

INTEGRATED HANDLOOM CENTER: A PLATFORM FOR THE WEAVERS

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ABSTRACT

Handloom/ তাঁতশিল্প, the tradition of weaving clothes by hands, is one of the richest aspects of Bangladeshi culture and heritage. Traditionally being the largest rural industry in Bangladesh, it is the second largest source of rural employment and income after agriculture and is responsible for a very high percentage of the nation's economy. However, today, this prospective commerce is facing threats of extinction because of various problems and obstructions, thus compelling the weavers to leave their holistic profession, weaving. The weavers, who play an instrumental role in the development of this sector, are deprived from all kinds of basic needs and wages which questions their livelihood and force them to leave their profession. This beautiful process of turning individual fibers into fabrics is very intricate and deserves high recognition and value. However, the reality is far away from this. Glorious past, confusing present and questionable future; is the ultimate harsh truth that handloom, the biggest handicraft industry of our country is facing now. This paper discusses the approach chosen for the benefit of the weavers' community by taking inspiration from the past and implementing it for the future, thus adding to its potential. It's like an institution within itself which benefits the entire complex as one unified whole. This handloom center, informal and accommodating of the weavers' language is basically an interactive platform for the welfare of the weavers' community, and in greater aspect for the entire country. The main aim of this paper is to deal with the actual scenario of the current situation, identify the limitations and strengthen the possibilities with the intention of preserving the existence of our beautiful handloom fabrics through a collective attempt.

Keywords: Handloom, Weavers, Customer, Institute, Research, Housing, People, Market, Exhibition.

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Chapter 1: Introduction

1.1 Background of the project

This project is about the handloom sector of our country, basically an interactive platform for the weavers. The aim of this project is to develop a modern handloom village in the outskirts of Dhaka city through a symbiotic development of the entire handloom settlement and marketing policies of the products through housing and center for textiles. The project also includes proper civic facilities for the workers as well so that their long lost traditions can be revived and put into proper use. To promote the development and sustainability of the traditional textiles and its products by creating a handloom settlement for the weavers of our country with proper civic arrangements and functions is the main objective of this project. It is an attempt to preserve the rich heritage of the textiles of Bangladesh and save it from the clutch of extinction.

Handloom weaving goes back as early as the 17th century, when this sector was an efficient sector and played important role in economic activities (Islam & Hossain, 2012). The handloom can meet a wide range of uses, from the needs of the daily life to being an exquisite heirloom. But we have come to know that, this ancient and most important cottage industry of Bangladesh is now on the way of extinction because of various problems and barriers adjacent to this industry. Weavers in our country don't get quality raw materials at right time and at right price (Ahmed, 1999). On most occasions it is evident that the creators of these beautiful crafts sink deeper into poverty, paying the middleman. The government has not done enough in terms of grants. This project, however, deals with such issues and provides amenities to the weavers such that they are benefitted and the country's heritage is preserved.

1.2 Project Brief

1.2.1 Name of the Project: Integrated Handloom Center : A platform for the weavers.

1.2.2 Client: Bangladesh Handloom Board.

1.2.3 Site Location: Between Shibchor of Madaripur and Jajira of Shariatpur, under Naodoba union.

1.2.4 Site Area: 4,356,000 sq.ft.

1.3 Project Rationale

Traditional Bangladeshi handloom enjoys a global reputation as well as huge demands in the local markets. Looking back into the history of the Bengal in the Indian subcontinent, traditional handloom textiles have been an integral part of our rich heritage for a long time. As late as 1792 Henry Patillo remarked that the demand for “Bengal’s textile manufacturers could never reduce because no other nation on the globe could either equal or rival their quality” (Mitra, 1978). However, the current scenario is totally different. The weavers face a number of challenges which affect their livelihood and overall wellbeing and are thus being forced to leave their profession and migrate to a different one. Historically our heritage and culture is very rich in traditional textiles but we have come to know that, this ancient and most important cottage industry of Bangladesh is now on the way of extinction because of various problems and barriers adjacent to this industry. At the time of independence over a thousand weavers societies existed and now almost all of which are dormant due to lack of strategic vision from government to protect and promote this sector (Latif, M.A 1997). So doing this project is really necessary to revive our handloom industry. The collective approach of the handloom settlement as well as the centre for research, exhibition space and workshops will not only help to preserve our heritage but also add

economic values to the weavers. Thus, we can promote this culture and boost the economy of our country as well.

In context of Bangladesh, a project like this is necessary in order to uphold the glory of being Bangladeshi. As a nation we have a very glorious background. With the passage of time and with the idea of a “Digital Bangladesh” which is not being used in a fruitful way, we can implement this policy also in this case to uphold the marketing strategies.

The site chosen for this project also adds value. Firstly, it is situated in the outskirts of the city which enables to decentralize the focus on Dhaka. Secondly, the site is about 5 minutes from the Padma bridge construction, which strengthens the transport system as well. If this project can be implemented well, within 10 years from now this will have the maximum chances of being successful.

1.4 Aims and Objectives of the Project

The main aim of this project is to focus on the present scenario of the handloom sector of our country and its constant degradation. This heritage of ours needs to be preserved for the greater good and maintained. Ghosh, 2005 identified the predominant factors that are moving the wheels of handloom industry slowly. Shortage of working capital, high cost of raw material procurement, lack of organizing capability, inadequate technology and efficiency, lack of policy support and major are the prime ones. Despite the huge diversity, the crafts in Bangladesh are dying. We have limited access to them and by the time they reach our shelves they have been rendered too conventional and uninspiring, and lost its true character.

The traditional gorgeous handlooms need to come under focus once again and the weavers and artisans are to be provided with facilities so that they can have the capacity to preserve this in future. The aims and objectives of this project are-

- To identify and locate the different types of handlooms and their products and associated crafts situated all over in Bangladesh and identify their traces.
- To encourage the weavers and artisans by providing them an exposure to the customers, that is, urban patrons.
- To identify their problems and limitations and the reason behind their movement and unwillingness to work further.
- To work according to the outcomes and help in revitalizing the industry again.
- To provide a common ground for the easy communication of weavers and designers, students, enthusiasts and buyers across the globe so that there is a direct connection and everything works as a unified whole.
- To promote, enrich, nourish and enlighten the audience about our well-known textile heritage of our country.
- To educate the normal people of our country about the importance of local traditional handlooms and its beauty.

Chapter 2: Symbiotic development of handloom sector and marketing strategies.

2.1 Traditional textiles of Bangladesh

Traditional textiles of Bangladesh incorporate mostly the significant handloom industry present in the country which has been producing fine quality clothes for over centuries. Handloom is generally run without any electrical motor; it is run by a person's hand and foot combination. At the time of independence over a thousand weavers societies were existed and now almost all of which are dormant due to lack of strategic vision from government to protect and promote this sector (Latif, M.A 1989). Bangladesh is yet to see any serious and systematic documentation of its textile traditions, whether woven or embroidered (Haque, 2006). And yet the textiles of Bangladesh go back to antiquity.

2.2 History of Traditional Handloom sector

History and archeological discovery suggest that Bengal was famous in the distant past for her textile production. Cotton was the chief raw material for textile work and it was produced abundantly in Bengal. During the First century AD, Dhaka muslin became famous in Asia and Europe. The varieties of muslin produced in Bengal were tanzeb, sarband, badan, khos, elebellay, sharbati, tarangam, kumish, turya, nayansukh, charkhana, malmal, jamdani, and addi. Besides muslin, weavers of Bengal produced such other fine fabrics as, shabnam (dewy) and abe rawan (running water).

These and many other fabrics of Bengal were noted for their fineness of texture, beauty of design, intricacy of weave, lightness of weight, and durability. Tantis however, produced many different types of clothes of daily use and most of them were coarse and cheap. The finer clothes are now rare in a tanti's workshop and they survive in the profession by weaving largely the daily wears for the common people. There are several types of handloom in Bangladesh. Such as:

- a. Pit loom
- b. Power loom
- c. Chittarranjan Loom
- d. Benarosi and Jamdani Loom
- e. Kamer / Waist Loom

Currently, Handloom sector in Bangladesh consists of more than 0.183 million handloom units with 0.505 million handlooms and about 1 million handloom weavers of which about 50% are female worker. A manpower of about one million weavers, dyers, hand spinners, embroiderers and allied artisans have been using their creative skills into more than 0.30 million active looms to produce around 687 million meters of fabrics annually. Production

of these handloom fabrics is diffused in numerous production centers all over the country which are linked up by a network of primary, secondary and central markets. (Bangladesh Handloom Board, 2010)

2.3 Present scenario of the handloom industry

Handloom industry has been recognized as the prominent industry and it has been called the backbone of our agricultural economy. It can be recognized as the mainstay of the weaving industry for supply of bulk of the domestic cloth requirements. However, this industry has some inherent problems. These are inadequate supply of yarn and dyes, high price of raw materials, lack of institutional credit, marketing problem, unfair competition, lack of efforts for improvement, lack of product diversification and organizational Problem. Due to these problems, many handloom units are remaining non-operational at present. Besides, Weavers are suffering from inadequate contemporary technology and scarcity of working capital which are mandatory to maintain the smooth flow of production (ADB, 2002). Although skills of our workers are up to the expectation level, they are lagging behind in capturing the modern technology due to lack of infrastructural support from the government (Sobhan, 1989).

This sector has a great potentiality to meet substantial requirements of fabrics in the export oriented garments industry. One of the major problems in this case that is noteworthy is inadequate distribution channel which is failing to match between demand and supply. (News Today: Feb 2005; 10)

2.3.1 Important Products with places of production

Lists of available products which are handmade are shown below in a table which depicts the location and type of the beautiful products.

Sl.	Name of the Products	Place of Production
1	Jamdani	Rupgonj and Sonargaon of Narayangonj district.
2	Benarasi	Mirpur of Dhaka, Iswardi of Pabna district and Gangachara of Rangpur district.
3	Tangail Sharee (Cotton sharee, Half Silk, Soft Silk, Cotton Jamdani, Gas-mercerised twisted cotton sharee, Dangoo sharee, Baluchherri)	Tangail Sadar, Delduar and Kalihati, Nagorpur, Basail of Tangail District.
4	Handloom Cotton share	Shahjadpur, Belkuchi and Sadar of Sirajgonj district, Narsingdi and Pabna districts.
5	Lungi	Ruhitpur of Keranigonj and Dohar of Dhaka district, Shahjadpur, Ullapara, Belkuchi, Sadar of Sirajgonj district, Kumarkhali of Kushtia district, Sathia,
6	Silk share	Sadar and Shibgonj of Chapai Nawabgonj and Rajshahi district.
7	Gamcha	Ullapara, Kamarkhand of Serajgonj, Gouranadi of Barisal, Fultola, Doulatpur of Khulna, Jhalokathi, Jessore and Bogra districts.
8	Check Fabrics	Belkuchi of Sirajgonj district.
9	Mosquito Nets	Araihazar and Rupgonj of narayangonj district, Shibpur and Sadar of Narsingdi district.
10	Bed Sheet & Bed Cover	Kumarkhali of Kustia district, Danga of Narsingdi district.
11	Sofa Cover	Danga of Narsingdi district.

12	Rakhine Special Wear(Wooling Shirting, Woolen Bed Sheet, ladies chadar, Bag,Lungi and Thami for tribal ladies)	Taltoli of Borguna district, Kalapara, Rangabali of Patuakhali district and Cox's Bazar district.
13	Tribal Fashion Wear (Thami for tribal ladies, Khati(Orna), Ladies Chadar & Lungi.	Rangamati, Khagrachari & Bandarban Hill districts.
14	Miniouri Fashion Garments (Monipuri Sharee, Puneek for ladies like lungi, Lungi, Un-stitched cloth (three pieces), Innachi(Orna) & Vanity Bag	Sylhet and Moulivibazar districts.

2.3.2 Current Statistics

Items	Number
Total Handloom units	183512
Total number of handlooms	505556
Total number of operational looms	313245
Total number of nonoperational looms	192311
Type wise number of looms Pit loom	169700
Frame loom	29212
Waist loom	141684
Semi-automatic/ Chittaranjan loom	150407
Benarashi/ Jamdani	12383
Others	2170
Number of Weavers	Number
Total number of weavers	888115
Total number of male weavers	472367
Total number of female weavers	415748
Handloom Factory (As of May 2008)	Number
Number of Handloom factory registered with the BHB (Factory is a production unit having more than 20 looms)	246

Source: Bangladesh Handloom Board

2.3.3 Distribution of Looms by Type

There are mainly six types of looms in Bangladesh. The distribution of total looms and operational looms by type are shown below Table 1.

Table 1 : Distribution of Looms by Type

Type of Looms	Total looms	Operational	Percent
Pit Loom	169700	107066	63.1
Frame Loom	2212	18410	63.0
Chittarangan Loom	150407	105410	70.1
Banarasi/Jamdani Loom	12383	9997	80.7
Komar/waist Loom	141684	69588	49.1
Power loom	2170	1380	63.6
Total Loom	505556	311851	61.6

Source: Handloom Census, 2003

2.3.4 Problems of Handloom Industry

Handloom industry has been recognized as the prominent industry and it has been called the backbone of our agricultural economy. From a study conducted by Elias Hossain and Khairul Islam of Rajshahi University, it is found that the handloom sector is raising rural employment and income, alleviating rural poverty, bringing equity in the distribution of income, substituting imports, and increasing potentials for exports.

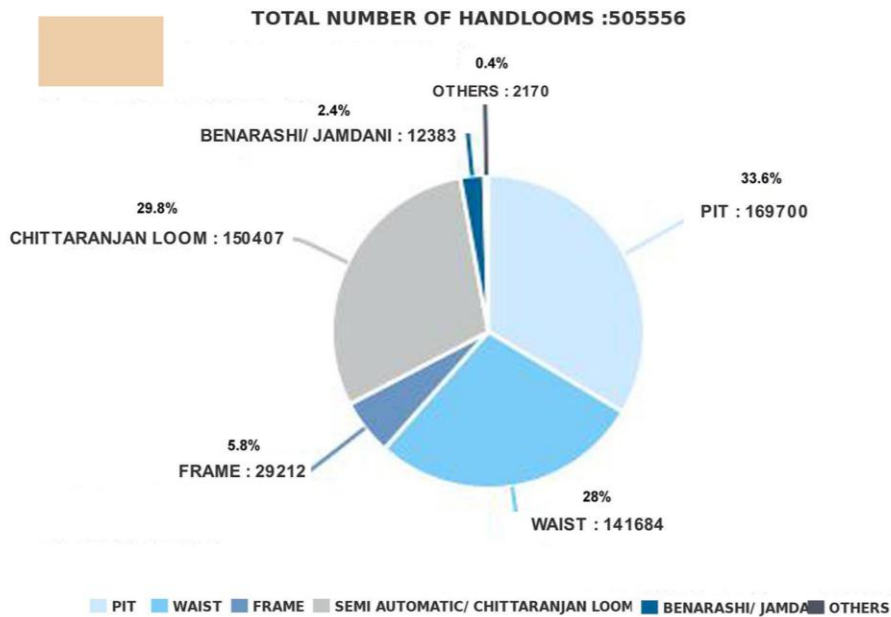
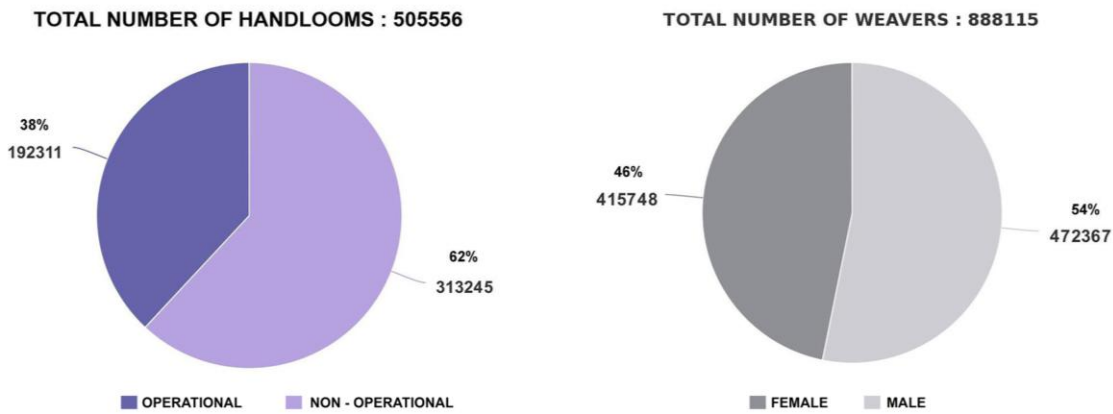
However, this industry has some inherent problems. These are inadequate supply of yarn and dyes, high price of raw materials, lack of institutional credit, marketing problem, unfair competition, lack of efforts for improvement, lack of product diversification and organizational problem. Weavers in our country don't get quality raw materials at right time and at right price (Ahmed, M.U 1999). The main problems regarding the *diffusion* of the improved Handloom techniques appear to have been lack of technological knowledge and skills as well as financial stringency of the weavers (Latif, M.A 1998).

