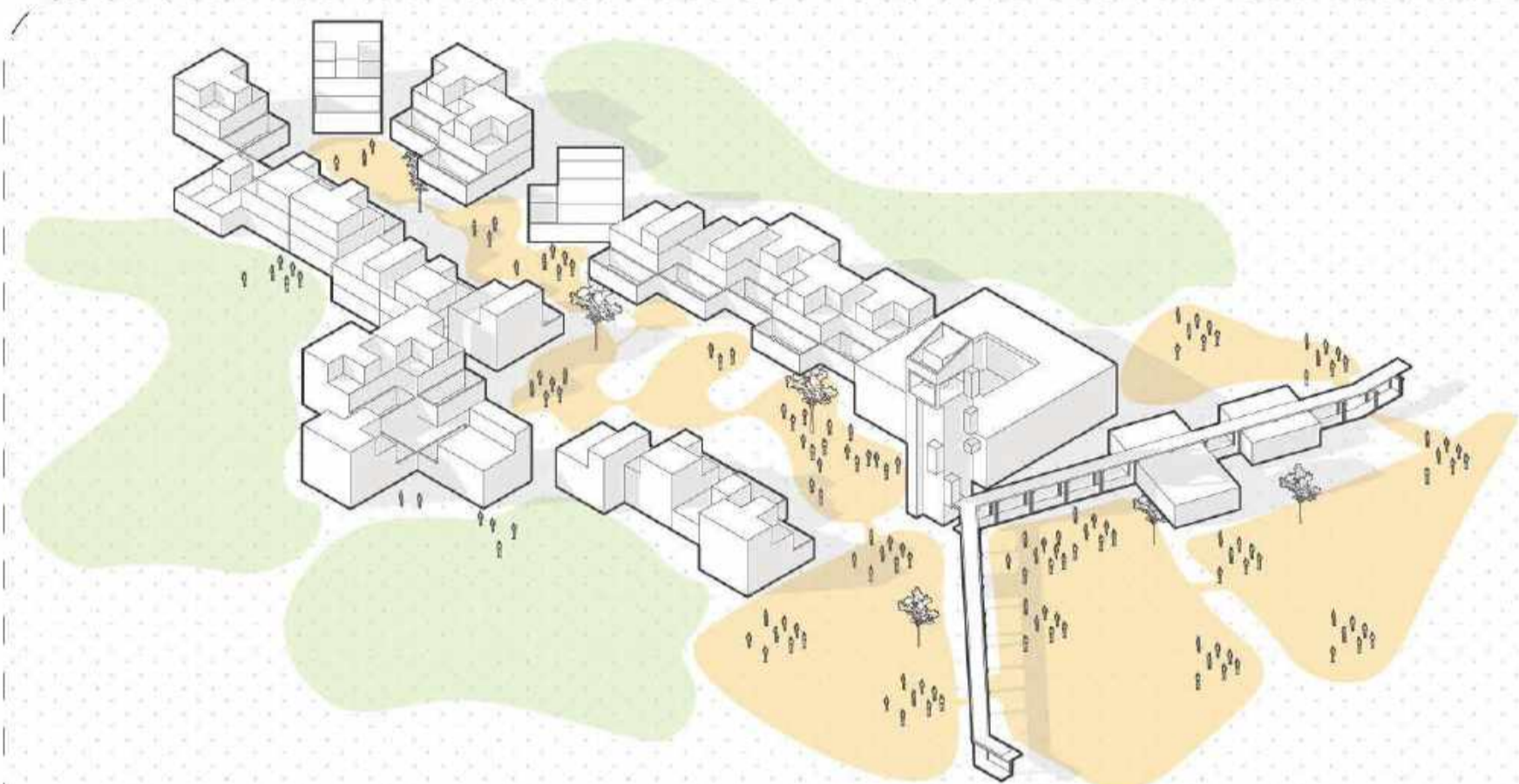


Space above the bridge can be use to generate energy.



Aeroponics Tower

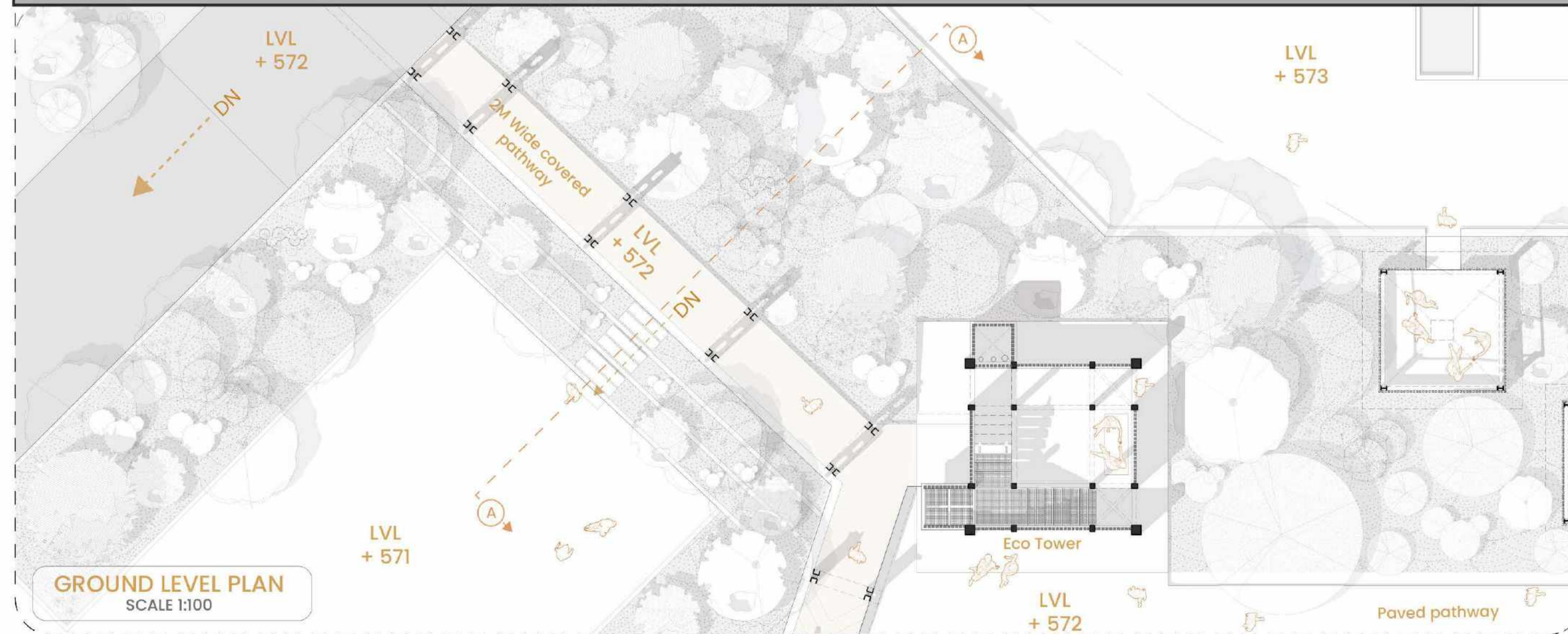
Space can be use to harvest food using advanced aeroponics tower and garden pockets.



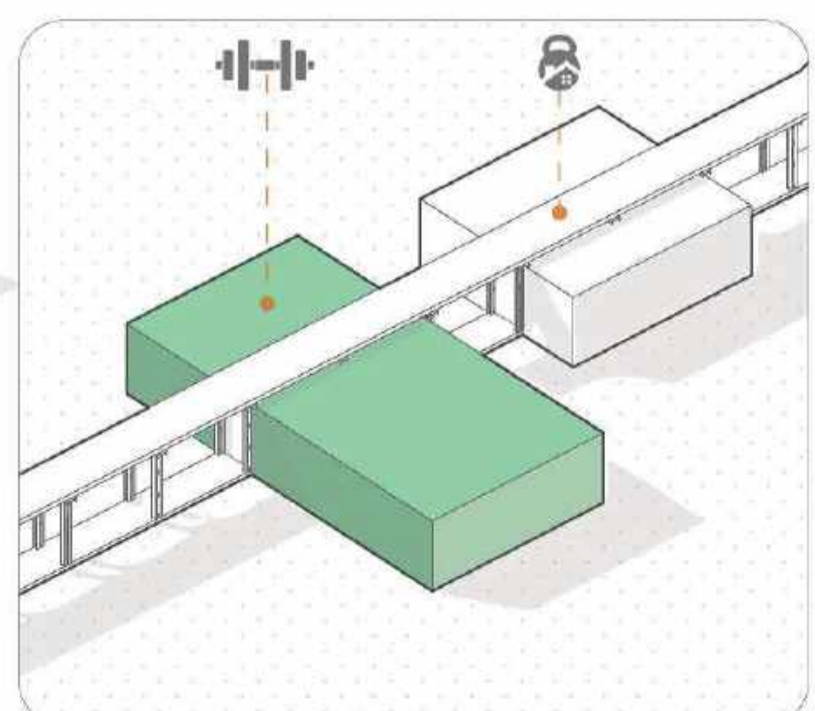
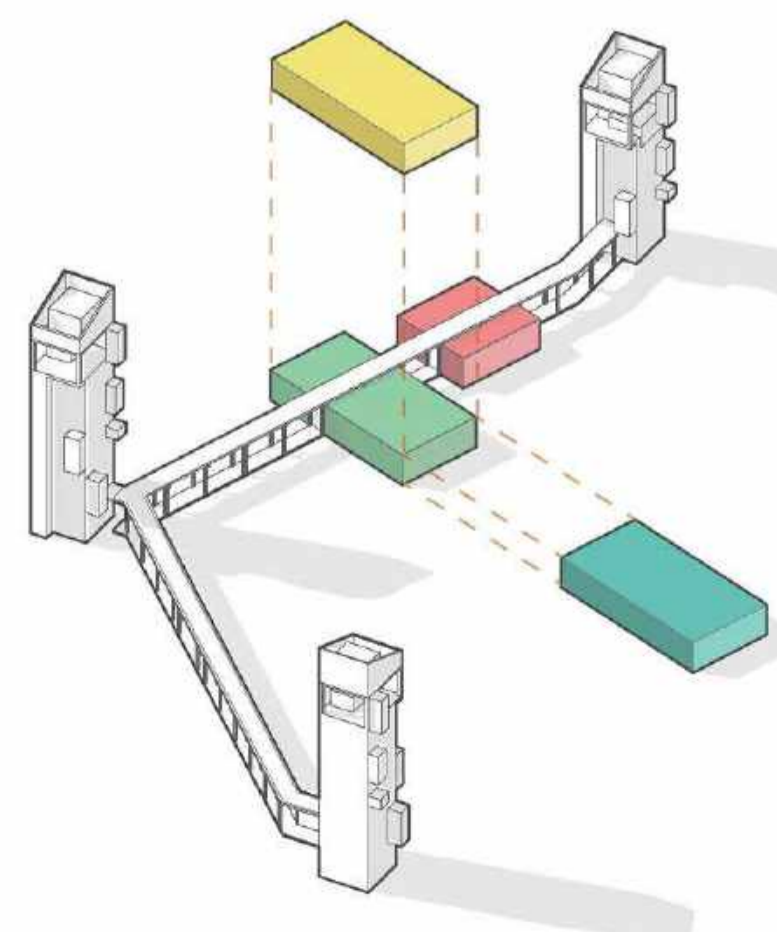
Connectivity and Transition of public places.



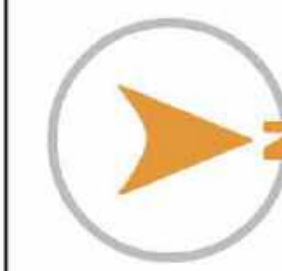
SECTION A-A
SCALE 1:100

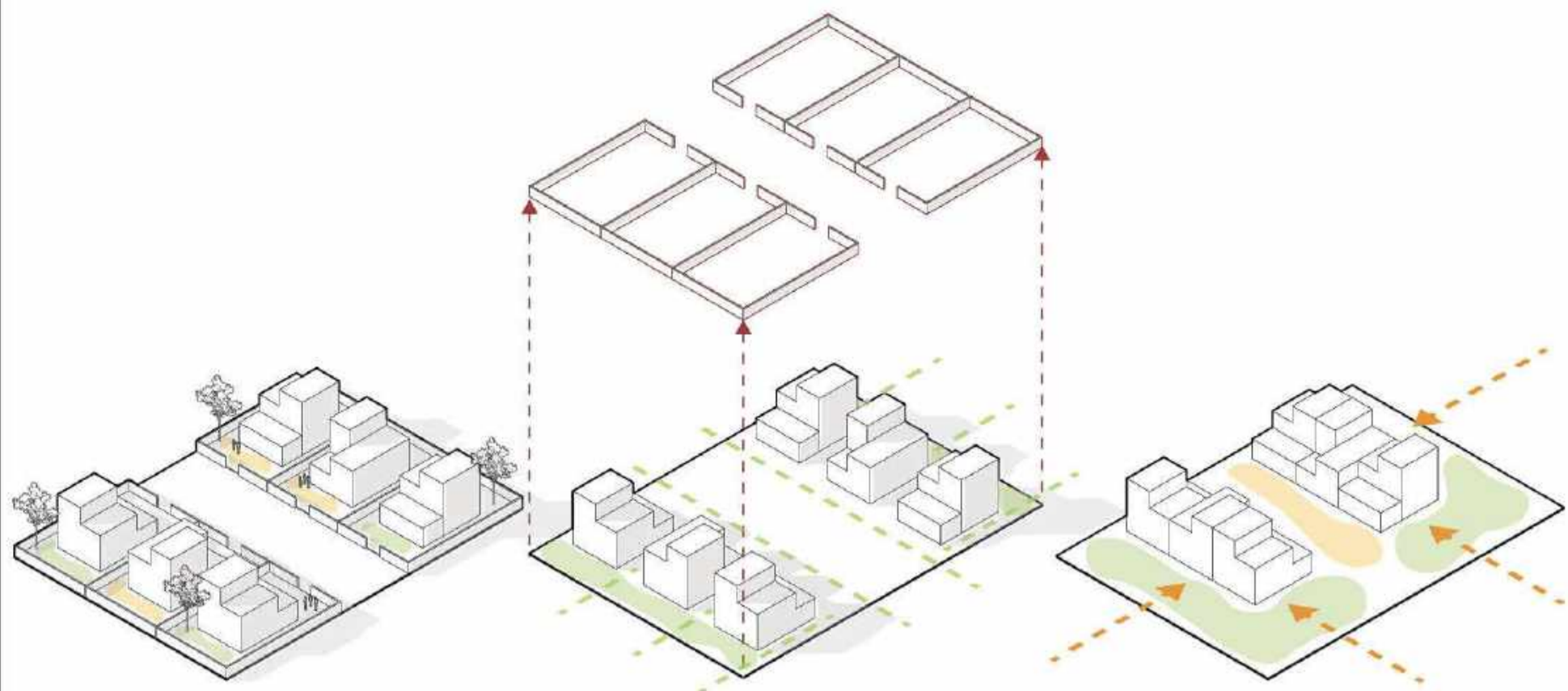
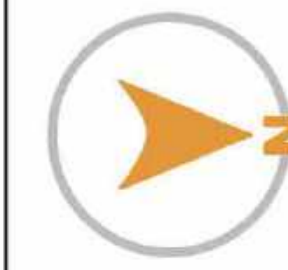


GROUND LEVEL PLAN
SCALE 1:100



Community spaces like gym and clubhouse can be inserted in this bridge.

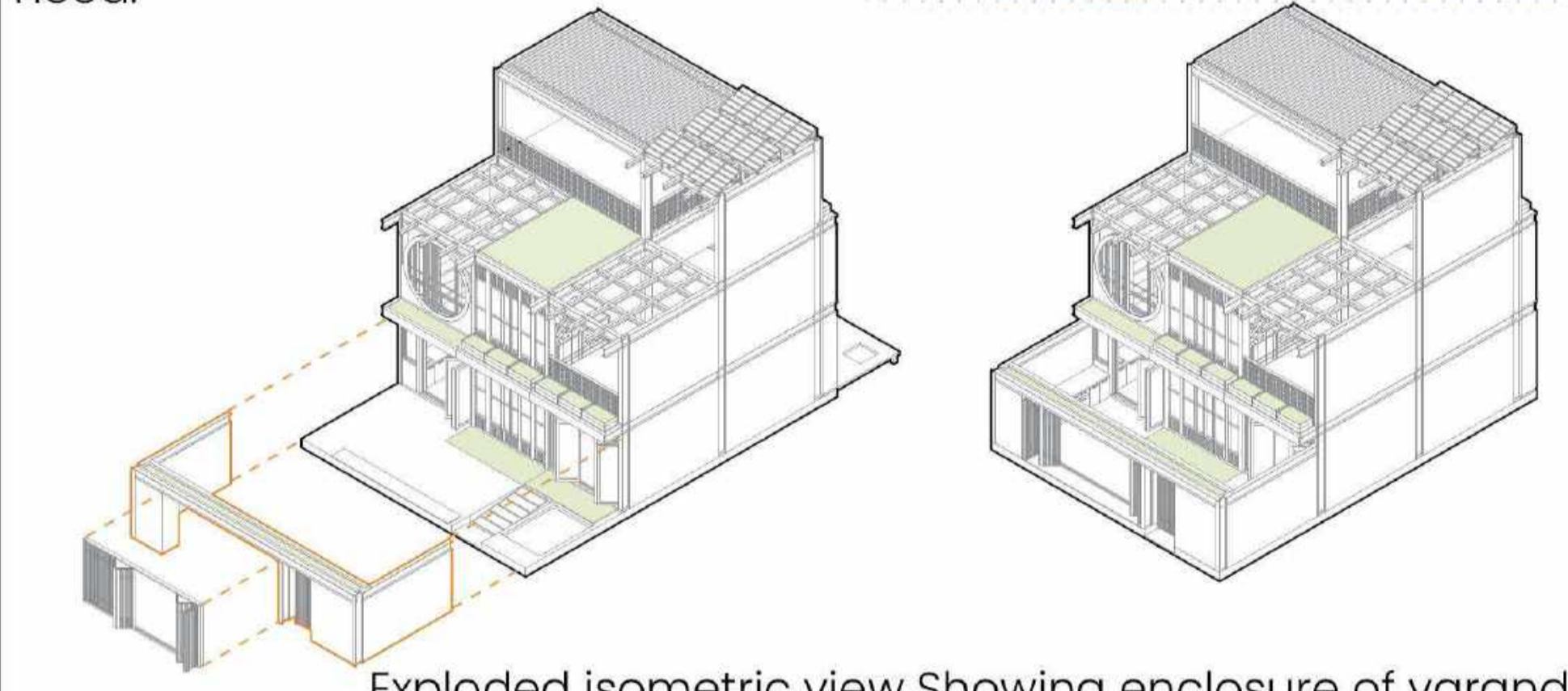
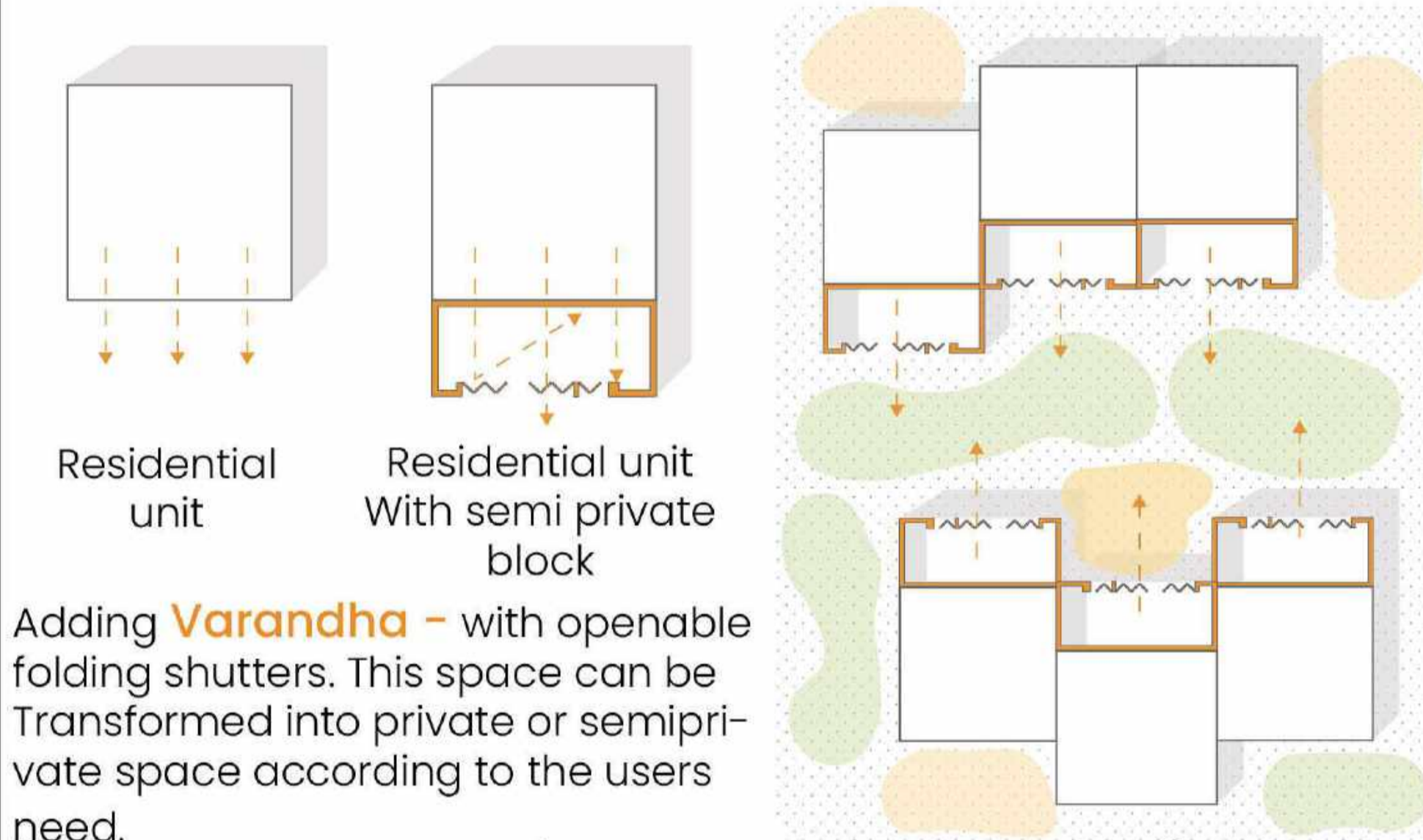




Typical housing Get rid of compound walls Creating open space

Removing compound walls and creating free spaces so that can be used by community or can be used for permaculture.

