# Intertwine.

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Thesis submitted to the faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Architecture
in
Architecture

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Keywords

Human-Animal Interaction, Community Integration, Vernacular Typology, Architectural Heritage, Experiential Thresholds

# Intertwine.

**Shreya Pramodh Manda**

Abstarct

Intertwine envisions a sanctuary for elephants and mahouts in Hampi, India—where architecture becomes a tool for empathy, coexistence, and cultural continuity. The project responds to the declining conditions of captive elephants and their caretakers by creating shared spaces rooted in vernacular traditions, ecological sensitivity, and behavioral understanding.

The design integrates elephant shelters, mahout housing, visitor stays, and community spaces across a landscape shaped by passive cooling, local materials, and natural topography. Curved walls, shaded paths, and water features support both physical comfort and emotional well-being.

Grounded in research and site analysis, Intertwine challenges conventional sanctuary models by placing interspecies relationships at the heart of design—offering a quiet, enduring response to care, dignity, and belonging.

# Intertwine.

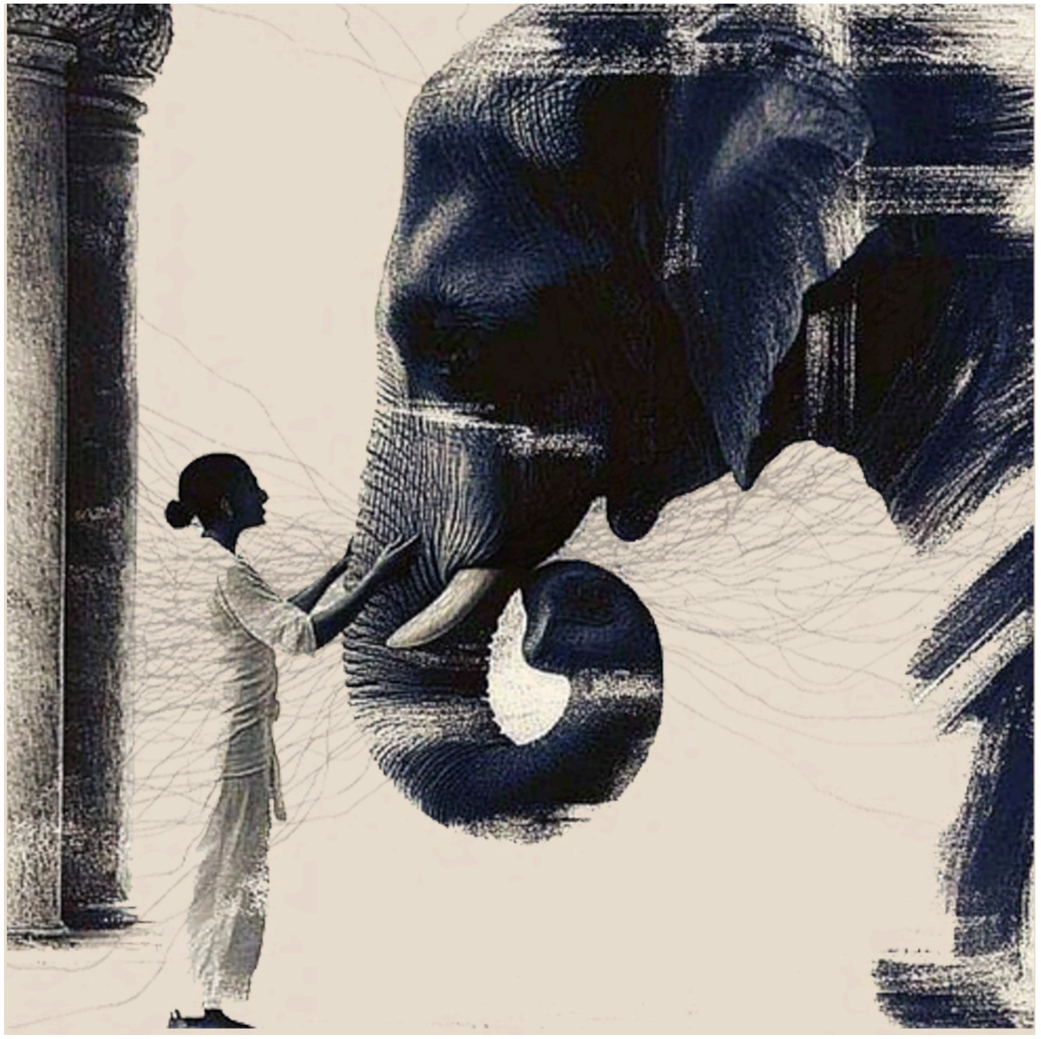
**Shreya Pramodh Manda**

General Abstarct

This thesis explores how architecture can help rebuild the fading bond between elephants and their lifelong companions—mahouts. Set in the historic landscape of Hampi, India, the project proposes a sanctuary that brings together elephants, mahouts, and visitors through shared spaces rooted in care, empathy, and cultural memory.

Using local materials, passive cooling, and vernacular design, the proposal includes elephant shelters, bathing pools, mahout homes, and community gardens. Special attention is given to the emotional and social needs of both species—curved walls for comfort, mud fields for elephant health, and open courtyards for interaction.

More than a shelter, Intertwine is about coexistence—honoring tradition, supporting conservation, and designing for compassion.



## Intertwine.

*Where elephants and mahouts*
*find belonging—together, beneath*
*Hampi's ancient skies.*

To Mowgli,
My dog, my companion, and the soul behind this thesis—thank you for making me understand the love of animals in its truest form. You showed me the beauty of empathy, trust, and connection across species. You inspired me to see architecture through a different lens—one that embraces purpose, compassion, and coexistence. This project is as much yours as it is mine.

To my family,
Your unwavering support, love, and belief in me have made this journey possible. Every step of my architectural education has been shaped by your encouragement, and I am forever grateful.

To my friend,
Samar Kansal—thank you for being my greatest support throughout this journey. In moments of doubt, you reminded me that I was capable, and that made all the difference.

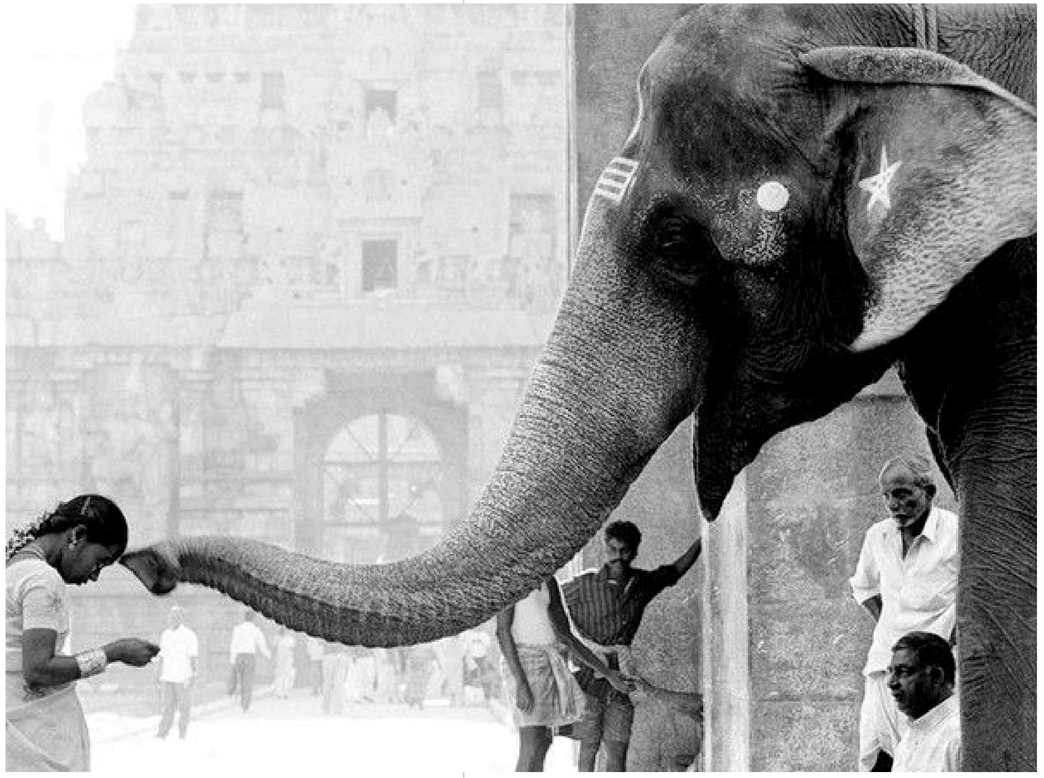
**Architecture Faculty**

James R. Jones
Chair
Thank you for helping me fall in love with the process of architecture—for showing me that design is not just about buildings, but about the stories we tell through space.

Jessica Hernandez
Committee Member
Your confidence in me during moments of uncertainty gave me the strength to keep moving forward. I am deeply thankful for your guidance and reassurance.

Edgar Garcia Carrasco
Committee Member
Your ability to simplify complexity through sketches made the design process feel approachable and exciting. Thank you for showing me how to think through drawing.

*Chapter 1:*



**Gentle Giants of the East.**
The Story of Asian Elephants

## The Story of Asian Elephants

The Asian elephant (Elephas maximus) is one of the last surviving members of the ancient proboscidean family—relatives of the woolly mammoth and mastodon. Fossil evidence shows their presence in the Indian subcontinent for over 1.5 million years, marking them as both ancient and enduring.

## Why Elephants Matter?

Asian elephants are not only majestic but vital to their ecosystems. Known as ecosystem engineers, they create forest paths, disperse seeds through dung, and naturally fertilize the soil. Their sensitive footpads detect underground vibrations, helping them locate hidden water sources during dry seasons—often shared by other species.

Beyond ecology, elephants have coexisted with humans for centuries—playing roles in agriculture, transport, rituals, and spiritual life. As they have supported us through time, it is now our responsibility to design for them—with empathy, respect, and a deep sense of stewardship.

- Soil Fertility Boosters
- Ecosystem Engineers
- Seed Dispersers
- Biodiversity Guardians
- Creating Microhabitats
- Water Source Locators

## Elephant Significance

**Religious Significance**

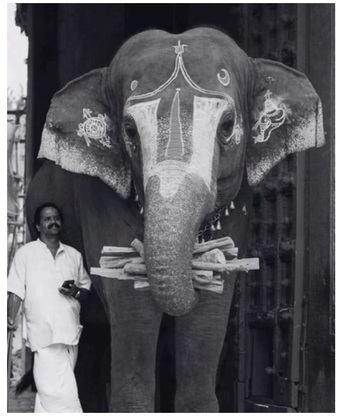
Elephants hold deep spiritual meaning in Hinduism, most prominently embodied by Lord Ganesha—the elephant-headed deity of wisdom, new beginnings, and the remover of obstacles. His form signifies strength, memory, and sacrifice, and he is worshipped across India.

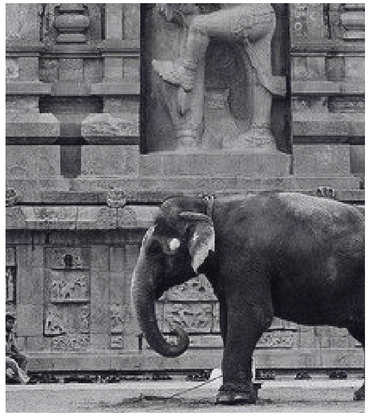
**Cultural Significance**

Elephants play a central role in temple festivals, leading sacred processions adorned in gold and silk. Their presence is believed to sanctify the event and elevate the spiritual atmosphere.

**Architectural Significance**

Elephants are intricately carved into temple architecture, especially across South India and Hampi. Seen on pillars, gateways, and walls, they appear in mythological scenes—carrying gods, partaking in battles, or guarding sacred spaces—blending narrative, symbolism, and architectural expression.





Decline of Elephants in Asia: A Fragile Future

Habitat Loss and Fragmentation

Captive Exploitation and Tourism:

Loss of Traditional Coexistence Practices

Human-Elephant Conflict

Poaching and Illegal Wildlife Trade

India Elephant Population (2010–2024)

| | |
|---|---|
| 2010 | 31000 |
| 2011 | 30800 |
| 2012 | 30500 |
| 2013 | 30250 |
| 2014 | 30000 |
| 2015 | 29800 |
| 2016 | 29500 |
| 2017 | 29200 |
| 2018 | 28800 |
| 2019 | 28500 |
| 2020 | 28100 |
| 2021 | 27700 |
| 2022 | 27400 |
| 2023 | 27100 |
| 2024 | 27000 |

*Chapter 2:*

**In the Shadow of Giants.**
Stories from the Mahout Community

## The Mahout: Keeper, Companion, and Cultural Custodian

Mahouts have lived alongside elephants for centuries, particularly in South India's tribal communities like the Jenu Kuruba of Karnataka. Often inheriting the role from their fathers, boys begin training as early as five, learning to guide and care for elephants using voice, touch, and intuition. Traditionally, a mahout partners with one elephant for life — a bond forged through daily care, shared routines, and mutual trust

A mahout's day is physically demanding and deeply immersive. Responsibilities include:

- Bathing elephants (often for over 3 hours daily)
- Feeding upwards of 300 lbs of vegetation
- Administering basic medical care
- Training using verbal commands and touch
- Walking and guarding elephants, even during forest patrols or temple festivals

Despite these immense responsibilities, most mahouts earn around ₹15,000/month (~$180–$200), often living in sparse shelters without running water or electricity.

### Cultural Significance of Mahouts

Mahouts hold a unique place in South Asian culture as lifelong companions and caretakers of elephants. Often part of generational traditions, their knowledge is passed down through families. They play key roles in religious festivals, processions, and daily care rituals. Their bond with elephants reflects deep respect, trust, and coexistence.

## Case Study 1: Jenu Kuruba tribe.

At this southern forest camp, 34 elephants are cared for by mahouts from the Jenu Kuruba tribe. Living in small huts or tents with their families, they form lifelong bonds with the elephants, using over 120 vocal commands. Their deep connection is so strong that during a 2014 strike, the elephants showed visible distress. Veteran mahouts also play a key role in managing conflict elephants, often succeeding where modern methods fall short.

