Sponsored Thesis Project Competition on

"RE-IMAGINING URBAN RIVERS"

Season- 2

Project Title : Pragati Setu : Bridging the socio-economic gaps with river tourism as a catalyst – A case of river Vincharna and Shinde Wasti

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NAMAMI GANGE

National Institute of Urban Affairs

WATER & ENVIRONMENT VERTICAL

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MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S
DR. BHANUBEN NANAVATI
COLLEGE OF ARCHITECTURE
FOR WOMEN

Preface / Summary

India is overwhelmingly an agricultural country with about 6 lakh villages, many of which have little or no connection with the outside world, attention to rural transportation has not been paid in the past.
This study highlights one such utterly neglected village - Sautada, on the banks of Vincharna river in Maharashtra's Beed district. Raeshwar Dam, was built 25-30 years back on the river Vincharna causing it to overflow and giving rise the to backwaters of Vincharna's riverine lake. The river Vincharna split the village of Sautada into two, cutting off a portion of the village from the main part. The cut-off island known as the Shinde Wasti got disconnected Sautada village and from the remaining world. Restricted access to their part of Sautada village has affected almost every one of Shinde Wasti's 500 or so residents. The existence of abundant water source led to flourishing agriculture and pisciculture practices. Rameshwar Waterfall and Temple, located within 1.5km radius of the Wasti in Sautada are a major spot for nearby tourists. There is an annual yatra consisting of thousands of pilgrims to the Rameshwar Temple. Despite the presence of these natural and cultural assets, there has been lack of tourism infrastructure development leading to migration of youth and socio-economic decline.
This project aims to identify the problems and bridging the gaps by addressing the current and future needs of the river and village with architecture as a mediator. The study follows a participatory approach as the main methodology which has proved to be efficient in problem identification and solution formation during past researches. The architectural solutions, interventions and policies aim at transforming the role of river Vincharna in the lives of villagers of Sautada village. The interventions focusing river-related agro-tourism infrastructure, pilgrim infrastructure and river ecology enhancement will uplift the socio-economic conditions of the village. This will not only enhance the livelihood of the villagers, but also conserve the existing ecology of the river. The expected outcome will serve as a model solution for similar conditions in rural villages of India, urging them to grow socially and economically with a ecologically sustainable and sensitive approach.

Acknowledgements

First and foremost, I would like to express my deepest gratitude towards my thesis guide – Prof. Kavita Murugkar for her eminent guidance and constant support, and all my faculty from BNCA.

I would like to extend my sincere gratitude towards my mentors from the NIUA (National Institute of Urban Affairs) and NMCG (National Mission for Clean Ganga) teams for their continuous help and guidance, and being a powerhouse of motivation during my thesis.

I would like to mention Dr.Ganesh Dhawale and Sanap Sarpanch from Sautada, Beed. This project wouldn't have been possible without their constant help.

I would also like to thank my family and friends who have helped me in some way or the other throughout my thesis journey.

Thanking You,

Yours sincerely,

Mohini Bhosekar

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1.1 INTRODUCTION

India is overwhelmingly an agricultural country with about 6 lakh villages, many of which have little or no connection with the outside world, attention to rural transportation has not been paid in the past. The livelihood of the villagers in India is based mostly upon agriculture, animal husbandry and local arts and crafts which is dependent on rivers as the water source. Some villages are disconnected within each other, from the main cities and the world. This project deals with the case one such remote village in Beed District of Maharashtra.

1.2 BEED DISTRICT

Beed district (Marathi pronunciation: [biːɖ]) is an administrative district in the state of Maharashtra in India. The district headquarters are located at Beed. The district occupies an area of 10,693 km² and has a population of 2,585,049 of which 17.91% were urban (as of 2011).

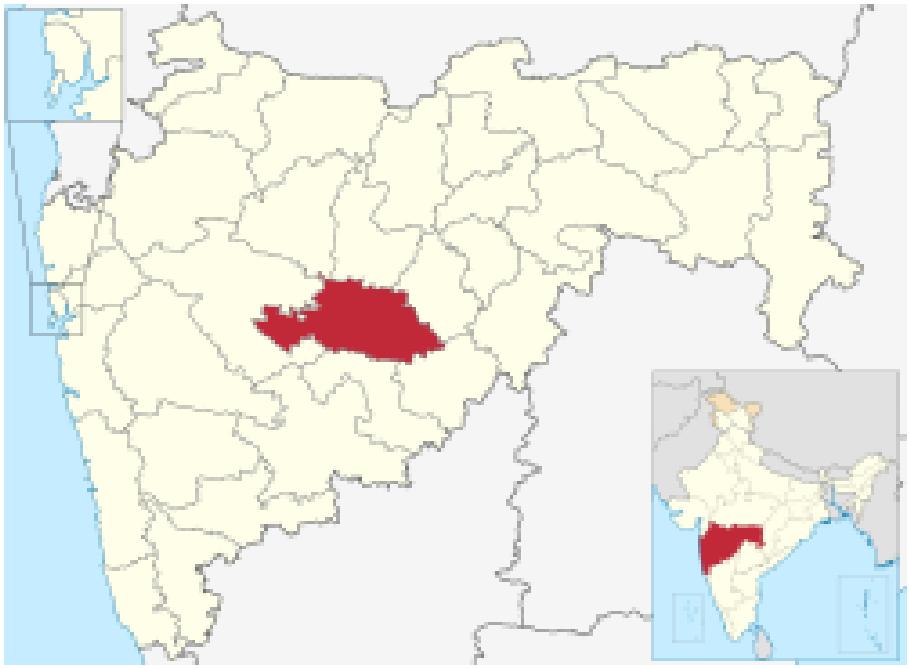


Figure 1 Location Map – Beed, Maharashtra (Source : google)

1.3 HISTORY OF BEED

Beed district has a long history of many rulers and kingdoms. In the ancient era, this city was called as Champavati nagari. The city still proudly shows some old monuments showing the signs of past glory in the form of many city entry doors (called Ves in local language) and city protection walls. Until the 19th century, this part of Marathwada was under the Nizam monarchy, but was later included into the Indian Republic after a fierce struggle between Indian freedom fighters and Nizam soldiers. The name of Bhir is given by Mohammad Tughlaq.

1.4 ECONOMY OF BEED

Agriculture is the main business in Beed, and it is largely dependent on monsoon rain. Beed also is a district which provides a large number sugarcane cutters. A large area of Beed is Rocky and hilly especially the Gheorai, Ashti, Ambajogai , Kaij and Patoda Taluk, these are the places where Custard apple is cultivated.

2.1 SITE INTRODUCTION

2.2 SITE LOCATION

Sautada is a Village in Patoda Taluka in Beed District of Maharashtra State, India. It belongs to Marathwada region, Aurangabad Division. It is located 52 KM towards west from District head-quarters Beed 13 KM from Patoda. It is 311 KM from State capital Mumbai.
The distance between Pune to Sautada is 186 Km by road. The nearest railway station is Ahmednagar.
One can reach Sauatada after a 2-hour long drive from Ahmadnagar. Nearest airports are Osmanabad Airport, Baramati Airport and Pune International Airport.
The site visit was carried by taking the Pune-Ahmednagar-Jamkhed- Sautada route via car.

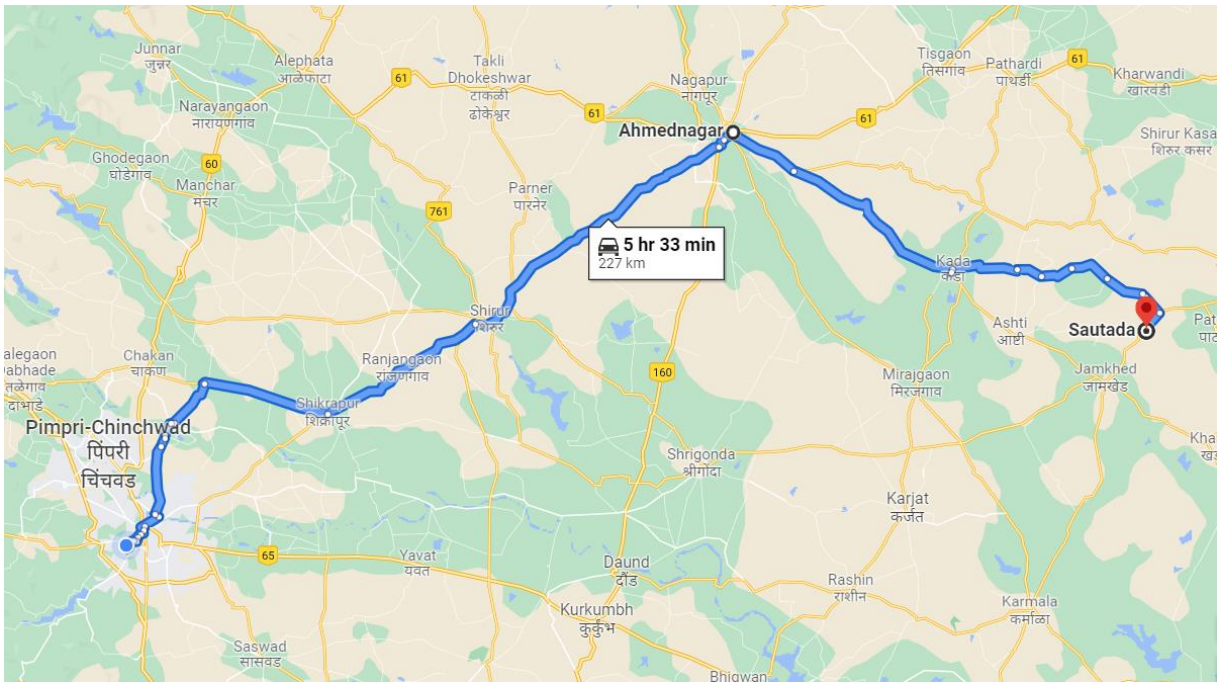


Figure 2 Route taken from Pune to Sautada, Beed, Maharashtra (Source : google map)

2.3 HISTORY OF SAUTADA VILLAGE AND RIVER VINCHARNA

Sautada is on the banks of Vincharna river in Maharashtra's Beed district.
Sautada Dam was constructed over River Vincharna almost 25-30 years back.
In a drought-prone region like Beed, the construction of a dam over the river, resulted in it acting as an abundant source of water. The dam caused the water to overflow, causing the formation of the riverine lake backwaters of river Vincharna.

Figure 3 Shinde Wasti residents crossing river Vincharna by rafts (Source : PARI network)

2.4 ACCESS TO SHINDE WASTI

The Shinde Wasti is surrounded by water of the Sautada dam backwaters from 3 sides and by private inaccessible farmlands on the 4th side. The only available access to the Wasti is by crossing the water body using rafts.

The shortest distance between the two river banks is approximately 30mts or more. To make the crossing easier, the villagers have rowed a thick rope across the river. The rope passes from between the rafts and secures them to the line, preventing them from drifting away. The three rafts are parked at the riverbank, a short trek down a hill. A person must step on rocks, carefully balance their body and then climb onto the wobbly raft, which is propelled by pulling the rope. It takes 5-7 minutes for the raft to reach the other side.

2.5 SAUTADA DAM

The Sautada Dam lies 2.4 km from the main Ahmednagar-Pathardi Road. One can reach it in 8mins via Rameshwar road by car. The dam is 200mts away from Shinde Wasti. It was built 25-30 years back, after which parts of the Shinde Wasti were submerged in water, causing it to form an island-like situation. Sautada Fort, lies on the way to Sautada Dam which is of high historical importance.

Figure 4 Sautada Dam (Source : Dr. Ganesh Dhawale, Beed)

Figure 5 Sautada Dam (Source : Dr. Ganesh Dhawale, Bee

2.6 RAMESHWAR WATERFALL AND TEMPLE

Sautada is famous for Sautada waterfall, also known as Rameshwar waterfall. This place is famous in both, Beed and Ahmednagar districts as it attracts people from every region of Maharashtra. The height of the Sautada waterfall is 70mts. The area around the waterfall is beautified and calming with natural serenity.

From the mountain cliff down to the level of the river basin a flight of about 600 steps has been built to access the famous Rameshwar temple of Lord Shiva built in Hemadpanti style.

The Rameshvar temple stands alone at a height of about 15.24 metres (50 ft.) overlooking the river Vincharna, flowing through the valley below.

Figure 6 Rameshwar Waterfall and Rameshwar Temple in monsoon (Source : Sakaal newspaper)

At the base of the waterfall, there is a pond known as *dev kund.* It is so-called because it is supposed to have been created by Ram by shooting an arrow. Further away is a big water strip in the form of a *doh* called *Sita kund.* There are the foot-prints of Sita on a stone slab here. The religious and historical importance is thus held high due to mythological legends associated with the Rameshwar temple and waterfall.

An annual fair is celebrated around the temple, known as Rameshwar Yatra. On the third Monday of the month of *Sravan* a fair attended by over 3,000 people, which goes on for 2 days.

2.7 ABOUT SHINDE WASTI

Shinde wasti is the isolated part of Sautada village in Beed.

The population of Shinde Wasti is 500-600 people, and around 40-50 houses in total.

There is a primary school – Shinde Wasti School from 1st to 4th standard only. There are currently 7 children studying in that school. The other children have to cross the river to attend the ZP school on the other side in Sautada.


Figure 7 & 8 Vernacular Houses of Shinde Wasti

The occupation of the residents of Shinde Wasti is primarily agriculture. Crops like sugarcane, soyabean, jowar, peanuts, etc. Animal Husbandry is also an occupation, mainly milk production. The farmers have to go and sell their produce in Sautada and nearby villages by crossing the river. They need to get supplies for their farming and cattle almost on a daily basis from the other side in Sautada.

There is a weekly bazaar in Sautada village where the villagers set up their producs every Tuesday.


Figure 9 & 10 Agricultural Farmlands and Cattle of Shinde Wasti

3.1 ANALYSIS

3.2 PARTICIPATORY APPROACH METHODOLOGY

Interviews of the villagers and meeting with the Village Sarpanch helped in understanding the needs and aspirations of the villagers.