Table 3: Reasons for Non-operation of Looms

Reasons for non-operation of loom	Frequency, 2003	Percentage, 2003	Frequency, 1990	Percentage, 1990
Lack of capital	75511	79	123597	80
Lack of yarn	11566	12	12284	8
Labor problem	1865	2	2334	2
Sale problem	4931	5	5860	4
Others	1509	2	10220	6
<u>Total reporting units</u>	<u>95382</u>	<u>100</u>	<u>154295</u>	<u>10</u>

Source: Handloom Census, 2003

2.3.5 Statistical Representation in pie diagram



Source: Author

2.3.6 Tools and Methods used in Handloom Production



Source: Author

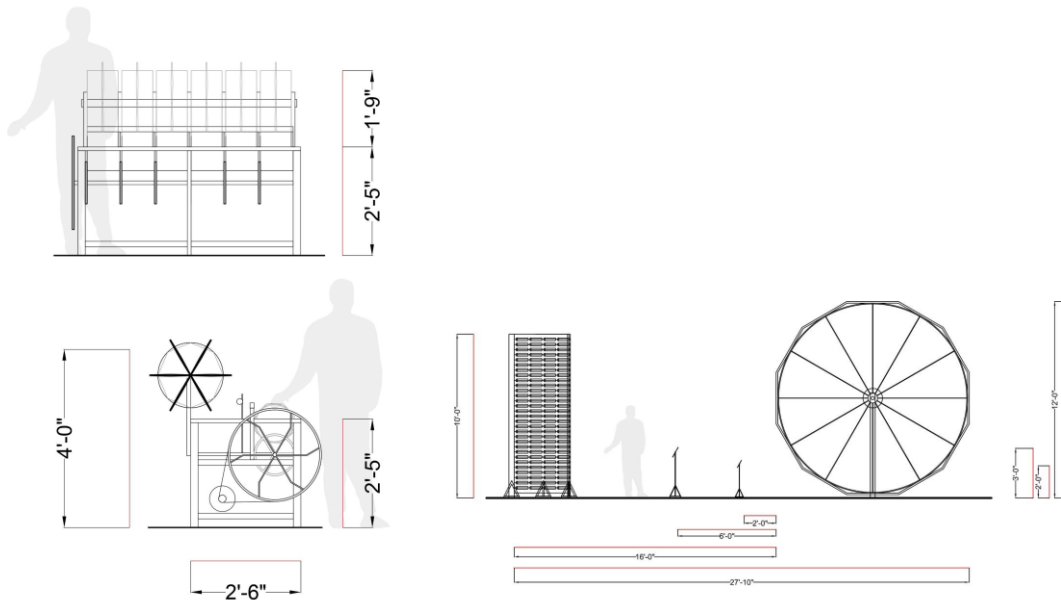


Source: Author

In general the different parts of a hand loom are as:

- Reed
- Heald shaft
- Treadle
- Cloth beam
- Shuttle
- Warp beam
- Reversing roller shaft

In most cases, Chittaranjan looms are used by the weavers. It's a semiautomatic loom operated both by the weaver and machine. Jacquard weaving is done where designs are punched on cards and then they are installed. Threads are dyed and spinned, known as charka by the women.



2.4 Handloom sector seeks good marketing

Product assortments made of cotton and other stuffs are saree , lungie, gamsa, grameen check fabrics, printed bed covers, pillow covers, table mats, kitchen and hand towels, apron, curtain and upholstery, furnishing fabrics, bags bandage etc.

Handloom products need good marketing to gain monetary values (Sundaram,2006). Innovative design backed by good marketing is essential to promote handlooms in India and global markets. There is a need to make the handloom tradition fashionable by introducing new designs and color schemes, he added. Weavers should constantly evolve, innovate and ensure quality. Fashion and design education also need to be re-oriented and make handlooms the centre piece of fashion for Bangladesh and the world.

The handloom is simply a weaving device made of wood and iron mainly operated by hand , relying solely on human metabolic energy and requires a space of barely 8 sq. meters. handloom weaving is a cottage based industry which was spread throughout the country. The sounds of the handloom are the music of the rural home inviting fortune to them(Sobhan,1989). In the process of weaving the handloom, weavers create a harmony of motion and rhythm. The vast majority of Bangladeshi handlooms was engaged in weaving cotton and blended fabrics although handloom cloth of silk earned a good reputation once. They are almost endangered now. Due to lack of capitals, these are on the verge of closing because large number of weavers is migrating from their profession.

2.5 Export of local handloom products worldwide

Hand woven textile goods have a glorious heritage in the history of weaving. The excellence of Bangladeshi hand woven fabrics was known to the West before the dawn of the British era. The lure of fine Muslin and exquisite weaves found their way to a number of European markets. At present many countries across the globe import handloom goods

from Bangladesh, which needs to be improvised. The products range from traditional fabrics of contemporary furnishing and household textiles. More products should be marketed both in the country and outside since the selling of these commodities worldwide can help a lot in this sector.

For the development of Handloom sector and ensure well being of the handloom weavers, Bangladesh Handloom Board has been implementing a number of package programs covering supply of input, innovation of suitable designs, financing of working capital, development of human resources, modernization of handloom technology, efficient marketing management and formation of sound weavers societies. In a word, the Handloom Industry has no alternative in the development of rural economy. Export of local handloom products can play a vital role in this case.

2.6 New modes of innovation: Benefit the industry

Economic theories of innovation have tended to ignore services or to assume that innovation in services consists of little more than adopting innovations developed in industry. Yet theories of innovation developed on the basis of observations of industry are inadequate to explain the forms of innovation which predominate in services. Innovation in services leads to industrial innovation (Gadrey,2015). In order to promote the new innovation identifying the main external factors is essential.

Ghosh,2015 states that the declining productivity of handloom industry is caused by simultaneous activation of internal and external factors like-

- Weavers don't get quality raw materials
- Weavers don't get quality raw materials at right time
- Weavers don't get quality raw materials at right price
- Weavers are suffering from inadequate contemporary technology.

- Government supports are not adequate
- Weavers are facing scarcity of working capital
- Promotion programs are not effective
- The industry faces competition from mill and power loom sector
- Weavers face lack of skills
- High level of skills are needed to produce quality products
- Weavers' association is not efficient
- Production is not enough to meet the demand.

Generally due to conventional process it takes much time to make the goods. Due to low production, workers have low income. So, many of them are eyeing on other professional fields. In many clusters, only old age people do the Handloom weaving, young people are not taking weaving craft as their profession. Training and skill development of the young and introducing them with modern designs can encourage joining the sector. New ideas and technologies can be used which will catalyze this sector and guide it towards the path of success.

2.7 Steps towards sustainability in handloom products

If the handloom industry reaches to the effective level then around one lakh eighty four thousand looms can be activated. It will help to produce 40 crore meter of extra cloth which will produce work for more five lakh people. It will also help to export around 10 crore meter fabric according to international demand (*Bangladesh Handloom Board*).

Sustainability is multi-faceted and can be approached in different ways by different people (Parker, 2011).

The considerations relating to fashion include environmental protection, social justice, economic fairness and cultural vitality. Many of the concerns overlap and can seem

contradictory and new information is constantly emerging. The fashion business both reflects and contributes to society and culture, economic development and constraint, and our changing world environment. Its current business models, whilst widely practiced, are unsustainable as they are predicated on an imbalanced set of criteria. The products that are to be made should be made sustainable.

2.8 Integrating the institution and village as a unified whole

To serve as a reference material for the weavers who are increasingly losing touch with their own traditions in terms of materials, techniques, designs and aesthetics of their arts and crafts due to sudden changes caused by modern industrialization(Pereira,2008).

Endeavor to promote Bangladesh assertively in the world arena and create demand for craftsmanship and handloom products by continuously adapting supply to the changing consumer habits of the demand countries home and abroad.

The settlement needs to be like an institution with facilities which will benefit each other and catalyze the growth of the overall sector in future.

Chapter 3: Site Appraisal and Contextual Analysis

3.1 Site Location

The site is located in Madaripur and Shariatpur district, with a highway passing in between. It falls under Naodoba Union. The site has to be accessed through Kathalbaria ferry ghat, at a distance of around 5 minutes from the ghat. To access the site, a highway starts just from the ghat which leads towards further end of the districts and the site comes in between.

The site has Shariatpur on one side and Madaripur on the other.

To reach the site from Dhaka, one has to cross Mawa Ferry ghat and then reach the site, the entire journey comes to around 3 hours. However, the Padma bridge construction is

going on which is just about two minutes from the site. hence, the connection network will be better and easily accessible. The area of the site is 4,356,000 square feet with 20% roads, 30% forestation(minimum) and 15% water body. So the built area is going to be around 35% of the total site, around, 15,24,600 sft.



Location of the Site for the Handloom Village

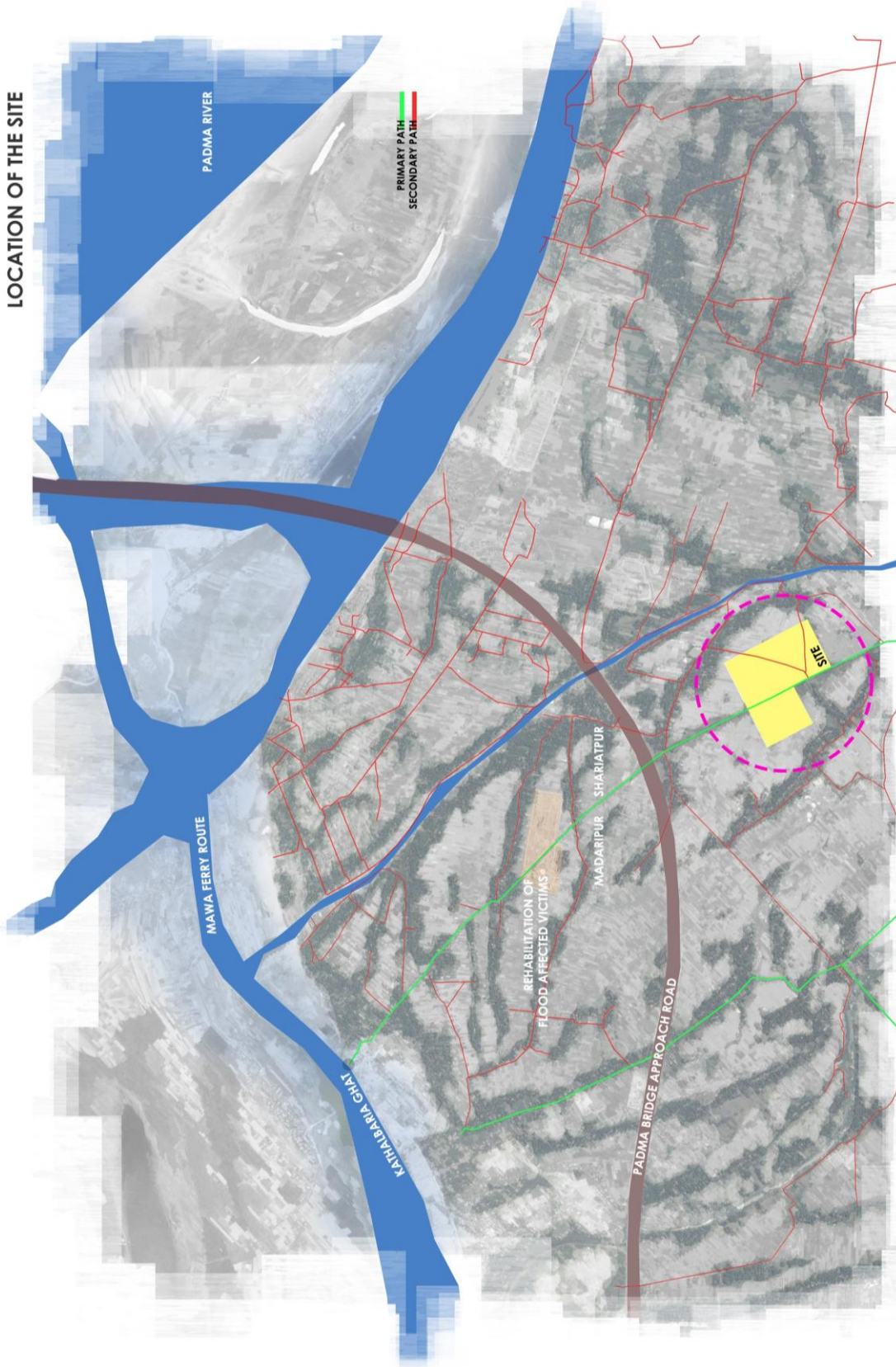
Southern End of Padma Bridge Site

3.2 Site Surrounding

3.2.1 Existing Site

The yellow portion marked is the site in terms of urban aspects. The roads are around 20' wide which runs through the site. The Padma bridge approach road is around 1 km away from the location. Current transport route is via the kathalbaria ghat from Mawa.

LOCATION OF THE SITE



Satellite image of the site and locations.

