

CHHAANCH NOGORI

MOLD TOWN:

Revival of Metal Craft in Dhamrai, Bangladesh

By

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ARC 512 | Seminar II

Spring 2017



Inspiring Excellence

Submitted in partial fulfillment of the requirements
for the degree of Bachelor of Architecture,
Department of Architecture,
BRAC University

Acknowledgement

This project is a result of almost 10 months of constantly questioning myself, understanding the multiple layers of our culture and heritage and most importantly interacting with people who have been by my side throughout the whole process and beyond.

In completion, rather the beginning of a new phase of my journey, I'd like to thank the people, who pushed me every single time I fell back, from the bottom of my heart.

First and foremost, I'd like to show my earnest gratitude to my studio instructors, **Dr. Mohammad Habib Reza** and **Iftekhhar Ahmed** for not only guiding me through the whole process but also keeping their faith in me when I was lagging behind. Along with that, I'd also like to thank all my teachers from the past 5 years for being there throughout this challenging path of architecture.

Along with them I'm grateful towards **Mr. Sukanta Banik** for helping me with the information on this craft and giving his valuable insights on the matter.

The next group of people who have helped bring this project to reality are the ones who gave every bit of their time and energy to complete this project at a high note. Thank you **Ehsan, Simi, Fahim, Zaria, Tuhin, Nelia** and **Nirjhar** for making this process extremely enjoyable and giving me memories to cherish forever.

I'm thankful to the people who constantly showed their support throughout my whole journey. **Rifat Ara Mostafa, Meem Zaman** and **Raihan Rafiq** thank you for being there every step of the way.

Ahana Rashid, thank you for supporting me and boosting my morale.

I'm grateful towards **Sarah, Ishrat, Marzia, Madiha** and **Dyuti** for never letting me question my integrity and being patient with me all throughout.

Most importantly, thanks to my **parents** for being my pillars. Without them, this journey would never have been possible and it is because of them that this time went by in a blink of an eye. Thank you for holding me up whenever I fell down and for never stopping on believing in me.

Abstract

Dhamrai has been the place of creativity for centuries. It has a rich history of artistic creativity tracing back to the Pala Dynasty (800-1100AD). During this time both early Buddhist and Hindu settlements had flourished. Some of the most beautiful crafts like metal casting, pottery, terracotta work etc. have been flourished in this region for decades. It had once been a centre for metal crafts where nearly every family used unique 2000 year old techniques to create the art. Their work ranged from producing everyday use items like culinary to religious idols of both Buddhism and Hinduism. However, the current situation is very different from what it had been. Over the past fifty years, many of the families in Bangladesh who were involved in the metal casting trade have taken on other work. Currently only 5 families remain in this trade. Instead of the 30 villages once spread across the Dhamrai-Shimulia region. It has now decreased to only Dhulivita road in Dhamrai *pourashova* and its adjacent regions. The main reasons behind this downfall are: lesser interest of the local Muslim population, availability of cheaper alternatives such as machine-made aluminum and plastic products, being expensive and time-consuming due to high dependency on skills, having very narrow market exposure, lack of proper government support, non-availability of institutional finance and bureaucratic hassles. This project aims to shed light on the importance of revival of almost-extinct art form via providing a platform for the remaining metal artisans while reviving the metal craft and the old structures still standing along the Dhulivita road. The research methods used to gather information are semi-structured interviews, surveys and field study as a bottom-up approach is proposed to get the maximum outcome. The combination of both knowledge and creativity of this community with the little help of training and awareness can not only enrich our heritage but also attempt to save the lost art before it disappears completely.

Key words: *heritage, metal craft, revival, platform, adaptive reuse*

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Chapter 1: INTRODUCTION

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1.2 History of Metal works

1.3 Metal works in Bangladesh

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1.1 Culture and its importance

In simple words, culture is what defines a civilization. It helps shape the way of life, affect our outlook on daily life and most importantly creates a sense of one's identity. It is almost always determined and developed with the help of a certain group's surroundings.

One of the primary element that shaped the culture of the Indian Subcontinent and specifically Bengal, is Metal. Crafts using metal have been shaping the lives of the people of Bengal from as early as 3000BC to recent past. From mere utensils to the creation of almighty deities, metal has been used to serve almost all purposes for centuries.

1.2 History of Metal works



Figure 1: Evolution of Metal (Source: Author)

Modern life is possible because of the fact that metals exist and we have figured out the ways of using it. Not only do they help us construct our buildings and bridges, allow us to fly, sail and get around but are also essential in industry and trade. With metals we measure time, build monuments, worship, adorn ourselves, make art and wage war.

According to The Gold Museum of the Bank of the Republic, the history of metals can be traced back to almost nine thousand years ago, in the Near East. Copper was the first metal to be used, when the ancient residents of Palestine and Anatolia struck pieces of natural copper to make tools for themselves. Over the following centuries,

people taught themselves to extract copper from ores and to mix it with tin to make bronze. Ancient empires used this alloy to produce weapons for their conquering armies. Strong tools were used in the manufacture of handicrafts and in agriculture, which resulted in the increase of production. Metals have been used for various other purposes since those times. Over 4000 years ago, between the rivers of Tigris and Euphrates, in Mesopotamia (today's Iraq), ancient artisans produced statues and adornments using natural beeswax for patterns, clay for molds and manually operated bellows for fueling furnaces.

The oldest casting is thought to be a frog which was cast in copper. In the third millennium BC, somewhere between the Black Sea and the Persian Gulf, an artist created a sculpture in beeswax, covered it in liquid clay and baked it in flames. In the flames, the wax was lost or evaporated, turning it into a hollow space surrounded by a clay shell. The artist used copper and tin to make a bronze alloy that the artist poured into the cavity left when the wax melted. After the molten metal within the clay shell hardened, the sculptor hammered the clay from the metal, and the first bronze was cast. The process was similarly used by artisans and sculptors of ancient Egypt, the Han Dynasty in China, the Benin civilization in Africa, the Aztec goldsmiths and the Indus Valley. (Huq, 2007)

In the thousands of years since it was first used, the use of technology has improved the ease and accuracy of the process but, remarkably, the concept remained the same. Today, around 5000 years later and with the help of modern techniques and technology, this process is used to create items from the finest jewelry to extremely complex aerospace components.

1.3 Metal works in Bangladesh

1.3.1 History

Art and Crafts play a vital role in unearthing the history of Bangladesh. Archaeological evidences verifying this fact have erupted by the excavations at Mahasthangarh, Bogra, Mainamati, Comilla and most recently since 2001 AD, from Wari-Bateshwar in Narsindhi district. The people of ancient Vanga (Bengal) dating to the earliest human settlements or janapadas of approximately 500 BC were producing pottery, iron implements, wooden objects and a range of agricultural, ritual and domestic items. (Banglapedia, 2014)

The Bengal Hindu sculptures were created over a period of 1000 years and it is evident that religious and iconographic concepts were at their peaks during that period. The unearthing of many sculptures in recent times reveals a complexity; expanding the horizon of information which was restricted to the Pala and Sena dynasty sculptures.

Copper, bronze and brass statues of gods-goddesses and handmade crafts in Bengal heritage of Vedic knowledge in metallurgy still lives in the art and craft of brassware. According to Banglapedia, objects used in the temple and religious ceremonies were of high artistic quality. For example, embellishment of the *paspapatras* or copper plates and bowls for holding flowers and offerings, temple lamps, *panchapradsips*, and the female form lamps the bells or *ghantas* for awakening the gods, and handle bells decorated with images of the Garuda, Hanuman or bird figures. Trays on stands mounted on a bull or peacock figure are meant for ritual offerings. The huge chariots

or *rath* were also elaborately decorated with brass and copper motifs representing mythological themes.

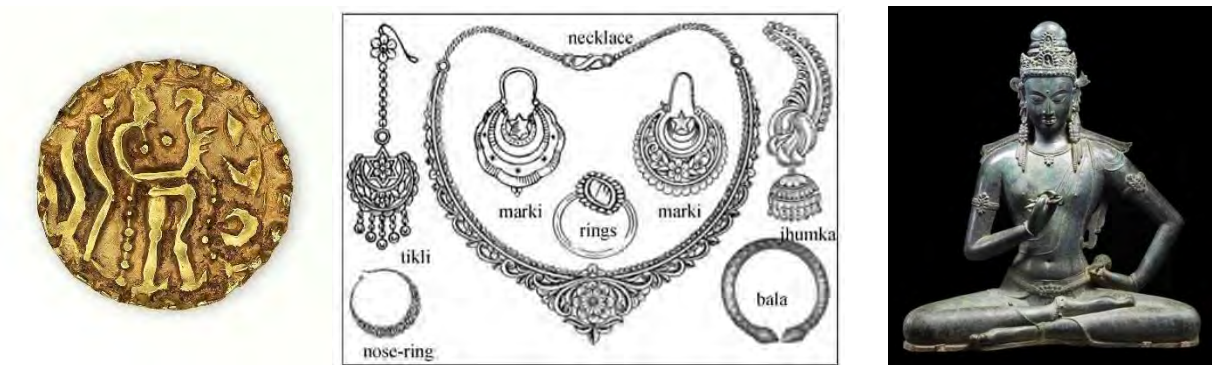


Figure 2: Earlier use of metal in Bengal (Source: Banglapedia)

1.3.2 Present scenario of brassware industry

The brassware industry in Bangladesh is considered as a cottage industry and artisans with high workmanship make brass crafts by hand. The brassware of Bangladesh has good reputation in international market for uniqueness.