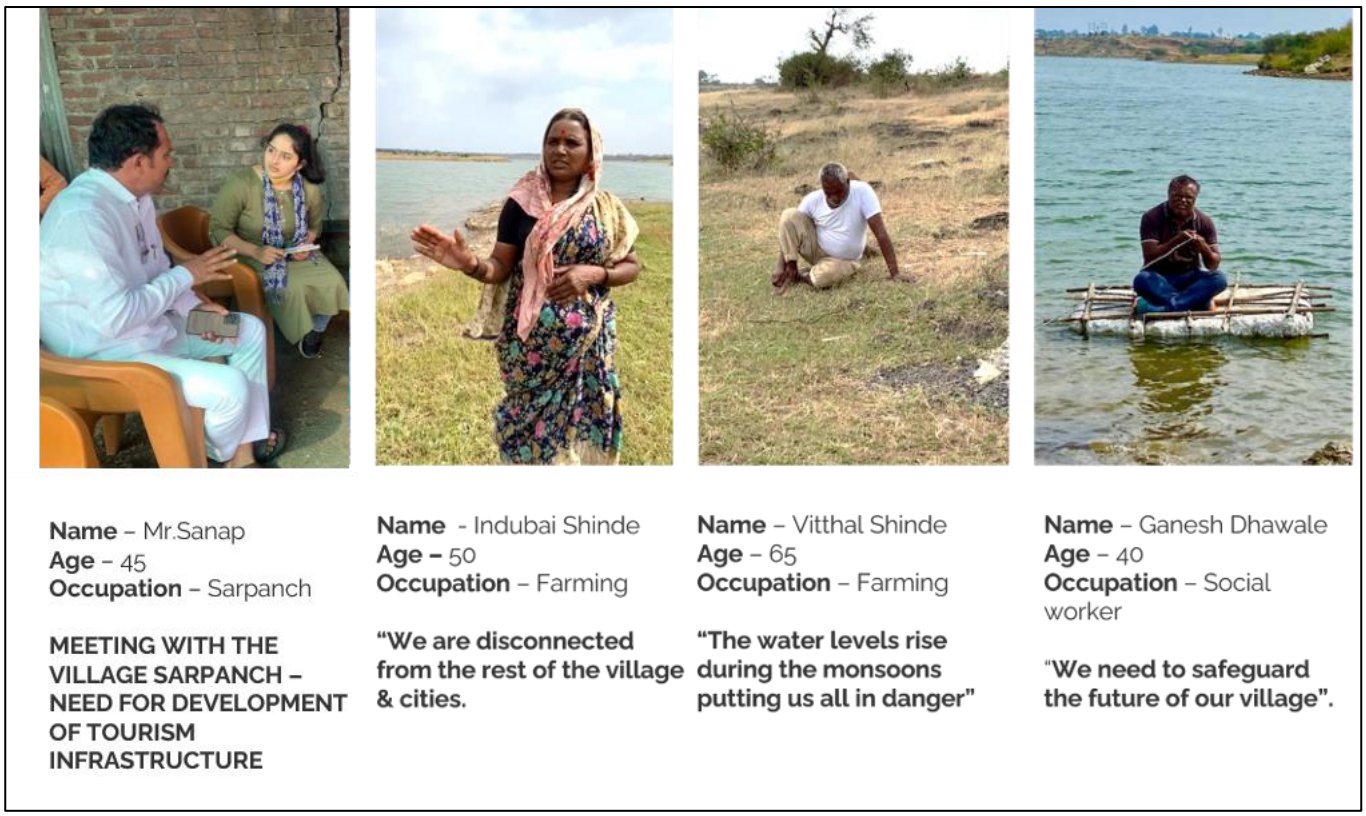
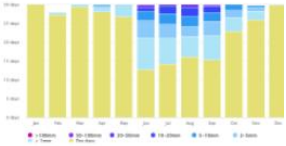


Figure 11 Interviews of the villagers and Sarpanch

Figure 12 The vernacular settings and local cuisine of Shine Wasti

3.3 CLIMATE ANALYSIS

CLIMATE - HOT AND DRY
HOTTEST MONTH S - APRIL, MAY
MAX TEMPERATURE - 42 DEGREES
MINIMUM TEMPERATURE - 16 DEGREES
ANNUAL RAINFALL - 758 MM
PREVALENT WIND DIRECTION - SW TO NE