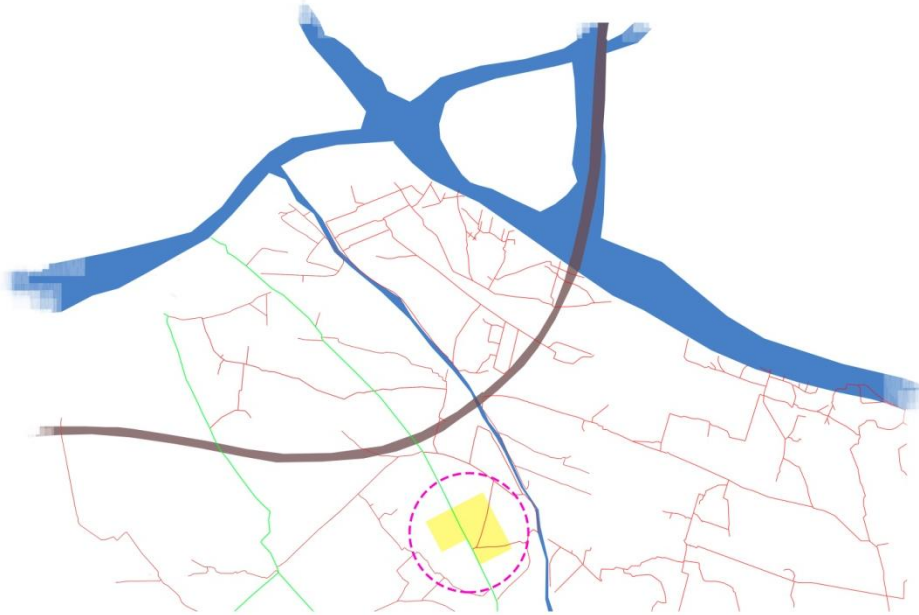
This site was chosen by the Government because they focused on settling this village in the outskirts of Dhaka city, as well as tried to ensure the transportation. Hence, this site was chosen because it was an open land and was near to Padma bridge construction site. Thus, people can easily access the site within a day and enter the handloom village as well. Moreover, if proper facilities are provided, then it will encourage other people to join as well which will help in boosting up the economy. This site was the nearest from the city. And also the site is very well connected with road and easy for other groups of people as well and even tourists can come easily to this place.

3.2.2 Adjacent Land Use



The existing site is a part of the adjacent agricultural land. It's a government property which is taken on lease by the local users.

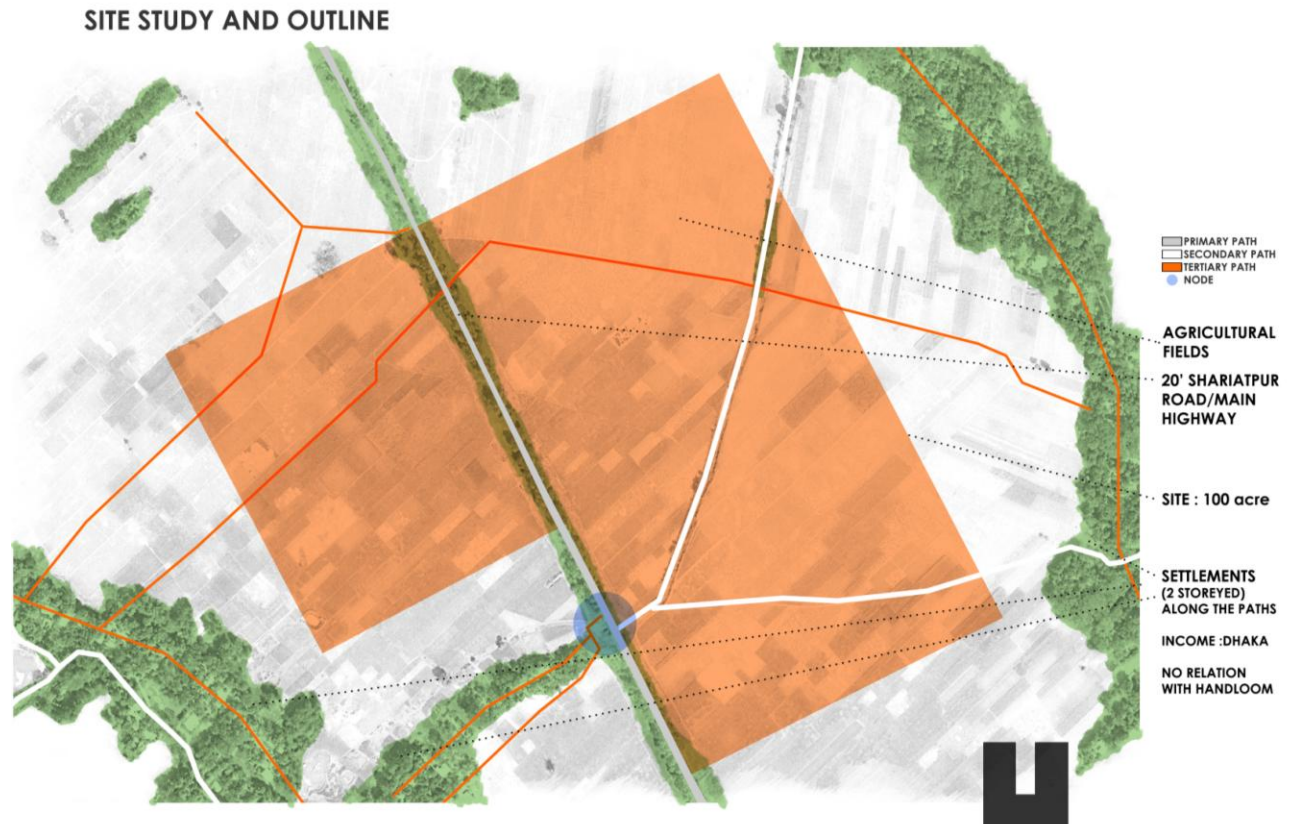
3.2.3 Road Network



Current road network

is via ferry route. With the construction of Padma bridge, it will be accessible by road.

3.3 Background and current condition of the site



SITE PHOTOS



Findings :

The site is an agricultural land at present, which is owned by local people. When asked about the project, they didn't have any complaints regarding the government decisions, they only wanted their share of money.

The site is a flat land, and the surrounding households have a height of 2 stories maximum.

It is well connected with the highway and has easy access since the road runs through the middle.

However, it is only a 20' road so chances of accidents will increase when the site is going to be crowded.

There are pathways for the pedestrians which run through the agricultural fields. Hence, while designing the notion should be kept in mind that pedestrian access is not hampered.

3.4 Site Analysis

The site is around 100 acres which is quite big for an initial proposition. So a phase wise development is proposed. The project, which has the first phase has a site area of 17.5 acres. A phased approach is chosen so that there is a progressive growth of the entire settlement.

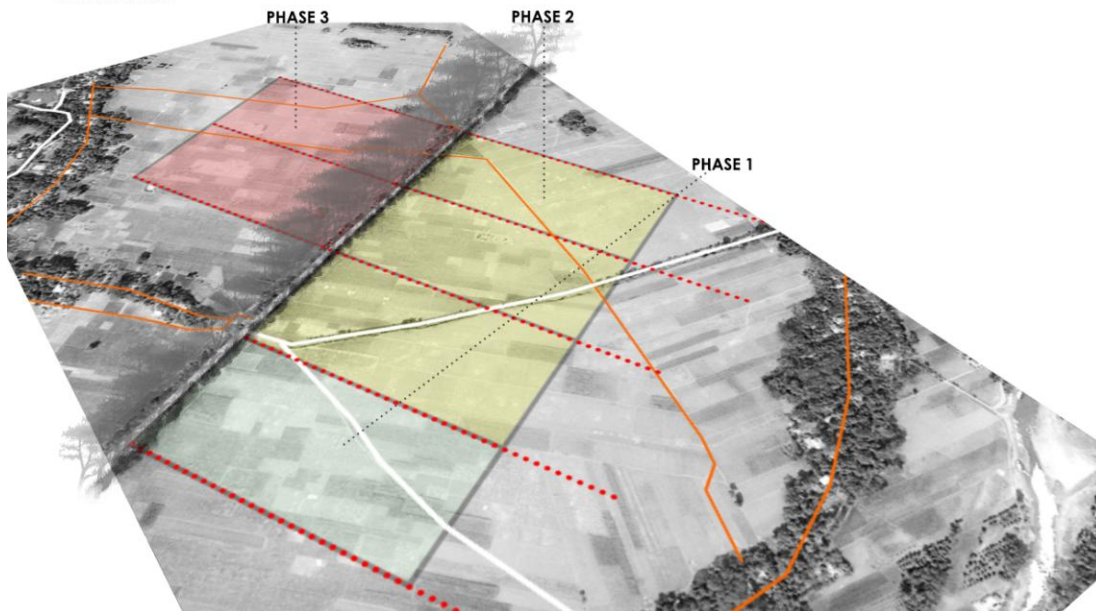


PROBABLE PHASE-WISE DEVELOPMENT

- HELPS TO OVERCOME RESISTANCE TO CHANGE
- ALLOWS FOR LESSONS LEARNED IN EARLY PHASES TO BE INCORPORATED IN SYSTEMS INSTALLED IN LATER PHASES
- ESTABLISHES A SOLID FOUNDATION OF AVAILABLE PROJECT DATA
- ALLOWS NECESSARY TIME TO GATHER FIRST HAND INFORMATION

THE SITE IS AN AREA WHERE NO HANDLOOM WEAVERS ARE PRESENT
HENCE, A PHASED APPROACH IS CRUCIAL FOR THE OVERALL DEVELOPMENT OF THE PROJECT.

PHASE 1 : WITH AN ESTIMATE OF 500 CRORE AS BUDGET AND WITH A TOTAL OF 150 FAMILIES, PHASE 01 IS CONDUCTED

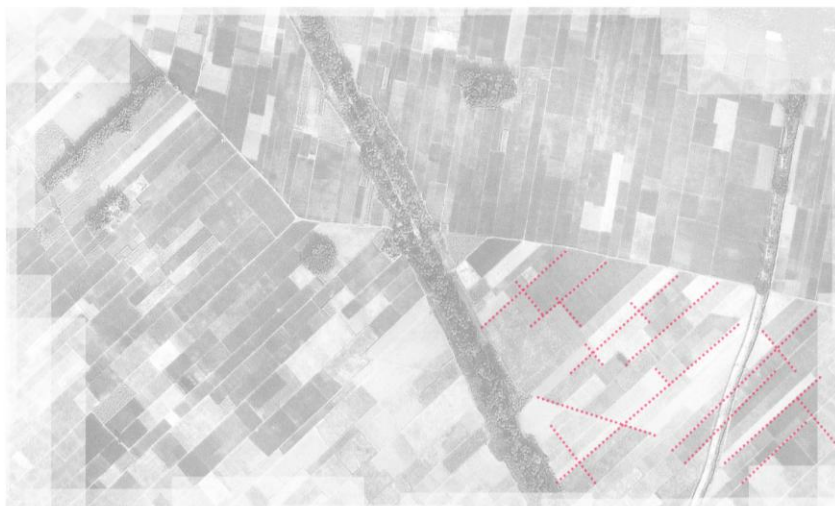


Analysis:

Integrating the agricultural fields to the site for preservation

Public facilities close to the public highway so that it is accessible to the public mass.

Pathways generated within the agricultural fields which further helps in easy access during the project.



**TAKING EXISTING LANDSCAPE LINES AS REFERENCE
PATHWAYS GENERATE**

3.5 SWOT Analysis

STRENGTH

The site is located quite close to Dhaka city_
Currently there are no structures around so the site can be manipulated according to the necessities_
Sufficient green space so possibility of good environment_
Functional aspects of the project can be finalized by the analysis of spaces_
The site is located on the southern side of Dhaka, on the other side of Padma river, not hampering or being any kind of nuisance to surrounding activities_

WEAKNESS

_No existing urban life or features or any site forces to analyze and predict accordingly.
_The site is empty and will take much time to develop as per desired design goals.
_Since it is a site with no weavers around, it might be a difficulty that initially the weavers are not interested to come. But with approaching of proper facilities and design this site can save the tradition from the verge of extinction.

OPPORTUNITY

An interesting platform for the convergence of artisans and weavers from all over the country as well as designers and enthusiasts from the city and abroad_
The site is located in a new and barren development, and holds the strength in controlling the urban sprawl that shall direct to a new visualization of the township_

THREAT

_The urban development shall disrupt the present green landscape and cause environmental harm if not addressed at with proper design.
_Land encroachment.
_Intrusion of building materials which are not natural might cause losing their unique identity

Chapter 4: Case Study.

As there are no exactly similar projects like this, therefore in this chapter different aspects of the project would be briefly analyzed with a number of international projects.

4.1 Khamir Artisan Village

Located at 16 km from Bhuj, Khamir artisan Village in Kutch, Gujarat is set up as a place which promotes, develops and facilitates the traditional wisdom, skills and knowledge of Kutch in the areas of art, culture, heritage and natural resources.

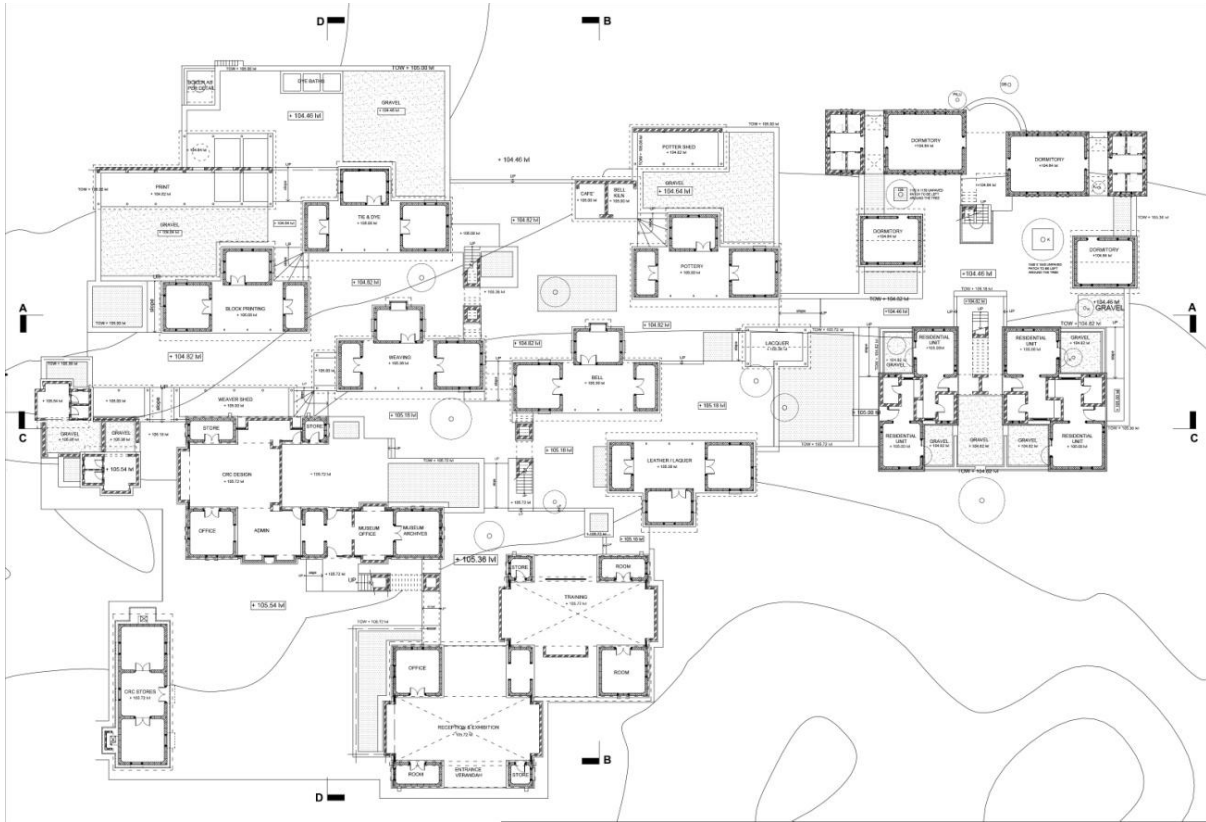


Khamir Artisan Village (Photo Source: Retrieved from [http:// www.hunnarshala.org/ publications.html](http://www.hunnarshala.org/publications.html))

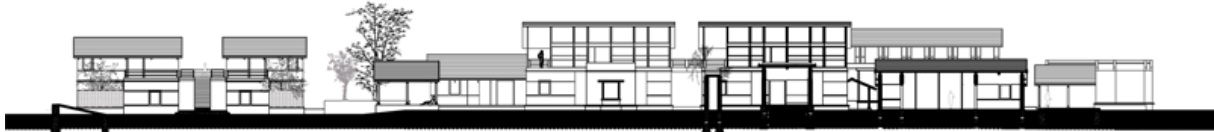
In this project, wherever possible homemade traditional food at artisan's house is served. While being here, one can enjoy and explore several artisan communities where you can discover the beauty of Embroideries, Leather Works, Lacquer Work, Rogan Work, Copper Bell making, traditional pottery, wood carvings and much more. Each trip can be customized to individual interests and is designed to create a unique and unforgettable experience.