What about privacy ?



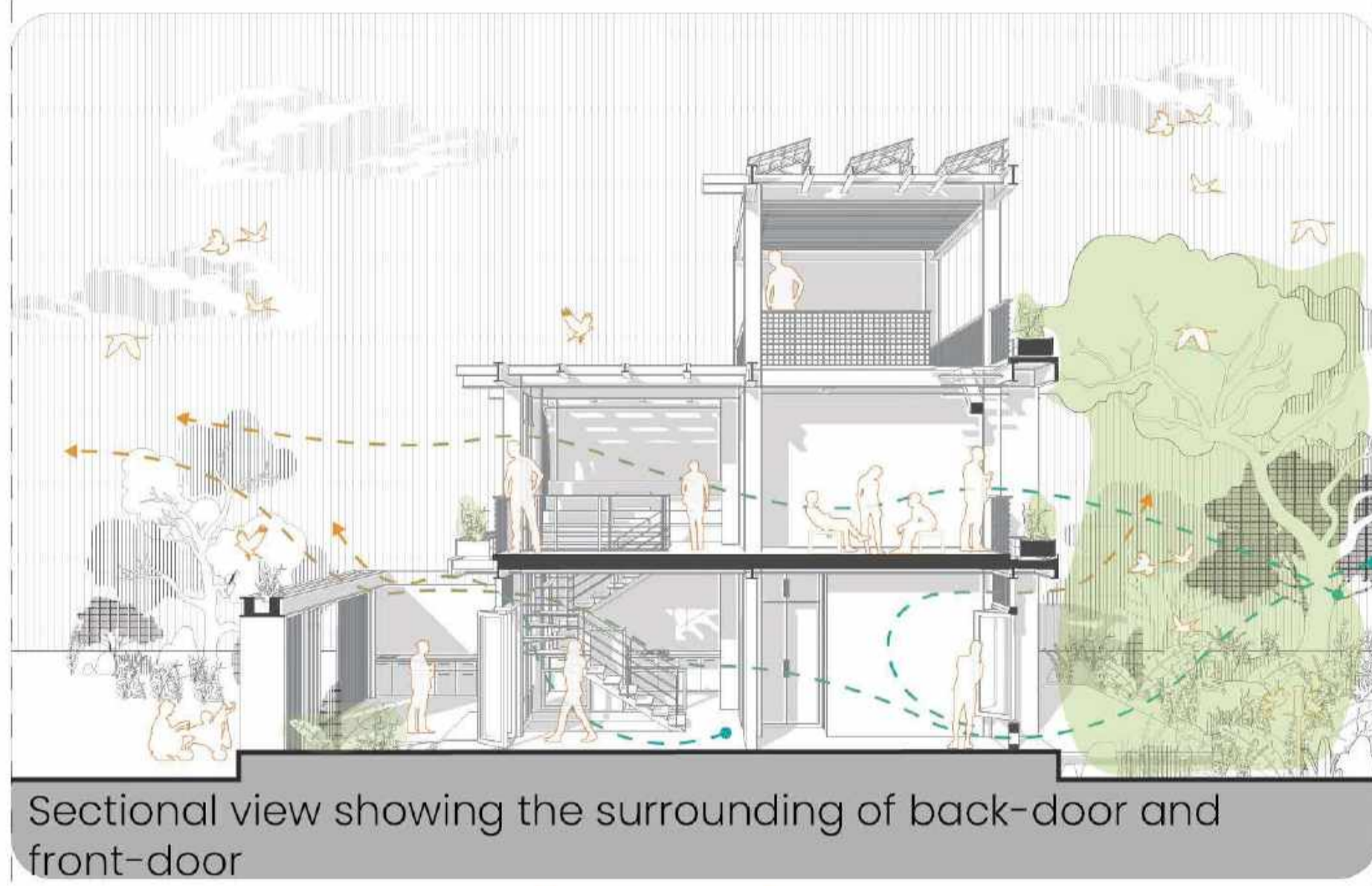
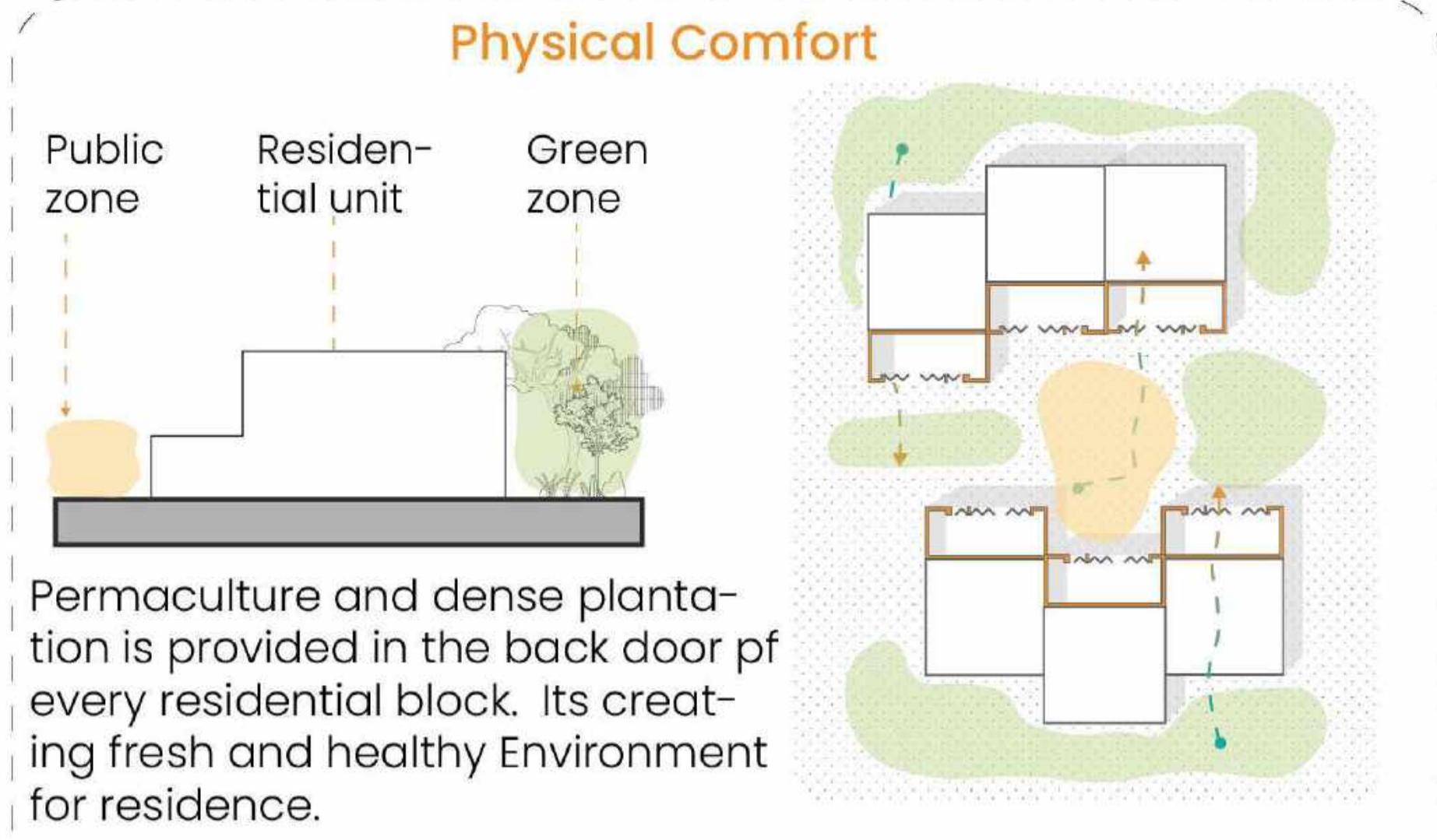
Exploded isometric view Showing enclosure of varandha.



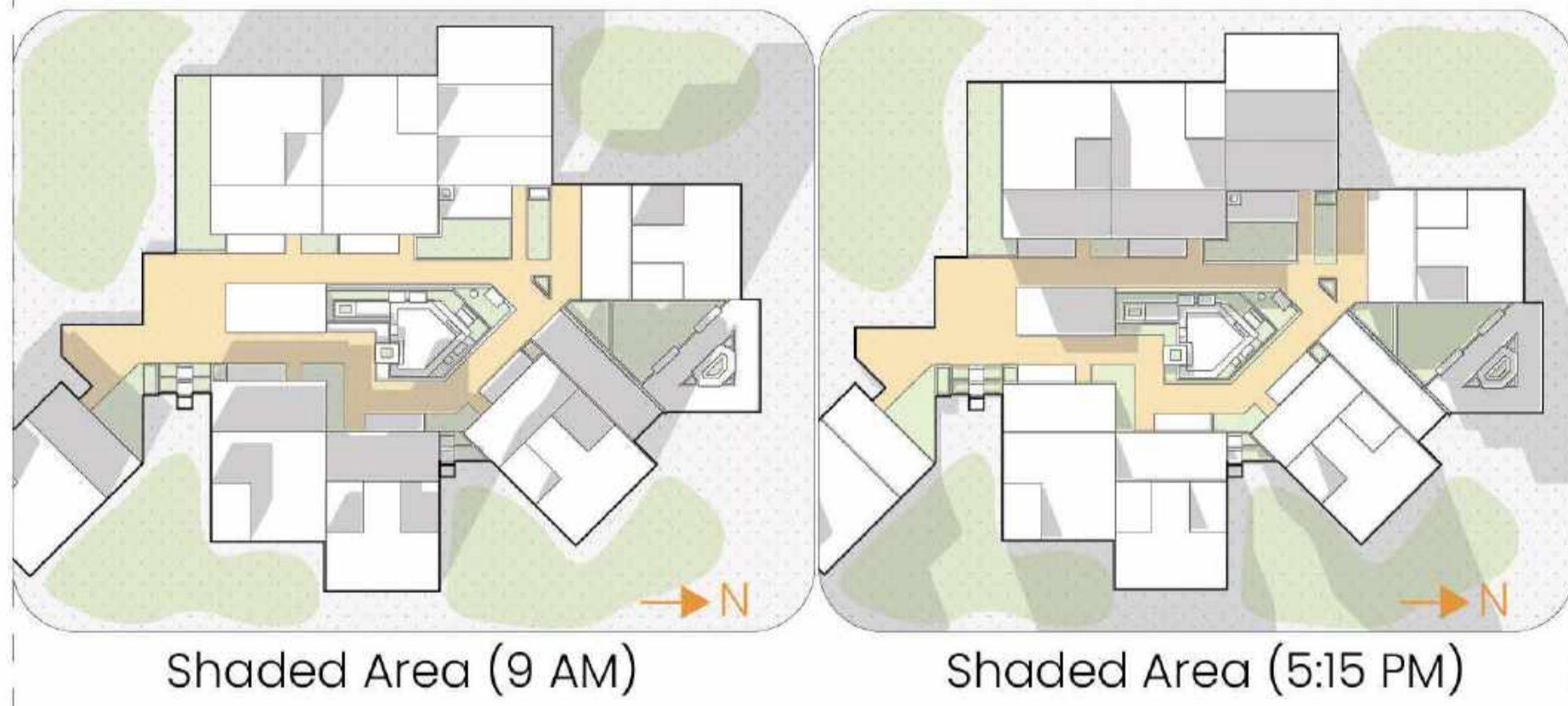
Closed varandha (Afternoon scene)



Open varandha (Evening scene)



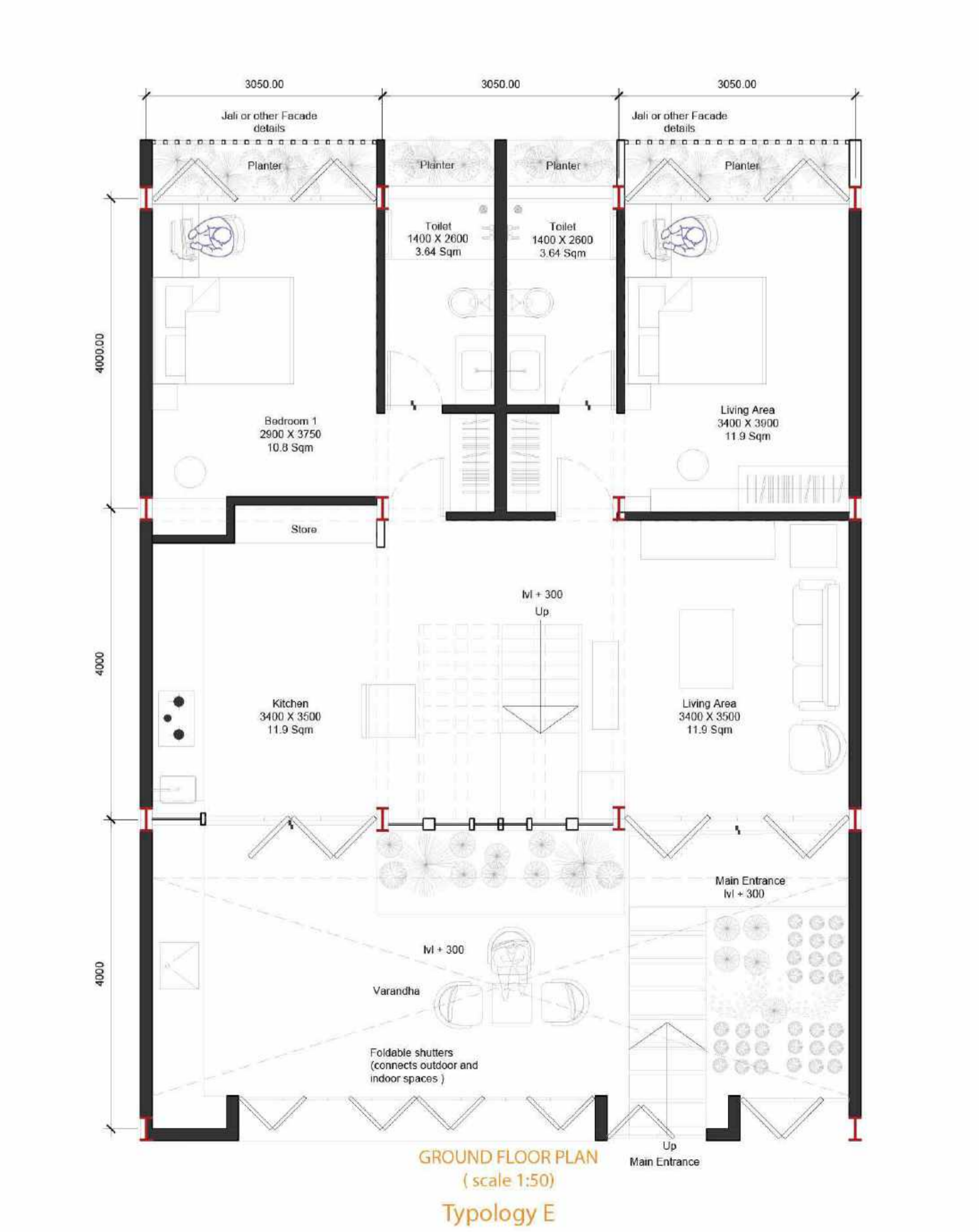
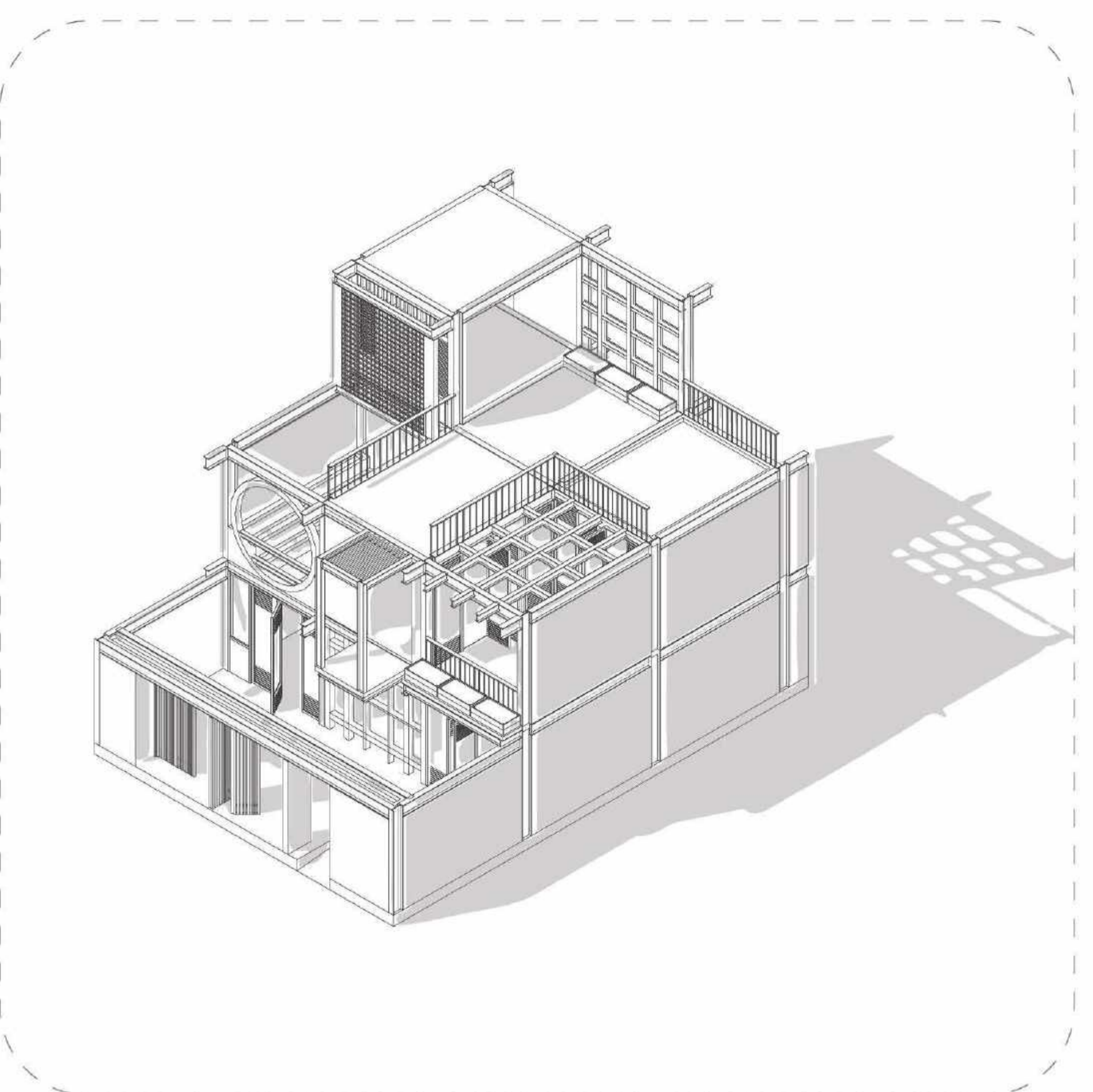
Physical Comfort



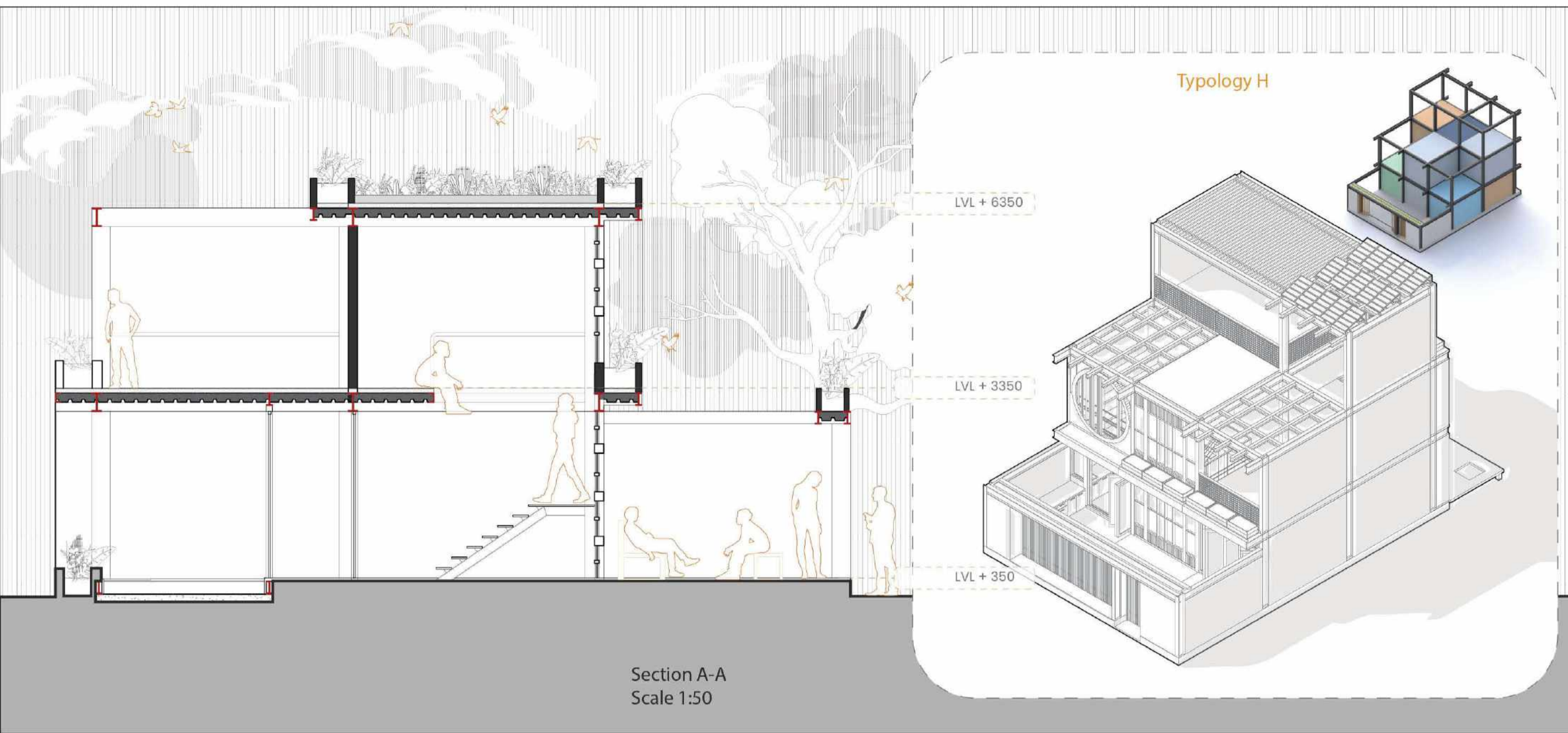
Shaded area throughout the day. Public activities can be planned according to that.



