“MAGGAM” – REVIVAL OF AN ARTISAN COMMUNITY IN SRIKALAHASTI

(Amalgamation of space, culture and education)

A THESIS

Submitted in partial fulfillment of the requirements for the award of

Bachelor of Architecture degree

By

CHAITANYA SAI JANARDHAN P

(37210007)

DEPARTMENT OF ARCHITECTURE

SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY) Accredited

With Grade “A” by NAAC

JEPPIAAR NAGAR, RAJIV GANDHI SALAI,
CHENNAI - 600 119

NOVEMBER 2021

SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY

DEPARTMENT OFARCHITECTURE

BONAFIDE CERTIFICATE

This is to certify that this Thesis Report is the bonafide work of **Chaitanya Sai Janardhan P (37210007)** who carried out the Thesis entitled**"MAGGAM" – REVIVAL OF AN ARTISAN COMMUNITY IN SRIKALAHASTI –**"*(Amalgamation of space, culture and education)*" under our supervision from July 2021 to November 2021.

Internal Guide	**Internal Review Member**	**External Guide**
Dr. R. Arulmalar	Ar. V.V.Sanghavi	Ar.Hariesh K. Sankaran

Dean and Head of the Department

Dr. DEVYANI GANGOPADHYAY

Submitted for Viva voce Examination held on **08.12.2021**

Internal Examiner	**External Examiner**
Ar. R. Ramkumar	Ar. Anup George

DECLARATION

I**, CHAITANYA SAI JANARDHAN P**hereby declare that the Thesis Report entitled“**MAGGAM” – REVIVAL OF AN ARTISAN COMMUNITY IN SRIKALAHASTI –** *(Amalgamation of space, culture and education)***”** done by me under the guidance of **Dr. R. Arulmalar**(Internal Guide, Ar.**V.V.Sanghavi**(Internal Review Member) and **Ar. Hariesh K. Sankaran**(External Guide) Sathyabama Institute of Science and Technology is submittedin partial fulfilment of the requirements for the award of Bachelor of Architecture Degree.

DATE: 06.12.2021

PLACE: Chennai **SIGNATURE OF THECANDIDATE**

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **Sathyabama Institute of Science and Technology** for their kind encouragement in doing this Thesis and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. DevyaniGangopadhay**, Dean and Head of the Department, School of Building and Environment, Our Design Chair **Dr. Suresh Kuppuswamy,** Thesis Coordinator**Ar.SuryaRajkumar** for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Thesis Internal guide **Dr. R. Arulmalar,** Internal Review member **V.V.Sanghavi**and External Guide **Ar. Hariesh K. Sankaran**their guidance, suggestions and constant encouragement which paved the way for the successful completion of my Thesis work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Architecture** who were helpful in many ways for the completion of the Thesis.

CHAITANYA SAI JANARDHAN P

MOTIVATION

B.P Agraharam (street) is a small community in the temple town of Srikalahasti, Andhra Pradesh known for their exquisite textile art collections of Kalamkari and other handicrafts of terracotta and wood carving etc. I was born and grew up witnessing the colorful growth and flourishment of the artisan community.

Around 15 years back, a walk through those streets would tour you through the hustle bustle of traditional kalamkari artisan's street of Srikalahasti with beautiful "muggulu" at the entrance and children playing on the streets, women working on the thinnai verandahs and the whole streets busy with common activities of the artform. Occasionally tourist buses or vehicles could be spotted with groups of tourists from over India and abroad flushing in to get a first-hand taste of the hand painted kalamkari sarees and materials.

However, it is not the same anymore. With Globalization and development of the temple town and infrastructure industry, mechanized kalamkari products entered the market lowering the standards and originality of the artform and devastating the artisans involved with it. This resulted in the search for other occupations and new lifestyle changes and architecture thus leading to the extinction of the original indigenous artform. However, a group of artisans with their co-artisans have been working towards it and the government has also brought in several schemes to support and promote the upliftment of this handicraft on national and international markets after gaining recognition worldwide. Several NGOs are also working to employ the artisans and empower others in the neighboring villages.

The intention behind taking up this project was to look at opportunities of revival of the artisan community and bring back their lost importance in the textile industry of India.Also, through an amalgamation of space, culture and education, the project proposal will also ensure widespread knowledge about this historic artform and its essence amongst various art, design and fashion enthusiast.

THESIS SYNOPSIS

Crafts are an integral part of Indian culture and flourish in the remote parts of the country resonating the character of the region. In India most of the crafts are practiced as the heritage of the past and the family. The concept of the centre came into picture to serve the purpose of bringing most of the crafts specimens and craftsmen under one roof.

With rapid industrialization and technological advancements, the role of local heritage and culture is getting deteriorated with the youth completely detaching themselves from the roots.The crux of the proposal aims at creating a single space for various users and enthusiasts associated to the textile handicraft to interact and develop the current scenario in srikalahasti through amalgamation of space, culture and education.

TABLE OF CONTENTS

CHAPTER No.TITLE PAGE No.

LIST OF FIGURES

FIGURE No. TITLE PAGE No.

LIST OF TABLES

Page no

LIST OF PLATES

Page no

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

India is known for its complexity and diversity of cultures and skills in various regions specific and unique in its own way. Art and artisans form the backbone of the rich heritage that India boasts and hence needs to survive through the phase of technology and Industrialization to flourish and hence conservation and revival play a major role.

Several artisan communities though recognised are facing downfall due to low labour force and skilled youth to carry the heritage and culture forward. By creating awareness about the importance of our roots and the indigeneity of our culture and heritage amongst the people, the revival and preservation of this cultural heritage can be grounded.

Tagline The agenda of this project is to preserve and protect the traditional practice of the folks through education to promote and enhance the current scenario by visualization of space as the main expression and voice of the artisan community.

1.2 HANDLOOM AND TEXTILE CRAFT INDUSTRY

It is a Heritage Craft of our Country.

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. There has been a shift and decline in the industry and it is necessary to understand the trend of the occupation and issues of the industry in the current context through various literature and live observations before an architectural solution is proposed.

Figure 1.1 Heritage Craft

- Textile designs are associated with special meanings of traditional societies specific to a particular ethnic group alone.

- Textiles play 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 and textile arts are a fundamental human activity, expressing symbolically that valuability in any culture.

1.3 MAJOR TEXTILE CRAFT CLUSTERS OF ANDHRA PRADESH

1.3.1 POCHAMPALLY, BHOODAN, NOW TELANGANA:

Pochampally ikat, is a type of silk that finds its origin in a small town of Andhra Pradesh (now Telangana), BhoodanPochampally. Dubbed as the “Silk City of India”, the town is known for giving the world a fabric that can rival any other Ikat production in the country. They have traditional geometric patterns in Ikat style of dyeing.

1.3.2 KALAMKARI, MACHILIPATNAM & SRIKALAHASTI, ANDHRA PRADESH:

Kalamkari is a type of hand printed or hand block printed cotton textile. Kalamkari refers to the ancient style of hand painting that is done with a tamarind pen, using natural dyes. Literal meaning of Kalamkari is kalam, which means pen and kari which refers to craftsmanship; which is derived from a Persian word.

OTHERS INCLUDE:

- MANGALAGIRI
- VENKATAGIRI
- KOSA
- UPPADA, ETC

Figure 1.2 Textile craft

Figure 1.3 Textile map of India

1.4 PROJECT FEASIBILITY AND NEED

- Kalamkari is an artform that flourished since the reign of the King Krishnadevaraya about 3000 years ago but experienced a surgic decline in the 1900's post industrialization.

- The ministry of textiles and crafts, tourism department etc have taken initiatives and has come to life since the late 1900's but has not reached the bar yet and is experiencing a second stage of decline due to improper facilities and socio-economic status of the artisans. The proposal will create an architectural solution to the several issues faced by the artisans and their supporting communities.

- The project will ensure better opportunities to the communities through tourism and educational recognition and cultural expression with the proposal becoming a landmark of the Kalamkari of Srikalahasti style.

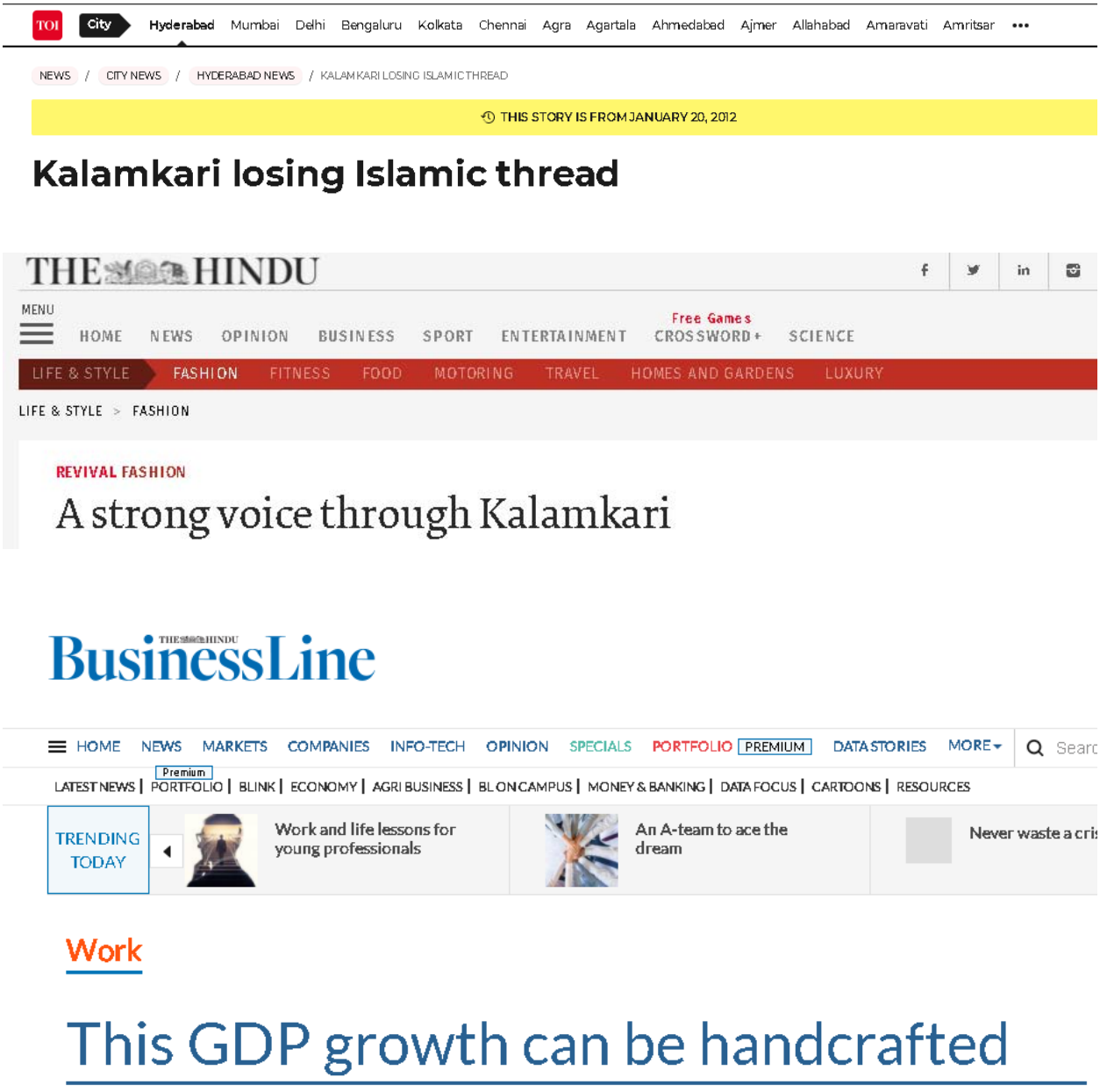


Figure 1.4 Newspaper clippings

1.5 PROJECT BACKGROUND

- One of the most ancient arts in INDIA originated about 3000 years is Srikalahasti Kalamkari. The word kalamkari is derived from the words kalam and Kari. Kalam means pen with which the drawings are drawn, and Kari means craftsmanship.
- Kalamkari involves twenty-three steps and only natural dyes are used in it. This art form is used to describe the events of HINDU mythology on the fabrics. In the past, this art is done only on cotton textile. But nowadays this has been extended to all types of fabrics, wall paintings, dupattas, pillow cushions, etc.
- The government of Andhra Pradesh helps to preserve the art by recognizing the kalamkari stores. The registration of kalamkari art helps the craftsman to fight legally if the art or design is copied in any form.
- Performed by around 300 artisans in and around the temple town, women empowerment programme is also a part of this.

KALAMKARI CRAFT CLUSTER

1.	**Cluster name with Location**	Kalamkari Craft Cluster, Chittor, A.P.
2.	**Type of cluster**	Mini cluster
3.	**Villages & Blocks covered**	10 Villages Namely Srikalahasthi, Pallamala, Cherlopalli, Thottambedu, Mittakandriga, Ganammakandriga,, Rachaguneeri, Meralapaka, Panagal & Pathaveerapuram & B.N.Kandriga (Mandal).Srikalahasthi Town, Thottambedu (M), Srikalahasthi (Rural Mandal), Yerpedu (M).

Figure 1.5 Kalamkari Craft Cluster

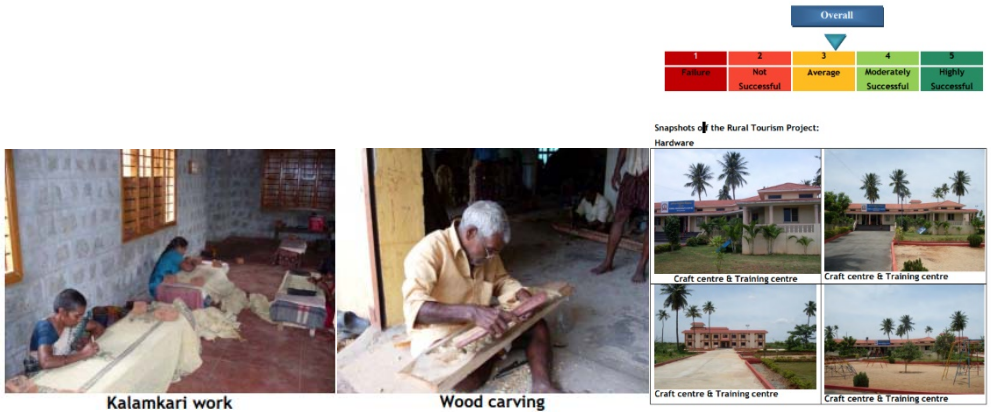


Figure 1.6 Kalamkari Work Figure 1.7 Wood Carving Figure 1.8 Craft and training center.

CHAPTER 2

PROJECT SYNOPSIS

2.1 AIM

- The aim of the project is to develop a multi-dimensional textile handicrafts resource centre for the preservation and promotion of the cultural handicrafts of Srikalahasti.

- The project aims at creating a space that will be an amalgamation of various activities to train, educate and support craftsperson's to practice their traditional crafts for the contemporary markets.

2.2 OBJECTIVES

- To study the history, different processes and the present scenario of the textile handicraft in and around Srikalahasti in Andhra Pradesh.

- To design a formal space for the artisans, and officials related to the handicrafts and informal space for the collective amalgamation of artisans, education enthusiast, tourists and market makers to practice, produce, teach and market the products.

- To design a space that will revive and revitalize the artisan community and act as a sorted destination for world class designers and textile enthusiasts.

- To revitalize and restore the character of the vernacular setting of the artisan village and its neighbourhood through Critical Regionalism and vernacular approach of AP.

2.3 GOALS

- To understand the trends in the handicrafts industry and identify the needs and issues that can be addressed architecturally through this project.

- To ensure a multi-faceted approach of production and other associated activities to increase efficiency.

- To provide a platform for the collaboration of the artisans and the designers directly and thus eliminating the need for middle-men.

- To simultaneously preserve and propagate the indigenous character of the settlement and thus the cultural community.

2.4 METHODOLOGY

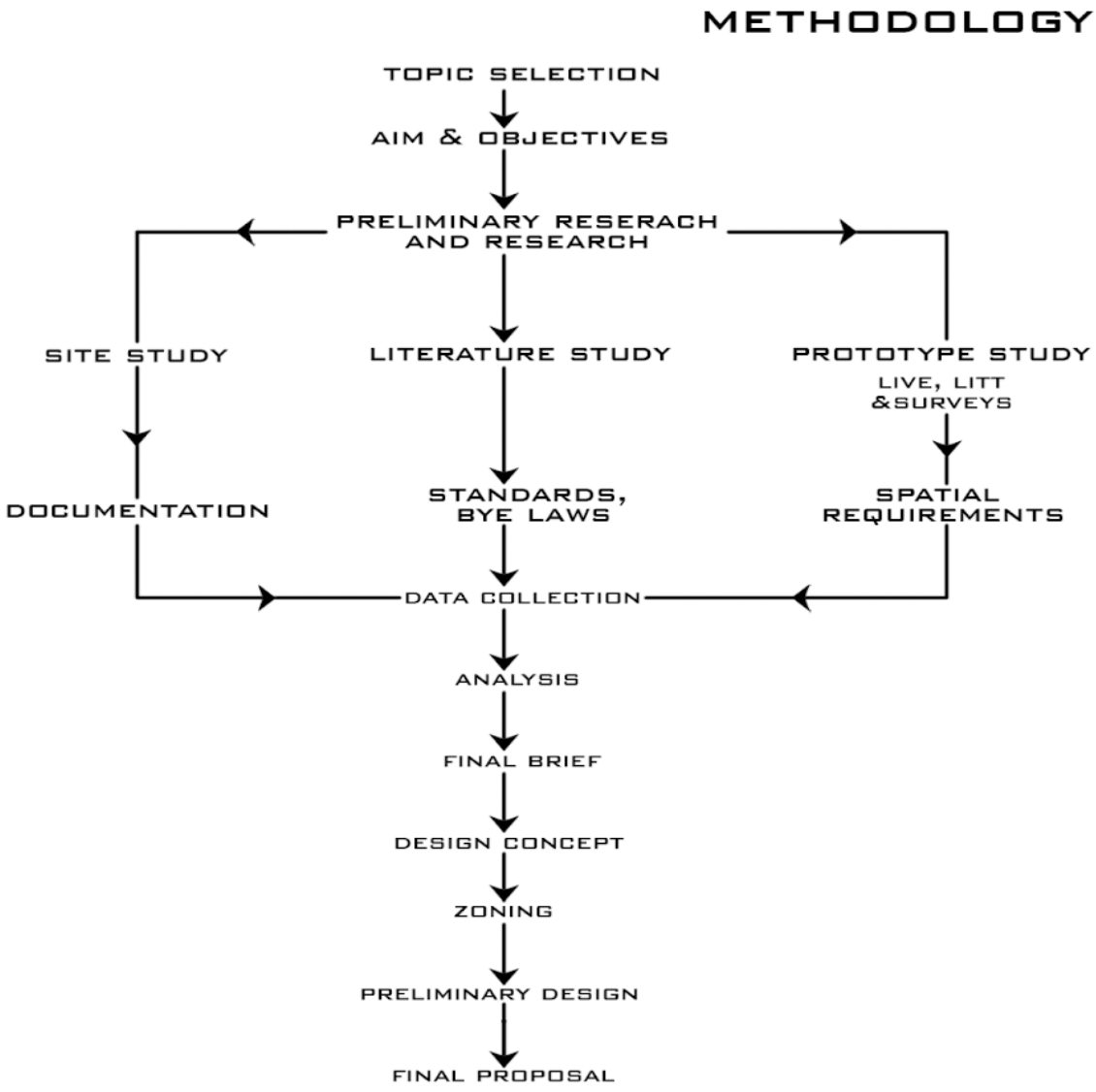


Figure 2.1 Design Methodology

2.5 DESIGN PRINCIPLES

2.5.1 PRIDE OF THE PLACE

The designed space must be an iconic attraction for the textile and tourism industry and thus positively affect the contemporary structure of the industry and the artisan community growth.