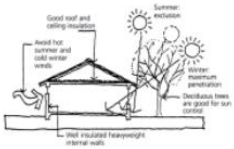


CLIMATE RESPONSIVE DESIGN STRATEGIES

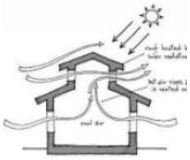
ORIENTATION OF BUILDINGS

BREATHABLE SPACES BUILDING ON STILTS

LARGE OVERHANGS GROUND COVER



THICK WALLS FOR INSULATION DECIDUOS TREES FOR SHADE



HOT AIR RISES OUT COOL AIR COMES IN

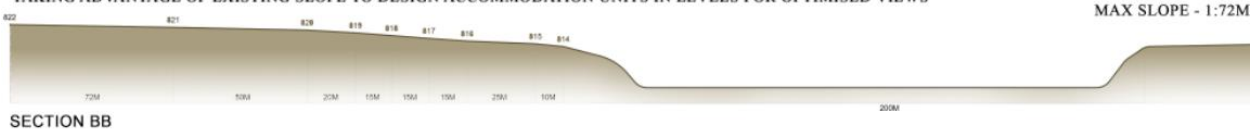
SLOPE ANALYSIS AND STRATEGIES

GRADUAL NATURAL SLOPE TO BE USED FOR PLANNING LARGE SPACES ALONG THE CONTOURS

SECTION AA

TAKING ADVANTAGE OF EXISTING SLOPE TO DESIGN ACCOMMODATION UNITS IN LEVELS FOR OPTIMISED VIEWS

MIN. SLOPE - 1:10M
MAX SLOPE - 1:72M



SECTION BB

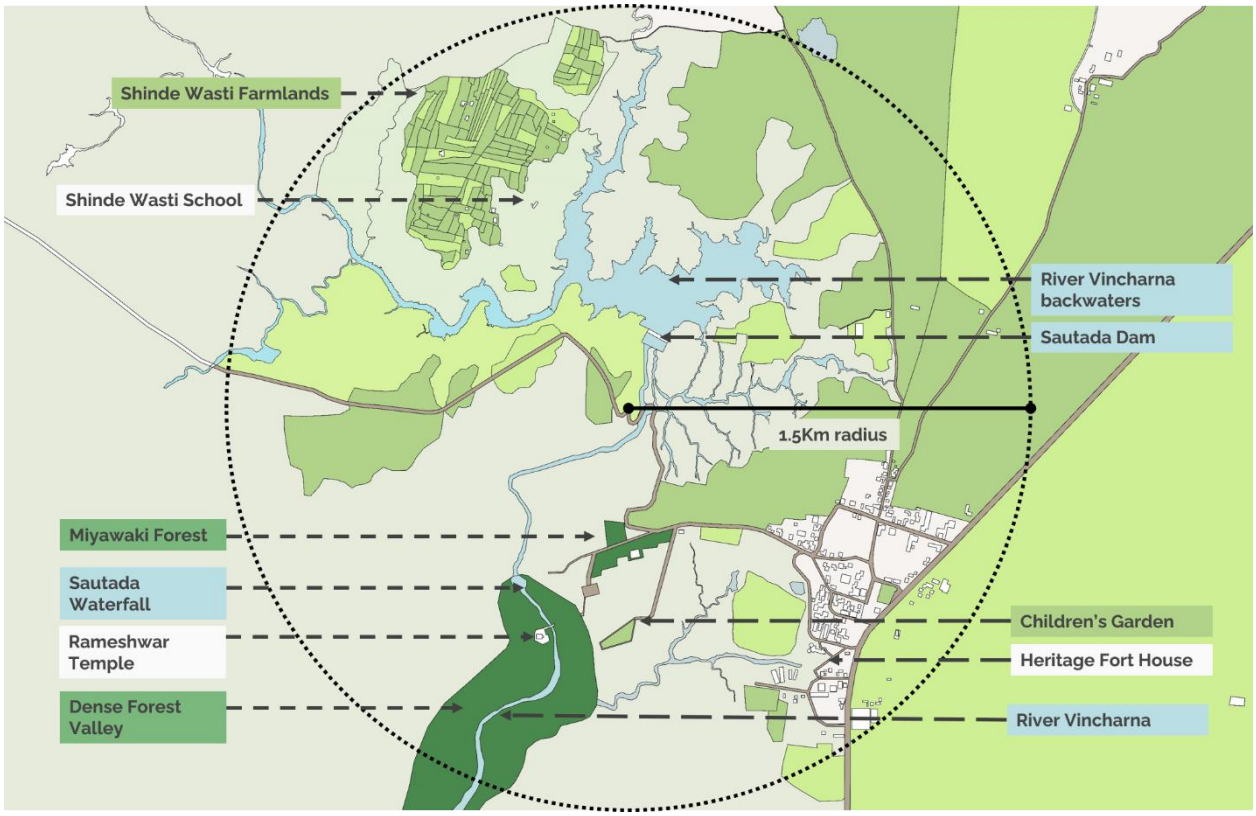


Figure 12 Proximity map of Sautada Village – Shinde Wasti and river Vincharna

3.4 SITE ANALYSIS

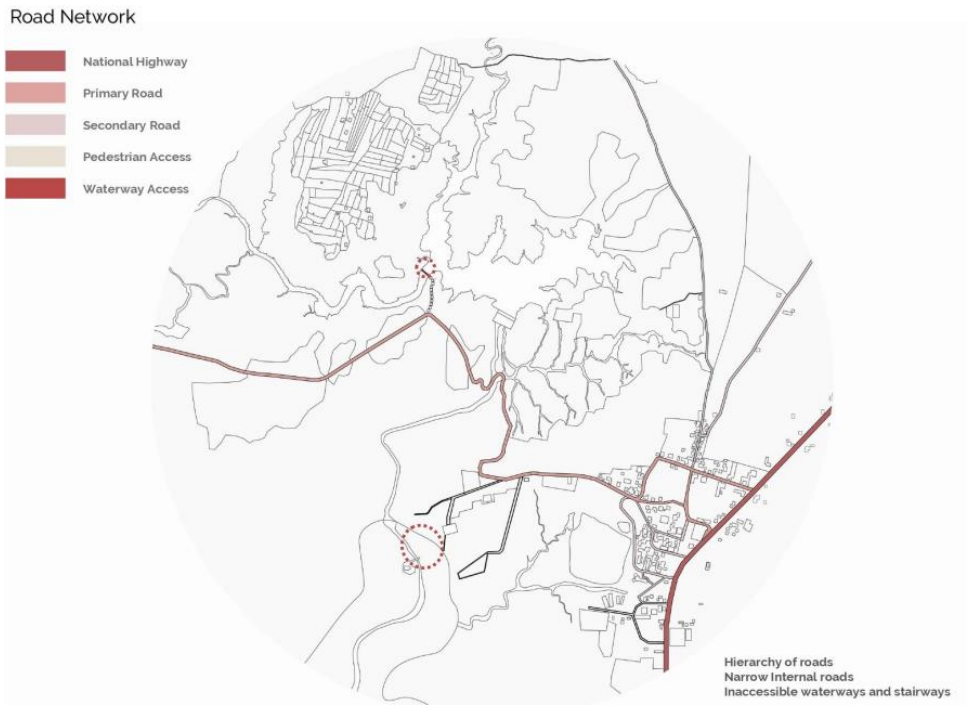


Figure 13 Road Network Analysis

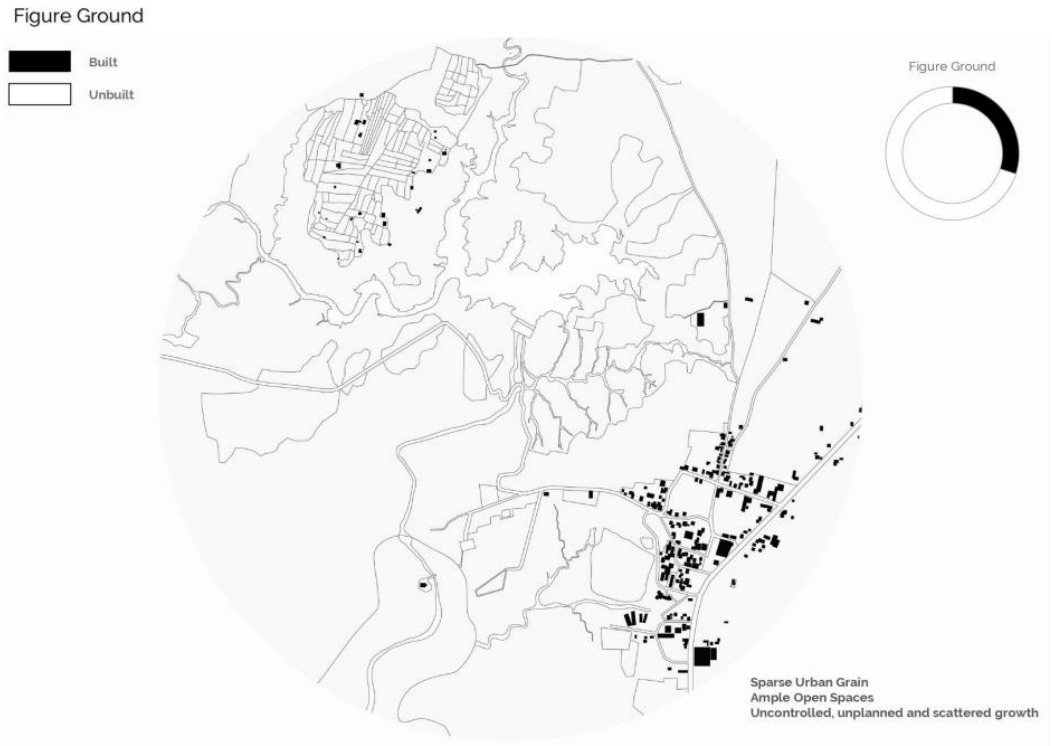


Figure 14 Figure Ground Analysis

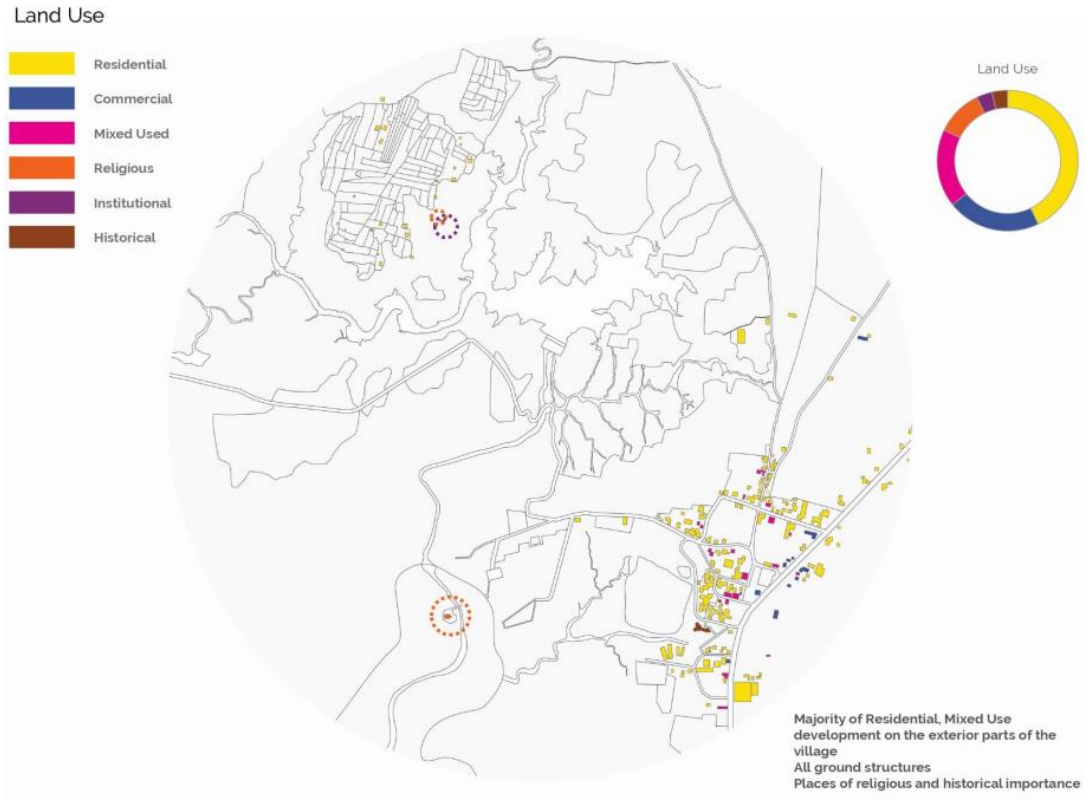


Figure 15 Land Use Analysis

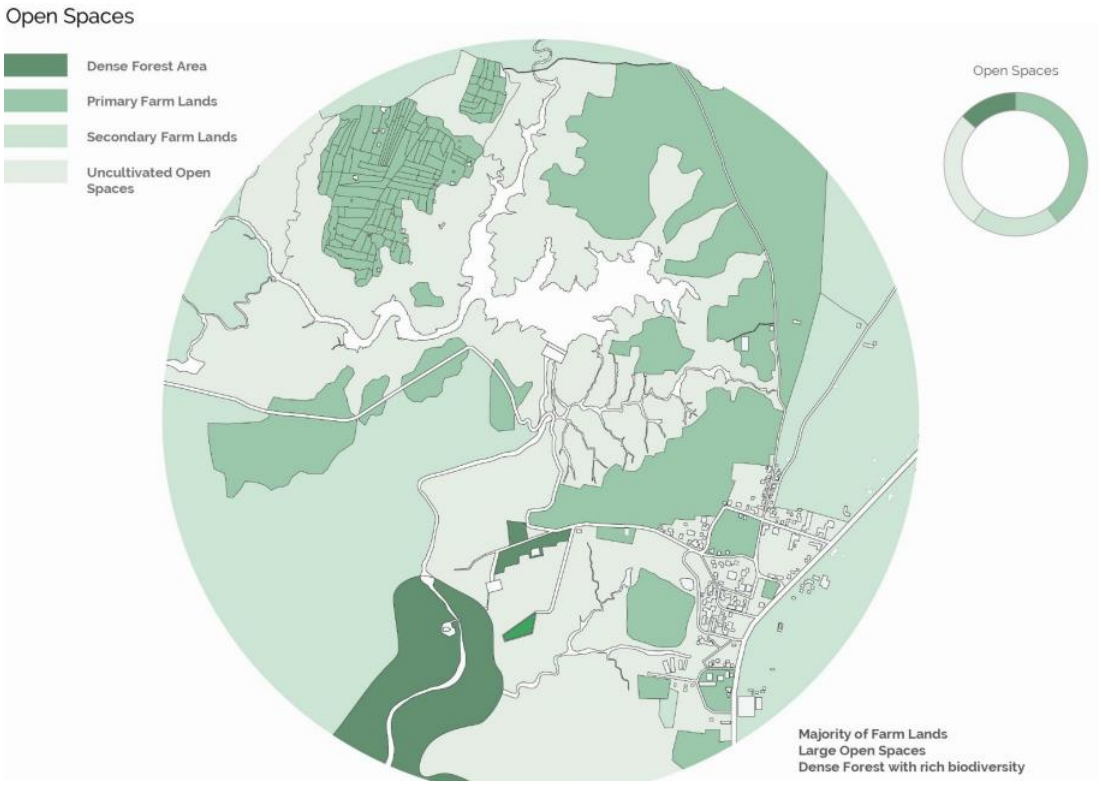


Figure 16 Open Spaces Analysis

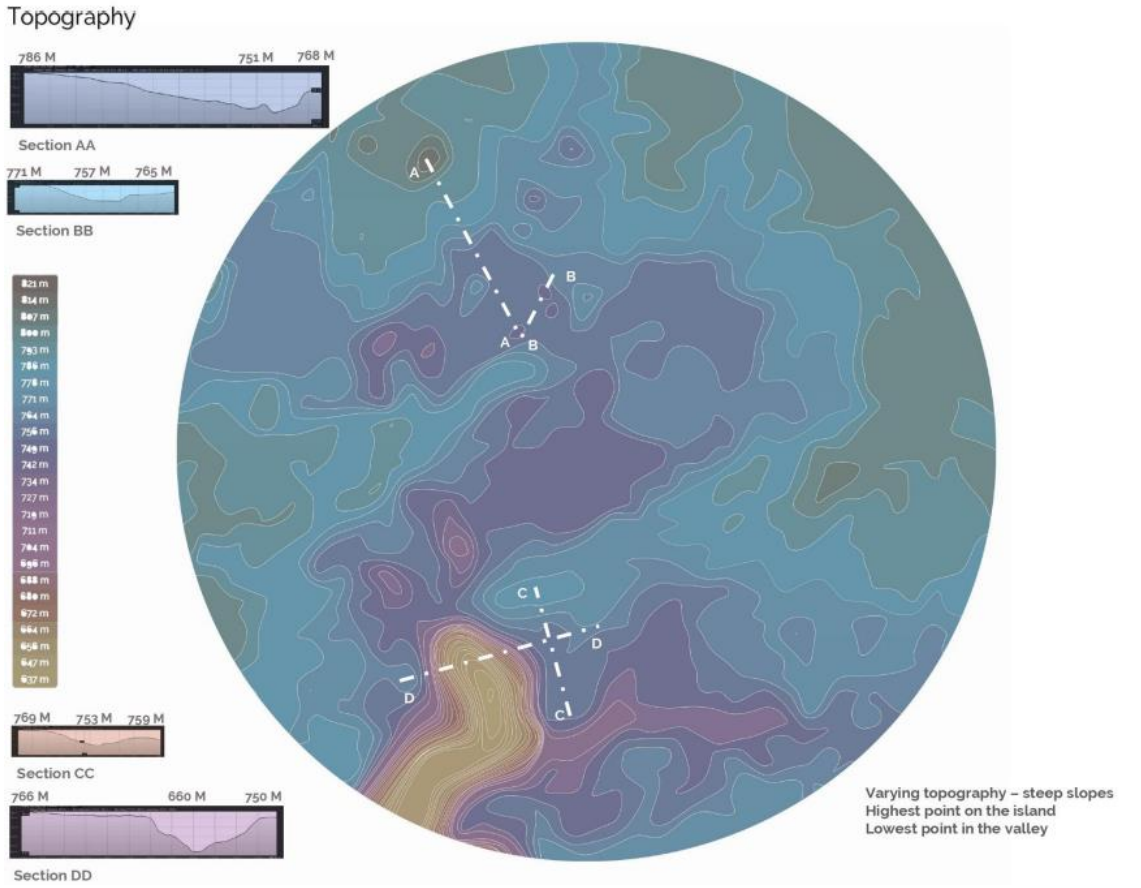


Figure 17 Topography Analysis

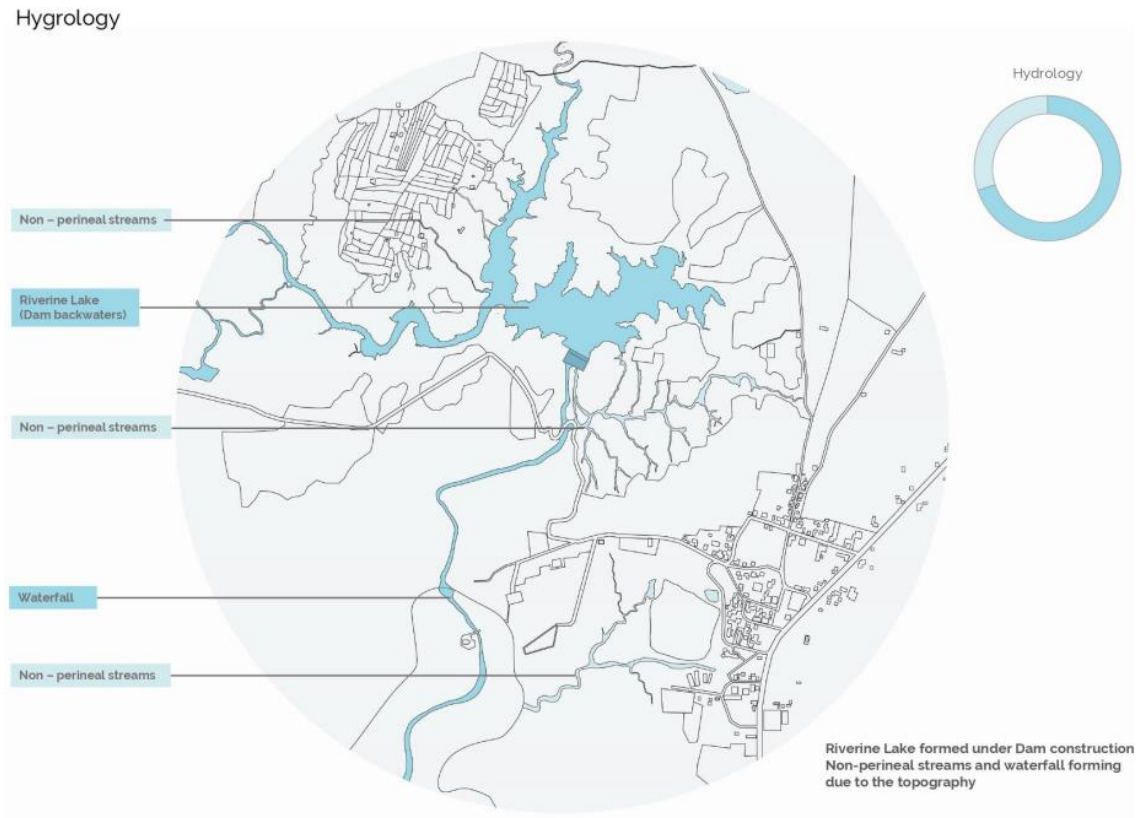


Figure 18 Hydrology Analysis

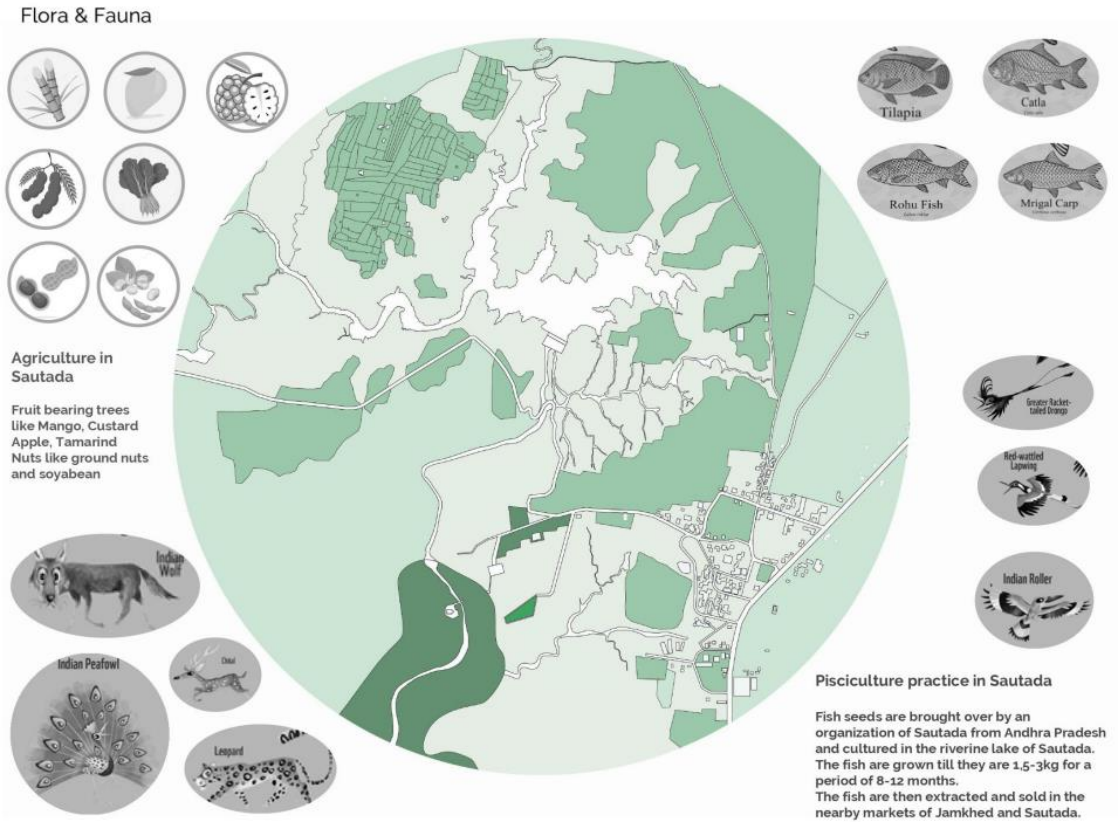


Figure 19 Flora and Fauna Analysis

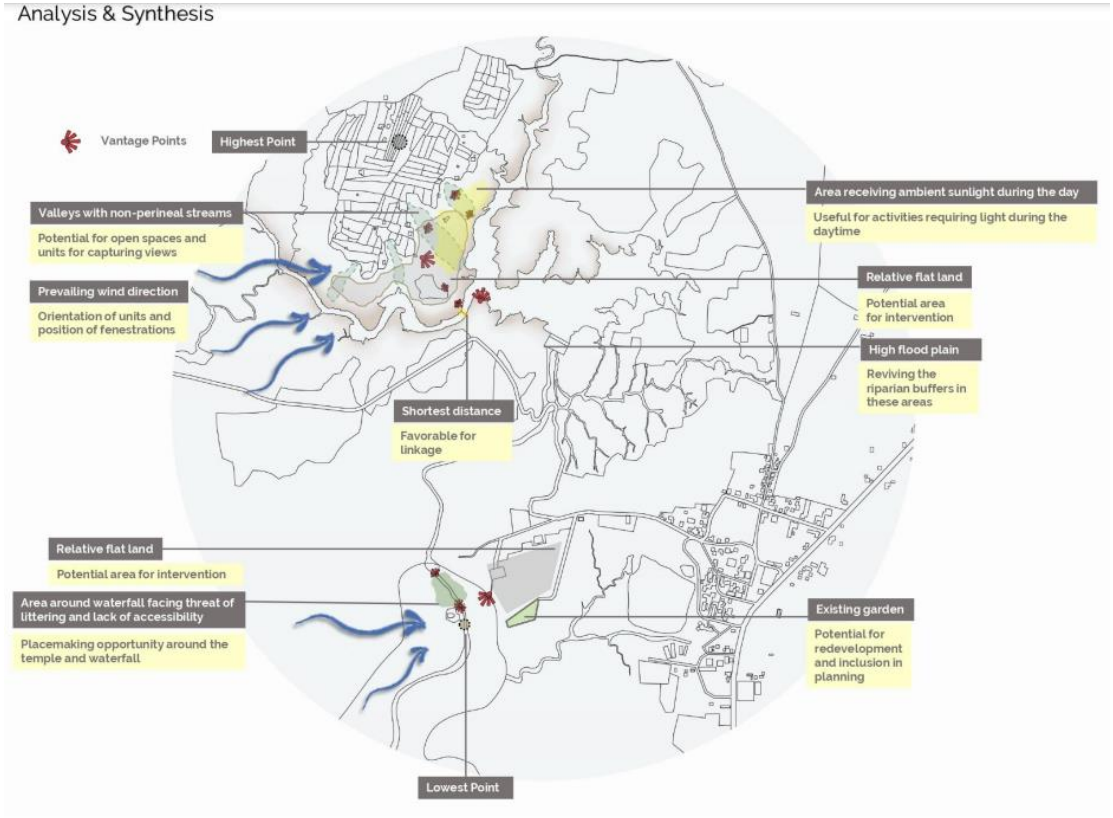


Figure 20 Synthesis

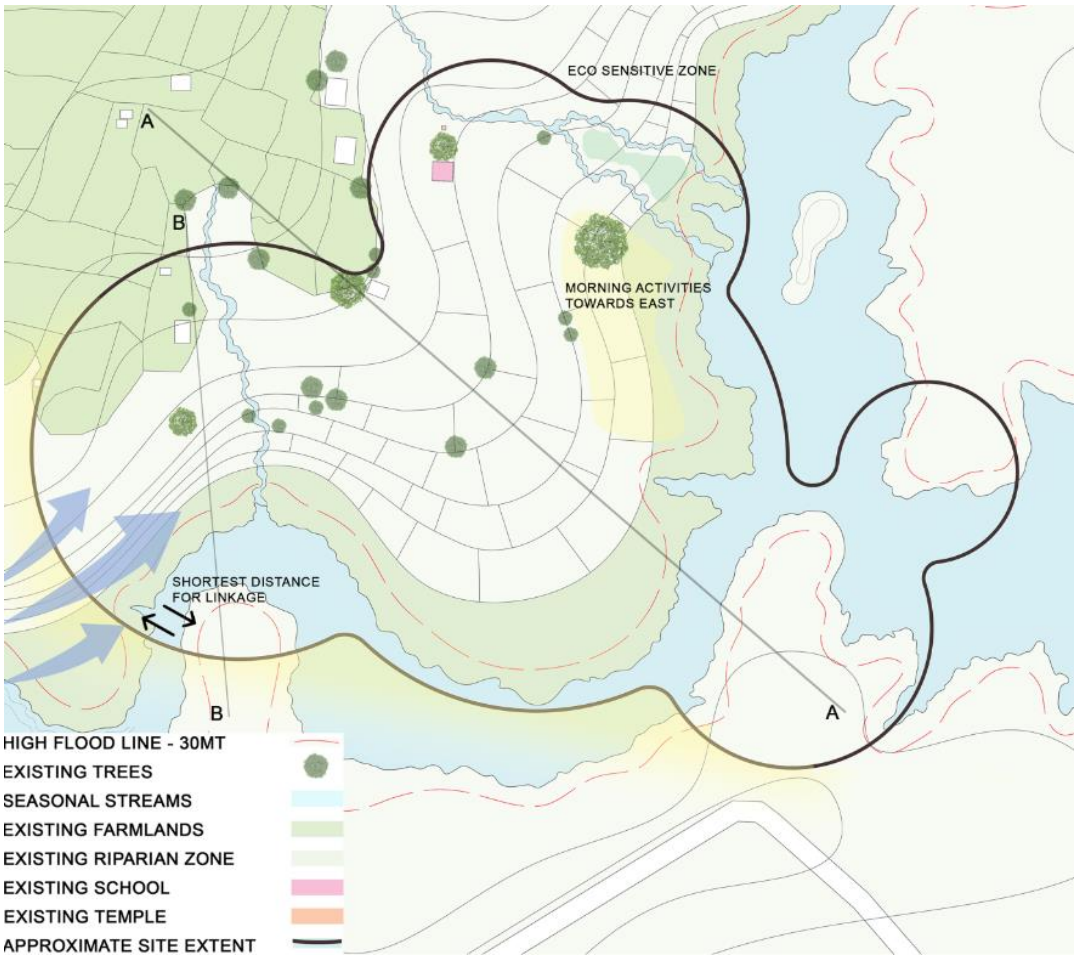


Figure 21 Site A – Shinde Wasti Site Analysis

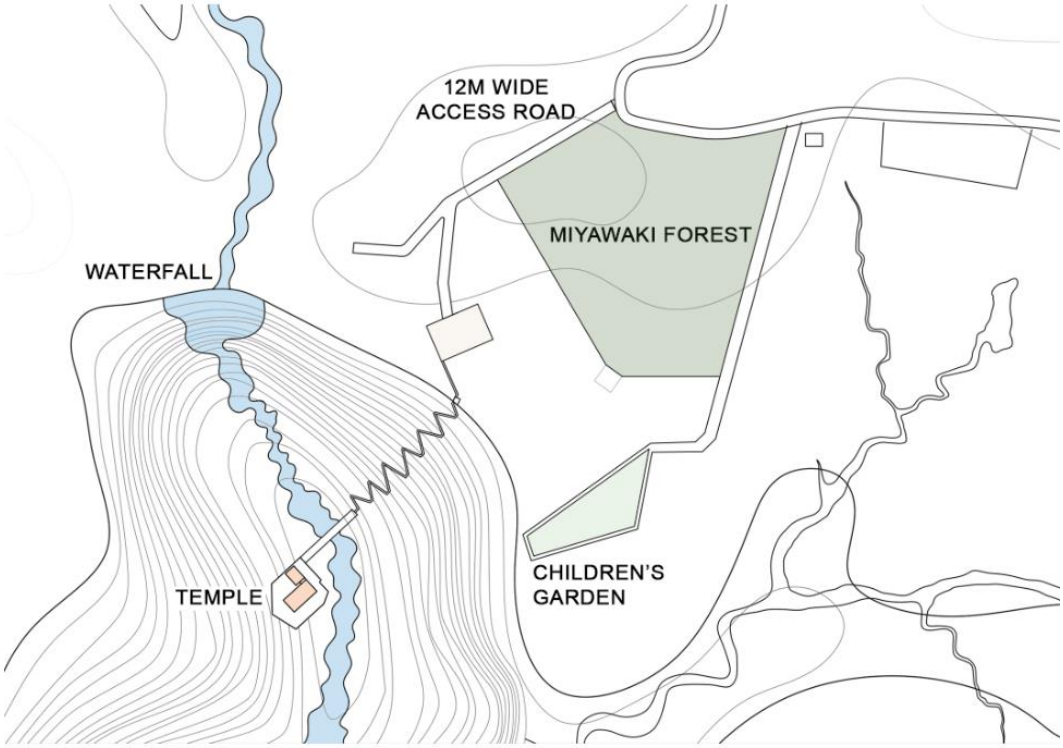


Figure 22 Site B – Rameshwar Waterfall and Temple Site Analysis

4.1 KEY ISSUES

LACK OF ACCESSIBILITY OVER THE RIVER

There is a need to establish proper connectivity and accessibility over river Vincharna for the Shinde Wasti residents to commute daily.

LACK OF TOURISM INFRASTRUCTURE

Despite the presence of tourist attraction places like the waterfall and temple, there is no tourism infrastructure development.

SOCIO-ECONOMIC DECLINE

The lack of accessibility and lack of tourism infrastructure have led to poverty in Sautada village.

MIGRATION OF YOUTH

The lack of development and employment opportunities have led to migration of youth to cities.

THREAT TO RIVER ECOLOGY

In case of infrastructural development, a threat to the existing river ecology may pose if not conserved with a sensitive approach

4.2 KEY ASSESTS

FLOURISHING AGRICULTURE – Due to the presence of abundant water

ONGOING PISCICULTURE PRACTICE – Due to the thriving river ecology

RELIGIOUS AND NATURAL HERITAGE – The waterfall, temple and river

4.3 KEY INTERVENTIONS AND POLICIES

GOALS

WHY?

TO **UPLIFT THE SOCIO-ECONOMIC CONDITION** OF THE VILLAGE

TO DEVELOP **RIVER-RELATED TOURISM** POTENTIAL

TO **ENHANCE THE ECOLOGY OF THE RIVER**

TO **ENSURE SAFE ACCESSIBILITY** OF THE RIVER

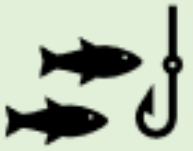
TO **ENSURE EFFECTIVE WASTE MANAGEMENT,** ESPECIALLY IN RIVER ZONE

KEY INTERVENTIONS AND POLICIES

INTERVENTIONS

WHAT?

AGRO TOURISM – FOR SHINDE WASTI WITH RIVER RELATED ACTIVITIES



VISITOR'S CENTRE – FOR WATERFALL AND TEMPLE

RIPARIAN MANAGEMENT ALONG THE RIVER EDGE

A **SAFE LINKAGE** OVER THE RIVER

SUSTAINABLE WASTE TREATMENT, RECYCLING WASTEWATER

KEY INTERVENTIONS AND POLICIES

POLICIES

HOW?

- DEVELOPING **TOURISM INFRASTRUCTURE** WITH **CONTROLLED FOOTFALL** FOR **MINIMUM ENVIRONMENTAL IMPACT**

- EQUIPPED WITH **FOOD PLAZAS AND RESTING PLAZAS**

- **LANDSCAPE POLICY - NATIVE PLANTATION** AND WETLAND SPECIES

