

**“INTERGRATED WEAVING HUB” – EMPOWERING COTTON  
TEXTILE TRADITIONS OF CHENNIMALAI**  
(Amalgation of space, Culture and Education)

*A THESIS*

Submitted in partial fulfillment of the requirements for the award of  
Bachelor of Architecture degree

By

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**SATHYABAMA**

**INSTITUTE OF SCIENCE AND TECHNOLOGY (DEEMED TO BE UNIVERSITY)**  
Accredited with Grade “A++” by NAAC | 12B Status by UGC | Approved by AICTE  
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**MAY - 2024**



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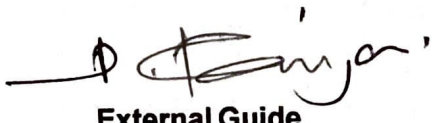
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### BONAFIDE CERTIFICATE

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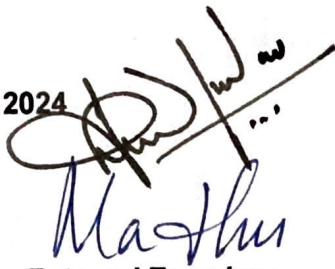
  
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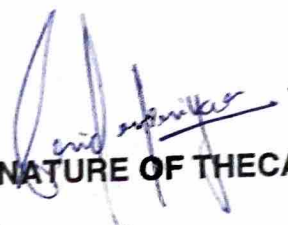
  
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## DECLARATION

I, N. Sridevi Priyaa hereby declare that the Thesis Report entitled "Integrated Handloom Hub" done by me under the guidance of Ar. Brindha (Internal Guide), Ar. Juvilasri Vignesh (Internal Review Member) and Ar. Rajan Daniel (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfilment of the requirements for the award of Bachelor of Architecture Degree.

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## **ABSTRACT**

Weaving is an ancient traditional method used for textile production. The quiet sensitivity of the weaver rooted in the custom and ritual had it, origin in religious fervor creating a relationship between him and cloth. This thesis proposes an integrated handloom weaving community to the weaver group of Chennimalai village, Tamilnadu, India. The handloom industry, which is in desperate need of revitalization, is expected to benefit from this initiative and to support the weavers' community by drawing inspiration from the past and putting it into practice in the future, thereby increasing potential. It is proposed to be a self-supporting handloom weavers' village which consists of an industrial and residence sector.

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# CHAPTER 1

## INTRODUCTION

### 1. INTRODUCTION

India Wrapped with enhanced and known for its complexity diversity of cultures and skills in various regions specific and unique in its own way. Weaving is a cross-cultural phenomenon, used as both a functional process and an art form.

Based on climate, material properties, and geographic location, each civilization and culture created its own distinctive style, composition, and color scheme. One of the few methods that incorporates all three forms of production - manufactured, mechanical, and digital. The weavers of Chennimalai produce and create **utility-based products**.

“The products of Chennimalai are so beautiful and of such magnificent quality that they find their usage not only in the South Indian households of India but also in other parts of India and worldwide” (gaatha, 2014). The project envisages the development of the Chennimalai village with the infrastructure and facilities to cater the needs of the weavers. The first stage of development is on 8-acre land out of total 21-acre land in Chennimalai village of Erode district itself.

### 1.1 HANDLOOM AND TEXTILE INDUSTRY

The textile industry is one of the largest industries in India with a vast range of stakeholders from weavers to farmers to artisans and allied workers to designers. The hand created materials are of high value worldwide due to the resonation of a regions character and style.

Originally, the British in India relied on and supported the Indian handloom industry in the late 18th century. However, this ended with the Industrial Revolution in the 19th century. Shifting their focus to factory production in England, the British abandoned the Indian textile industry.

Despite this, Tamil weavers adapted. They learned new techniques and began producing furnishing fabrics to meet the changing demands of the market

“**Weavers of Chennimalai used to weave sarees and lungis** for trading and their welfare. As the country started growing after independence and people started building their lifestyles in different ways, the weavers began making bedsheets and various home decors” (gaatha, 2014).



*Figure 1: Tradional Weaving at houses of Chennimalai*

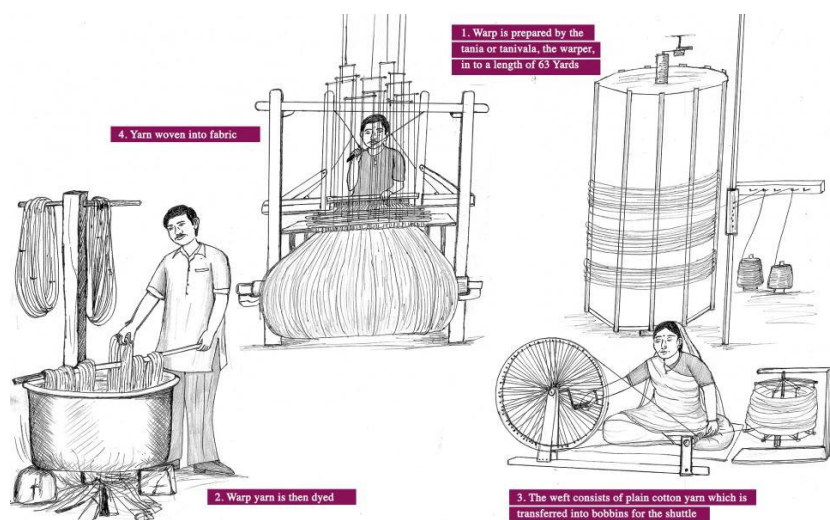
- Textile designs are associated with special meanings of traditional societies specific to a particular ethnic group alone.
- It plays a major role in the social, economic and religious lives of communities and the traditional meanings of these societies once lost cannot be reconstructed and thus efforts are being made to protect and promote the handloom and textiles industry of India.
- Textiles are thus a major component of material culture and textile arts are a fundamental human activity, expressing symbolically that valuability in any culture.

## 1.2 COTTON WEAVERS

Cotton weaving has been an integral part of Indian culture and economy for centuries, with various regions specializing in different techniques and styles. Cotton weaving holds immense significance in India, both culturally and economically, and serves as a symbol of the country's rich heritage and tradition. In Tamil Nadu, the tradition of cotton weaving has deep roots, with historical records indicating the presence of a thriving textile industry in the region for several centuries. The geographical and climatic conditions of Tamil Nadu favored cotton cultivation, making it a natural hub for cotton weaving.

One of the notable centers of cotton weaving in Tamil Nadu is Chennimalai, located in the Erode district. Chennimalai has a rich history of cotton weaving that spans several generations. Chennimalai is situated in the western part of Tamil Nadu, an area known for its conducive climate for cotton cultivation. The availability of raw material played a crucial role in the development of the weaving industry in this region.

Today, Chennimalai in the Erode district continues to be a hub of cotton weaving, known for its rich tradition, skilled artisans, and exquisite textiles. The legacy of cotton weaving in this region serves as a testament to the enduring craftsmanship and cultural heritage of Tamil Nadu.



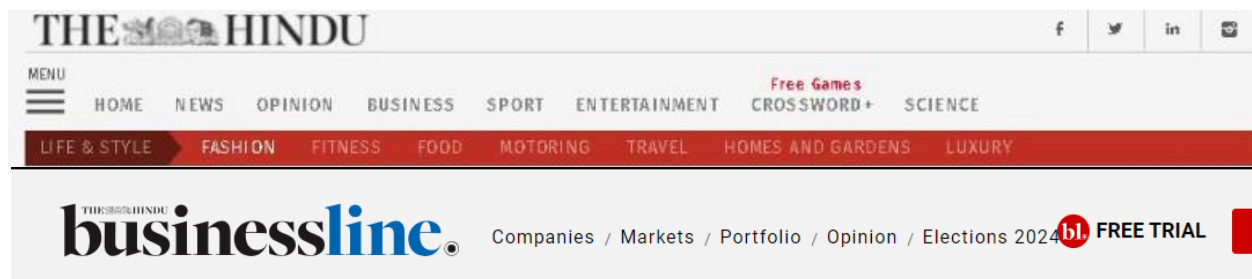
**Figure1.2: Typical cotton weaving process in infographics**  
(source: Khamir Organization)

### 1.3 VIABILITY

The Project is a self – supporting Handloom weavers' village. The weavers are free to work at their own convenience. Raw materials will be supplied and the finished products brought back by the promoters. The proposal is for creation of a working environment which can shape self-respecting individuals and provide them a better infrastructure which leading to further economic and cultural development of this Weaving tradition and also increasing the productivity leading to overall development of the community whom rely on this textile industry.

### 1.4 PROJECT FEASIBILITY AND NEED

- Creating an environment that supports and preserves the traditional craftsmanship of cotton handloom weaving, ensuring that cultural heritage is maintained.
- Ensuring that the architecture supports the integration of the handloom center with the local economy, providing economic opportunities for the community
- There has also been a **sharp increase in the cost of production** of these textiles due to which there has been a challenge in the **process of selling**. This is further worsened by the problem faced by this industry in the **marketing of its products** and the **pressures of globalization**.



Home » News » National

## Efforts on to restore Chennimalai's handwoven textile heritage

Updated - January 19, 2018 at 03:54 PM. | Coimbatore, Jan 13

*To revive and bring together the declining handloom weavers, Sivagurunathan C quit his high-paying job, learned how to weave handlooms, and set up a body called Nurpu Handloom Weaving Society to create job opportunities for the weaving community.*

**Figure 1.3: Newspaper Clippings**

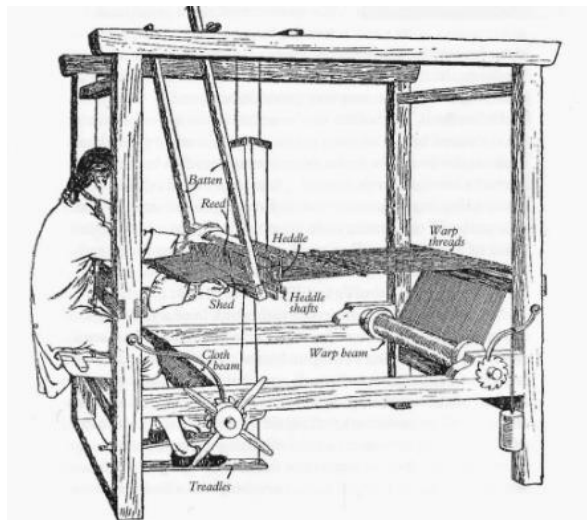
**(source: The Hindu Business Line)**

## 1.5 AIM

The primary objective is to establish an integrated hub in Chennimalai village, Erode, Tamil Nadu, India, where the cotton weaving community can come together under one roof. This initiative aims to create economic opportunities while preserving and promoting the local weaving tradition.