Things to keep in mind when at Khamir campus is dressing which has to be conservative keeping in mind the local. Khamir was established in the aftermath of the Bhuj earthquake, through a collaborative effort of non-profit and industry stakeholders in the Kutch region. The organization aims to serve as a cultural resource center that enables artisans to conserve their traditional way of life by creating sustainable livelihoods centered on their craft.

Designed by Architect Neelkanth Chaya, this project aims in facilitating the craftspeople as well as promote their works to the visitors as well. Their dwelling clusters are sensitively designed and depict communities within. The village has workshops and artifacts which is open for the public use as well.



Site Plan



SECTION AA



SECTION BB



SECTION CC



SECTION DD

Site sections

At Khamir, they strive to create a democratic and empowering space - a common roof under which a range of stakeholders can exchange ideas and collaborate. They work to shift consumer perspectives and raise the cultural value placed on crafts.

4.2 Kuthampully Handloom Village



Kuthampully Handloom Village(Photo Source : Retrieved from <http://www.welcomekeralaonline.com/article/handloom-weavers-kuthampully>)

Kuthampully is one of the popular weavers' villages in Kerala (India), situated on the banks of River Nila. The deity here is 'Soudeswari' and is the community Goddess of the village. This must have been the centre point of the weavers' village in the bygone era. While you walk around here, you can hear the rhythmic beat of looms emanating from the small vernacular homes. Many of these homes are now converted into comparatively big modern buildings.

There are many small pathways leading away from the main road. If we just walk along any of these pathways, we can see the typical residential area of this community with

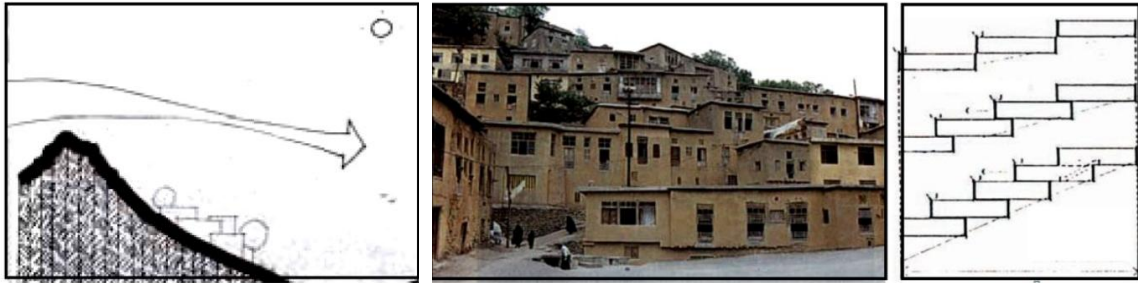
traditional houses lining both sides of the road. Everyone here is engaged in weaving from morning to evening. The long area in front of their homes is commonly used by the weaver for warping the yarn. This society was established in 1972 with an aim to provide decent income to the weavers and to centralize the efforts for promoting and sale the Kuthampully products. At present there are about 160 weavers under the society as against nearly 500 during 1990s.

The Kuthampully weavers followed the traditional methods in the early days to produce Indian clothing's but however; later new techniques were applied on the products of saris and other products. Each and every house in this village is supplied with materials needed for weaving by the co-operative society. The hand woven fabrics are displayed for sale in the village Kutthampully saris and other handloom items are favorite especially among common folk not only in Kerala, but also in other parts of the country .The handwork of traditional weavers is blended with contemporary concept to offer creative value addition to handloom products. In Kuthampully each house is in fact a Kasavu shop. Rhythm of the looms weaving together resonates in the air to remind the new generation about the glorious past this cottage industry had in the Kerala society.

4.3 Masouleh Village, Iran

Traditional buildings of rural areas in Iran have been designed in total coordination with the surrounding climate so that they normally remain warm in winters and cool in summers; and provide their dwellers with comfort without any environmental impact.

Masouleh stepped village, shows the creative architectural patterns of Iranian urbanism utilizing the local materials and sunshine, the open form of the buildings with large windows for natural ventilation, triple function of the roofs: roof, yard, and public access route; with climate steep passages.



Stepped Village and Wind Intensity with Solar altitude diagram (Photo Source: Retrieved from <http://www.wseas.us/e-library/conferences/2013/CambridgeUSA/ENVMECH/ENVMECH-24.pdf>)



Source: (Retrieved from <http://www.amusingplanet.com/2014/08/the-historic-village-of-masouleh.html>)

Shortage of constructible land in Masouleh causes the houses to be built in the minimum area but extended in the floors, so most of the houses are double storied and a few are triple storied.

This village in Iran depicts how local materials and context can convert a village into a successful one for community development. In order to have better relationship with the neighbors, the number of steps undertaken in designing the houses adds a great value to this project. Masouleh village texture as a garden village has made a sort of coexistence between the natural landscape and the architecture of the human made environment which is one the important principles of environmental architecture.

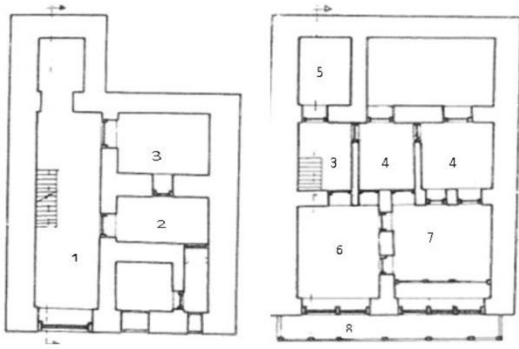


Fig. (left): Ground floor plan: 1) Corridor, 2) Store
 Fig. (right): First floor plan: 3) Chogham, 4) Someh,
 5)Toilet, 6)Rookeke 7)Talara 8)Talarpish

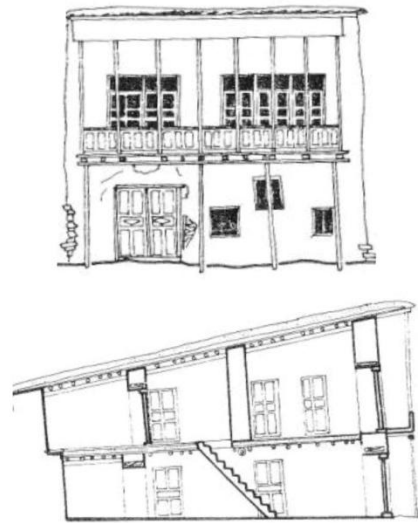


Fig.: Elevation (top), Section (bottom)

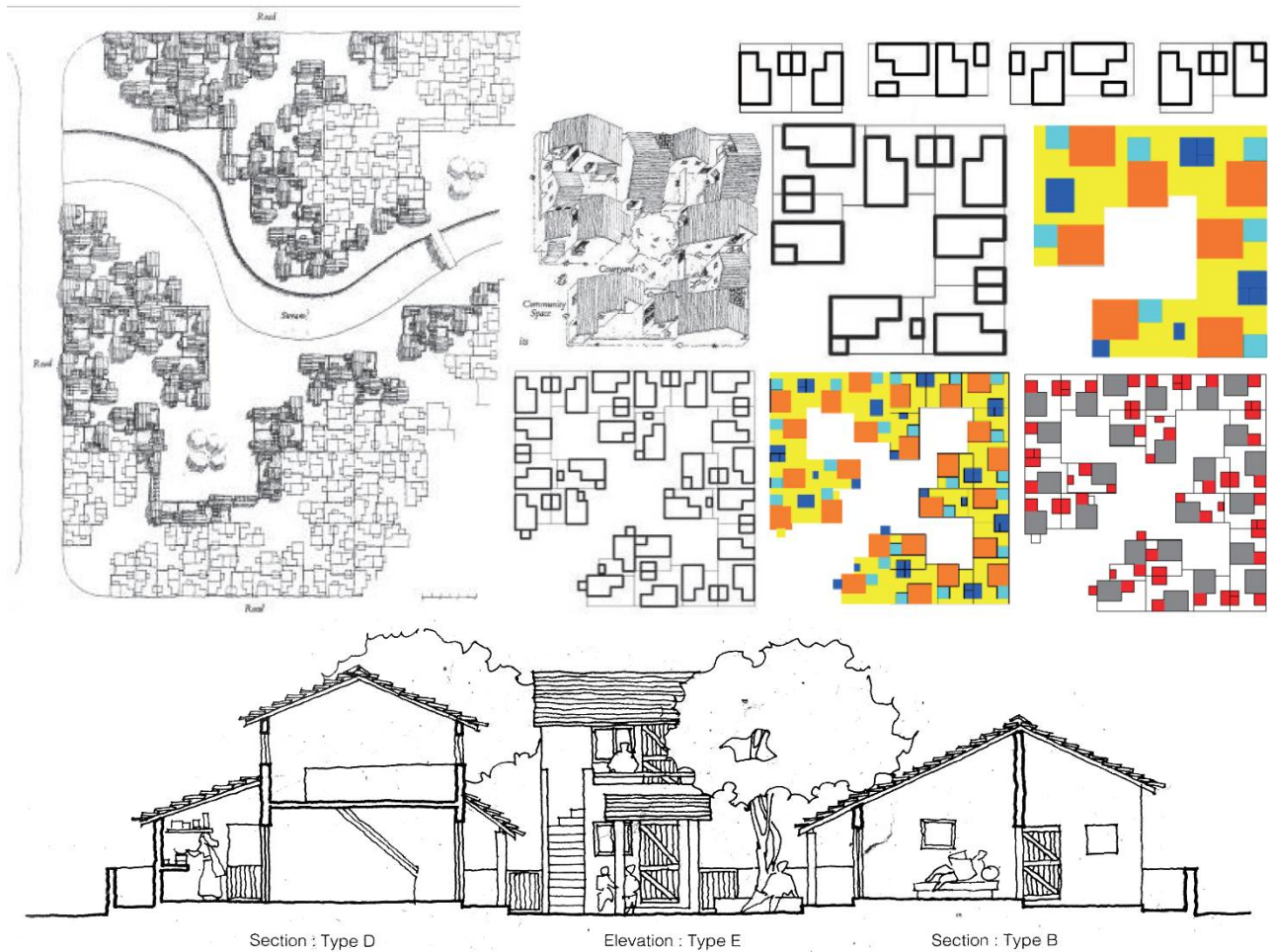
The materials used in different parts of the building are varied and combination of stone, adobe, and wood; which are all local. Building forms are designed extrovert and extended high from the ground in order to prevent moisture, and are in concordance with the humid- and temperate climate; together with outer balconies and large windows which cause the combination of outer and inner space of the building.

4.4 Belapur Incremental Housing, Mumbai, India.

“Making housing is like a bird building its nest. You start with a basic house, but you have to let people change it to their own needs”-Charles Correa.

This project located on six hectares of land about 2 km from the city center of New Bombay attempts to demonstrate how high densities can be easily achieved within the context of a low rise typology.

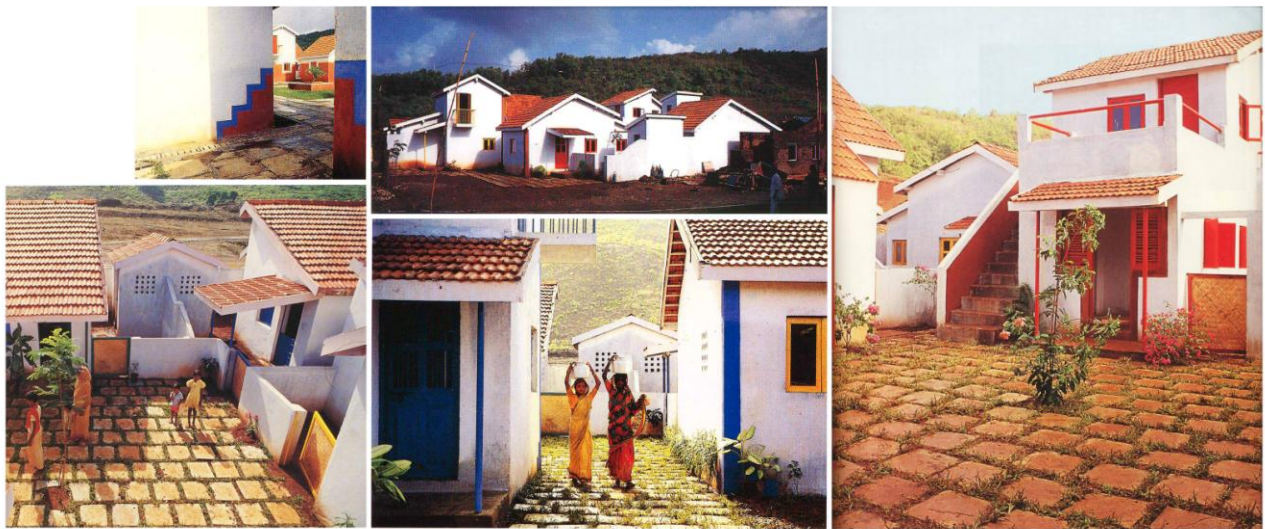
The site plan is generated by a hierarchy of community spaces, starting with a small shared courtyard 8mx8m around which seven houses are grouped. Each of these houses is on its own piece of land so that the families can have the crucial advantage of open to sky spaces.



Belapur Incremental Housing(Photo Source : Retrieved from http://www.mukogawa-u.ac.jp/~iasu2012/pdf/iasu2012_Proceedings_404.pdf)

Based on observation of traditional Indian settlements, he has suggested that cities should be developed using a spatial hierarchy which ranges from the private world of the individual dwelling, through the ‘doorstep’, to the communal court (which traditionally contains the well or common tap), to the greater public space - the *maidan* – the public promenade of the community. The geometry of Belapur is a direct interpretation of this syntax. The basic element is the house. For Correa ‘the territorial privacy of families is of primary importance, and he believes that, in the Indian climate, ‘open-to-the-sky space’ is essential for family life.

Correa's community and spatial precepts are linked to socio-economic ideals. He believes that prefabricated system building is wrong for India (and elsewhere) because it precludes individual involvement in home creation and it diverts resources from the limitless pool of the bazaar's craftsmanship to inefficient centralized production. So the structures at Belapur are one or two storey high, built traditionally and are seen as the basic armatures onto which families will model dwellings which reflect their particular life styles.