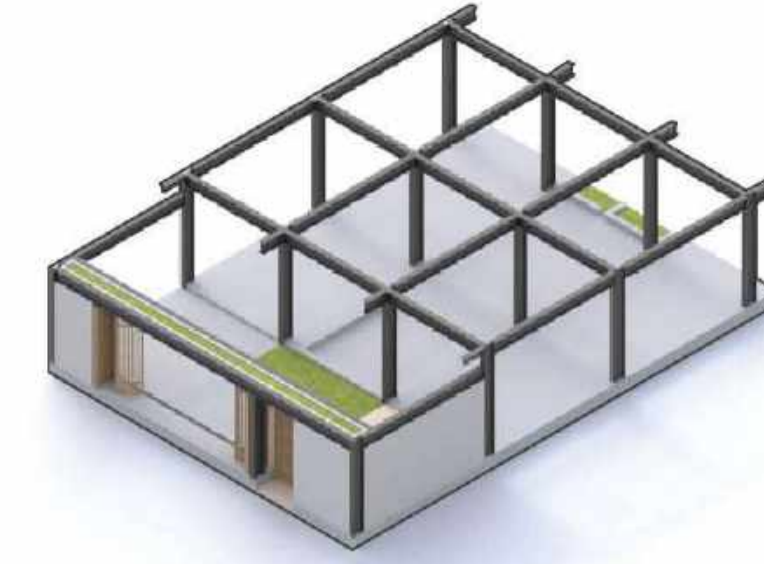
Green Roof
Providing green roof is better solution in locations like aurangabad.
1. Reduces Urban Heat Island Effect and Improves Air Quality.
2. Insulates the Building
3. Reduces Greenhouse Gas Emissions



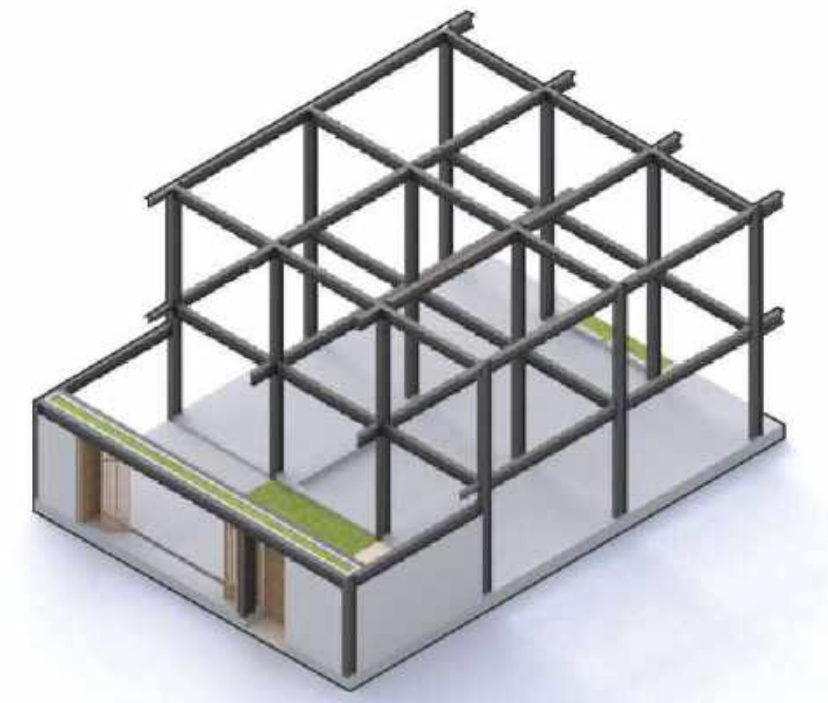
GROUND FLOOR PLAN (scale 1:50)
Typology E



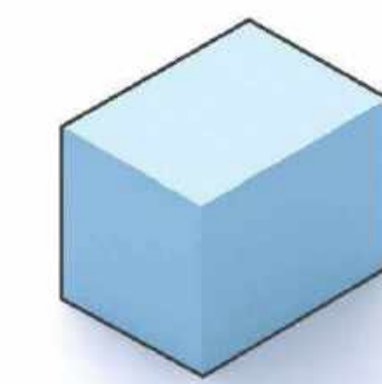
RESIDENTIAL UNIT



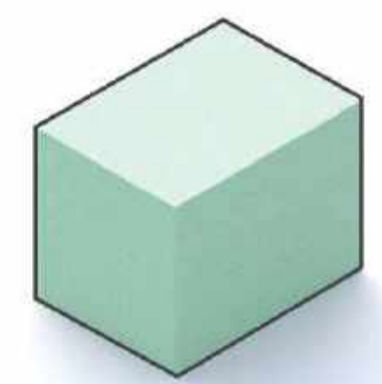
GROUND FLOOR PLAN FRAMING



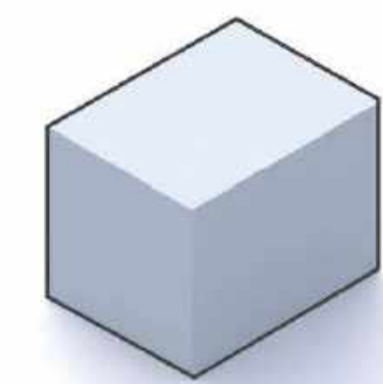
GROUND FLOOR AND FIRST FLOOR PLAN FRAMING



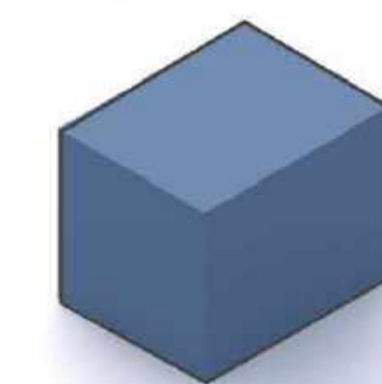
LIVING AREA
3 x 4 x 3 m (12 sqm)



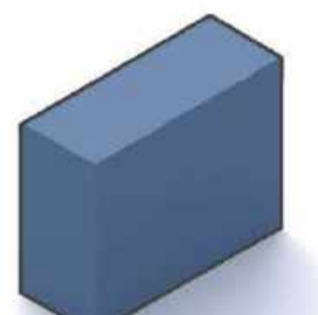
KITCHEN AREA
3 x 4 x 3 m (12 sqm)



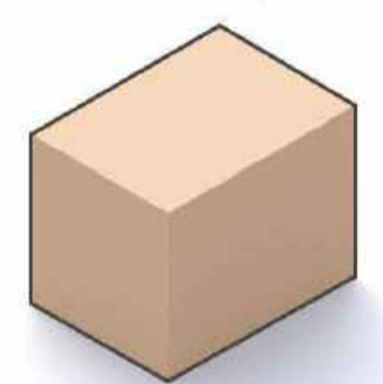
CORE AREA
3 x 4 x 3 m (12 sqm)



TOILET AREA
3 x 4 x 3 m (12 sqm)
(Cluster of two toilets and store)



TOILET
3 x 2 x 3 m (6 sqm)
(Toilets or store)

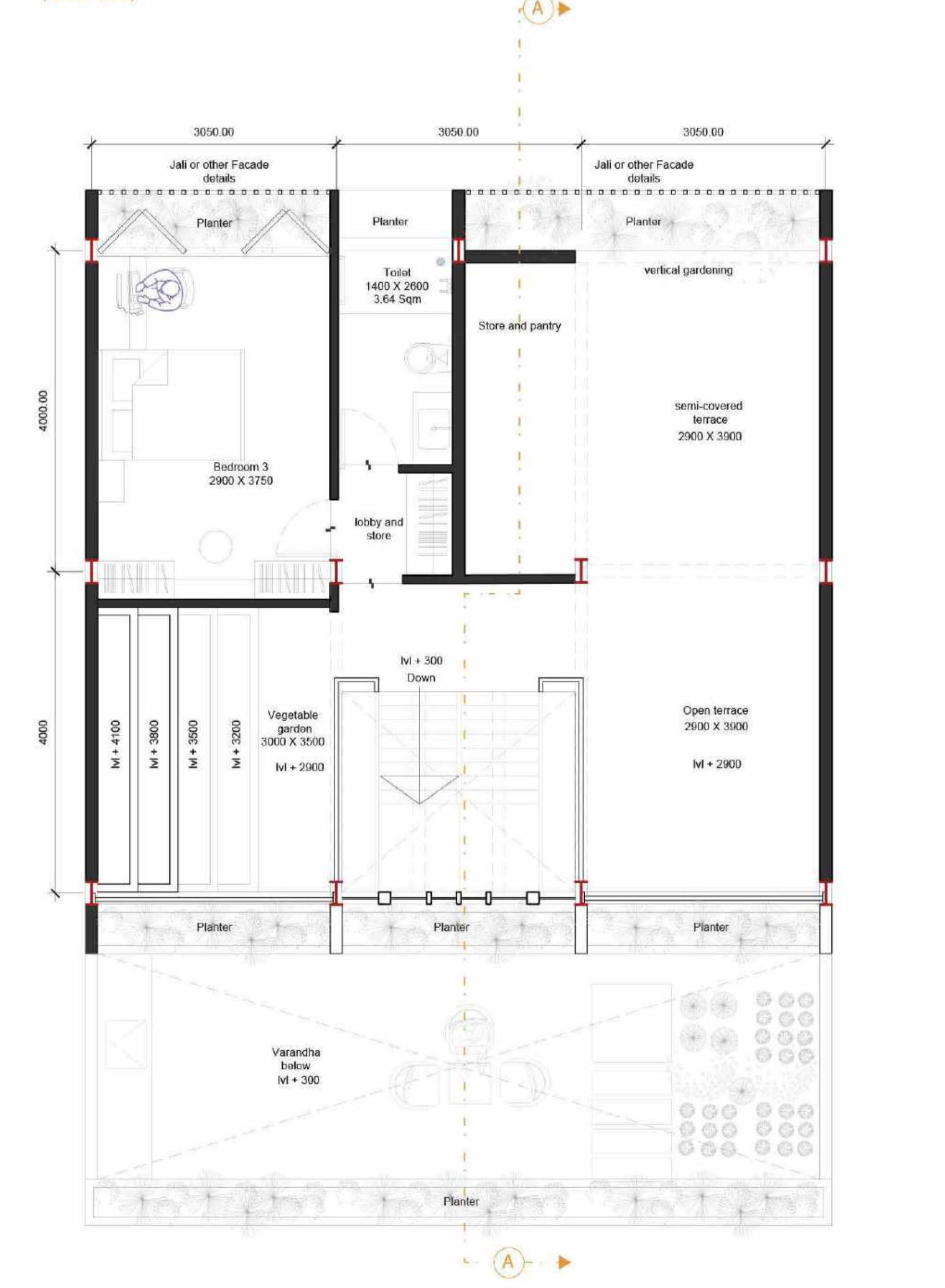


SLEEPING AREA
3 x 4 x 3 m (12 sqm)
(Bedroom)

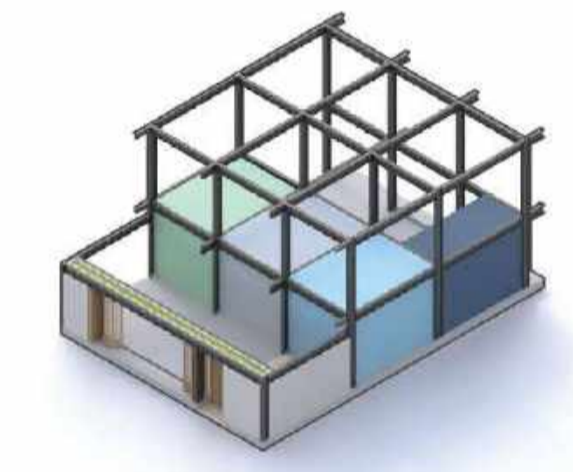
GROUND FLOOR PLAN (scale 1:50)



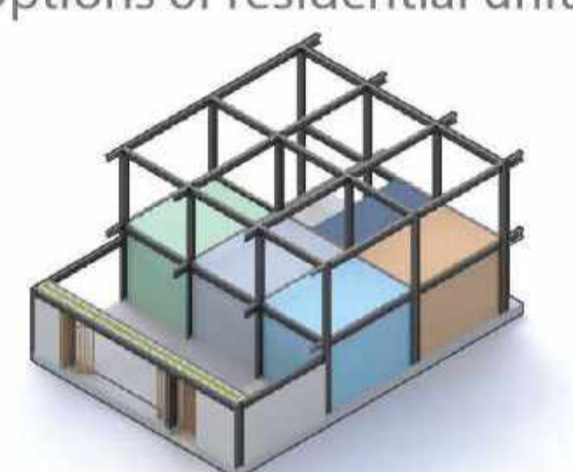
FIRST FLOOR PLAN (scale 1:50)



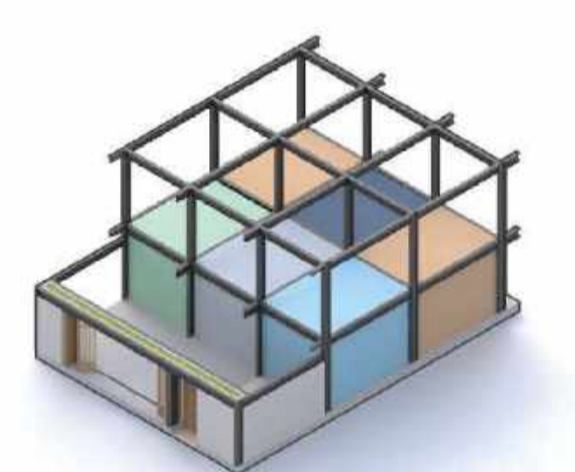
Options of residential units



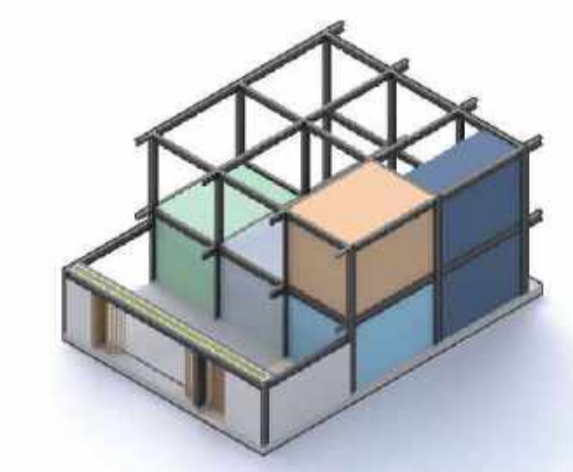
Typology A
(36-45sqm)
36sqm of varandha | 30 sqm courtyard



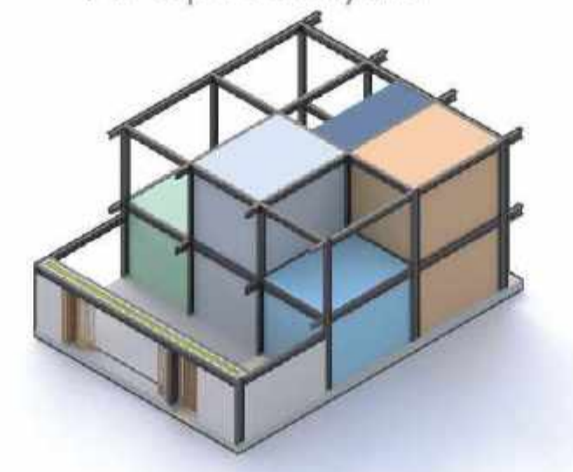
Typology B
(48-55 sqm)
36sqm of varandha | 18 sqm courtyard



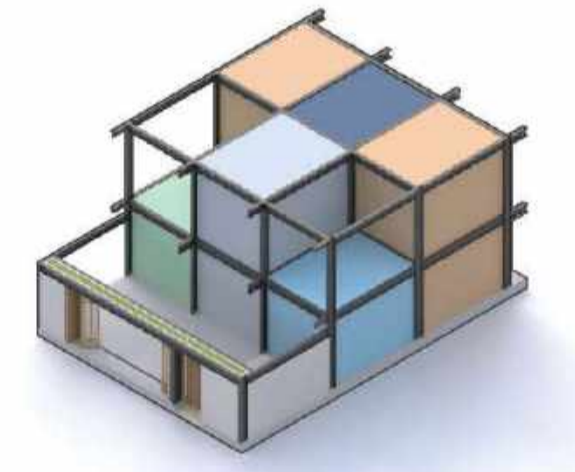
Typology C
(72-75 sqm)
36sqm of varandha



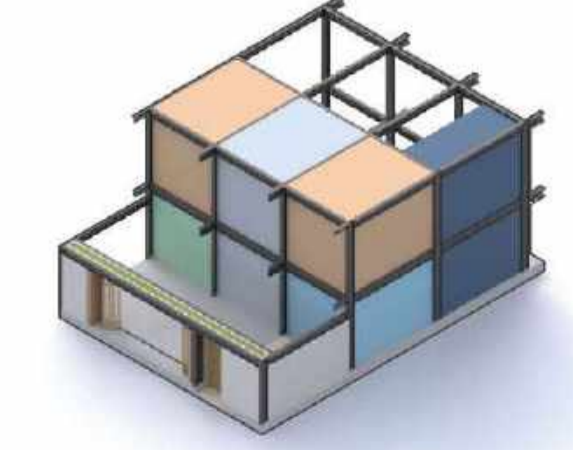
Typology A .1
(60-65 sqm)
36sqm of varandha | 30 sqm courtyard



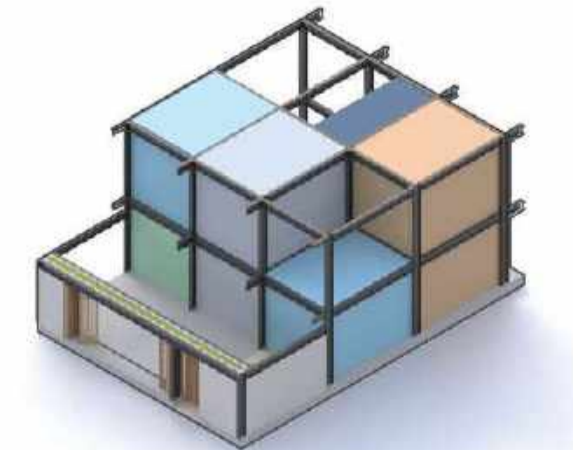
Typology B.1
(80-85 sqm)
36sqm of varandha | 18 sqm courtyard



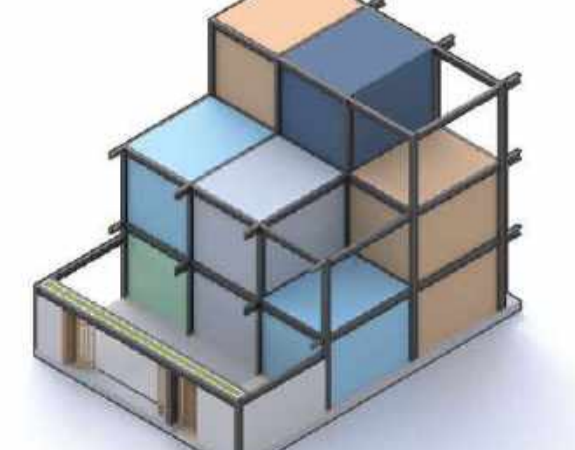
Typology C.1
(115-120 sqm)
36sqm of varandha