## 1.6 OBJECTIVES

- To Identify the current issues and scenario at present
- Creating a solution for the identified issues by designing a space that uplifts the industry
- To enlarge the sector and training in traditional weaving with modern techniques
- To provide a platform for Opportunity development for weavers as well as youth
- To establish a well-integrated community that is self-sustainable



**Figure 1.4: Weaving – Production**



**Figure 1.5: Other Objective and purposes**

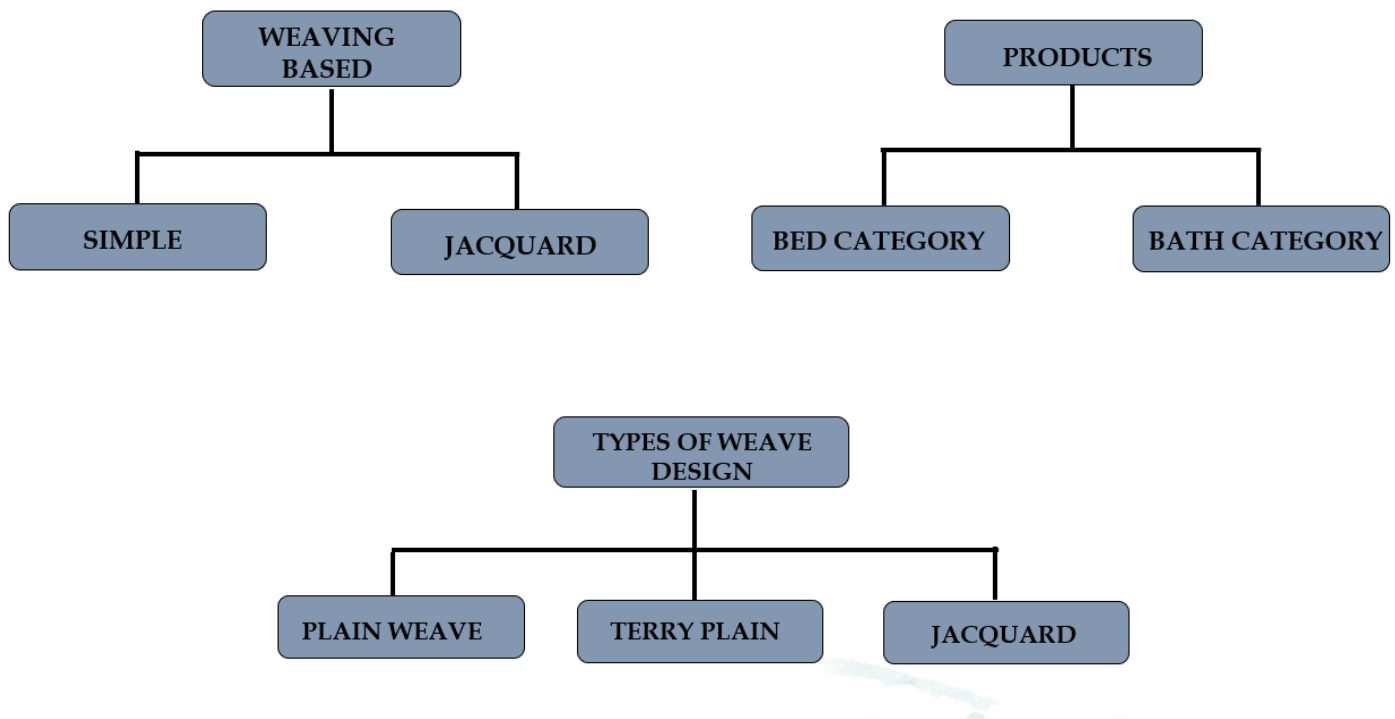
## 1.7 ABOUT THE INDUSTRY

“Chennimalai is a fast-growing cluster with a young population of weavers who are eagerly taking up the weaving profession and incorporating contemporary patterns into their home décor items” (gaatha, 2014).

“Chennimalai has also gained significance over the years since a large number of exports of home décor items such as bed sheets, towels, blankets, napkins and other bed and bath items are sold all over the country and even abroad” (gaatha, 2014).

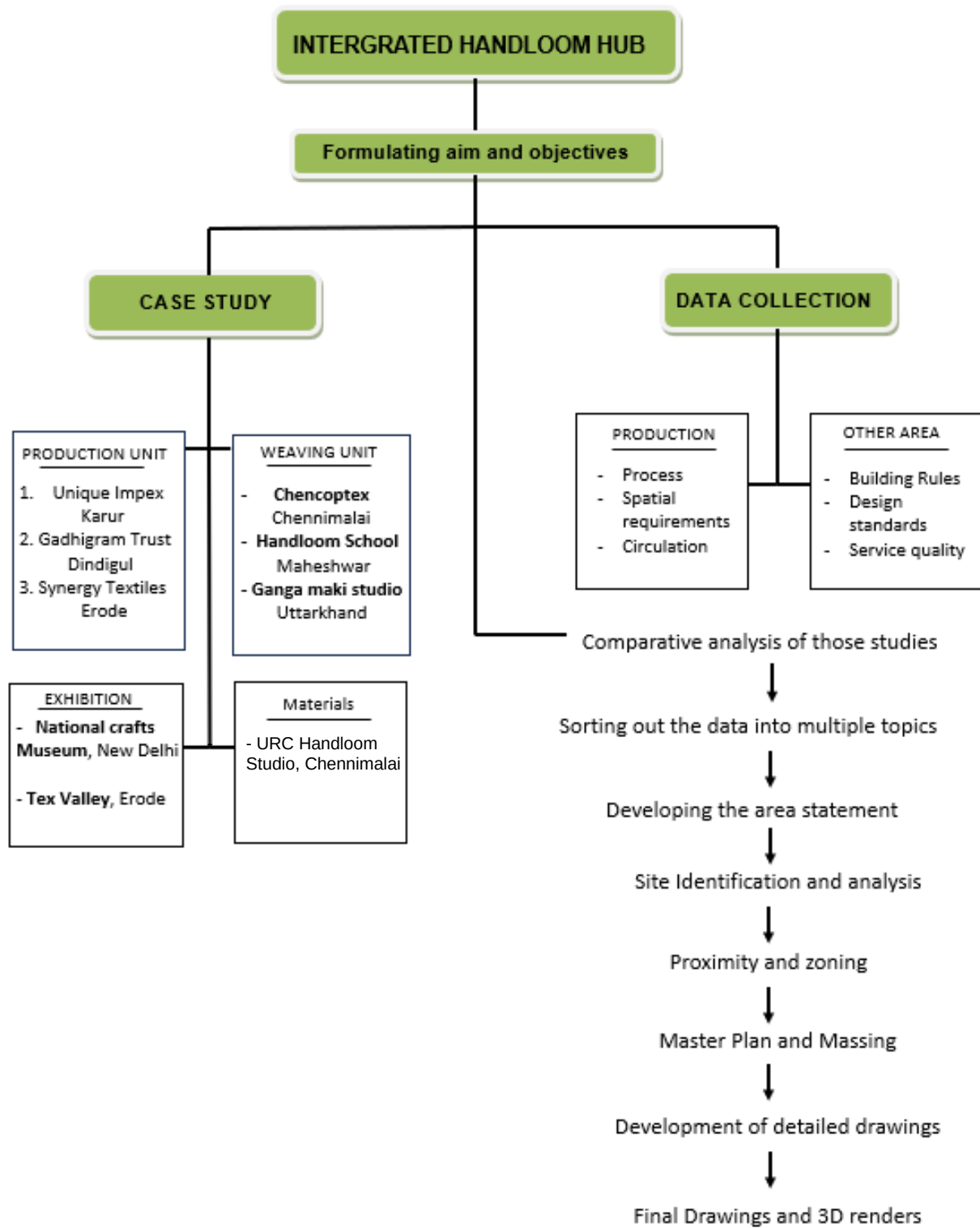
## 1.8 KEY ADVANTAGES

- Produces a series of home décor items that can be used to decorate every household.
- The demand for Chennimalai cotton sarees and fabrics grew steadily over the years, both domestically and internationally. The high-quality craftsmanship and unique designs attracted buyers from various parts of India and even overseas markets.
- Chennimalai is situated in the western part of Tamil Nadu, an area known for its conducive climate for cotton cultivation. The availability of raw material played a crucial role in the development of the weaving industry in this region.
- The people of Chennimalai have a long-standing tradition of weaving, passed down through generations. Skilled artisans in the region mastered the art of cotton weaving, creating intricate designs and patterns that became renowned across the country.



**Simple weaving**, this is used for making several bedsheets with vibrant colors and checked patterns whereas Jacquard is used for home décor items that feature a plethora of kaleidoscopic patterns with florals, leaves and geometric patterns inspired by temple architecture.

## 1.9 METHODOLOGY



# **LITERATURE STUDIES**

## CASE STUDIES

### 2.1.1 MASTER PLANNING AND IDEALOGY OF BLOCK PLACEMENTS

The site overlooks the river Narmadha. The academic building is located as we enter on the site as it is one where public can access the most. And as we go in further the dying block is present behind the academic block but it is detached from the building as in the space some chemical reactions will be present based on the activity. And the private spaces the Amphitheatre and the residential block which is located on rear side of the site overlooking the river.



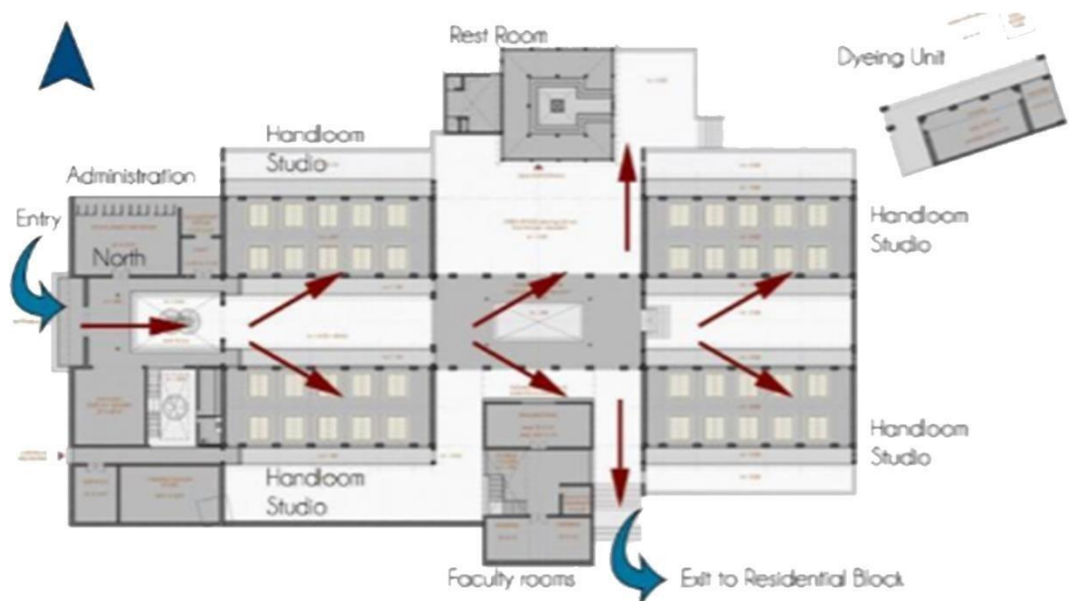
**Figure 2.2: SITE PLAN**  
**source: SJK Architects**

### 2.1.2 ABOUT

The Handloom School, founded in 2015 by women, aims to rejuvenate the local handloom industry by focusing on young individuals aged 18 to 25. The program offers comprehensive training in weaving and pre-weaving tasks, empowering students to explore their creativity through the development of their own designs.

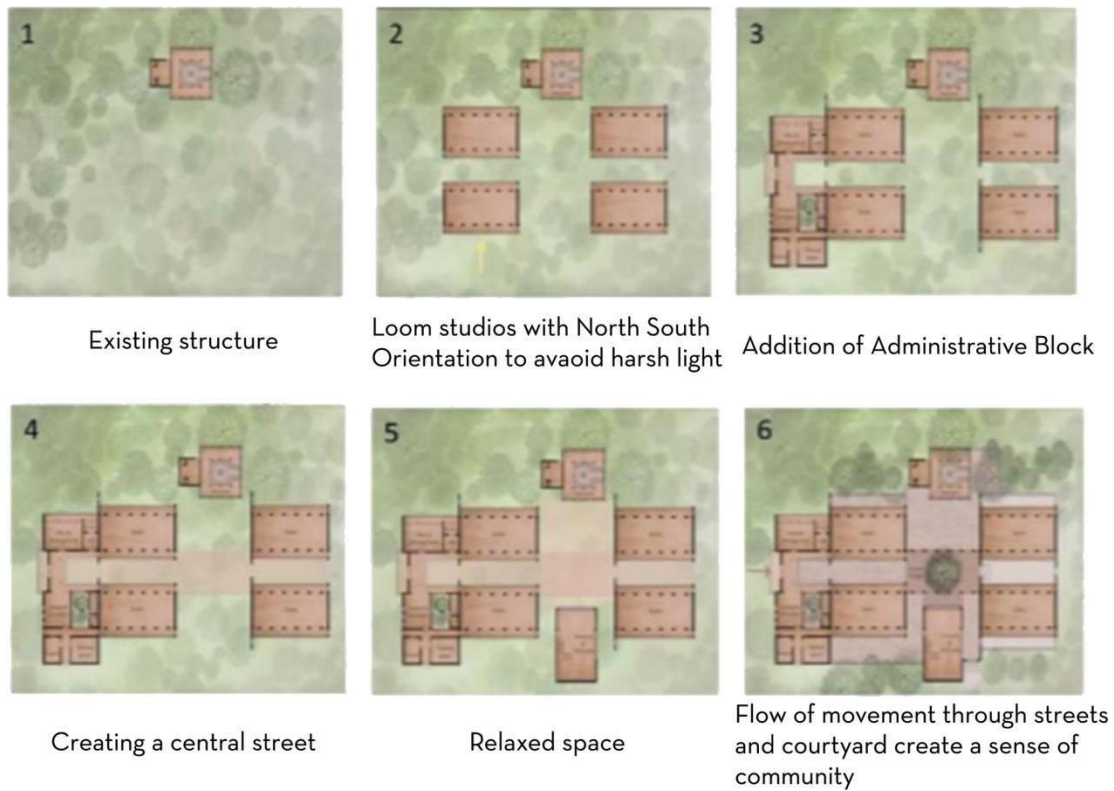
### 2.1.3 SPATIAL ARRANGEMENTS

The main Building (Academic block) has 4 main weaving studios that is also used as classrooms, where these rooms are connected by street like corridors. The architectural style draws inspiration from local building traditions, while meticulous attention was given to designing the building's layout to optimize natural light for the studios and to cultivate a conducive atmosphere for its occupants. The building is said to be carefully planned in such a way that the required amount of lighting necessary for the studios and the ambience it creates for the users.