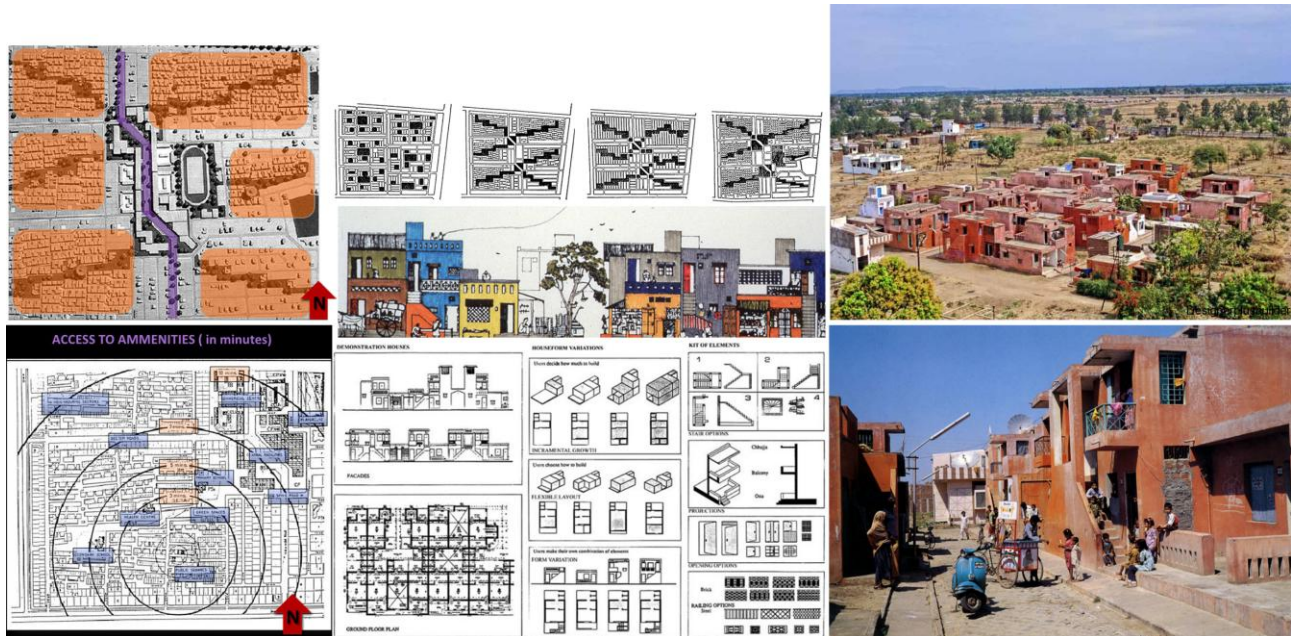
Belapur Incremental Housing(Photo Source : Retrieved from http://www.mukogawa-u.ac.jp/~iasu2012/pdf/iaSU2012_Proceedings_404.pdf)

This project depicts a complex programme in which a revolutionary social proposal grows out of deep appreciation of tradition. Belapur is a built manifesto and, like all manifestos, it tries to encompass everything.

4.5 Aranya Community Housing, Indore,India

Aranya, 6 kilometers from Indore, houses a total population of 60,000 in 6500 dwellings, on a net planning area of 85 hectares. The master plan, prepared by the Vastu-Shilpa Foundation in 1983, is designed around a central spine comprising the business district. Six sectors, each with populations of 7000-12,000, lie to the east and west of the spine and are diagonally bisected by linear parks. Ten houses, each with a courtyard at the

back, form a cluster that opens onto a street. Internal streets and squares are paved. Septic tanks are provided for each group of twenty houses, and electricity and water are available throughout. The site plan accommodates and integrates a variety of income groups. The poorest are located in the middle of each of the six sectors, while the better off obtain plots along the peripheries of each sector and the central spine.

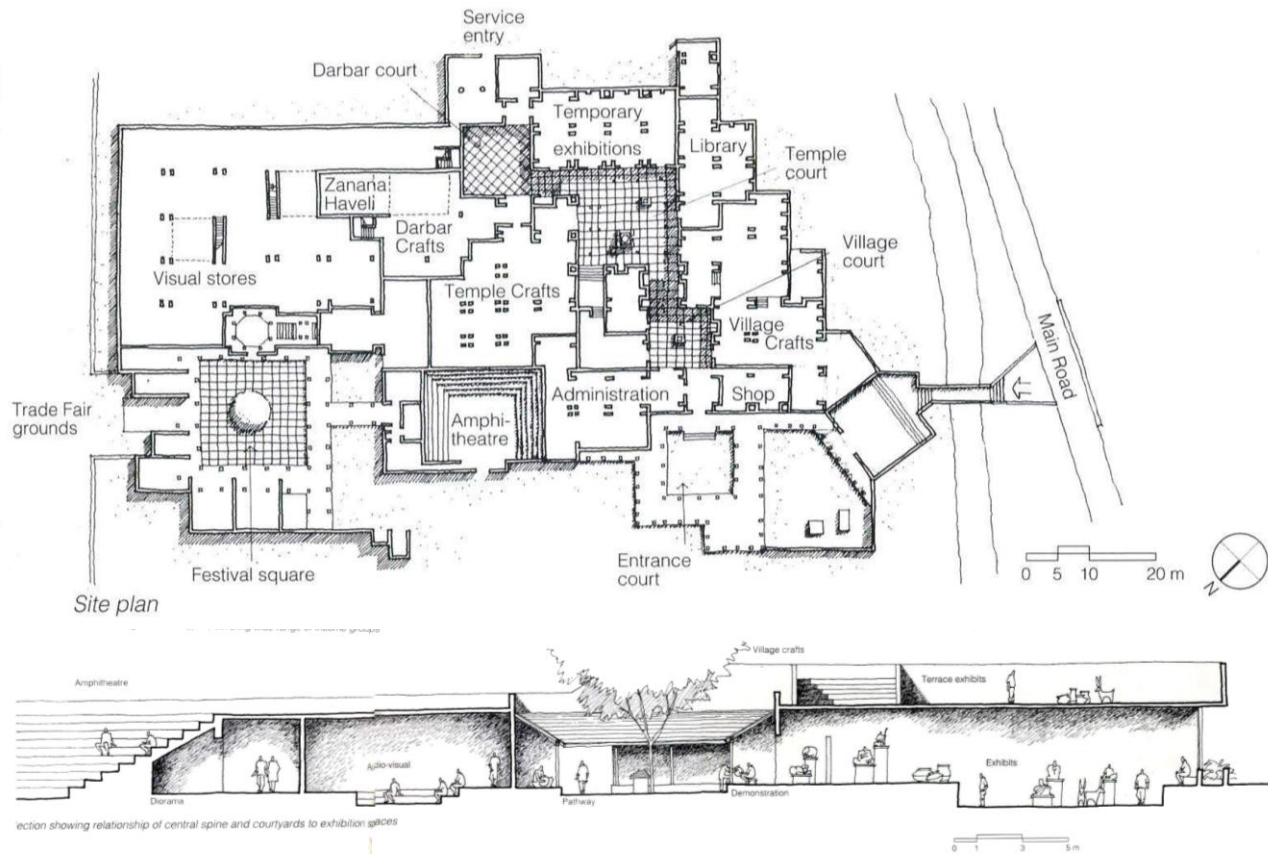


Aranya Community Housing(Photo Source : Retrieved from <https://www.mcgill.ca/mchg/pastproject/aranya>)
 Designed by architect BV Doshi, this project creates a functionally sympathetic and aesthetically pleasing street environment and provide spaces for social and religious activities.

4.6 National Crafts Museum, Delhi

The crafts museum, casual and accepting of the artisan's vernacular, is a work done by Architect Charles Correa. Here Correa reinterprets the timeless quality of India into a building which resists the obvious western label of museum. It was set up over a period of 30 years starting in the 1950s and 60s by the efforts of the renowned freedom fighter late Smt Kamaladevi Chattopadhyay, when the area was envisaged as an ethnographic space

where craftsmen from various parts of India would come in to work towards preservation of various traditional arts and crafts.



Source: Retrieved from "The complete works of Charles Correa"



Source: Retrieved from "The complete works of Charles Correa"

By the 1980s it already had a substantial collection, and in time the museum space gradually evolved and transformed into its present shape. Today the museum holds over 35,000 rare and distinctive pieces reflecting the continuing tradition of Indian craftsmen through painting, embroidery, textiles, various crafts of clay, stone and wood, all housed in a building designed between 1975 and 1990 by architect Charles Correa, incorporating traditional architectural vocabulary into a modern design.

This museum strives for an identity, it is an institution within itself which acts like a ground for the artisans to interact and gain firsthand experience, The archives are studied by the artisans and research is conducted. In this manner they can interact and interchange their ideas as well. This project is basically an incentive which has till now never been available to traditional Indian craftsmen.

Chapter 5: Program development and Analysis

5.1 Rationale of the program

The basic understanding of the programmatic requirements of the project could be gathered from the literature overview and given programs from the client. Here, a few programs have been added to add up to the existing ones and for the success of the project. It is strongly established in the literature review that for such a project to be successful it needs to address the marketing policies of the finished goods and proper research facilities.

As such, programs with detailed information are analyzed and added here. For that reason the program has been categorized into three zones, the public zone where all the visitors can also enter, the semi public zones and the private zones. So that one who is not interested on one side of the process can always come back to the other side which

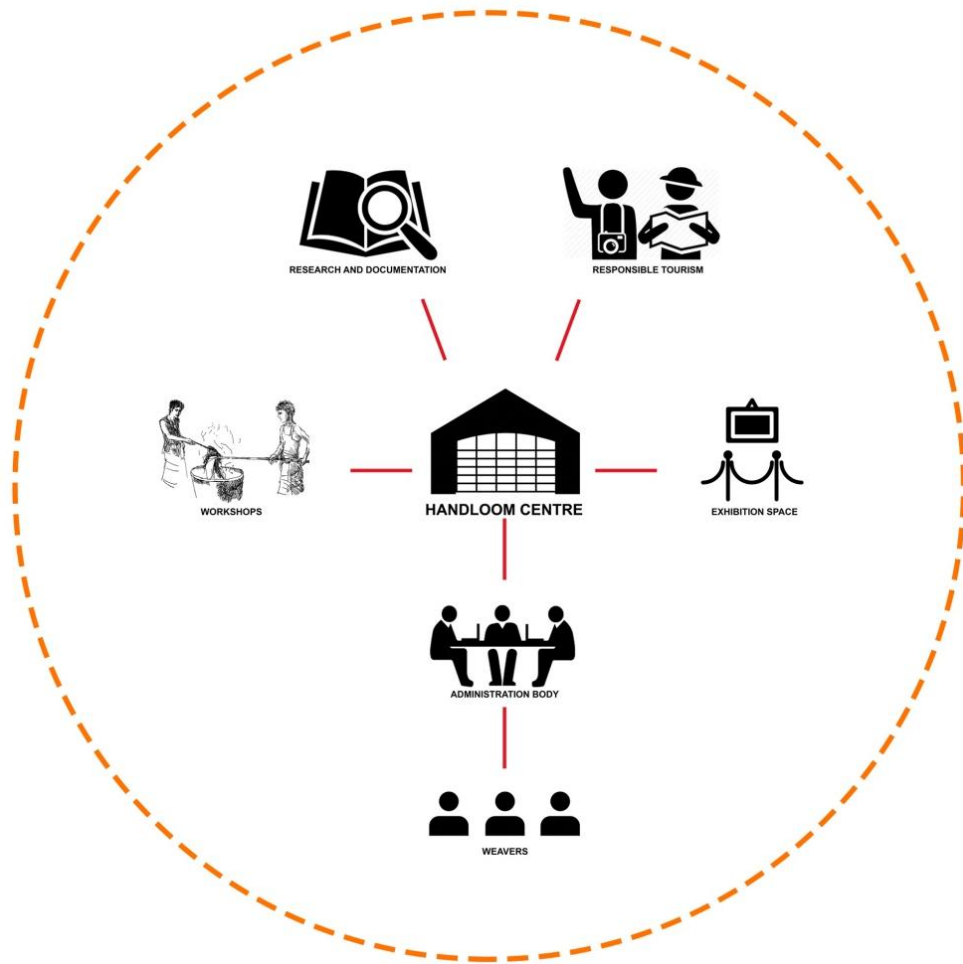
according to him is beneficial for him. Besides, community centers are proposed for positive civic spaces so that the project becomes successful.

These projects have the objectives of providing facilities for the welfare of the weavers' community and also improve their quality. Hence, training centers and research and design centers will play a vital role in this case. It has broader aspects to it.

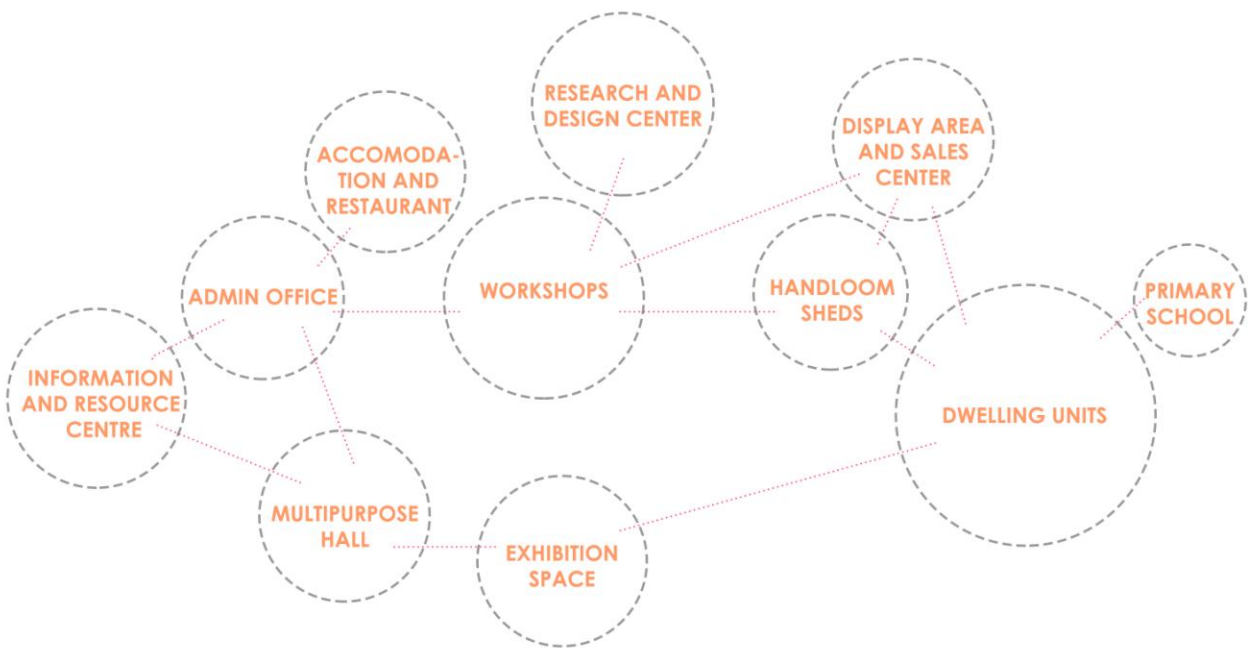
5.2 Functional flow and Program Analysis

The programs are analyzed on the basis of studies and then zoning is done. They are facilitated with functions and as such the entire community intersects. Proposed programs-

- RESIDENTIAL UNIT
- HANDLOOM SHEDS
- MULTIPURPOSE HALL
- RESEARCH AND DESIGN CENTRE
- EXHIBITION SPACE : PERMANENT AND TEMPORARY
- HAAT CORNER FOR SELLING PRODUCTS
- DISPLAY AREA AND SALES CENTER
- WORKSHOPS
- ACCOMODATION+RESTAURANT
- ADMINISTRATION OFFICE
- INFORMATION AND RESOURCE CENTRE
- PRIMARY SCHOOL



Source: Author



Source: Author

5.3 Square Feet and Area for program

RESIDENTIAL UNIT

Allocated plot per family : 1200 sft

Single Unit, single/double storied

Persons to accommodate : Varies

Total 65 families ;Total area : $65 \times 1200 = 78,000$ sft.