Typology A .2
(75-80 sqm)
36sqm of varandha | 30 sqm courtyard

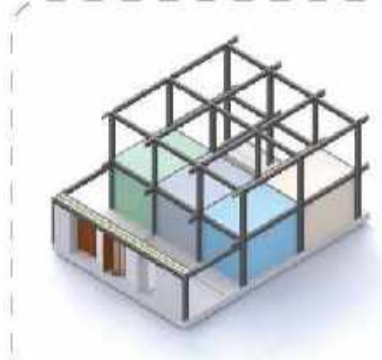


Typology B.2
(90-100 sqm)
36sqm of varandha | 18 sqm courtyard

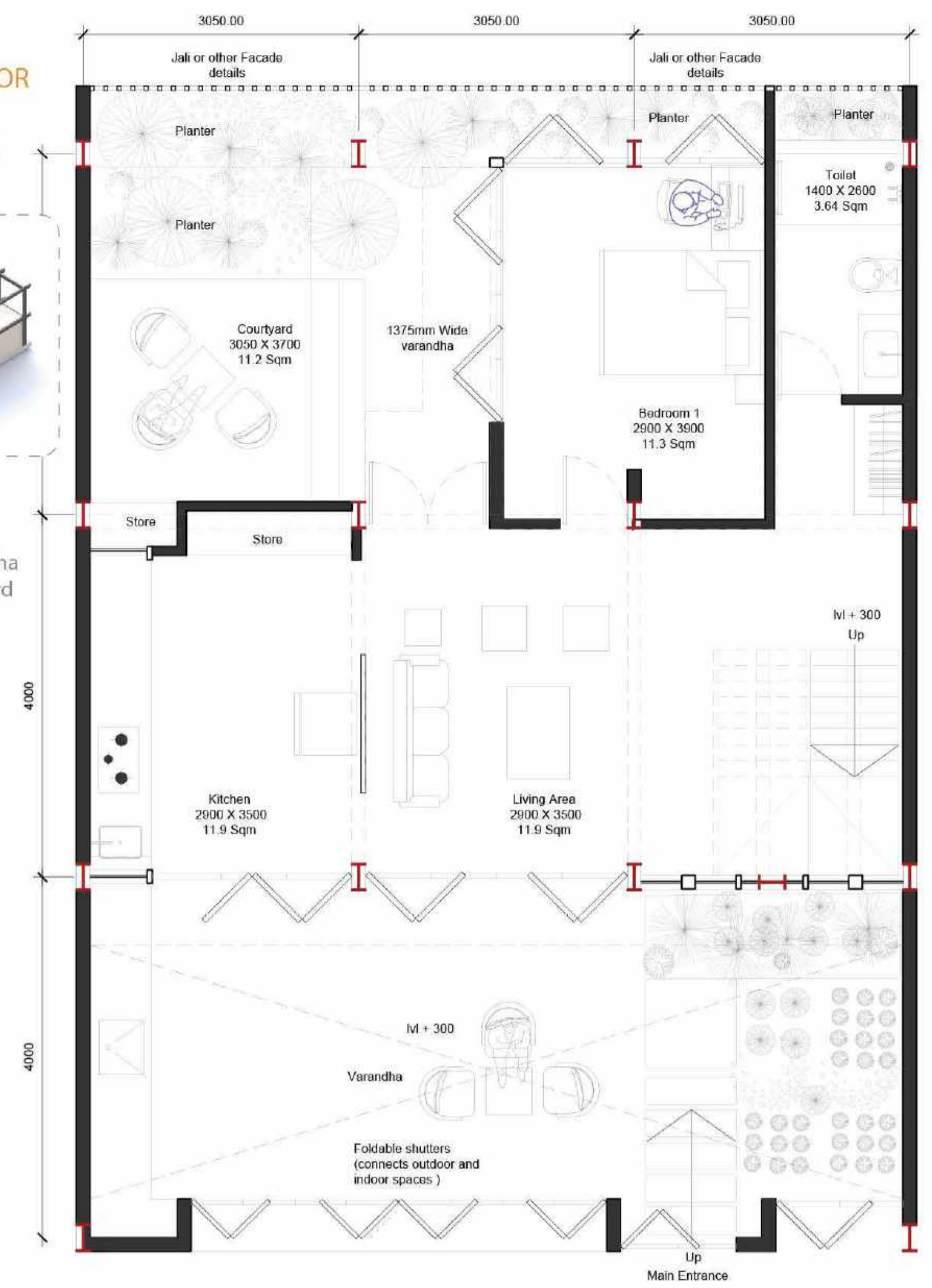


Typology C.2
(156-160 sqm)
36sqm of varandha

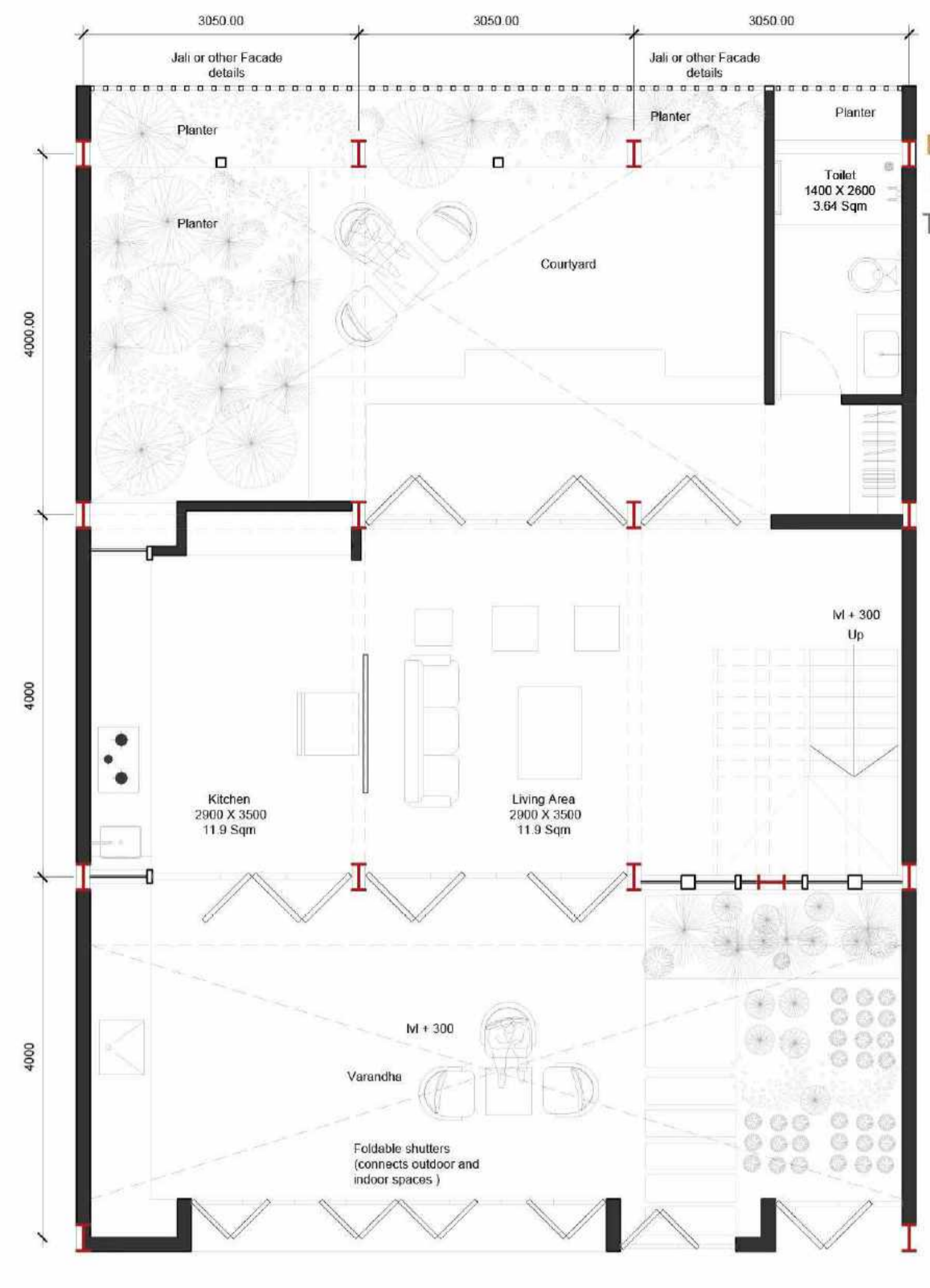
GROUND FLOOR PLAN
(scale 1:50)
Typology F



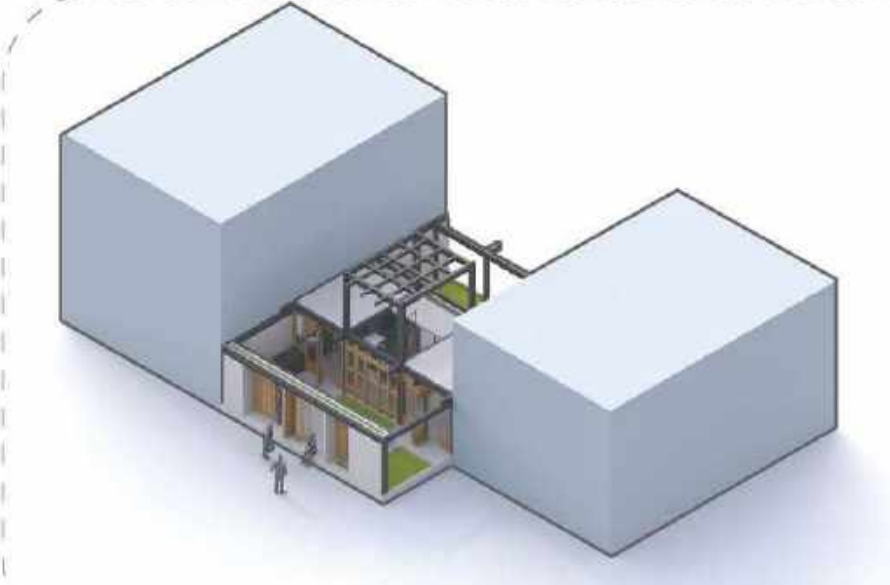
Typology B
(60-65 sqm)
36sqm of varandha
| 24 sqm courtyard



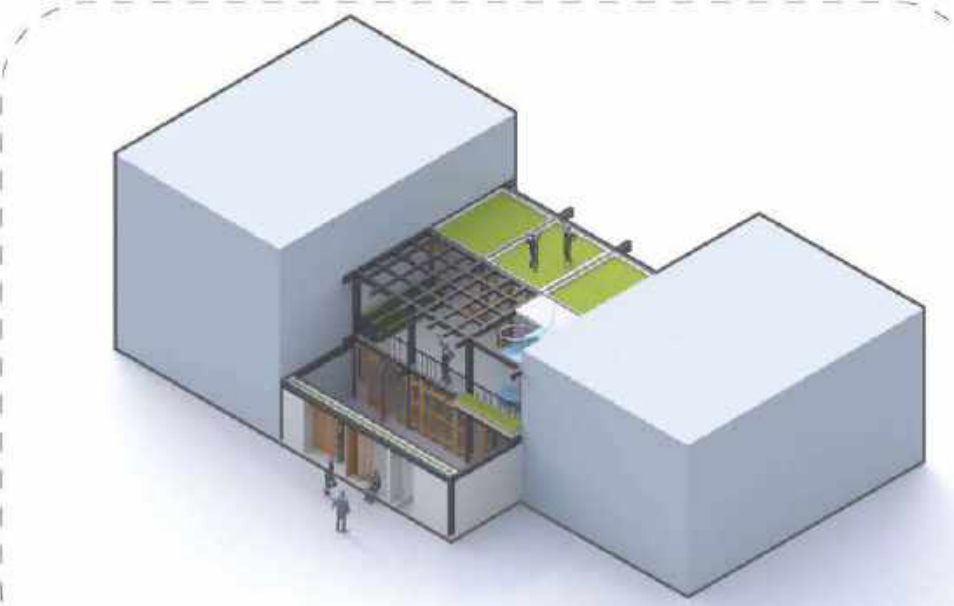
GROUND FLOOR PLAN
(scale 1:50)
Typology G