**Figure 2.3: Plan of the Academic Building**  
source: SJK Architects

- The building made with locally available brunt bricks and the aesthetical portions are inspired from the Maheshwar Cityscape.
- “In order to achieve the flow of spaces to arrive for smooth functioning of the school; the Handloom school architecture design was said to be guided by the discipline of the process of weaving, from the spinning of thread to the final finished product” (SJK Architets , 2015 )



**Figure 2.4: The Design Development Phases Involved in Project**

## 2.1.4 INFERENCE

The project reflects design of the compact space mirrors the layout of nearby clusters, providing a familiar atmosphere for weavers within the studios. Organizing spaces based on activities adds an engaging dynamic to the environment.



**Figure 2.5: The Corridor Area across the Classroom Area**



***Figure 2.6: The 3D view of the Academic building***



***Figure 2.7: Front Elevation View of the Block***

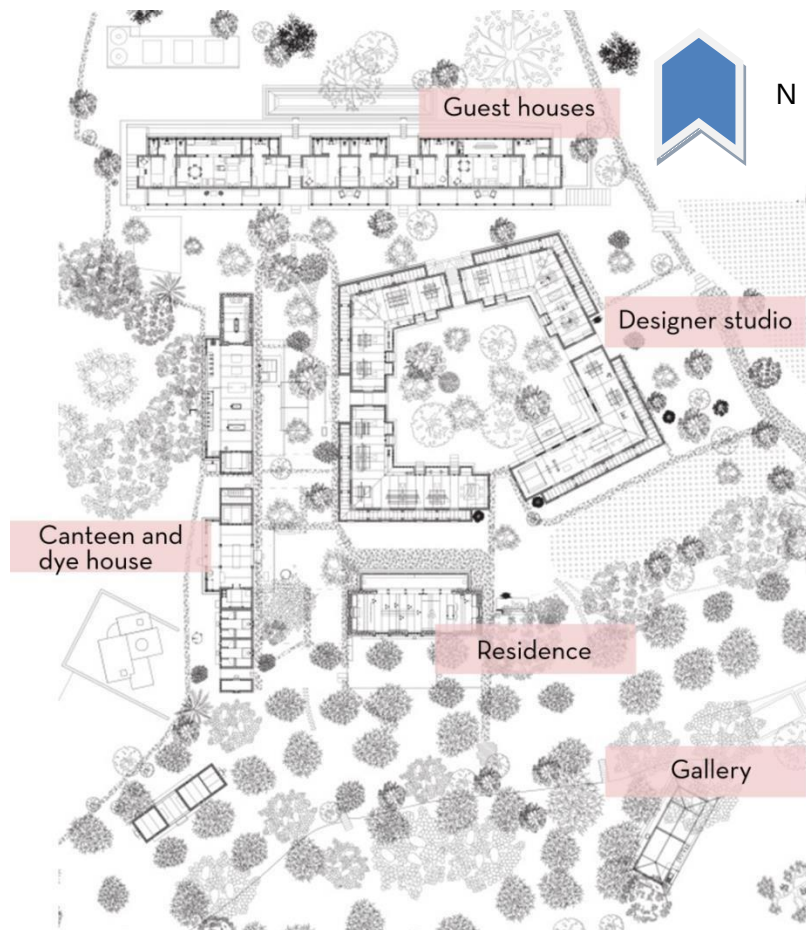


***Figure 2.8: Inside the Academic Block Classroom***

## 2.2 GANGA MAKI TEXTILE STUDIO, UTTARKHAND

“An innovative combination of traditional craft and local materials propels us to rethink how craft is understood” (Review, 2017)

Located in Uttarkhand is known to be collaborative project undertaken by the Maki Textile Studio in Japan and further commissioned to Indian Architecture firm Studio Mumbai, known to be one of the Leading Architecture firms in India. The complex of the project is completely hand-built by using only locally available materials. Built Up area of 1300sqm, this complex took the duration of 4 years to complete. Designed by the Architect Jain and the duration they took in order to carefully design and incorporating the locally available materials and resources.



**Figure 2.9: SITE PLAN**  
**Source: Architecture Review**

The Studio is a venture by a leading Japanese textile designer Chia Maki and entrepreneur Rakesh Singh. The site consists of 4 L- shaped Designers studios, a guest house, a small exhibition space, dye house and followed by Canteen. The Complex is completely hand build and made of only locally available materials (**Review, 2017**) .

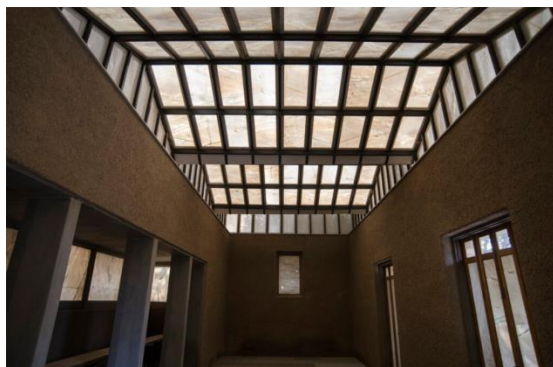
The majority is built with Bricks and plastered with lime. The Flooring are paved with stones. The studio is built with the Bamboo frame work plastered with mud mixed with the dung. The areas throughout the site are all landscaped only with local plants. The roof of the gallery is covered by translucent white marble. And also, all the building work done by the local craftsman after being trained by the Swiss and Japanese artisans.



*Figure 2.10: Raised Platforms for women to knit threads source: Boderandfall*



*Figure 2.11: Designer studio to create diffused light and semitransparent bamboo roof*



*Figure 2.12: Semi Transparent roof, bamboo farmwork, and on top of its polycarbonate sheet is laid*

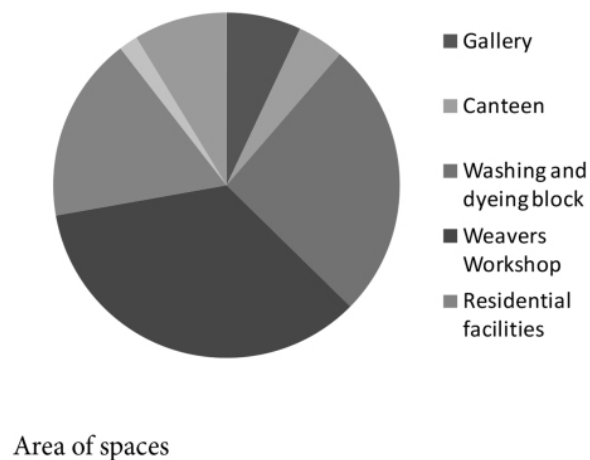


*Figure 2.13: Area for other weaver which is detached from the design studio (accessible)*

### 2.2.1 SPACIAL ASPECTS

- Design Studio
- Canteen and Dyehouse
- Gallery
- Residence
- Guesthouse

| UNITS                       | AREAS<br>IN SQ M | NO OF<br>USERS |
|-----------------------------|------------------|----------------|
| Gallery                     | 80               | 20             |
| Canteen                     | 50               | 15             |
| Washing and dyeing<br>block | 300              |                |
| Weavers Workshop            | 400              | 30             |
| Residential facilities      | 200              | 10             |
| Utility room                | 20               |                |
| Chiaki's Workshop           | 100              | 1              |



*Figure 2.14: Area provided for Different Areas present inside, Source: WordPress*

### 2.2.2 INFERENCE

- The design is completely built taking into the considering the local environment of the weavers
- The lighting of the space is diffused (i.e. optimal for weaving)
- The dye house is placed separately to avoid diffusions and the fumes
- The space is centered on a courtyard that inclusive feeling to the people working in the studio
- This Studio design shows how to incorporate the designer and the weavers under one roof, same space ensuring to both of them importance had been given
- Use of the Site Contours in the Design.

## 2.3 SYENERGY TEXTILES, KARUR

Located at Karur, the Synergy Lifestyles Workspace is a manifestation of the town's unique blend of tradition and progress. In Karur's climatic and socio-cultural context, the Synergy Textile Workspace Architecture is presented as a conscious confluence of the local /global and traditional/modern. (SJK Architets , 2015 ).



*Figure 2.15: The overview of the building inside and outside respectively*

- PROGRAM: Home Textile Factory
- ARCHITECTS: SJK Architects
- SITE AREA: 2 Acres
- BUILT UP AREA: 3000 SQM
- COMPLETION: 2004

### 2.3.1 SITE ENVIRONMENT AND PLANNING

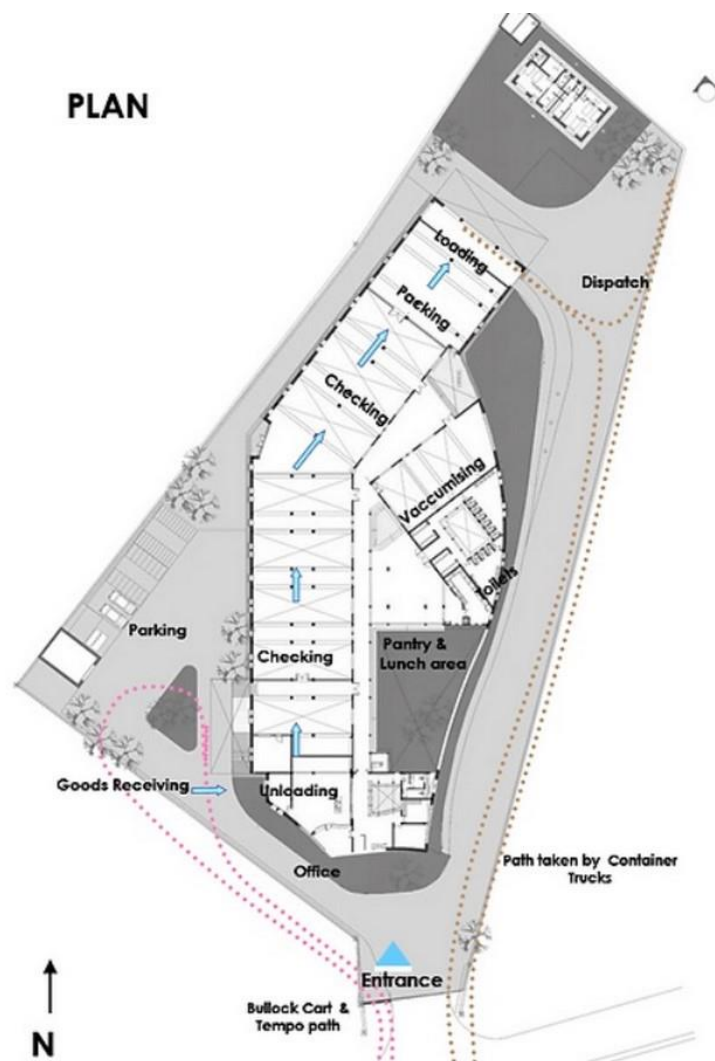
Synergy Lifestyles is a home textile industry which exports indigenous, homegrown products from in and around Karur village to global markets. (SJK Architets ), the dyeing of colored yarn, weaving and stitching of fabric, cushions and table linen, is a home industry conducted in the courtyard of village homes in Karur.

The client's brief outlined a factory which resonated with the rich culture and built-environment of Karur – a town known for its age-old home industry of dyeing, weaving, and stitching textiles.

Despite the hot-dry climate and deeply historic and religious character of this town, the Synergy Textile Workspace Architecture set in the outskirts of Karur encompasses 30, 000 sq. ft built up area to effectively and efficiently cater to the factory's functioning.

The factory workflow is divided into primary production spaces, and accessory or service spaces, both of which are integral to the unit's functioning. With an aim to maximize well-being and efficiency, the programmatic components were overlaid with climatic considerations.

Unlike a conventionally industrial set-up, the Synergy Textile Workspace architecture was imagined as a crafted workspace, fusing local craft and sustainability in form as well as functional values. Integrated with built spaces, a series of courtyards punctuating the plan invite winds and patches of sky into the factory's experience.