Clusters to be formed so that, three individual courtyards can be obtained within.

HANDLOOM SHEDS

1 Chittaranjan Loom per weaver and 1 Charka per family. For the thread dyeing paraa, open sheds are proposed.

Total area : 12000 sft.

MULTIPURPOSE HALL

Space required per person : 10 sft

No. of users : 550 approx (in total village)

No. of rooms :

Area : 5500 sft

RESEARCH AND DESIGN CENTRE

Material Treatment Lab: 2000 sft

Research Lab: 1000 sft

Material Archive: 600 sft

Chemical Testing Lab:500 sft

Fabric Analysis Lab: 500 sft

Library and Documentation: 2000 sft

EXHIBITION SPACE : PERMANENT AND TEMPORARY

Gallery 1: EXHIBITS USING WEAVING MATERIALS/ PERMANENT GALLERY/
WEAVING AND HANDLOOM EXHIBITION: 4000 sft

Gallery 2: JACQUARD PREPARATION AND DESIGN PROCESS GALLERY;
EDUCATING THROUGH DISPLAY: 4000 sft

Gallery 3: OPEN PLATFORM: 3000 sft

Lobby/Courtyard Space: 3000 sft.

HAAT CORNER FOR SELLING PRODUCTS

Depends on the proportion and space.

DISPLAY AREA AND SALES CENTER

Every shed has an adjacent display area attached to it for constant display and weekly fair. Area : 700 sft

WORKSHOPS

Admin, Director and Staff Zone of Research and Workshop : 2000 sft.

Workshop in Charge : 600 sft

Workshop areas : $1200 \times 3 = 3600$ sft

Dyeing and Printing: 3000 sft

Natural Dye Workshop: 3500 sft

Finished Goods Storage: 2000 sft

ACCOMODATION+RESTAURANT

Room Number : 8, Area : $8 \times 300 = 2400$ sft

Common Lobby: 1000 sft

Restaurant and Food zone : 6000 sft

ADMINISTRATION OFFICE

Reception: 500 sft

Admin Office: 650 sft

Account Section: 250 sft

Registrar Section: 300 sft

Controller Office: 250 sft

Computer and Engineering Section: 300 sft

Conference Room: 600 sft

INFORMATION AND RESOURCE CENTRE

3000 sft

PRIMARY SCHOOL

5000 sft

5.4 Area Coverage

Phase 1 consists of 17.5 acres of land, i.e. 7,62,300 sft area in total.

Here,

Green Space = 30%

Water body = 15%

Roads and Internal Hard Surface = 20%

Total = 65% of 17.5 acres = 4,95,495 sft.

Hence, Designing a built space of (7,62,300-4,95,495) sft or, 2,66,805 sft is possible,i.e.

35% of the total land area.

According to given functional analysis and calculated sft, built area comes up to 2,21,500 sft, i.e. 29% of the site.

Hence, approximately 45,805 sft still remains.

5.5 Grand total

RESIDENTIAL UNIT _78,000 sft
HANDLOOM SHEDS _12,000 sft
MULTIPURPOSE HALL _5500 sft
RESEARCH AND DESIGN CENTRE _6600 sft
EXHIBITION SPACE: PERMANENT AND TEMPORARY _14,000 sft
HAAT CORNER FOR SELLING PRODUCTS _Varies
DISPLAY AREA AND SALES CENTER _700 sft
WORKSHOPS _14,700 sft
ACCOMODATION+RESTAURANT _9400 sft
ADMINISTRATION OFFICE _2850 sft
INFORMATION AND RESOURCE CENTRE _3000 sft
PRIMARY SCHOOL _5000 sft

Chapter 6: Conceptual Stage and Design Development

6.1 Introduction

The initial work included the study of the existing handloom settlements; recognize the effects of extinction and then identify the traces. Finally, connecting the traces accordingly and including them in the site through successive selections.





Source: Author

The findings affirmed the need for a collective whole where settlement and the research center, i.e. public centers co-exist.

6.2 Concept Development

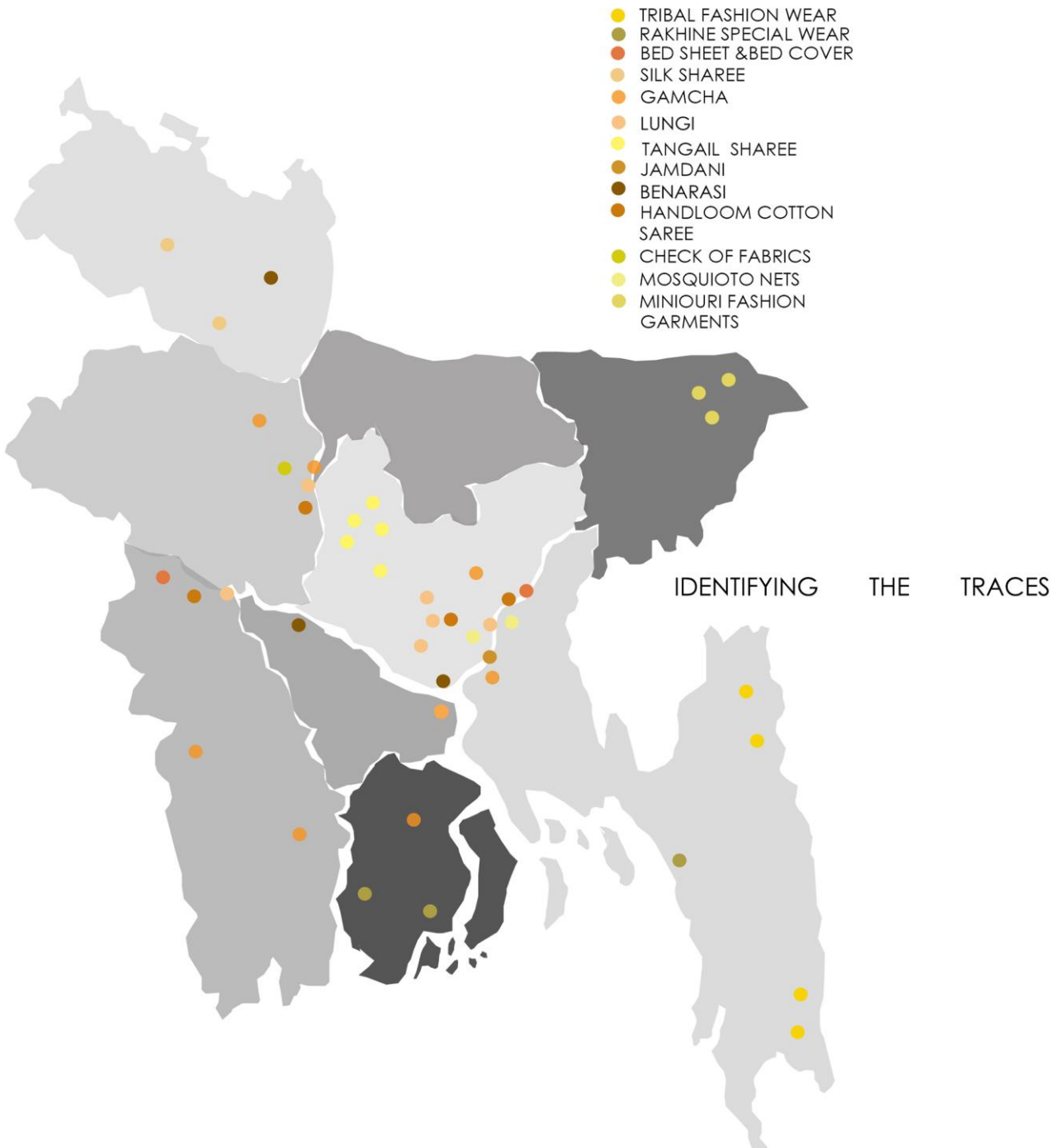
The primary agenda was to think and consider about the needs and wants of the weavers.

আমার পণ্য আমার দেশ

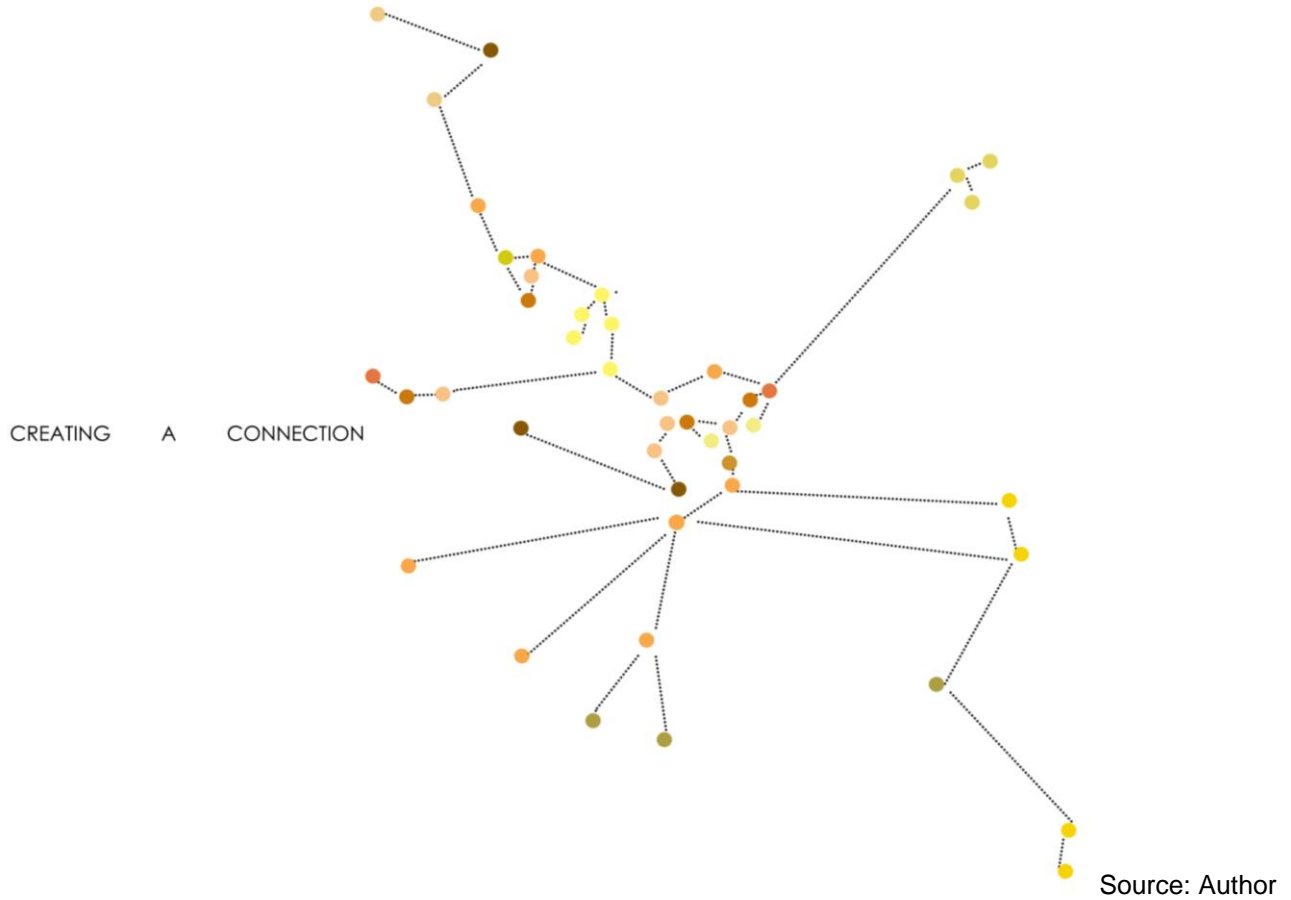


Source: Author

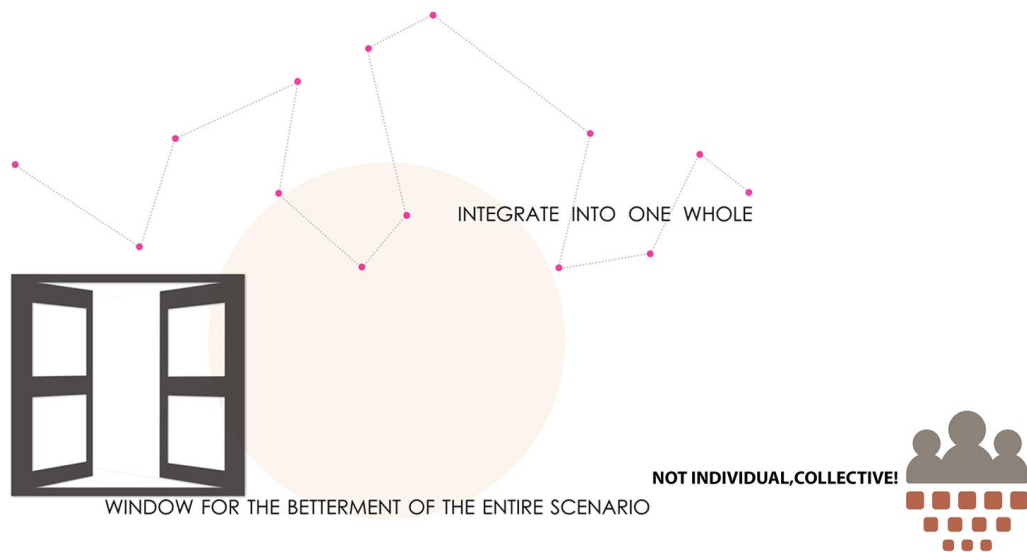
This project is for the weavers' community on the whole. A platform for their betterment and welfare. We all know Bangladesh has a wide range of handloom products all over the country. Hence, at first I tried to identify the locations of the products and then connect the traces throughout.