## Modern Challenges and Disappearing Traditions

As development encroaches on forests, elephants are increasingly pushed into farmland, leading to rising human-elephant conflicts. Ironically, this is happening at a time when the number of mahouts is declining. Younger generations are leaving the forests in search of better pay and more stable lives.

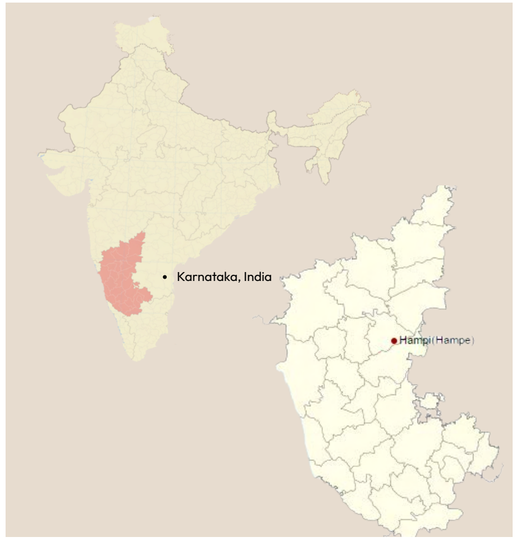
The profession's decline is also cultural. Government oversight, lack of formal recognition, and changing societal values have all contributed to the erosion of this tradition. Mahouts, once seen as elite caretakers, are now marginalized, often referred to as "animal laborers."

To preserve both elephants and the people who know them best, conservation must include mahouts—not just as workers, but as co-designers of care, policy, and cultural heritage.

“Elephants understand love. Without it, they won’t listen.”

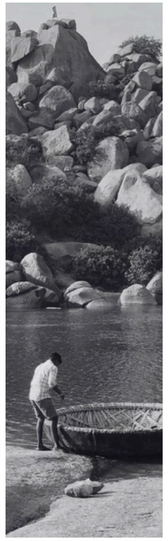
*Chapter 3:*

**Ruins and Reverence.**
Hampi’s Living Heritage




Tungabhadra Reservoir

Virupaksha Temple



Lotus Arch

In the heart of Karnataka lies Hampi, a city that once pulsed with imperial power, spiritual energy, and architectural brilliance. Capital of the Vijayanagara Empire between the 14th and 16th centuries, Hampi was described by the Portuguese traveler Domingo Paes as “as large as Rome and very beautiful to the sight.” The ruins that remain today—stone chariots, stepped tanks, pillared halls—whisper stories of an era where temple towns and trade routes flourished amidst granite hills.

Designated a UNESCO World Heritage Site, Hampi is not merely an archaeological marvel, but a living cultural landscape. Its temples are still in use, its festivals still draw thousands, and its myths still shape local identity. In Hampi, history is not buried—it breathes.

The ruins of Hampi, built between the 14th and 16th centuries, are remnants of a once-great empire that blended power, devotion, and architectural brilliance.

## Hampi Timeline

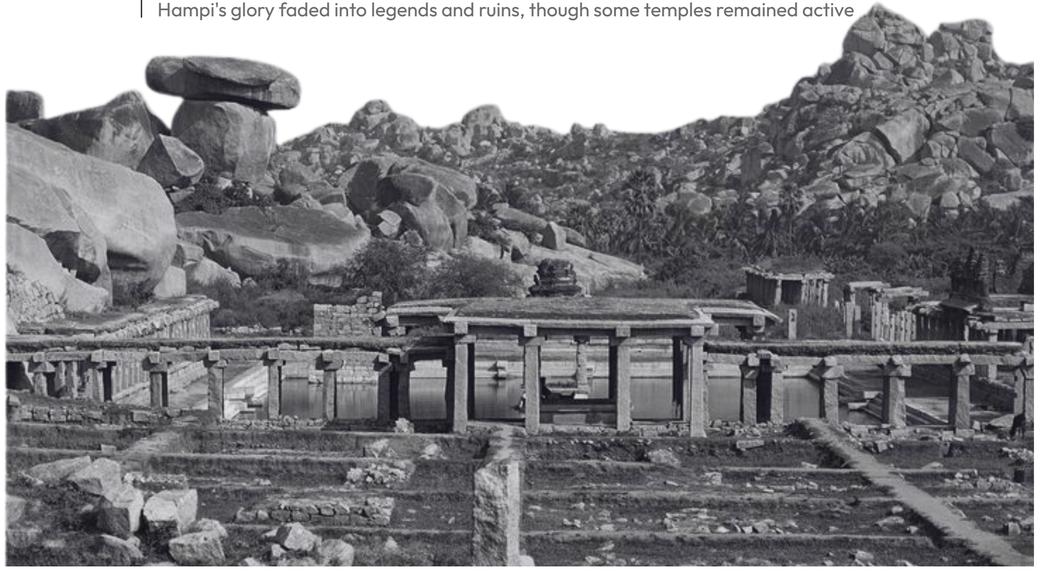
**1336 CE** — **Founding of Vijayanagara Empire**
Established by Harihara I and Bukka Raya I on the banks of the Tungabhadra River.
Hampi became the grand capital city.

**14 -15CE** — **Golden Age**
Under rulers like Harihara II, Deva Raya II, and Krishnadevaraya, Vijayanagara flourished.
Huge growth in trade, temples, palaces, and art — elephants were key in festivals, wars, and economy.

**1509–1529 CE** — **Reign of Krishnadevaraya**
Peak of the empire's power, culture, and military strength.
Hampi became one of the richest cities in the world.

**1565 CE** — **Battle of Talikota**
A major defeat by a coalition of Deccan Sultanates.
Hampi was attacked, looted, and largely abandoned over the next few decades.

**17-18 CE** — **Decline and Ruins**
Small kingdoms and local rulers controlled parts of the area.
Hampi's glory faded into legends and ruins, though some temples remained active



## Tourism at a Crossroads

- Over 1 million tourists/year, with high international interest.
- Recognized as one of India's most iconic heritage destinations.
- Hampi's vernacular styles—stone plinths, shaded corridors, open courtyards—support passive cooling and minimal ecological impact, ideal for elephant-sensitive architecture.

| Year | Total Visitors | Indian Tourists | Foreign Tourists | Notable Events |
|---|---|---|---|---|
| 1986 | ~50,000 | ~45,000 | ~5,000 | UNESCO World Heritage Site designation |
| 2000 | ~200,000 | ~185,000 | ~15,000 | Increased archaeological efforts |
| 2010 | ~400,000 | ~370,000 | ~30,000 | Major tourism drives by Karnataka government |
| 2015 | ~600,000 | ~560,000 | ~40,000 | Revival of Hampi Utsav (Festival) |
| 2020 | ~100,000 | ~90,000 | ~10,000 | COVID-19 pandemic impact |
| 2023 | ~550,000 | ~510,000 | ~40,000 | Post-pandemic tourism recovery, eco-tourism focus |

*Chapter 4:*

**Elephants and Empire**
Hampi’s connection to Elephant

Few animals are as deeply embedded in the story of Hampi as elephants. In the royal city, they were prized as instruments of war, processional grandeur, and spiritual symbolism. Kings paraded them during Dussehra. Priests invoked their strength during rituals. Artisans immortalized them in stone across temple friezes.

That reverence continues today. At the Virupaksha Temple, Lakshmi the elephant is more than an attraction—she is a living embodiment of Ganesha, the remover of obstacles. Tourists and devotees alike seek her blessing, offering coins or flowers which she gracefully accepts before resting her trunk on their bowed heads. Visitors are often stunned by her intelligence—she distinguishes currency notes, responds to her mahout's whispers, and recognizes familiar faces. She is a tangible link between past and present, myth and memory.

Hampi’s temples and palaces are filled with beautiful carvings of elephants on walls and pillars — a clear sign of how important they were in that era. During the Vijayanagara Empire, thousands of elephants were used in wars, in trade caravans, and during grand festivals. They weren’t just animals — they were symbols of power, prosperity, and royal pride.

Elephants are etched into the very fabric of Hampi’s architecture, symbolizing strength, divinity, and the grandeur of the Vijayanagara Empire.

Sidebar: Meet Lakshmi – The Blessing Elephant

A temple elephant at the Virupaksha Temple, Lakshmi is a local icon. Every morning, she bathes in the Tungabhadra River and returns to the temple by 8 a.m.
She can recognize rupee denominations and distinguish her regular visitors. Her mahout shares that she's also moody on hot days—refusing to bless anyone until bathed and fed.

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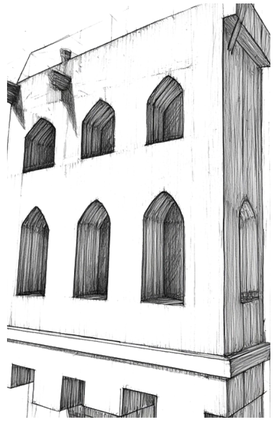
Once home to thousands of elephants, Hampi today has only one — Lakshmi at the Virupaksha Temple, a living symbol of a fading legacy.

*Chapter 5:*

**Hampi- City Visit**
Learnings from Hampi Architecture

## Hampi Site Visit: 24th January 2025

A site visit to Hampi was conducted on January 24, 2025, to study its architectural language, engage with the local community and tourist dynamics, and explore potential locations for the proposed sanctuary. The visit offered valuable insights into the region's cultural fabric, spatial character, and ecological setting—crucial elements that informed the design approach.

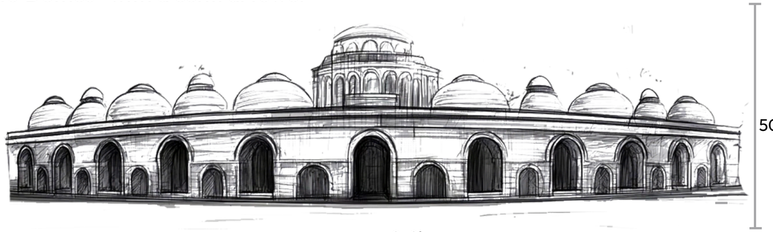


**Use of Jharokhas:**
Projecting balconies used for visual connection, airflow, and heritage integration.

**Fortified Entrance Design:**
Inspired by Vijayanagara gateways with stone walls and watchtowers.

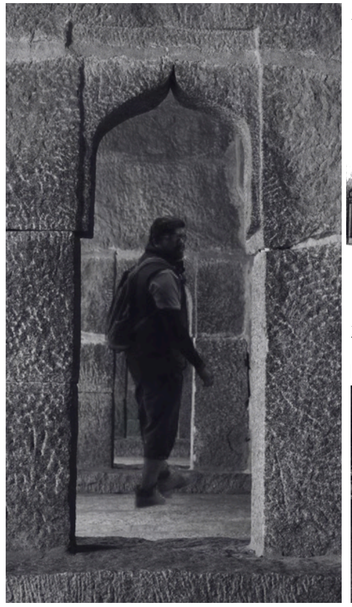
**Lotus Arch Motif:**
Derived from temple forms; symbolizes beauty, delicacy, and spiritual symbolism.

Elephant Stables of Hampi:
10 Domes- with a central tower




- The dim interior keeps the heat away.

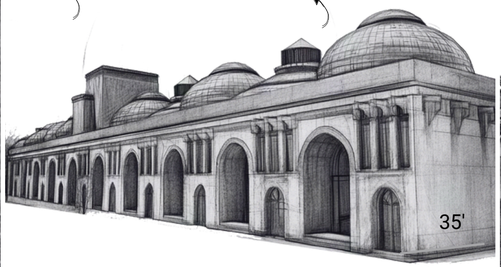
11 Arches

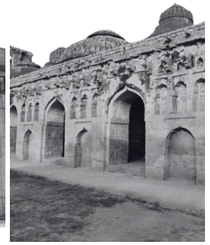


- The stables are connected by man-sized passages

Stepped Dome

Ribbed Dome _



2 Types of Arches

- Arches for entry/ exit for elephants

Indo Saracenic Architecture

- Scratching Poles: These might have also been used to tie elephants.

- Mahout Quarters

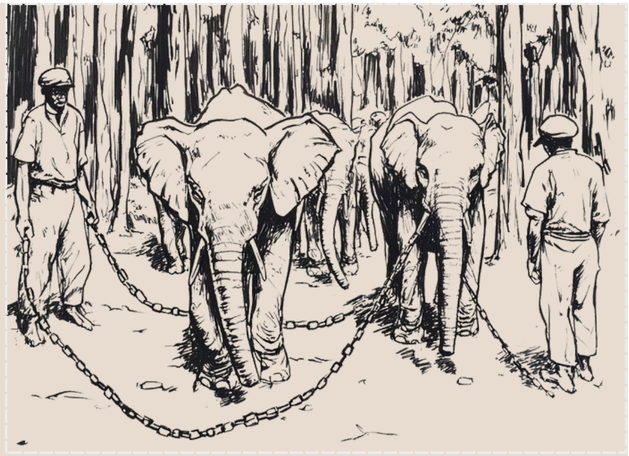
*Chapter 6:*

**Forest to Camp**
The Journey of Sakrebyle's Elephants

Tucked along the banks of the Tunga River in Shimoga, the Sakrebyle Elephant Camp was designed as a kind of refuge — a transitional space between the wild and the human world. Located near the Shettihalli Wildlife Sanctuary, it provides shelter for elephants rescued from conflict zones, captivity, or injury.

But behind the calm setting and the familiar sight of elephants bathing in the river, there's a tougher reality. The camp is under-resourced, under-visited, and constantly under pressure — struggling to meet the needs of the very elephants it was built to protect.