The traditional cottage brassware industry in Bangladesh is mainly located in Dhamrai Upazila of Dhaka District. Besides that, there are also family based cottage brassware industries in Chittagong, Narayanganj, Nawabganj, Islampur of Jamalpur District, Rangpur, Tangail and Shariatpur.

Though once a matter representing our golden age of civilization, pride and social identity, unfortunately in the course of time such a cultural heritage with its highly rich aesthetical and creative value, has fallen on the verge of extinction. As a matter of fact only a few in our society, nowadays, are aware of the fact that one of the main centres of such metal crafts of the sub-continent had been on this ground where only a few artisans still have been working to their most to revive this age-old art form. (Huq, 2007)

1.4 Dhamrai

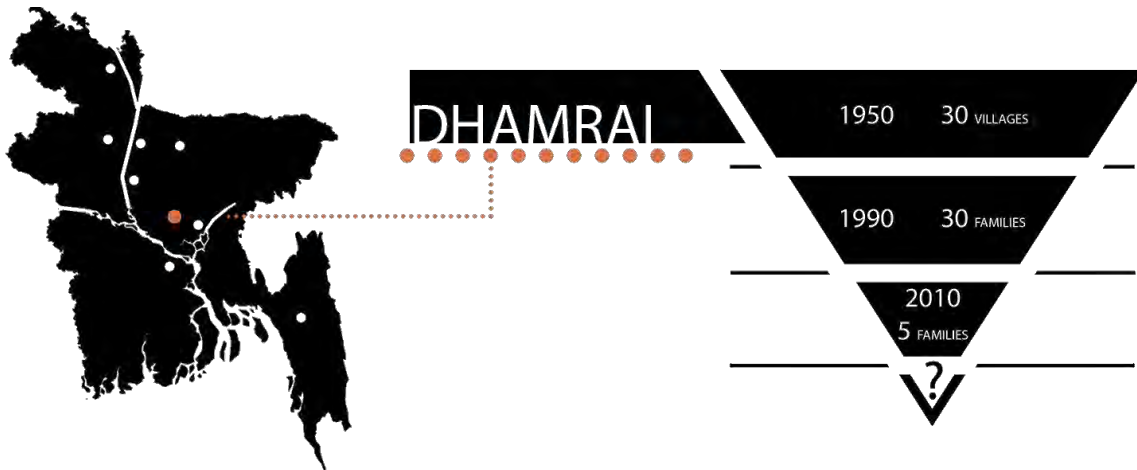


Figure 3: Metal usage in Dhamrai (Source: Author)

Dhamrai has been a stable ground for various kinds of handicrafts by incorporating rich cultural values and traditions into the lives of people. It is a home to some of most exquisite talents of Bangladesh who are gifted with immense creativity and knowledge on one of the oldest crafts in the world. However, it's unfortunate that the city is gradually losing its identity as the creativity and traditions are being drained out and getting replaced by the mechanical ways of life. Although it attracts a number of foreign enthusiasts of art and crafts, very few people are properly informed of the potentials of this place. It barely has the recognition it should have in national and international level as it is not efficiently recognized amongst us. The area is slowly losing its artistic origin due to the lack of consciousness and preservation practice.

“Though once a matter representing our golden age of civilization, pride and social identity regrettably in the course of time that cultural heritage highly rich in aesthetics and artistry has fallen on the verge of extinction. In fact only a few in our society nowadays, are aware of the fact that one of the main centers of such metal crafts of the sub-continent had been on this soil where only a few artisans still have been toiling to their most to revive the millennium-old art-form.” (Huq, 2007)

Although, there was a time when the metal industry, especially in Dhamrai, thrived across the country currently it's facing extinction as the traditional professions are not self-sufficient. Along with that due to mass production of cheaper alternatives, modern day crisis, ignorance of both the artisans and rest of the world and lack of contemporary techniques, their situation have been made more miserable. This as a result is making them stray from their generations old family business and opt for other jobs to earn a minimum living.

1.5 Why is the craft fading away?

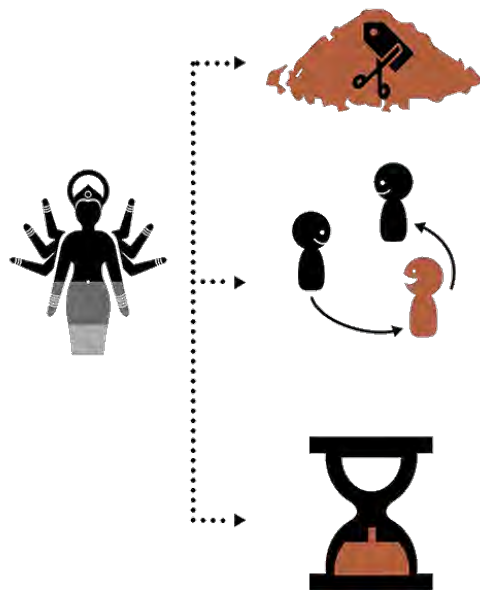


Figure 4: Major reasons behind fading of metal craft (Source: Author)

On the base of it all, there are factors that contribute to the metal crafting industry's downfall.

1. Cheaper alternatives

Through industrial revolution, colonialism and the vast availability of modern technology, the people of Bangladesh have access to much cheaper alternatives of metal crafts such as plastic, glass, melamine, aluminum etc. Therefore, Bangladeshi metal craft’s consumer base has seen a major shift.

2. Middle man

For the artisans to reach their current day consumer base, it takes a handful of middlemen. Be it local brokers or large boutique houses, the distance between buyer and creator is always quite large. Due to such mediators, the crafters end up with a lot less than the potential maximum profit.

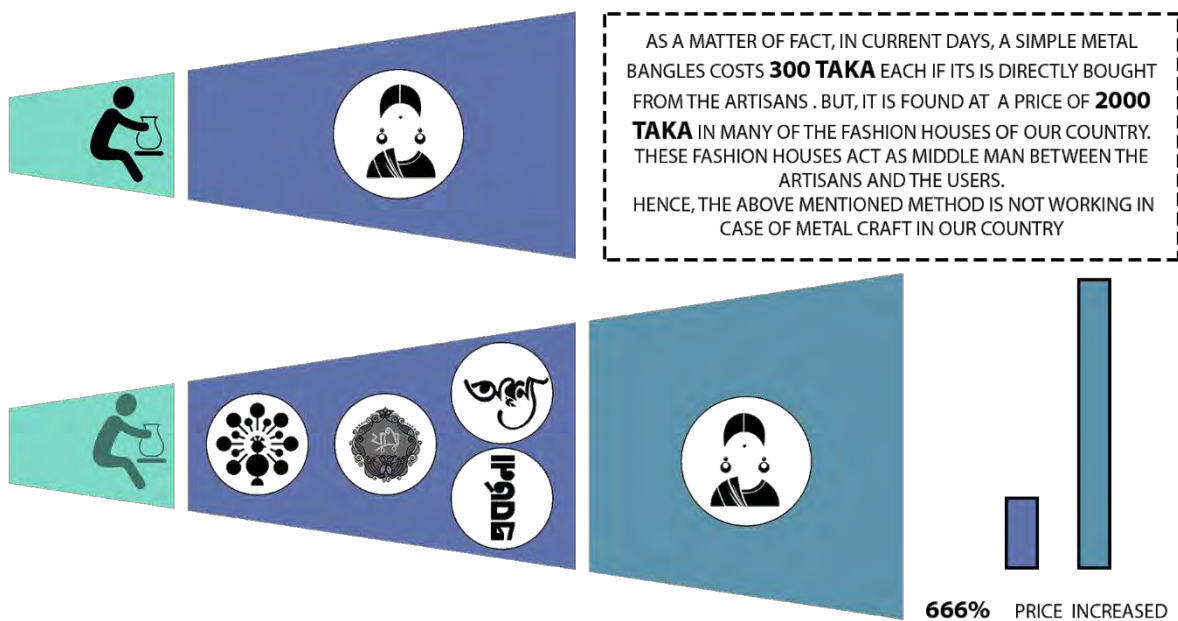


Figure 5: Influence of Middle man (Source: Author)

3. Expensive

The process of metal crafting restricts its products to be repeated and mass produced within a small amount of time. Moreover, a large part of the products quality depends on the skill of the artisan and not the apparatuses that contributes to its creation. It is

also a lot more time consuming than its alternatives. Due to these factors, the products created from this craft tend to be more expensive.