STAGE -1



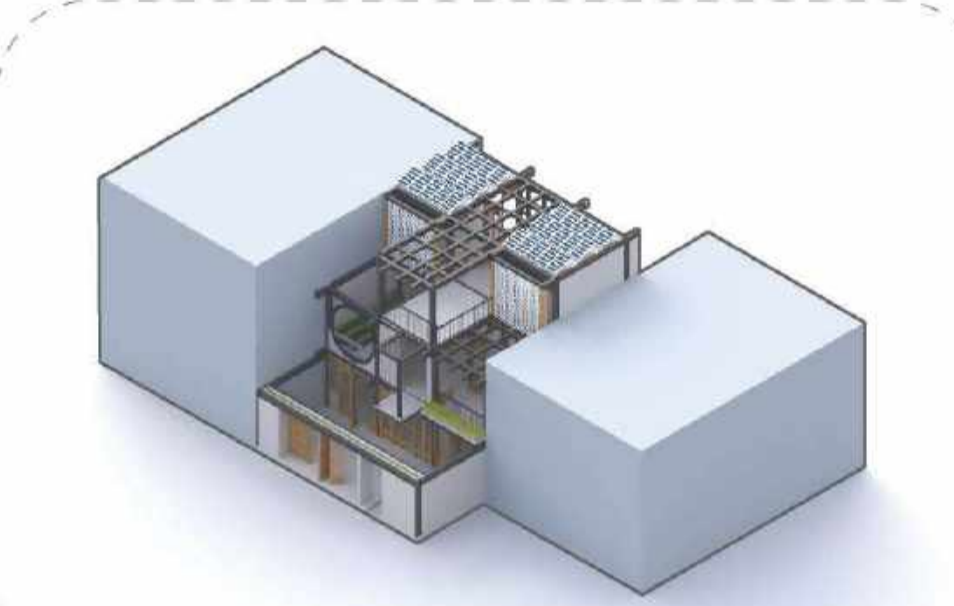
STAGE -2



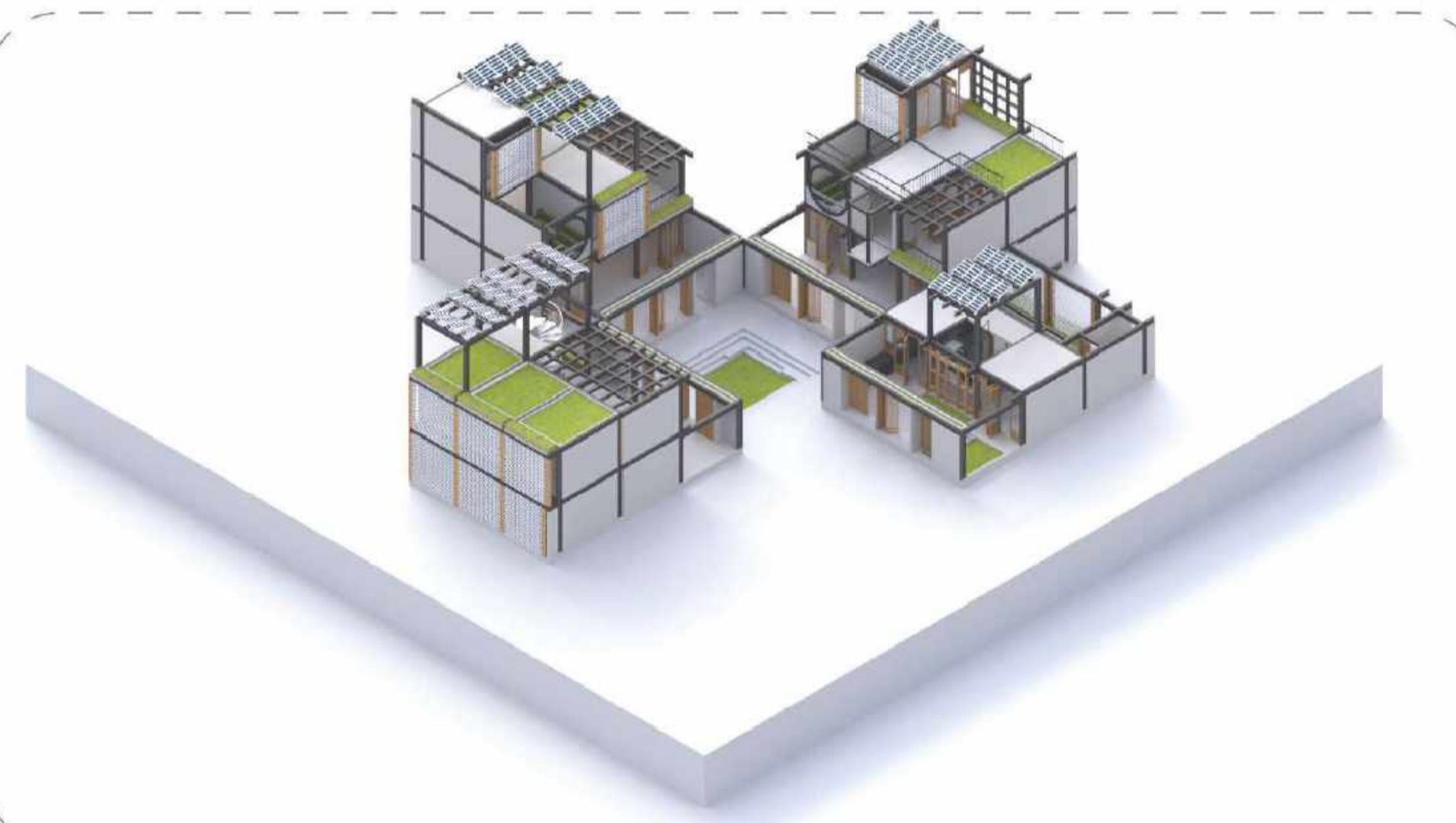
STAGE -3



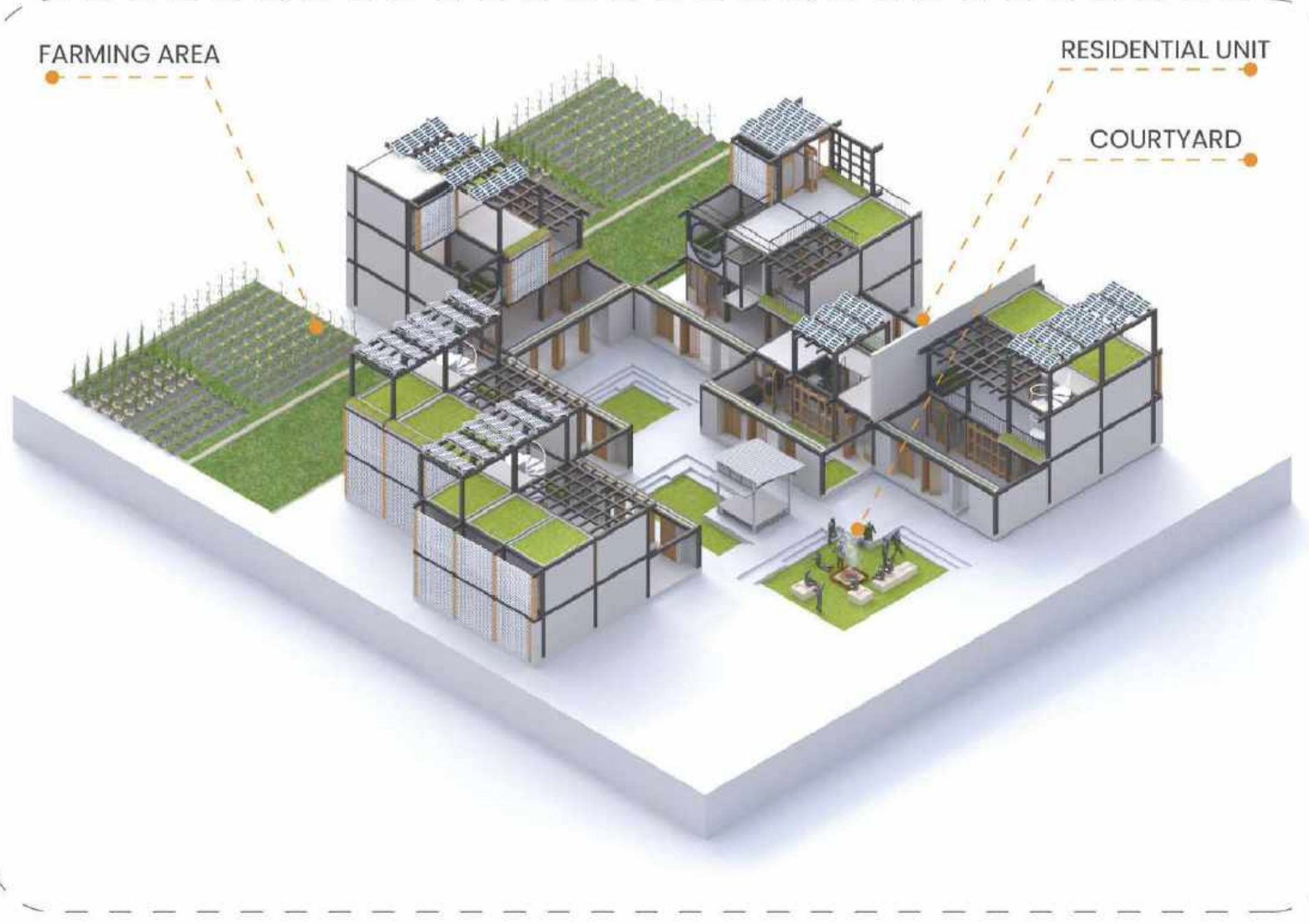
STAGE -4



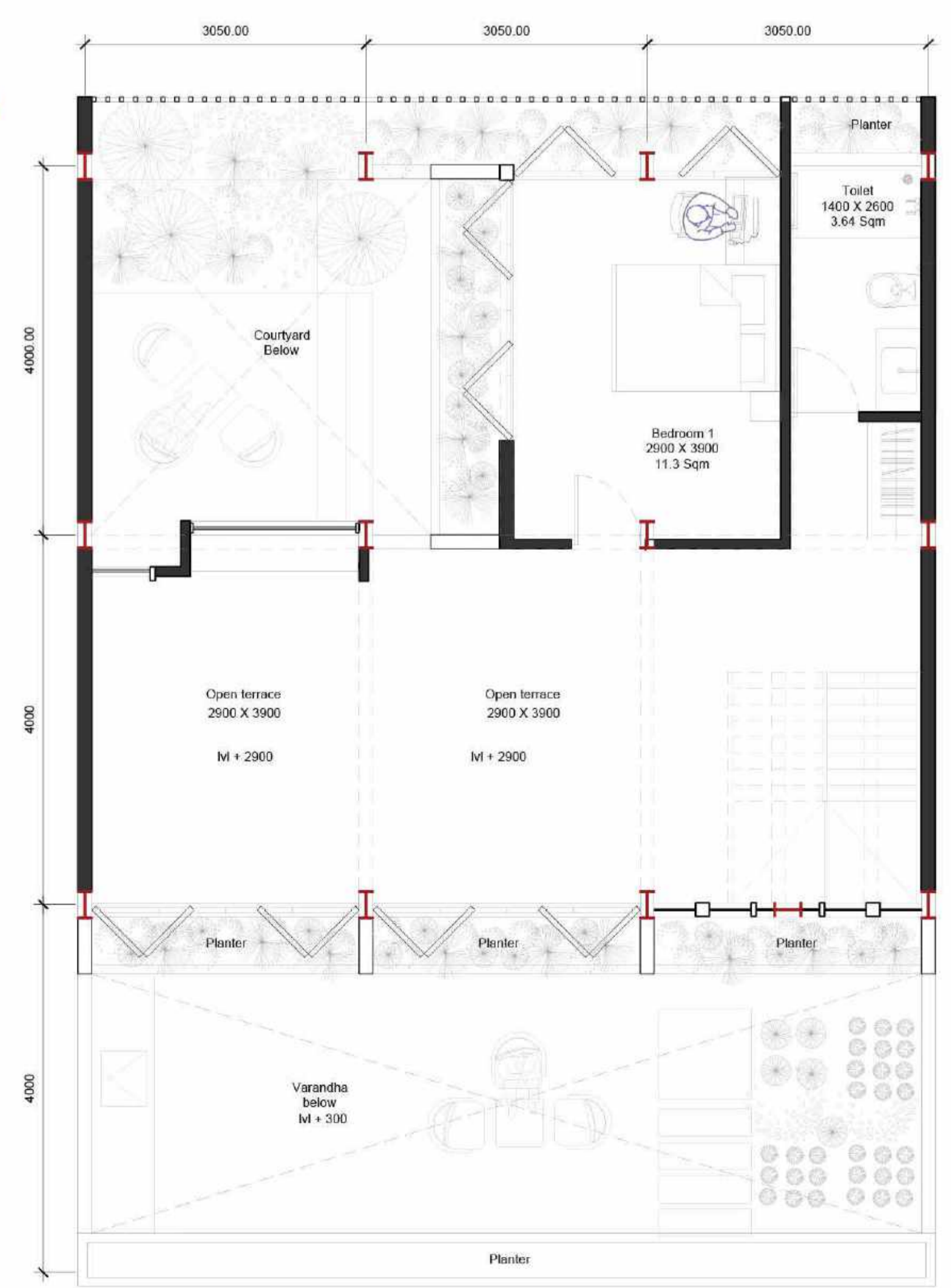
CLUSTER OF DIFFERENT TYPOLOGICAL UNITS



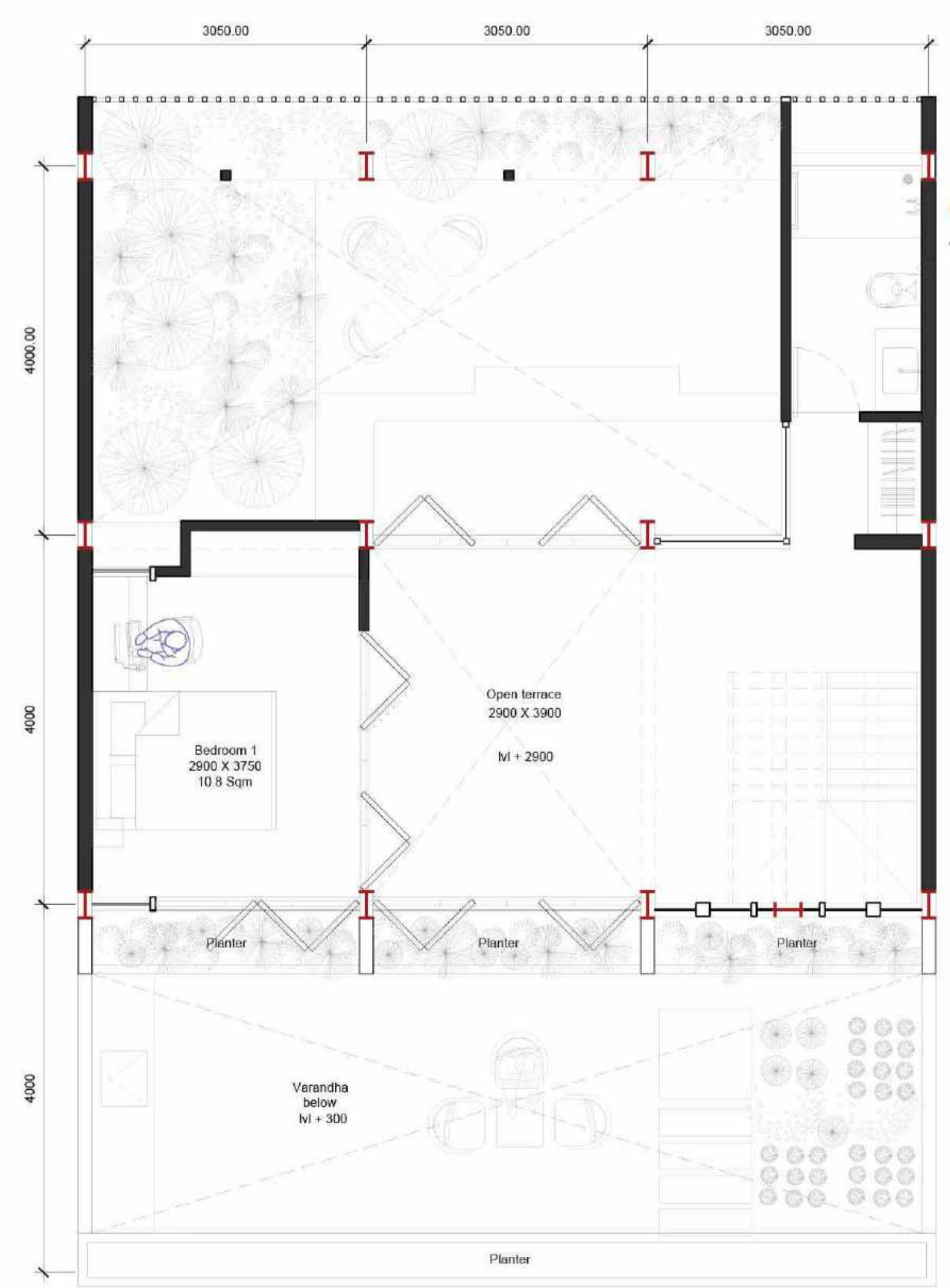
CLUSTER OF DIFFERENT TYPOLOGICAL UNITS WITH FARMING AREA



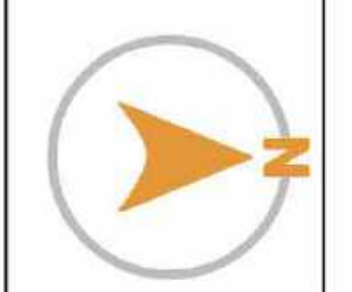
FIRST FLOOR PLAN
(scale 1:50)
Typology F

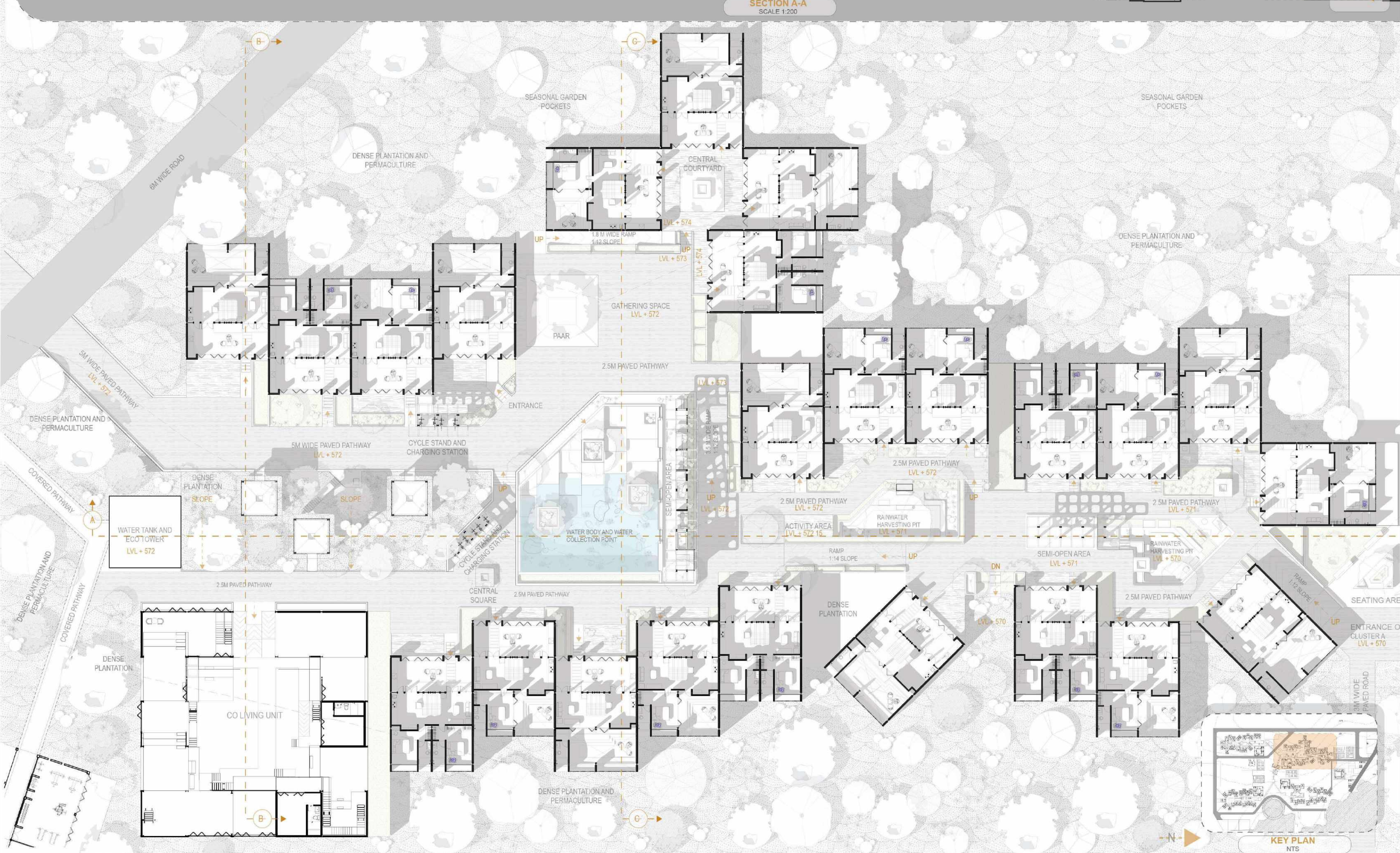


FIRST FLOOR PLAN
(scale 1:50)
Typology G



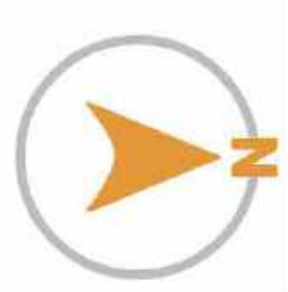
RESIDENTIAL UNIT



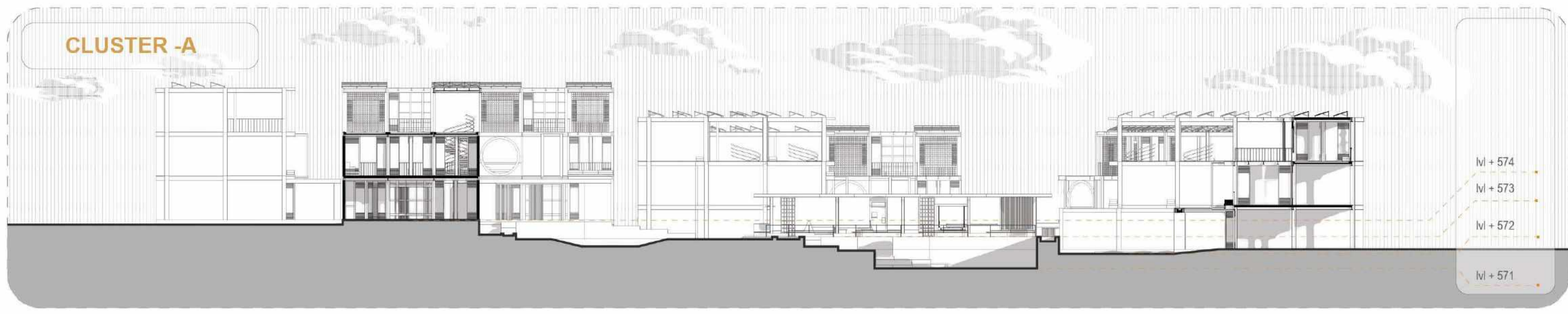


CLUSTER - A DETAILS

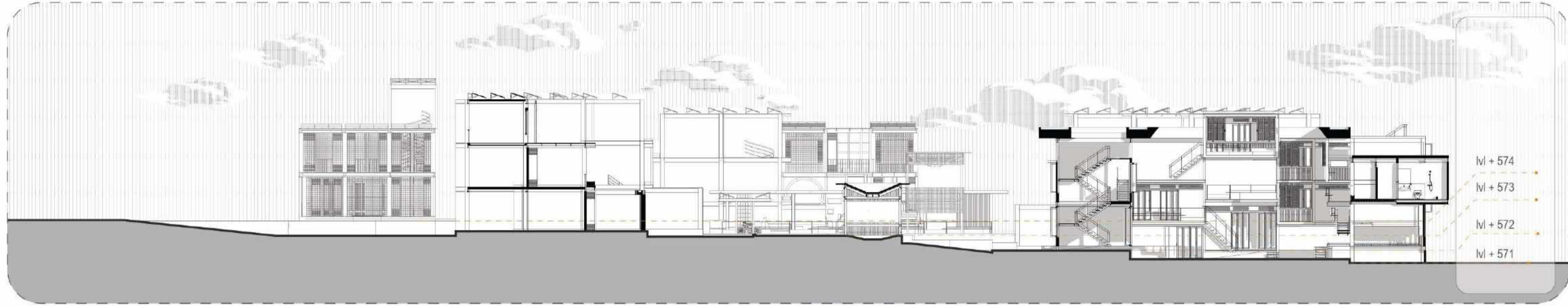
ADP - ECOVILLE - self reliant re-gen community
 NAME : AHIRE KARAN V - YEAR B. ARCH
 AAYOJAN SCHOOL OF ARCHITECTURE AND DESIGN, PUNE



CLUSTER -A



SECTION C-C
SCALE 1:200



SECTION B-B
SCALE 1:200



VIEW SHOWING WATER BODY AND TRANSITION SPACES



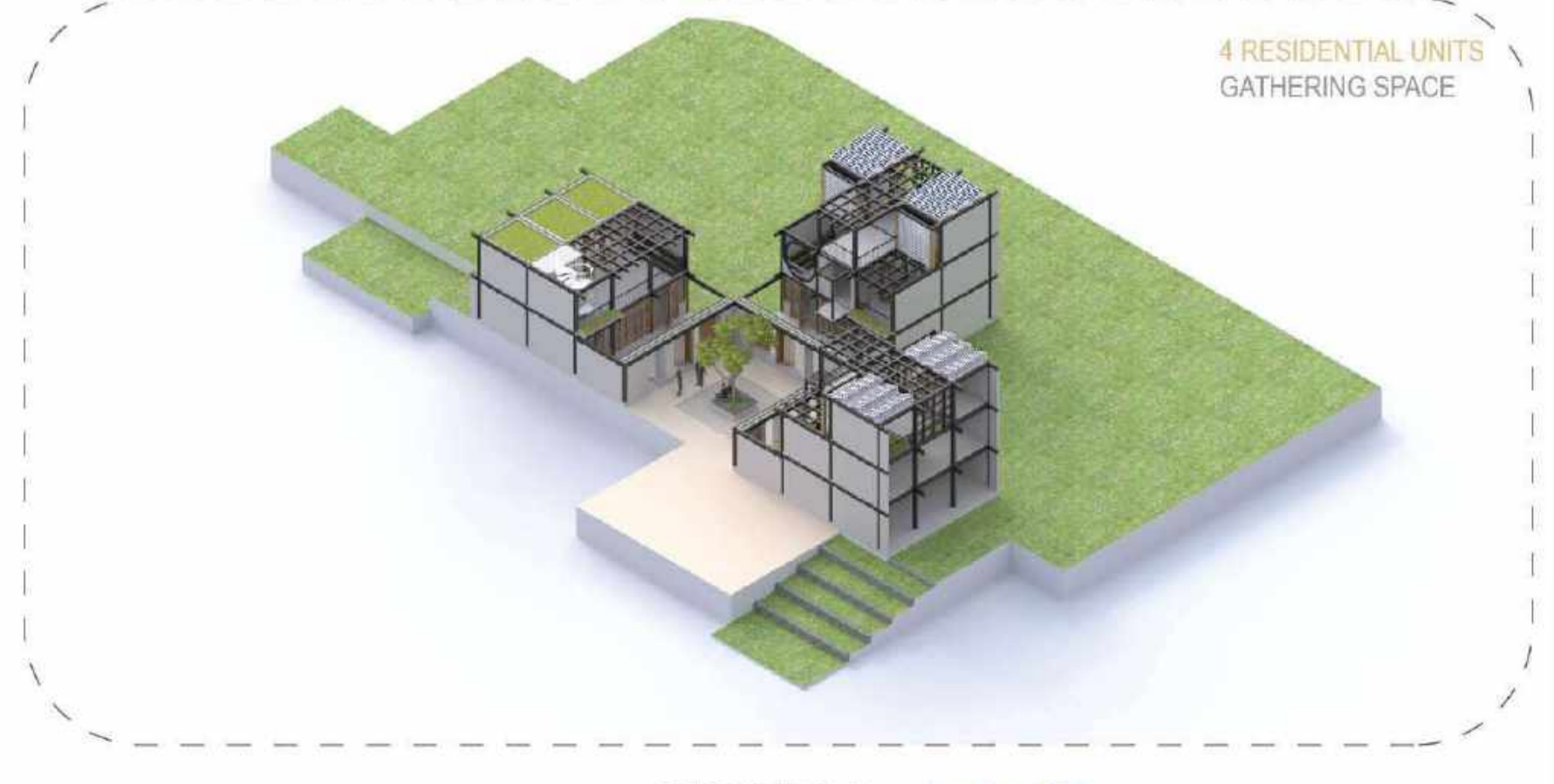
CLUSTER A-1 on level + 571



CLUSTER A-2 on level + 572



CLUSTER A-3 on level + 573

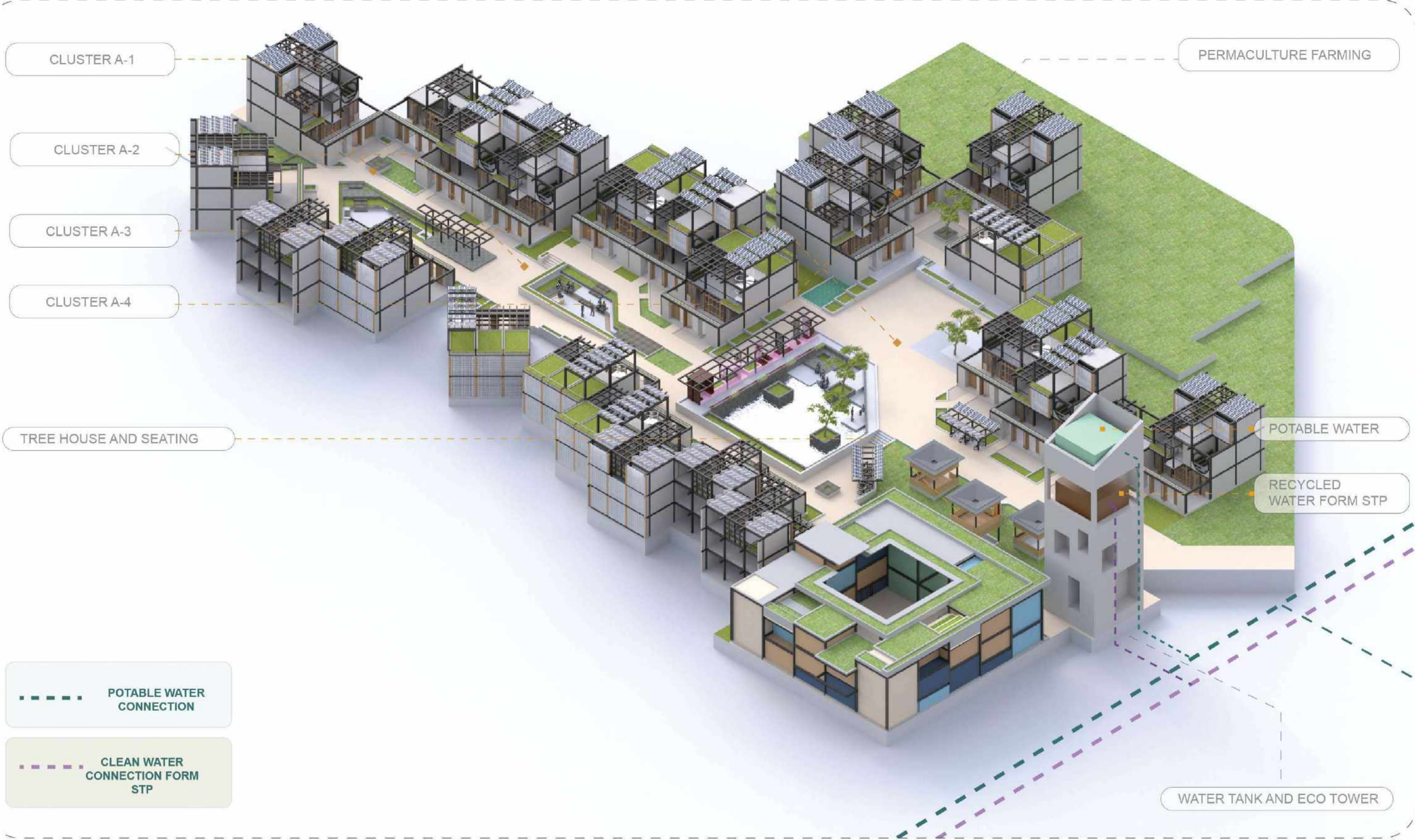
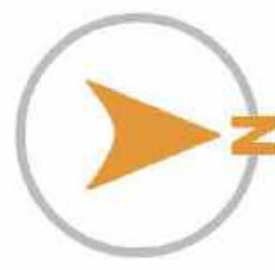