*Figure 2.16: Site Plan of the industry showing along with major spaces in*  
*Sources: Rethinking Future*

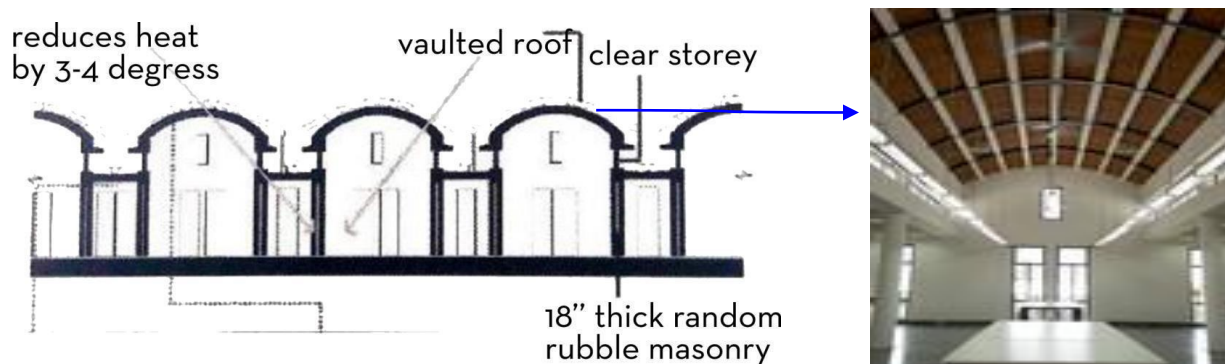
### 2.3.2 DESIGN INTERVENTIONS

The Planning diverges by concealing the working areas from the primary entrance, allowing visitors to enjoy unobstructed vistas of lush greenery, alongside easy access to the pantry, while the courtyards serve to regulate ambient temperatures within the spaces.

An 8'-0" corridor is placed towards the west of the most used spaces to cut down on the heat gain through radiation. Although the heat gain through east-west walls is the same, it is important to shield/insulate the west wall as the ambient temperature in the afternoon is already high over there as the climate is Semi-arid.

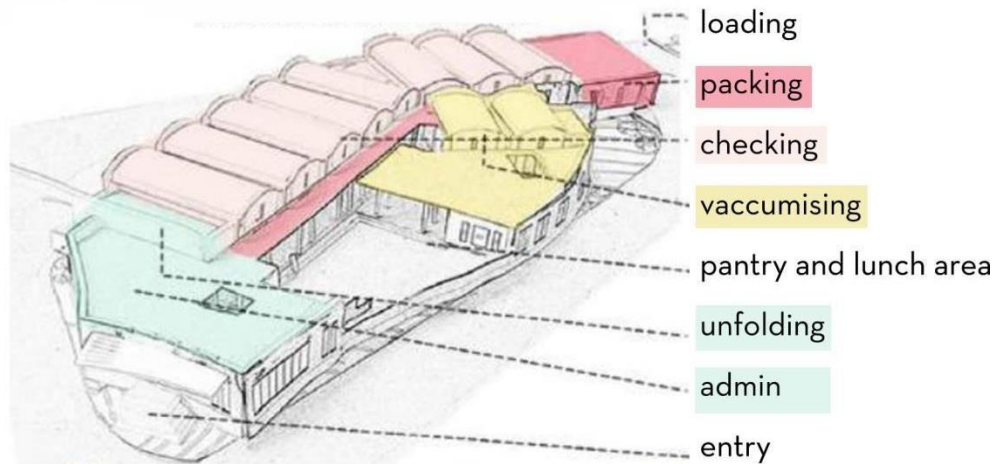
The courtyard is located to the west of the most densely occupied space of the building to further reduce afternoon heat gain by providing a vegetation buffer. Also, the predominant wind direction is from the South West-North West, so this would cool the breeze as it enters the building. This also controls and shields the dust that the winds bring inside the space.

The roofing is of Barrel vault structure as heat gain in inclined surface is less compared to flat roofs, and, it was also important to align the vaults east-west with the directory along the north-south to get as much diffused light as possible and minimize roof exposure to the higher East-West radiation.



**Figure 2.17: Real image and Section showing with vaulted roof, used as a design strategy to reduce heat, source: SJK Architects**

Although, the attempt was to maximize the curved surface area. They wanted daylight to spread evenly through the entire space so they ensured to stay within the recommended height-width ratio. Another way to vent out hot air was by encouraging the venturi effect.



**Figure 2.18: The 3D model view of the industry building with spaces mentioned**  
**source: SJK Architects**

### 2.3.3 MATERIAL STUDY

The entire building has been encased with 18" thick random rubble masonry walls which is a good insulator of heat that helps to block off excessive heat. Rubble masonry walls had the added advantage of not requiring any plaster or paint over the exterior surface and hence had a touch of local materials that mirrored the village architecture. They chose a vaulted roof for the building over clear stories for the sole advantage of allowing shaded north-south light to enter into the building which brings in and optimize the daylighting.



**Figure 2.19: The exterior views of the building which shows the intense Rubber**  
**Mansory Wall, source: SJK Architects**

The roof was built using hollow terracotta blocks which were fitted within a grid of precast RCC ribs, which were spanned between semi-circular beams of steel. A thin cement screed with a China mosaic finish over it completed the roof construction, making it economical, light-weight, and cutting out several degrees of heat gain.

Several small and large courtyards on the west reduce afternoon heat gain by providing a vegetation buffer.

### 2.3.4 IDEALOGY BEHIND THE MATERIALS

Studies of the local architecture and climate served as their mood board to draw inspiration and helped them develop a building that is linked with courtyards, both small and big, and include passive energy-saving technologies in the building.

Discovering that the little town had a fascinating history of gable walls, a local stone quarry, and many other traditions of country-wood joinery for doors, an entire village that specializes in metal hardware for locks and hinges, etc.

### 2.3.5 INFERENCE

- It sets a good example of vernacular style industrial design creating beautiful workspaces for the people to be engaged much more active.
- Materials used were sustainable and easily available, which blends with the context
- Achieving the design interventions in simple and functional aspects
- The space circulation and arrangement with respecting to the workflow.

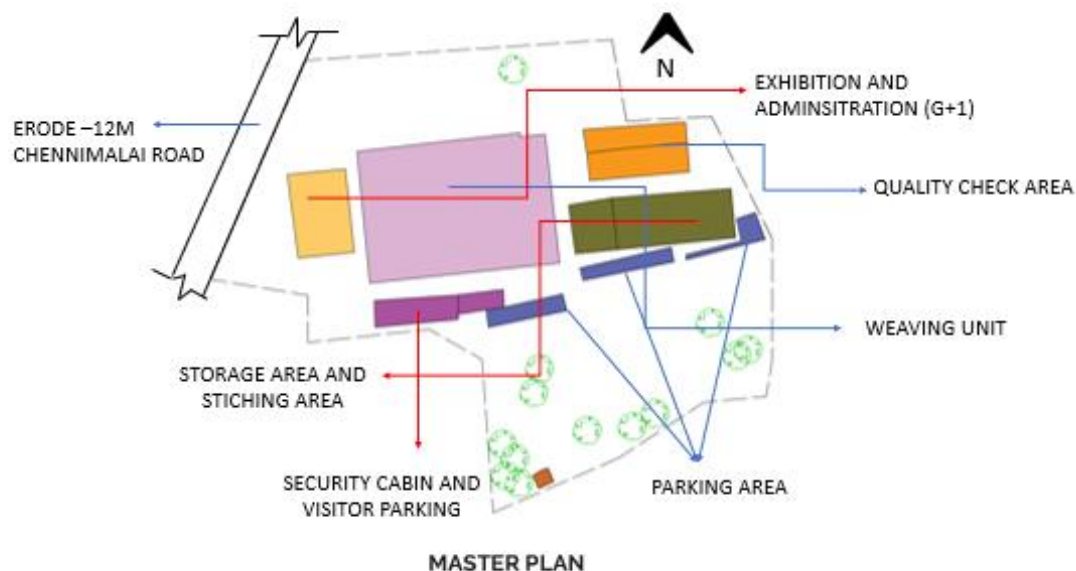


*Figure 2.20: The views of the semi open corridor passage and the courtyard area at the entrance*  
source: SJK Architects

## 2.4 CHENCOPTEX, CHENNIMALAI

### 2.4.1 THE STUDY AND ANALYSIS

This the live case study which was done through to get an insight into the building functioning, cultural, social, economic, and environmental factors. This contextual understanding informs their design decisions and encourages sensitivity to local conditions. The-on experience helps to look through the weaver's enhancing their technical skills, and understanding workflow lively and helped to get what's are the portions of requirement exactly they are lacking of. And also, this thesis project proposed in site which is located in Chennimalai itself. So, this case study was very needed and important to go through and understanding the context.



*Figure 2.21: Overall site plan of Chencoptex in Chennimalai, source: Authorship (drawn in AutoCAD)*

- **SITE AREA:** 5 Acres
- **POPULATION WORKING:** 300 working including weavers
- **SHOWROOM EXHIBITING:** Upto 2000nos are kept in sale showroom remaining are stored in the storeroom and warehouses and restocked accordingly.



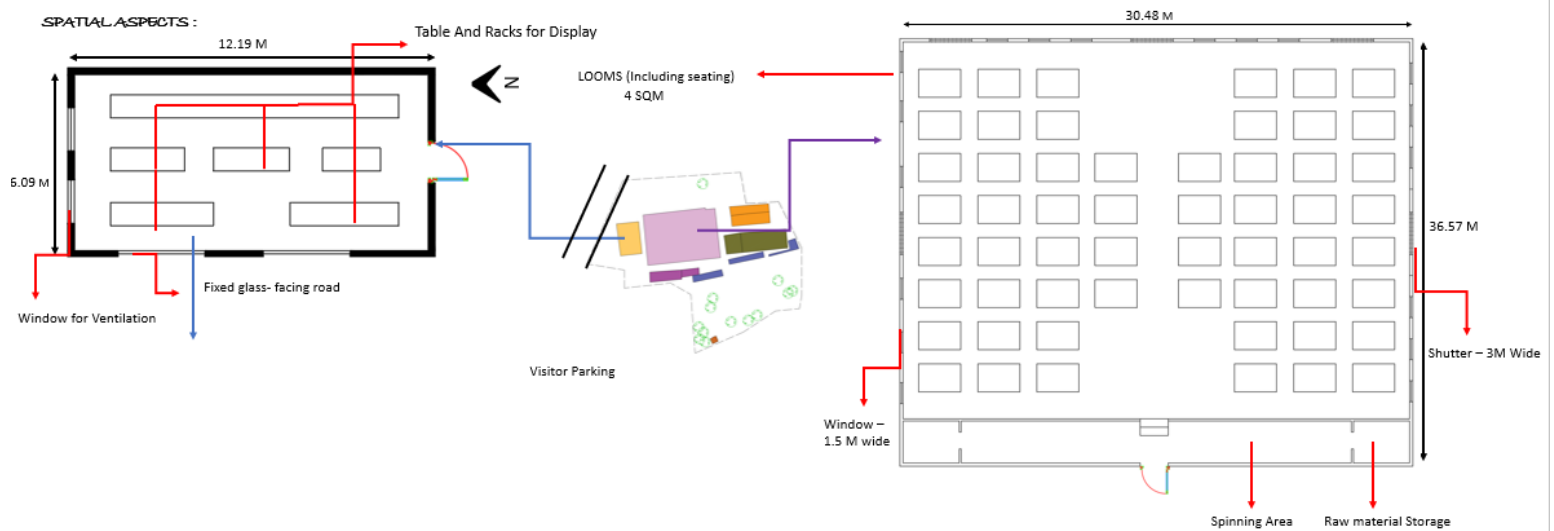
**Figure 2.22: The front elevation of the building and the vehicular parking for the public sources: Live Photographs**



**Figure 2.23: The Quality check area and the Stitching, Loom area present in horizontal stretch source: Live photographs**



**Figure 2.24: Interior view of the Loom and spinning wheel area where the natural light enters through the skylights on the roof, clerestory and wide windows, Source: live photographs**



**Figure 2.25: The plans of the Sale showroom area and the Loom/ weaving area provided with the dimensions and elements present inside source: Authorship (manual cad drawing)**