2.5.2 EXPERIENCE

The experience of the space must be inspiring and uplifting space for the artisans and incoming students and designers and thus encourage new designs and products as outcomes of new techniques and approaches.

2.5.3 INTEGRATION

The space must integrate the needs of all the users of the space and must create a holistic environment interweaving all the activities through the spaces.

2.5.4 ARCHITECTURE

The spatial planning should be in accordance to the user's needs, spirit and context of the place and the spatial quality necessary for the artisans.

2.6 SCOPE

The growth of the artisan community has drastically deteriorated with the involvement of middle men and lack of infrastructure and resource availability, lack of knowledge about this craft all over. Thus, through space, education and culture, involvement of government bodies and NGOs in upliftment can help in the revival of this artisan community and the artform on a large scale and create a market for their economic stability.

2.7 LIMITATIONS

The availability of fresh running water is a limitation for completing the process on a traditional note.

2.8PRINCIPLE ACTIVITIES AND USER GROUPS

To create a holistic platform to glorify the artform, integration of various users and their activities must be the primary approach of the proposal. The various activity zones include the production unit, Institute, training Centre, Exhibition and workshop, administration and public amenities like toilets, cafeteria etc.

The various target groups in the proposal are:

* Artisans
* Tourists
* Art enthusiasts
* Students and Design Interns
* Researchers
* Staff
*Stakeholders

CHAPTER 3

LITERATURE STUDY

3.1 INTRODUCTION TO KALAMKARI ART

In India, there are two distinct styles of Kalamkari. They are the Srikalahasti style and the Machilipatnam style. The Srikalahasti style kalamkari is made by using a pen (kalam) for a freehand drawing of the subject and filling in the colours.This is entirely handwork. Whereas the Machilipatnam style is made at Pedana near Machilipatnam in Andhra Pradesh. This art is influenced by Persian art and involves patronage of Mughal and Golconda sultanate.

Figure 3.1 Types of Kalamkari

This art involves 23 tedious steps of dyeing, bleaching, hand painting, block printing, starching, cleaning and more. Motifs drawn in Kalamkari spans from flowers, peacock, paisleys to divine characters of Hindu epics like Mahabharata and Ramayana.

3.1.1 HISTORY

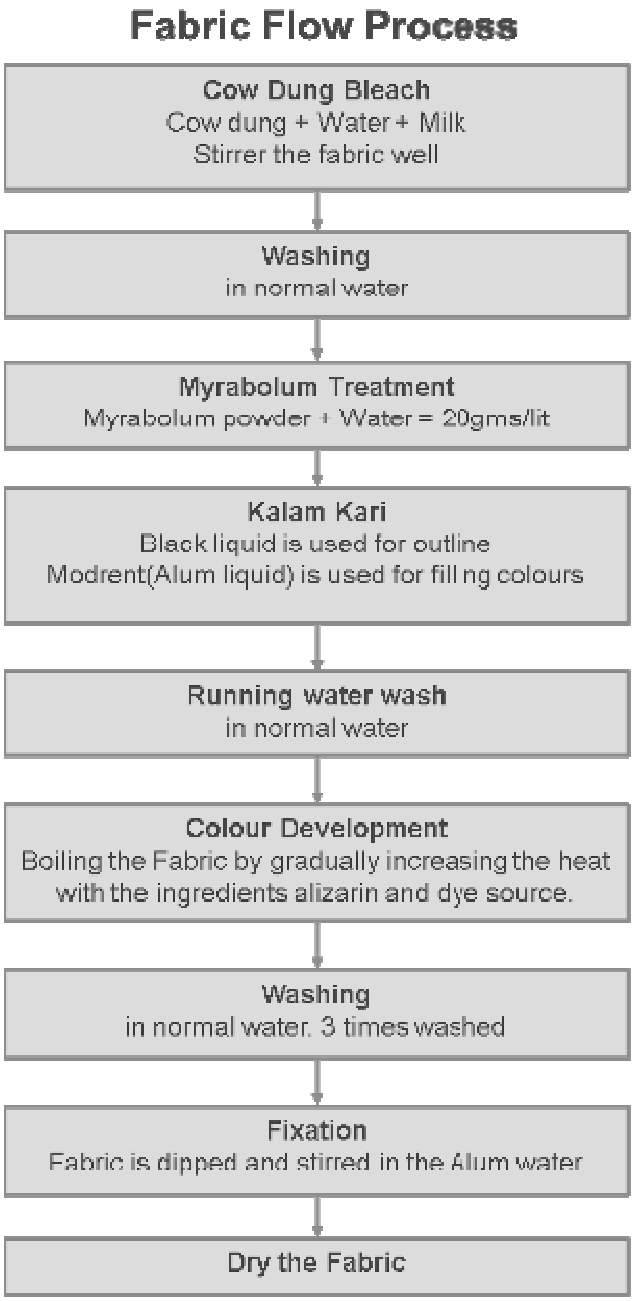
Centuries ago, folk singers and painters used to wander from one village to other, narrating stories of Hindu mythology to the village people. But with course of time, the process of telling tales transformed into canvas painting and that's when Kalamkari art first saw the light of day. This colourful art dates back to more than 3000 B.C.
MUGHAL - MACHILIPATNAM MOTIFS
VIJAYANAGARA RULE - MYTHOLOGICAL DESIGNS

IN SRIKALAHASTI:

- In Srikalahasti, it is now currently practiced in full scale by the Balija community in B.P. AGRAHARAM situated along the riverbanks of Swarnamukhi, the main reason for this craft to flourish here.

- It was registered as one of the geographical indications from Andhra Pradesh, under handicraft goods by Geographical Indications of Goods (Registration and Protection) Act, 1999.

3.2 THE PROCESS OF KALAMKARI ARTWORK



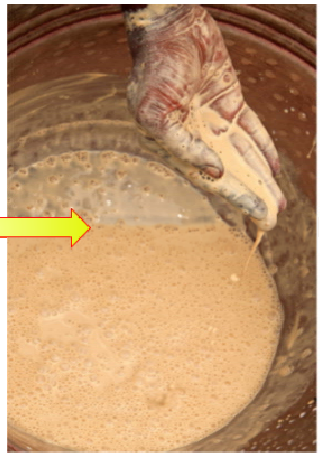
3.3 SPATIAL UNDERSTANDING OF THE WORKSPACE

Covered spaces – Maggam space (black and white – mostly male oriented, colour dyeing – female oriented), storage and retail

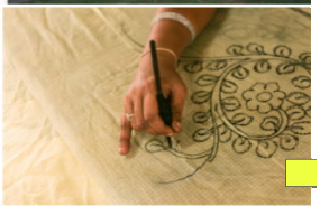
Semi – covered spaces – kiln space, washing tanks, mixing and other activities

Open space - drying yards, cleansing area, farm spaces etc.

Figure 3.2 Kalamkari making process



Cotton fabric is dipped in the solution.



Experienced Artisans paint the design directly on the fabric.

Cotton cloth shred is rolled on a bamboo stick to absorb the paint.

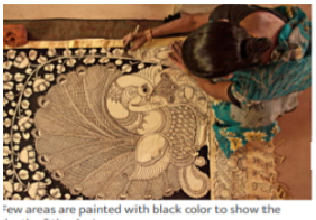
Cotton thread is tied around the cotton shred.

The outline is painted with the solution made out of jaggery and rusted iron.

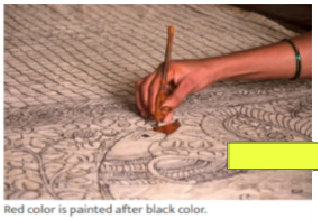
The final design is obtained on the fabric.

The pen is dipped into a paint completely.

Natural ingredients are used to obtain various colours.



Few areas are painted with black color to show the depth of the design.



Red color is painted after black color.

Dried cloth is boiled in water from 80 to 100 degree.

Washed fabric is immersed in milk which brightens the colors painted, and it turns the unpainted areas to white color.

While painting the red color solution gives yellow shade and turns bright red after drying.

When all the required areas are painted with red colour on the fabric, it is kept to dry for two days.

Then it is washed in cold water.

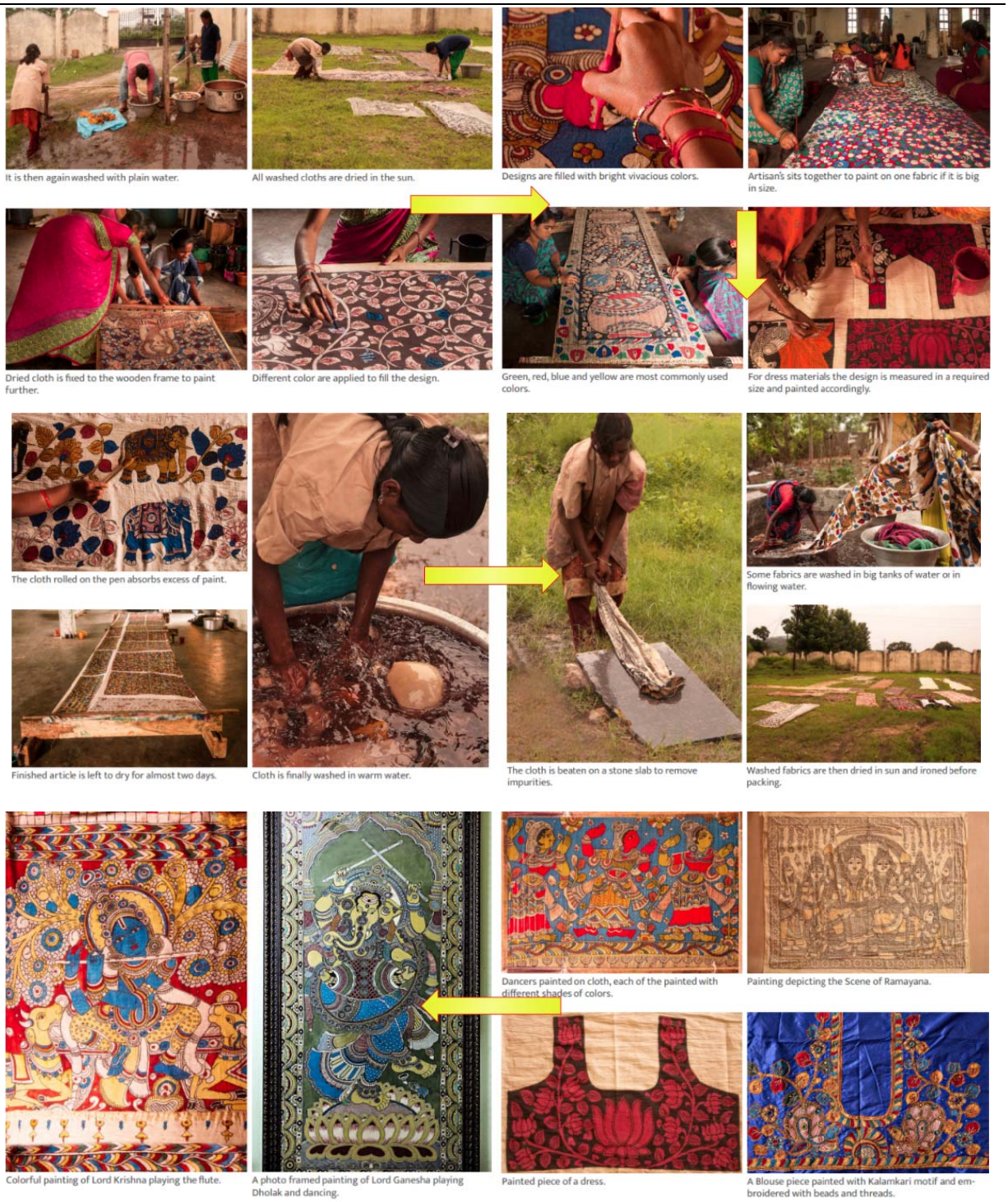


Figure 3.3Process of making Kalamkari art

CHAPTER 4

CASE STUDIES

4.1 CASE STUDY

The chapter details the various case studies that was studied to help in the design process. Since the proposal involves various user zones, no single space can be studied for the project and hence the study was divided into categories - SKHT production unit, Academic unit, exhibition and designer unit.

4.2 UNDERSTANDING DESIGNER INTERVENTION

Designers and fashion enthusiasts form a major group that can bring a massive upgrade over the textile industry and thus the artisan community. Predominantly, the artisan units do not hold accommodation facilities for the designers and researchers which makes it difficult to engage and collaborate with the artisans.

The following case studies was chosen keeping in mind the scope, needs and character of the project and the context to act as a wayfinding study into the depths of the design project.

4.2.1 The LLDC - The Living and Learning Design Center, Ajrakhpur, Kutch

The LLDC was primarily meant to be a tactile visual repository of the various crafts of Kutch. The main intent of the project was to define its position as a resource center for artisans, the museum being its public face that houses galleries of the various crafts especially the textile antiquities. It was an initiative by the SHRUJAN NGO for the revival of the artisan community through interaction and engagement of local master artisans with designers and practitioners to synergize and educate new young artisans and thus ensure a stable income growth for the artisans.

Figure 4.1 Exterior View of Museum Block

Figure 4.2 Museum gallery

Architect: Uday Andhare&MausamiAndhare
Client: Living & Learning Design Center- LLDC – Ajrakhpur – Kutch
Site Area: 8 acres
Building Area: 11150 m2 (25%)
Typology: EducationalCultural › Cultural Center Museum, Public institution for the arts/crafts of Kutch

4.2.1.1 Location

The resource center is located in Ajrakhpur, Kutch in Gujarat in the outskirts of the city, 10 km away from Bhuj. It is well connected and dwells on the concept of community living and sustainable design strategies to creative an eco-sensitive space. It responds to the local climate, program, economic realities and the various user interventions.

Figure 4.3 Location Map

The various users of the project are

Craftspersons> Tourists > Art and craft enthusiasts > Textile and design students > Staff and Shrujan trust members.

The proposal has three zones on the site with the museum block as the primary usable public zone that is completed in the first phase, the craft school and residential enclaves form the secondary phases.

Figure 4.4 Design model

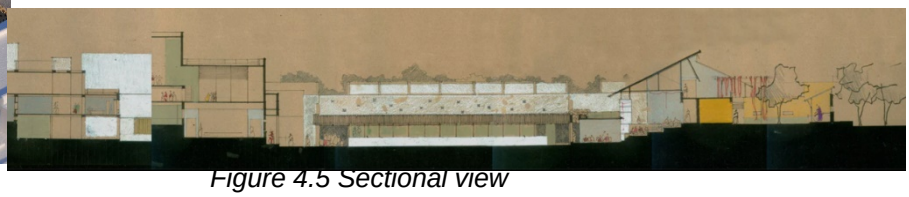


Figure 4.5 Sectional view

SPACES	AREA (IN SQ M)	NO OF USERS
Cafe	36	20
Kitchen	30	
Museum shop	20	10
Guest house	60	6
Exhibition gallery	210	100
Temporary exhibition	130	60
Hands on gallery	33	5
Auditorium	322	150
Conference room	36	20
Library	84	31
Restaurant	80	50
Demo printing area	49	6
Informal workshops	155	30
Storage	40	
Classroom	128	80
Craft shop	72	10
Toilet	64	
Storage for exhibition	165	
Orientation space	90	20
Administration	200	60

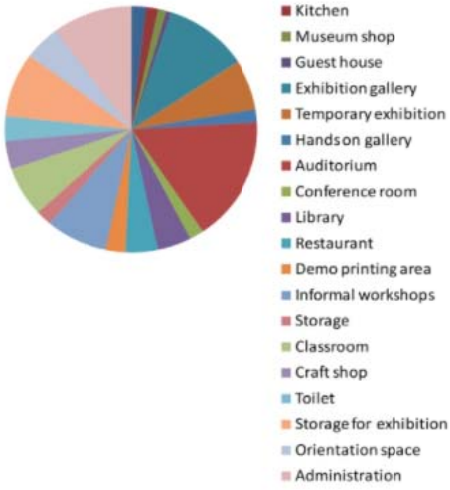


Figure 4.6 Design Program

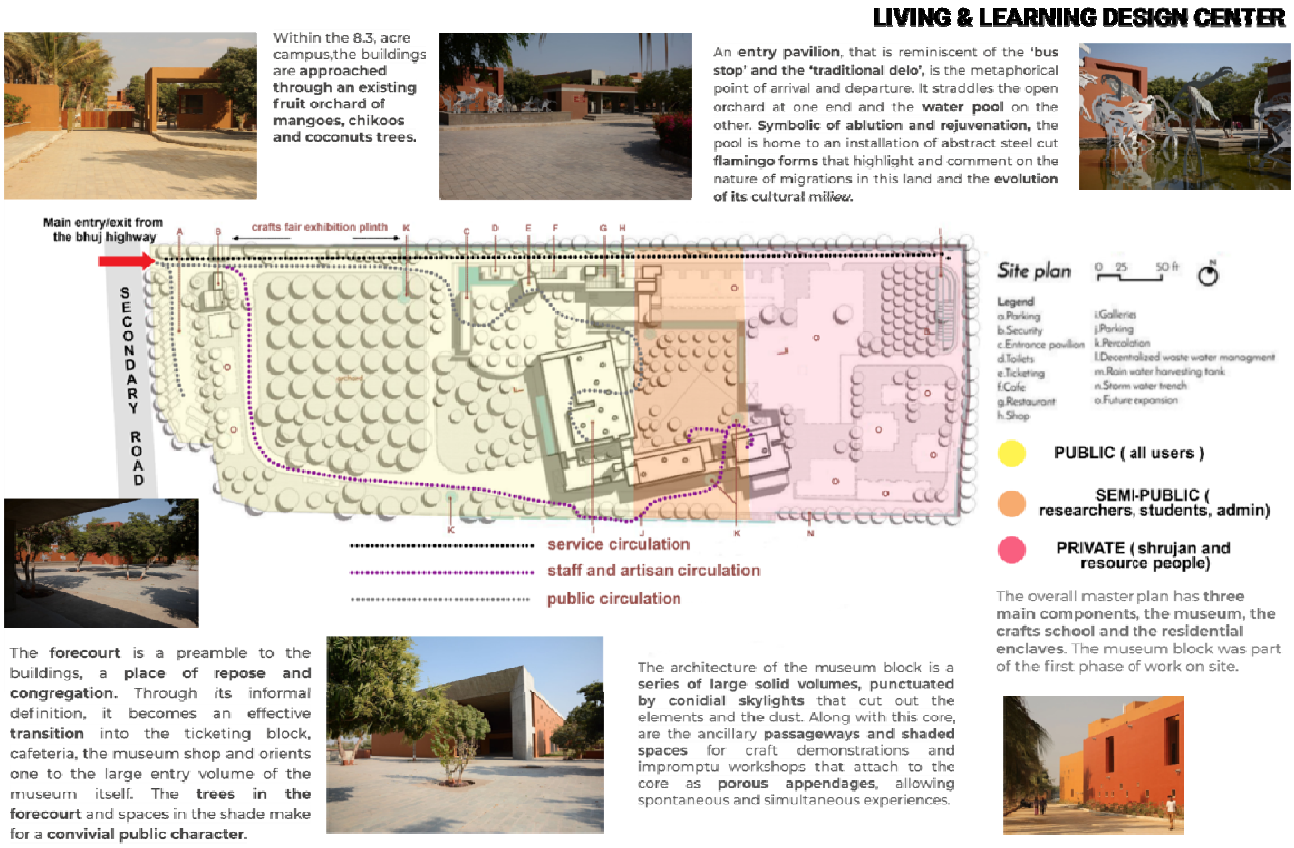
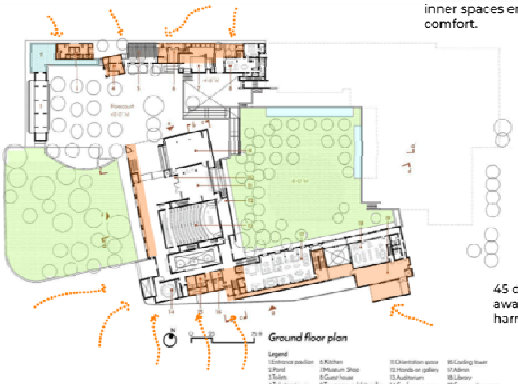
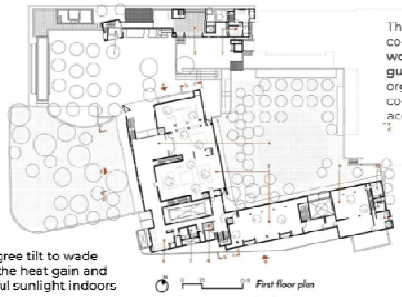


Plate 4.1

LIVING & LEARNING DESIGN CENTER

Plan organization: Segregation of service functions, on the heat gain sides, layering of spaces with circulation and ancillary functions ensured a stable and protected core. A solid facade and porous layered inner spaces ensure breathability allowing for breezes to tunnel across during the night and day ensuring comfort.