CLUSTER A-4 on level + 573

CLUSTER -A DETAILS



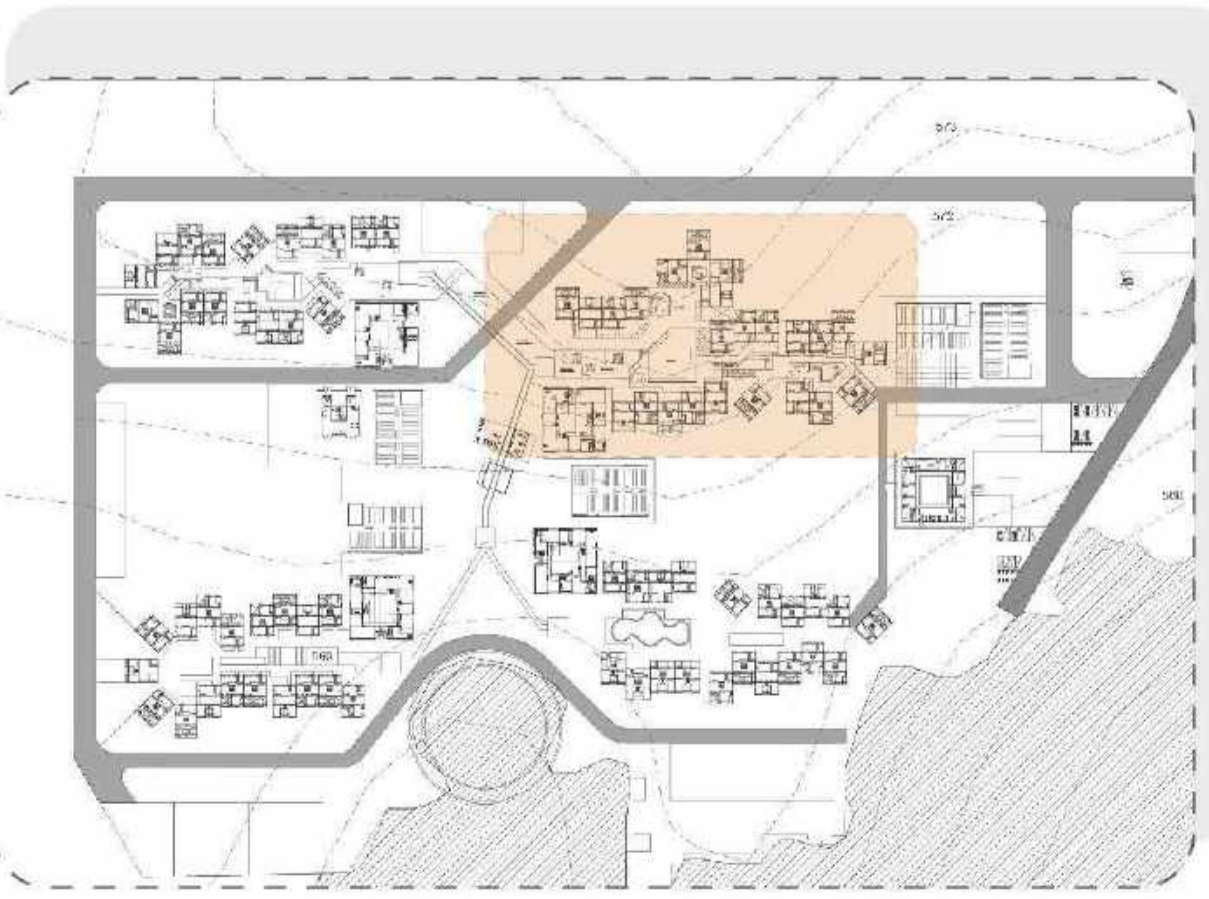
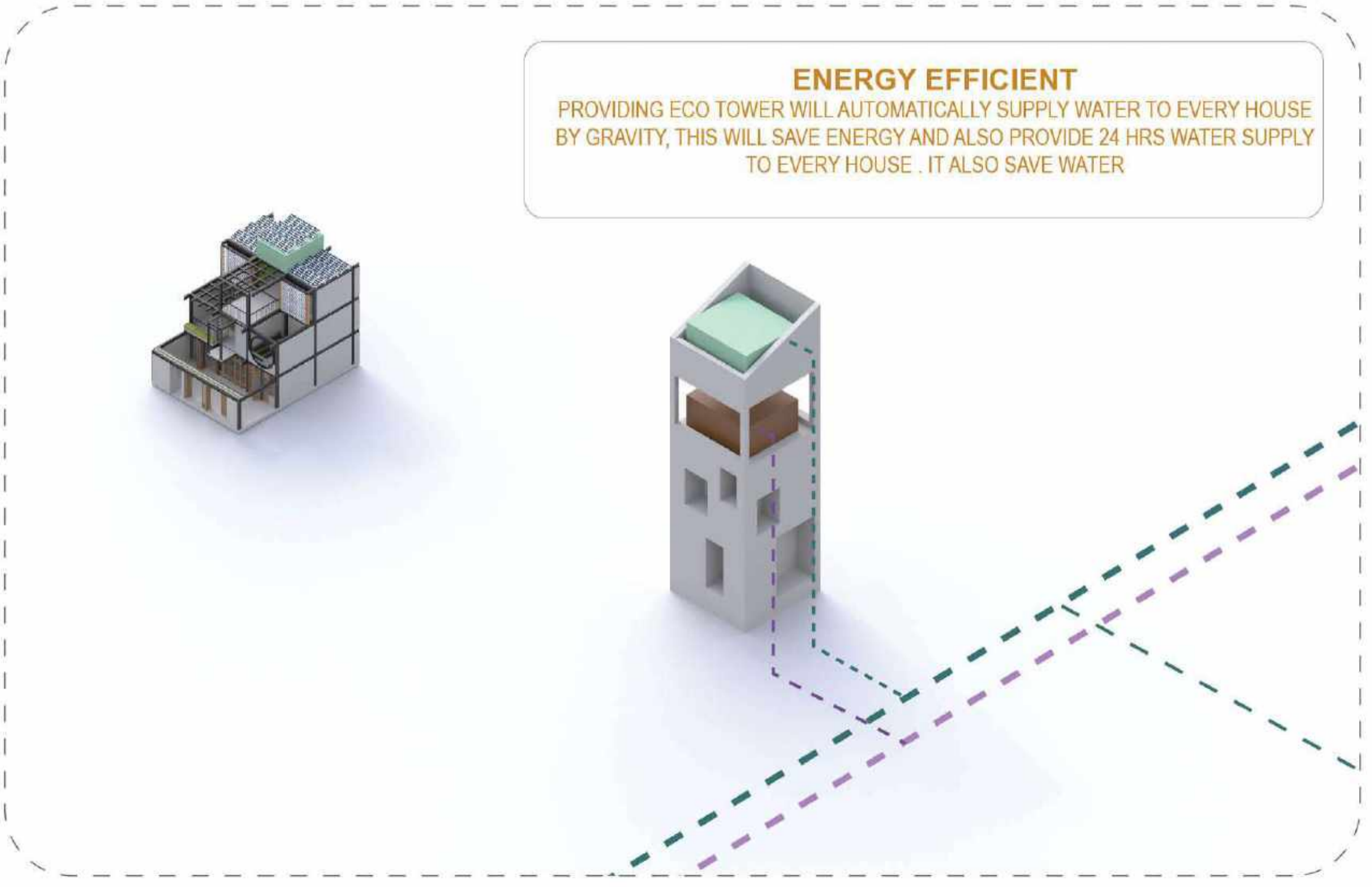
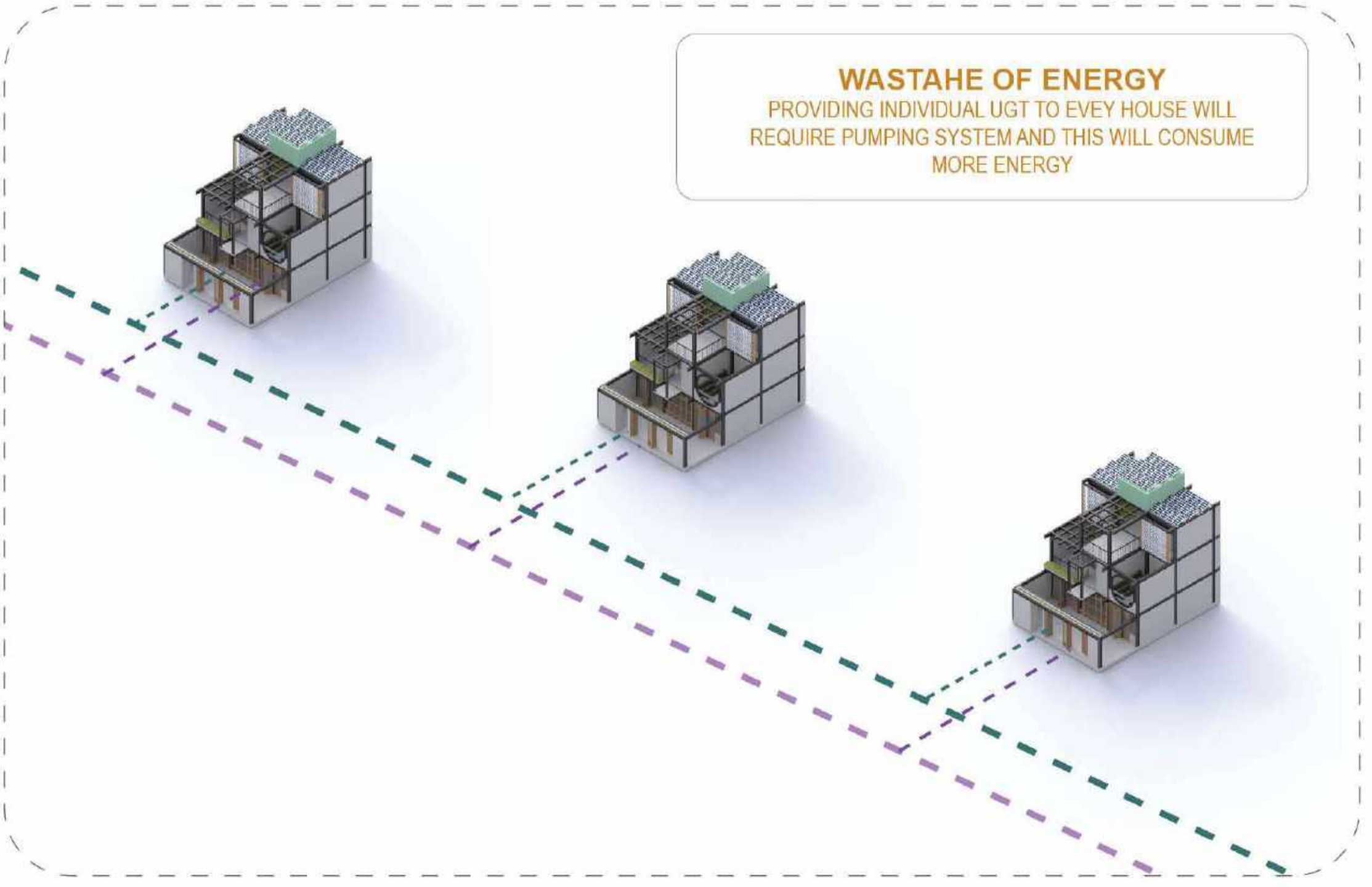
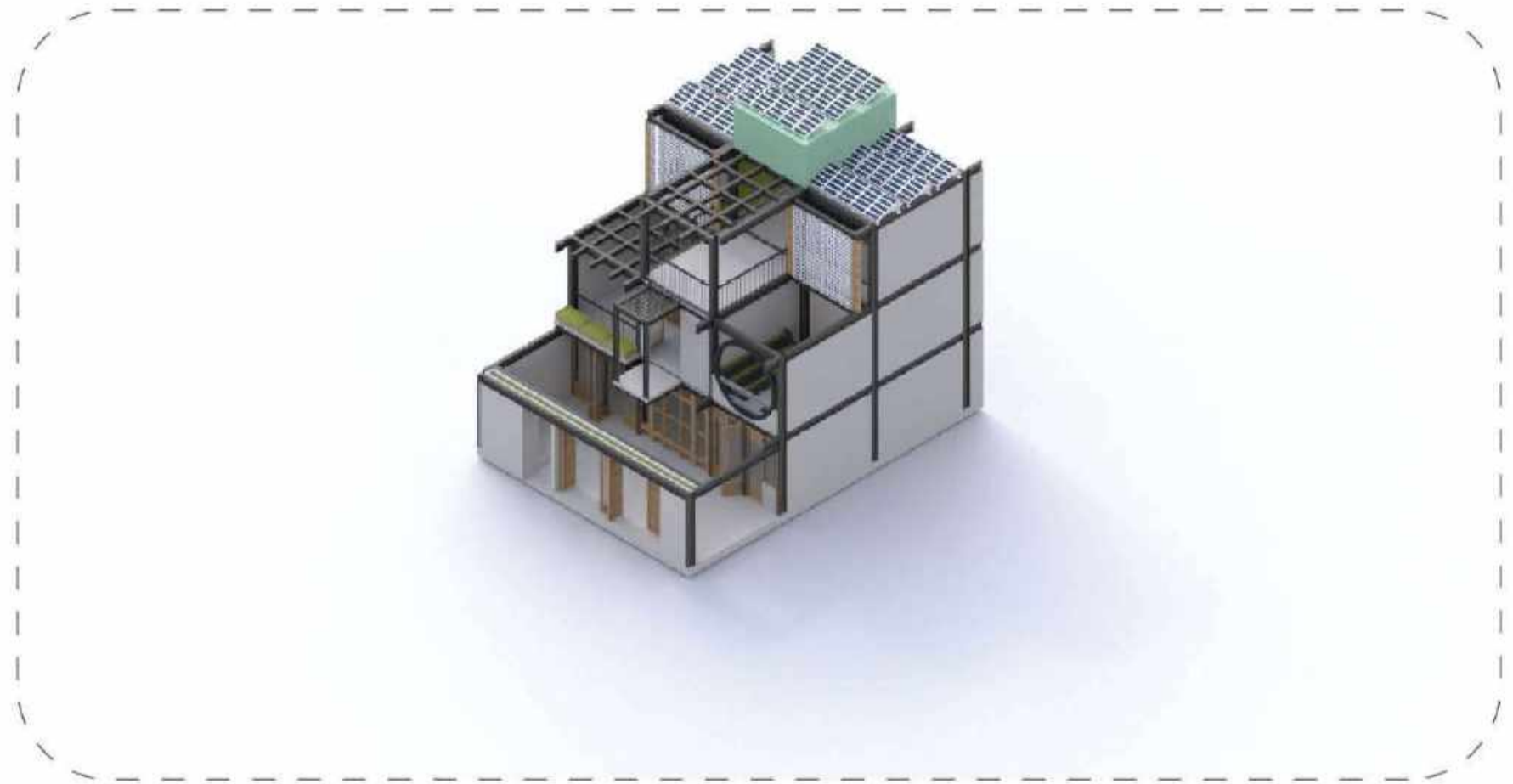
CLUSTER - A SERVICES



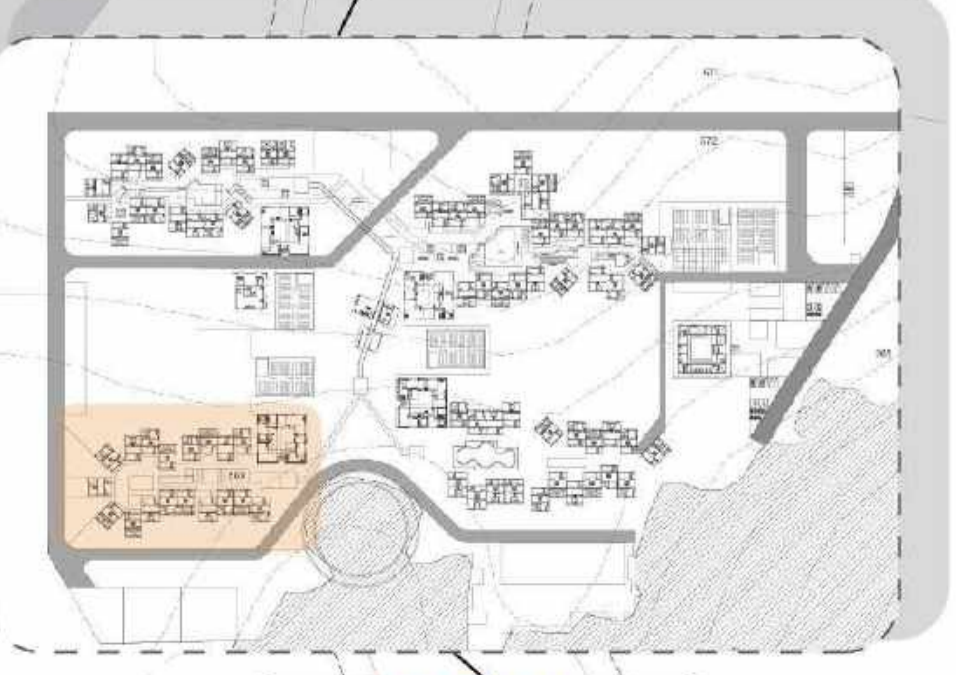
ISOMETRIC VIEW
SHOWING SERVICE LAYOUT OF
CLUSTER - A



ISOMETRIC VIEW
SELF SUFFICIENT MODULE

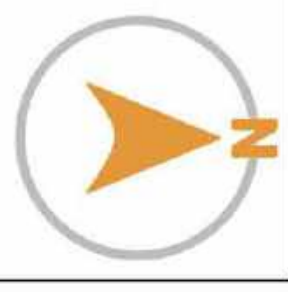


KEY PLAN
NTS

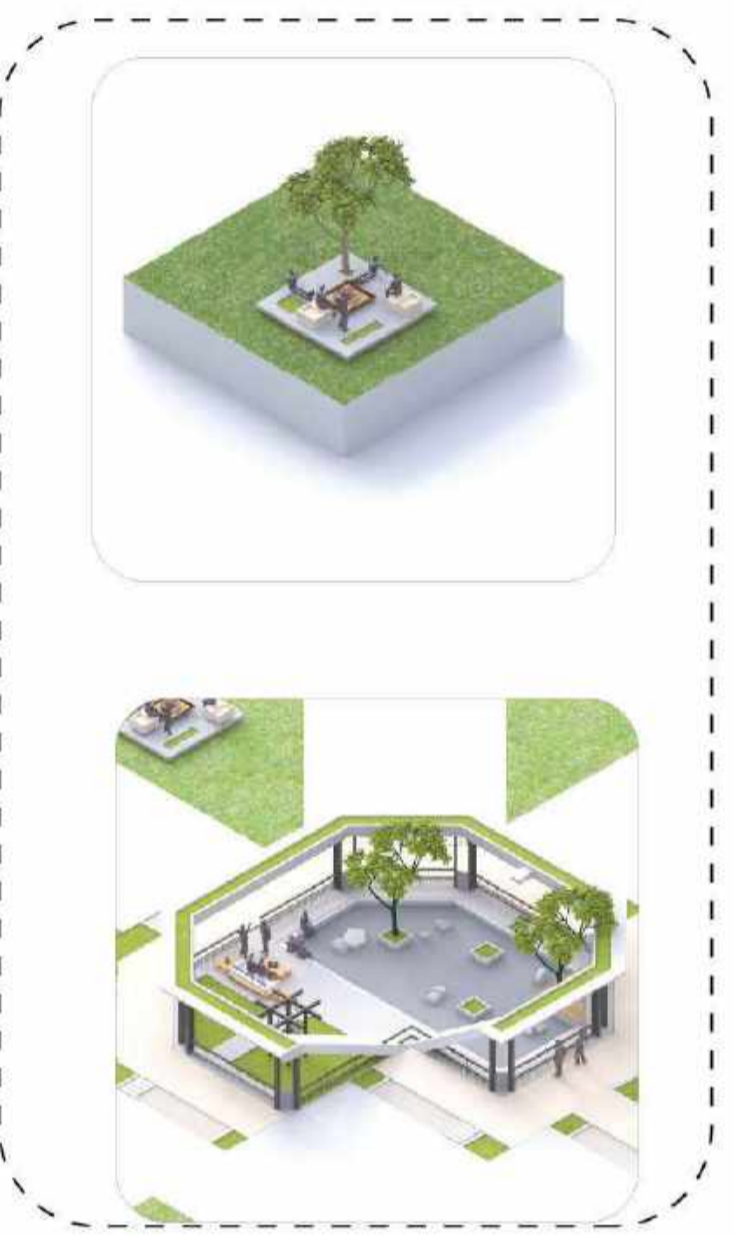
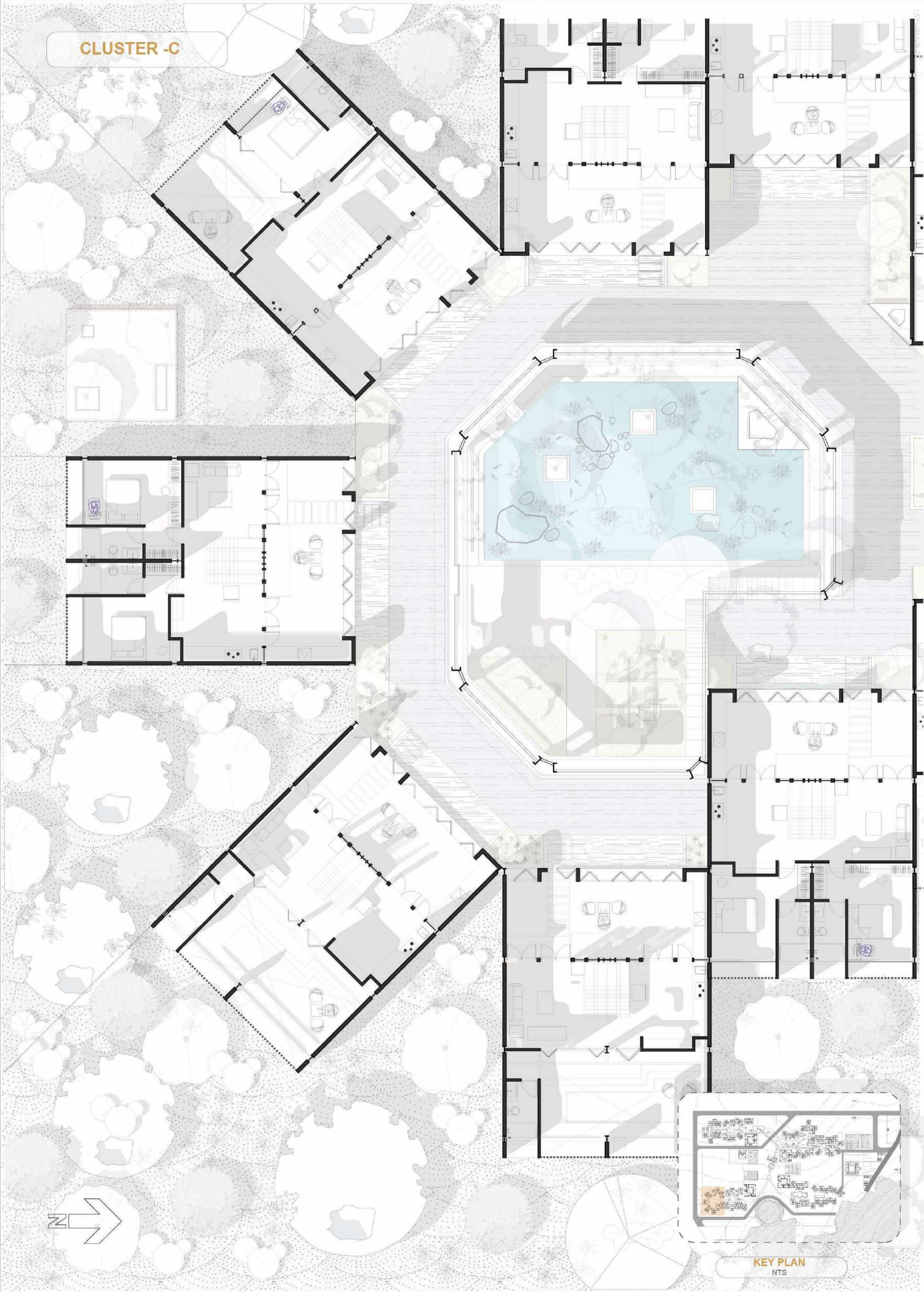