- **A BRIDGE** DESIGNED CONSIDERING RIPARIAN ZONE FOR VILLAGER'S TO COMMUTE

- USING **SBT – OUTPUT OF ONE SYSTEM IS INPUT OF OTHER.**

5. INTERVENTIONS

5.1 DESIGN BRIEF – AGRO TOURISM

	PART A – AGRO TOURISM - SPACE PROGRAM	UNIT AREA	NO. OF UNITS	BUILT AREA IN SQ. M.	OPEN AREA IN SQ. M.
	WELCOME PAVILION			**150**	**280**
	Arrival Porch			30	
	Waiting Area			36	
	Information and Help Desk			18	
	Visitor's Toilet			65	
	Viewing Deck				200
	Boat Deck				80
	ARRIVAL COURT AND RECEPTION			**530**	**145**
	Entrance Porch			35	
	Waiting Area			200	
	Refreshment's Area			100	
	Storage			30	
	Reception and Information Desk			100	
	Visitor's Toilet			65	
	Central Courtyard				145
	AGRO EXPERIENCE ZONE			**1500**	**440**
	Welcome Pavilion			42	
	Visitor's Toilet			65	
	Community Chula Kitchen			42	
	Dining Area			225	
	Activity Area			72	
	Central Courtyard				290
	Tree Plaza				150
	Aamrai Picnic Zone pavilions	36	5		180
	Gaushala			780	
	Kitchen Unit	60	4	240	
	Sugarcane Pavilion			42	
	FISHING ZONE			**100**	**80**
	Pisciculture Information Desk			36	
	Fishing Storage			18	
	Fishing Decks	10	5		50
	Orientation Hall			54	
	Nature Trail				30
	ACCOMMODATION			**1150**	
	Type A – Farm Stay Unit _(3-4 people)	150	4	750	
	Type B – Stream Side Tent Unit_(2 people)	35	5	175	
	Type C – River Side Tent Unit (3 people)	45	5	225	
	WELLNESS ZONE				**2400**
	Yoga Lawn				10
	Meditation Pavilions				150
	Green Gym		5 (50)		250
	Open Air Amphitheatre				2000
	VILLAGE WELFARE AND EDUCATION ZONE			**600**	**1248**
	Healthcare Clinic			100	
	Multi-purpose store			40	
	Villager's toilets			65	
	Banyan Court				225
	Children's Playground				390
	Tree Plaza				225
	Welcome Pavilion (Visitor's Entry)			54	
	Library			54	
	Training Hall	54	4	216	
	Open Workshop Area	54	2		108
	Visitor's Toilet			65	
	Stream Court				300
	PARKING				**5000**
	2 wheeler		30		
	4 wheeler		45		
	Bus		7		
	TOTAL PART A			**4000**	

Considering footfall of max 200 people per day, 100 max for overnight stay.

5.2 SITE PLAN – AGRO TOURISM AT SHINDE WASTI

Figure 23 Site Plan – Agro-tourism at Shinde Wasti

SITE DESIGN

The site has been carefully designed keeping in mind the existing site conditions.

There is a Welcome Pavilion with boat dock and parking facility for the visitors. The visitor's entry is via boats to reach the Arrival Court and Reception. This is the first experience of the river that has been provided to the visitors.

The Agro-experience centre with Mango grove, Gau-shala and Community kitchen lie at the heart of the site. The visitor's can spend their day enjoying these activities.

There is an open Amphitheatre for local cultural performances. There are yoga pavilions, bamboo bridges along the seasonal streams. Nature trail with birdwatching decks along the entire river edge with Riparian plantation.

The Fishing Zone has pisciculture information hall and fishing decks, accessible by boats on site.

The Village Welfare and Training zone has been designed along the seasonal stream.

The visitor's Accommodation is in the silent zone and there is a bridge for the villagers and visitor's in case of emergency.

5.3 THE WELCOME PAVILION

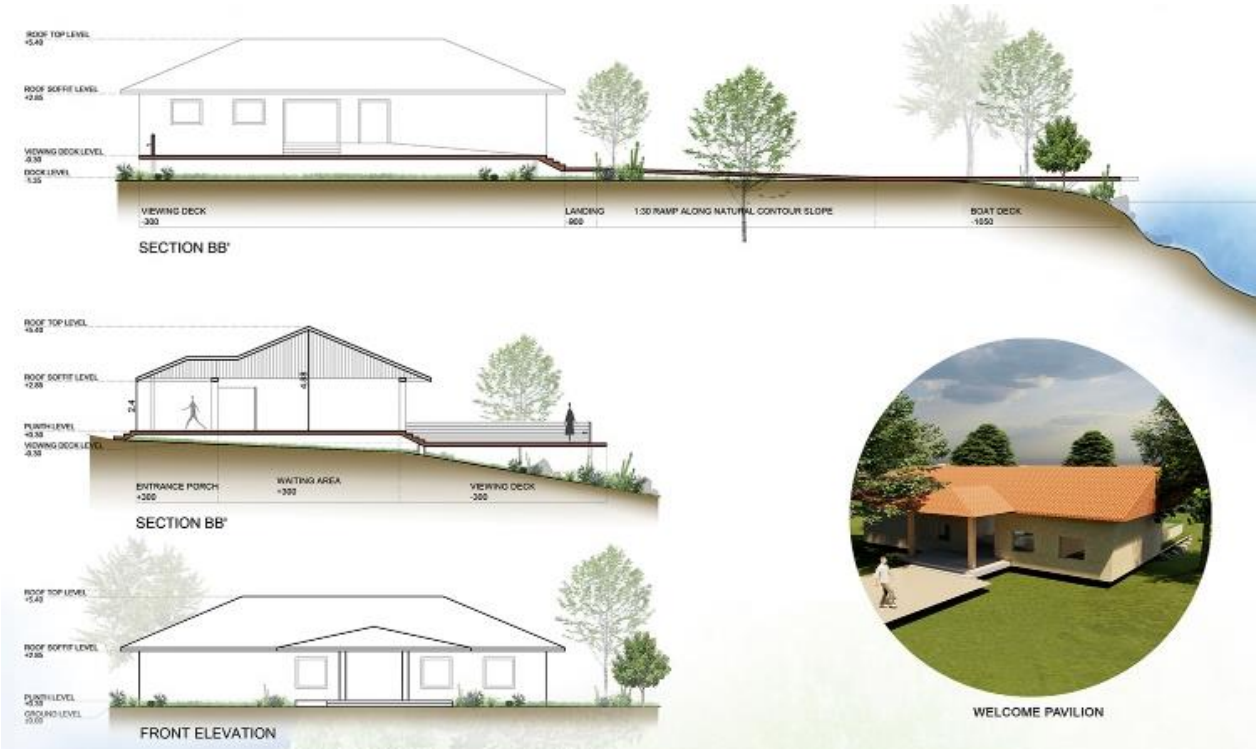


Figure 24 Welcome Pavilion Sections

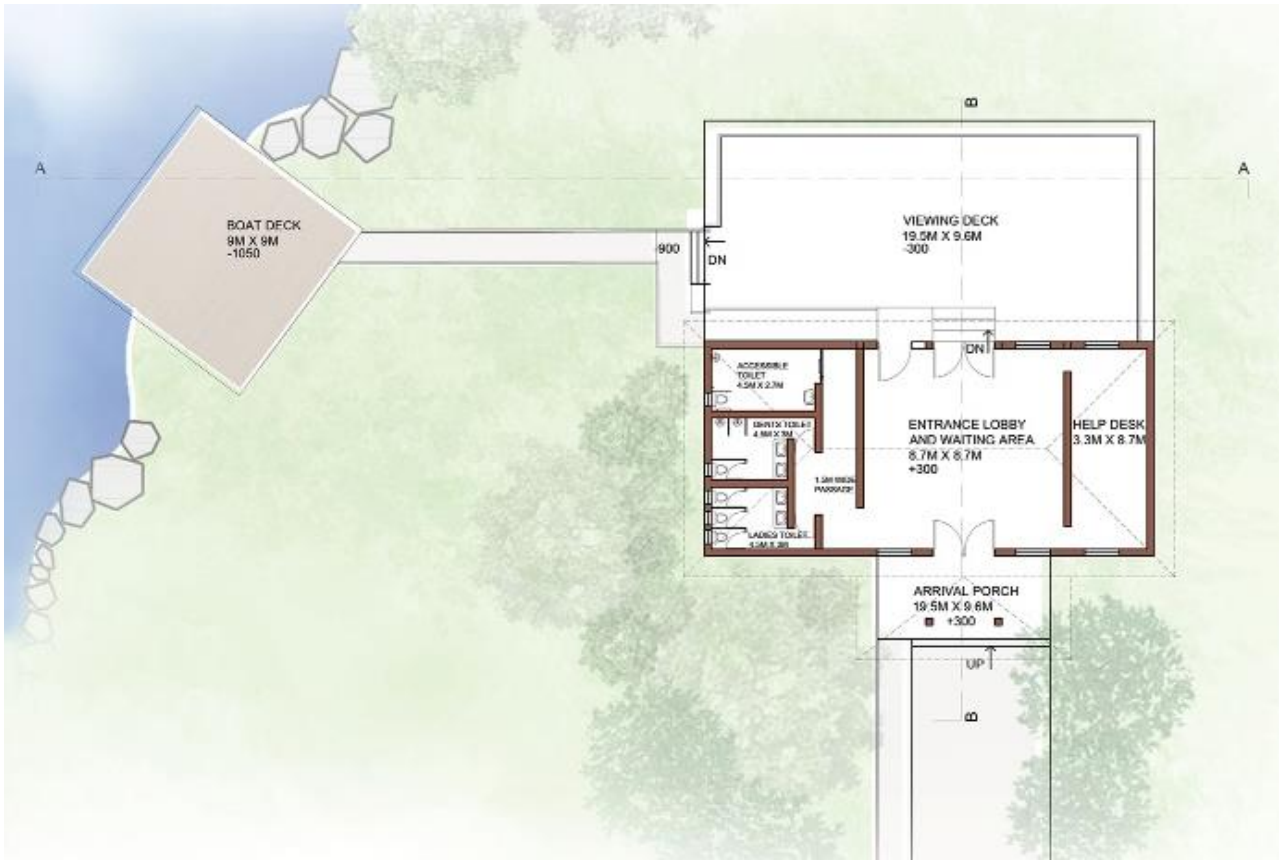


Figure 25 Welcome Pavilion Plan

THE WELCOME PAVILION

The Welcome Pavilion acts as a doorway to the unending vistas of the river, earth and sky.