1.6 Why should metal be revived?

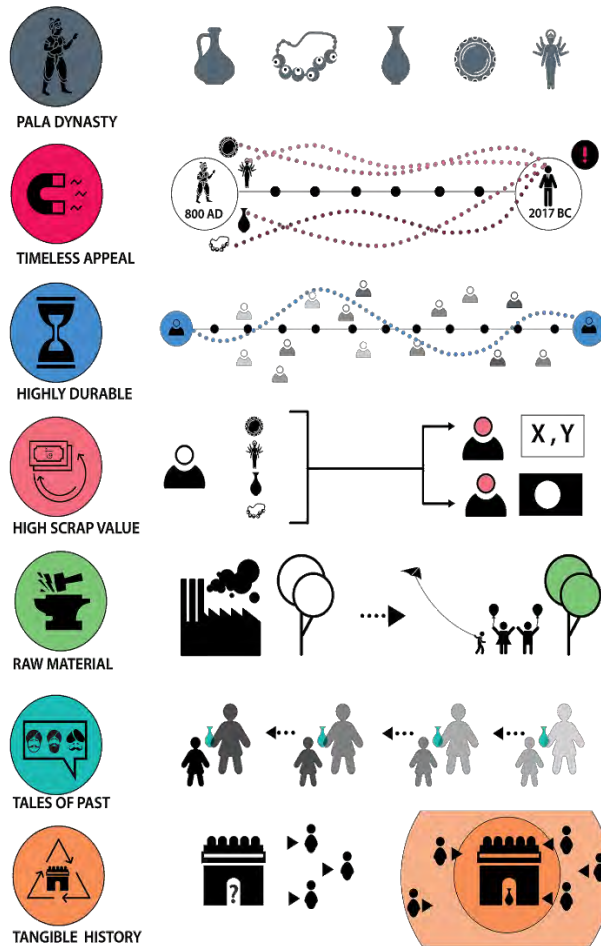


Figure 6: Why should metal be revived? (Source: Author)

Unlike many other crafts that had existed in the past, metal craftwork in Bangladesh is still not in a position where it cannot be stopped from being extinct. There are a number of reasons for it to be revived, restored and practiced at its glory. They are listed below.

1. Timeless Appeal

The materials produced through metal craft have been around from as early as 800AD. Due to its fantastic craftsmanship, uniqueness and aesthetic, it holds its appeal to this day.

2. Pala Dynasty

Metal Crafting is a direct descendant of Pala dynasty's culture. It is one of the few living cultural fossils of that time hence precious to our idea individuality. Along with that, the techniques and skills used in Bangladesh is very unique.

3. Highly Durable

Metal itself is a highly durable material. On top of that, the process with which metal crafting is done, makes the products exceptionally durable.

4. High Scrap Value

Materials produced from metal crafting can be almost entirely reformed and reused.

5. Local Raw Material

The use of locally available material makes this environmentally friendly. Unlike its industrially produced counterparts, metal does not contribute to the rising pollution level of Bangladesh.

6. Tangible History

The instruments used in metal craft, the institutions and the workshops are all situated in and around assets with tangible historic value. If this craft goes extinct, such historical marks are going to be demolished alongside it.

1.7 Revival of Nakshi Kantha

A type of embroidered quilt, Nakshi kantha is a centuries old part of handicraft of Bangladesh.

It can be traced back to a time in Bangladesh where it was created with the intention of daily use instead of a sought after craft. Like metal, once a coveted product in

people's lives, Nakshi kantha had also faced an alarming decrease in demand over time. A heritage product of both east and west Bengal, it was endangered when cheaper and faster alternatives started surfacing.

From a closer look at the revival process of Nakshi Kantha, it can be seen that there are two key things that has saved the craft from extinction. Firstly, changing the product's identity from being a household item to a luxurious one. By doing this, in terms of economic value, a much larger consumer base was reached. Secondly, the distance between the artisans and buyers was as minimized as possible. This made sure that the artisans earned enough. Overall, the revival process was done through four phases. They are described below.

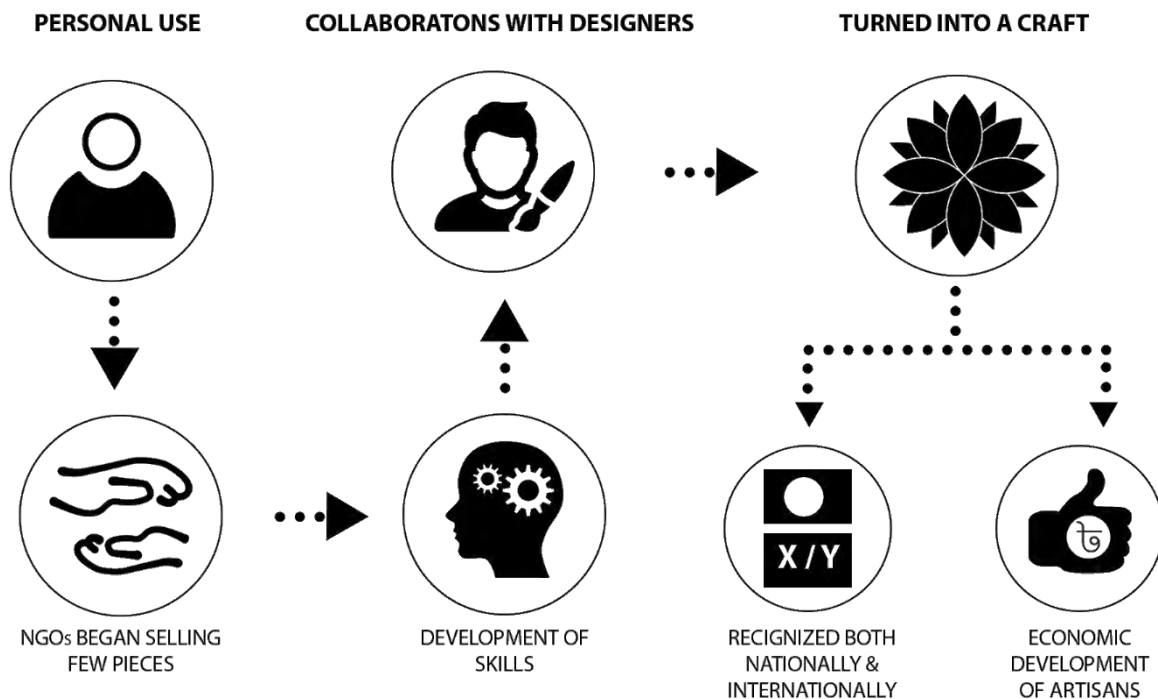


Figure 7: Revival of Nakshi Kantha (Source: Author)

Phase One – Being Used as Household Item

At the beginning, Nakshi Katha was used and produced to be used personally. It was a product that was used in one's daily life.

Phase Two – Recognizing the Decline

The decline of Nakshi Katha was recognized and nonprofit organizations took proactive measures. The sale increased by a small margin.

Phase Three – Developing Skills

The production process of Nakshi Katha was streamlined. Now, they were being made much faster and with more skilled workers.

Phase Four – Collaborating with professional designers

Artists and designers with strong education on skill and aesthetics joined the production team of Nakshi Katha. As a result, it transformed into a craft from a mere daily personal product.

Result

Nakshi Katha is now a well-known symbol of Bangladeshi culture around the globe. There are a handful of artisans with almost zero complains of their economic needs to be met.

Chapter 2: PROJECT INTRODUCTION

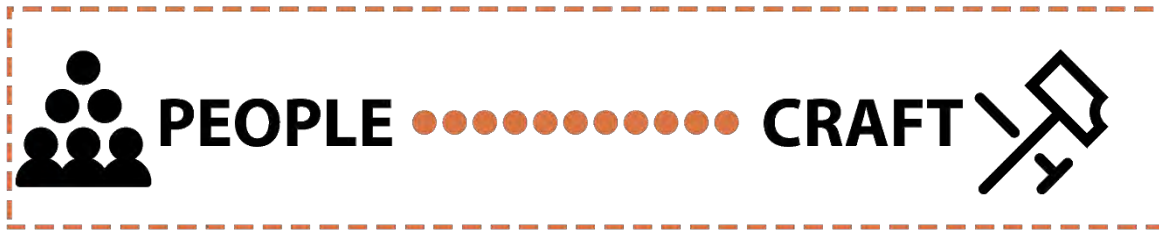
2.1 Project Introduction

2.2 Aim and Objectives of the project

2.3 Methodology

2.4 Schematic program and Rationale

2.1 Introduction



Traditional Bangladeshi metal craft is globally reputed and used to have huge demands in the local markets. Looking back into the history of the Bengal in the Indian subcontinent, traditional metal artistry have been an essential part of our rich heritage for a long time. The existence of metal crafts on the Indian peninsula back to over 2000 BC. (Huq, 2007). The rhythm of beautiful working melodies of metal could still be heard just seventy years back in the lanes of Dhamrai. However, today's scenario has changed drastically. The once thriving market of metal works has now reduced to the threat of extinction in the fast paced nature of the country. One of the most important cottage industries of Bangladesh is now on the way of extinction due to numerous complications and barriers related to the industry. Therefore, doing this project is really necessary to revive our dying metal industry. The combined approach of the artisans along with the centre for research, exhibition space and workshops will not only help to attract tourists to this culturally rich town but also preserve our heritage. Thus, we can promote this culture and boost the economy of the artisans which turn improves the economic condition of our country as well.

In context of Bangladesh, a project like this is necessary in order to preserve our roots of being a Bangladeshi. With the passage of time and with the idea of a "Digital Bangladesh" (provided that it is being used in productive way), we can implement such ideas to uphold the tradition as well as open doors for new marketing strategies.

Dhamrai is likely to be one of the few remaining metal craft sites in Bangladesh. In no other place of Bangladesh has such a combination of metal workshops along with colonial buildings giving it a unique character. It's a perfect amalgamation of the tangible and intangible history of Bangladesh. It can be stated that the location of Dhamrai is rather fortunate and beneficial because is situated at a close proximity of Dhaka (40 km away). Moreover, it's in a 15 minute walking distance from the Dhaka-Aricha Highway making it easily accessible. Also, it's used as a ground for Roth Yatra every year making it a common tourist destination during that time. Along with that, tourists (mostly foreigners) have shown keen interest in the craft itself marking this as a possible site with innumerable potential. It is obvious that the site has a multi-dimensional factors influencing its future. At present, it is significant in numerous ways such as cultural, historical, economical etc, turning it into a national asset.