CLUSTER -C DETAILS

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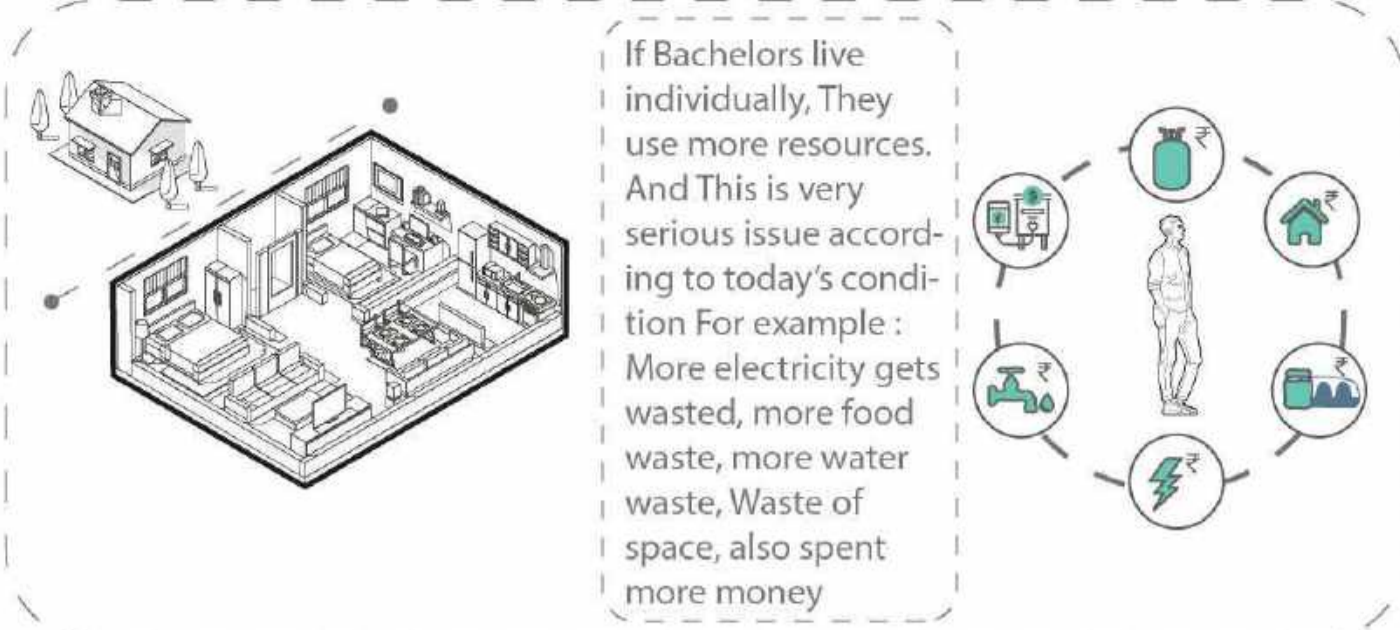
CLUSTER -C



CLUSTER -C DETAILS



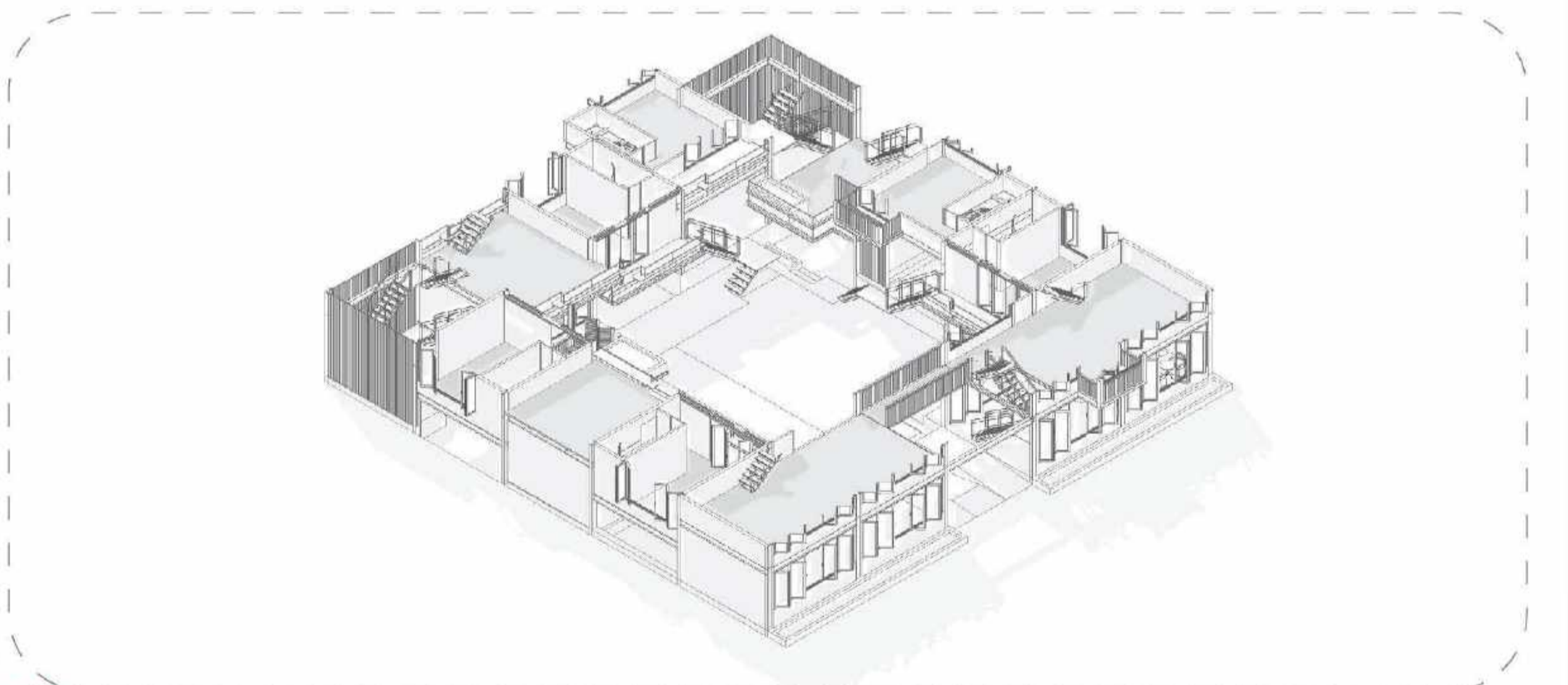
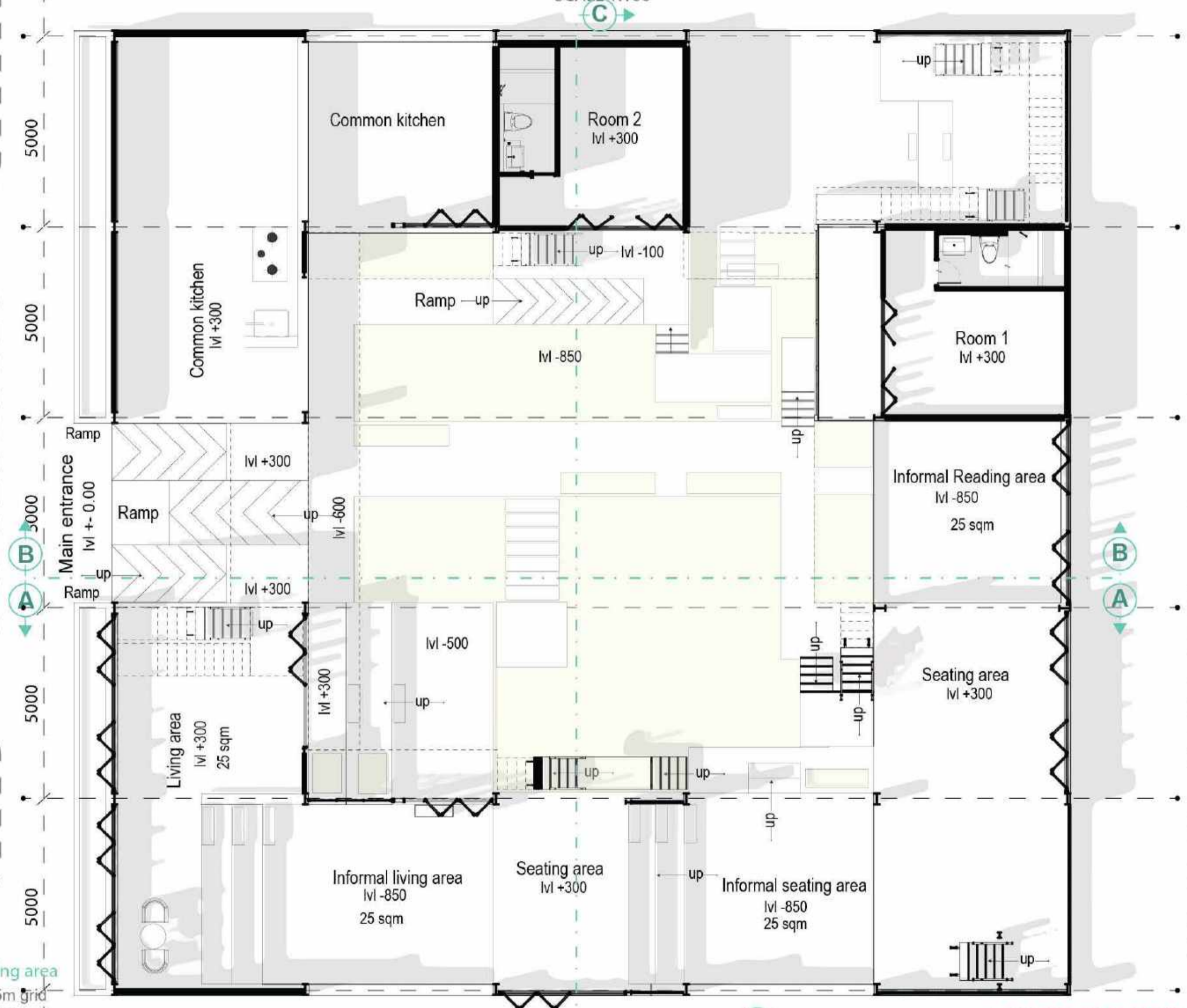
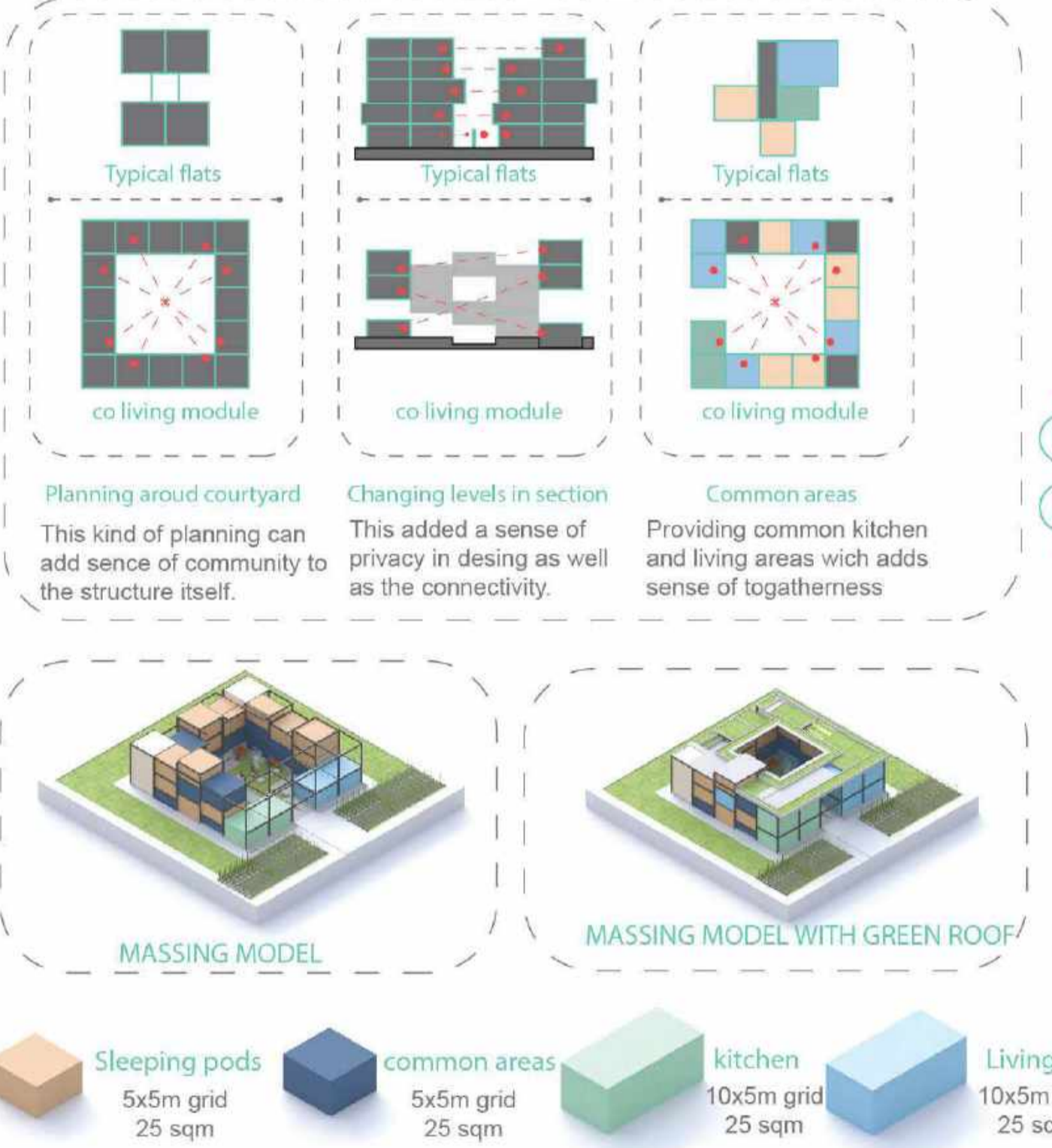
Bachelors living in private flats, which results in more consumption of resources.



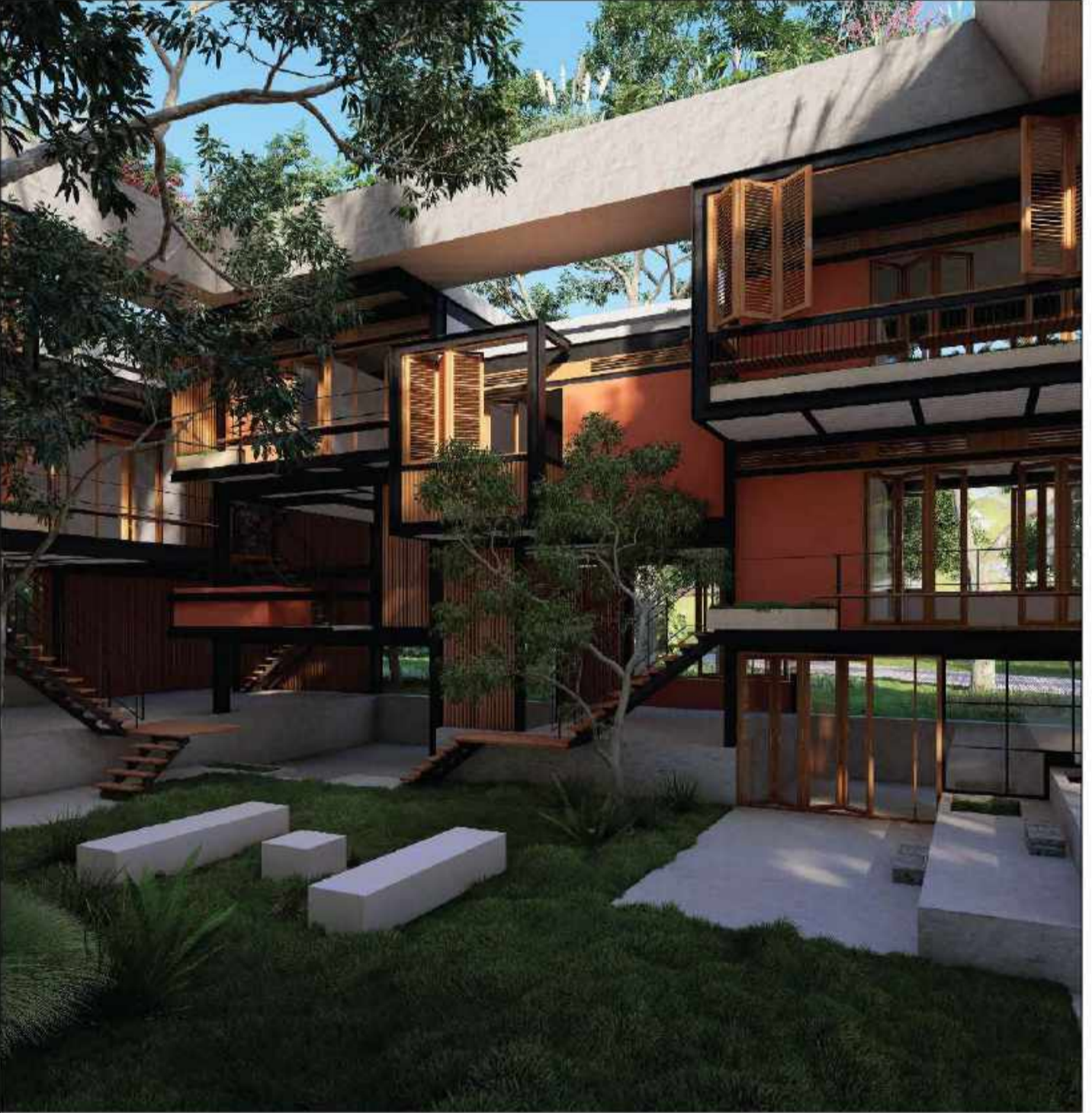
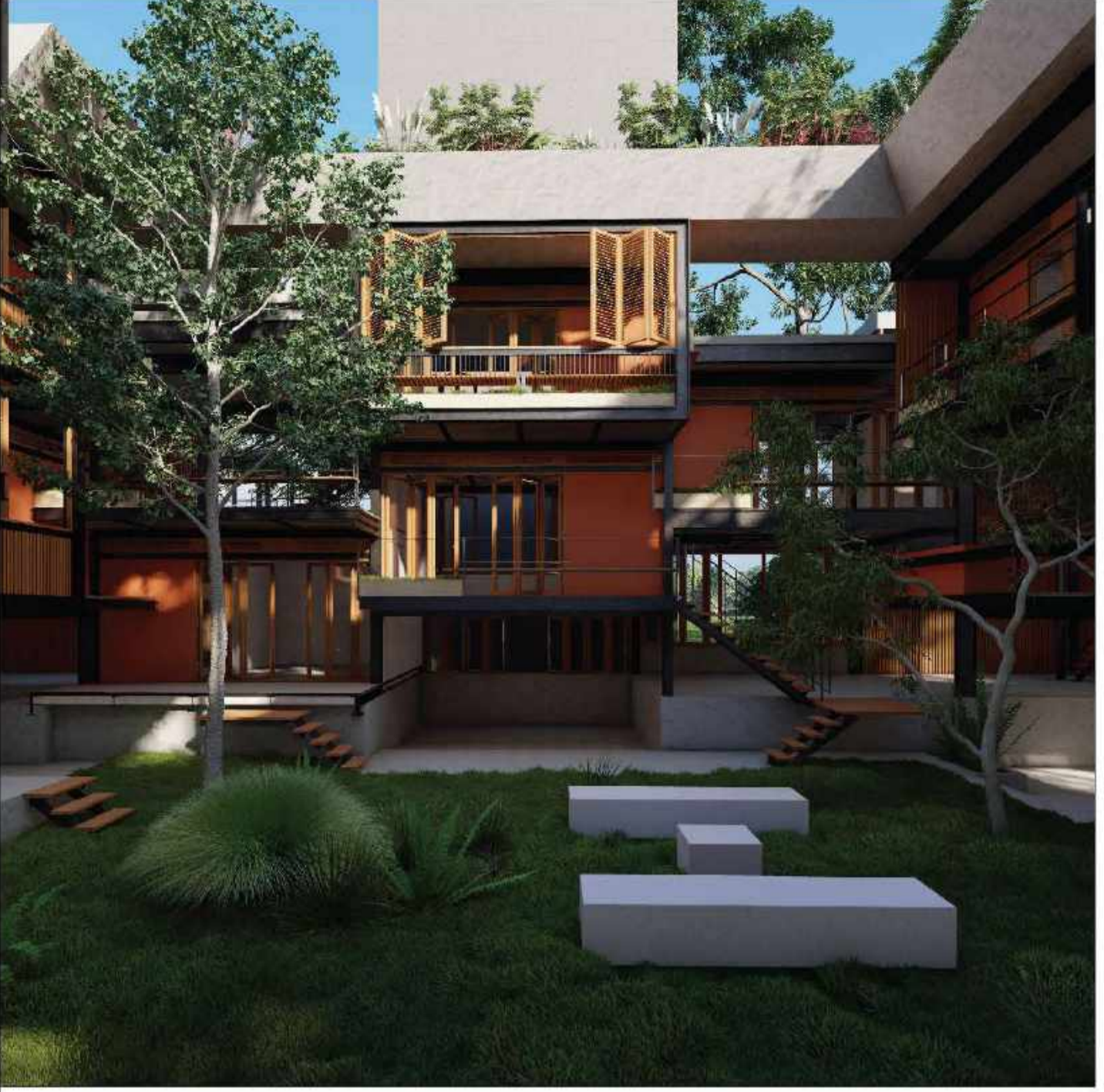
People also face many health related issues