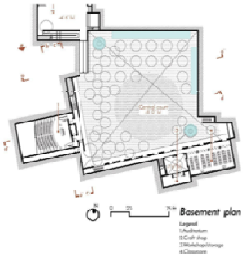
The main buildings, comprising, the **museum, workshops and the guesthouse** block are organized around a large congregational sunk court, accessed by ramps.

45 degree tilt to wade away the heat gain and harmful sunlight indoors

Shaded walkways provide refuge along its perimeter to access the classrooms and workshops as well as the administrative areas.

The design responds, to the local climate, program, economic realities and the need to create a thermally stable environment for the exhibits.

The museum comprises of four galleries including a temporary exhibit area.



Circulation of users : The movement of users happen through staircases and ramps through engaging *passageways and* the flow maintains the level of privacy from public--semi public---private zones.

Plate 4.2

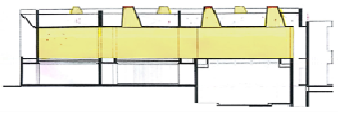
LIVING & LEARNING DESIGN CENTER

INCORPORATED DESIGN STRATEGIES

Light and its modulation:

The quality and quantum of light in the galleries is guided through carefully crafted concrete truncated conical skylights, which orient to the sun allowing for a diffused play of light.
A special IR/UV film over the glass covering the oculus cuts off the harmful UV and keeps the heat out.

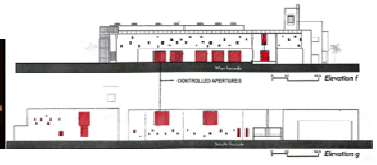
The creation of dark and bright zones develops the athe atmosphere of the gallery and reduces the heat gain owing to the arid hot and dry climate.



Fenestrations:

Meticulously detailed windows and cutouts on the west and south allow the winter sun to warm the interiors while keeping out the summer sun.

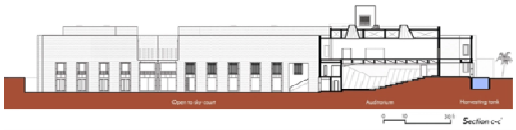
Controlled apertures, calibrated to the sun angle ensure its working and becomes a simple strategy to effect ventilation without increasing thermal gain. Windows avoid glass especially on exterior surfaces.



Stored rainwater cools the structure:

Rainwater harvesting tanks, integrated in the design collects, 500,000 liters of rain annually for drinking.

Use of radiant cooling pipes circulate the same stored water below the floor on terraces and other slabs, draining the heat continuously to maintain the mean radiant temperature of the structure between 30 and 34 deg c. ensuring that very little energy is used to cool the air and maintain the desired humidity using low energy humidity control.



Fresh air and Cooling :

The space within the vertical shaft of the overhead water tank is designed to act as a cooling tower. Night time cool air is passed over a thermal mass created by stored bottles of packaged drinking water stacked in crates almost three floors high.

The air is guided to the auditorium area through ducts that run below the seats.

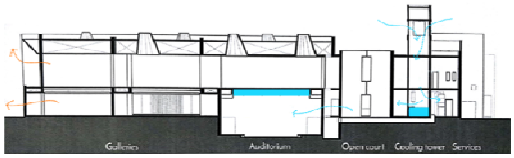


Plate 4.3

LIVING & LEARNING DESIGN CENTER

WATER CHANNELING :
Water from the site is managed within the site through a series of percolation wells and trenches that hold water along the perimeter of the compound wall section. Flash bouts of intense rain are managed in these holding systems and can be used for irrigating the landscape.

GREY WATER USAGE :
Decentralized wastewater treatment system (DEWATS) is designed to handle all the wastewater from the site including the process effluents from the workshops and toilets.

VEGETATION :

Local low water consumptive, dense canopy, tree species planted to augment existing trees in the orchard. Tree shaded enclosures ensure appropriate use of outdoor spaces for people in the intense summers.

SITE AND LANDSCAPE STRATEGIES

DEWATS is a technical approach to decentralized wastewater treatment in developing communities. The passive design uses physical and biological treatment mechanisms such as sedimentation, floatation, aerobic and anaerobic treatment to treat both domestic and industrial wastewater sources.

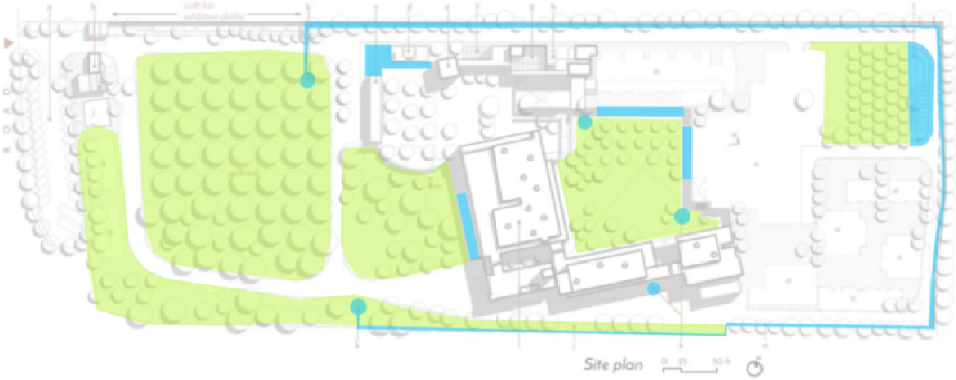
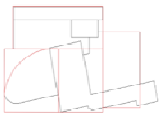


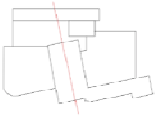
Plate 4.4

ARCHITECTURAL ANALYSIS

Built to unbuilt relationship:
both built and unbuilt is given *equal importance* and related to each other

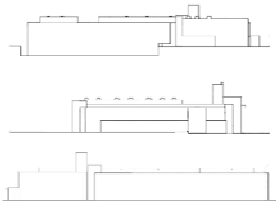


Geometry:
complex has a main rectangular geometry



Balance :
There is a balance through an axial configuration. The equation of open spaces flanking the built blocks creates the harmonic balance

Structure: Columnar and planar structure, Regular, structure defines the space.



Massing:
simple, combination of multiple masses.

A vocabulary of earth colored platonic volumes, receiving the intense desert sun with small, punctuated openings, deep shaded passageways is prevalent throughout.

LIVING & LEARNING DESIGN CENTER

CONSTRUCTION DETAILS

LLDC is a manifestation of the idea of sustainability. The design responds, to the local climate, program, economic realities and the need to create a thermally stable environment for the exhibits

NO	DESCRIPTION	ANALYSIS
1	Structure	Load bearing
2	Material	Exposed concrete, stone, Fly ash bricks
3	Wall finish	natural dolomite lime plaster
4	Roof	Flat roof finished with broke china mosaic
5	Height of walls	6m
6	Wall thickness	450mm
7	Flooring	Yellow polished khavda sand stone, kotah stone,
9	Foundation	Rubble stone
10	No of storey	2 + 1 Basement

MATERIAL PALETTE

Locally made sun dried lime-fly ash bricks with lime mortar and lime plaster were used including dolomite plaster for internal finishes. Traditional methods of mixing lime mortar uses methi (fenugreek) Gud (Molasses) and Guggal (resin) to achieve plasticity, impermeability and quick setting of mortar respectively.

Local yellow polished khavda sand stone in flooring.

Natural brown kotah flooring in the exterior and river washed brown kotah stone flooring in the internal areas.

Rough unpolished flooring in the exterior with fine river gravel and cement grouting.

Roof slabs finished with broken china mosaic in white cement grout for deflection of heat.

Ceiling soffits were form finished un-plastered using local timber and steel plate shuttering.

Internal plasters use dolomite lime plasters and low VOC paint on plastered walls.

Plate 4.5

4.2.1.2 Inference

- The spaces are defined based on the context, users and local climate.
- Properly designed masterplan to ensure a sustainable space with services etc.
- The zoning of various spaces and the user movement through the site is public to semi- public to private.
- The climate responsive design strategies, display patterns, use of locally available materials and artisans creates an identity for the project.
- Various required program and area statements based on the artisan craft and its standards is arrived at.

4.2.2 The Ganga Maki Textile Studio, Uttarakhand.

The Ganga maki studio is a collaborative project undertaken by the Japanese designer of Maki studio and was designed by Studio Mumbai - a leading architecture firm in India.

Architect: Studio Mumbai

Client: Chiaki Maki, Rakesh Singh venture

Built Up Area: 1300 Sq. m

Location: Bhogpur, 30 kms from Dehradun,
Uttarakhand.

Purpose: Integrated Weaving Studio

The site is an open land on a hill with thick vegetation. The houses of the workers are around are around the site

Figure 4.7 Location

Figure 4.8 3D Model

ANALYSIS

FUNCTIONAL ANALYSIS

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

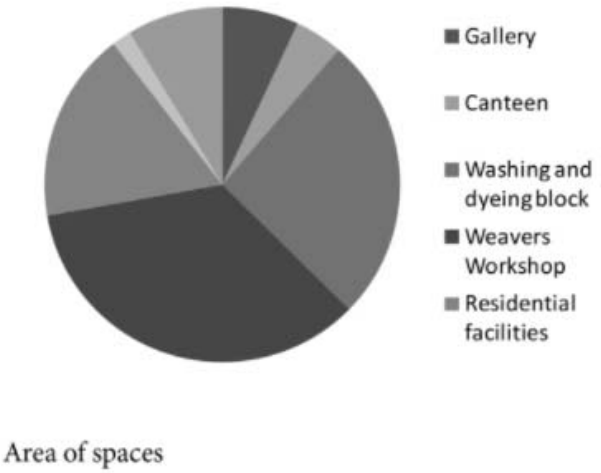


Figure 4.9 Program

Beautifully designed and built in a scenic environment, the spaces are located based on the user groups and their needs to ensure the interaction between man, nature and the built form with outdoor pockets and is a good example of the progressive craft industry.

The 1300 sq. m complex took 4 years to complete and was designed by Bijoy Jain through locally sourced materials and artisans. The studio is a venture by the Japanese textile designer Chia Maki and Rakesh Singh, an entrepreneur. The overall planning of the studio and factory is composed of a series of four L-shaped volumes (Designer studio, gallery, residences, canteen and dye house) arranged in a horse shoe pattern around the courtyard which is the heart of the project with a water trough to reflect the moon.

The majority is built with bricks and lime and is stone pavered. Local plants form landscape elements and bamboo inspired from Japanese architecture was also used as a framework in the studio space.

4.2.2.1 Zoning

- The hierarchy of spaces ascends from most public accessed zones to very private zone.
- The spaces are carefully located based on the user community and the needs, the interaction between man, nature and built form with outdoor pockets.

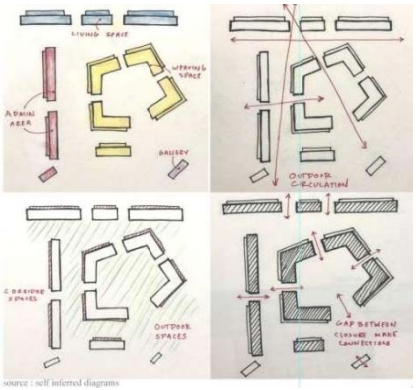


Figure 4.10 Zoning

THE GANGA MAKI TEXTILE STUDIO

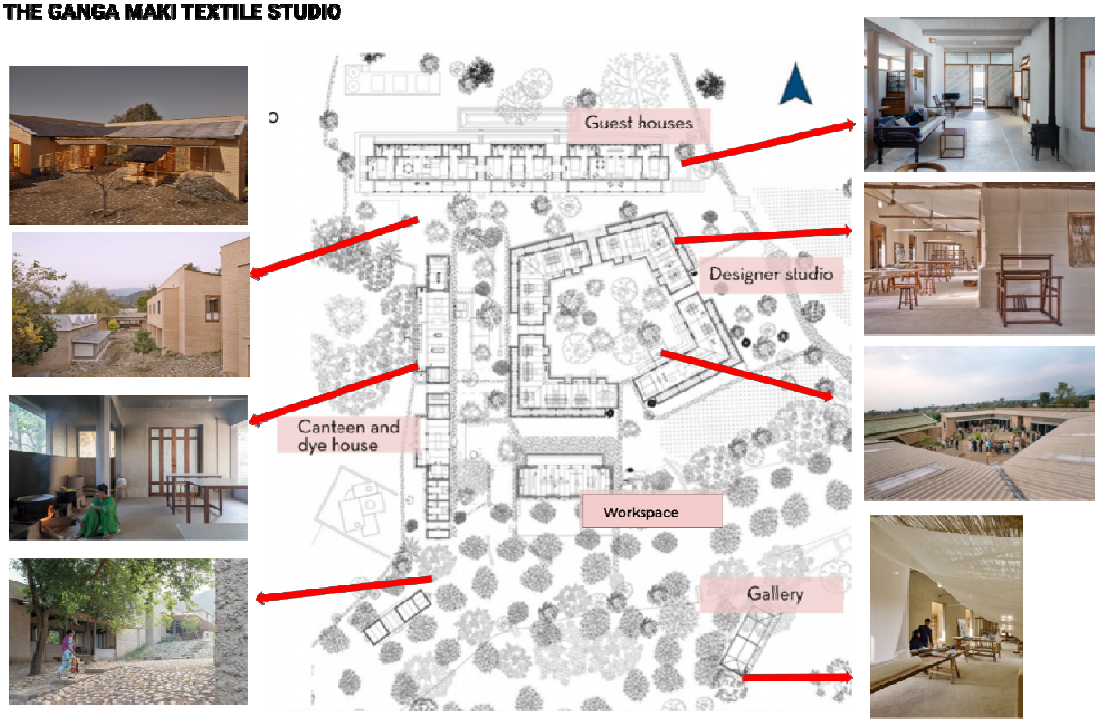


Plate 4.6

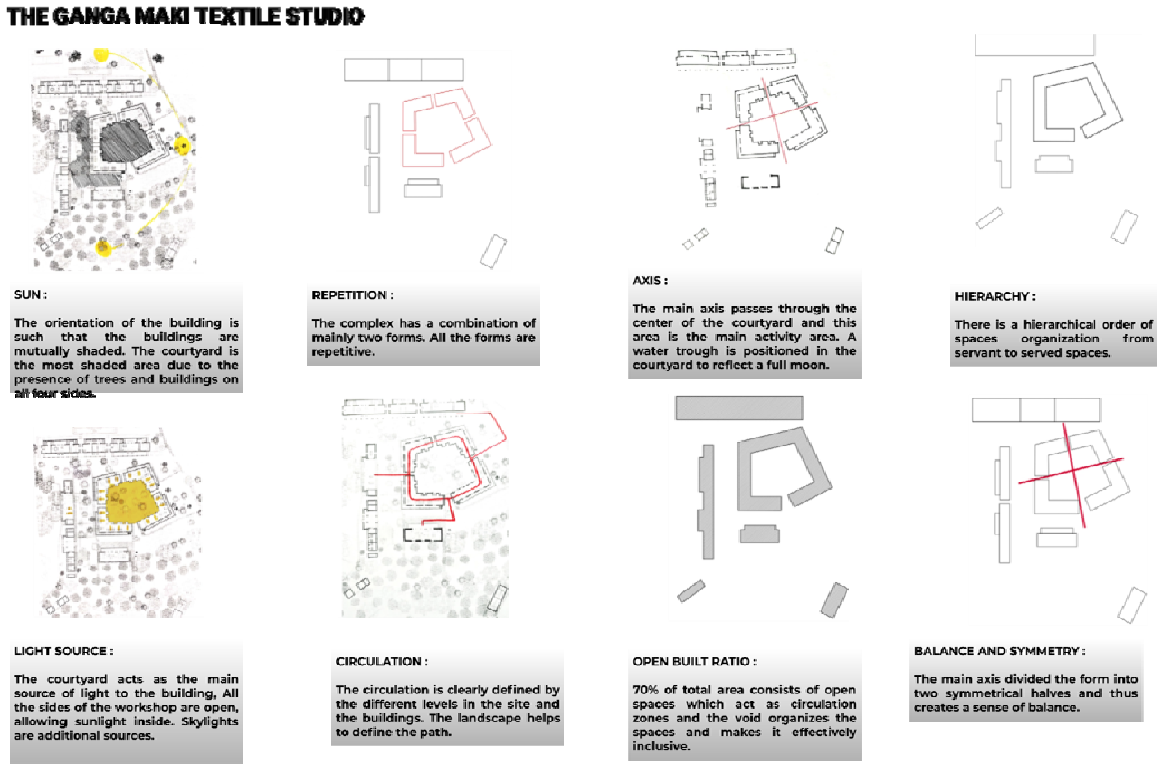


Plate 4.7

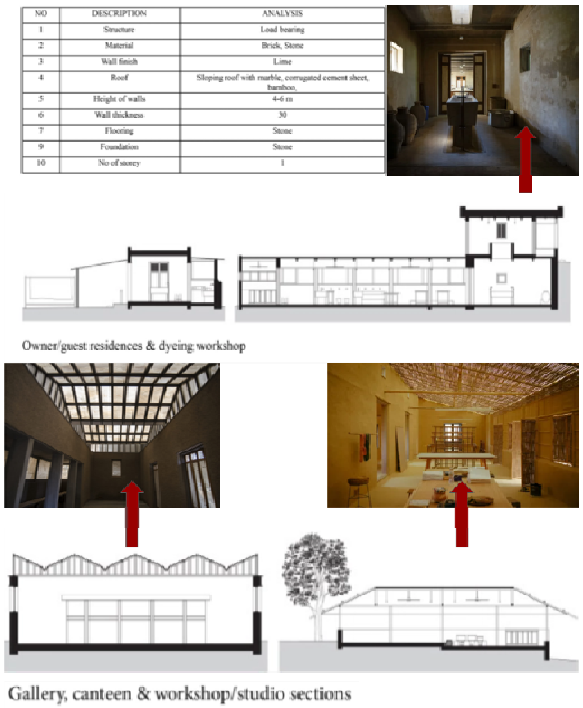


Figure 4.11 Sectional view

4.2.2.2 Inference

- The design is based on the local environment of the weavers and with courtyard as an inclusive design feature.
- The lighting is diffused (optimum for weaving) and the dye house is located separately to avoid fumes and heating.
- The studio space shows how to integrate the weavers and the designers and has space for 16 looms in 4 different rooms to avoid overcrowding.
- Traditional elements of design have been recreated on a contemporary scale to add "identity" and a "sense of place" to the project.