Figure 26 View of Welcome Pavilion and Parking

Figure 27 View of Welcome Pavilion and Arrival court connection

5.4 THE ARRIVAL COURT AND RECEPTION

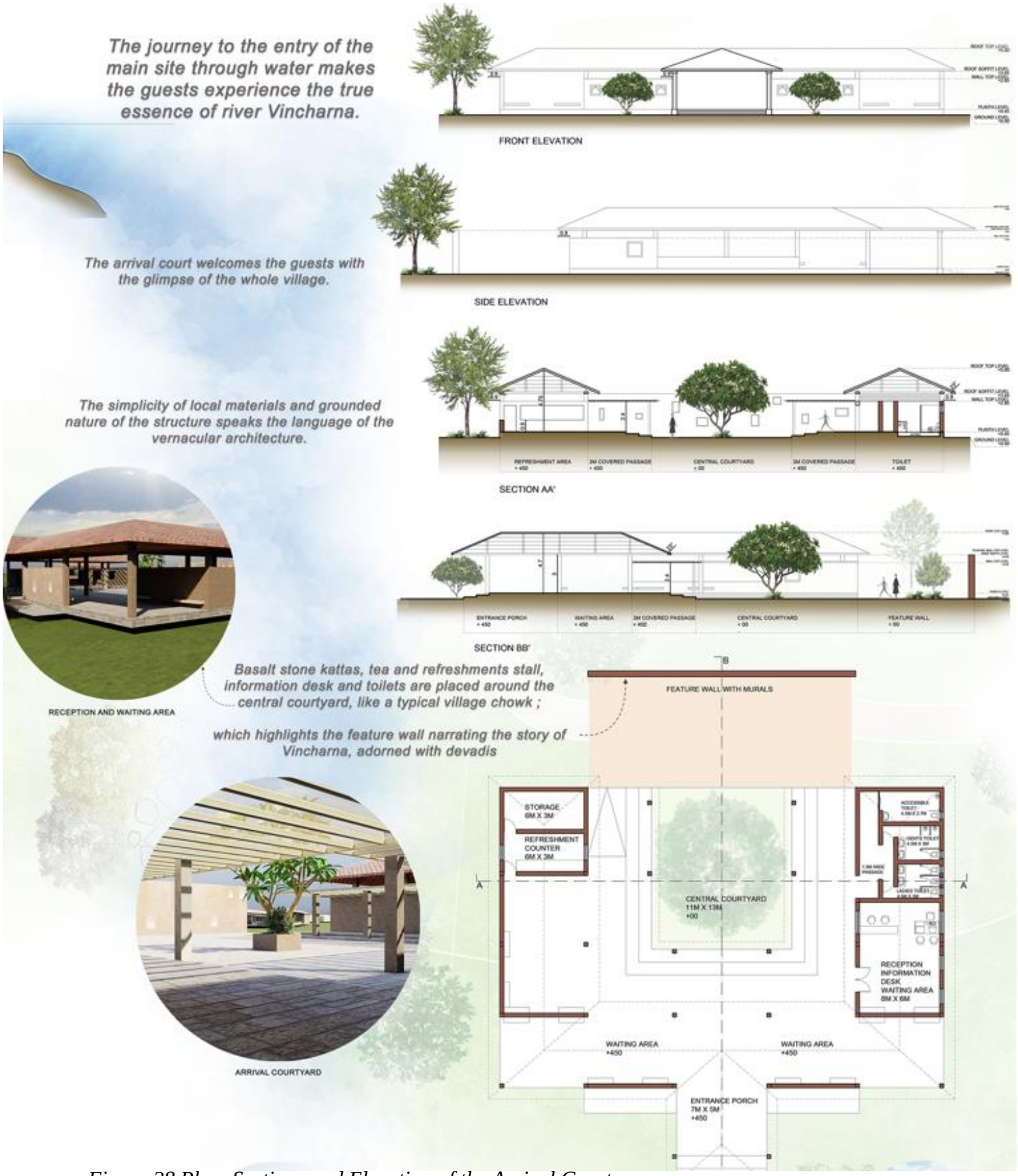


Figure 28 Plan, Sections and Elevation of the Arrival Court

THE ARRIVAL COURT AND RECEPTION

Figure 29 Arrival Court and Reception Front View

Figure 30 Arrival Court and Reception – Central Courtyard

5.5 THE AGRO EXPERIENCE ZONE

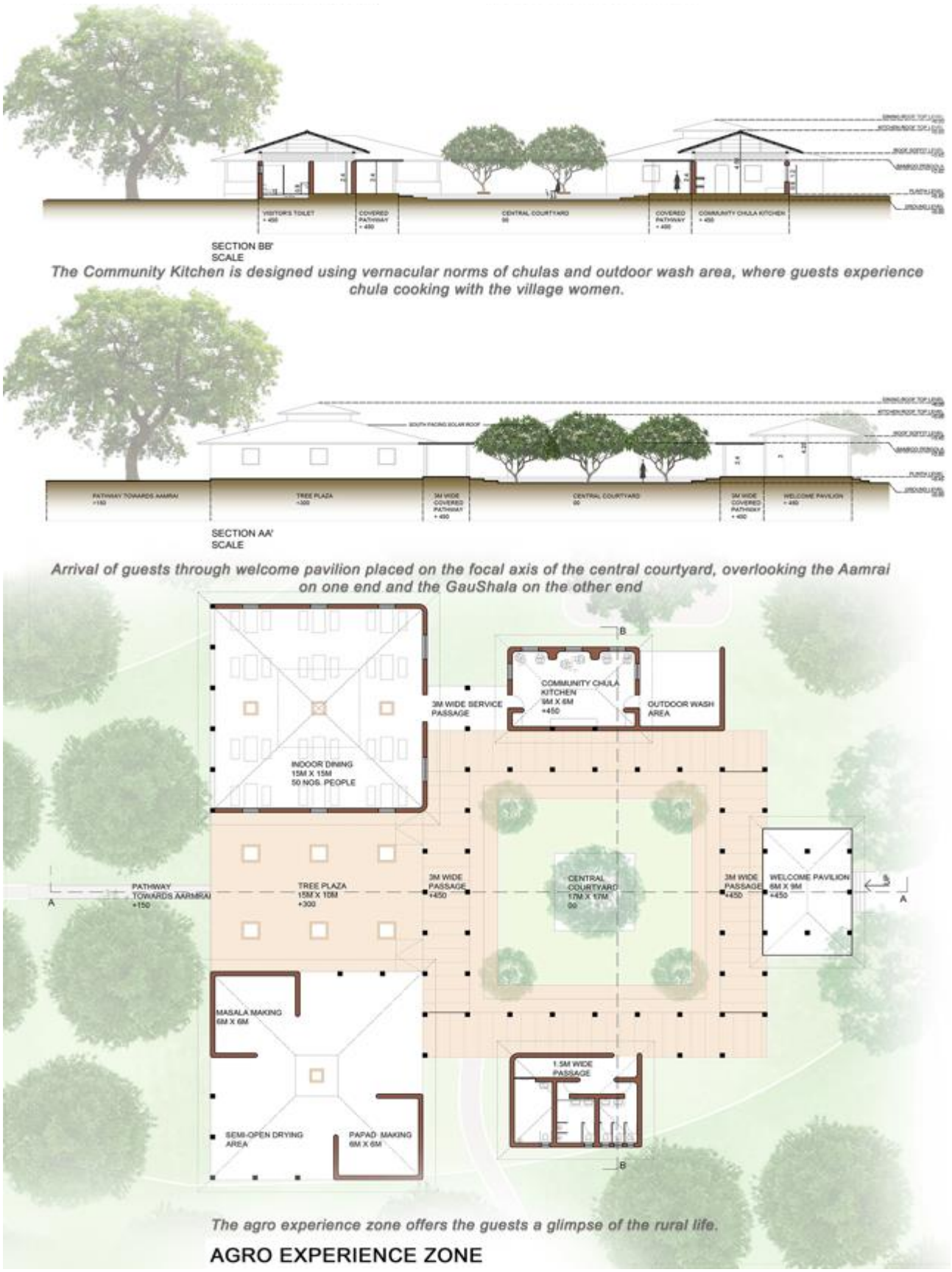
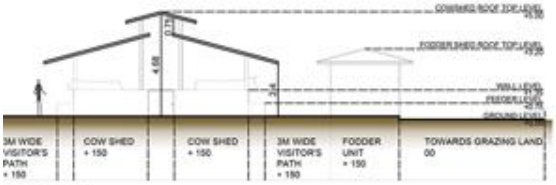


Figure 31 Plan and Sections - Agro-Experience Zone

5.6 THE AGRO EXPERIENCE ZONE – GAU SHALA, KITCHEN, SUGARCANE PAVILION

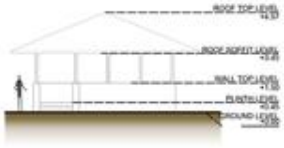
GAUSHALA FEEDING ZONE

SUGARCANE PAVILION

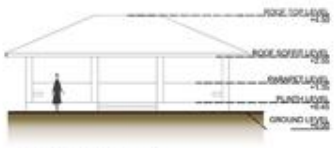


ECTION AA'
CALE

The GauShala placed on the lower contour with N-S orientation, close to water and grazing lands aims for minimum heat gain and odour.

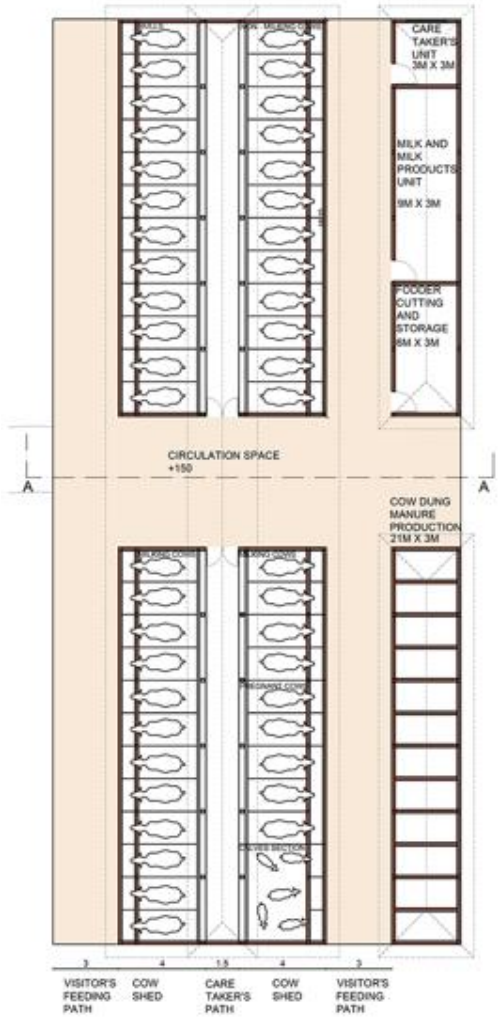


FRONT ELEVATION



FRONT ELEVATION

The Sugarcane Pavilion - Usacha gurhaal is a designated area for the most typical rual experience, highlighting the major crop of Sautada

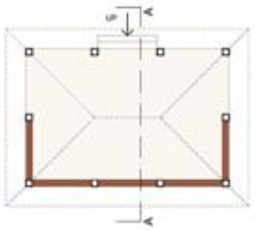


SECTION AA'

SECTION AA'

The Kitchen Unit - Chulivarcha Jevan is designed for private family dining experience, derived from the vernacular chulas of the village Placed amidst the vegetable farms, the produce from the farms will be used for the cooking in these kitchens

TYPICAL KITCHEN UNIT PLAN



SUGARCANE JUICE PAVILION PLAN

TYPICAL KITCHEN UNIT

Figure 32 Plan and Sections – Gau Shala, Kitchen unit and Sugarcane Pavilion

THE AGRO EXPERIENCE ZONE

Figure 33 View - Agro-Experience Zone

Figure 34 View – Gaushala Experience Zone

5.7 VISITOR'S ACCOMMODATION

Figure 35 Plan – Type 1 Accommodation

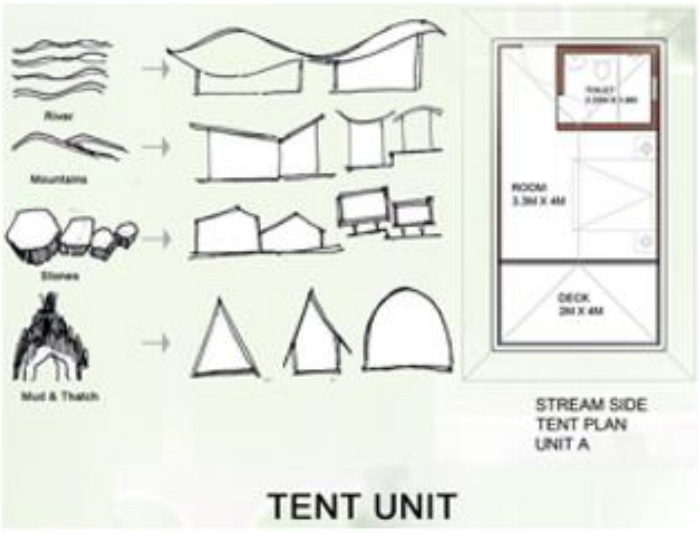


Figure 36 Plan – Type 2 Accommodation

Figure 37 Plan – Type 3 Accommodation

VISITOR'S ACCOMMODATION

SECTION AA'

SECTION BB'

The farm stay cottages, derived from the village's housing typology aim at remaining true to the context, blending with the vernacularity of the village and reconnecting the users to their roots.

The tent units, nesteled in the natural slope of the site, along the seasonal stream and facing the river Vincharna are raised on stilts to conserve the riparian zones aroud the water bodies.

The accommodation cluster offers the guests two distinct yet unifying experiences with an objective to build a strong harmony with nature.