2.2 Aim and Objectives of the project

The main aim of this project is to focus on the present scenario of the metal crafts sector of our country and its constant degradation. It is to offer an interactive platform to connect the universal artists, artisans and art enthusiasts in one thread. It will provide an opportunity to understand not only the craft but also the life of the artisans.

The traditional metal art needs to come under focus once again and the project aims to do this by:

- Promoting this area as a coveted tourist destination through the cultural assets
- Developing socio-cultural economy and position of craft
- Motivating the artisans by providing them exposure customers, that is, urban patrons

- Identifying their problems and limitations and the reason behind their migration and unwillingness to work further
- Constructing the ultimate exposition of art, craft and life to involve everyone to participate in our cultural heritage
- Developing a cultural corridor in the outskirts of the capital to ensure decentralization of cultural activities
- Providing a universal platform for art and craft practitioners and learners beyond the borders so that there is a direct connection and everything works as a unified whole
- Enlightening the audience (both local and international) about well-known metal craft heritage of our country and its beauty

2.3 Methodology

For the study, reviewing of many relevant literature regarding this subject has been done. Such as government and non-government official documents, reports, articles and books on metal crafts and Dhamrai, the history have been studied to get the proper situation and information. To analyze the situation, semi-structured interviews were taken and surveys were done in the community and also from distinguished individuals who have worked with the said topic. Along with the qualitative research, some quantitative research was also done to establish the condition. While the books and articles helped create a picture of the previous and current situation, field surveys helped to analyze the state from own perspective.

2.4 Schematic program and Rationale

- Colonial structures accommodating the current metal workshops

Renovation

- The annual Jagannath Roth Jatra festival

Craft fairs

- Set of common services to artisans that enables them to leverage their inherent skills to compete in modern-day markets

Workshops

Metal craft sheds

- Connect the artisans to the markets through various marketing channels

Curated exhibitions

Craft workshops

Craft residencies and exchange programs

- Help explore export markets to attract international customers, tourists and sculptors.

Accommodation

Restaurants

Shops

- Documentation of the age-old techniques and the history of this craft.

Research centre

Library

Chapter 3: LITERATURE REVIEW

3.1 Processes of manufacturing metal crafts

3.2 Traditional craft

3.3 Preservation of Traditional craft

3.4 Types of Rural tourism

3.5 ICH and Experiential Tourism

3.1 Processes of manufacturing metal crafts

There are five different casting techniques:

- Lost wax method
- Clay casting method
- Sand casting method
- Spoon casting method
- Plate casting method



These methods are used to make items ranging from ornate Hindu and Buddhist statues to simple household objects such as spoons and toilet pots. Traditionally metals like copper, tin, zinc, iron, mercury, lead, gold and silver are the primary raw materials that are used in the process. But as a general rule, three basic alloys are mostly used here: brass, bell-metal or white brass and bronze.



Figure 8: Sprig moulds for lost wax method (Source: Dhamrai Metal casting, Making Space: Sensing Place, Steven Follen)



Figure 9: Tools required for Detailing (Source: Dhamrai Metal casting, Making Space: Sensing Place, Steven Follen)



Figure 10: Making on the process (Source: Dhamrai Metal casting, Making Space: Sensing Place, Steven Follen)

3.2 Traditional craft

Traditional craftsmanship is perhaps the most tangible manifestation of intangible cultural heritage. (UNESCO, n.d) In order for a craft to be termed into a traditional craft, it has to attain the following facts:

- Taking shape, existing and having *long-development* in a country
- Forming craft *villages or streets*
- *Generations* of skillful craftsmen
- Stable *technique* of the nation
- Nation's *raw material*
- Cultural *heritage*

Instead of focusing on preserving craft objects, conservation attempts should instead concentrate on encouraging artisans to continue to produce craft and to pass their skills and knowledge onto others. According to UNESCO, there are numerous expressions of traditional craftsmanship: tools; clothing and jewelry; costumes and props for festivals and performing arts; storage containers, objects used for storage, transport and shelter; decorative art and ritual objects; musical instruments and household utensils, and toys, both for amusement and education. While some are used for more short term uses others turn into heirloom that are passed from generation to generation.

3.3 Preservation of Traditional craft

Like many other intangible cultural heritage, due to rapid globalization, metal craft is also facing several challenges which have begun endangering its very existence. In order for the craft to adapt to these changes, steps should be taken immediately. These steps can be of various types and the one of the most effective measure is promotion of tourism in those areas.

One such project was project CRAFTATTRACT (Traditional craft as new attraction for cultural tourism) which was implemented by Hrvatsco Zagorje and Slovenian partners in the border of Croatia and Slovenia. In order to foster heritage as driving force for responsible tourist development, Slovenia established a sound basis for preservation of intangible craft.

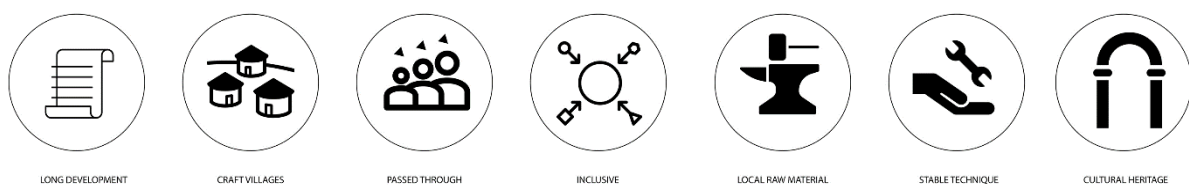


Figure 11: Intangible Cultural Heritage (Source: Author)

3.4 Types of Rural tourism

1. Natural Tourism
2. Cultural Tourism
 - History, culture, archeology of local people
3. Ecotourism
4. Agro Tourism
5. Village-Based/Experiential Tourism
 - Tourist share in village life
 - Rural villages gain economic and other benefits from tourist activities

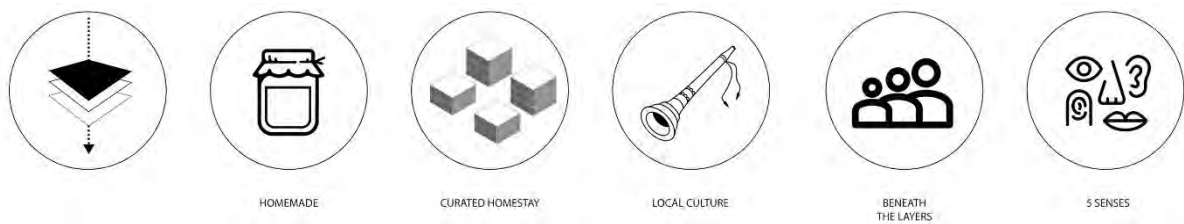


Figure 12: Experiential Tourism (Source: Author)

3.5 ICH and Experiential Tourism

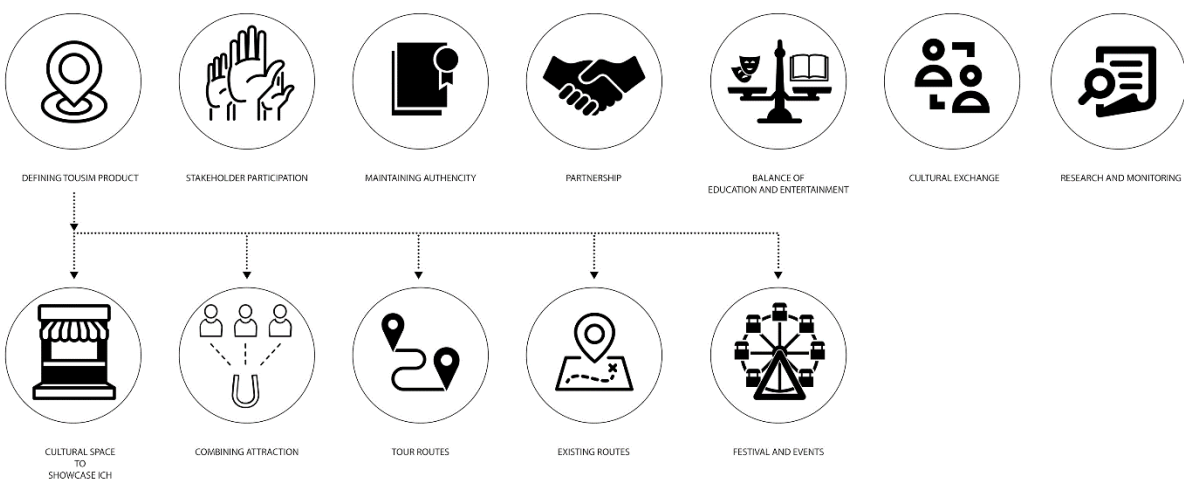


Figure 13: ICH and Experiential tourism (Source: Author)

Chapter 4: SITE APPRAISAL

4.1 Introduction

4.2 Naming of Dhamrai

4.3 Dhamrai: A city of stories

4.4 Economic activities

4.5 Site and Surrounding

4.6 Dhulivita road

4.7 Existing site

4.8 Heritage buildings

4.9 SWOT Analysis

4.1 Introduction

The site is situated at the bank of Bangshi River in Dhamrai. Dhamrai is located about 40 kilometers north west of the capital city of Dhaka; it is located within the coordinates of 90.02 - 90.14E and 23.50 - 24.02E.