A Sanctuary in Name, A Struggle in Practice

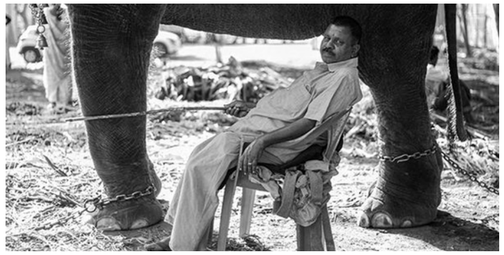


Elephants tied up throughout the day

Feet tied through chains

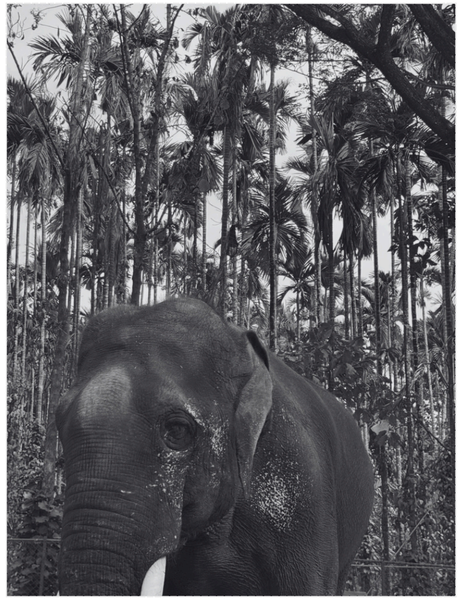
- Animal Welfare Issues
- Community & Cultural Decline
- Infrastructure Challenges
- Resource Constraints

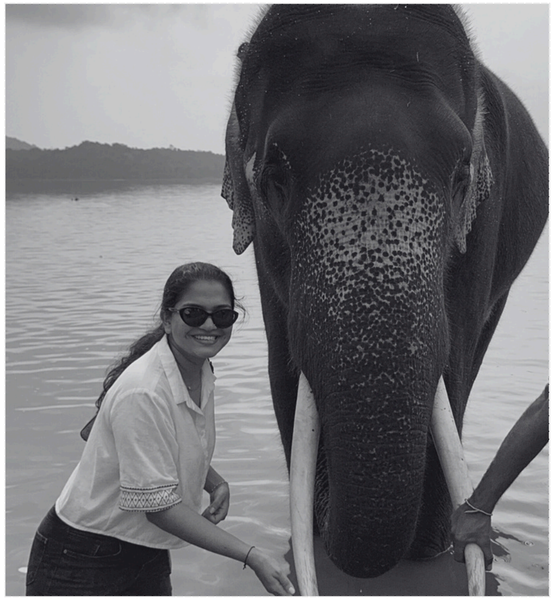
While the Sakrebyle Elephant Camp was established as a refuge, it now faces critical challenges. Inadequate infrastructure, limited veterinary care, and low funding leave mahouts dependent on chains and basic shelters. Visitor engagement is minimal, reducing awareness and support. Elephants lack environmental enrichment, and mahouts live in poor conditions with low pay. Behind its serene exterior, the camp struggles to meet the needs of the elephants it was meant to protect.



A viewing platform: Height 9-10ft Approx

The walk during the Trek (Chained)

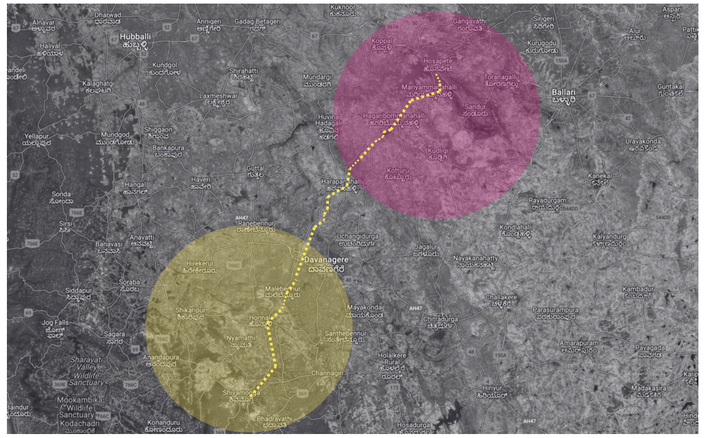


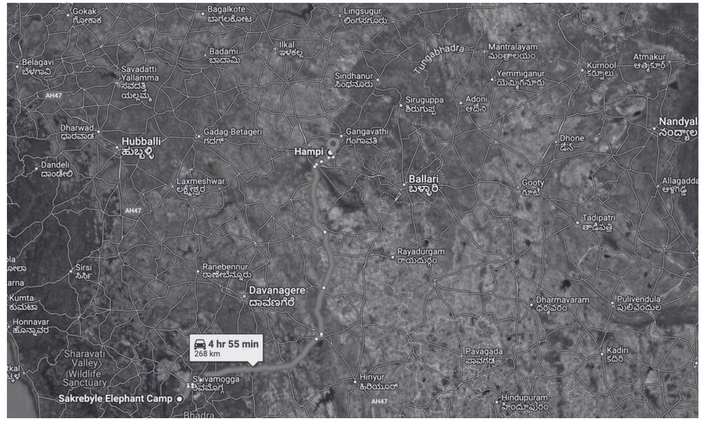


There is a designated space with mud paths for the elephants, but they are often still tied up because the barrier or fencing is not sturdy enough to withstand their strength, preventing them from roaming freely in the sand pit.

*Chapter 7:*

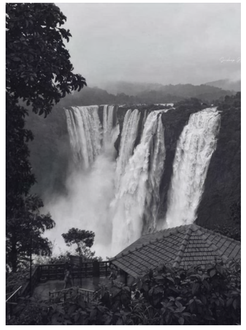
**Sakrebyle vs Hampi**
Should we move the camp to Hampi?

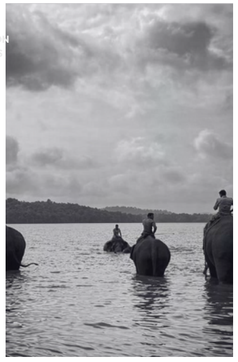



The distance between Sakrebyle Elephant Camp and the proposed site in Hampi is approximately 269 kilometers (169 miles) — about a 4 hour and 55 minute drive by road.

## Sakrebyle Elephant Camp, Shimoga





**Shimoga**, now officially known as Shivamogga, is a city in the Indian state of Karnataka. It is located in the southwestern part of the state, approximately 300 kilometers (186 miles) northwest of Bangalore, the capital of Karnataka.

**Forested Terrain:** The Sakrebyle camp is located within a more forested and green environment, which is a natural habitat for elephants. The nearby forests and the Tunga River provide a suitable ecosystem for the elephants.

**Natural Water Bodies:** Elephants can regularly **bathe in the river, which is an essential part of their care and well-being.** The dense vegetation offers adequate grazing and shade.

**Climate Suitability:** Shimoga has a tropical climate with ample rainfall, creating an ideal environment for elephants.

NICHE TOURISM

0.5 MILLION TOURISTS

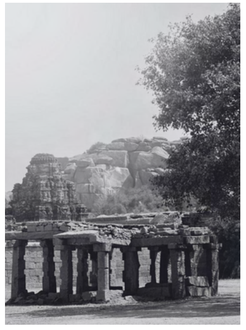
~$600,000 - $1.2 MILLION)

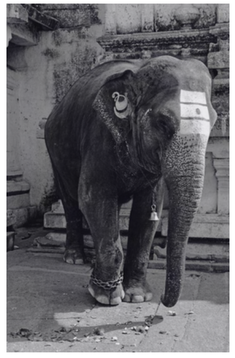
Transport: Shimoga is accessible by **road and rail,** with a modest annual **railway passenger count of around 1 million.**

HOTEL

Accommodation: There are fewer tourism-related accommodations compared to Hampi, with around 1**00 hotels and lodges in the Shimoga region.**

## Hampi





Hampi is an ancient village and **UNESCO World Heritage Site located in Karnataka,** India. It was the capital of the Vijayanagara Empire, one of the largest and most prosperous empires in Indian history, flourishing from the 14th to the 17th centuries.

**Adaptability Concerns:** The more arid environment may not naturally provide the same level of resources (grazing land, shade, moisture) as Shimoga, which could necessitate artificial interventions (irrigation, fodder cultivation)

**Natural Water Bodies:** The Tungabhadra River in Hampi provides a vital natural habitat, offering abundant water for elephants to bathe and thrive, closely echoing their traditional lifestyle in the wild.

**Climate Suitability:** Hampi's hot, dry climate with high summer temperatures and a short monsoon season shapes its rugged, rocky terrain—ideal for adaptive, low-water-use design.

HIGH FOOTFALL

2.5 MILLION TOURISTS.

~$6-12 MILLION

Hampi is well-connected, with growing **domestic and international access** via Hubli and Bangalore airports. Over **3 million tourists** arrive annually by rail and road.

HOTEL

Accommodation: Hampi has a larger and more developed hospitality sector, w**ith over 300 hotels and guesthouses in the region,** ranging from budget to luxury options.

RIVER BATH

ROCKY TERRAIN

EXPOSURE

TOURISM

LOCATION

CLIMATE

The final verdict favors relocating the Sakrebyle Elephant Camp to Hampi, as the region offers greater potential across multiple dimensions. Its thriving tourism, natural river access for elephant bathing, suitable terrain, and dry climate make it an ideal setting for a co-living sanctuary. Additionally, Hampi's cultural heritage and visibility provide opportunities for education, awareness, and long-term sustainability.

## Intertwine.

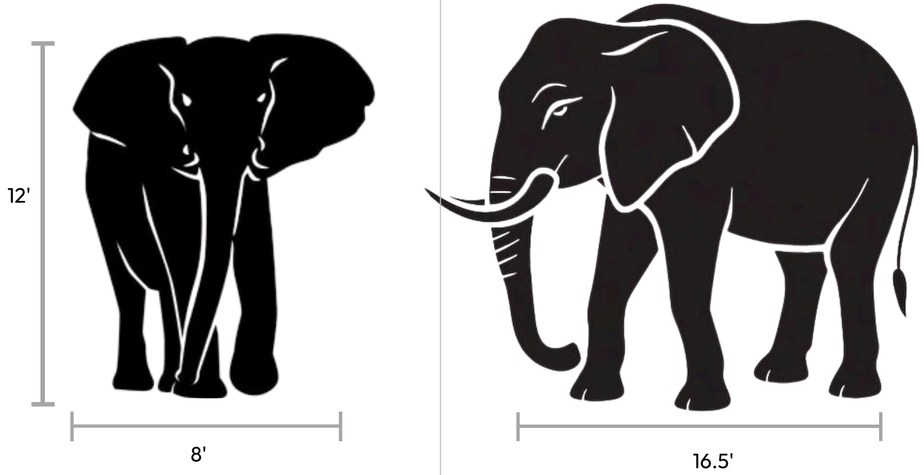
it is a quiet unfolding of connections long buried, now brought gently back into dialogue. At its heart lies the belief that architecture is not meant to dominate life, but to nurture it. It is the intertwinement of Hampi's ancient wisdom with present needs, of elephant and mahout in quiet companionship, of community and ecology, of built space and breathing earth. It seeks to weave the past with the present, the wild with the human, the sacred with the everyday. In this woven landscape, architecture becomes more than shelter—it becomes a gesture of respect. A space where living beings—human, animal, and vegetal—coexist not in conflict, but in harmony. Intertwine is a reminder that design is not about imposing order, but about listening deeply—to the land, the wind, the memory of stone, and the footfalls of giants. It is architecture for the living.

*Chapter 8:*

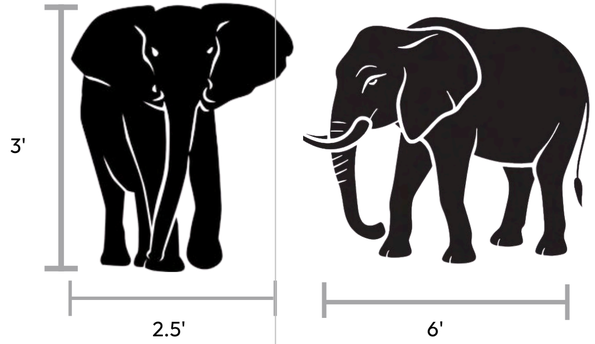
**Understanding the Inhabitants: Elephants, Mahouts & Visitors**

Designing with empathy — for those who walk, guide, and arrive.






Adult Asian Elephant




Baby Asian Elephant

### Outdoor Space

Allows for free movement, exercise, and behavioral diversity

- **Minimum 5,400–8,700 sq. ft. per elephant**

### Indoor Space

Enables resting, shelter from weather, medical monitoring

- **Minimum 600–1,000 sq. ft. per elephant**

### Pool Access

Large enough for full submersion

- **Full Body Immersion: 9ft Minimum**

Sleep

Nutrition

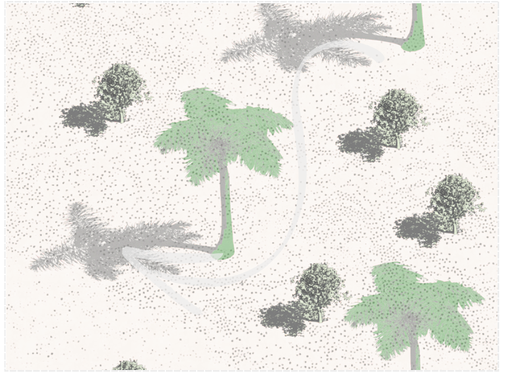
Bath

Movement

Social

A high standard of living for elephants depends on meeting their fundamental physical and emotional needs. Key factors include quality sleep, proper nutrition, regular access to water for bathing, freedom of movement, and healthy social interaction. Together, these support their overall well-being in captivity.