Figure 38 Sections, Elevations of Type 1, Type 2, Type 3 Accommodation

VISITOR'S ACCOMMODATION

Figure 39 Visitor's Accommodation view – Tent units

Figure 40 Visitor's Accommodation view – Farm Stay units

5.8 THE FISHING ZONE

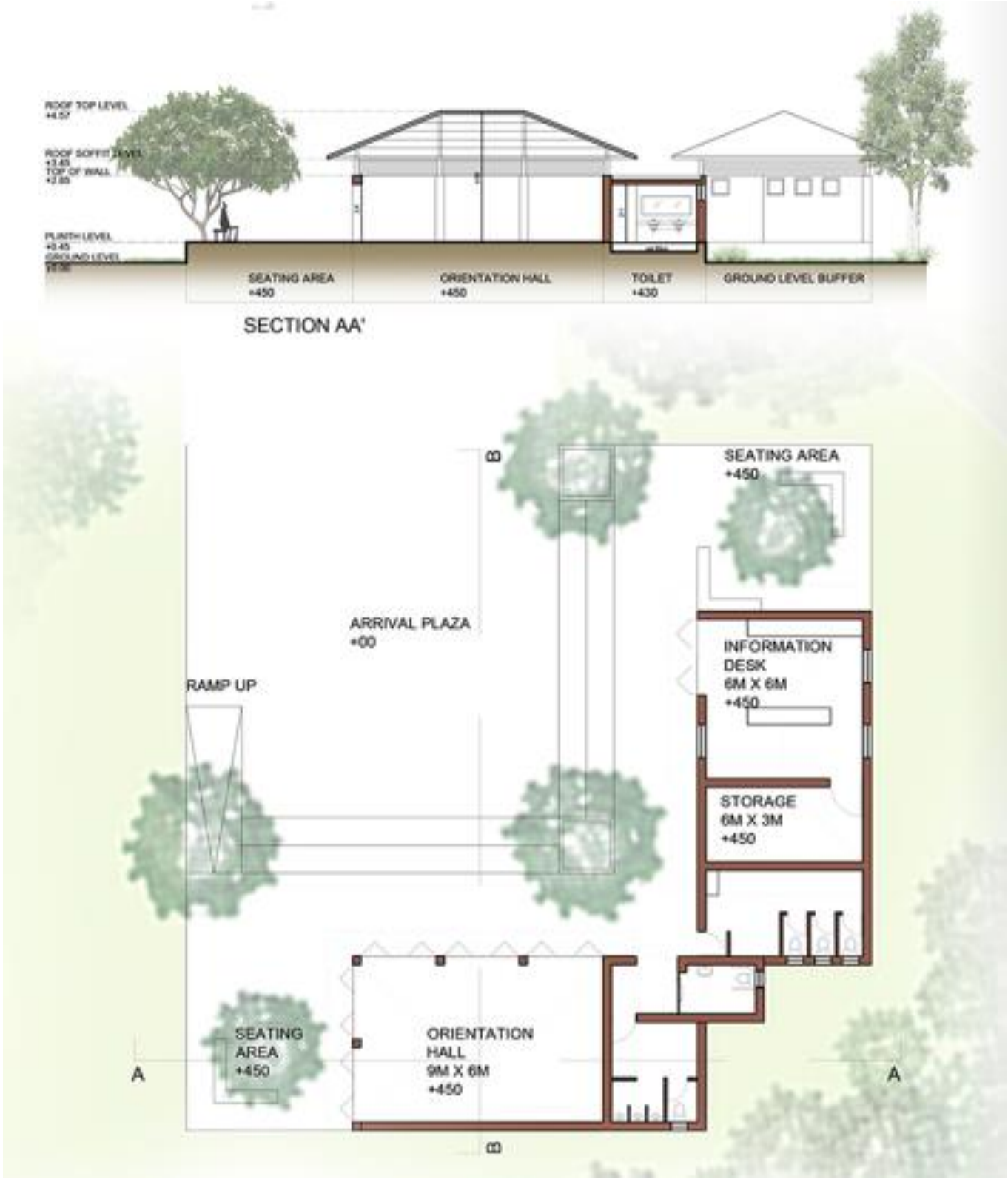


Figure 41 Plan and Section – Fishing Zone

THE FISHING ZONE

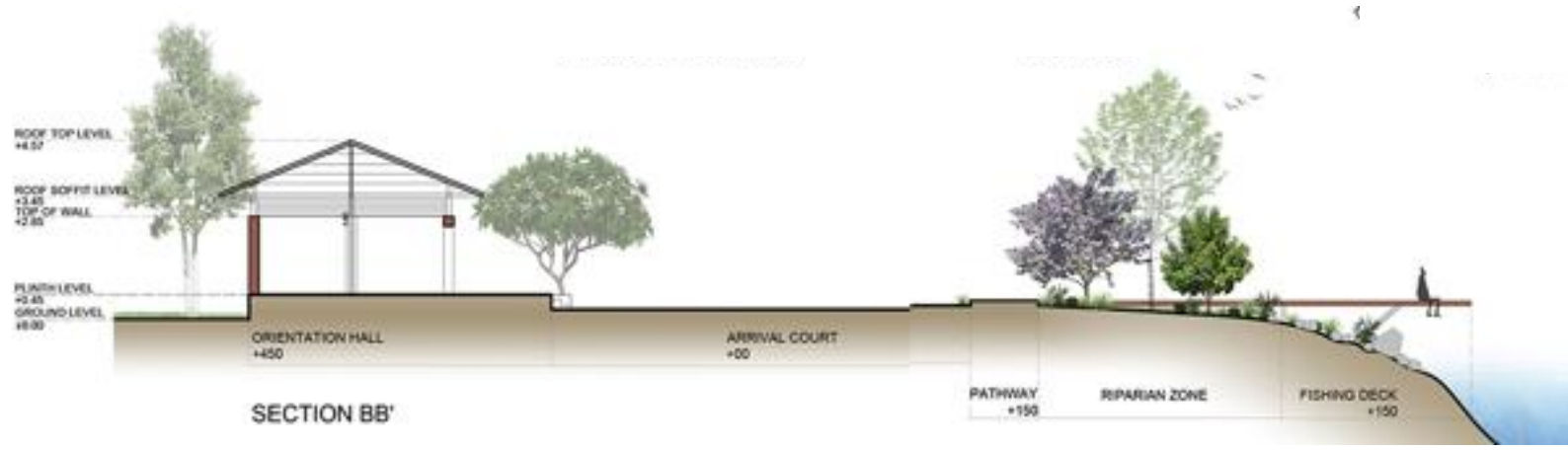


Figure 42 Section – Fishing Zone and Fishing Deck

Figure 43 View – Fishing Zone and Fishing Decks

5.9 THE VILLAGE WELFARE ZONE

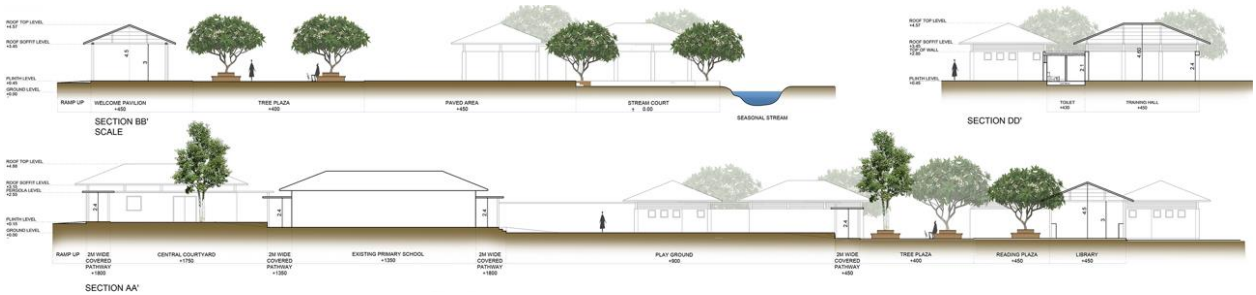


Figure 44 Village Welfare Zone Sections

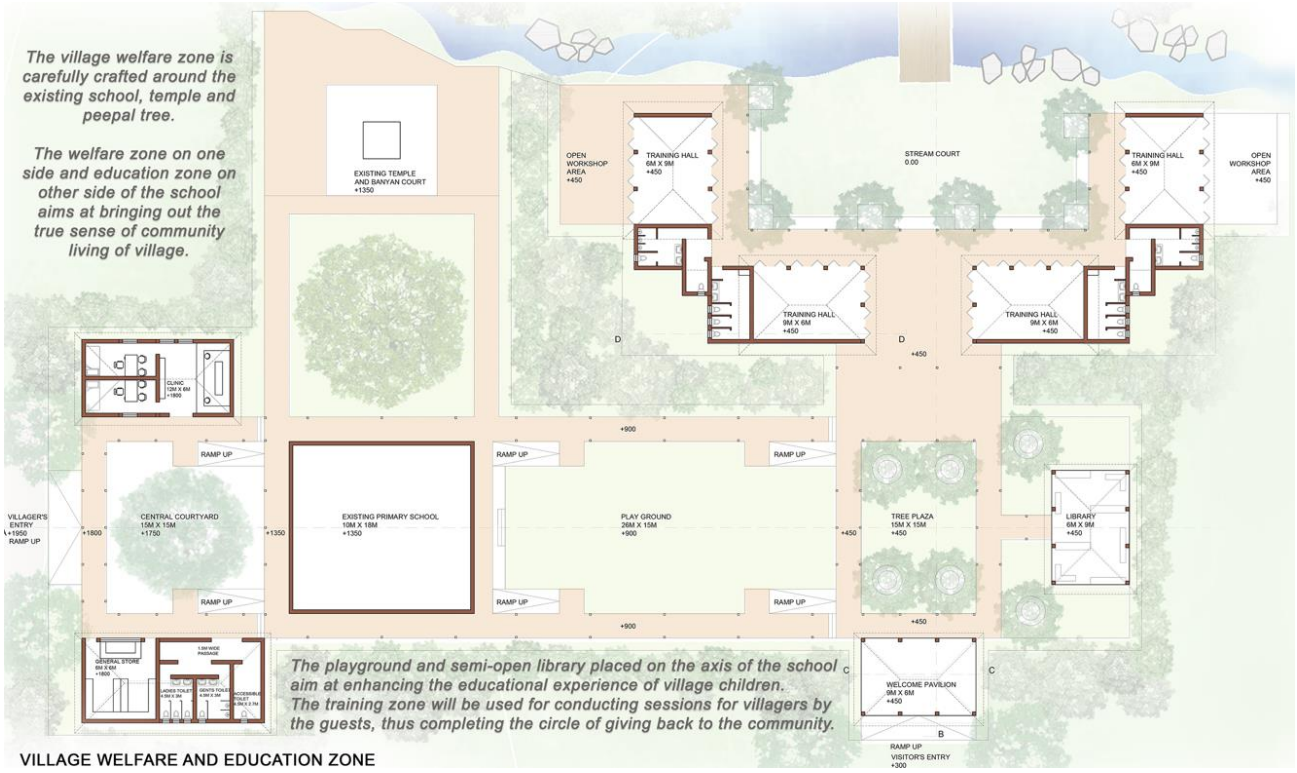


Figure 45 Plan – Village Welfare Zone

VILLAGE WELFARE ZONE DESIGN

The Village Welfare Zone is carefully crafted around the existing school, temple and peepal tree.

The Welfare zone on side – consisting of a clinic, multi-purpose store and public toilets and The Education Zone – consisting of playground and training centre with library on the other side of the school aims at bringing out the true sense of community living of the village.

The playground and semi-open library placed on the axis of the school aim at enhancing the educational experience of village children.

The training zone will be used for conducting sessions for villagers by the guests, thus completing the circle of giving back to the community.

THE VILLAGE WELFARE ZONE

Figure 46 View – Village Welfare Zone

Figure 47 View – Village Welfare Zone Courtyard

6.1 CONCEPTUAL LEVEL BRIDGE PROPOSAL

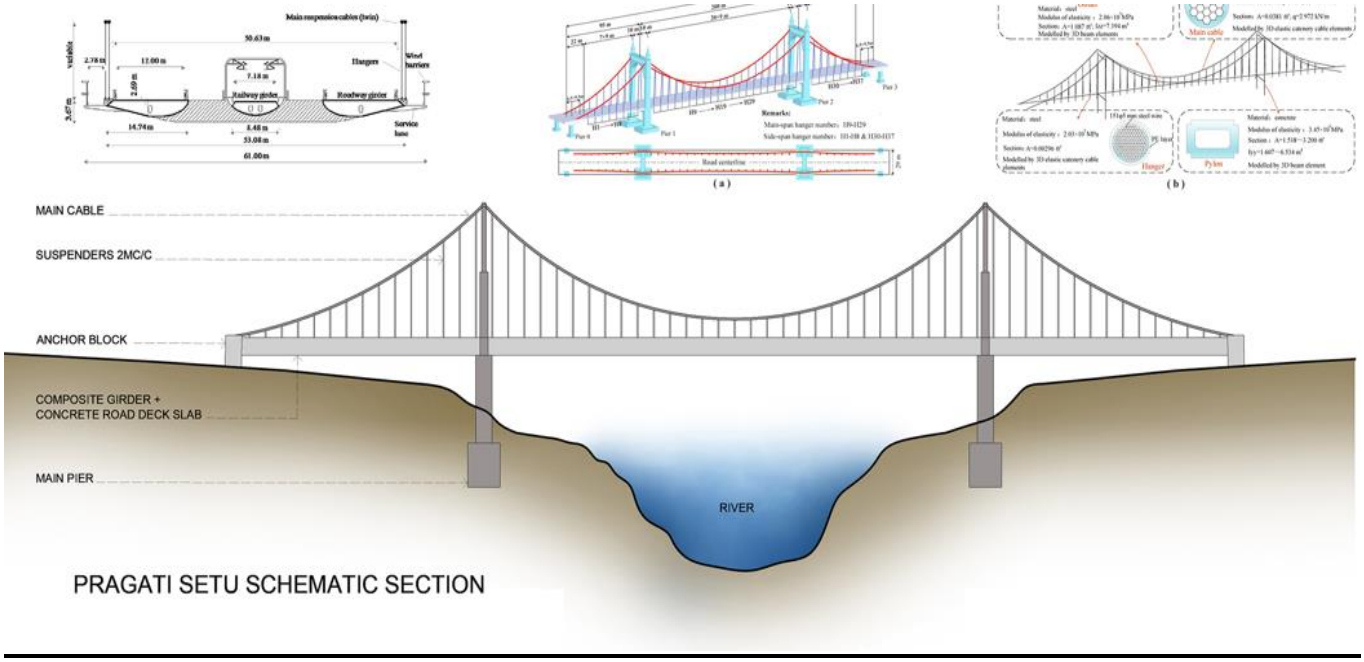


Figure 48 Pragati Setu conceptual section

The conceptual proposal of a suspension bridge is made considering the Riparian zone.

30mt. from the river edge have been left for the riparian buffer, after which the bridge is constructed. The proposal shows use of steel as a material.

Figure 49 Reference images for the bridge (Source : google)

6.2 CREATING A VIBRANT RIVER ZONE

Policy - Public gathering space along the river bank to increase the river-citizen connect

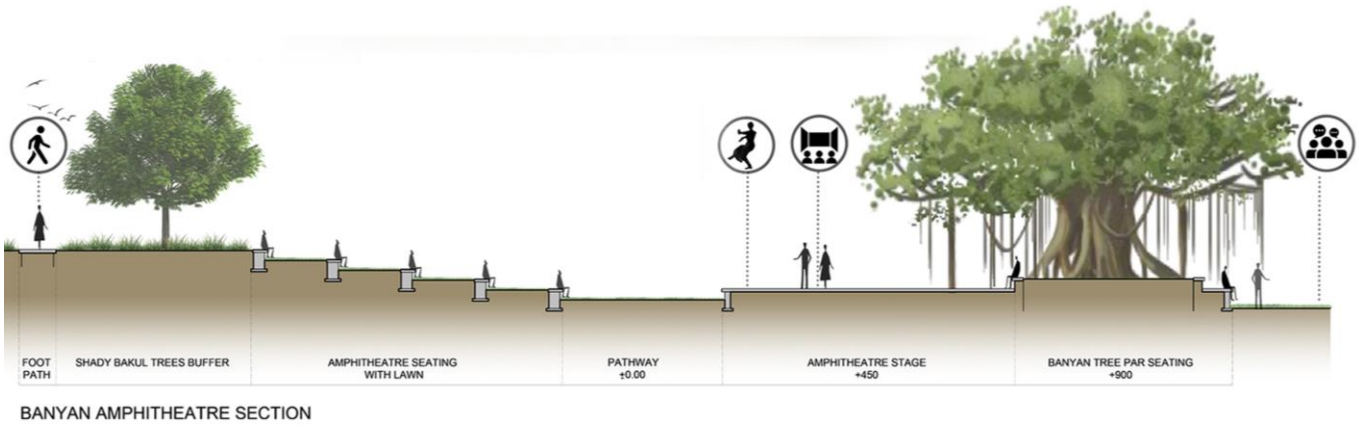


Figure 48 Banyan Amphitheatre Section

The Open Amphitheatre is designed around an existing Banyan Tree on site, with the backdrop of the river front.

The space can be used for local cultural performances and village meetings.

Figure 50 Banyan Amphitheatre overlooking the River Vincharna

6.2 CREATING A VIBRANT RIVER ZONE

Policy - Designing landscape features along the seasonal streams, in a manner sensitive to and respectful of the existing natural habitat

Figure 51 Wellness Zone Section

The Wellness Zone is designed around the seasonal streams.

Yoga pavilions, Green gym lawn are provided using local and sustainable materials, with minimum environmental impact. Riparian buffers and bamboo bridges are provided over the seasonal streams and the edges.