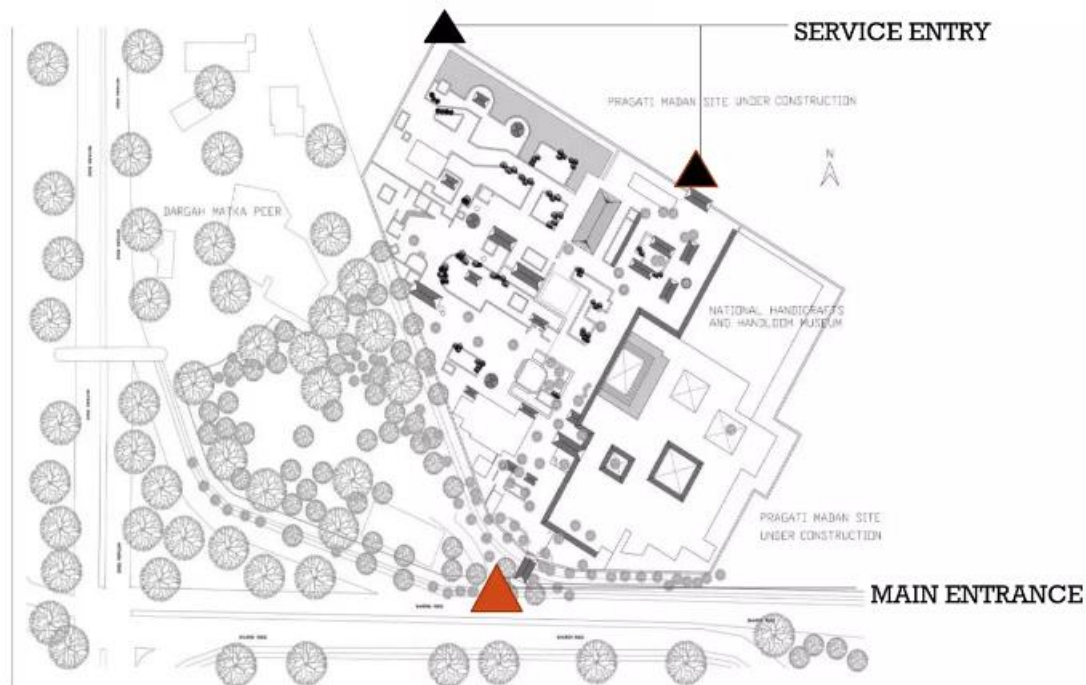
- The roofing of the building areas is of traditional terracotta tiles slope roofing except the Loom block area which is of Polycarbonate sheets to resistant excess temperature inside
- The Main Block which is present at the frontage of the site which is the G+1 concrete structure which is around 1500 sqm area (approx.).
- The furniture inside these blocks which is of country wood which are locally available around the area.
- Windows are enclosed with the steel grills paneled along with PVC painted in green shade
- The floor of the buildings is of natural stone flooring and the column is of concrete where on exterior surface the black brick tile like has been laid on top of these columns.

## 2.4.2 INFERENCE

- What are the primary factors that had to be considered while moving on with design and planning phases.
- Ensuring to provide a proper workflow, as it plays a vital role in this building for people working whom are well familiar and well organized in their work.
- Circulation importance especially in the Loom area, how it affects the overall space.

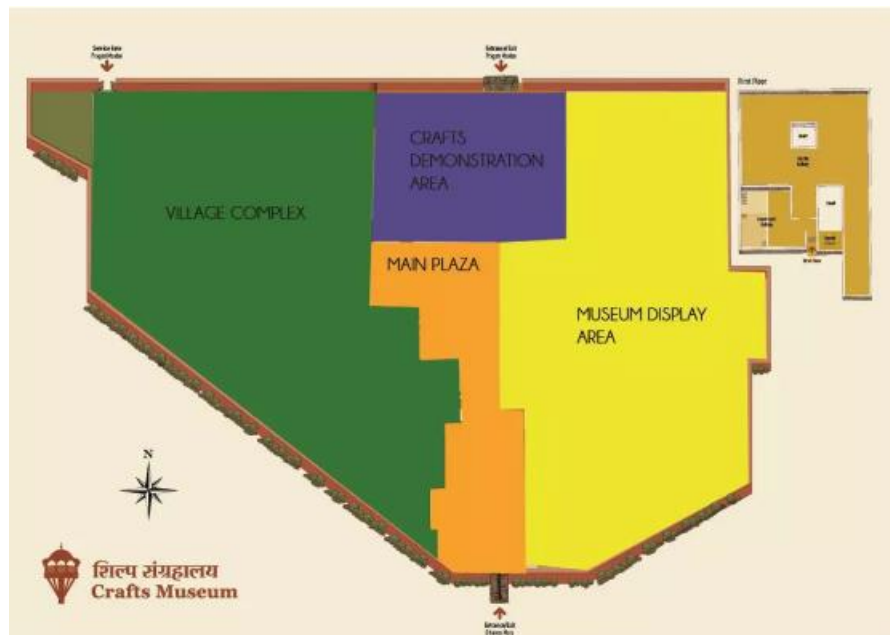
## 2.5 NATIONAL ARTS AND CRAFTS MUSEUM, NEW DELHI

The aim of this museum is to provide as a serve to the house for the objects of antiquity as well as a platform for the craftsman who's hereditary tradional works have being faded out. Perfect example to show case the local and national identity of crafts, that has been elaborated through architecture spaces, materials and other elements.

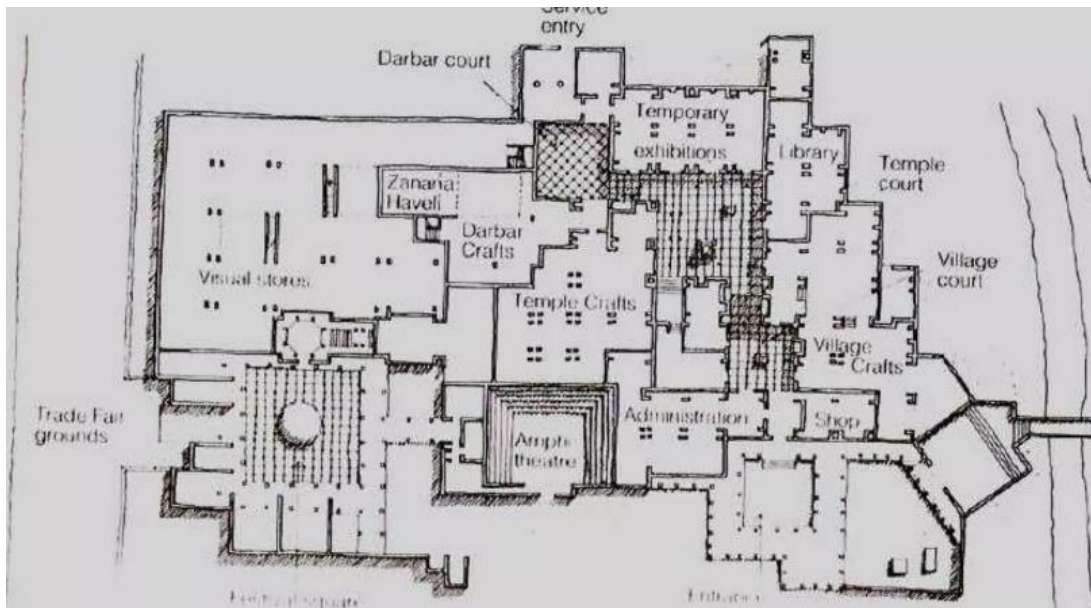


*Figure 2.26: Site plan of the museum showing the entry points, source: Architecture case studies*

- **ARCHITECT:** Charles Correa
- **BUILT UP AREA:** 6800 sq m
- **YEAR:** 1990
- **FOOTFALL:** 4000 visitors annually



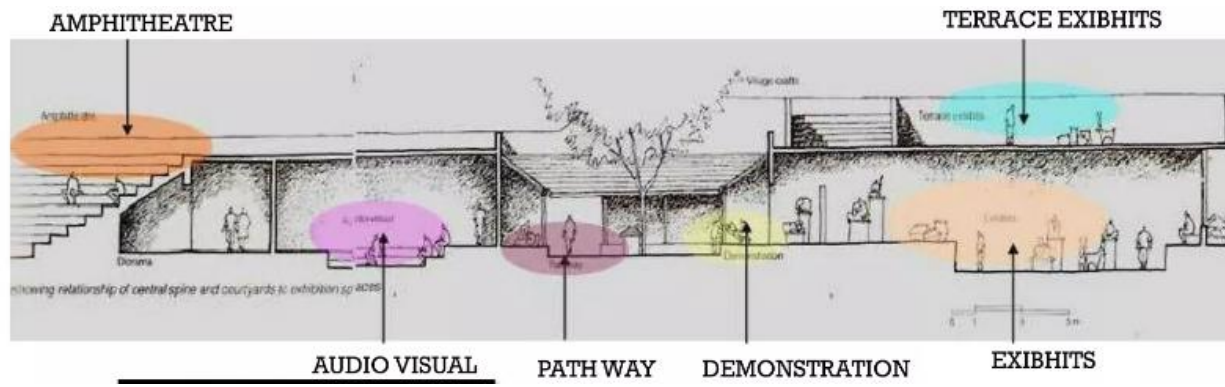
**Figure 2.27: Plan Zoning of the spaces inside, source: Crafts museum**



**Figure 2.28: The ground plan showing the Craft Museum, source: Architecture case studies**

The crafts museum is organized around a central pathway, revealing a sequence of spaces along the pedestrian spine.

The architect has inspired from the great Buddhist and Hindu temples of the past such as those in Bali (Besaki), Java (Borobudur) and southern India (Srirangam) which are structured around an open to sky ceremonial path. Explores the idea of puzzle box and use the platform of varying levels to articulate space. The scaling down of functions is also something that he employed in his pavilion project for Expo 70 at Osaka.

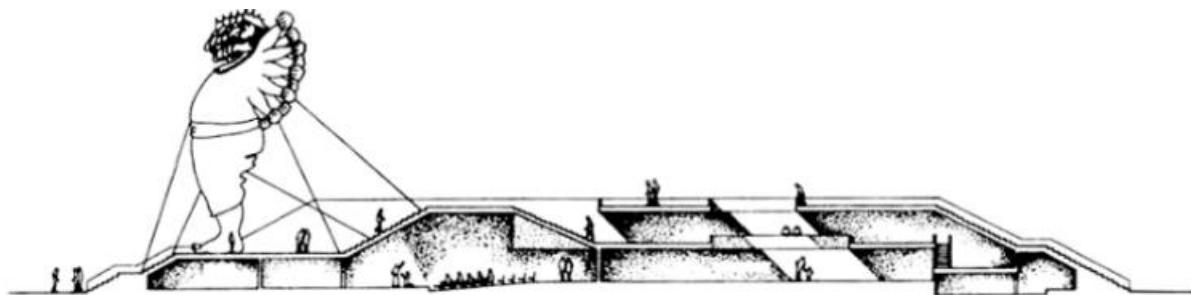


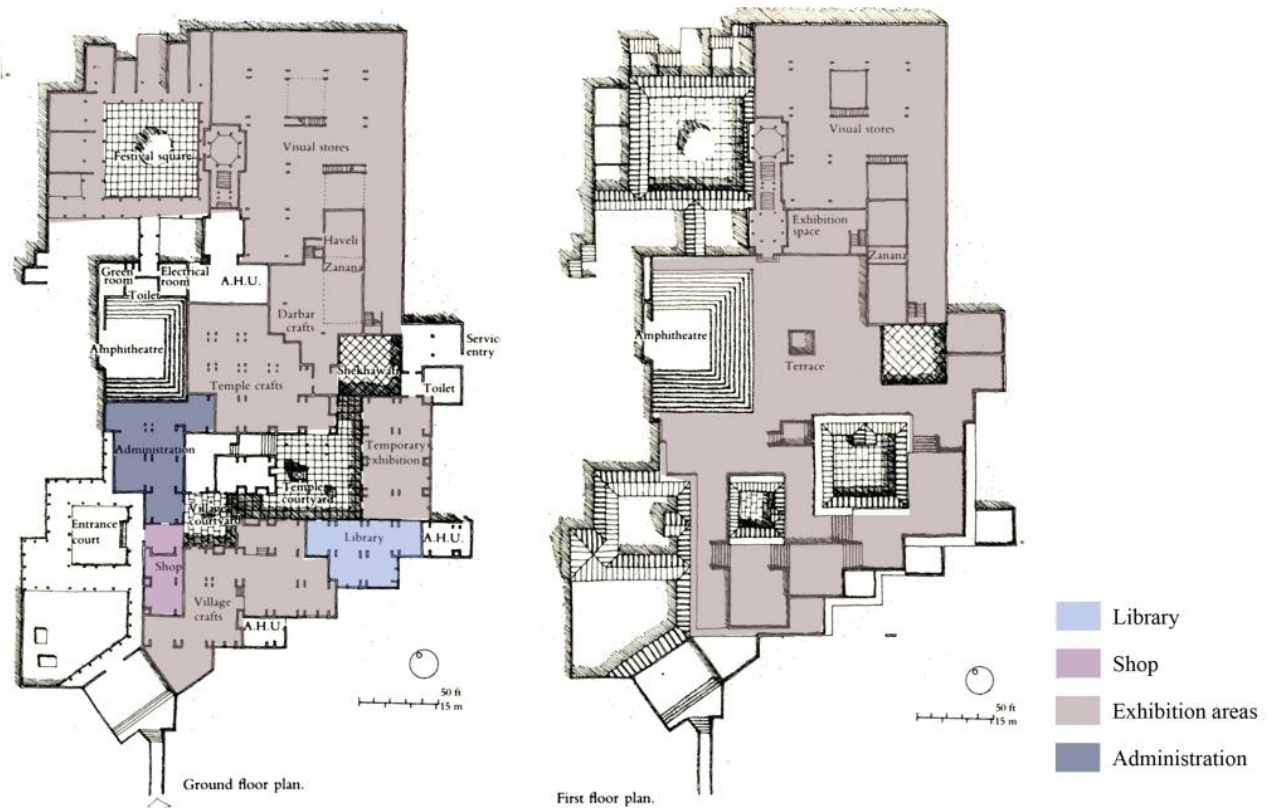
**Figure 2.29: The section of the museum showing the different levels used in the area, source: architecture review**

The stepping down of platforms and the actual use of steps to define both functions and edges of spaces echo the old bathing ghats of Varanasi and the Sarkhej in Ahmadabad. The earth colors are use to provide traditional look.