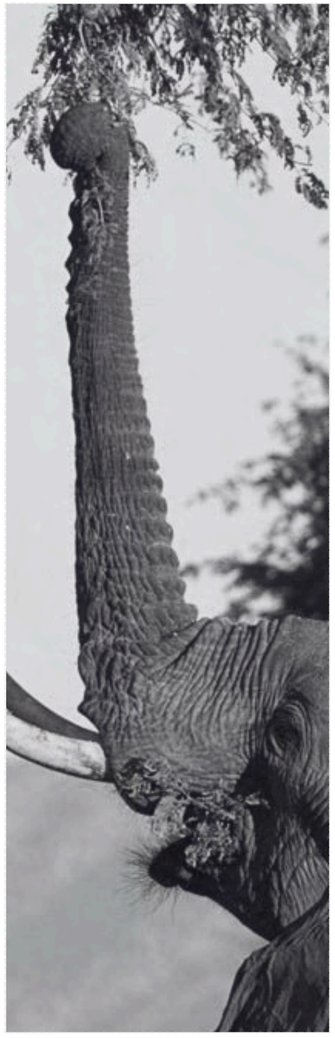
### Sleep:



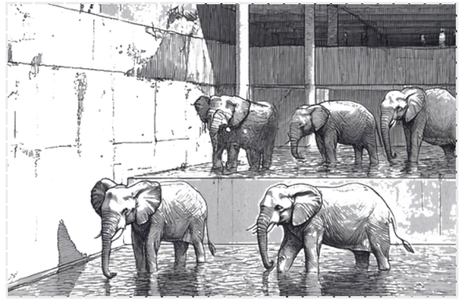
- Ensure ample space for elephants to lie down without obstruction under tree shade.
- Soft, dry substrates like sand or grass to facilitate comfortable lying down

## Nutrition:

| | |
|---|---|
| Hay & Forage | 150+ lbs per day<br>Primary diet; supplemented with live vegetation if possible |
| Fruits & Vegetables | 10–20 lbs per day<br>Adds variety and enrichment |
| Grains, Minerals, Probiotics | Daily supplements<br>Supports digestion and overall health |
| Fresh Browse | Daily availability<br>Mimics wild feeding behaviors |
| Water | Free access, separate pool and drinking sources<br>Hydration and bathing must be always accessible |



## Bath:



- **Water Play Features:**

Playful elements like gentle fountains or spraying nozzles for elephants to interact with, enhancing their natural bathing behavior.

- **Materials: Non Slip**

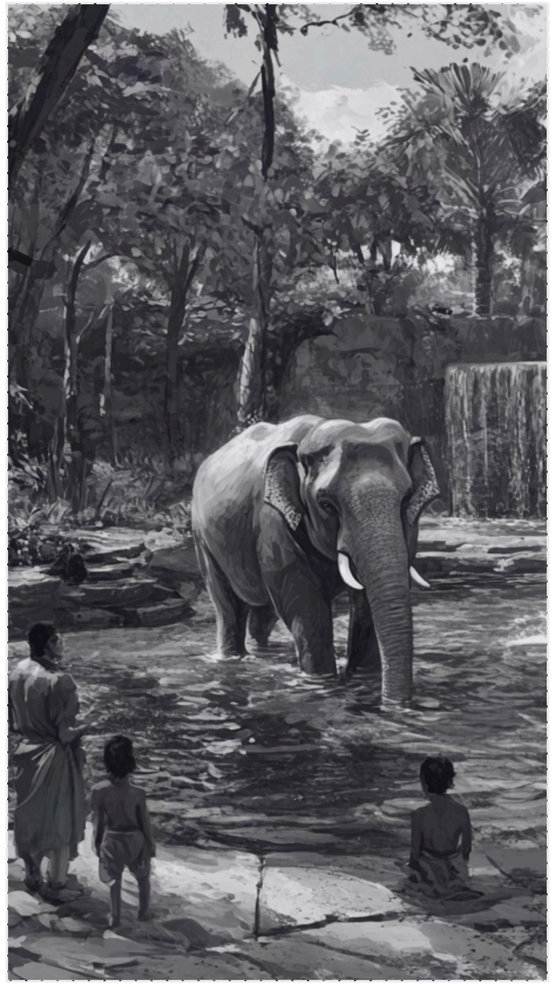
Use non-slip concrete or stone surfaces that can withstand high pressure and provide safe footing for elephants, Visitors and Mahouts.

- **Naturalistic Environment:**

Surround the pool with rocks, trees, and mud to mimic a natural riverbank.

- **Tiered Bathing Pool:**

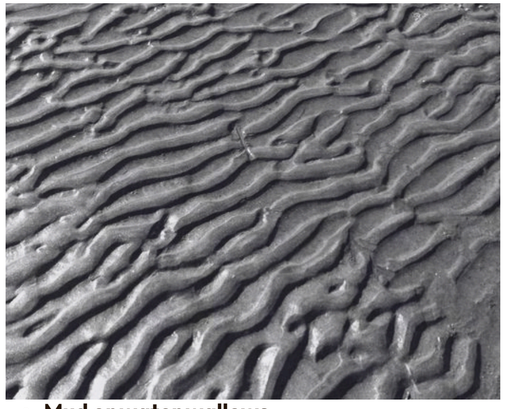
A large water body with multiple depths to accommodate elephants of all sizes and provide shallow edges for safe visitor access.



## Walking:

- **Natural: grass, soil, sand**

  In miles, the walking distances for captive elephants range from about **6 to 9** miles daily.



- **Mud or water wallows**

- Promotes healthy feet and skin, avoids sores and cracking

## Social:

- Enrichment: Must be rotated frequently, include natural objects (logs, sand piles), and support foraging, climbing, and decision-making

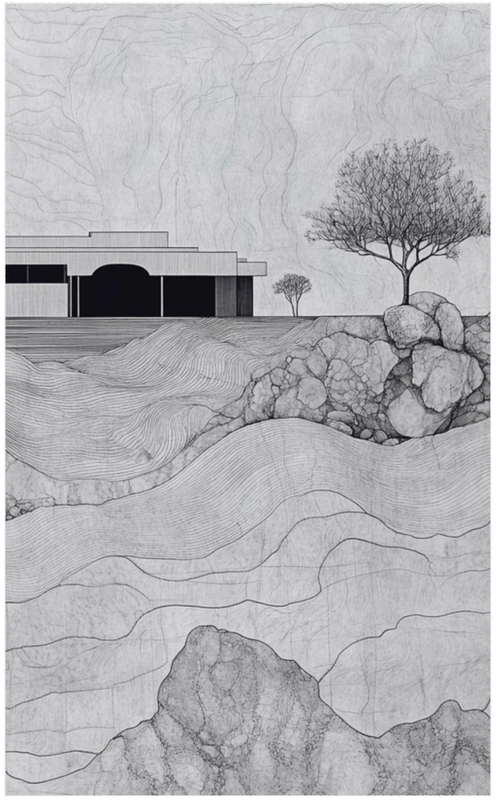
- Freedom of Choice: Elephants should choose when to socialize, bathe, rest, or explore

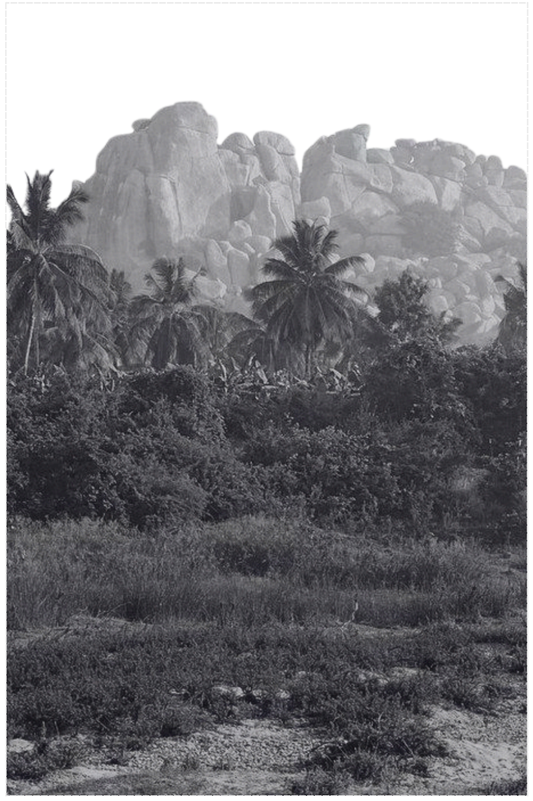
- Group Size: **Minimum 3–5 individuals**; less than 5 is not ideal (TAOS)

*Chapter 9:*

**Rooted in Tradition**
The Vernacular Architecture of Hampi

Built With the Land, Not On It





Architecture followed the land

- Boulders around the site and structure remain as it is. It speaks of their architecture
- My design mirrors this through scattered units and flowing paths, allowing air, animals, and people to move freely without rigid boundaries.
- Shrubs and landscaping elements to shape the walways/ pathways

## Built With the Land, Not On It

- Sloping Roofs, Terracotta Roof and Courtyards

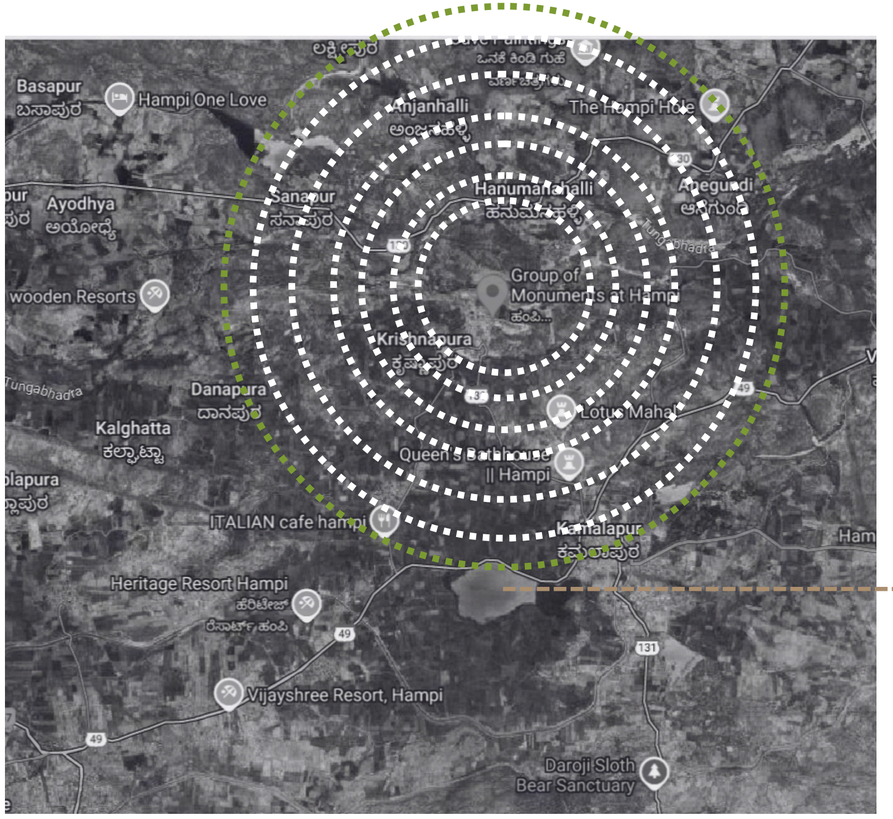
- Sloping Roofs
- Deep Overhangs
- Landscaping
- Stone flooring

*Chapter 10:*

**Looking for a Site**
A Natural water body

## Location of Site

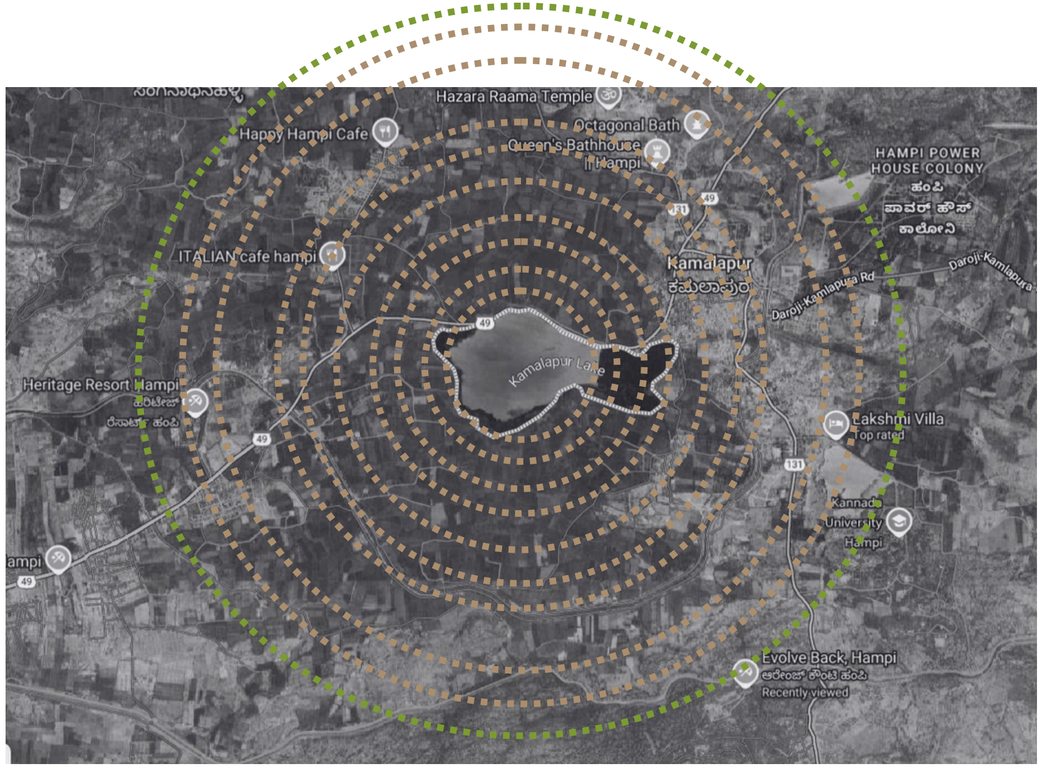
To begin the site selection process, I first identified the central point of the Hampi monuments to establish a spatial anchor. Using concentric circles with a 0.5-mile radius, I explored the surrounding context and identified Kamalapur Lake—a freshwater, oxbow-shaped lake—as a potential anchor for the proposal, offering both ecological and experiential value.