Figure 52 Wellness Zone View

6.2 CREATING A VIBRANT RIVER ZONE

Policy – Conserving and Enhancing the Riparian buffer zone

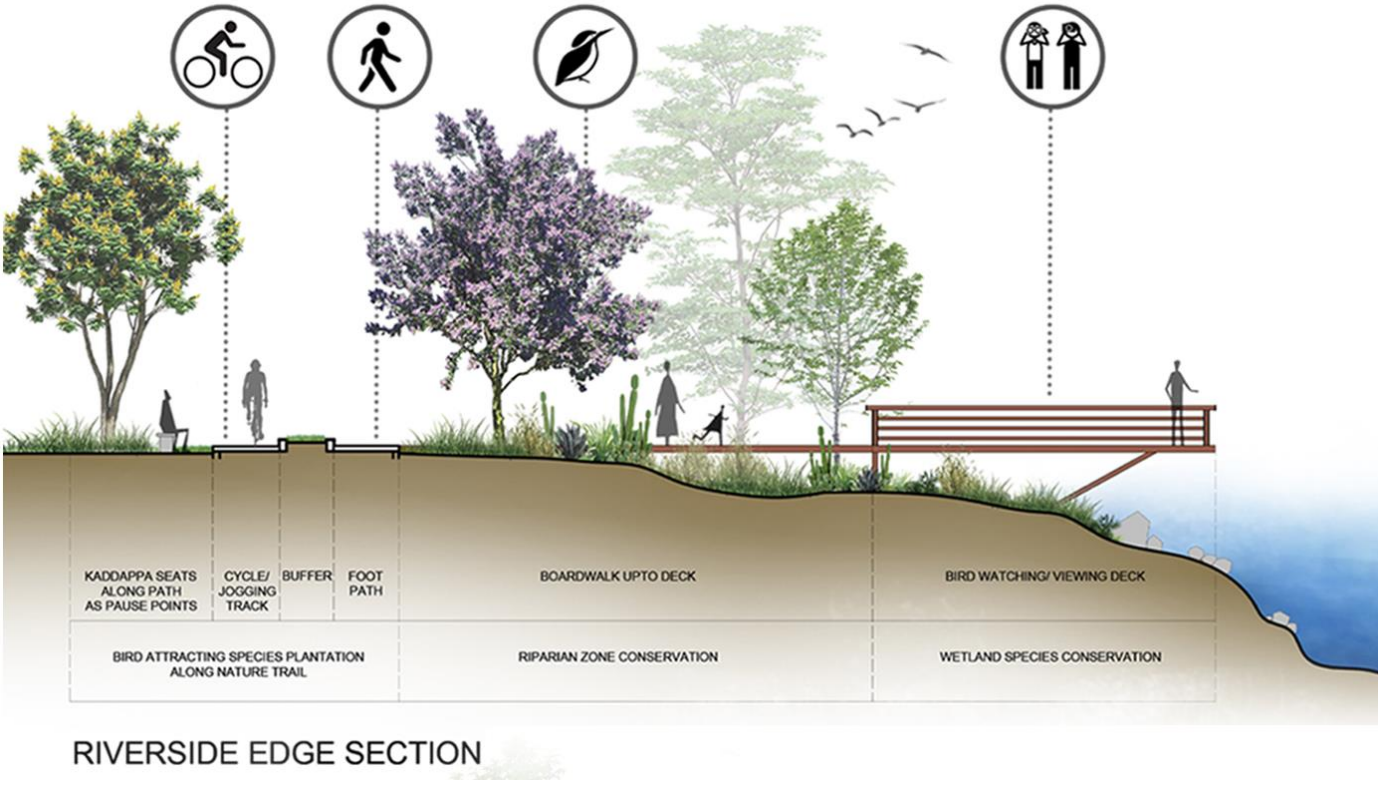


Figure 53 Riverside Edge Section

RIVERSIDE EDGE EXPLAINED

The entire site has been provided with a Riparian buffer zone on the river edge.

A continuous loop of Nature Trail consisting of Cycle/ Jogging track with buffer and Footpath is provided.

The Nature trail has got natural stone seats along it at specific intervals to cater as pause points.

Birdwatching and Viewing Decks are sporadically placed along the trail that connect the people to the nature.

The materials used are natural, local and causing minimum impact to the environment.

The Plantation policy from the river edge towards the nature is in layers ass follows -

Wetland species conservation zone, Riparian conservation zone, Bird Attracting species and Shady trees along the pathways.

6.2 CREATING A VIBRANT RIVER ZONE

Policy – Conserving and Enhancing the Riparian buffer zone

Figure 54 Riverside Edge Section

RIVERSIDE EDGE EXPLAINED

The entire site has been provided with a Riparian buffer zone on the river edge.

A continuous loop of Nature Trail consisting of Cycle/ Jogging track with buffer and Footpath is provided.

The Nature trail has got natural stone seats along it at specific intervals to cater as pause points.

Birdwatching and Viewing Decks are sporadically placed along the trail that connect the people to the nature.

Some decks are for fishing, provided in the fishing zone.

The Plantation policy from the river edge towards the nature is in layers ass follows -

Wetland species conservation zone, Riparian conservation zone, Bird Attracting species and Shady trees along the pathways.

6.3 ENHANCING AND CONSERVING THE RIPARIAN BUFFER ZONE, RIVER ECOLOGY AND BIO-DIVERSITY

Policy - Native Species Zone-Wise Landscape Plantation Scheme

ZONE A

RIPARIAN ZONE

CACTUS

ALOE VERA

AGAVE

FICUS (UMBAR)

KARANJ

PARAL

CYPERUS


ZONE B

BIRD ATTRACTING SPECIES

BABUL

PELTOPHORUM

SINGAPORE CHERRY

JAMBHUL



ZONE C

BUFFER ZONES

CORDIA

BAHUNIA

APTA

ARJUNA

BAMBOO



ZONE D

HERBAL/ MEDICINAL SPECIES

TULSI

LEMON GRASS

ALOE VERA

ADULSA



ZONE E

VEGETABLE FARMING - KITCHEN GARDEN

SPINACH

FENUGREEK

CABBAGE

SOYABEAN

GROUND NUTS

SUGARCANE


ZONE F

AAMRAI MANGO GROVE

MANGO


ZONE G

FRUIT TREES PLANTATION

CUSTARD APPLE

JACK FRUIT

POMEGRANATE

JAMUN

TAMARIND



ZONE H

SHADY TREE SPECIES

BAKUL

PELTOPHORUM

PALAS

NEEM



ZONE I

FRAGRANT TREES

CHAMPA

RAAT RANI

MILLINGTONIA HORTENSIS



ZONE J

GRAZING LANDS

SORGHUM

FORAGE LEGUME

COW PEA



Figure 55 Landscape Policy Zones Scheme

6.4 ENHANCING AND CONSERVING THE RIPARIAN BUFFER ZONE, RIVER ECOLOGY AND BIO-DIVERSITY

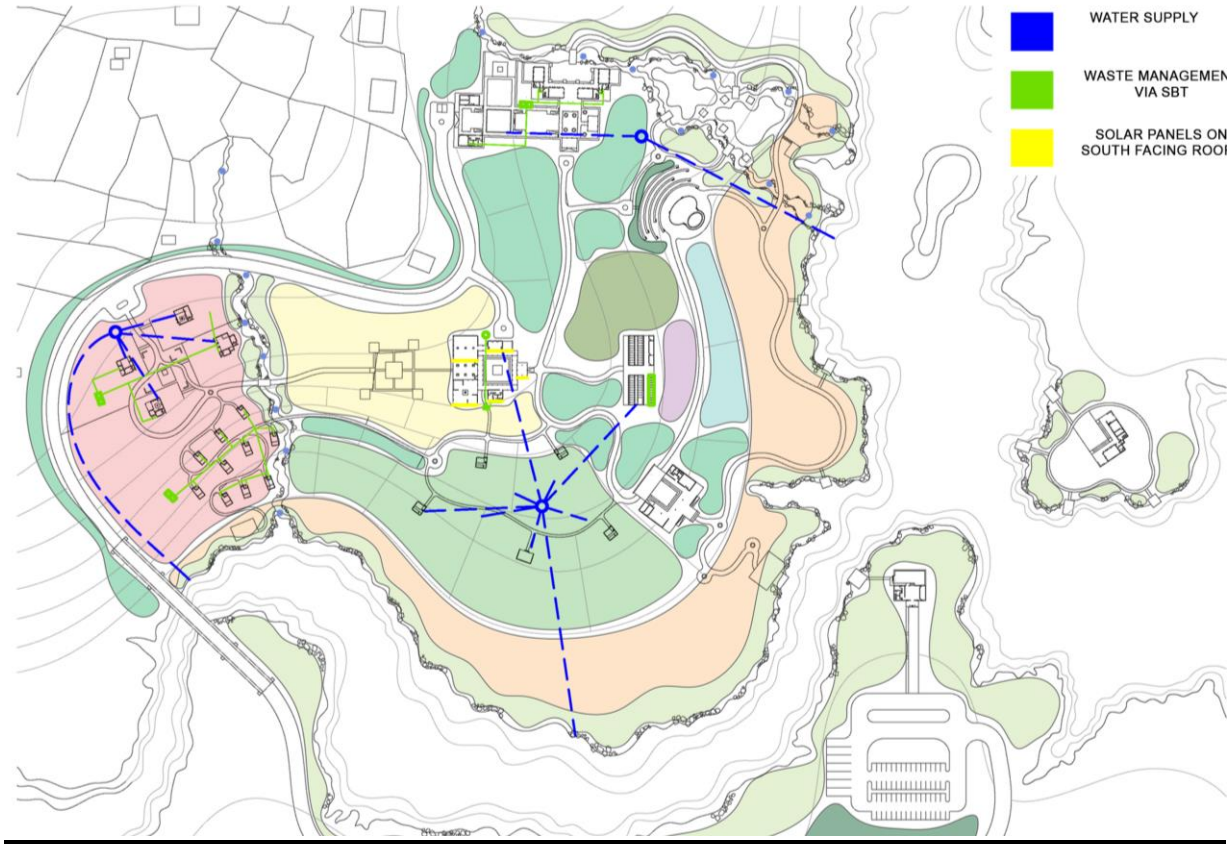


Figure 56 Landscape Policy Zones

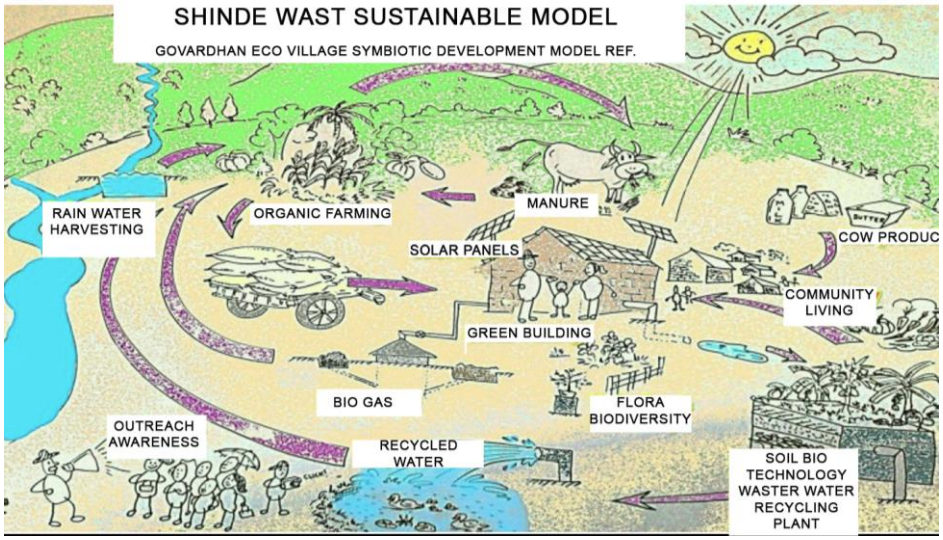


Figure 57 Sustainable Model (Source Govardhan Eco Village)

Symbiotic recycling of wastewater and solid waste via Soil Bio-technology Treatment Plant.

95% of recycled water can be used for organic farming.

6.5 SITE A VIEWS

Figure 58 Shinde Wasti Agro Tourism View

Figure 59 Shinde Wasti Agro Tourism View

7.1 DESIGN BRIEF – VISITOR'S CENTRE – AT REMESHWAR WATERFALL AND TEMPLE

	PART B – VISITOR'S CENTRE	UNIT AREA	NO. OF UNITS	AREA IN SQ. M.	OPEN AREA IN SQ. M.
	PARKING PLAZA			**100**	
	Driver's Resting Plaza				
	Bus Parking (Pilgrim)		10		
	4 Wheeler Parking (Tourist)		60		
	2 Wheeler Parking (Tourist)		40		
	VISITOR'S CENTRE			**2240**	
	Arrival Court	270	2	540	
	Refreshment Court	20	20	400	
	Visitor's Toilets	75	2	150	
	Tourist Information Centre			125	
	Kitchen			125	
	Dining Pavilion			450	
	Resting Pavilion			450	
	Sunken Courtyard Seating				550
	TOTAL PART B			**2340**	
	TOTAL PART A + B BUILT AREA			**6340**	