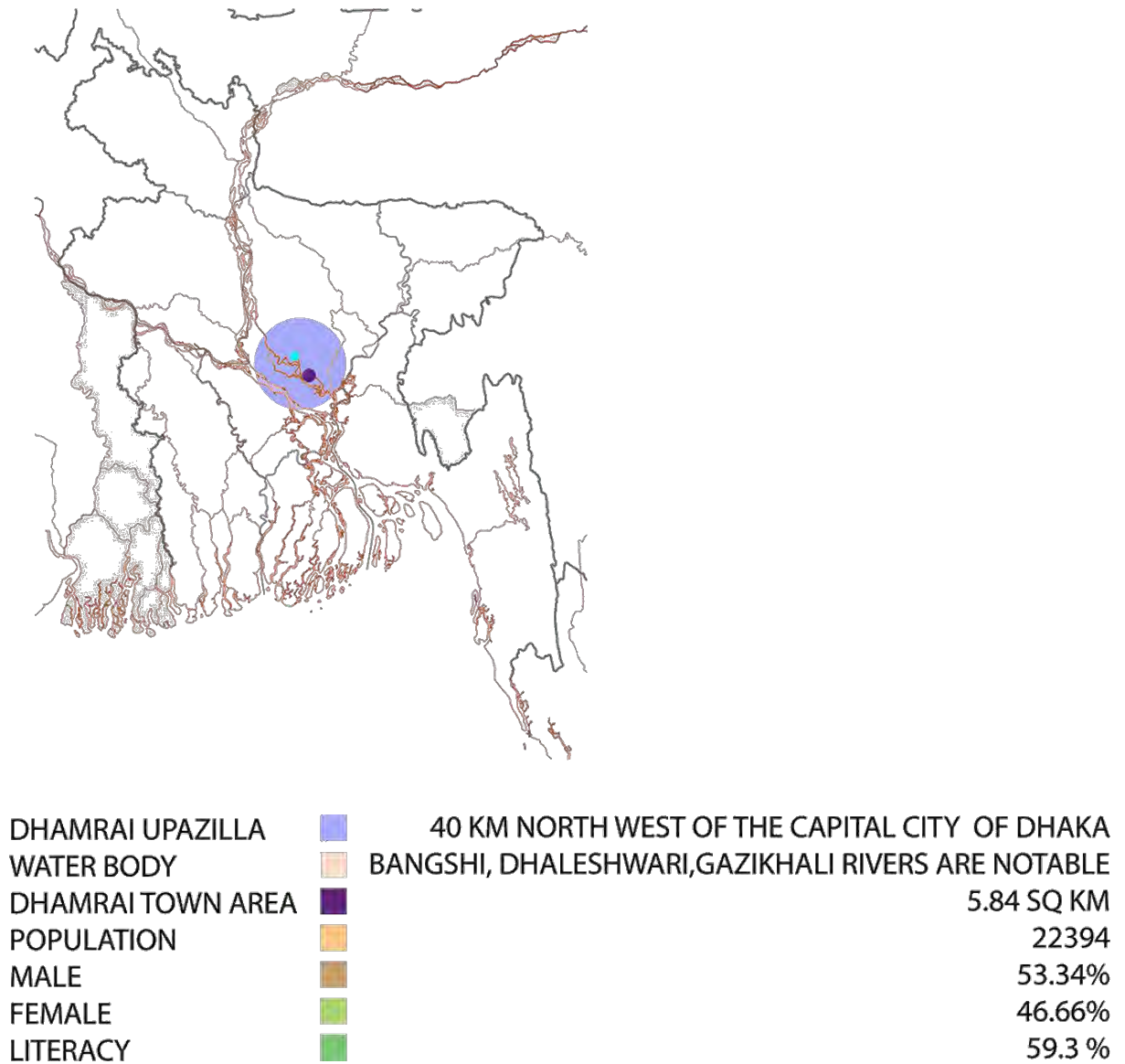


Figure 14: Basic information of Dhamrai (Source: Author)

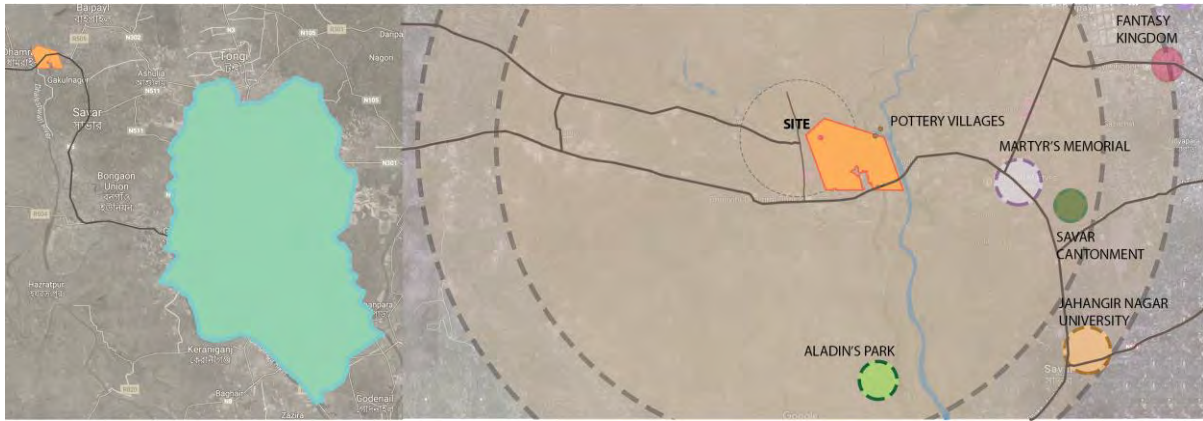


Figure 15: Landmarks in and Around Dhamrai (Source: Author)

DHAMRAI upazila

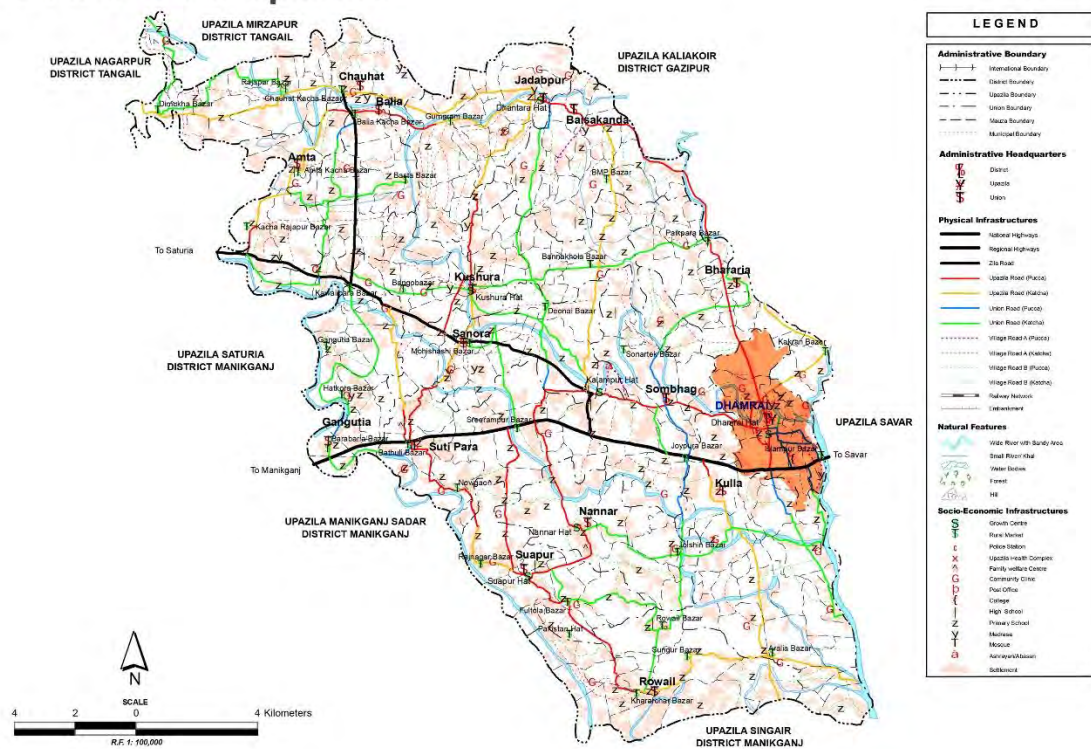


Figure 16: Location of Dhamrai Pourashava (Source: Author)

4.2 Naming of Dhamrai

There are two versions of how the name of Dhamrai came about:-

During the time of Asoka the Great there was a Buddhist “Dharmarajika” and the name reduced came to be known as ‘Dhamrai’ over time. The discovery of a prehistoric Buddhist “Stupa” in Savar, about 10 miles away from Dhamrai provides credibility to this opinion.

The other version, is that a famous Sufi Saint Hazrat Shahjalal came to, what is now Bangladesh, about eight hundred years ago with 360 companions. Legend has it that five of them (Tirmizi Al-Hussaini, Hazrat Hazi, Hazrat Gazi, Hazrat Zambahadur and Hazrat Shah Magdum) came to Dhamrai which was then sparsely populated and heavily forested. They settled and started leading a secluded life. Food supplies ultimately ran short and one day they slaughtered a stray cow and used the meat to satisfy their hunger. After a few days a couple; Dhama Gope and his wife Rai Goalini claimed that the cow demanded compensation. The Sufis learnt that the couple was childless. It is said that with their blessings a child was born to the couple and also they named the place accordingly. Thus the name Dhamrai (Dham+Rai) came about.