4.2.3 The Handloom School, Maheshwar, Madhya Pradesh

The school was an initiative launched by Women weave in 2015 to help revive the handloom industry of the town. The proposal focusses on the younger age groups between 18 -25 years and equips them with training in weaving and pre-order weaving activities. The project agenda is to create self-made new and own innovative designs. The school also offers 4-month and 1- month courses as well.

Figure 4.12 Location

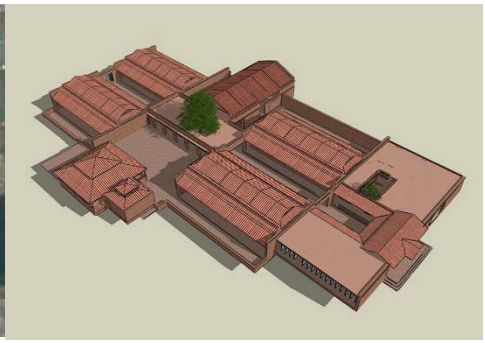


Figure 4.13 model

4.2.3.1 Location

The Handloom school is in Maheshwar, which is a small town in Khargone district in the state of Madhya Pradesh famous for its forts and maheshwar sarees. It lies in the banks of the narmada river with good accessibility from the city in 15mins and has a single site access for all users.

The spatial planning is related to the process of weaving from spinning the thread to the final finishing of product.

The architecture language was inspired by the local traditions of building, pattern of the facility and the functional and socio-cultural parameters of the region.

4.2.3.2 Program

- Studio
- Administration
- Residential dorms
- Recreational outdoor facilities like amphitheatre and parks.
- Dyeing block
- Handloom unit

Figure 4.14 site plan

4.2.3.3 Zoning

- The hierarchy of spaces ascends from most public accessed zones to very private zone.

- The main academic building is at the entrance of the site as it's the most public accessed building. The dye house is located behind theacademic building but detached. The more private areas such as the amphitheatre andthe residential block is towards the rear side of the side overlooking the river.

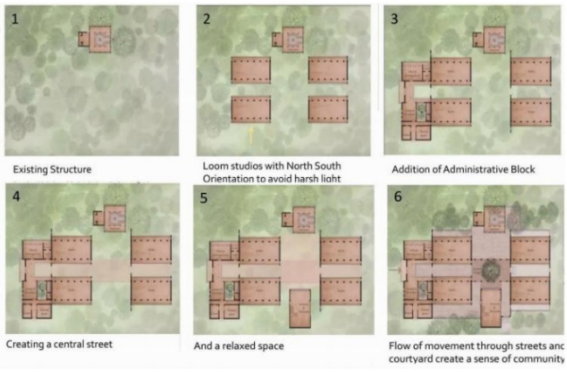


Figure 4.15Design development (Academic block)

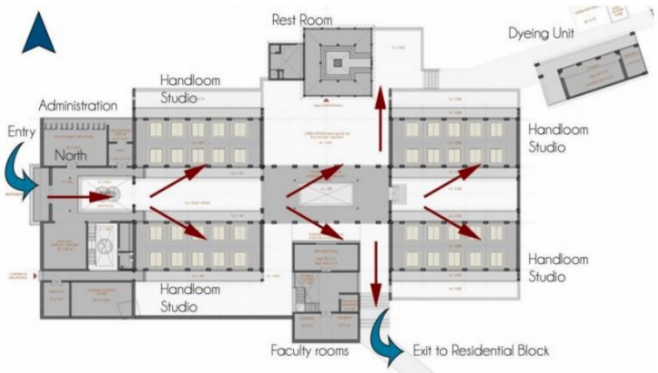


Figure 4.16 Floor plan and circulation of the Handloom school through the Academic block

4.2.3.3 Architectural Planning

- The main building has 4 weaving studios that is used as classrooms.
- These rooms are connected by street like corridors.
- The building is made with locally available burnt bricks and the aesthetics are inspired from the forts of Maheshwar.

- The building is carefully planned based on the amount of light necessary for the studios
  and the ambience it creates for the users.
- Several considerations based on the user groups has been taken to create the flow of the various user groups of artisans---visitors----students.

Figure 4.17 Front Elevation of the handloom school

4.2.3.4 Inference

- Owing to the climatic considerations of the process and its impact, openings should be located only on the north and south walls to allow only diffused light inside the studio space since harsh light makes it difficult to weave.

- Good natural and cross-ventilation is a must for the studios to allow constant air flow throughout to remove any dust or thread particles from the air.

- The dyeing unit is placed separately to avoid the fumes and heat into other usable spaces and the planning is such that it imitates the local clusters and hence the weavers feel at home in the studio.

4.3 UNDERSTANDING PRODUCTION UNIT

- The selected unit is a typical workspace in the skht town where government-maintained artisan groups work and produce the kalamkari products. The production unit is a cluster of covered, semi-covered covered and open spaces. It has 9 units with common kilns, washing and drying yards.

- The unit is typical space but not specifically designed for the artisans to work at and hence the plate below discusses the positives and negatives of the space and its perceptions.

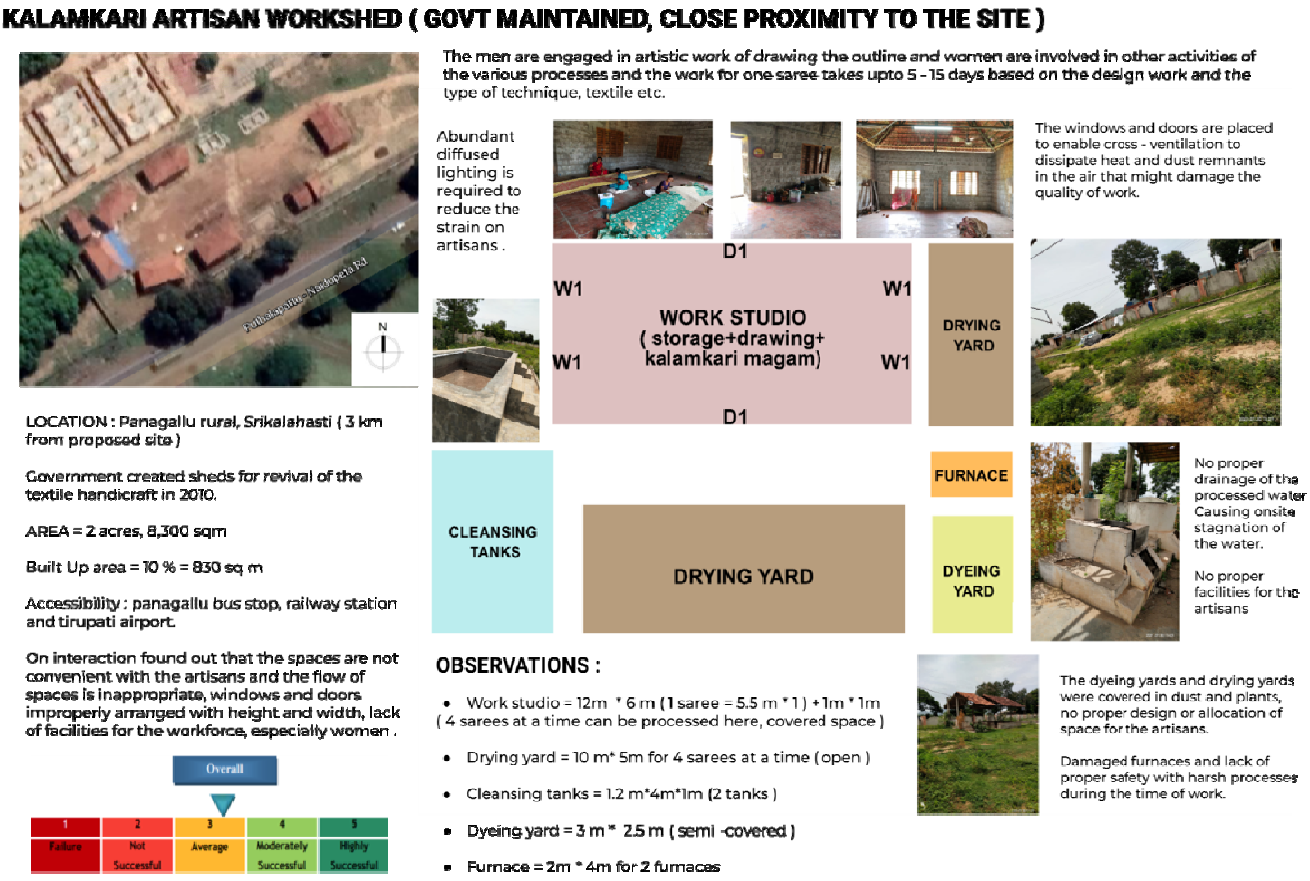


Plate 4.8

4.4 UNDERSTANDING THE ACADEMIC UNIT

4.4.1 IIHT, Kannur

The Indian Institutes of Handloom Technology are a group of government run public institutes of higher education in the handloom sector. There are six institutes in central sector and four in State sector.

All IIHTs provide a three-year Diploma in Handloom and Textile Technology. The Varanasi and Salem campuses also offer a one and half year Post Diploma in Textile Processing.

4.4.1.1 Courses offered in the institute: -

- For diploma of handloom technology -75 seats available -6semester course
- For Post diploma of handloom technology - I O seats - 3 semesters
- Bachelors in Handloom Technology -50 seats -8 semesters

4.4.1.2 Facilities offered in the institute: -

- Classrooms equipped with LCD and Computers
- Faculty rooms
- Weaving Labs with at least 20 looms
- Dyeing and printing lab -Textile testing lab
- Computer Aided Textile Design Lab
- Computer colour matching lab
- Computer lab with 75 computers
- R & D lab for product developments
- Library - Workshops
- Display Halls
- Administrative wing with administrative office and examination cell

Figure 4.18Various IIHT

For providing opportunities to the upcoming generations, it is important to educate them of the technology presently used and provide opportunities to upgrade these technologies. The structure of IIHT campus and the SVITSA structure is studied to understand the spaces necessary, course to offer and NIFT Kannur is studied to understand the area requirements of the space.

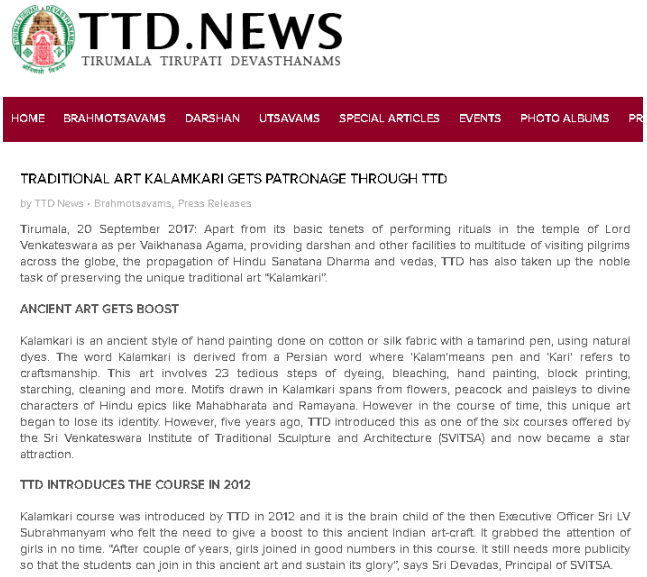
4.4.2S.V. Instituteof Traditional Sculpture and Architecture

Location: Chennai - Anantapur Highway, Srinivasa Nagar, Dwaraka Nagar,
Tirupati, Andhra Pradesh

BRANCHES / DEPARTMENTS:

1. Temple Architecture
2. Stone sculpture
3. Sudai sculpture
4. Metal sculpture
5. Wood sculpture
6. Traditional painting

It also provides all the facilities for boarding and lodging during the tenure of the course, with the whole expenditure being met by the management of T.T.D., with a view to promote the Indian art and culture which is a desideratum.



TTD.NEWS
TIRUMALA TIRUPATI DEVASTHANAMS

HOME BRAHMOTSAVAMS DARSHAN UTSAVAMS SPECIAL ARTICLES EVENTS PHOTO ALBUMS PR

TRADITIONAL ART KALAMKARI GETS PATRONAGE THROUGH TTD

by TTD News - Brahmotsavams, Press Releases

Tirumala, 20 September 2017: Apart from its basic tenets of performing rituals in the temple of Lord Venkateswara as per Vaikhanasa Agama, providing darshan and other facilities to multitude of visiting pilgrims across the globe, the propagation of Hindu Sanatana Dharma and vedas, TTD has also taken up the noble task of preserving the unique traditional art "Kalamkari".

ANCIENT ART GETS BOOST

Kalamkari is an ancient style of hand painting done on cotton or silk fabric with a tamarind pen, using natural dyes. The word Kalamkari is derived from a Persian word where 'Kalam'means pen and 'Kari' refers to craftsmanship. This art involves 23 tedious steps of dyeing, bleaching, hand painting, block printing, starching, cleaning and more. Motifs drawn in Kalamkari spans from flowers, peacock and paisleys to divine characters of Hindu epics like Mahabharata and Ramayana. However in the course of time, this unique art began to lose its identity. However, five years ago, TTD introduced this as one of the six courses offered by the Sri Venkateswara Institute of Traditional Sculpture and Architecture (SVITSA) and now became a star attraction.

TTD INTRODUCES THE COURSE IN 2012

Kalamkari course was introduced by TTD in 2012 and it is the brain child of the then Executive Officer Sri LV Subrahmanyam who felt the need to give a boost to this ancient Indian art-craft. It grabbed the attention of girls in no time. "After couple of years, girls joined in good numbers in this course. It still needs more publicity so that the students can join in this ancient art and sustain its glory", says Sri Devadas, Principal of SVITSA.

Figure 4.19Article clipping

SVITSA offers two level courses.

- One is the Certificate Course for eighth class- passed students
- other is the Diploma Course for tenth class-passed students.

- The Certificate Course is offered in Kalamkari designing.
- This course is of two years.
- 4 semester courses
- Strength: 10 students
- No fees

4.4.3NIFT, Kannur

NIFT Kannur is in Dharamshala in Kannur district of Kerala. The campus is situated in 10 acres of land and was designed by Indigo Architects.

The campus building changes from low rise to high rise gradually through radial increase in floors. The main facilities are located around a 40 m courtyard.

Figure 4.20NIFT Campus

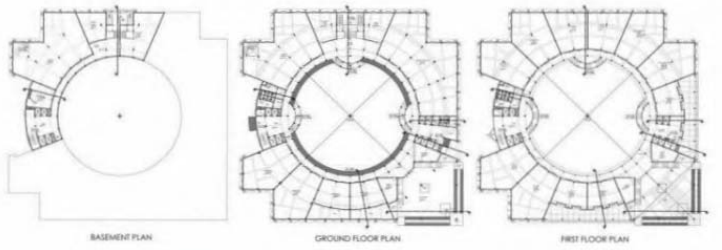


Figure 4.21NIFT Floor plans

Figure 4.22 art room & classroom

Figure 4.23 Sewing room & Pattern making room

PARAMETER	NIFT KANNUR
Parking Space	1 car for every 300 sq.m
Library	0.5sq.m per person
Material Library	0.3 sq.m/person
Auditorium	0.7sq.m/person
cafeteria	1.3 sq.m /person
Classrooms	l.2sq.m/person
Design Studio	3.0sq.m/person
Pattern Making Lab	4.5sq.m/person
Weaving Lab	6.0sq.m/person
Textile Testing Lab	3.0sq.m/person
Dyeing & Printing	4.5sq.m/person
CAO Lab	1.6sq.m/person
Toilets	1 forevery8

Table 4.1 Parameters of NIFT, Kannur

For providing opportunities to the upcoming generations, it is important to educate them of the current skills, techniques and technologies and provide forums to create new technology. In the process of revival, the history and knowledge of the artform must be passed on to future generations to keep the community alive and this is focussed through education. A course of two years with a bare min. strength of 10 students is provided in the proposal.

The structure of IIHT to understand the spaces necessary, the background of svitsa to understand the course objective and contextual detail, NIFT to understand the area requirements of spaces.

CHAPTER 5

DATA COLLECTION

5.1 STANDARDS

GENERAL SPACE REQUIREMENTS AND SERVICES (M.A & U.D. Department, TUDA, AP Bye Laws-2017- Chapter-iv)

Space requirement for different parts of building of different sizes:

(a) Plinth:

(i) Main Building: The height of the plinth shall be not less than 450mm from surrounding ground level.

(ii) Interior Courtyards, Covered Parking Spaces and Garages: Every interior courtyard shall be raised at least 150mm above the determining ground level and shall be satisfactorily drained either by gravity or by mechanical means.

(b) Boundary wall height:

(i) In industrial buildings of workshops and factories, electric sub-stations, transformer stations, institutional buildings like sanitaria, hospitals and educational buildings like schools, colleges, including hostels, and other public utility undertakings and strategically sensitive buildings a height up to 2.4m may be permitted. (ii)Side walls and back wall: 2.4m from ground level to be solid (stone/brick/masonry etc.).

(C) Capacity of exits:

The capacity of exits (staircase, ramps and doorways) indicating the number of which persons could be safely evacuated through a unit exit width of 50cm.