- Pros**
- Privacy
 - Personal freedom.
 - Increased productivity and creativity (for artists).
 - Lack of judgment.
 - Freedom to be yourself.
- Cons**
- Security issue
 - Affect mental health-anxiety and depression.
 - Loneliness has substantial affect on people's health and happiness, higher systolic blood pressure and BMI etc.
 - Loneliness Increases likelihood of early death by 20%, This effect is equivalent to smoking 15 cigarette or affects due to obesity.
 - People becoming loner
 - More Amount of responsibilities.
- But at the end, Society and friends are important.*

Proposed design based on all pros and cons



CO - LIVING UNIT



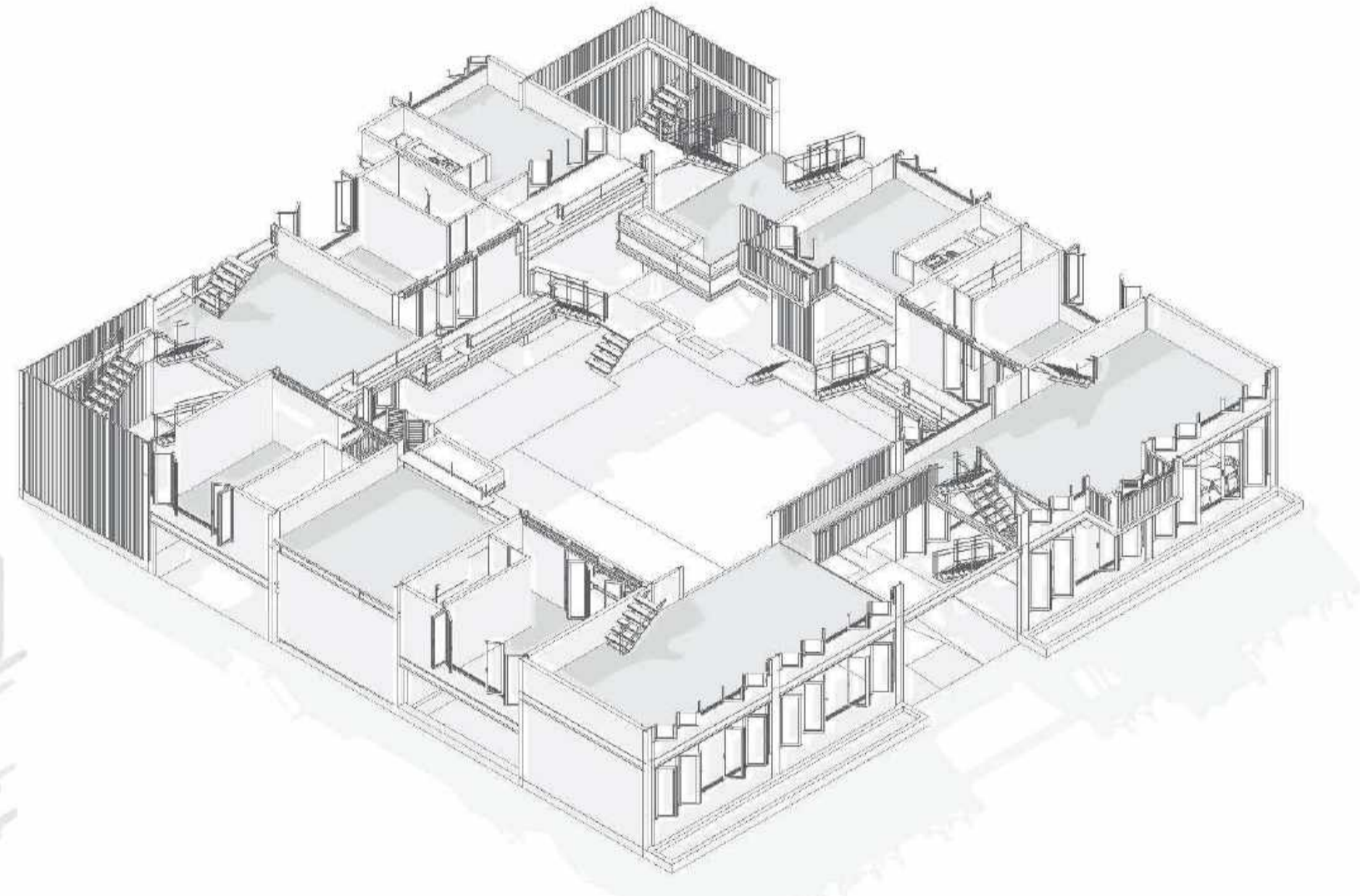
ELEVATION-X
SCALE 1:100



ELEVATION-Y
SCALE 1:100

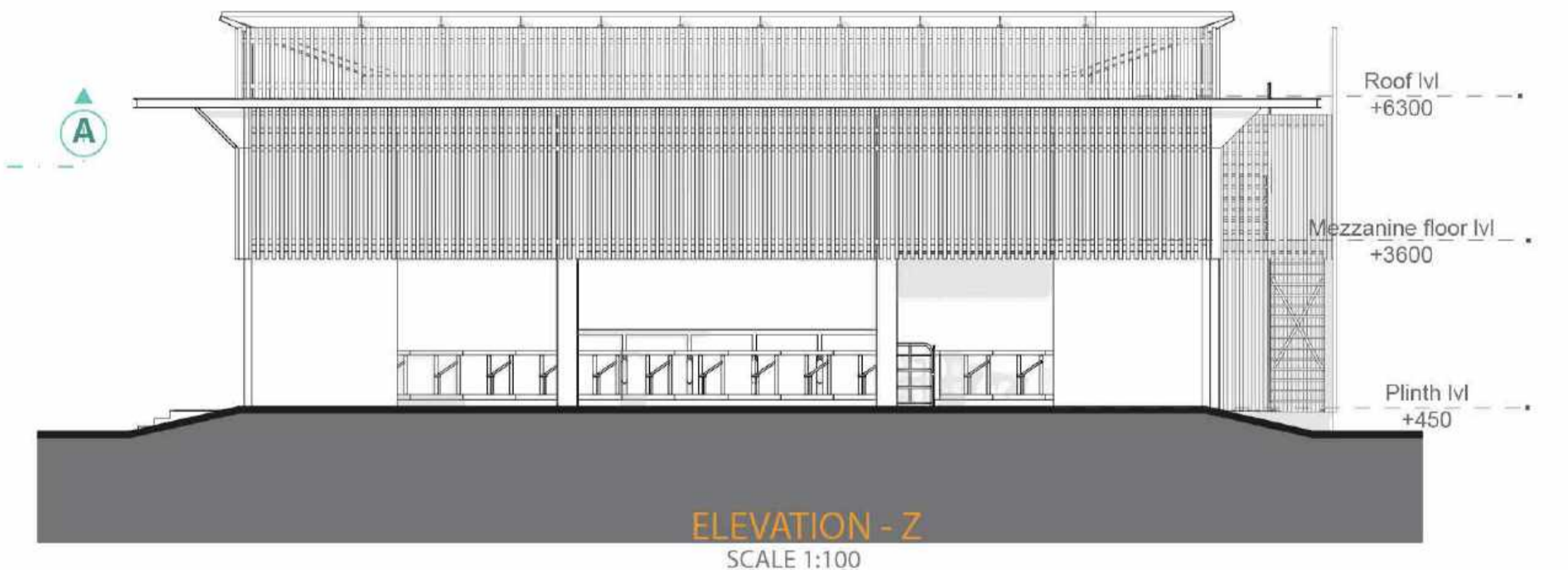
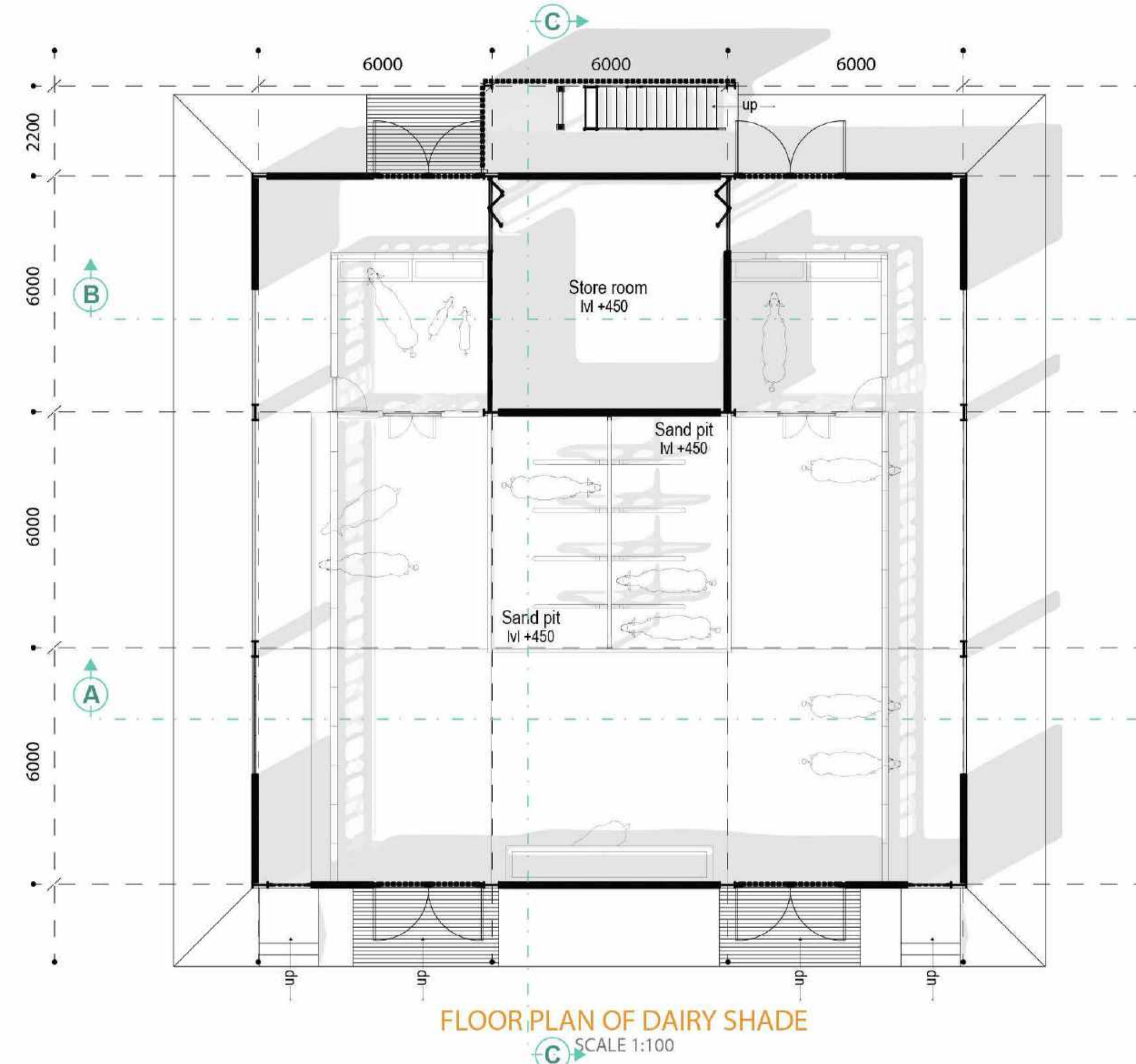


UPPER FLOOR PLAN
SCALE 1:100

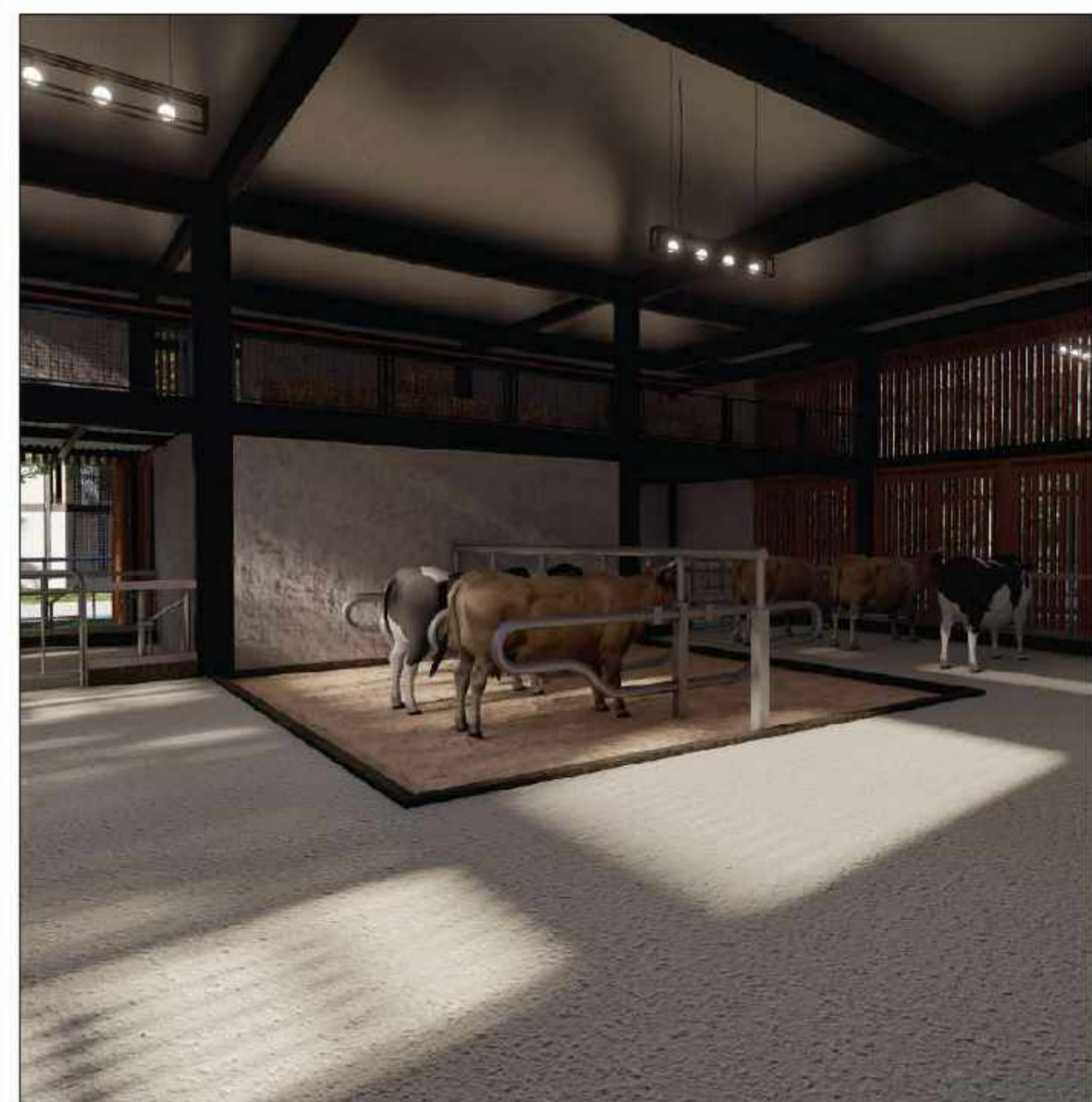


ISOMETRIC VIEW
NOT ON SCALE



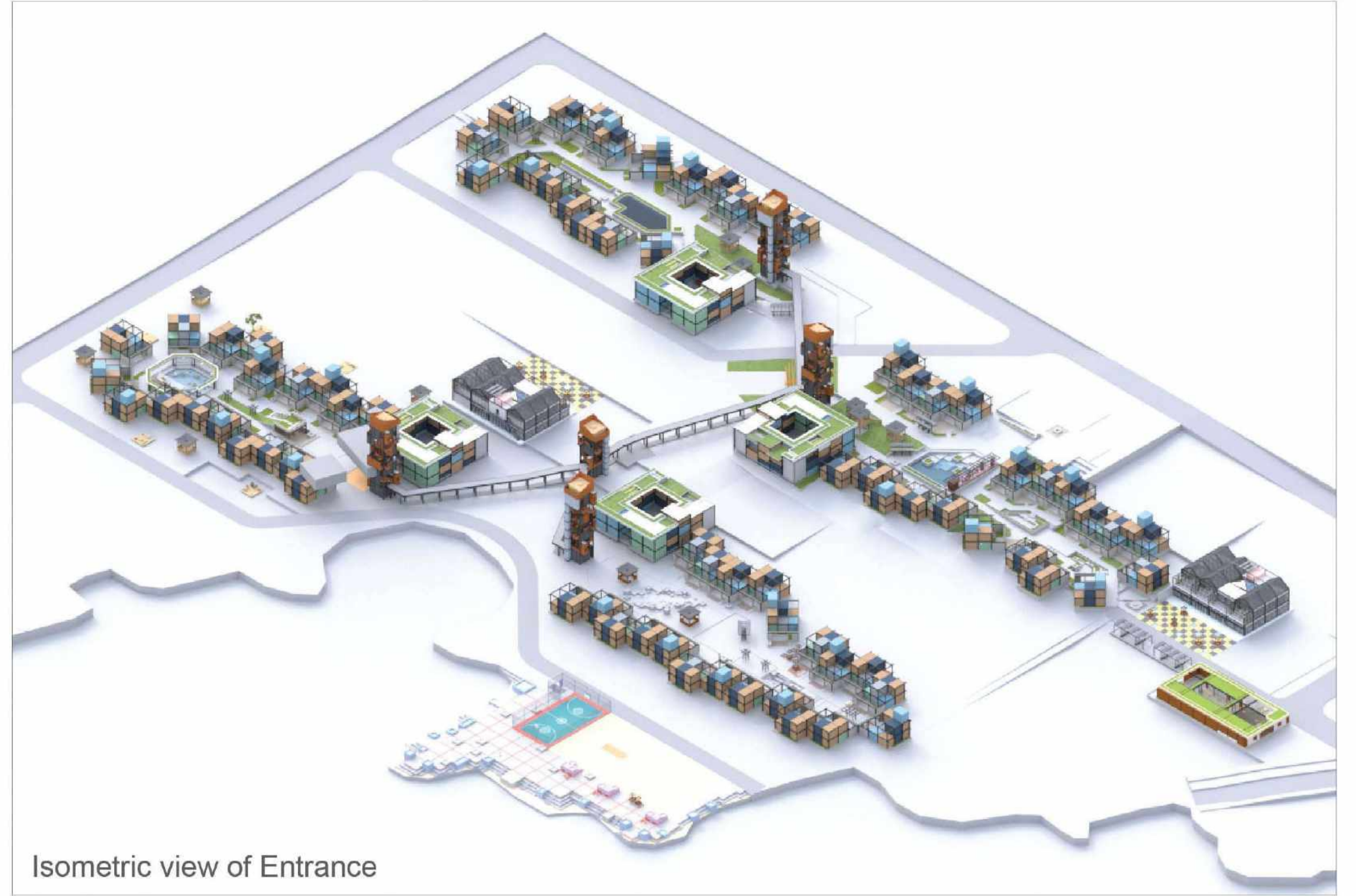


LIVE STOCK - COWSHED





Isometric view of cluster-A



Isometric view of Entrance



View of Entrance



Rendered Isometric view of Co-living Unit

RENDERS

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