4.3 Dhamrai: A city of stories

Dhamrai can be stated to one of the city of cultures in our country. Not only is it famous for its beautiful artistry like terracotta work, indigenous crafts like pottery and metal casting but it is also a center of celebrations. Dhamrai remains in a festive mood throughout the year. Here along with cultural events, regional festivals also hold a very high value. The whole year is occupied with fairs, festivals, Roth Jatra etc. keeping the artisans busy and citizens delighted.

4.3.1 Brass and Bronze Work in Dhamrai

Dhamrai has always been one of the most remarkable craft villages of Bangladesh, although its prominence did not persevere. The artisans remaining in Dhamrai belong

to the generation of those who were once the soul of Dhamrai: the fine craftsmen of ancient Bengal.

Although the traditional metal industry once existed in other parts, it had been the epicentre for centuries due to the quality, workmanship and aesthetic appeal. While in the early 1950's, people of about 30 villages in Dhamrai-Shimulia region were in this trade but as the artisans began migrating now only around five families, against all difficulties, are trying their best to keep this trade alive. On the other hand, the industry has been facing stiff competition from much cheaper machine-made aluminium and plastic products. Over and above the aristocracy once attached to using metal crafts had in most instances faded out of our culture. All these in fact contributed for its traditional market to diminish to such a level that special effort needs to be taken by all concerned for its survival.

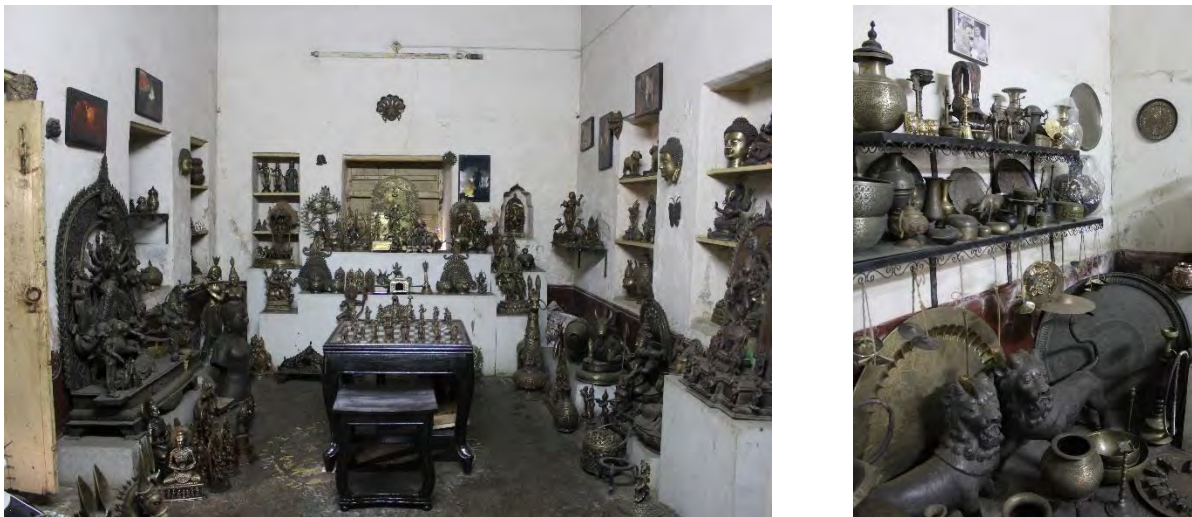


Figure 17: Current scenario of Metal craft in Dhamrai (Source: Author)

4.3.1.1 Lifestyle of metal craft artisans

Artisans of metal casting usually work under an assigner, who is a business man trading artifacts. In most cases, the assigners belong to different merchant families with the title 'Banik'. Although earlier most of the intricate designs were ordered and

financed by these traders themselves, nowadays they act as a middleman for various artists and Bangladeshi shops.

4.3.2 Roth Jatra and other festivities

The annual Jagannath Roth Jatra is a famous Hindu festival attracting thousands of people. Dhamrai is well known for this annual festival all throughout Bangladesh. Roth jatra festival begins on around the 10 day of Bangla Calendar month of Ashar and "Ulto Roth" takes place one week after. A month long Roth Maela is held in Dhamrai for this occasion. The Roth cart is approximately 45 feet (14 m) high and pulled by the thousands of pilgrims who turn up for the event.

Dhamrai Poush Samkranti Mela and Boishakhi Mela are amongst the few other festivities continuing for generations in this area.



Figure 18: Jogonnath Roth Jatra, Dhamrai (Source: Collected)

4.4 Economic activities

4.4.1 Major economic activities

Although once famous for its craftwork, residents of Dhamrai have opted for various sources of income to sustain their lives. While a considerable portion migrates to the capital, Dhaka, every day, the rest still work in places around Dhamrai.

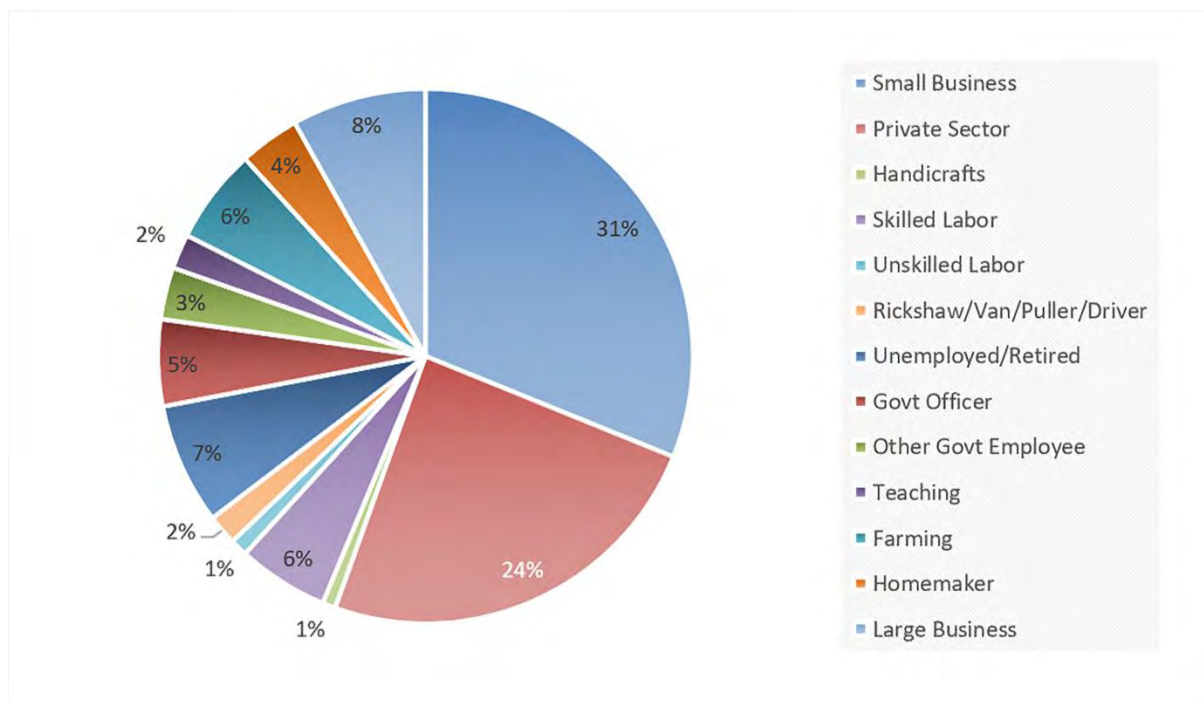


Figure 19: Economic activities (Source: Author)

4.4.2 Cottage industries

The four major cottage industries that are still practiced in and around Dhamrai are Metal, Pottery, Jewelry and Handicrafts.

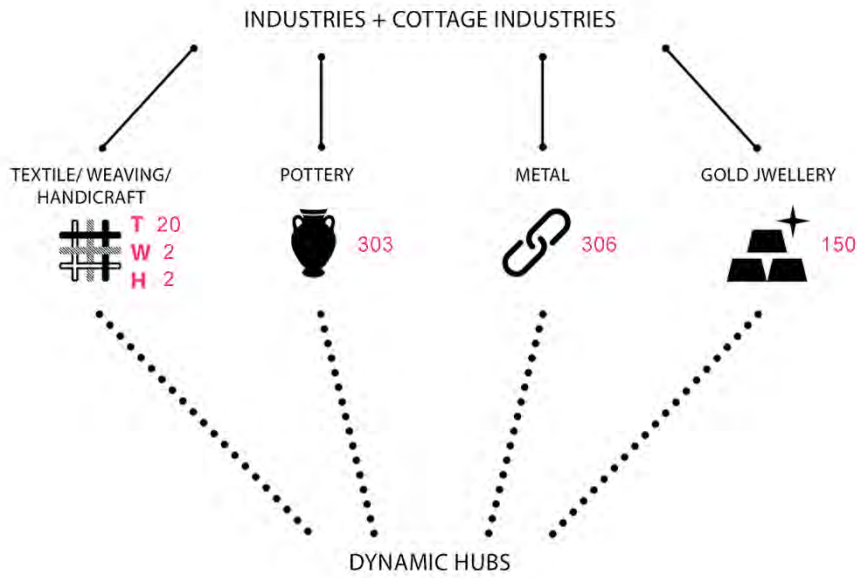


Figure 20: Cottage industries (Source: Author)

4.5 Site and Surrounding



Figure 21: Site surrounding with landmarks (Source: Author)

4.6 Dhulivita road

Width: **20' average**

Length: **1.95 km**

Type: **Pucca**

This is the principal distributor road that connect Upazila to the Dhaka-Aricha national highway and which carries a lot of importance for Dhamrai Pourashava. Goods and passengers coming from the outside the municipality use this road. It carries major share of traffic of the Pourashava. The composition of traffic in the 'Dhulivita to Upazila road' remains almost same irrespective of hatbar or nothatbar.