TABLE - 7
Number of Occupants per unit Exit width

S. No.	Occupancy	Number of occupants		
		Stairways	Ramps	Doors
(A)	(B)	(C)	(D)	(E)
1	Residential/Educational/Institutional	25	50	75
2	Assembly	40	50	60
3	Business/Mercantile/Industrial/Storage	50	60	75

TABLE - 5
Minimum Size, Width and Height of different components of residential premises

S. No.	Components of Building	Minimum Requirement for a Dwelling Unit up to 50sq.m			Minimum Requirement for a Dwelling Unit above 50sq.m		
		Area (sq. m)	Width (m)	Height (m)	Area (sq. m)	Width (m)	Height (m)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
1	Habitable Rooms	7.5	2.1	2.75	9.5	2.4	2.75
2	Kitchen	3.3	1.8	2.75	4.5	1.8	2.75
3	Pantry	-	-	-	3.0	1.4	2.75
4	Kitchen with Dining area	7.5	2.1	2.75	7.5	2.1	2.75
5	Bathroom	1.2	1.0	2.2	1.8	1.2	2.2
6	WC	1.0	0.9	2.2	1.2	0.9	2.2
7	Combined Bath & WC	1.8	1.0	2.2	2.8	1.2	2.2
8	Door ways (Habitable rooms)	-	0.9	2.1	-	0.9	2.1
	(Kitchen, Bath, WC)	-	0.75	2.0	-	0.75	2.0
9	Staircases	-	1.0	-	-	1.0	-
10	Garage	Two-wheeler garage: 1 x 2 m			18.0	3.0	2.4
11	Store room	Area and width of the store has no restriction, however Minimum Height has to be 2.20mt. If the area of the store is 9.5sqm and above, the light and ventilation clause shall also apply.					
12	Projections	Permitted within the plot boundary, up to 0.75 m width. No portions of any projection whatsoever shall project outside the plot boundary.					

1. Provided that the minimum clear head way under any beam shall not be less than 2.4 m.

2. Maximum permissible height for building component mentioned above is 4.8m. However if the architect desires that more height of any building component is necessary for the functional design even to the extent of double height (to be counted twice in FAR) in the project, the same may be permitted subject to the overall permissible height of building/structure.

Plate 5.1

BUILDING HEIGHTS:

1. Provided that the minimum clear head way under any beam shall be not less than 2.4 m.

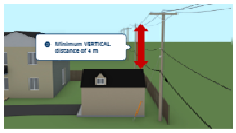
2. Maximum height permissible for all the components of the building mentioned above is 4 m. 3. The maximum height of building shall not exceed 1.5 times the width of road abutting plus the front open spaces.

TABLE – 17
Minimum Setbacks and Height Permissible

Sl. No.	Plot Size (in Sqm) Above – Up to	Parking provision	Height (in m) Permissible Up to	Building Line or Minimum Front Setback to be left (in m) Abutting Road Width					Minimum setbacks on remaining sides (in m)
				Up to 12 m	Above 12m & up to 18m	Above 18m & up to 24 m	Above 24m & up to 30m	Above 30m	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
11	Above 2500	Stilt + 2 or more Cellar floors	7	3	4	5	6	7.5	5.0
			15	3	4	5	6	7.5	6.0
			18**	3	4	5	6	7.5	7.0

Chapter 7 : Railways guidelines

- The distance between the Railway Property Boundary and the edge of the building shall be 30m as per Indian Railways Works Manual or as per No Objection Certificate (NOC) given by the Railway Authorities.



GENERAL SPACE REQUIREMENTS AND SERVICES (M.A & U.D. Department, TUDA, AP Bye Laws-2017- Chapter-iv)

Plot split up for various typologies in the proposal

TABLE – 13
Category wise Minimum Size of Plots

S. No.	Category	Minimum Plot Size (Sq. m)
(A)	(B)	(C)
1	Cinema Theatre / Convention Center/Game Center/ Kalyana Mandapam / Marriage hall / Social clubs and amenities	3000
2	Educational Institution	
a	Primary/Upper Primary School	2000
b	High School / Residential School	6000
c	Junior college	4000
d	Degree College	6000
e	Technical Educational Institution	10000
3	Group Development Scheme	4000
4	Hotel, Conference Hall	2000
5	LPG Storages	500
6	Multiplex Complex	3000
7	Multi storey Car Parking	1000
8	Nursing homes	300
9	Office Buildings	500
10	Petrol pumps/Filling Stations	500
11	R & D Lab	1500
12	Row Type Housing / Row Type Shopping Precincts /Cluster Housing	1000
13	'U' Type Commercial Building	2000
14	Others	As per required standards/as prescribed by the Competent Authority

Plate 5.2

GENERAL SPACE REQUIREMENTS AND SERVICES (M.A & U.D. Department, TUDA, AP Bye Laws-2017- Chapter-iv)

Means of Access:

1. *Main entrance to the premises* - not less than 6m.
2. If archway is provided, height of the archway shall not be of less than 5m in height.

TABLE – 14
Minimum Abutting Existing Road Width Required

Category	Type/Use of Building Plot permissible	Minimum abutting existing road width required (in meters)
(1)	(2)	(3)
)	Institution	12m

Doorways :

1. Doorways for bathrooms, water closet, stores etc. shall be not less than 0.75m wide.
2. Doorways shall not be less than 200 cm in case of assembly buildings.
3. Doorways shall be not less than 2m in height.
4. the required width of stairway or landing not less than 0.9m.

SL.NO	CATEGORY	WIDTH	HEIGHT
1.	MAIN DOOR	7.5m - 1.2m	2.1m
2.	WASHROOM DOOR	6m - 8m	1.7m - 1.95
3.	SINK	0.4m - 0.6m	0.7m - 0.85m
4.	DISTANCE b/w 2 SINKS	0.3m - 0.5m	–

TABLE – 9
Minimum Width Provisions for Passageway/Corridors

S. No.	Type of Building	Minimum width (m)
(A)	(B)	(C)
3	All Other Buildings including Hotels	1.50
4	Assembly Buildings like Auditoria, Theatres and Cinemas	2.00

Staircase Requirements :

1. For buildings such as assembly, business, education, hazardous, industrial, institutional, Mercantile Building, High Rise Building, Multi Level Car Parking Building, Office Building (premises), Special Building, Storage Buildings and Wholesale Establishment, there shall be minimum of two staircases
2. Single staircase may be considered for Non-high-rise residential, educational, business or group housing society where floor area does not exceed 500 sq. m. and height of the building does not 57 exceed 18m (including Stilt Floor)

TABLE - 8
Minimum Width Provisions for Stairways

S. No.	Type of Building	Minimum width for each stairway (m)
(A)	(B)	(C)
3	Educational Buildings like Schools, Colleges	1.50
5	Institutional Buildings like Hospitals etc.	2.00
6	Assembly Buildings like Auditoria, Theatres and Cinemas	2.00

Minimum Width Provisions for Stairways :

1. The minimum width of treads : > 25 cm for residential building : > 30 cm for others building
2. The maximum height of rise : <19 cm. for residential building : < 15 cm for other building
3. Minimum height of handrails : >100 cm Maximum no. rise per flight : < 12

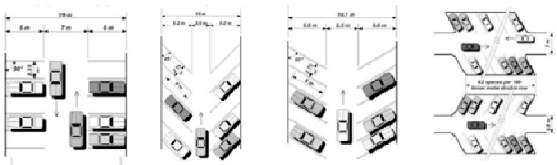
Plate 5.3

Ramps

1. A ramp when provided should not have a slope greater than 1 in 20 or maximum of 1 in 12 for short distance up to 9000 mm.
2. A ramp shall have handrails on at least one side, and preferably two sides, that are 900mm high.
3. The maximum gradient of a ramp approach intended for the Differently Abled persons shall not exceed 1 in 10 and shall be finished with approved non-slippery materials. The minimum width of the ramp shall be 1.2m and provided with handrails of height not less than 80cm.

TABLE - 11
Parking Area to be provided in All Buildings

Sl. No.	Category of building/activity	Parking area to be provided as percentage of total built up area	
		Municipal Corporations & Selection Grade, Special Grade Municipalities	First Grade, Second Grade Municipalities, Nagar Panchayats and Gram Panchayats in Master Plan areas and in Development Authority Areas
(A)	(B)	(C)	(D)
1	Multiplexes	60	50
2	Information Technology Enabling Services Complexes, Shopping Malls (above 4000sq. m),	50	40
3	Business buildings, Cinema halls, Hotels, kalyana Mandapams, Lodges, Offices, Other Commercial buildings, Restaurants & High-Rise Buildings / Complexes of Non Residential Category	30	25
4	Colleges, Godowns, Hospitals, Industrial buildings, Institutional buildings, Residential Apartment Complexes, Schools, Educational Buildings & Other Buildings	20	20



GENERAL SPACE REQUIREMENTS AND SERVICES (M.A & U.D. Department, TUDA, AP Bye Laws-2017- Chapter-iv)

Parking stall size based on the vehicles and the turning required to be provided :

type of vehicle	length (m)	width (m)	height (m)	turning circle radius (m)
motorcycle	2.20	0.70	1.00 [2]	1.00
car				
- standard	4.70	1.75	1.50	5.75
- small	3.60	1.60	1.50	5.00
- large	5.00	1.90	1.50	6.00
truck				
- standard	6.00	2.10	2.20 [1]	6.10
- 7.5t	7.00	2.50	2.40 [1]	7.00
- 16t	8.00	2.50	3.00 [1]	8.00
- 22t (+16 t trailer)	10.00	2.50	3.00 [1]	9.30
refuse collection vehicle				
- standard 2-axle vehicle (4 x 2)	7.64	2.50	3.30 [1]	7.80
- standard 3-axle vehicle (6 x 2 or 6 x 4)	1.45	2.50	3.30 [1]	9.25
fire engine	6.80	2.50	2.80 [1]	9.25
furniture van (with trailer)	9.50 (18.00)	2.50	2.80 [1]	9.25
standard bus I	11.00	2.50 [3]	2.95	10.25
standard bus II	11.40	2.50 [3]	3.05	11.00
standard vehicle - bus	11.00	2.50 [3]	2.95	11.20
standard vehicle - articulated bus	17.26	2.50 [3]	4.00	10.50-11.25
standard articulated truck	18.00	2.50 [4]	4.00	12.00 [1]
tractor		2.50 [4]	4.00	
trailer		2.50 [4]	4.00	
max. values of the road regulations				
2-axle vehicle (4 x 2)	12.00	2.50 [4]	4.00	12.00
vehicle with more than 2 axles	12.00	2.50 [4]	4.00	12.00
tractor with semi-trailer	15.00	2.50 [4]	4.00	12.00
articulated bus	18.00	2.50 [4]	4.00	12.00
trucks with trailer	18.00	2.50 [4]	4.00	12.00

Plate 5.4

GENERAL SPACE REQUIREMENTS AND SERVICES (M.A & U.D. Department, TUDA, AP Bye Laws-2017- Chapter-iv)

SANITATION

TABLE-A.1 Per Capital Water requirement for various Occupancies/Uses

Sl.No	Type of Occupancy	Consumption per head per day (in lt.)
1.	Residential	
	a) In living units	135
	b) Hostels	135
	c) Hotels with lodging accommodation(per bed)	180
	d) Hotels(5 Star and above)	340
2.	Educational	
	a) Day Schools	45
	b) Boarding Schools	135
3.	Institutional (Medical Hospitals)	
	a) No. of beds not exceeding 100	340
	b) No. of beds exceeding 100	450
	c) Medical quarters and hostels	135
4.	Assembly- Cinema theatres, auditoria, etc. (per seat accommodation)	15
5.	Government or Semi public business	45
6.	Segregated toilets facilities for Visitors in public Buildings	
	a) Each use of toilet (including g washing hands and floors)	7
	b) Flushing urinals	0.20
7.	Mercantile(Commercial)	
	a) Restaurants (per seat)	70
	b) Other business building	45

TABLE-A.11 The recommended enclosure-sizes for different facilities at visitor's toilets

Sl.No.	Description	Optimum (mm)	Minimum (mm)*
1	Water Closet enclosures	900X1200	750X800
2	Urinals (divided by partition walls)	575X675	500X600

Sl.No.	FITMENTS	FOR MALE PUBLIC	FOR FEMALE PUBLIC
1.	Water closets	• 1 per 200 persons upto 400 persons. • For over 400 persons, add at the rate of 1 per 250 persons.	• 1 per 100 persons upto 200 persons. • For over 200 persons, add at the rate of 1 per 150 persons.
2.	Ablution taps	1 in each water closet	1 in each water closet
3.	Urinals	1 for 50 persons	-
4.	Water basins	1 for every 200 persons	1 for every 200 persons
5.	Drinking water fountain	1 for every 100 persons	1 for every 100 persons

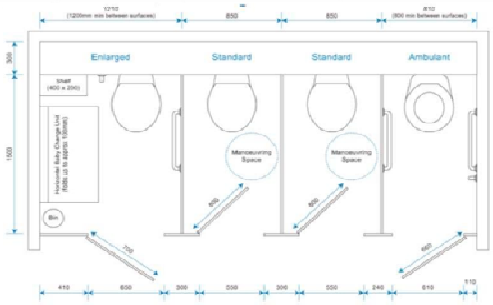


TABLE - 10
Size of Ventilation Shaft

S. No.	Building Height (m)	Size of ventilation shaft (sq. m)	Minimum size of shaft (m)
(A)	(B)	(C)	(D)
1	Up to 10	1.0	1.0
2	Up to 12	3.0	1.2
3	Up to 18	4.0	1.5
4	Up to 24	6.0	1.8
5	Above24	9.0	3.0

Plate 5.5

As per NATIONAL BUILDING CODE

Type of Rooms	Carpet Area Requirement in sqm. / student	
Classification of Size	Minimum	Desirable
Class rooms for 15-20 students	1.3	1.5
Class rooms for 30-40 students	1.2	1.4
Class rooms for 60 students	1.1	1.3
Drawing / examination halls for 60 students	2.5	2.8

Minimum one number drawing hall of size 175 sq.m upto 240 students in first year
Minimum two number drawing hall of size 175 sq.m more than 240 students

Number of classrooms required for the college shall be equal to

$$= \frac{\text{Total sanctioned intake for all the years}}{60} \times 0.75$$

Number of tutorial rooms required for the college shall be equal to

$$= \frac{\text{Total sanctioned intake for all the years}}{60} \times 0.5$$

TOILET BLOCK

Education Building : 10 sq.m. for each unit of 100 students
Hostel : 75 sq.m. for each unit of 120 students

HOSTEL BLOCK

College is located within 20 km. of a large city:
Accommodation for 20% of bays and 50 % of girls on enrollment
Other locations :
Accommodation for 50% of bays and 100 % of girls on enrollment

	Carpet area (sq.m)
Single room	9
Triple seated room	20

Plate 5.6

- The collected data standards are from the National building code and TUDA AP bye laws 2017 - chapter iv.

- The basic requirements for an institutional building are arrived from these and the basic requirements for the proposal is arrived from research study, case studies and live studies on the site region.

CHAPTER 6–PROGRAM BRIEF

6.1 INTRODUCTION TO THE PROPOSAL

6.1.1 Program flow of the various process and users in the textile craft industry of Srikalahasti

- Based on the literature and live interaction with the artisan community at a minimal level and on research based on the textile industry of India, the flow of the program for the Textile Handicraft of Kalamkari has been derived.

- The project is primarily aimed at a government generated and funded proposal to preserve and promote the handicrafts of the State of Andhra Pradesh.

- Several NGO organizations like DWARAKA (Development of Weavers and Rural Artisans in Kalamkari Art) have already initiated self-help group societies and is raising funds to help the artisan group.

- The flow of the proposal aims at the amalgamation of space, culture and education to promotes the craft and educate the future designers and train them into the needs of the contemporary market with new innovative branching from the traditional style.

- The various target groups of the project include

1. Artisans
2. Supporting labours
3. Students
4. Researchers
5. Designers
6. Tourists

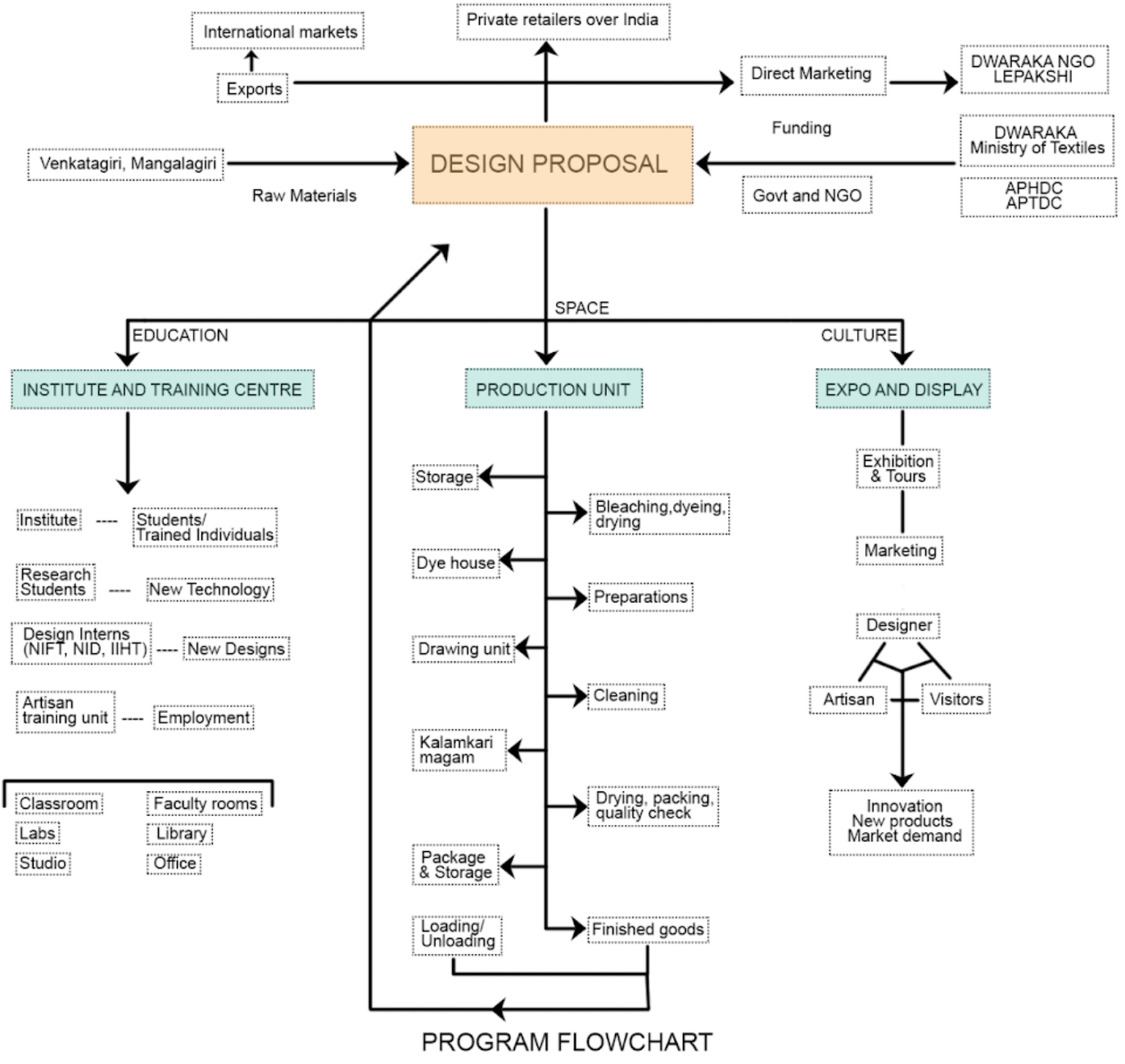


Figure 6.1 Program flowchart

6.2 PRELIMINARY AREA REQUIREMENTS

MAIN ACTIVITIES	SUB- ACTIVITIES	AREA	REFERENCE AREA
	raw material storage	60*2 = 180 sq m	6 sm / unit raw material
	drying yard	100 * 2= 200 sq m	10 sqm/ saree
	sketching studio	300 sq m (15 no's)	15sq m/ saree
	washing and furnace yard	50 sq m (5 no's)	10 sq m/ saree
PRODUCTION UNIT	kalamkari 35icke studio	300 sq m (15 no's)	15 sqm/ saree
100 artisans working at a time	contemporary product design studio	150 sq m	
10-12 saree/ day	packing ans storage	200 sq m	
	toilets	wc = 5+ 2 urinal = 5 35icket35 = 40 sq m	1.5sq m/ wc 1sq m/ urinal