## Kamalapura Lake

## Location of Site

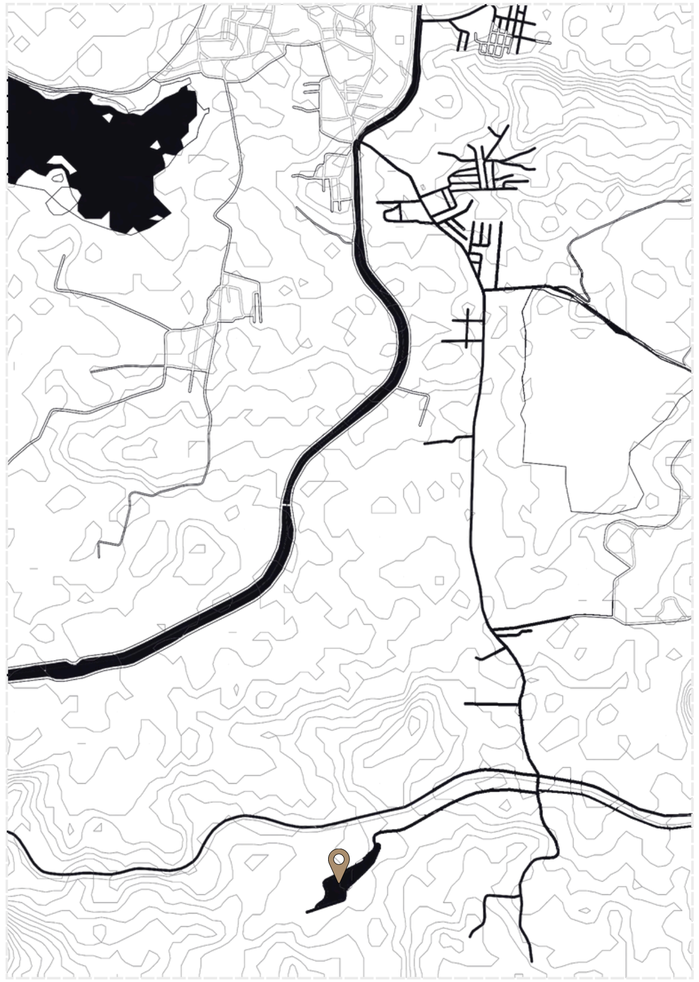
Building on the initial analysis, I took Kamalapur Lake as the central reference point and mapped concentric circles at 0.5-mile intervals to study the surrounding landscape. This method led to the identification of a forested zone that offered the ideal balance of natural cover, gentle terrain, and proximity to water—making it a fitting and sensitive location for housing elephants and their mahouts.




*Chapter 10:*

**Evolve Back**
Site Findings

Route to the Site:

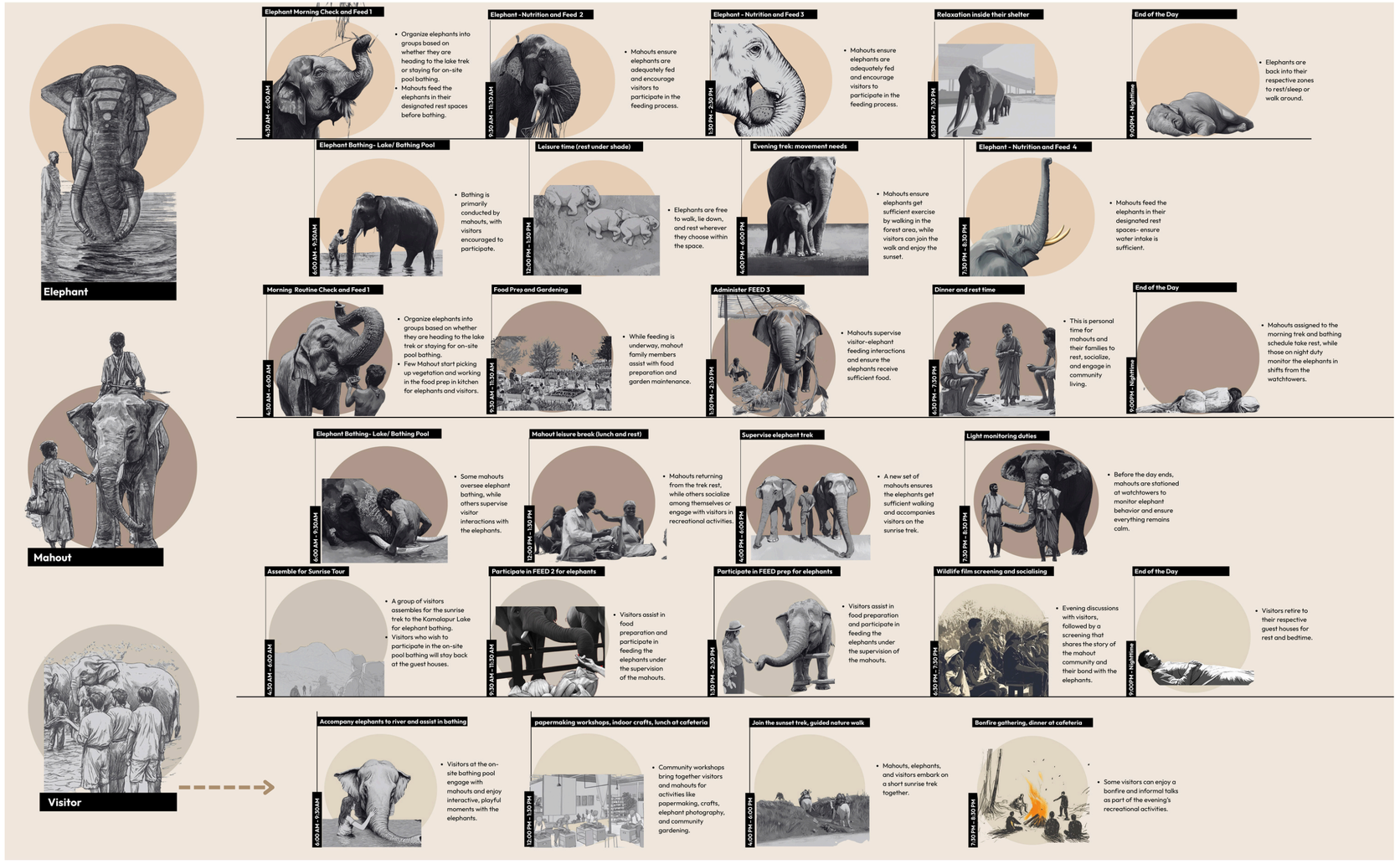


- Route: Hampi to Kamalapur via SH 49 (State Highway 49)
- Distance: ~4–5 km
- Travel Time: 10–15 minutes by car
- Landmark: Large boulder at right turn from Hampi onto a paved resort pathway
- Pathway Material: **Stone blocks**, not tar or concrete, to preserve the old-age aesthetic and blend with the landscape
- Design Inference: Creating a **buffer space at the entrance** to enhance **privacy and build curiosity for travelers**

*Chapter 12:*

**The Intertwinements**

What are they?




## Elephant-Mahout-Visitor Schedule

This schedule outlines the daily rhythm of the three central components of the proposal—elephant, visitor, and mahout—derived from case studies and the species' specific needs. It reflects how their interactions are thoughtfully woven together, allowing organic connections and interdependencies to form through shared routines and experiences.

## Scan the QR code for the virtual version:

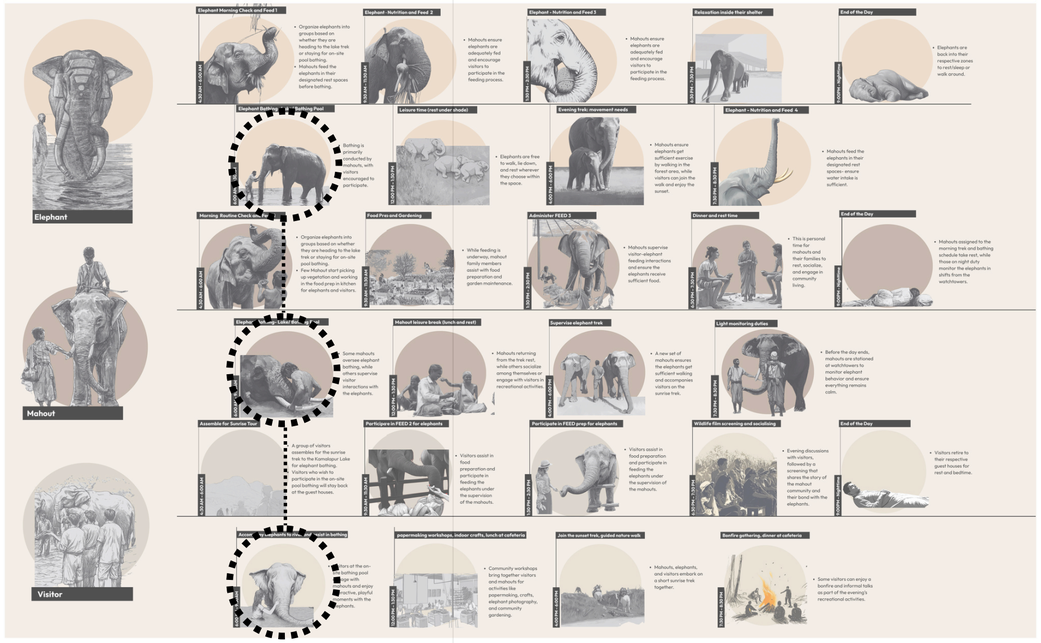
Access a high-resolution, interactive version of the schedule by scanning the QR code. This digital format offers enhanced clarity and detail, allowing for a better understanding of the daily rhythms and interconnections between the elephant, mahout, and visitor.

## Intertwinement 1: Elephant-Visitor-Mahout Connection: The Feeding Ritual

Feeding becomes a powerful moment of connection, where visitors engage directly with elephants under the careful guidance of mahouts. This shared activity fosters trust, understanding, and respect among all three, transforming a simple act into a meaningful exchange. It is in these quiet, tactile moments that bonds begin to form.

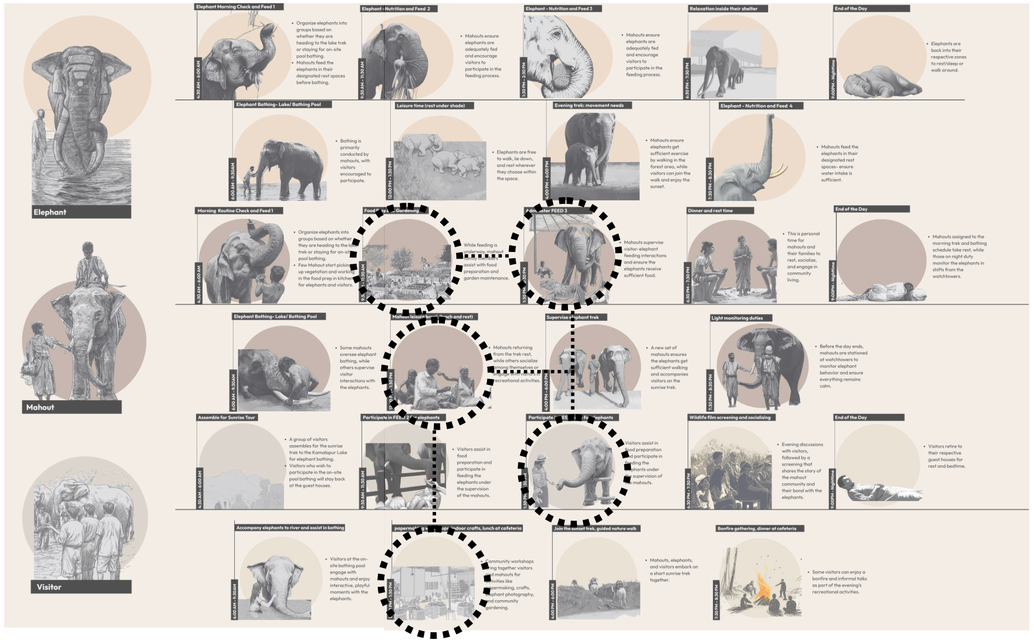

## Intertwinement 1: Elephant-Visitor-Mahout Connection: The Bathing Ritual

The daily bathing ritual is a moment of shared care and joy, where visitors join mahouts in gently washing the elephants. This intimate experience fosters empathy and connection, allowing visitors to witness the trust between elephant and mahout, and become part of that bond, even if just for a moment.



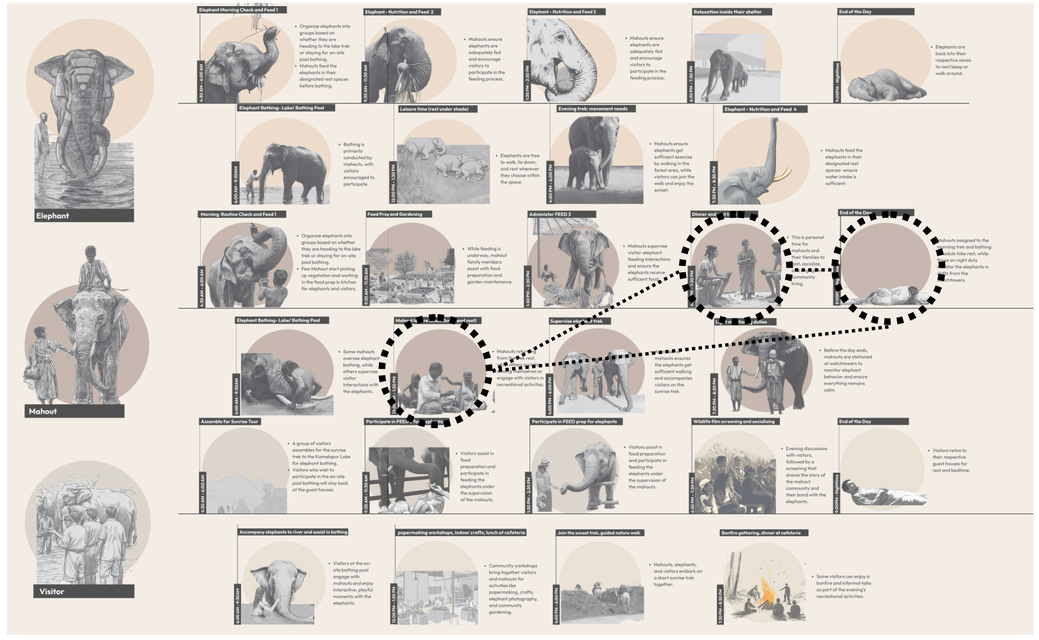
## Intertwinement 2: Visitor- Mahout Connection: Community Garden & Kitchen

Through shared activities in the community garden and kitchen, visitors engage with mahouts in farming, harvesting, and preparing food—both for the elephants and themselves. These interactions foster meaningful dialogue, cultural exchange, and awareness about sustainable living and the deep care involved in elephant stewardship.