**Figure 2.30: Court gallery, textile gallery and the library area present inside the space, source: Architecture review**





**Figure 2.31: The ground and first floor plans of the museum, source: Architecture review**

- Brick is the main material which are used in the walls as well as in pathways. Walls are plastered with mud, cow dung plaster
- Bamboo is used as purlins and rafters in the roofing and as screens in order to separate from one another.
- Supported on the wood truss, the roof is covered with the Mangalore tiles.
- Mud plaster huts with thatched roofs acts as a workshop for the crafts persons and the brick paved floors and stepped platform acts as an open-air study for the children
- The exterior walls have been used to display folk art of different regions. Terracotta sculptures have been used as landscaping elements.

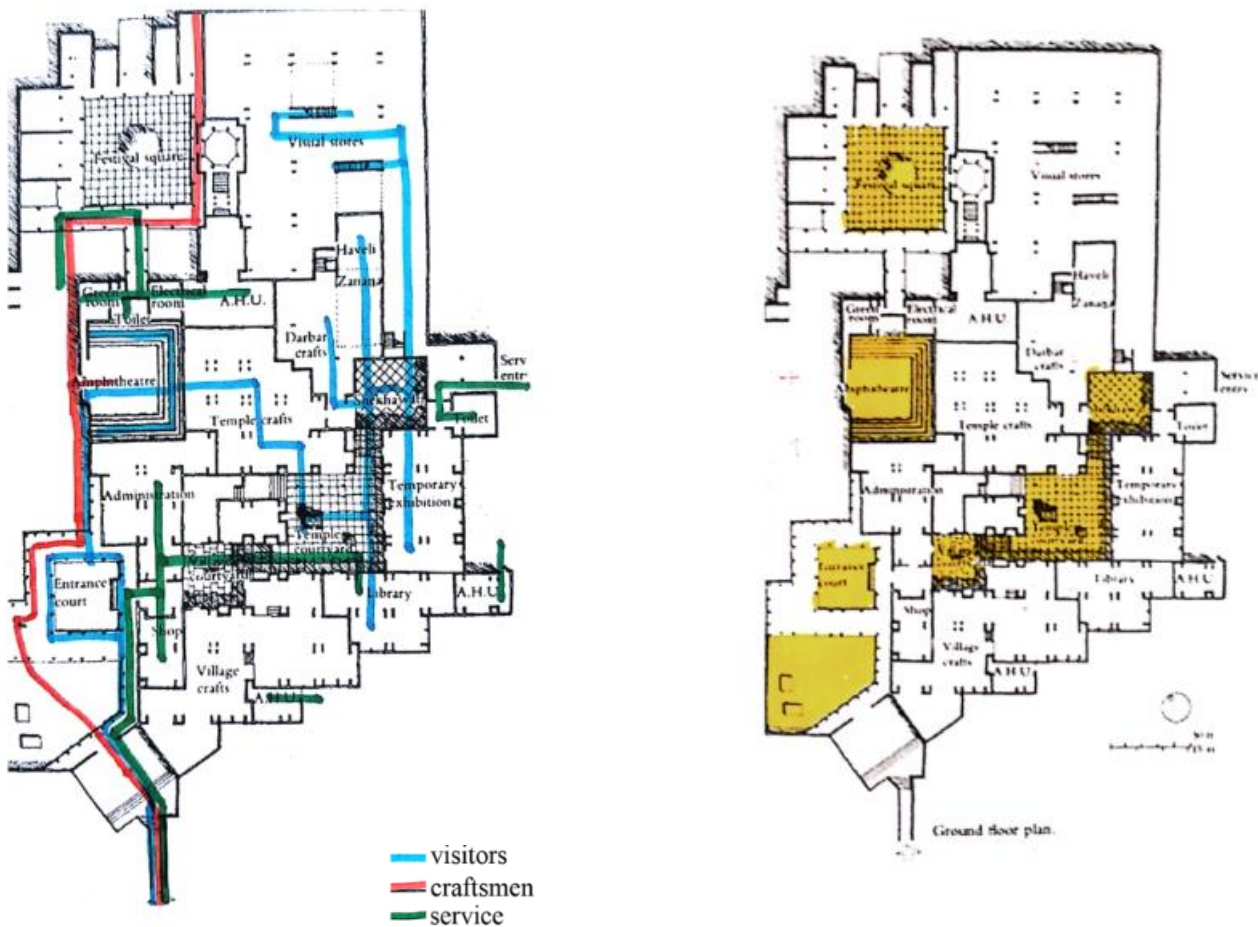


Figure 2.32: The circulation and the daylighting sources areas are highlighted on the image

- **Circulation :** The walk through the museum leads one through a series of open, semi open and closed spaces. The whole museum is divided into small galleries which reduces the problem of circulation.
- **Light source :** The main source of Natural light is the direct light from the courtyard which disperses towards the sides creating a natural environment.



## INFERENCE

- Clubbing of courtyards and activities
- Allowing free movement through the museum without restricting users to view every exhibit

## 2.6 KHAMIR ARTISIANS VILLAGE, GUJARAT

Situated in the midst of a vast arid expanse in Kutch, the architecture of Khamir Crafts Resource Centre in Kukma is said to be one of the participations in the celebration of the crafts from the region. Designed to facilitate a network with the artisans by responding to their way of life and work, the place builds upon the complex cultural relationship.

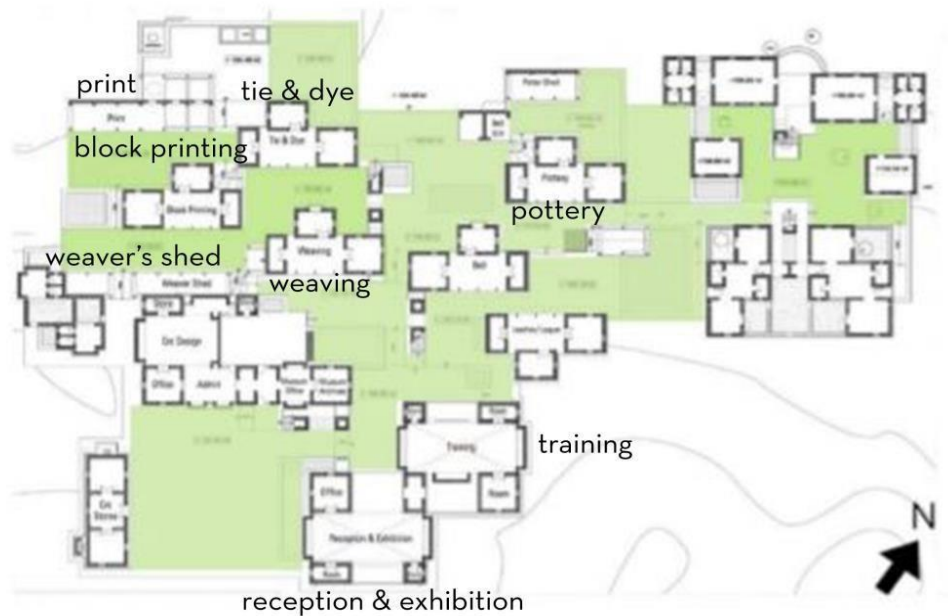
Khamir Craft Resource Centre is a charitable organization situated in the Kachchh district of Gujarat, India. It was founded in 2005 with the primary objective of endorsing and safeguarding the traditional crafts and artisanal expertise specific to the Kachchh region.



*Figure 2.33: The Site location showing distance from the main Khamir village area, source: WordPress*

- **ARCHITECT:** Neelkanth Chhaya
- **LOCATION:** Kukma, Bujh, kutch
- **SITE AREA:** 8093 Sqm
- **FOTFALL:** 11000 visitors annually
- **COMPLETION:** 2017

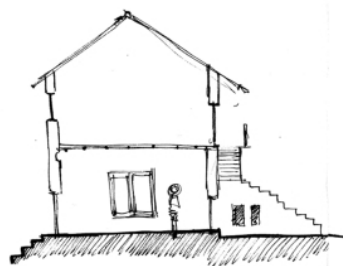
Khamir is located in the outskirts of the city 10 km away from Bhuj. The immediate context is open lands, the average temperature during summer months can rise up-to 31 deg Celsius. In winters the temperature drops and average temperature in the months of winter is about 12 deg Celsius.



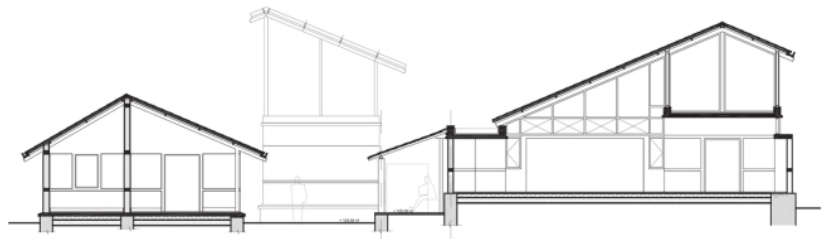
**Figure 2.34: Overall Site Plan of the project, source: WordPress**

### 2.1.6.1 DESIGN CONCEPT

The concept aimed to recreate the sense of a village settlement, where houses were characterized by internal courtyards, every house had an internal courtyard which is either placed at the entrance forming an entrance courtyard which is open to the sky or an internal courtyard which is connected to other spaces. The planning of khamir is done in the same manner as of the village street layout forming chowks and courts, as an accelerator for the community spaces throughout the Campus. It establishes a kind of urban approach having integrity and involvement.



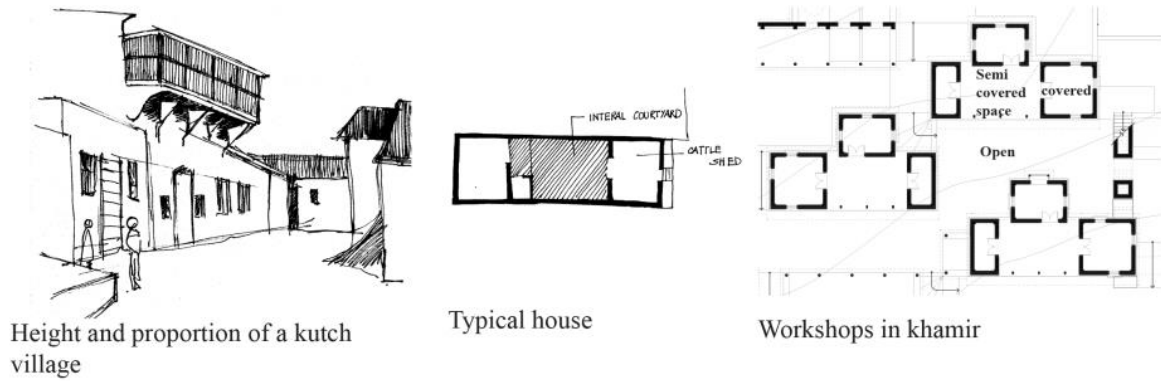
Schematic section of houses



Height and proportion of Khamir.