Source: Author

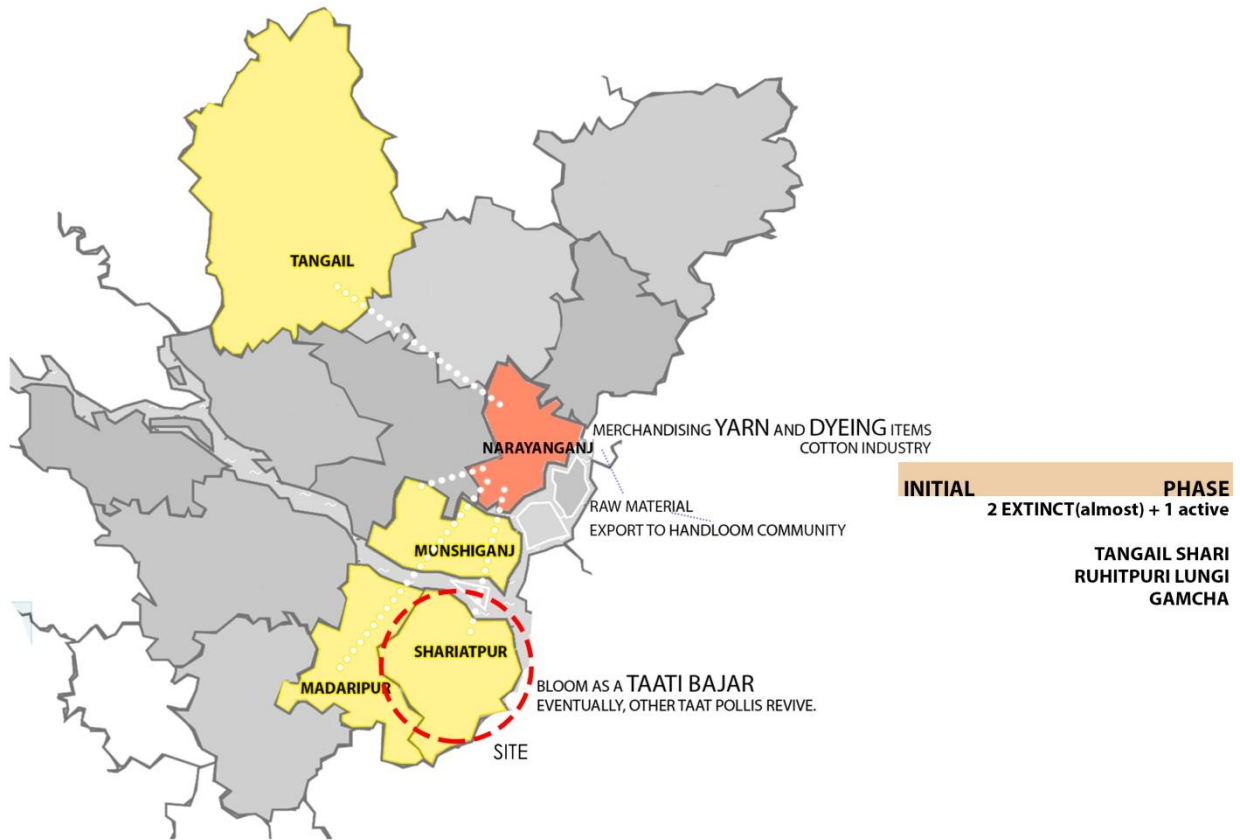


Upon carrying out a comparatively thorough study, the main finding was to bring the entire handloom sector into one integrated whole such that it acts as a window for the betterment of the existing ones and catalyze the growth of the sector.



Source: Author

Hence, in the initial phase, three handloom products from three regions are chosen. It's evident that the raw materials location is nearby and public access is well because of close proximity to Dhaka city.



Source: Author

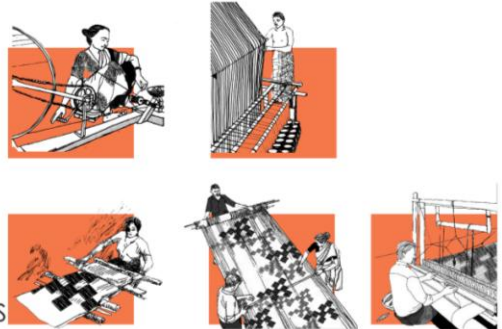
Handloom Production is a beautiful process and the process is very intricate. If we go through the entire process, then it's evident that from thread preparation to finished product, the entire cycle is a beautiful one. However, there is no direct connection between the customer and the weavers, which results in the failure of exposure and preservation.

For this reason, Another step was to alleviate the discontinuity and establish a direct connection between the two such that there exists first hand communication.

This craft needs to be brought into light through proper supervision such that it survives and enlightens the entire nation.

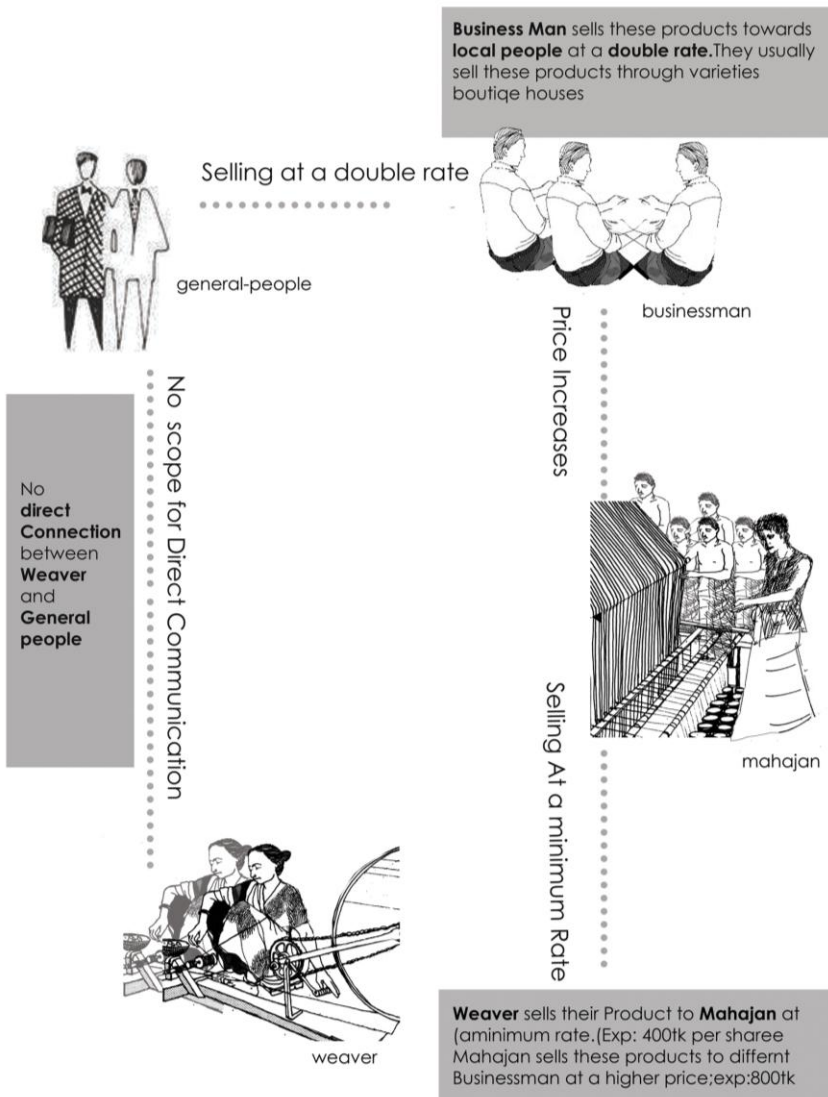


WEAVING PROCESS



INDIVIDUAL FIBRES COME TOGETHER TO BECOME BEAUTIFUL FABRICS

Source: Author



Source: Author

The current scenario depicts influence of two upper hands and zero profit of the weavers during the entire process. Removal of this and taking steps for the enrichment of the products were a big concern.

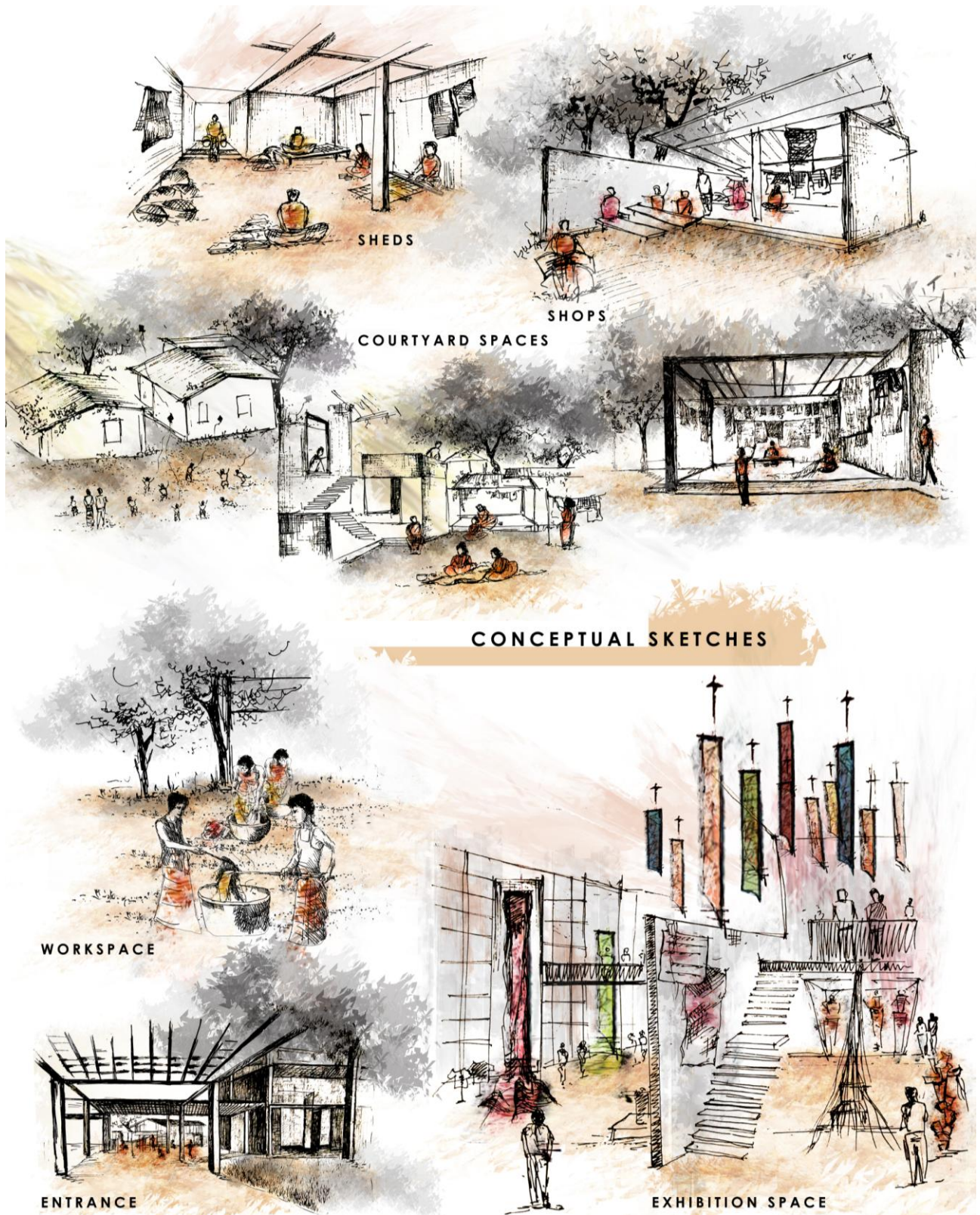


Source: Author

Through all the analysis it is evident that, the amount of hard work and the level of intricacy depicted by the weavers is unparalleled and they are highly skilled. They can weave different stories but their marketing strategies are what keep them behind. These handloom crafts need to be enriched so that we can nurture and uphold them with dignity and pride.

The main concept of this project emerged during interaction with the weavers. The entire scenario demanded public access and a direct connection between the weavers and the public mass, which has been an essential aspect of the design. Some conceptual sketches were imagined which created a visionary scenario for the project.

Spaces visualized through rough drawings added to further design generations.

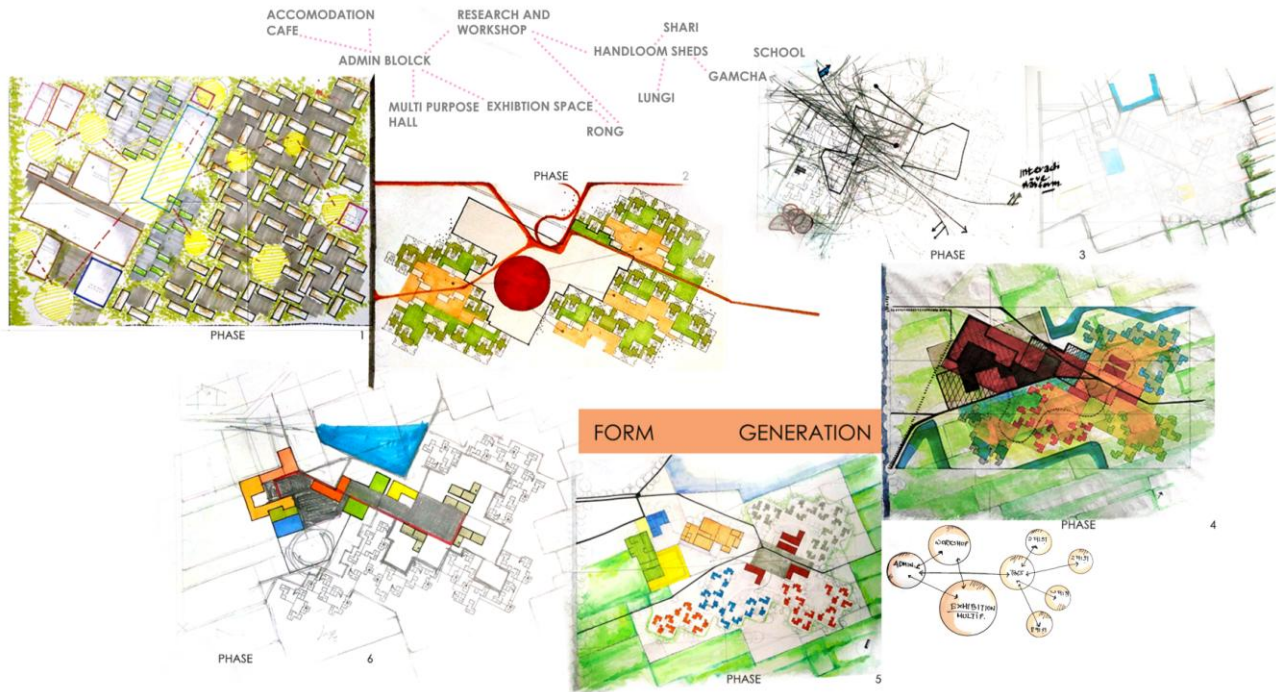


Source: Author

6.3 Form Development & Programmatic Layout

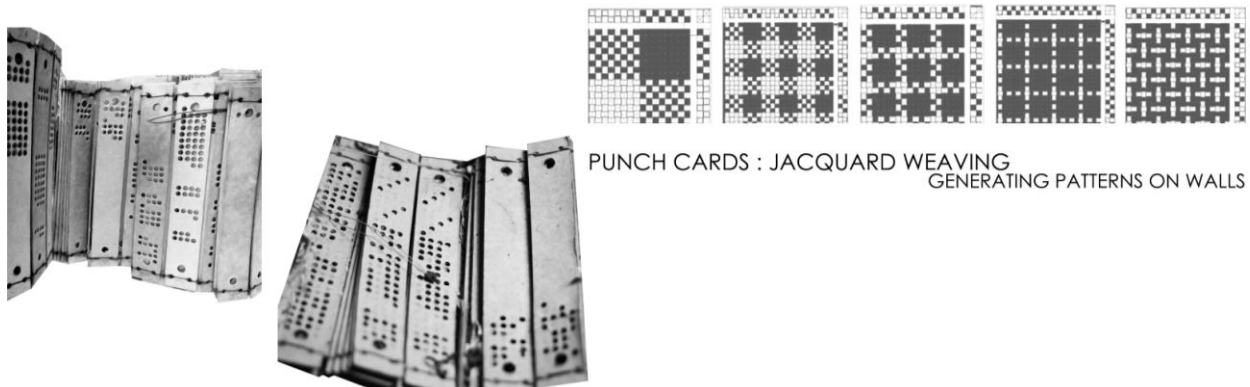
The entire complex has two different axes, one along the north south direction and other along the existing landscape on the site.

So, having these two as the main reference, functions are placed.