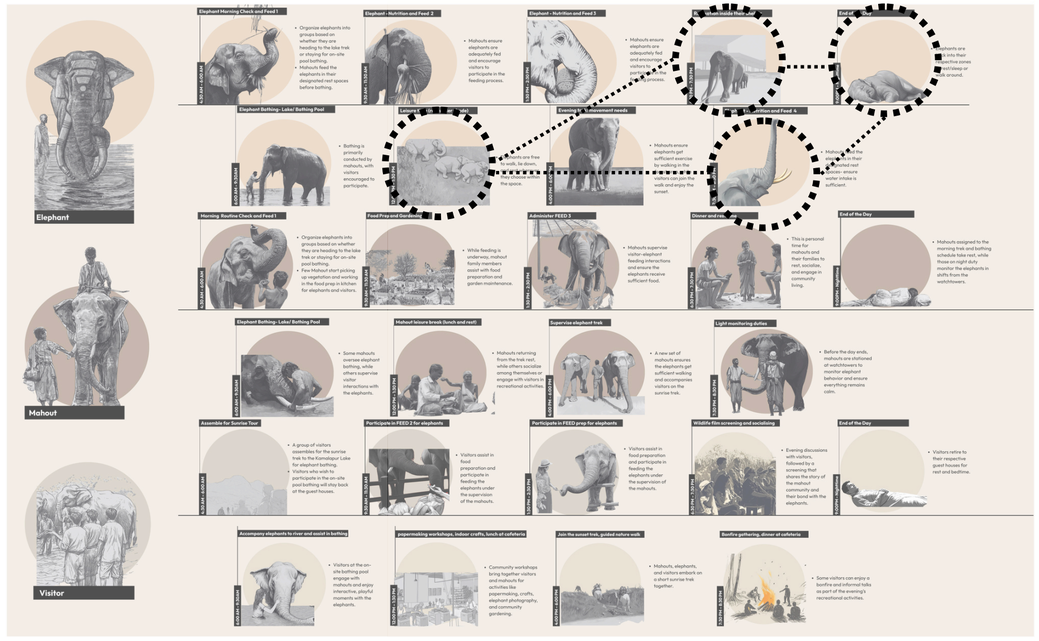

## Intertwinement 3: Mahout Community Connection: Housing & Cultural Space

Mahout housing is designed with dignity and cultural sensitivity, addressing the poor living conditions often seen in case studies. This space honors their need for privacy, rest, and cultural expression, while also creating opportunities for community bonding and reconnection within their own circle—an essential yet often overlooked aspect of their well-being.



## Intertwinement 4: Elephant Herd Connection: Social Bonds & Herd Dynamics

Elephants are deeply social beings with strong herd instincts. This aspect of the design prioritizes spaces that support natural herd behavior—allowing elephants to interact, form bonds, and engage in group activities essential to their emotional and psychological well-being.



| Zone / Program Element | Expanded Area (sq. ft.) | Details |
|---|---|---|
| 1. Elephant Quarters + Paddocks | 120,000 – 140,000 | ~4,800–5,600 sq. ft. per elephant including indoor shelters + shaded group paddocks. Calves need additional safe zones. |
| 2. Mahout Housing Cluster | 18,000 – 20,000 | 12 homes × ~1,200–1,400 sq. ft. with private yards, shaded verandahs, shared spaces |
| 3. Visitor Family Stay Units | 12,000 – 14,000 | 8 homes × ~1,500–1,700 sq. ft. including porches, quiet gardens, and privacy buffers |
| 4. Elephant Bathing + Mud Pool Zone | 15,000 – 18,000 | Large naturalistic pool (~6,000 sq. ft.) + surrounding landscape for bathing, lounging, mud wallows |
| 5. Community Kitchen + Farming Area | 8,000 – 10,000 | Includes large outdoor cooking + composting areas, shaded garden beds, storage |

Project Program & Area Requirements

| Zone / Program Element | Expanded Area (sq. ft.) | Details |
|---|---|---|
| 6. Elephant Movement Trails + Grazing | 80,000 – 100,000 | Large loops, soft-surfaced paths with fodder and sensory elements; supports 6–9 miles of walking loops |
| 7. Agricultural / Fodder Fields | 100,000 – 120,000 | Banana, sugarcane, napier grass, bamboo — supports on-site feeding sustainability |
| 8. Passive Landscape + Buffer Zones | 50,000 – 60,000 | Shaded trails, boulder clusters, trees, visitor outlooks, jali walls and wind corridors |
| 9. Interpretation & Community Zones | 10,000 – 12,000 | Outdoor learning space, craft workshops, elephant interaction decks, tool storage |

Total Estimated Site Area:
~5 to 6 acres (approx. 220,000 to 260,000 sq. ft.)

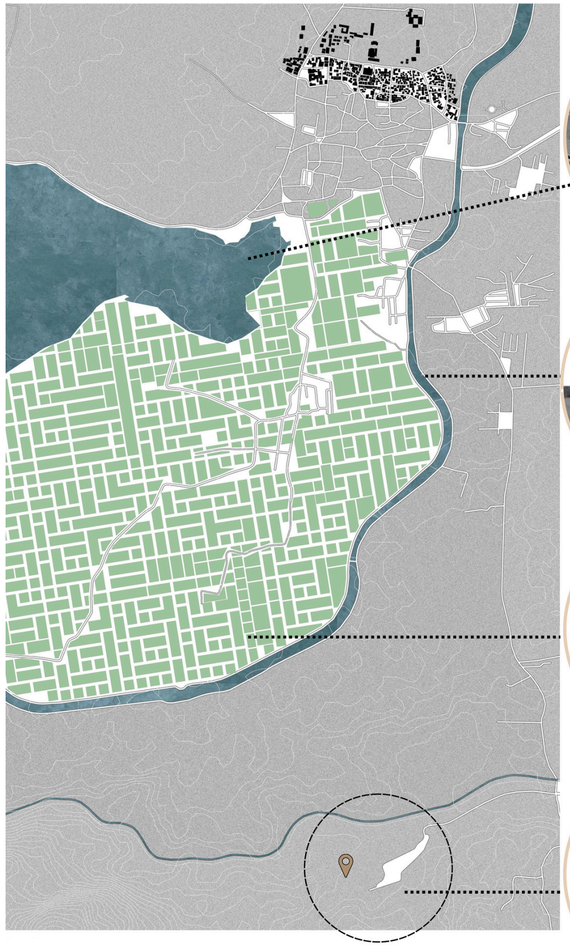
**Intertwinement**

The design fosters a gentle intertwinement between mahout, elephant, and visitor—bridging centuries of tradition with contemporary awareness, and inviting the world into a shared rhythm of empathy, care, and coexistence

*Chapter 13:*

**Site Study and Strategies**

The foundation of the design process



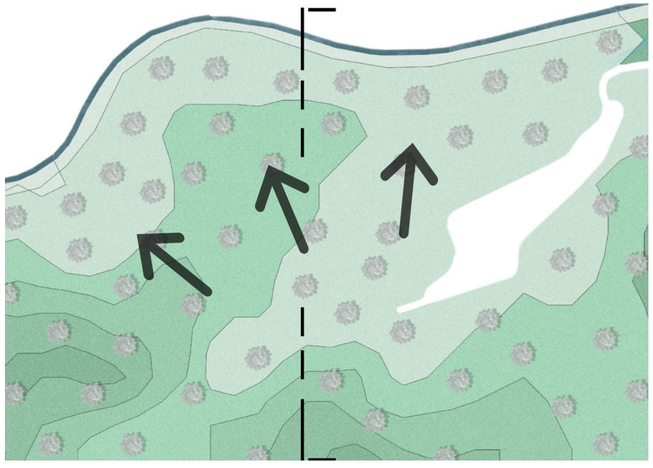
Kamalapura Lake maintains high water purity, offering elephants a clean, toxin-free environment for bathing and skin care—essential for their health and well-being."

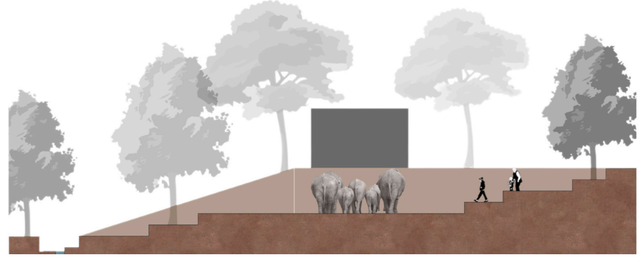
Tungabhadra Canal provides a shaded, ecologically stable corridor that allows them to walk safely along its edge—ideal for slow, stress-free movement through the landscape.

The path through lush agricultural fields is shaded by tall palm trees, offering a cool, calm, and immersive trekking experience that reflects the elephants' natural habitat.

Evolve Back Resort, with its eco-luxury experience rooted in local heritage, attracts high-value tourists and offers strong potential for promoting elephant conservation awareness.

Urban Context





By utilizing the site's natural contours, visitor and community spaces are placed on higher ground while elephant zones are positioned on lower terrain—this creates continuous visual access to the elephants, enables passive supervision by mahouts, and serves as a natural, non-intrusive security buffer.


## Master Plan

Scan the QR code for the virtual version:

Access a high-resolution, interactive version of the Master Plan and Site Section AA' by scanning the QR code. This digital format offers enhanced clarity and detail, allowing for a better understanding of the daily rhythms and interconnections between the elephant, mahout, and visitor.

## Section AA’

Scan the QR code for the virtual version:

Access a high-resolution, interactive version of the Master Plan and Site Section AA’ by scanning the QR code. This digital format offers enhanced clarity and detail, allowing for a better understanding of the daily rhythms and interconnections between the elephant, mahout, and visitor.