However, during the annual Jagannath Roth Jatra, traffic is prohibited to enter this road due to huge pedestrian and the vehicles are rerouted to the Dhamrai-Kalampur road.

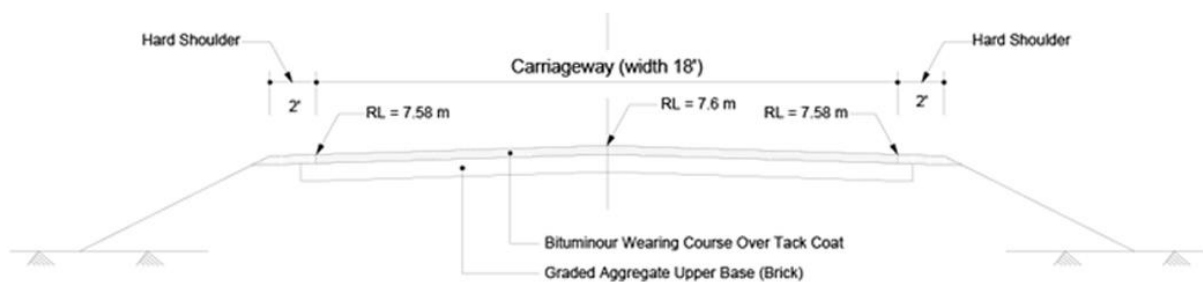


Figure 22: Cross section of Dhulivita road (Source: Dhamrai Pourashava Survey report)

4.6.1 Traffic Analysis

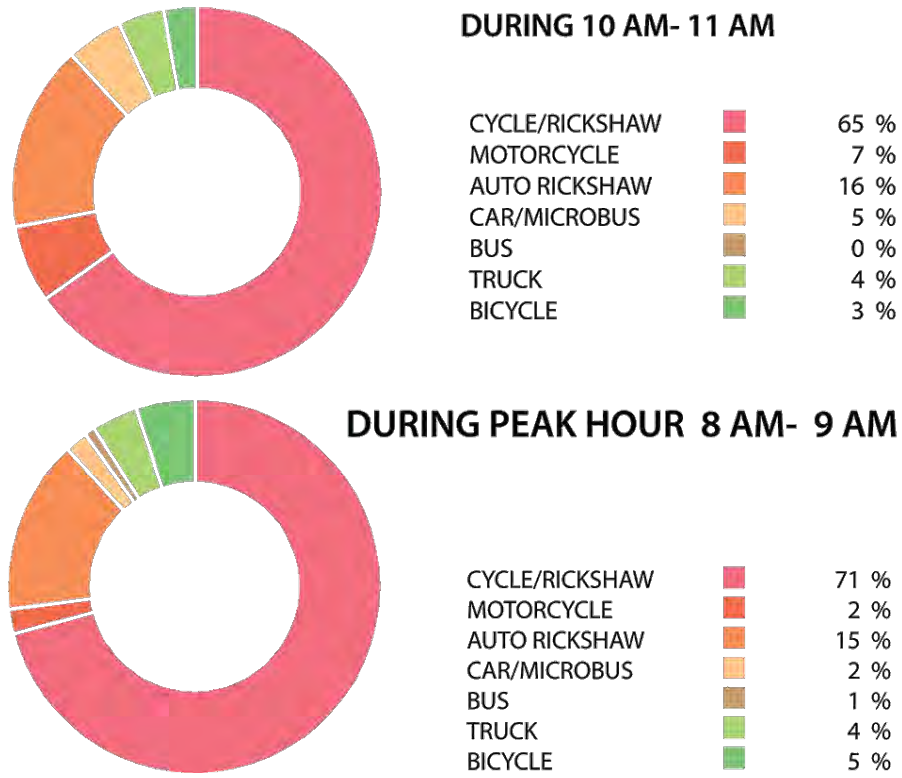


Figure 23: Traffic Analysis of Dhulivita road (Source: Dhamrai Pourashava Survey report)

4.7 Existing site



Figure 24: Important features of Dhulivita (Source: Author)



Figure 25: Location of site on Dhulivita road (Source: Author)

4.7.1 Basic Mapping



Figure 26: Building Height (Source: Author)

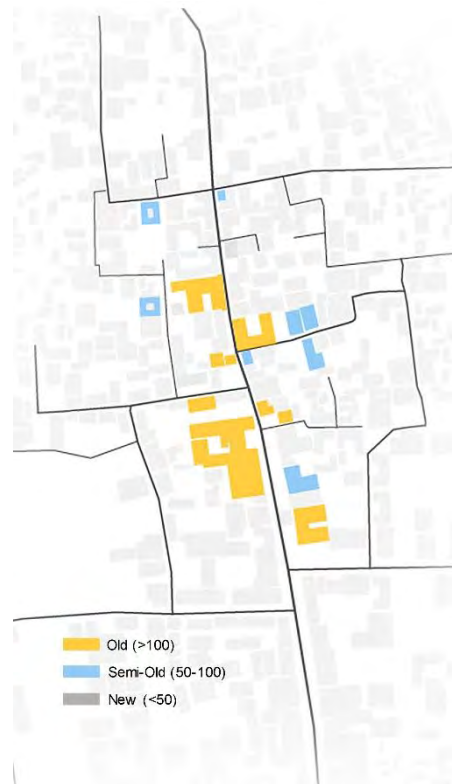


Figure 27: Building Age (Source: Author)

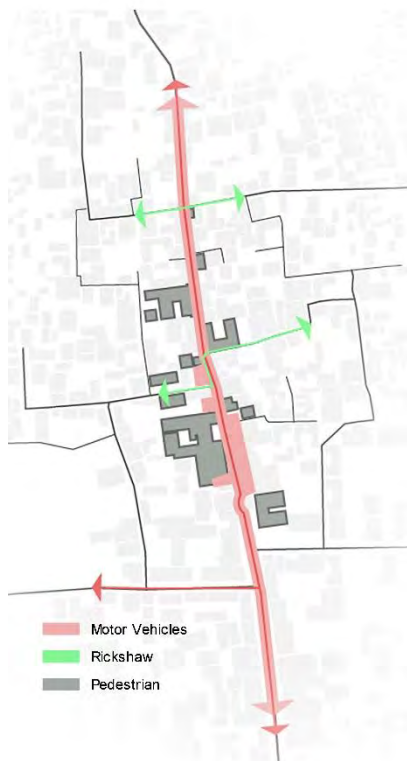


Figure 28: Vehicular Accessibility

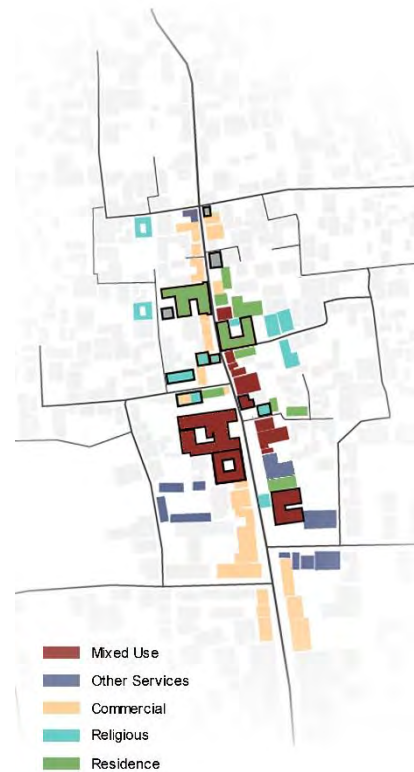


Figure 29: Building Typoogy (Source: Author)

4.7.2 Site images



Figure 30: Site Images (Source: Author)