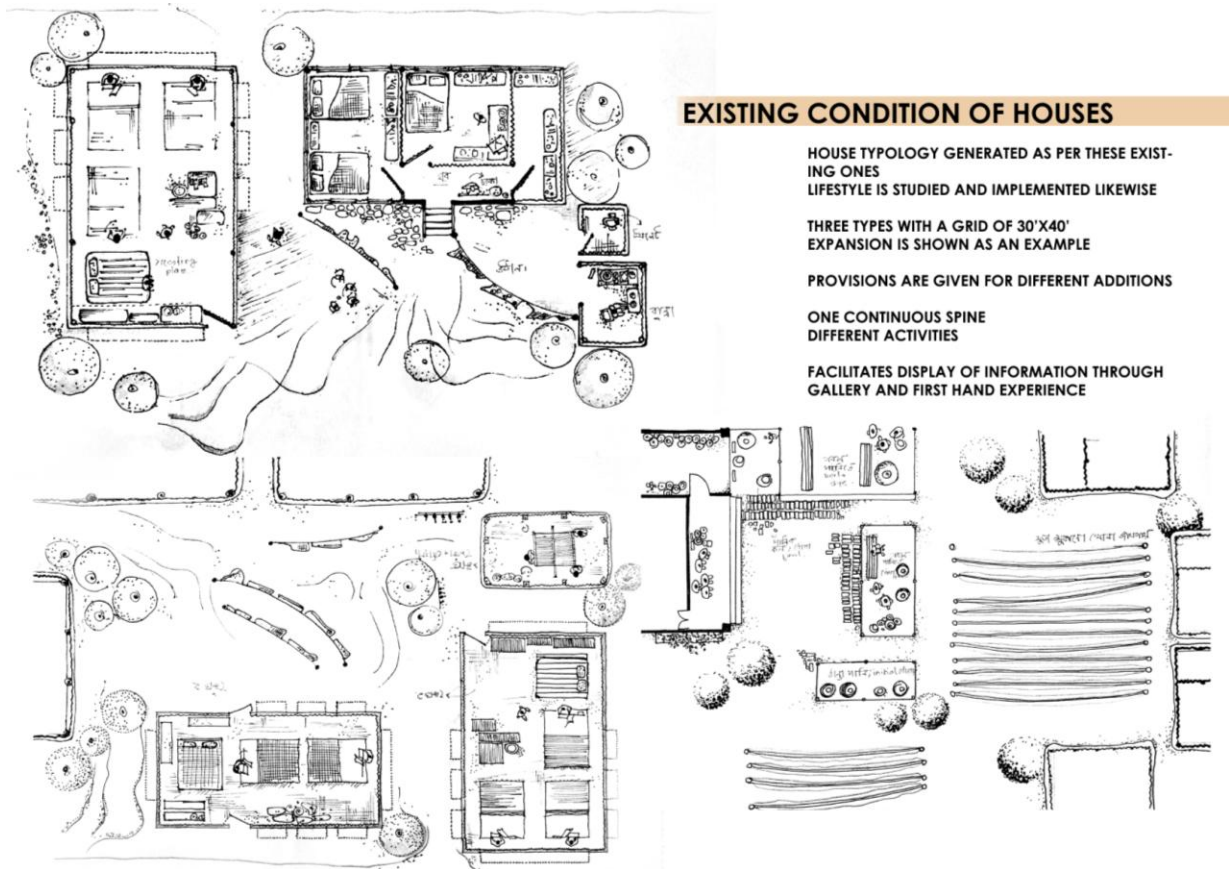
Source: Author

The fenestration on walls has inspiration from the traditional jacquard punch cards. Both the complex and housing units have similar jail patterns on bricks. Designs vary according to different combinations which creates dramatic play of light inside and inspires people.

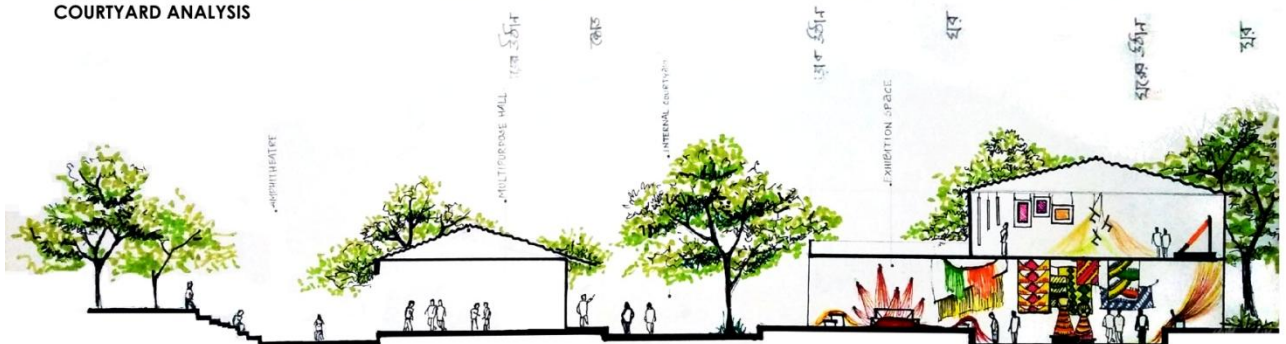


Source: Author

The programs are arranged accordingly in the complex and the housing clusters are grouped according to the existing data available from the study areas.



COURTYARD ANALYSIS



CONCEPTUAL EXHIBITION SPACES

Source: Author

The housing units are derived from these existing types from which the basic lifestyle is chosen and then the design is done accordingly. Initially functions are analyzed and then the final design is derived from a basic grid.

This handloom center, informal and accommodating of the weavers' language is organized around a central spine. It provides opportunities to meet their urban patrons. Such a patronage is so formidable that is lost, even thousands of formal institutions and universities will not be able to reconnect.



Source: Author

The agricultural landscape blends with the proposed design in such a way that the aisle connects with the courtyards and proposed pathways in between. The entire complex is interlinked with a continuous corridor.



FUNCTIONAL ANALYSIS OF THE COMPLEX

6.4 Final Design Drawings

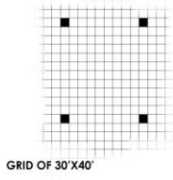




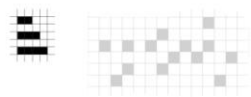
ROOF PLAN
SCALE: 3/64" = 1'-0"

HOUSE TYPOLOGIES

HOUSING TYPES : 3
 CONSIDERATIONS
 DWELLING UNITS
 OPEN SPACE
 ANCILLARY FUNCTIONS
 INTRINSIC COMPONENT : COURTYARD
 INHABITANTS : LOCALS + MIGRANT
 WEAVERS
 FAMILY MEMBERS : VARIES



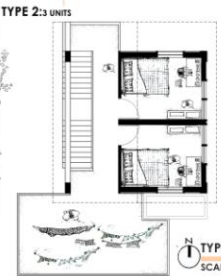
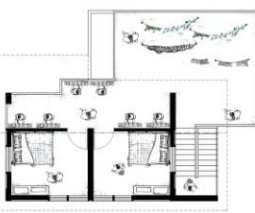
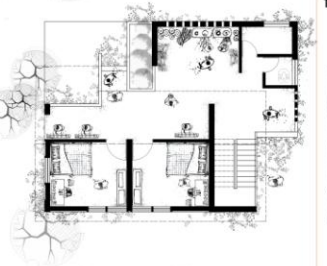
INCREMENTAL SOLUTION/LAYOUT
 INSPIRATION FROM WEAVING PATTERN



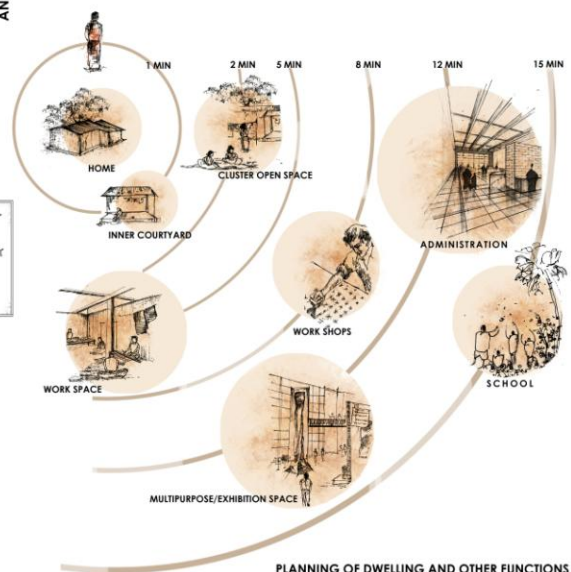
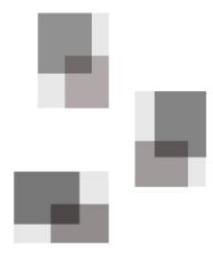
USERS CHOOSE HOW MUCH TO BUILD
 KIT OF ELEMENTS : STAIRS + JALIS



AREA : 1000SF(ipp)
 HOMESTEADS EXTEND TO COURTYARDS

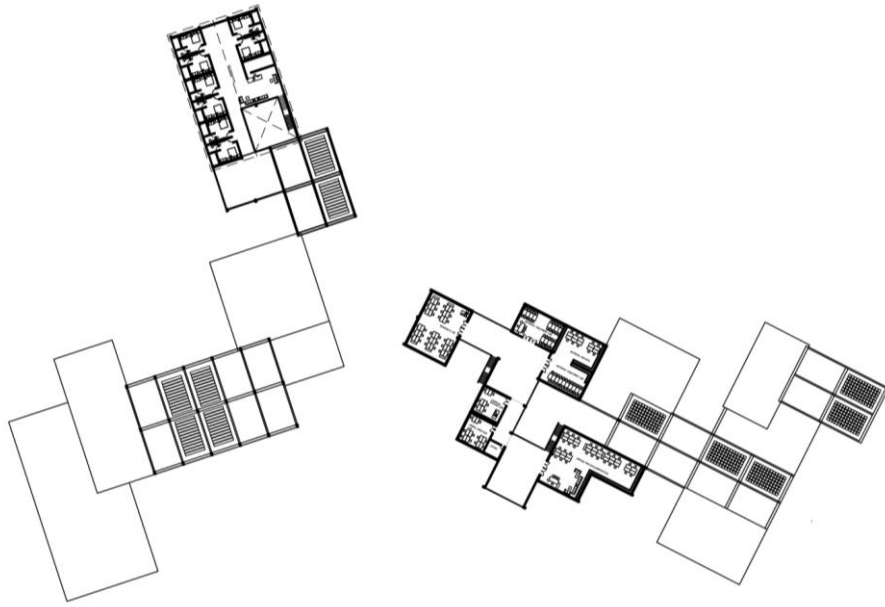


TYPICAL
 SCALE : 1/4"=1'-0"



- PRE-CAST FERROCEMENT L PANEL**
 LIGHTWEIGHT
 REDUCES CONSTRUCTION COST UP TO 30-35%
 HIGH QUALITY AND SUSTAINABLE
 NON TOXIC
 BETTER THAN CI SHEETS. REDUCES HEAT GAIN INSIDE
 LONG LASTING AND DURABLE
- BRICK WALLS**
 LOCAL FACTORY AVAILABLE
 INTERIOR WALLS ADJUST THE TEMPERATURE
 HIGHER DURABILITY
- JALI DETAILS**
 INSPIRED FROM WEAVING PATTERNS
 JALI WINDOWS FOR BETTER VENTILATION
 SAVES BRICK AND PROVIDES AESTHETIC VALUE
- PRECAST CONCRETE COLUMNS**





ACCOMODATION AND RESEARCH BLOCK



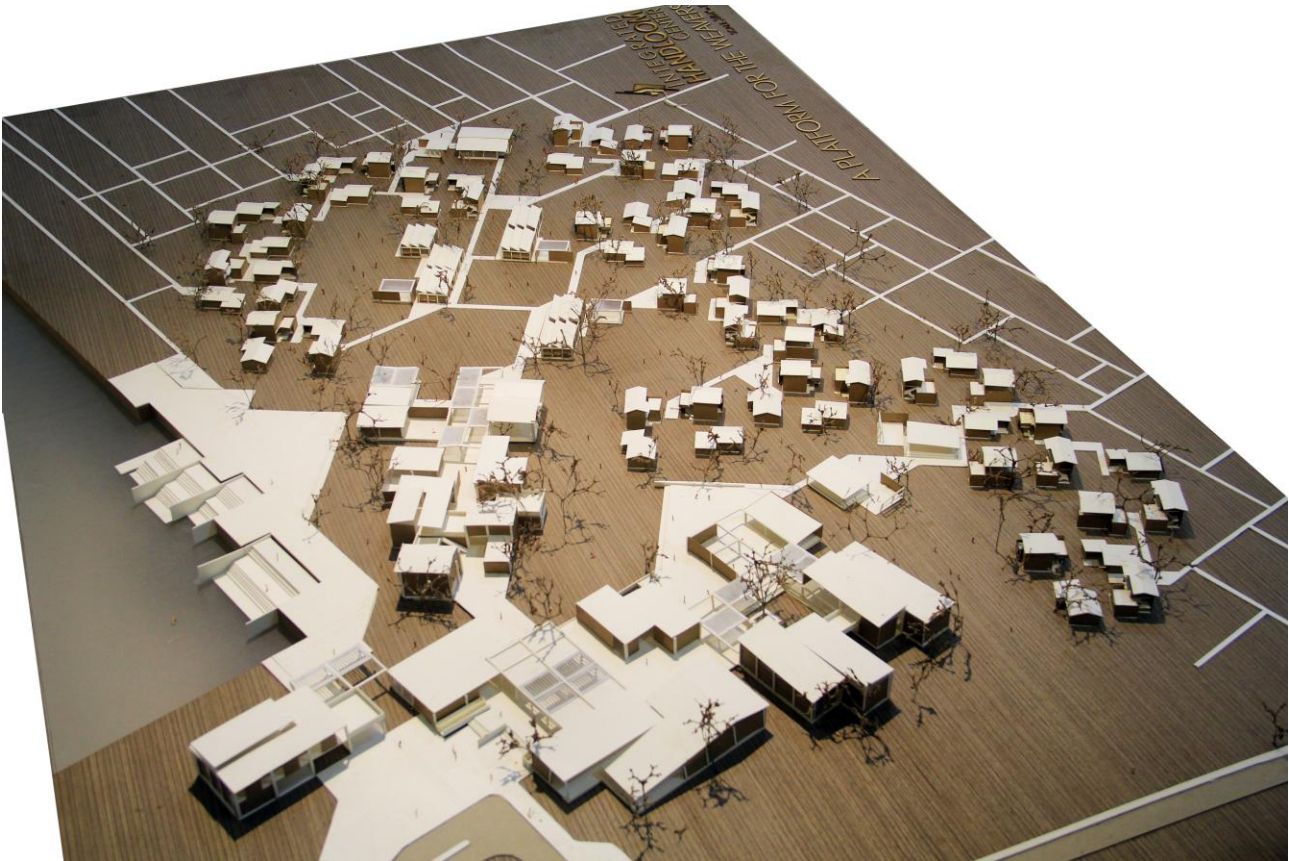
Sections







6.5 Final design models







MODEL IMAGES





BLOWUP DETAILS





Conclusion

This project is dedicated to all the weavers associated with this craft for generations. The design is a spontaneous growth of the necessary elements of a handloom village, with additions that enriches its' potential. It aims in revitalizing the overall growth through strategic solutions. The design is an interpretation of the weavers' language and patterns that makes it unique. To promote our traditional handloom products and enrich their values is the core idea of this project. It serves as a welfare opportunity for the weavers' community, in broader aspect, for the whole country.

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