Visitor- Mahout - Elephant  Feeding and Bathing Ritual Intertwinement 1

Isometric View of the Elephant Feed + Bath

Elephant Feed + Bath

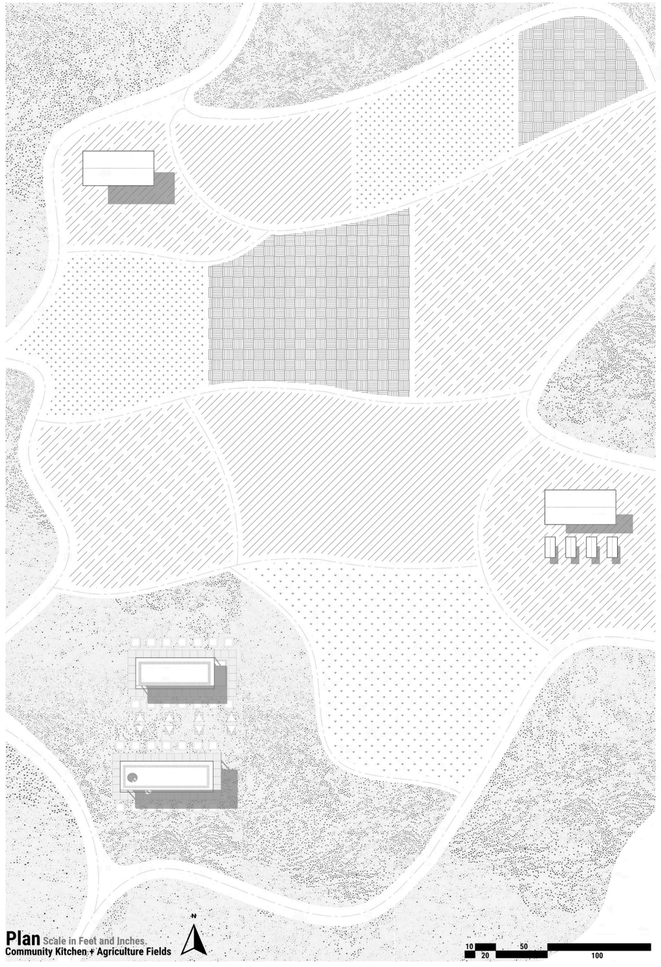
Section BB' - Elephant Feed + Bath

Elevation - Elephant Feed

Elephant Feed + Bath

Elephant Feed

## Visitor- Mahout Connection: Community Garden & Kitchen: Intertwinement 2

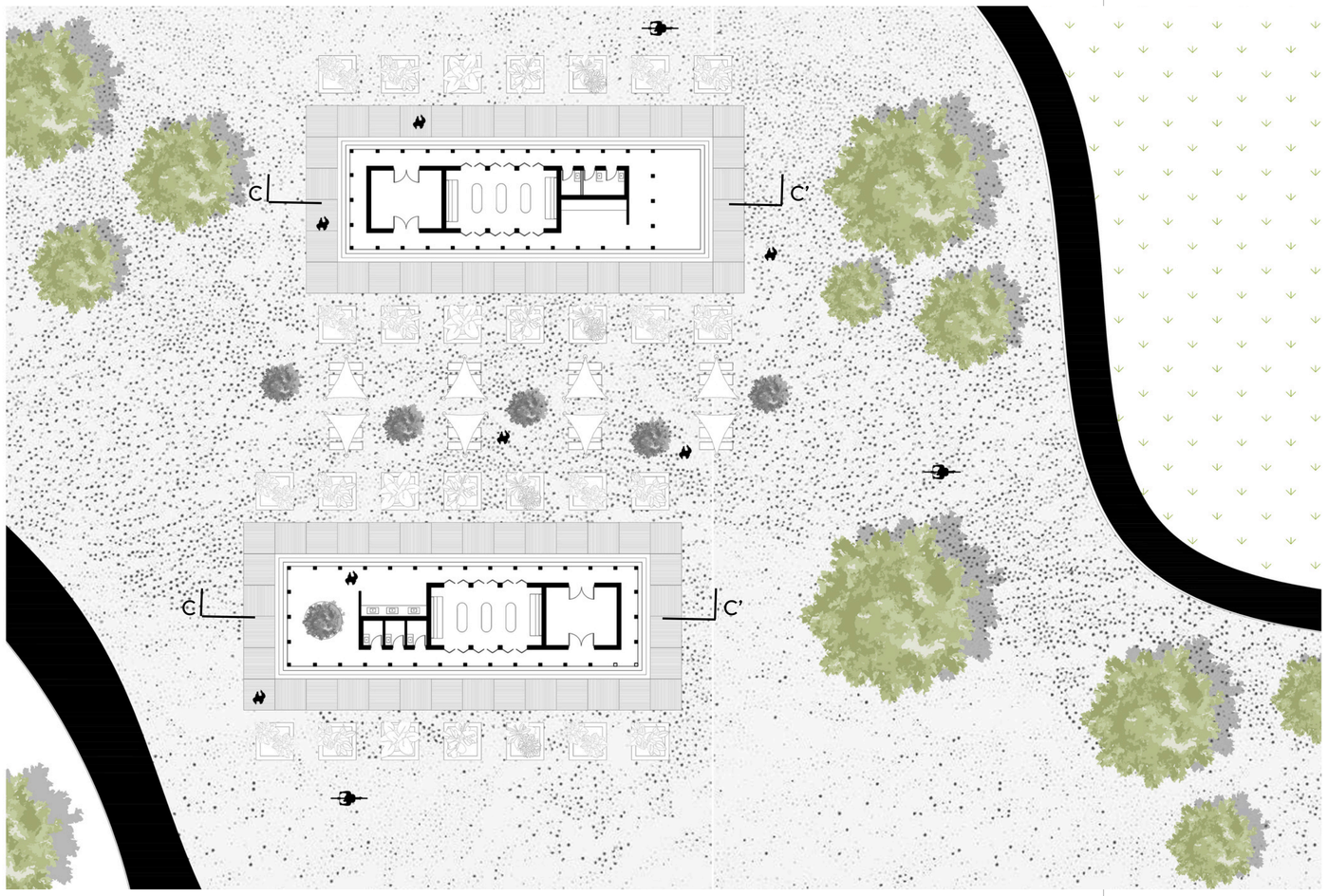



## Plan

Scan the QR code for the virtual version:

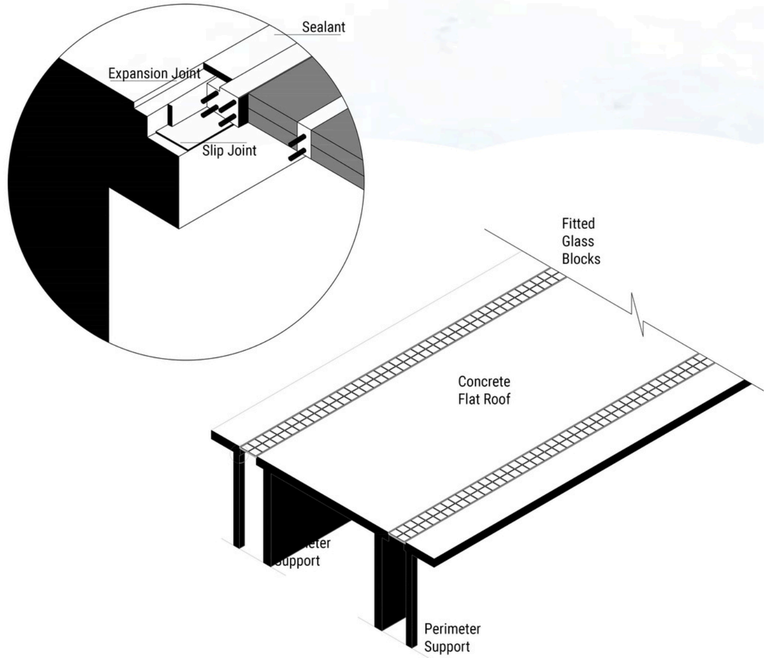
Access a high-resolution, interactive version of the Community Kitchen Plan by scanning the QR code. This digital format offers enhanced clarity and detail, allowing for a better understanding of the daily rhythms and interconnections between the mahout, and visitor.

Community Garden & Kitchen

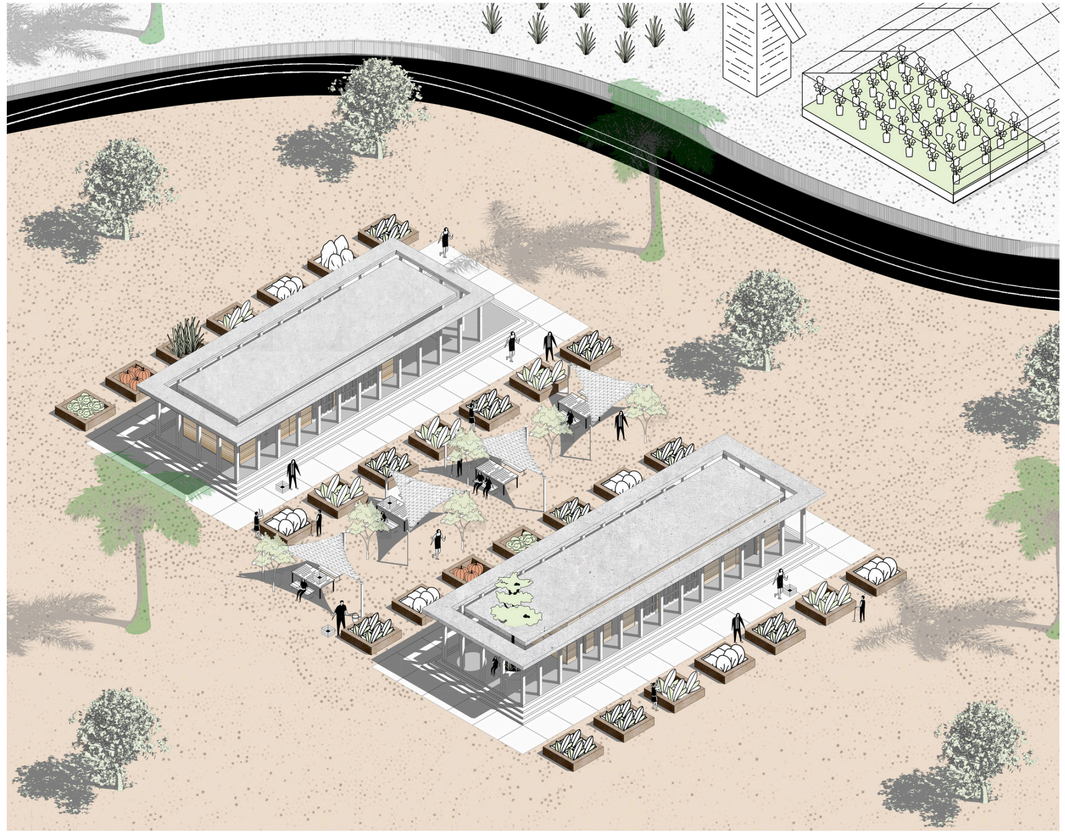



Interior Plan- Community Kitchen

View of the Kitcehn and Garden

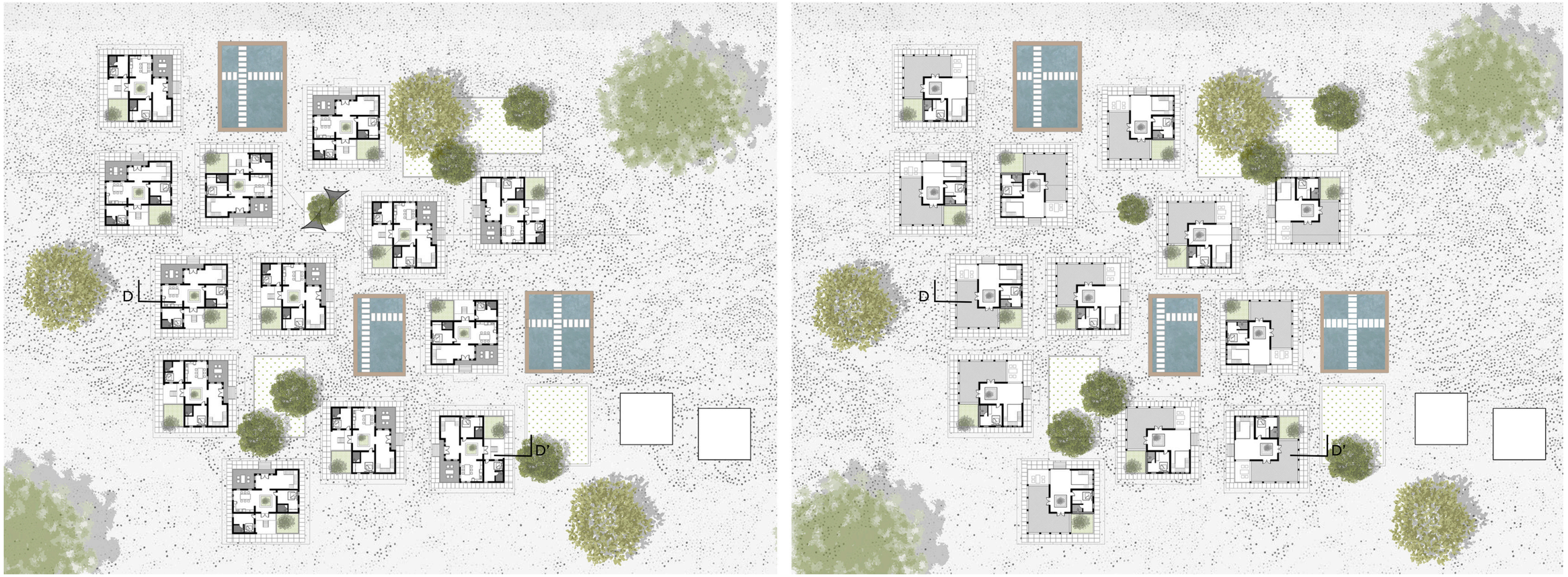



Roof Detail of the Glass Block insert



Isometric View

Section CC’




Mahout Housing Plan

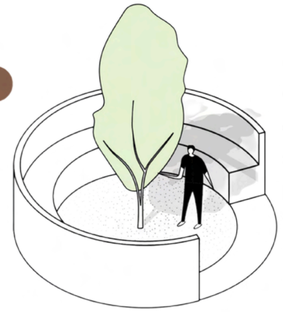
Mahout Housing Section DD’

Mahout Housing Courtyard

Isometric View

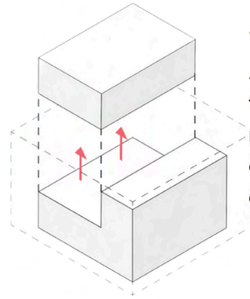
Passive Cooling Methods

1



Courtyard:

Courtyards in Hampi design help cool interior spaces naturally by promoting cross-ventilation and releasing trapped heat upward through the open sky.

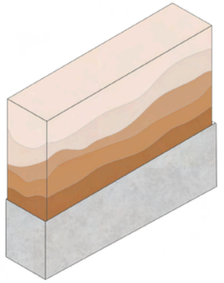


4

Verandah

A verandah provides shaded transitional space that reduces heat entering indoor areas while allowing comfortable outdoor living in Hampi's climate.

2



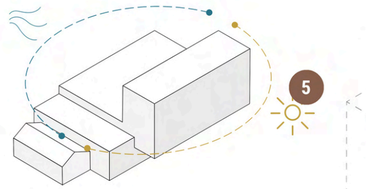
Rammed Earth:

Rammed earth offers high thermal mass, keeping interiors naturally cool during Hampi's hot days and warm during cooler nights.

3

Settlement Pattern

Close-knit, narrow road settlement patterns in Hampi reduce direct solar exposure and create shaded pathways, keeping the environment cooler throughout the day.

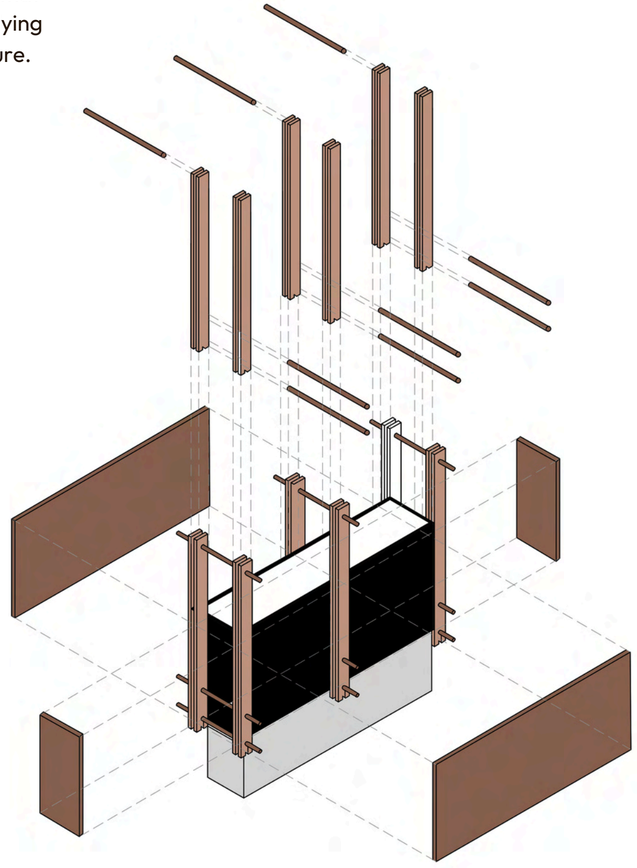


5

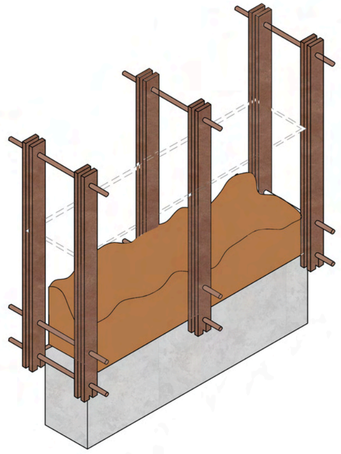
Orientation Axis

Orienting a house along the east–west axis minimizes exposure to the harsh southern and western sun, helping to keep interiors cooler in Hampi's hot climate.