Table 6.1 Area Requirements

MAIN ACTIVITIES	SUB- ACTIVITIES	AREA	REFERENCE AREA
	classroom (20 students)	70* 2 = 140 sq m	1.5 sqm/ person
	faculty rooms and research (5+2)	90 sq m	1.5 sqm/ person
	dyeing and textile lab (20 users)	90 sq m	4.5 sq m/ person
	design lab (20 users)	60 sq .m	1.6 sq m/ person
	R & D lab (10 users)	50 sq m	1.6 sq m/ person
INSTITUTE AND TRAINING CENTRE	library (30 -35 users) (material+ book+ reading room)	150 sq m	1.4 sqm/ person 1.7 sqm/ person
	Design studio (20 users)	80 * 2 = 160 sq m	4 sq m/ person
total of around 100 people	cafetaria	40 sq m	1 sq m/ person
	training unit (20– 30 users)	300 sq .m	4 sq m/ person
	toilets	wc = 12+ 6 urinals = 10	1.5sq m/ wc 1sq m/ urinal

Table 6.2 Area Requirements

MAIN ACTIVITIES	SUB- ACTIVITIES	AREA	REFERENCE AREA
	gallery spaces (100 users at a time)	200 sq m/ gallery	1.2 sqm/ person
	Info centre (2 staff))	15 sq m	
	reception + lobby + waiting area	50 sqm	
EXHIBITION AND EMPORIUM	workshops (10 users)	100 * 2 = 200 sq m	4 sqm / person
	expo / mela (permanent and temporary)	1000 sq m	1.5 sqm / person (max of 500 people)
	storage	100 sqm	
	toilets	wc = 16 + 6 urinals = 10	1.5sq m/ wc 1sq m/ urinal

Table 6.3 Area Requirements

MAIN ACTIVITIES	SUB- ACTIVITIES	AREA	REFERENCE AREA
	reception + waiting lounge	35 sq m	
	VIP lounge	40 sq m	
	conference room (15 users)	50 sq m	
	staff room + lounge	30 sq m	
ADMINISTRATION	directors office	30 sq m	
	managers room	20 sq m	
	press room	40 sq m	
	record section	40 sq m	
	toilets	wc = 3+2 urinal = 5 36icket36 = 40 sq m	1.5sq m/ wc 1sq m/ urinal
	DWARAKA office APTDC 36icket36l room	60 sq m	

Table 6.4 Area Requirements

MAIN ACTIVITIES	SUB- ACTIVITIES	AREA	REFERENCE AREA
	students hostel facility ☹ 50 users) 2 sharing room = 25 sq m with bathroom	300 sq m 20 girls =200 sq m 20 boys = 100 sq.m	
	single room with (10- 15) bathroom = 12 sqm	100 sq m male – 50 sqm female 50 sq m	
ACCOMODATION	Intern stay	50 sq m	
	faculty (5= 1:8) and artisan quarters	200 sq m	
	guest house for stakeholders and visitors	300 sq m	

Table 6.5 Area Requirements

ALLIED ACTIVITIES	SUB- ACTIVITIES	AREA	REFERENCE AREA
restaurant + kitchen	300 sq m		1.2 sqm / person
37icket counter	10 sq m		
security	10 sq m		
amphitheatre	300 sq m		
DEWARTS unit + farm	2000 sq m		
parking			
services			

Table 6.6 Area Requirements

Based on Andhra Pradesh rules, NBC and research study from textile-based colleges like NIFT and IIHT

CHAPTER 7

SITE STUDY AND ANALYSIS

7.1 SITE JUSTIFICATION AND FEASIBILITY

7.1.1 About

Location: Srikalahasti, Andhra Pradesh
District: Chittoor
Site area: 18 acres
Climate: Hot and Humid
Govt type: Municipality
Area of town: 24.50 sq. km
Population: approx. 80,056 people (2011)
Proposal: Revival of the Kalamkari artisan community of Srikalahasti

Figure 7.1District map

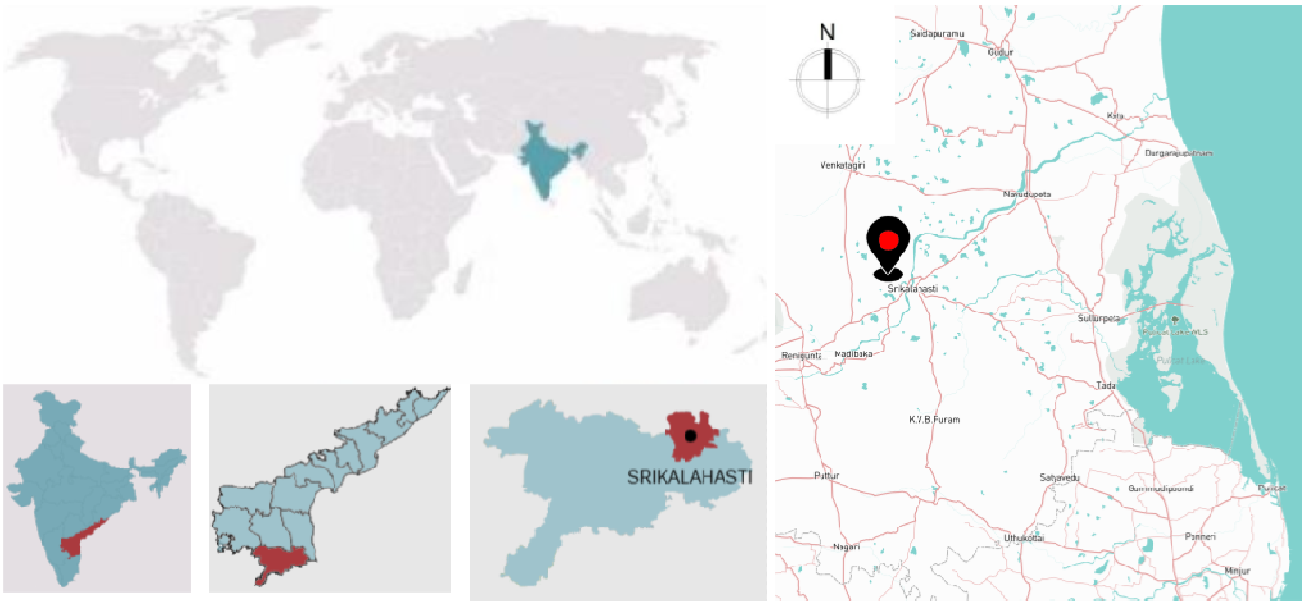


Figure 7.2 Location map

- Kalamkari of mythological themes is practiced in Srikalahasti temple town popularly known as " **Dakshin Kailash**" in the Chittoor district of Andhra Pradesh, India.

- The kalamkari style of Srikalahasti is the ancient practice of hand painting and dyeing techniques.

- The town house around 300 families of artisans practising this artform with new designs and innovation into the contemporary market.

7.1.2Catchment area | Justification and feasibility

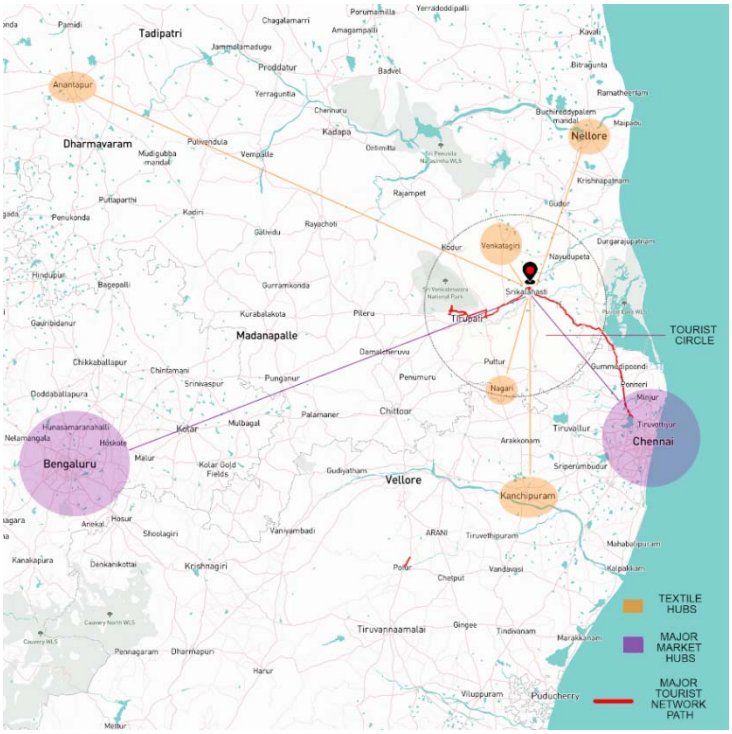


Figure 7.3 Catchment area

- The site is easily accessible from major urban centres of AP with good transportation connections and other infrastructure facilities.

- The site by itself is a pilgrimage town and is surrounded by pilgrimage centres that concentrates the tourist population in vicinity- who form one of the major user groups of the project and hence it is an added advantage of the prime location.

- Also, the selected site is only 10 km from the core of Srikalahasti town, major centre for Kalamkari with good infrastructure facilities and connectivity with other states too.
- Another important reason is the mapping of neighbouring villages from where the kalamkari wage workers hail from and the raw material centres for this textile handicraft.

7.1.3PROPOSED MASTER PLAN LAND USE 2040 By TUDA

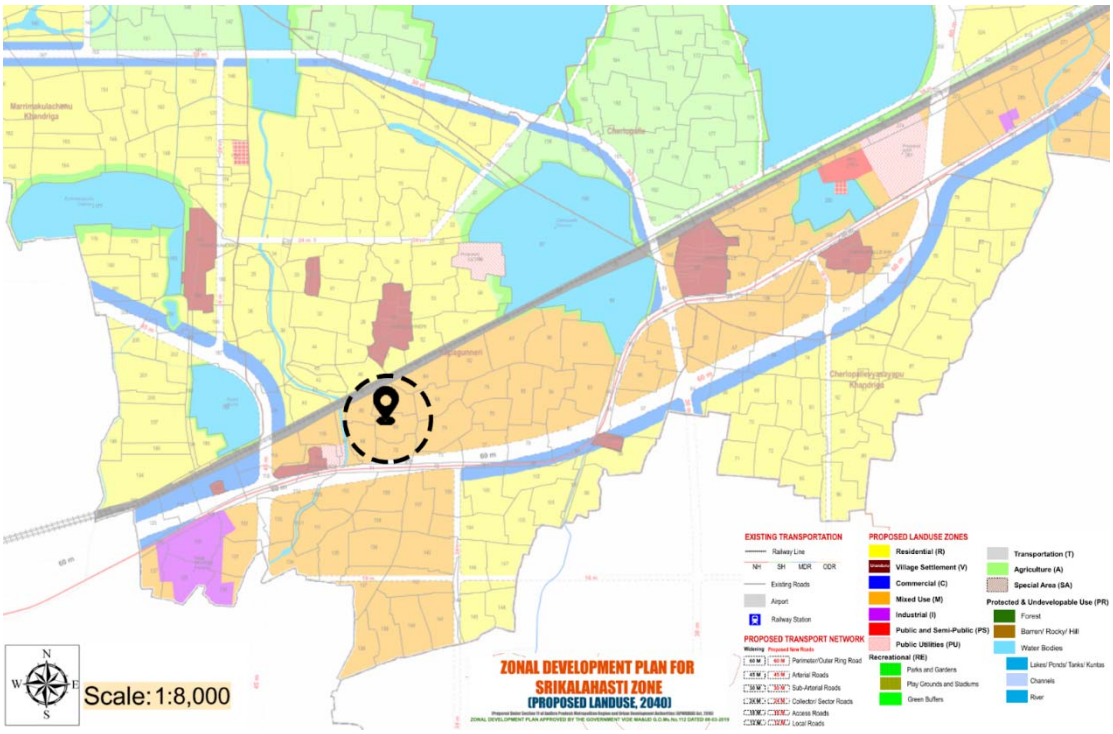


Figure 7.4 Proposed Master Plan land use 2040 by TUDA

SURROUNDING LAND TYPE

- The land use of the site is a mixed-use parcel with a waterbody canal running adjacent the chosen site.
- The surrounding land use comprises mostly of mixed use and residential use with the areas around the site in immediate proximity are either vacant or used as farmlands.

GENERAL FEEDBACK OF THE PROJECT

- The surrounding region has positive outcomes with introduction of the project there for the neighbouring villages and will also result in development of various infrastructure facilities in the rural end along the Highway.

FEASIBILITY

- Presence of abundant water in the close proximity for the successful manufacture of this artform, along the main tourist network of Andhra Pradesh.

7.1.4 WHY??

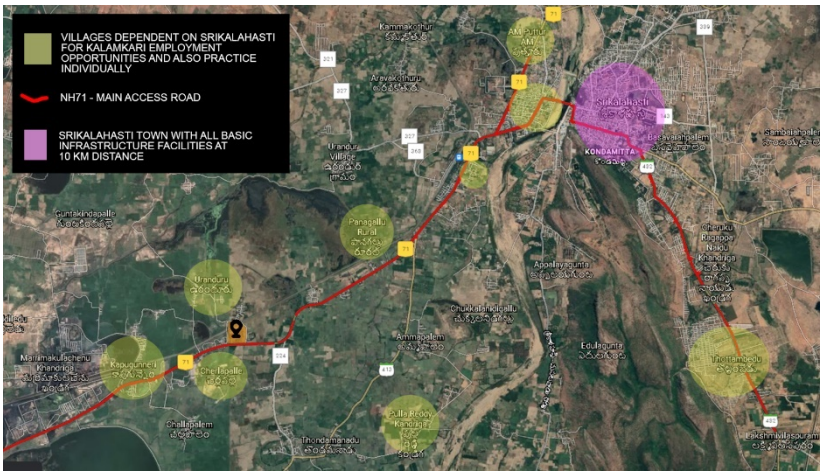


Figure 7.5 Context map

Figure 7.6 Connectivity

- Prestigious educational institutions (IIT, IISER), Industrial Hubs (Sri city) are located near the proposed site.
- Tirupati and Srikalahasti form major pilgrimage centres and heritage places in the country and the world.
- The kalamkari and wood craft communities reside in close proximity in dilapidated state at a radius of 5 km from the proposed site.

7.1.4.1 Neighborhood context

- Temple - 11 min 5 km
- Tirupati- 42 min 32 km
- Nearest bus stop- 3 min 1.8 km
- Skht arch- 6 min 3 km
- MGM Hospitals - 16 min 7.4 km
- Fire station - 12 min 5.5 km
- SKIT college - 10 min 4.5 km
- Haritha hotel, APTDC office - 2 min 1.5 km

LOCATION - Srikalahasti rural

Srikalahasti (**dakshin kailash**) is a holy town in Chittoor district of the Indian state of Andhra Pradesh.

Srikalahasti is located on the bank of river Swarnamukhi. It is located 36 km north of Tirupati central.

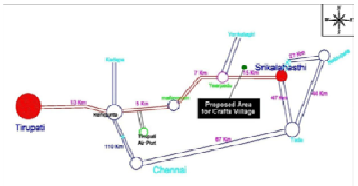
Located around 37 km east of Tirupati, the sacred town of Srikalahasti is famous for the Sri Kalahasteeswara Temple and the ancient textile painting art of Kalamkari.

The mandal serves as a major handicrafts hub in the chittoor district and has a rich cultural history behind the development of the settlement.

ACTUAL LOCATION OF SITE :

KAPUGUNNERI - along the NH-71 road connecting the various pilgrim and prime tourist spots in and around the region.

It is situated 6km away from sub-district headquarter Srikalahasti



HISTORY AND CULTURE

Located on the banks of **River Swarnamukhi - symbolic of Ganges** , a tributary of the penner river, the temple is dedicated to Lord Shiva, who is worshipped in the form of vayu linga. **Sri Kalahasti is named after the staunch devotees of Lord Shiva. They were the Spider (Sri), the Serpent (Kala) and the Elephant (Hasti).** This is the **Vayu Sthalam among the Pancha Bootha Sthalams representing Air.** The major attraction of this town is that it is a pilgrimage hub of Lord shiva - Shiva sthalam and the temples were built by several eras of south rulers like the Cholas, Pallavas and the Vijayanagara rulers. It was adorned by the tribals people of those days. The temple is also associated with Rahu and Kethu (of the nine grahams or celestial bodies in the Indian astrological scheme).

SHAIVISM - ardent shiva devotees form the major population here with utmost importance to the festivals and customs associated with shiva mythology. Site where Kannappa, one of the 63 Saivite Nayanars, was ready to offer both his eyes to cover blood flowing from the Sivalinga before the Lord Siva stopped him and granted mukti.

SETTLEMENT EVOLUTION : TRIBALS -- SHAIVITES KSHATRIYAS -- BRAHMINS -- BALIJAS -- SHUDRAS

The settlement expresses cardinal symbolism wrt to the river and the shrines, where the development expands along the east and west as a belief of the natives- going south means to decay.

ARCHITECTURE STYLE - DRAVIDIAN AND VIJAYANAGARA BLENDS - The Srikalahasti Temple boasts of the beautiful Dravidian style of architecture. It was built during the Pallava period in the 5th century.

SOCIO-CULTURAL ASPECTS

- predominantly agrarians and **(patta chitrakars)** artisans of the mythological themes.
- Music and Dance - RUDRA THANDAVAM (shiva is known for dance)
- ART AND CRAFTS - wood carving, wood crafts and the kalamkari handicrafts
- Family patterns - joint -- nuclear family with minimum of 4 per family unit
- Festivals like MAHA SHIVARATRI, GANGAMMA JATARA GANESH CHAVITHI, DUSSEHRA are very famous apart from the other festivals.