**Figure 2.35: Typical section of the houses in Khamir, source: WordPress**

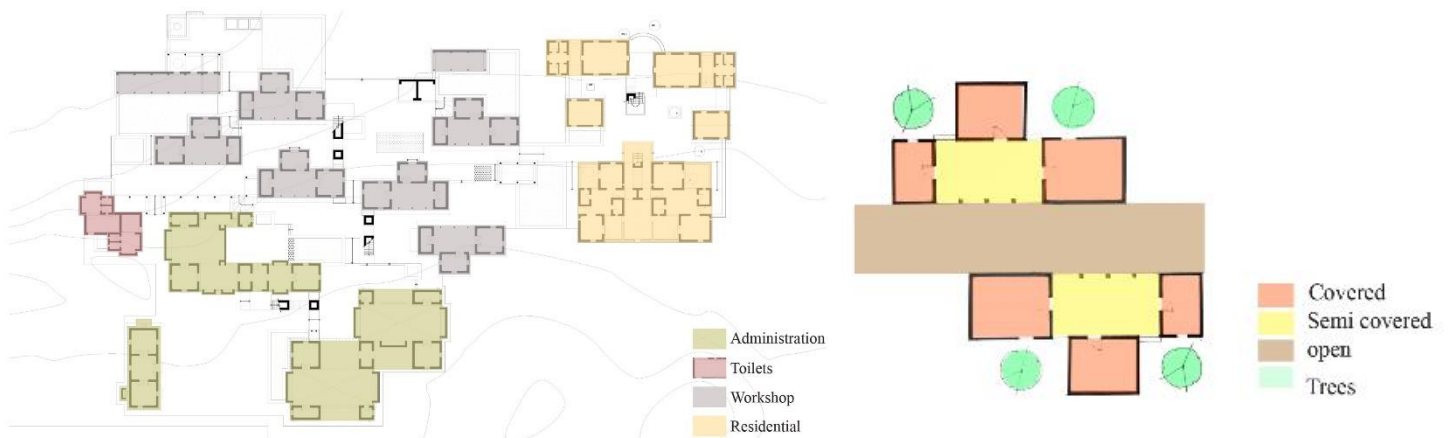
Mostly two storied structures interconnected by courtyard for light and ventilation. It is a human scale structure which is connected to the ground. The height width proportions of the courtyards and streets provide shade for most of the day.



**Figure 2.36: Typical House plans and street views in the village showing along with the workshop plan of project, source: WordPress**

It is a human scale structure which is connected to the ground. The height width proportions of the courtyards and streets provide shade for most of the day. The courtyards of khamir are planned similar to the courtyards in the houses such that it has both semis covered, covered and internal courtyards which are connected to each other which becomes the major activity areas.

## 2.6.2 DESIGN INTERVENTIONS



**Figure 2.37: Overall Block layout and showing Built and Unbuilt spaces in a typical block, source: WordPress**

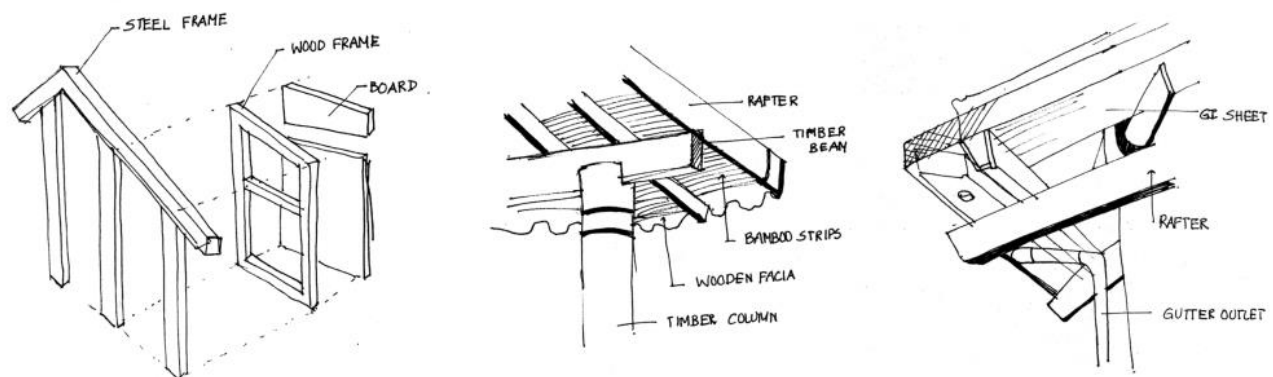
- Interrelation between closed, semi open and open spaces to create natural and fresh environment for people working there.
- Kattas (outdoor seating) are provided in courtyard.
- Staggered arrangement of built form



**Figure 2.38: Overall site plan showing the areas of Built and Unbuilt, source: WordPress**

### 2.6.3 MATERIAL USED

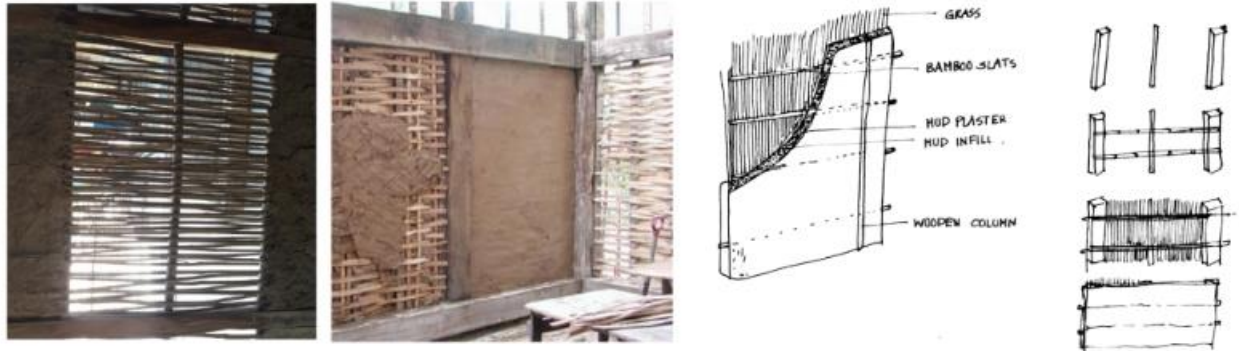
Khamir employs some unique strategies of making it earthquake resistant, earth architecture and vernacular architecture of Kutch region. Strating up of with the foundation it is 2m Rubble stone foundation with the cement base to it. As we move on to the above ground floor level steel frames takes over and supports the roof. The roofs are made with above corrugated sheeting covered with country tiling using naturally available compound purlite, as an insulating and binding agent.



Simple steel and wooden structure becomes the frame

**Figure 2.39: The image shows the details of use of the steel frames inside and followed by the roof detailing provided source: WordPress**

The walls of the first floor of this Craft Facility were made with Wattle and Daub Panels. In this method of construction, the vertical wooden stakes or wattles are woven with horizontal twigs and branches. 'Daub' is a combination of materials such as wet soil, - clay, sand, lime, animal dung and dried grass.



**Figure 2.40: The wall portions of the building and the sketch of material used detail shown in sequence view,**  
**source: WordPress**

#### 2.6.4 INFERENCE

- Manifestation of the idea of local availability and sustainability
- Disaster resilient techniques
- Clubbing of courtyards and activities
- New techniques like POP sculptures wall
- The site selection criteria should be based on the location of the users
- Simple construction
- Highly durable
- Highly sustainable
- Maintenance cost less

Today, the project is known across Kutch for its exploration of architecture, appropriate to the local way of life and work. The unconventional gestures in architecture and construction offer a subtle relief, introducing lightness and porosity in the plan.

A stark overlay of details and a carefully planned landscape, the architecture practices restraint in the vernacular poetics of the overall built-environment by engaging in what is already known to create a contemporary, utilitarian space that does not romanticize the village.

Responding to values, tradition, and identity intrinsic to the context, the architecture of Khamir Craft Resource Centre demonstrates a genteel dichotomy between conservatism and innovation, the conventional and uncustomary, and pragmatism and idealism- suggesting an all-encompassing approach to architecture that is grounded yet wishful.



**Figure 2.41: The Pause points in between building clusters, Overhead walkways connect the upper floor level**



**Figure 2.42: The workshop area and overall block view facing the rear side of the site**



**Figure 2.43: Internal views of the block and transition spaces in between the blocks where it creates a lively experience**

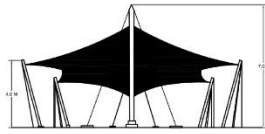
## 2.7 COMPARATIVE ANALYSIS

| CASE STUDY          | PILLAYARPALAYAM WEAVER CLUSTERS                                                                                                                                                                                                    | GANGA MAKI TEXTILE STUDIO                                                                                                                                                                                                                       | HANDLOOM SCHOOL, MAHESHWAR                                                                                                                                                                                                                                                                       |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. LOCATION         | LOCATED IN THE RESIDENTIAL AREA, WHICH THE COMMUNITY RUNS ALONG AMONG THE RESIDENCES<br><br>AREA: KANCHIPURAM, TAMILNADU<br>                      | LOCATED IN THE OUTSKIRTS OF THE PUNNIWALA VILLAGE, IN DEHRADUN ON THE SLOPES OF THE FOOTHILLS OF HIMALAYAS IN UTTARKHAND<br><br>AREA: BHOGPUR, UTTARKHAND<br> | LOCATED AT THE BACKWATERS OF RIVER NARMADA ALONGSIDE OF THE SITE IN THE OUTERSKIRTS OF MUMBAI<br><br>AREA: MAHESHWAR, UTTARKHAND<br>                                                                          |
| 2. ORIENTATION      | THE COMMUNITY AREA IS SURROUNDED ALONG TEMPLES AND FEW OTHER HERITAGE AREAS<br><br>WHICH IS ORIENTED TOWARDS SOUTHEAST TO NORTH WEST<br>          | THE BLOCK IS ORIENTED PREDOMINANTLY TOWARDS THE NORTH EAST DIRECTION AND ALSO COVERING THE VIEWS OF THE DENSE VEGETATION AROUND<br>                           | THE BUILDING IS FACING SOUTH TO NORTH WISE WHERE SOUTH IS THE ROAD ACCESS WHERE AS THE NORTH PRESENT THE RIVER NARMADA<br><br>ACCORDING TO THE ACTIVITIES IT IS ORIENTED AND FACTORS ARE CONSIDERED ALONG<br> |
| 3. AREA             | 2 SQKM RADIUS THIS WEAVER COMMUNITY COVERS                                                                                                                                                                                         | BUILT UP AREA : 1300 SQM                                                                                                                                                                                                                        | 34,000 SQFT                                                                                                                                                                                                                                                                                      |
| 4. ACCESSIBILITY    | ITS SURROUNDED WITH MIXED OF CLUSTER BUILDINGS OF HOMES AND IN BETWEEN THE OPEN SPACES ARE COVERING MOST SPACES WITH STREETS                                                                                                       | THE MAIN ACCESS FOR THIS SITE IS THROUGH THE MAIN NH ROAD WHERE ALONG INSIDE THE STATE ROAD WHICH LEADING TO THIS SITE                                                                                                                          | AS IT IS SITUATED IN THE OUTSKIRTS OF THE CITY WHICH IS SECURED AND ALONGSIDE THE SURROUNDED OF COMPOUND WALLS                                                                                                                                                                                   |
| 5. SPACIAL IDEALOGY | THEY DEDICATED THE SPACE FOR THE LOOM AREA INSIDE THEIR RESIDENCES AS THE PROFESSION WAS EQUAL TO THEIR GODS THAT THEY PRAY .                                                                                                      | THE SPACIAL ASPECT WAS BASED ON THE MAJORITY ON CREATING IT LIKE A TRAINING CENTER RATHER IT TENDS TO SERVE AS INDUSTRIAL ASPECT                                                                                                                | IT WAS PURELY INTENDED TO BE RESTORE THE TRADITIONS OF THE HANDLOOM AND TO RESTORE ITS CULTURAL IDENTITY AND TRADITION                                                                                                                                                                           |
| 6. LIGHTING         | HERE THE LIGHTING WAS PURELY BASED ON THE WINDOWS THAT PROVIDES NATURAL LIGHTING INSIDE AND EVEN FOR VENTILATION THIS IS THE PREDOMINANT PART<br> | IT IS PREDOMINANTLY SURROUNDED WITH DIFFUSED CATEGORY OF LIGHTING ALONGSIDE SUPPORTED WITH WINDOWS<br>                                                        | THE LIGHTING IS DONE THROUGH THE CONCEPT OF RATCAGES WHERE IT CREATES A PATTERN INSIDE THE SPACES AND CREATES A PLEASANT ENVIRONMENT<br>                                                                      |
| 7. MATERIALS        | THE MATERIALS THAT WERE USED IS CONCRETE AS NORMAL RESIDENCES HAVE ALONGSIDE SUPPORTING WITH TERACOTTA TILES<br>                                  | THE MATERIALS THAT WERE USED HERE IS OF CONSTRUCTED WITH LOCAL BRICK AND LOCALLY HARVESTED LIME AS WELL AS STONE, MARBLE AND BAMBOO<br>                       | THE MATERIAL PALETTE HERE IS USED OF CONCRETE, TERACOTTA TILES, WOODEN STRIPES AND PREDOMINANT OF TEAK WOOD WINDOWS AND REDBRICKS<br>                                                                         |