7.2 SITE PLAN – VISITOR'S CENTRE AT RAMESHWAR WATERFALL AND TEMPLE

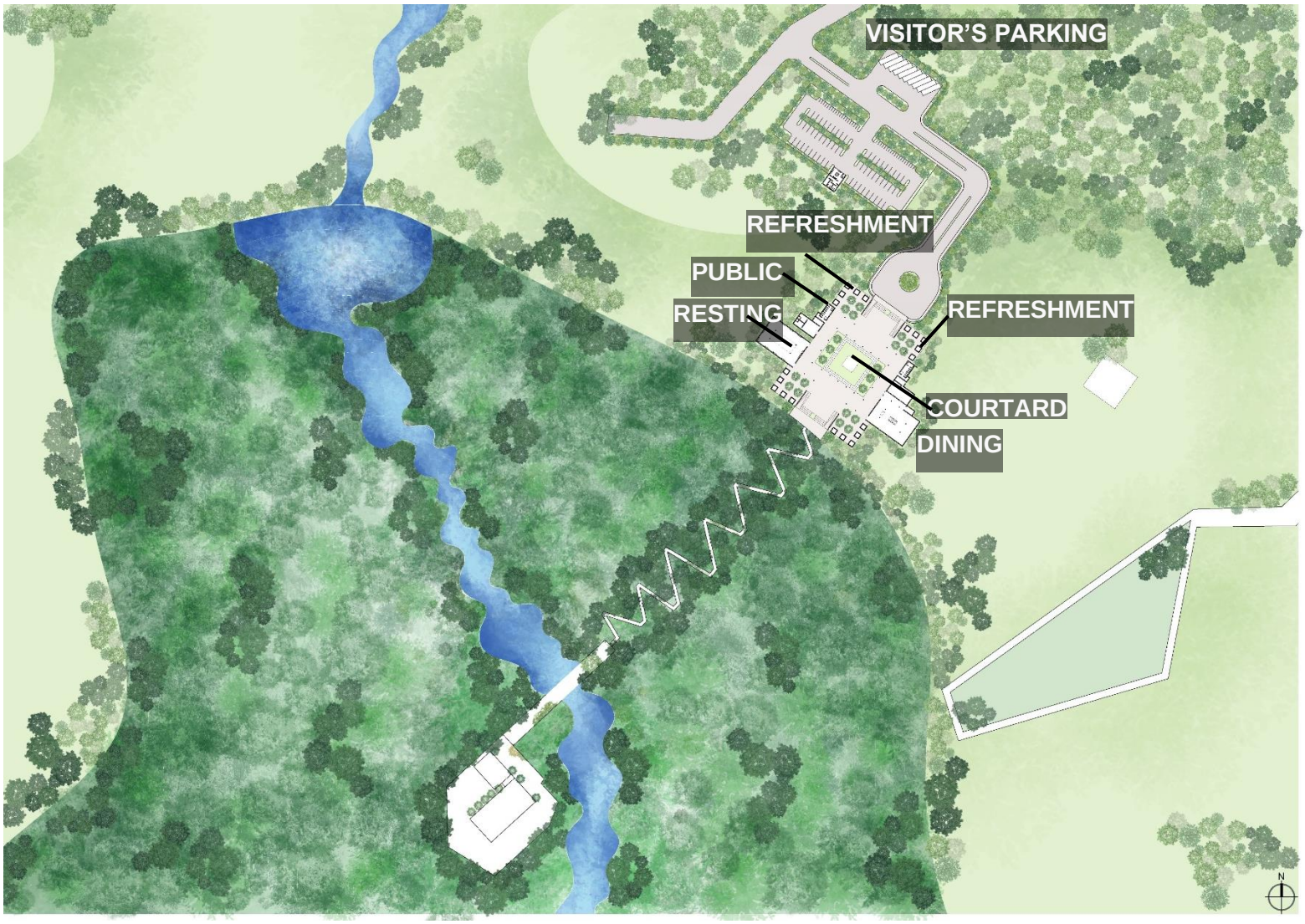


Figure 60 Site Plan – Visitor's Centre at Rameshwar Waterfall and Temple

7.3 DESIGN DEVELOPMENT STAGES

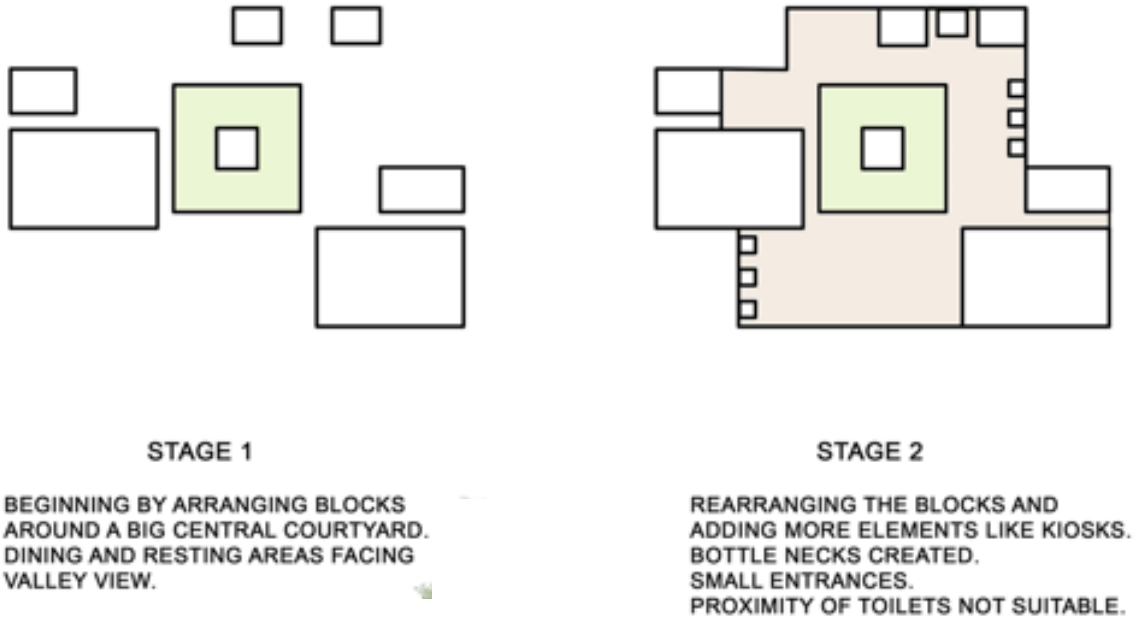


Figure 61 Design Development stage

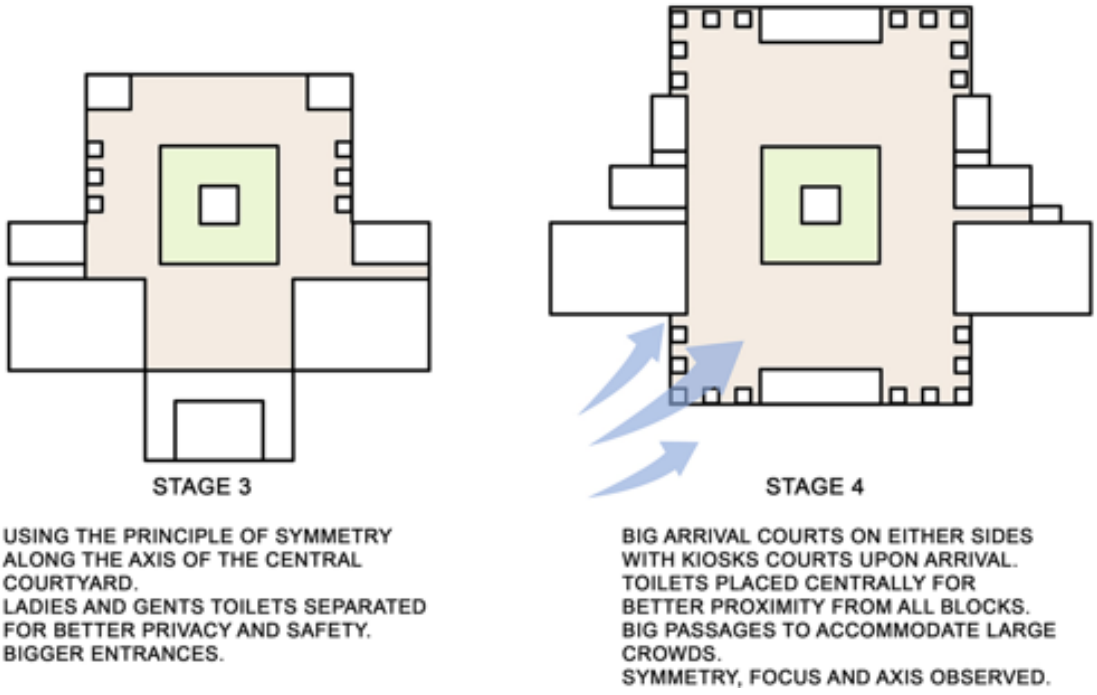


Figure 62 Design Development stage

7.4 DESIGN OF VISITOR'S CENTRE

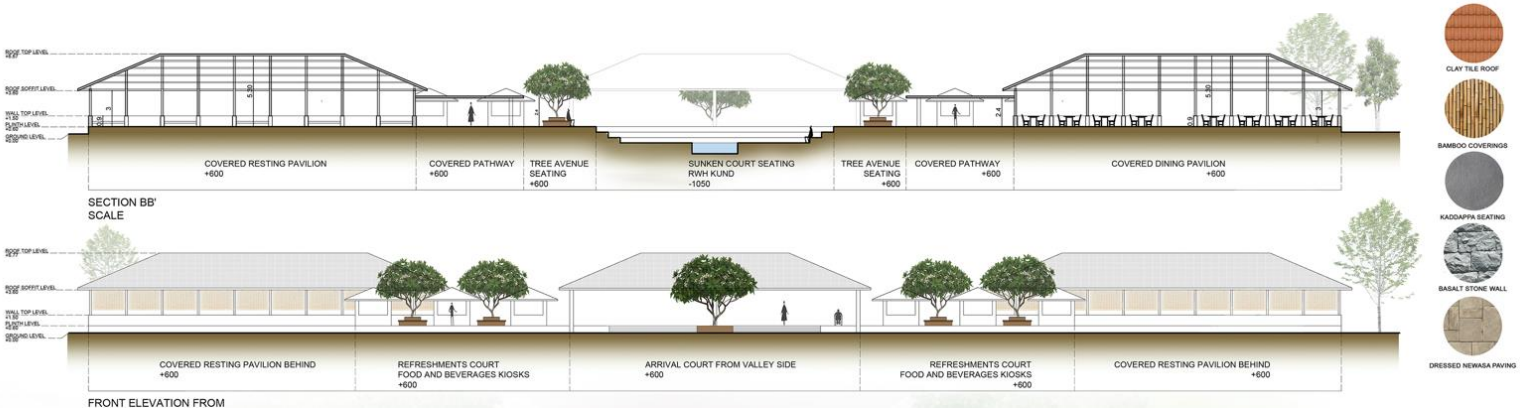


Figure 63 Visitor's Centre Sections

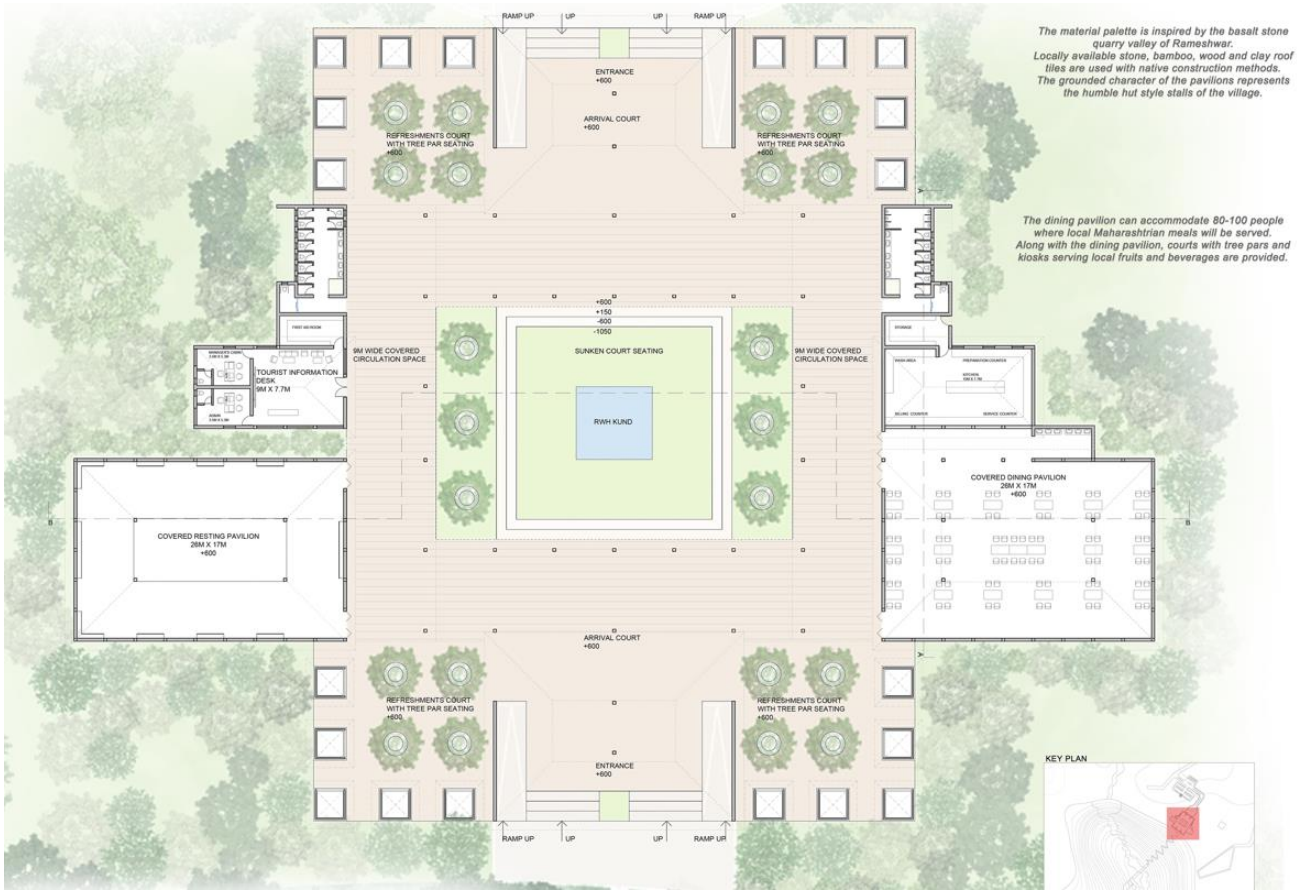


Figure 64 Visitor's Centre Plan

7.5 VIEWS OF VISITOR'S CENTRE AT RAMESHWAR WATERFALL AND TEMPLE

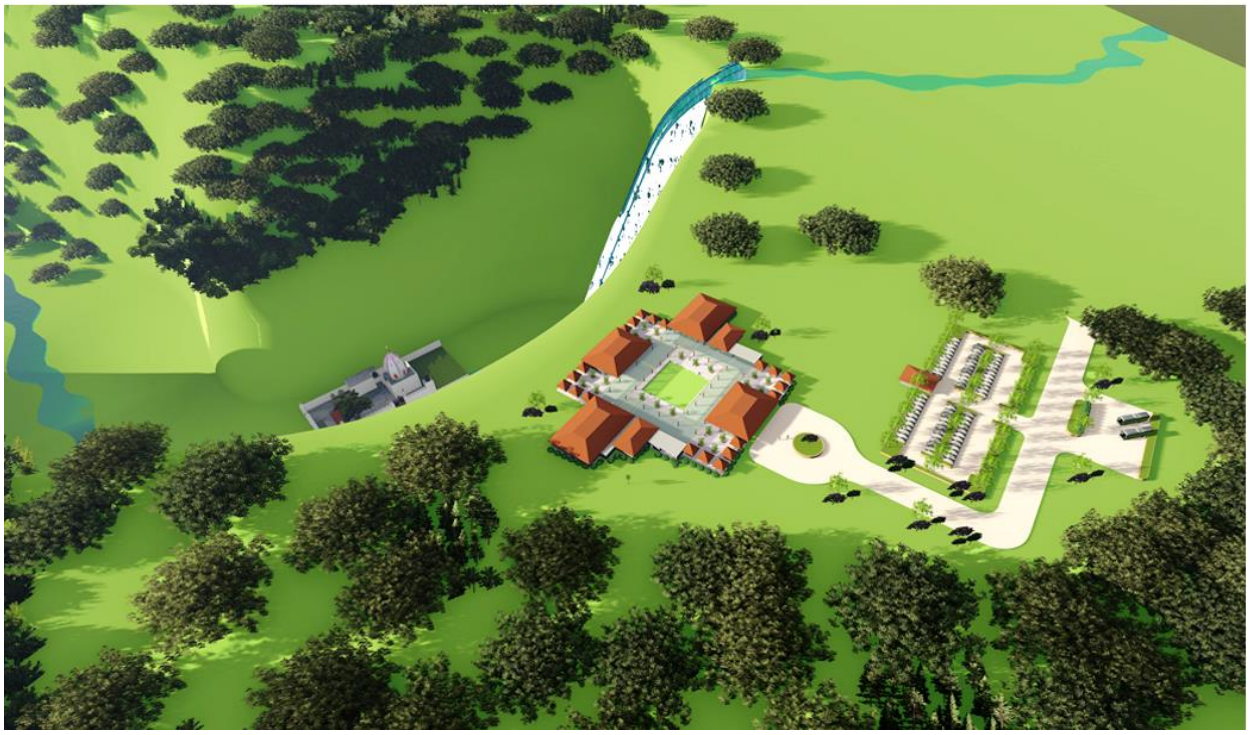
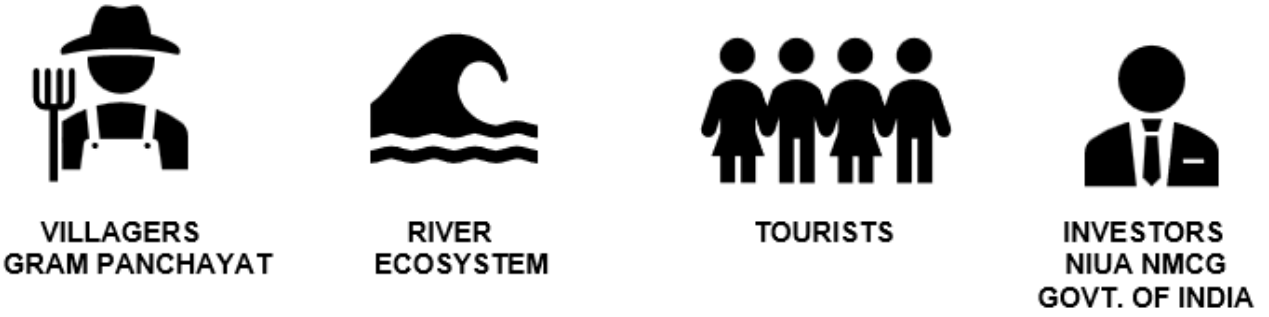


Figure 61 Site View – Visitor's Centre at Rameshwar Waterfall and Temple

Figure 62 Visitor's Centre

8.1 STAKEHOLDER'S ROLE AND BENEFITS



8.2 FUNDING AND WAY FORWARD

PPP MODEL – PUBLIC PRIVATE PARTNERSHIP

FORMATION OF A CO-OP SOCIETY OF FARMERS ALONG WITH THE SUPPORT OF VILLAGE GRAM PANCHAYAT.

THE KEY STAKEHOLDERS WILL BE FARMERS, PANCHAYAT AND GOVERNTMENT OF INDIA.

CSR FUNDING CAN BE TAPPED FOR RAISING THE INITIAL CAPITAL WITH A DEFINITE R.O.I AND TIMEFRAME.

STAGE-WISE EXECUTION CAN TAKE PLACE FOR AGRO-TOURISM GIVING PRIORITY TO AGRO AND RIVER ACTIVITIES FOR INITIAL REVENUE.

AFTER WHICH OTHER FACILITIES LIKE ACCOMMODATIONS, ETC CAN BE DONE.

THIS PROJECT WILL BECOME ECONOMICALLY SUSTAINABLE OVER A PERIOD OF TIME AND SERVE AS A MODEL FOR SIMILAR CASES OF RIVERS AND REMOTE VILLAGES.

CERTIFICATE OF COMPLETION

This is to certify that this thesis project titled "**Thesis Title**" was carried out by Sh./Smt. **Name of Student**, a student of **Name of Course**, at the **Name of Institute**. The research for this project was undertaken under the guidance of the afore-mentioned institute and completed during the period of **Start Date** to **End Date**.

This project was shortlisted under the *Sponsored Thesis Project Competition on "RE-IMAGINING URBAN RIVERS" (Season- 2)* hosted by the National Institute of Urban Affairs (NIUA) and the National Mission for Clean Ganga (NMCG).

This report has been submitted by the student as a final deliverable under the competition. All parts of this research can used by any of the undersigning parties.

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Signature -

2. Institute

Name -
Department -
Authorized Representative -
Signature -

3. Sponsors

Name - National Institute of Urban Affairs
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Name - National Mission for Clean Ganga
Authorized Representative - G Asok Kumar, Director General
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