Plate 7.1

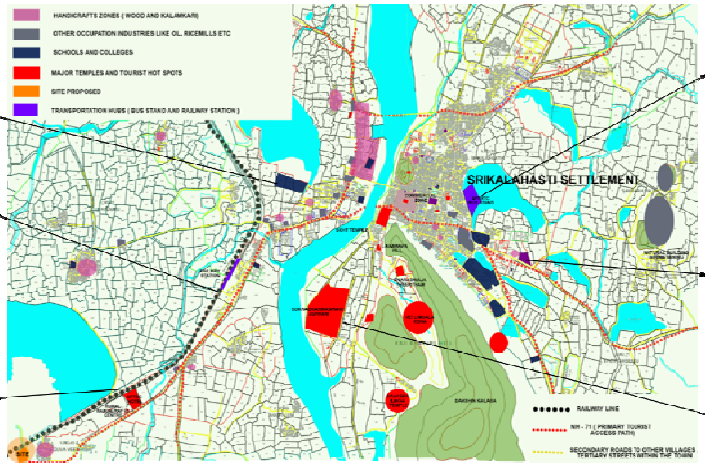
NEIGHBOURHOOD CONTEXT AND FACILITIES

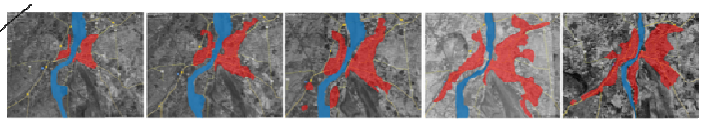
SKIT COLLEGE - 4KM

SKHT RAILWAY STATION 2 KM

RURAL HANDICRAFTS CENTRE - 1.2 KM

TIRUPATI INTERNATIONAL AIRPORT - 21 KM

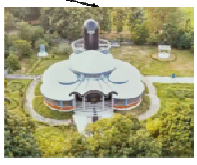




The growth of the settlement as shown in 2001--2005--2010--2015--2021 is along and away from the river into the fields along the cardinal directions based on history. The regionalism of the temple town has lost its essence and becoming a commercial tourist zone and thus industrialization and lost crafts. The site chosen is away from all the chaos amidst the paddy scenescapes in close proximity to the artisans of the villages.

APSRTC BUS STAND - 5.5 KM WITH KAPUGUNNERI BUS STOP ON SITE

NIMS HOSPITALS - 7KM LARGEST MULTI SPECIALITY HOSPITAL IN TOWN



SUKHABRAHMASANAM ASHRAM - 4 KM MAJOR TOURIST INTERNATIONAL SPOT

Plate 7.2

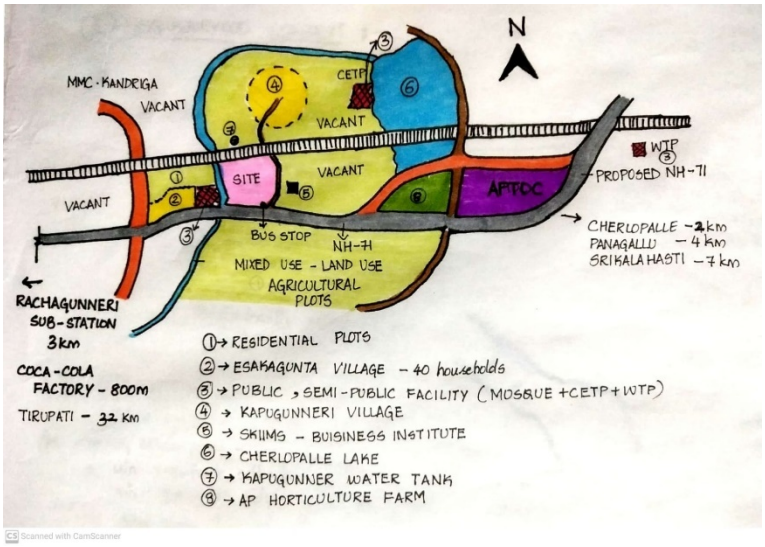


Figure 7.7 Neighborhood context

The immediate neighbourhood of the site within 1 km distance houses 2 residential villages, public utilities like CETP, WTP and a mosque building. The SKIIMS college is located parallel to the site on East. Vacant land engulfs the site in all the directions and hence faces no issues of ventilation or vandalism.

7.1.5 Activity mapping

The people residing in the villages practice agriculture and dairy as main work, kalamkari craft as secondary work and wage workers in factories and shops as tertiary occupation. There is no specific movement of user groups along the site except the vehicles through the Highways.

Figure 7.8 Activity mapping

7.2 SITE ZONING AND GUIDELINES

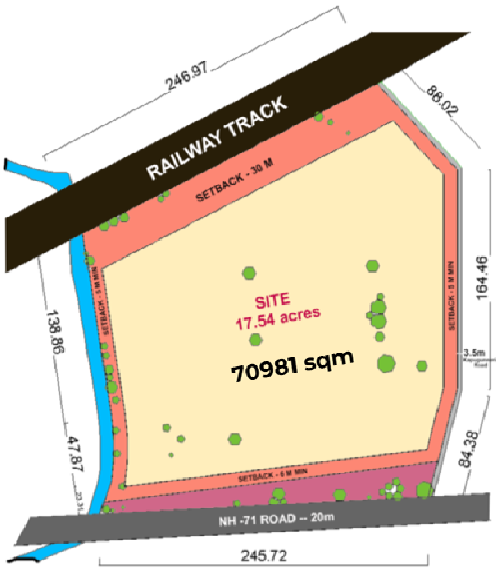


Figure 7.9Site setback

BUILDING HEIGHTS:

- Provided that the minimum clear head way under any beam shall be not less than 2.4m.
- Maximum height permissible for all the components of the building mentioned above is 4 m. 3. The maximum height of building shall not exceed 1.5 times the width of road abutting plus the front open spaces.

LEGAL:

Private ownership- Venkata Ramaiah
(Farmer and trader in kapugunneri)

Legal - Srikalahasti court
Under TUDA Development Authority

TABLE – 17
Minimum Setbacks and Height Permissible

OSR - 5% OF SITE AREA

Sl. No.	Plot Size (in Sqm) Above – Up to	Parking provision	Height (in m) Permissible Up to	Building Line or Minimum Front Setback to be left (in m) Abutting Road Width					Minimum setbacks on remaining sides (in m)
				Up to 12 m	Above 12m & up to 18m	Above 18m & up to 24 m	Above 24m & up to 30m	Above 30m	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
11	Above 2500	Stilt + 2 or more Cellar floors	7	3	4	5	6	7.5	5.0
			15	3	4	5	6	7.5	6.0
			18**	3	4	5	6	7.5	7.0

Table 7.1 Heights and setbacks

Railway's guidelines:

- The distance between the Railway Property Boundary and the edge of the building shall be 30m as per Indian Railways Works Manual or as per No Objection Certificate (NOC) given by the Railway Authorities.

7.3 SITE ANALYSIS

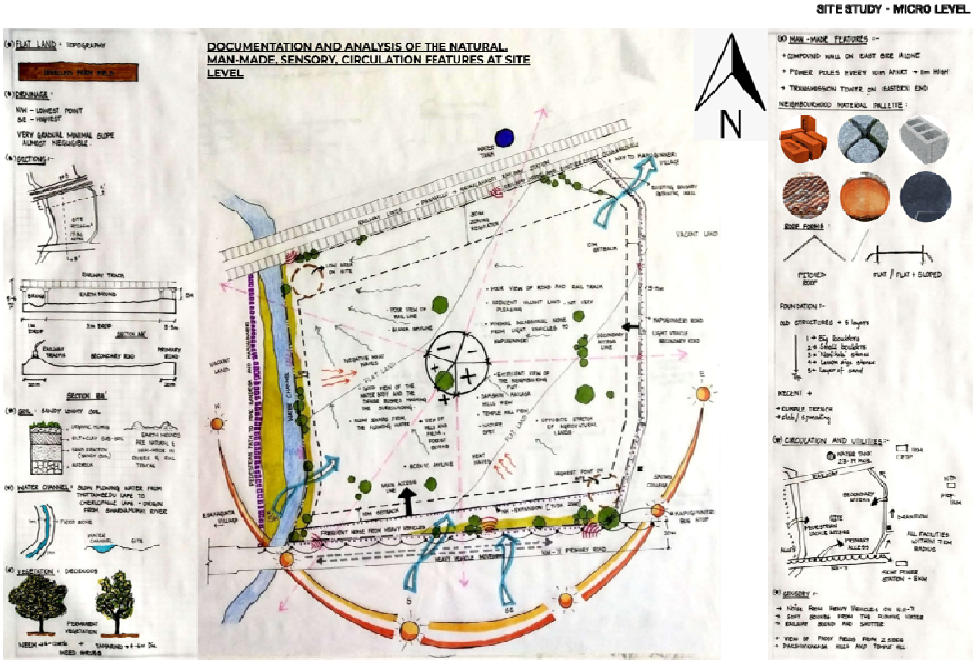


Plate 7.3

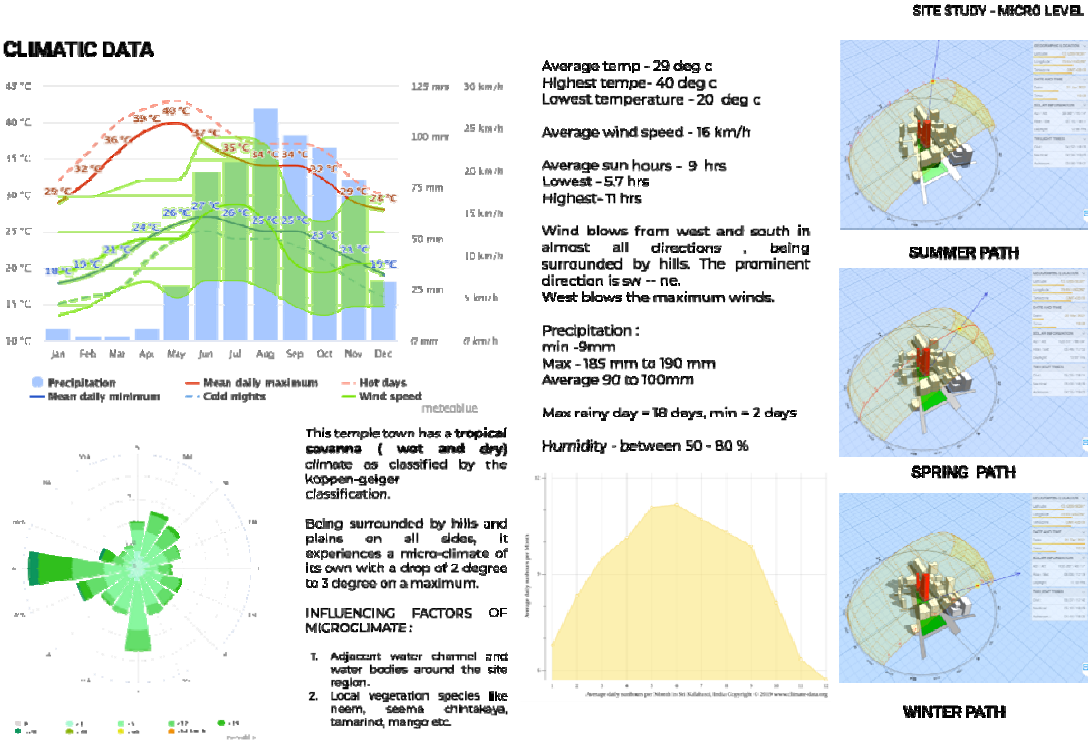


Plate 7.4


SENSORY FEATURES :
N
View from the northern end of the site
246.97
RAILWAY LINE
88.02
KAPUGUNNERI ROAD
Gudur–Katpadi branch railway line
View into the site on the east
164.46
138.86
SITE - 17.54 ACRES
70981 sqm
47.87
84.38
Flowing water canal of width 5-7 m
Secondary road of 4m width on east
NH-71
245.72
Shaded NH-71 with neem and gulmohar trees
Opposite parcel of agricultural land
NH-71 And the petrol bunk on the opposite end
Kapugunneri bus stop

Plate 7.5

CHAPTER 8

ARCHITECTURAL DESIGN

8.1 DESIGN IDEATION AND CONCEPTUALIZATION

SUSTAINABLE DESIGN THROUGH CRITICAL REGIONALISM IN THE REVIVAL OF A SUSTAINABLE HANDICRAFT

- Critical regionalism is an architectural concept that seeks to balance local needs and capabilities with the progressive lessons of modernisation.

- Critical regionalism is an approach to architecture that strives to counter the place lessness and lack of identity of the International Style, but also rejects the whimsical individualism and ornamentation of Postmodern architecture. • Critical regionalism is not simply regionalism in the sense of vernacular architecture. It is a progressive approach to design that seeks to mediate between the global and the local languages of architecture.

- Sustainability is Design that seeks to minimize the negative environmental impact of buildings whilst enhancing the social and economic environment for all demographic parts in society.

8.1.1 Design considerations:

- Create spaces that creates a sense of place for the various users of the space.

- Integrate the prime focus (core activities) with the allied and supporting activities to weave a storyboard of the handicraft and its essence.

- Introverted and extroverted design, hierarchy of spaces -- semi open -- open -- closed and so on.

- Textile guidelines

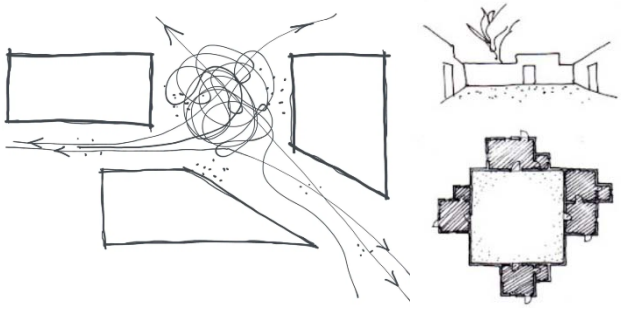
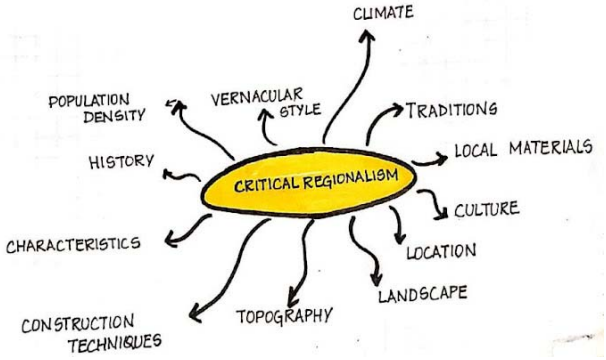


Figure 8.1 Integration and disintegration

8.1.2 Basic Ideas of CriticalRegionalism

- Context-specific Architecture
- Historical Knowledge
- Climate Responsiveness
- Materiality
- Ecology and Landscape



Social and Cultural Appropriateness*Figure 8.2 Critical Regionalism*

- Technology

Figure 8.3Context specific architectural elements

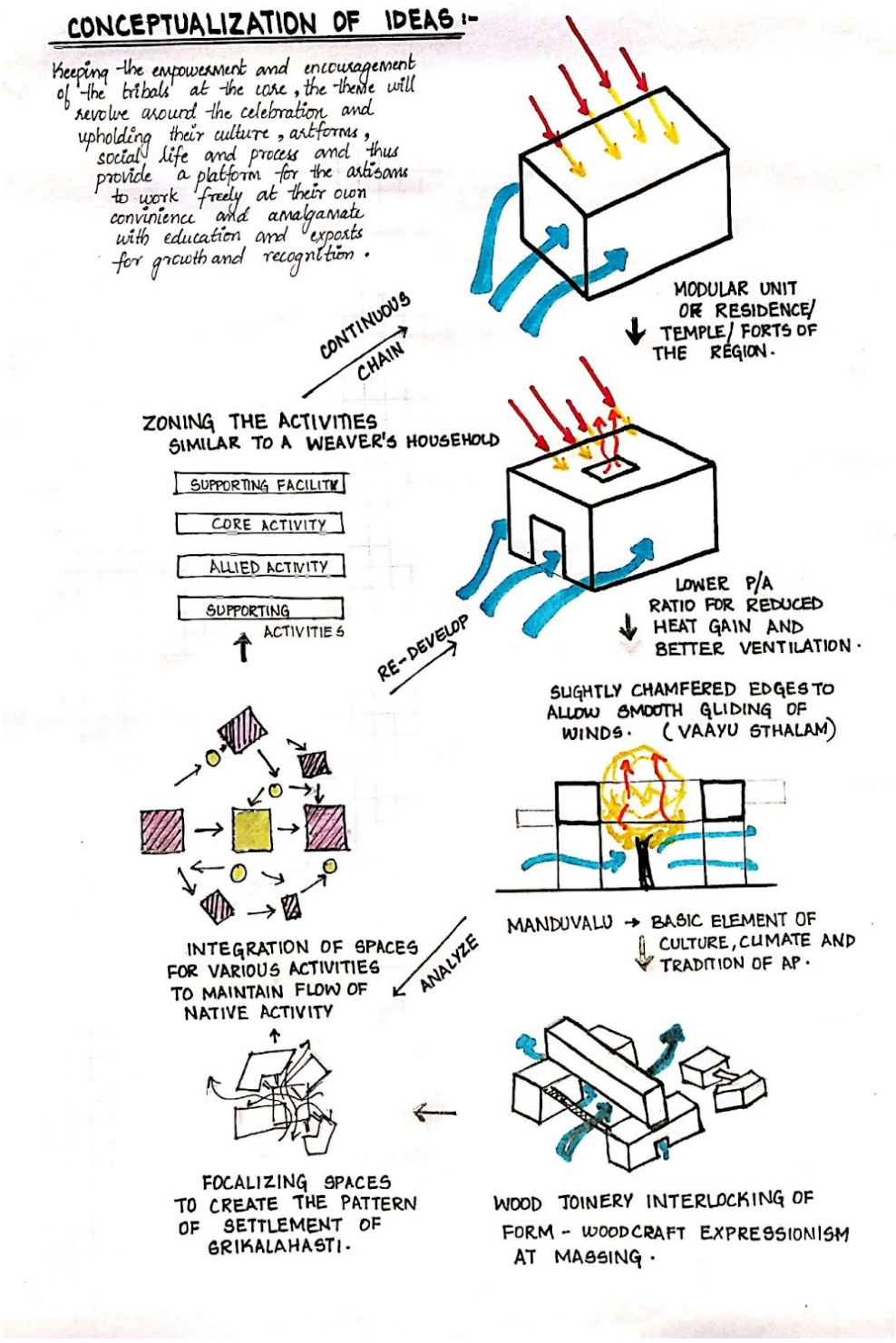


Figure 8.4 Conceptualization of Ideas

8.2 SITE ZONING


RAILWAY LINE
BUFFER FARM
SECONDARY ACCESS SERVICE + STAFF & TOURIST
TOURIST PARKING
ADMIN + ARTISAN PARKING
SUPPORTING UNIT
G+1 - ACCOMODATION
PLAYGROUND
DEVATS
CAFE
FARM + OAT
GF → PRODUCTION UNIT FF → TRAINING CENTRE
DRIVING YARD
HANDS-ON (OTHER)
FF-INSTITUTE
CENTRAL COURT
ADMIN
GF-EXHIBITION AND EMPORIUM
GALLERY
IN-HOUSE SHOPS
MELA GROUNDS
OSR
SECONDARY ROAD - 8.5m
KAPUGUNNERI ROAD
MOTEL
VISITORS PARKING
MAIN ENTRY / EXIT
NH-71 - 20m
PRIMARY ROAD
- CORE ACTIVITIES
- SUPPORTING ACTIVITIES
- FARM ZONES
- ALLIED ACTIVITIES


N
RAILWAY LINE
DENSE VEGETATION COVER (BUFFER)
SERVICE ENTRY EXIT
ACCOMODATION PARKING
ADMIN + ARTISAN PARKING
DEVATS
FUTURE EXPANSION OF ACCOMODATION / ADMIN
ADMIN BACK OFFICE
EXHIBITION SPACE
WATER BODY
FARM
ACCOMODATION BLOCK
OUTDOOR CLASS
HANDS-ON SPACE
OAT
MELA GROUNDS OR FUTURE
GALLERY 1
GALLERY 2
PLAYGROUND
PRODUCTION UNIT
WORKSPACE
FRONT SPACE
TREES
COVER
MUSEUM SHOP + CAFE + LIBRARY
WATER TANK
PAVILION
FARM
FUTURE EXPANSION OF PRODUCTION UNIT
DRIVING YARD
WATER BODY
TREES
COVER
PARKING - VISITORS
KAPUGUNNERI ROAD - 8.5m
SECONDARY ROAD
OSR
NH-71 EXPANSION BOUNDARY
SERVICE ENTRY
MAIN ENTRY
NH71 - PRIMARY ROAD (20m)

Figure 8.5 Site zoning evolution

8.2.1 Zoning Strategies

The interlocking of spaces creates an integrated approach to the different activities within the site creating a holistic space.