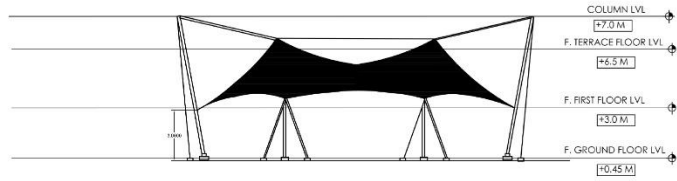
# **DETAILED DRAWINGS**

## 2 DETAILED DRAWINGS (TENSILE STRUCTURE)

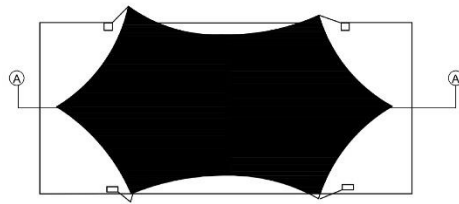
INTERGRATED HANDLOOM CENTER FOR COTTON PRODUCTION



ELEVATION



SECTION



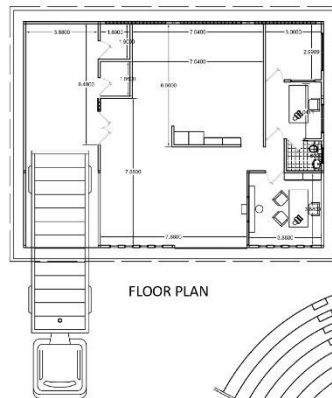
PLAN

NAME: N. SRIDEVI PRIYAA  
REG. NO: 20180004  
BATCH: 2018-2019  
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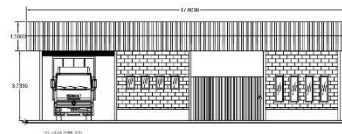
## 2 DETAILED DRAWINGS (WAREHOUSE AND AMPHITHEATRE)

INTERGRATED HANDLOOM CENTER FOR COTTON PRODUCTION



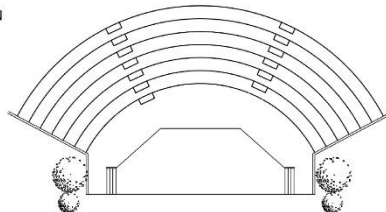
FLOOR PLAN

WAREHOUSE

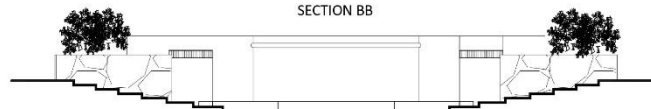


ELEVATION

AMPHITHEATRE



SECTION BB



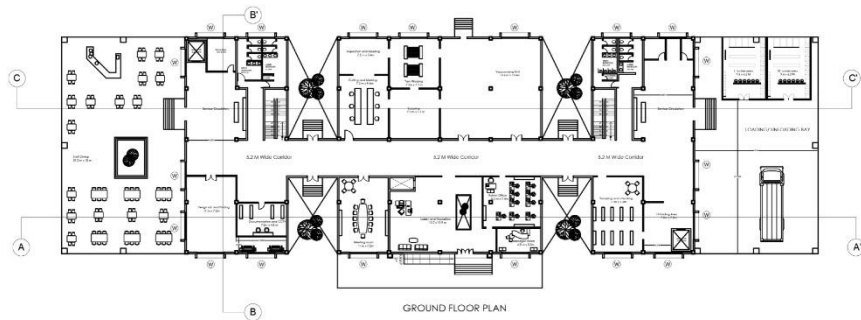
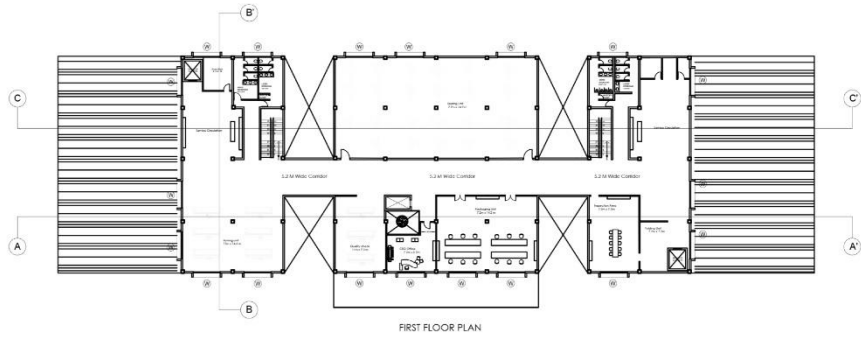
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2

## DETAILED DRAWINGS ( PRODUCTION UNIT )

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## DETAILED DRAWINGS ( PRODUCTION UNIT )

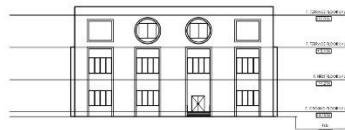
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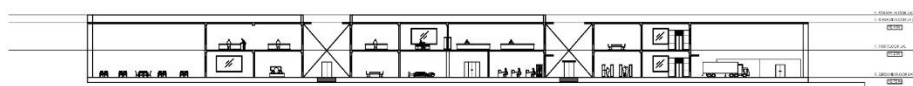
REAR SIDE ELEVATION



FRONT ELEVATION



SECTION AA'



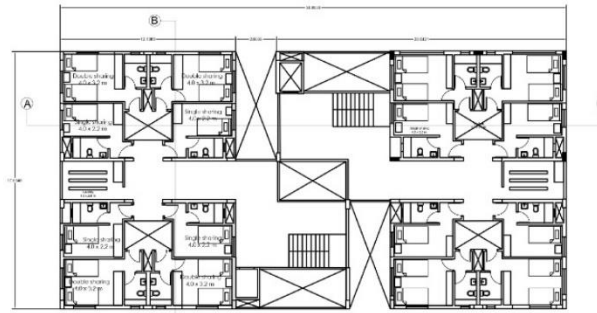
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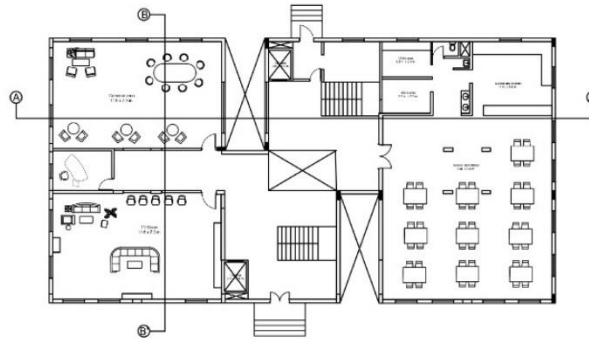
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## DETAILED DRAWINGS (ACCOMODATION)

INTERGRATED HANDLOOM CENTER FOR COTTON PRODUCTION



FIRST FLOOR PLAN



GROUND FLOOR PLAN

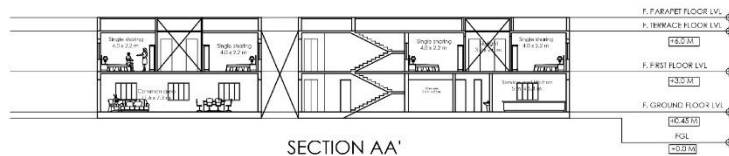
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2

## DETAILED DRAWINGS (ACCOMODATION)

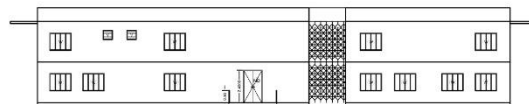
INTERGRATED HANDLOOM CENTER FOR COTTON PRODUCTION



SECTION AA'



SECTION BB'



FRONT ELEVATION



SIDE ELEVATION

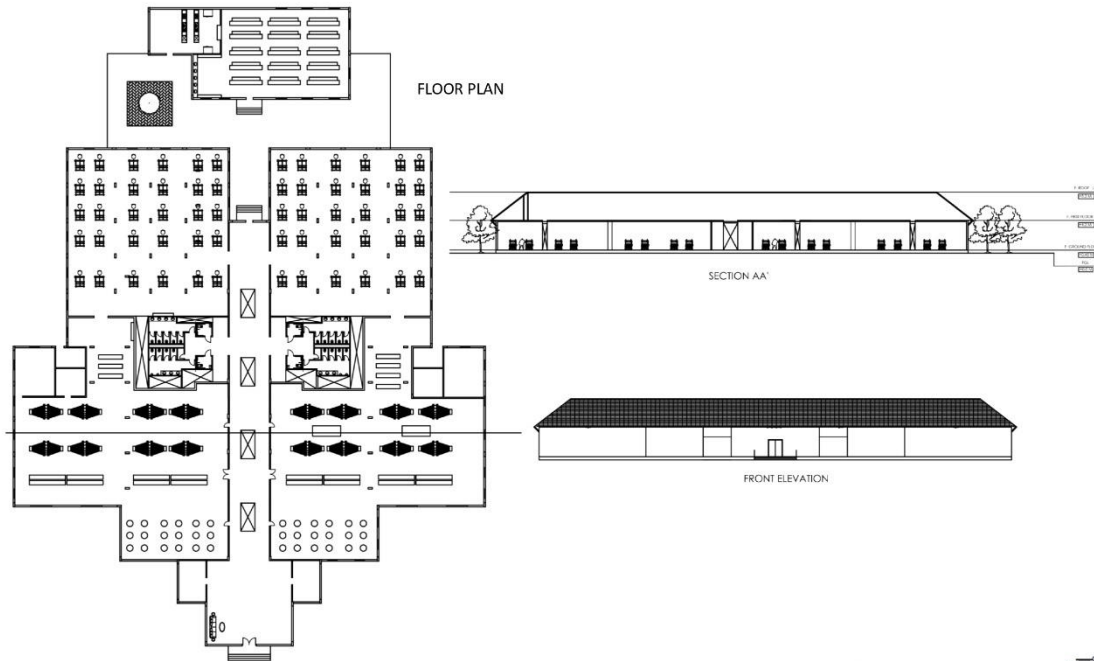
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# MODELS

## 2 DETAILED DRAWINGS (WAREHOUSE AND AMPHITHEATRE)

INTERGRATED HANDLOOM CENTER FOR COTTON PRODUCTION

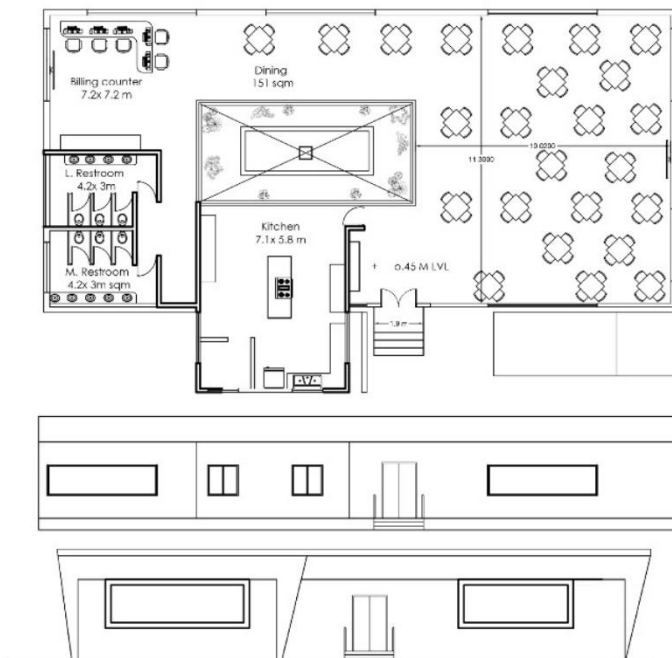


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## 2 DETAILED DRAWINGS ( CAFETERIA )

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