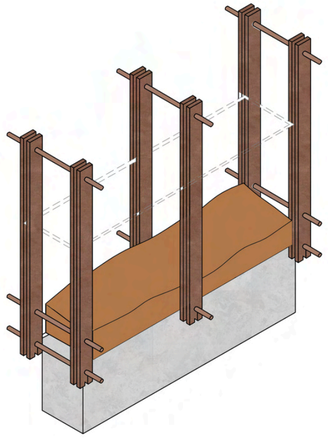
Rammed earth, an ancient yet enduring technique, molds the very soil beneath our feet into walls that breathe, insulate, and age gracefully—embodying sustainability and timeless beauty in architecture.



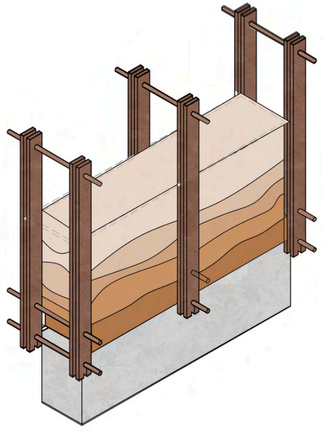
Construction of Rammed Earth



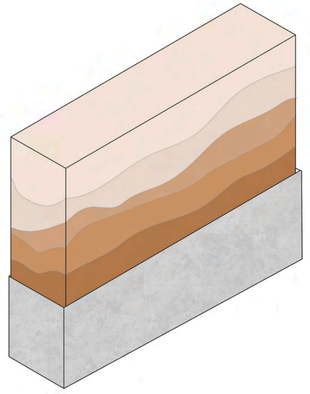
Step 1: After constructing the wall framework, fill it with a layer of damp earth—typically a mix of sand, gravel, clay, and a stabilizer.



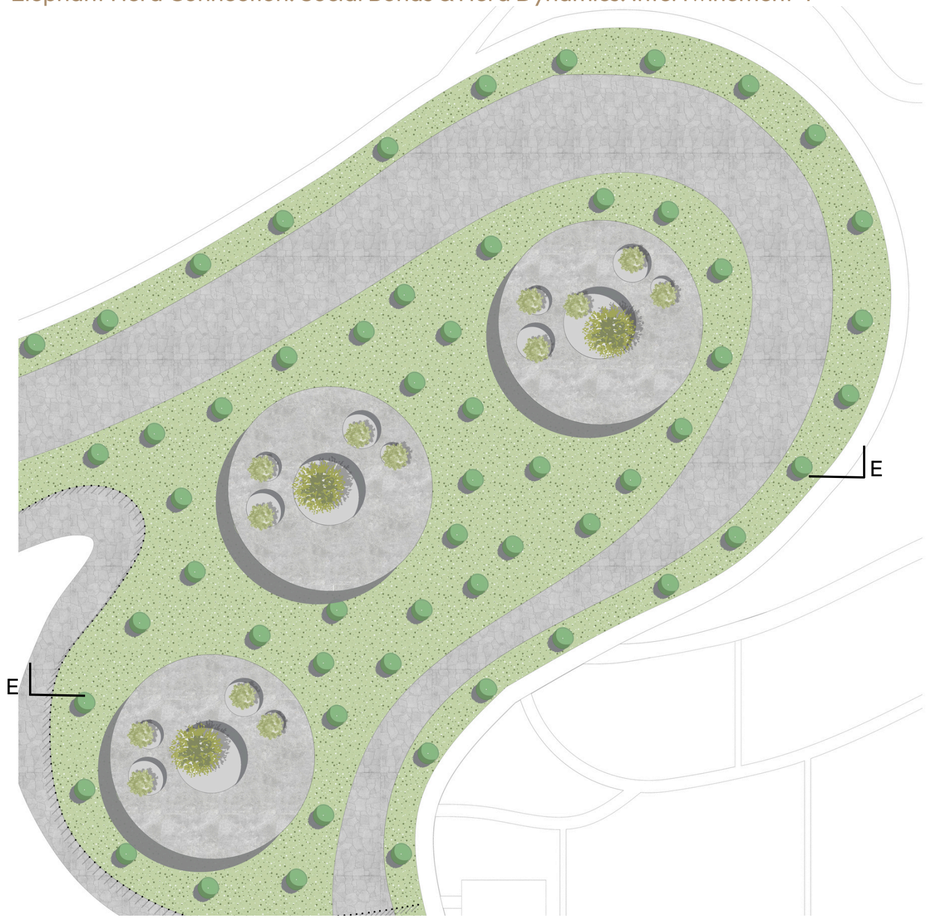
Step 2: Compress the damp earth to about half its original volume using a pneumatic rammer, ensuring a dense and stable structure.



Step 3: Repeating the process until the layers of the earth are rammed and desired wall height is attainted.



Elephant Herd Connection: Social Bonds & Herd Dynamics: Intertwinement 4




Elephant Stay Plan

Elephant Stay View

Section EE’

## Ventilation

Narrow slit openings allow controlled cross-ventilation, enhancing airflow and maintaining a cooler interior without direct sun exposure—ideal for Hampi's dry heat.

They filter in soft light and allow glimpses of rain, offering visual and sensory connection to water—vital for elephants' wellbeing.

## Curved Walls

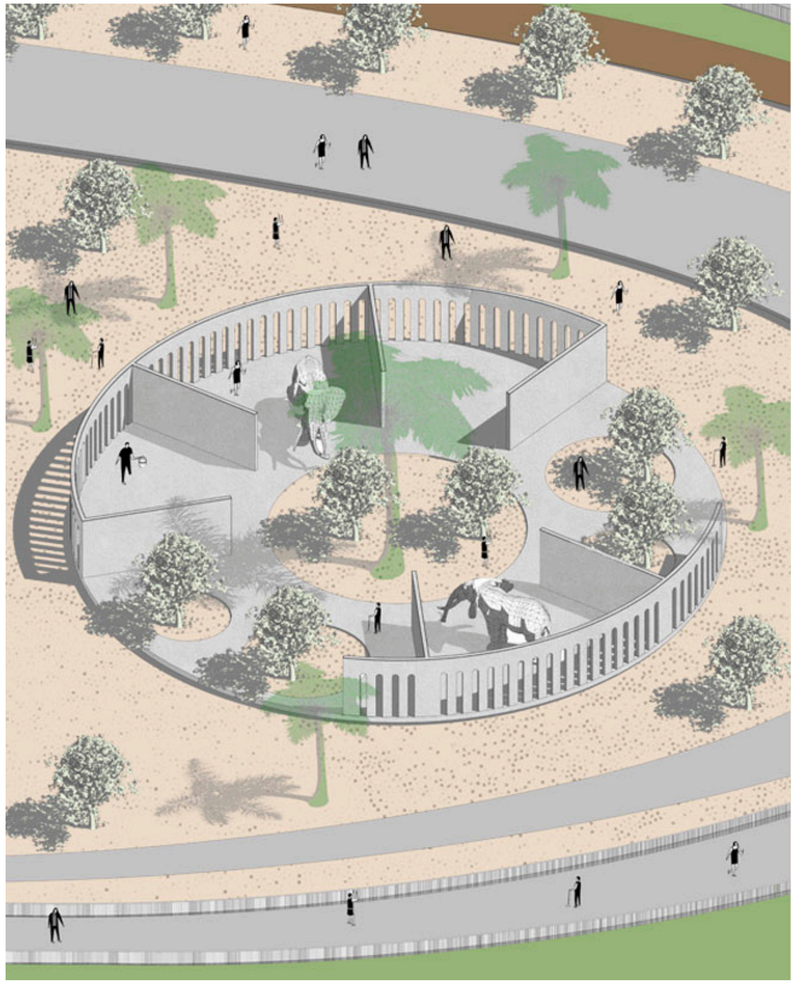
:Comfort & Curiosity: Curved walls offer a soft, inviting form—elephants, being naturally curious, are drawn to gentle curves that also provide a comfortable surface for resting.

Spatial Flexibility: Circular layouts support herd living while allowing natural separation when needed—ideal for adult females in estrus seeking solitude.

## Using Concrete:

Thermal Comfort: Concrete's high thermal mass keeps interiors cooler in Hampi's hot climate, creating a comfortable resting space for elephants.

Strength & Durability: Concrete supports the heavy weight and movement of elephants, ensuring long-term structural stability.



Isometric View

View of the Elephant Stay

Watch Towers

Strategically placed around the elephant enclosures, watch towers allow mahouts to monitor elephant behavior in rotating shifts. Each tower is surrounded by vertical columns, creating a physical barrier that prevents elephants from approaching or passing through, while maintaining clear lines of sight for supervision.

Hydrated Mud Fields

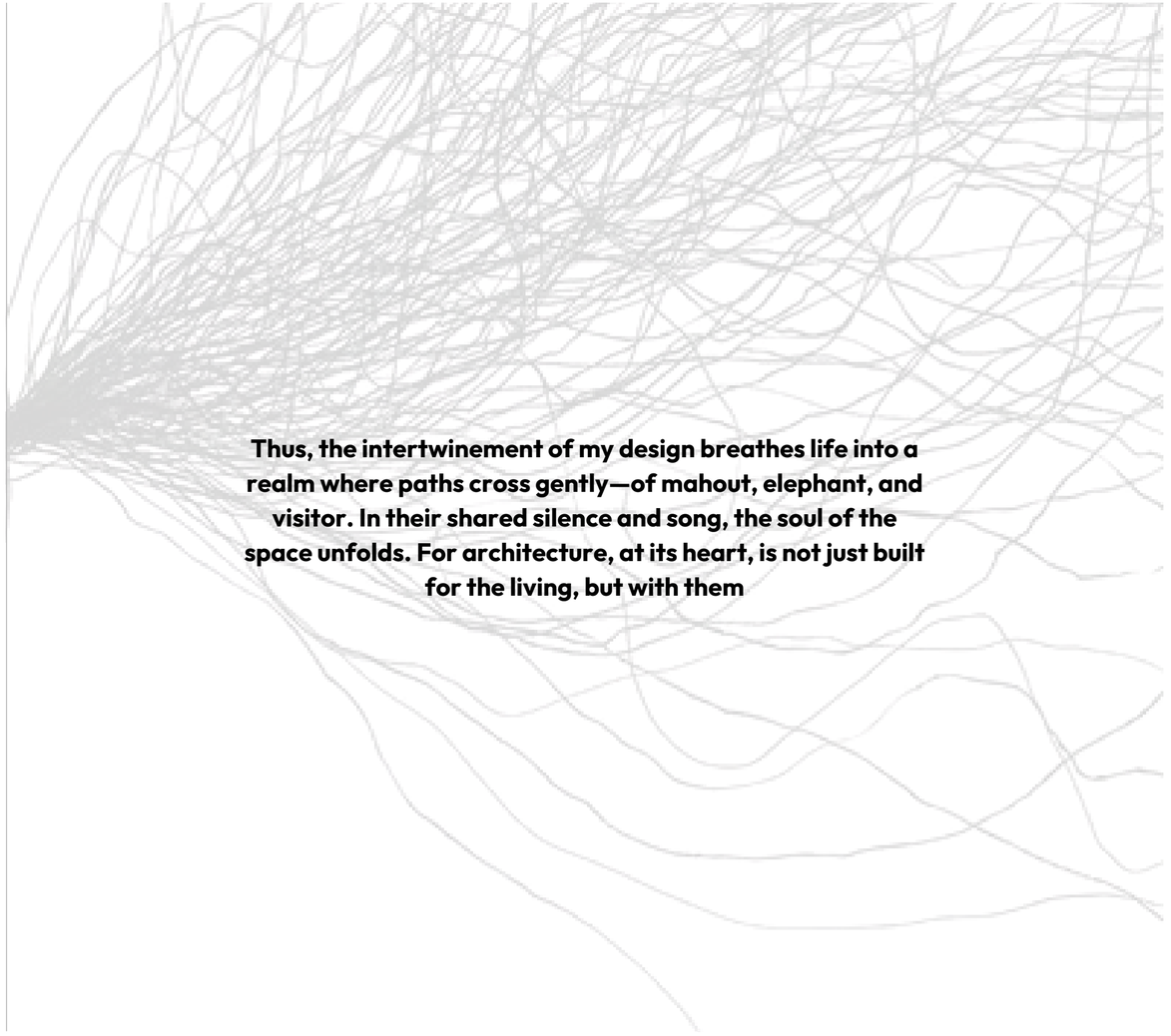
Elephants are naturally drawn to moist earth—walking on wet mud not only provides comfort but also supports joint health and foot care. To maintain this environment, sprinkler systems are installed to periodically spray water across the mud fields, ensuring the soil remains cool, soft, and inviting for elephants to walk, rest, and graze.

Interaction Zone

This conceptual space is designed to foster meaningful interactions between visitors and mahouts. Set around open courtyards and shaded workshop areas, it encourages shared activities such as elephant dung paper-making, local craft demonstrations, and storytelling sessions. These workshops not only promote cultural exchange but also help build empathy and stronger bonds between mahouts and visitors.

Interaction Zone

This conceptual space is designed to foster meaningful interactions between visitors and mahouts. Set around open courtyards and shaded workshop areas, it encourages shared activities such as elephant dung paper-making, local craft demonstrations, and storytelling sessions. These workshops not only promote cultural exchange but also help build empathy and stronger bonds between mahouts and visitors.



**Thus, the intertwinement of my design breathes life into a realm where paths cross gently—of mahout, elephant, and visitor. In their shared silence and song, the soul of the space unfolds. For architecture, at its heart, is not just built for the living, but with them**

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