Figure 8.6 Zoning strategies

The primary spine and the focal zones coincide with each other to create a theme of wayfinding through the building and it also ensures mutual shading similar to street planning strategies in Srikalahasti.

- The vertical zoning brings the major activities of public and semi-public at lower level and the private education zone at the first-floor level with their accommodation facilities.
- To create a sustainable space for the sustainable textile craft, Dewats system for water management in the production process and farms growing the native trees required for the process involved in the production.
- Zoning based on various user approaches and segregation of pedestrian and vehicular at outer ends to create a traffic free site circulation.

8.3 SITE PLAN

Plate 8.1

Figure 8.7THEME LINE – Dictates User flow within the Built space

Figure 8.8Integration of critical regionalism of Srikalahastithe into planning

8.4 BUILDING DESIGN

8.4.1 Ground floor plan

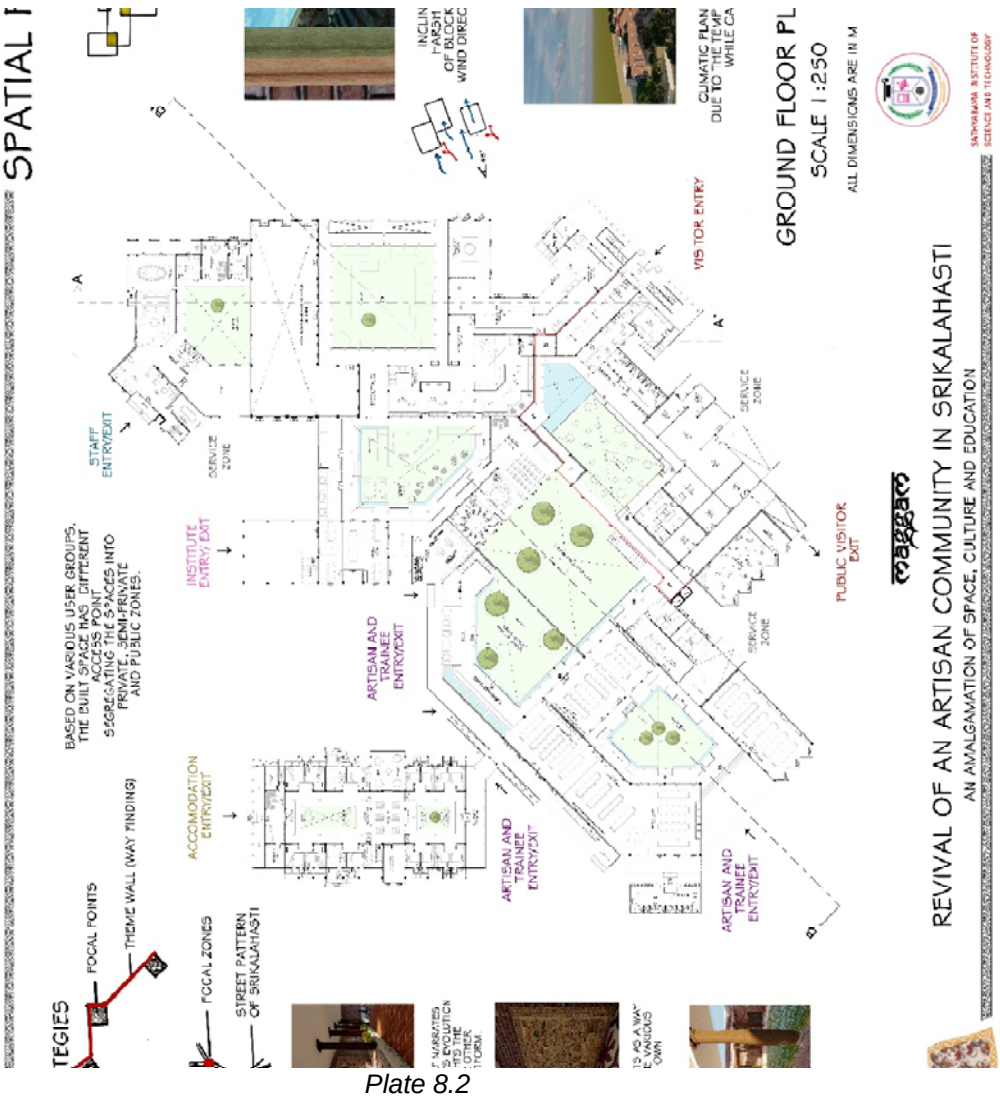


Plate 8.2

8.4.2 Users and their Spaces

Plate 8.3

8.4.3 First floor plan

Plate 8.4

8.4.4 Section

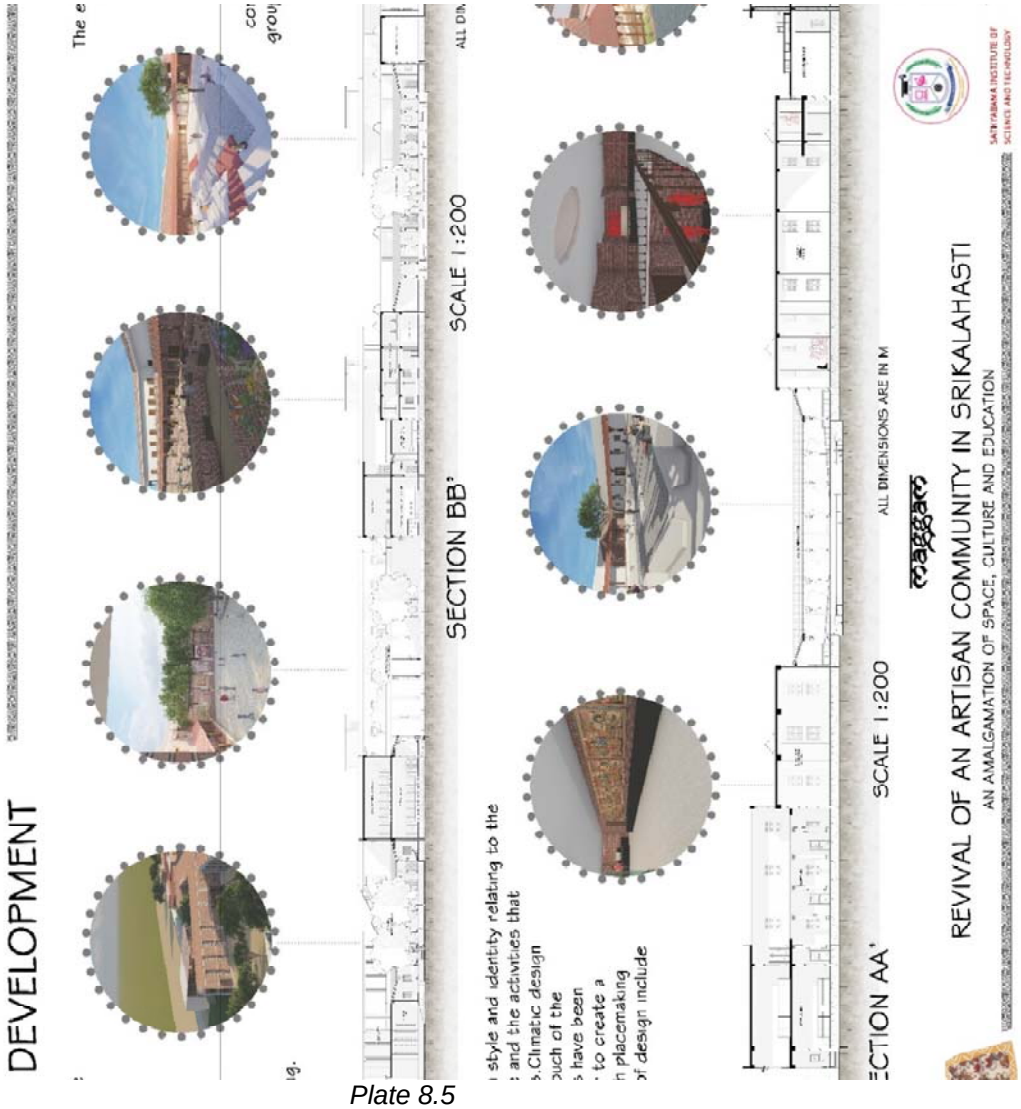


Plate 8.5

8.4.5 Elevation

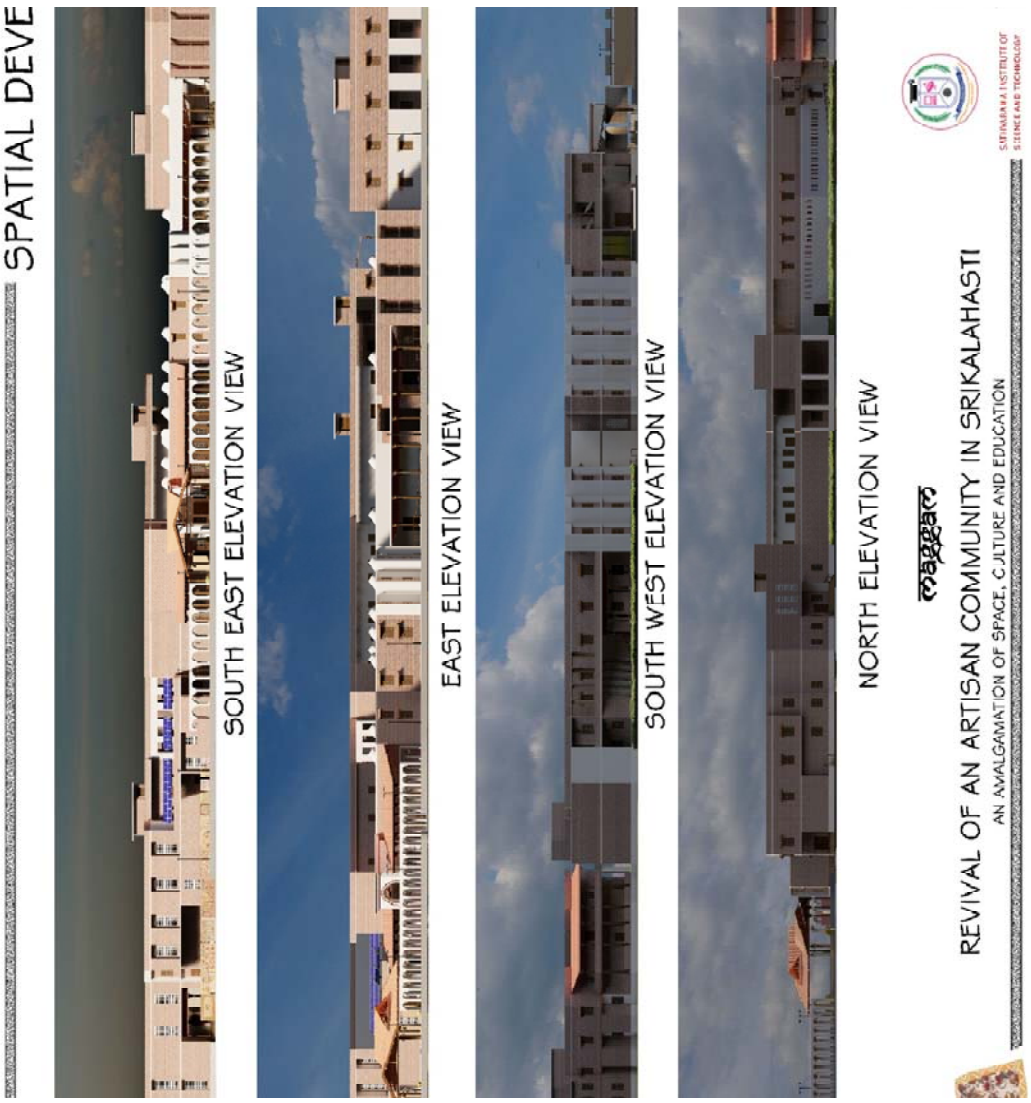


Plate 8.6

8.4.6 Design Elements

Plate 8.7

8.4.7Dewats System

Plate 8.8

8.4.8 Views

REVIVAL OF AN ARTISAN COMMUNITY IN SRIKALAHASTI
AN AMALGAMATION OF SPACE, CULTURE AND EDUCATION

Plate 8.9

CHAPTER 9

CONCLUSION

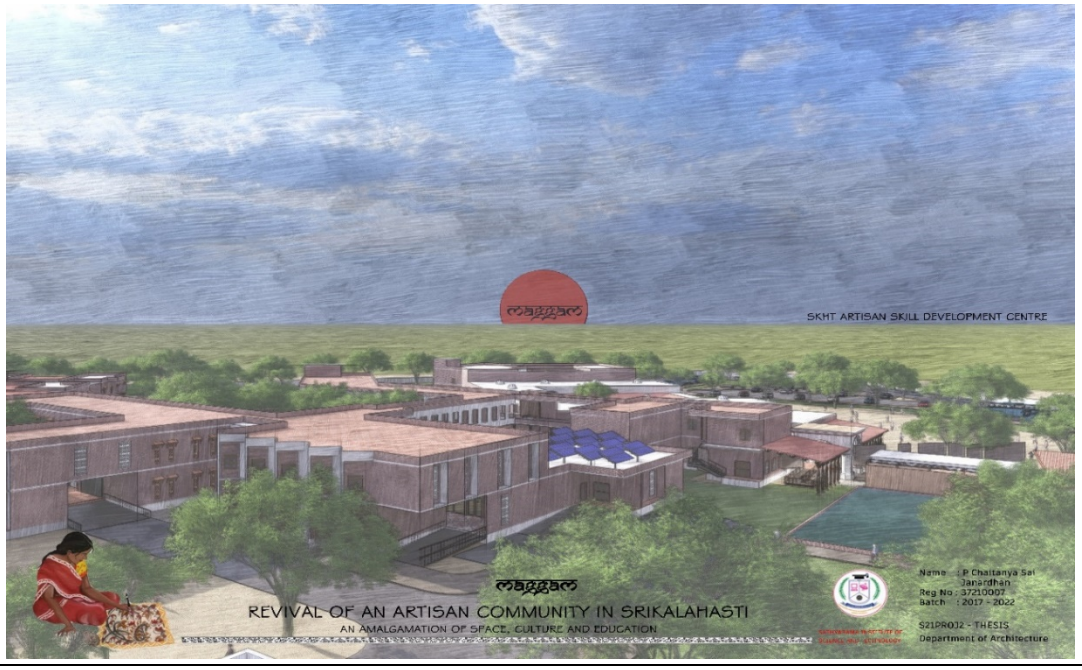
9.1 CONCLUSION

The aim of this project was to design an architectural solution for the fast-evading importance of the artisan community in Srikalahasti, Andhra Pradesh. After understanding the flow of the textile industry and its business and economic loops, it is realized that fragmentation of the community is the main reason for the fall and can be revived through an architectural influence.

Hence, the design aimed at integrating the various activities of the industry in a single space for the revival and flourishment of the artisans in and around. The campus designed provides scope for research and innovation through amalgamation of space culture and education.

It also provides opportunities for the designers and students to interact with the artisans and reside and understand their lifestyle for new approaches and creations using the Kalamkari craft in the contemporary world.

Most importantly, the project eliminates involvement of middlemen and directly brings to light the government marketing companies and NGO run business organizations. It also has mela spaces where large exhibitions and bazaars can be held and the space designed resonates the story and glory of the Kalamkari art and the artisans of Srikalahasti and creates employment opportunities in the sector.



CHAPTER 10
REFERENCES

10.1 BIBLIOGRAPHY

10.1.1 Research papers

- https://www.researchgate.net/publication/318529485_Tradition_and_Transition---_A_study_on_Kalamkari_of_Srikalahasti
- https://www.sahapedia.org/kalamkari-introduction
- https://ijcrt.org/papers/IJCRT2009102.pdf
- https://www.academia.edu/5448860/Kalamkari_The_painted_temple_cloths_Kalamkari_The_painted_temple_cloths
- https://www.ijsr.net/archive/v9i7/SR20713172207.pdf
- https://www.researchgate.net/publication/334598625_Evaluating_students'_learning_from_and_appreciation_for_the_hand_painting_workshop_of_traditional_Kalamkari_art
- https://commencement-archive.wustl.edu/postmodern-kalamkari/
- http://the-kalamkari-painting-and-printing.blogspot.com/2017/?m=1
- https://www.scribd.com/document/299052640/Design-Guide-Arts-Crafts-Centers
- https://www.behance.net/gallery/22237637/The-making-of-Kalamkari
- https://architecturecasestudies.wordpress.com/category/uncategorized/

- https://archinect.com/anushreeraina/project/shilpgram-promotion-center-for-handicrafts

- https://puremitti.com/blogs/blogs/kalamkari-a-timeless-art
- https://www.archinomy.com/case-studies/traditional-house-in-andhra-pradesh/
- https://www.researchgate.net/publication/280940901_Standardisation_of_Design_and_Maintenance_of_DEWATS_Plants_in_India
- https://aphrdi.ap.gov.in/documents/Trainings@APHRDI/2017/6_June/ias/siva%20nagireddy.pdf

10.1.2Reference books

- https://books.google.co.in/books?id=wKGKLdMirSIC&pg=PA211&lpg=PA211&dq=do+people+from+other+villages+come+for+kalamkari+work+in+srikalahasti&source=bl&ots=0dycPNi1AQ&sig=ACfU3U0FQV2hoVkM-gHcCRbj2qqiqXBn9A&hl=en&sa=X&ved=2ahUKEwiu3eD2zYPyAhXxheYKHSlBAqYQ6AEwEnoECBoQAw#v=onepage&q=do%20people%20from%20other%20villages%20come%20for%20kalamkari%20work%20in%20srikalahasti&f=true