4.7.3 Landmarks of Site

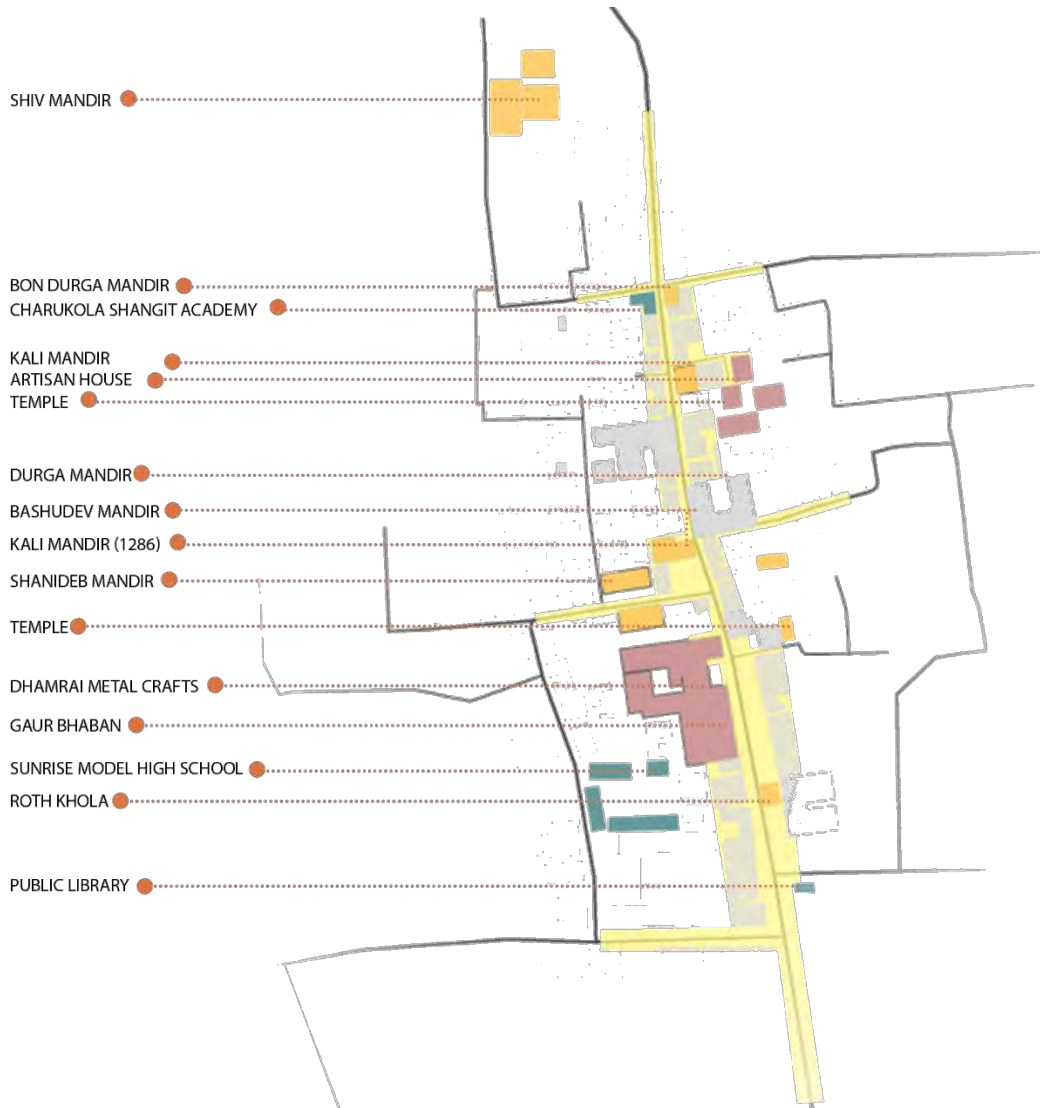


Figure 31: Landmarks (Source: Author)



Figure 32: Landmarks Analysis (Source: Author)

4.8 Heritage buildings



The site contains colonial buildings dating back to the 1900s. Along with years of history intertwined with them, they also house the metal craft work that are still left in Dhamrai. They bear the stories of their ancestors while the artisans craft away newer additions every day.

Thus, in order to revive metal craft, these buildings would also have to be taken into account.

Figure 33: Placement of heritage building (Source: Author)

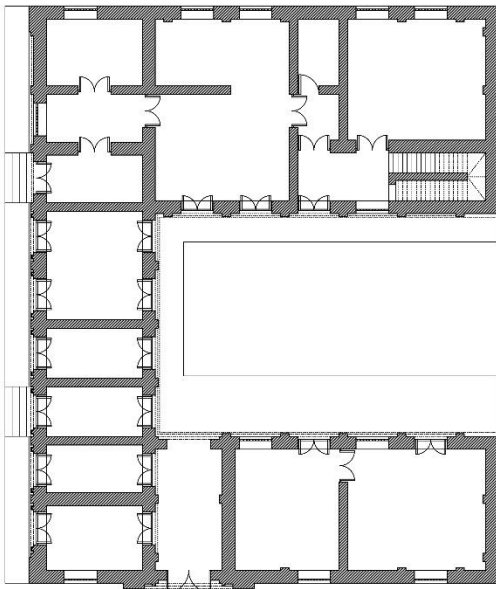


Figure 34: Building 1 (Source: Author)

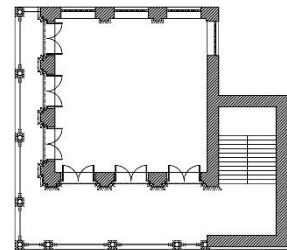
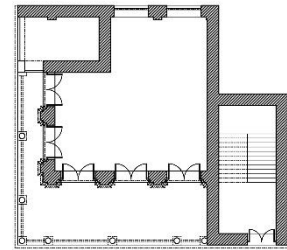


Figure 35: Building 4 (Source: Author)

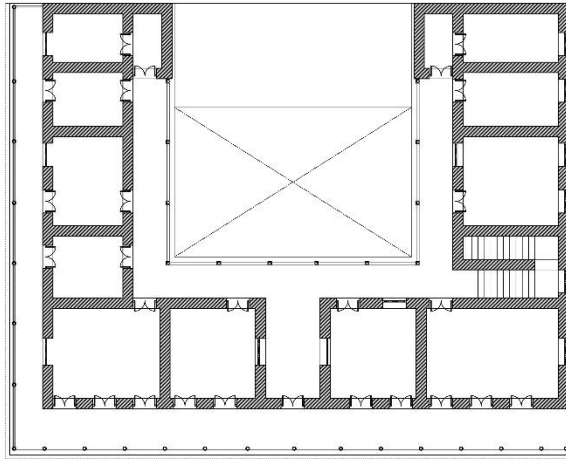
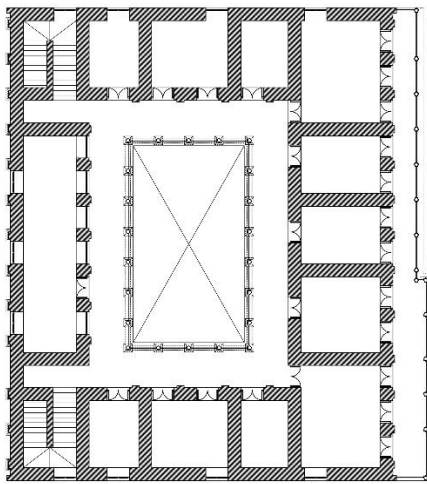
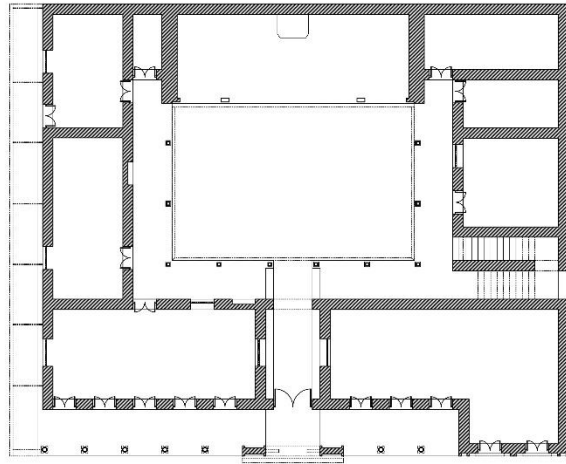
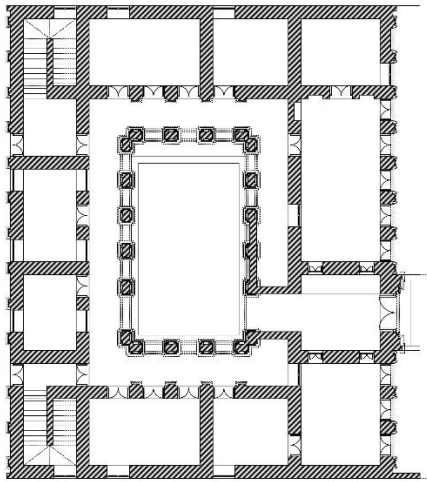


Figure 36: Building 2 (Source: Author)

Figure 37: Building 5 (Source: Author)

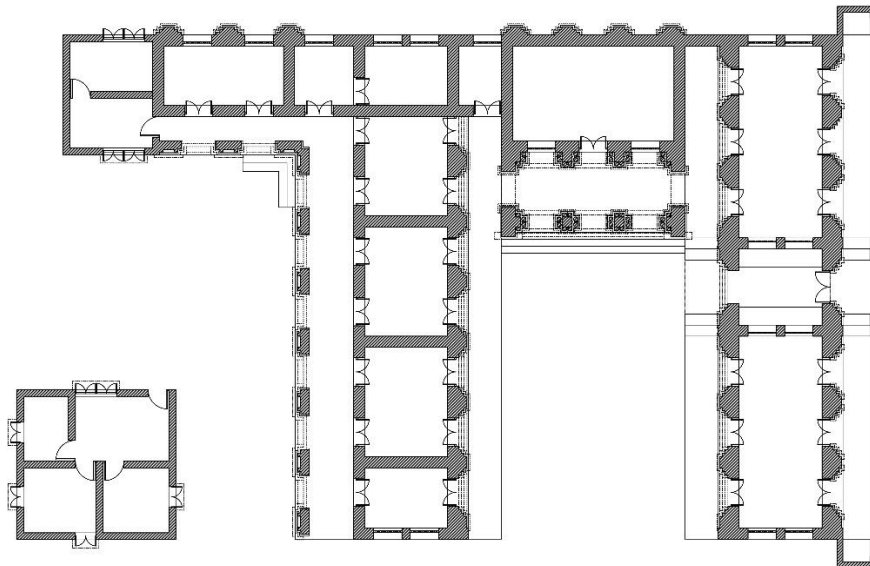


Figure 38: Building 6 (Source: Author)

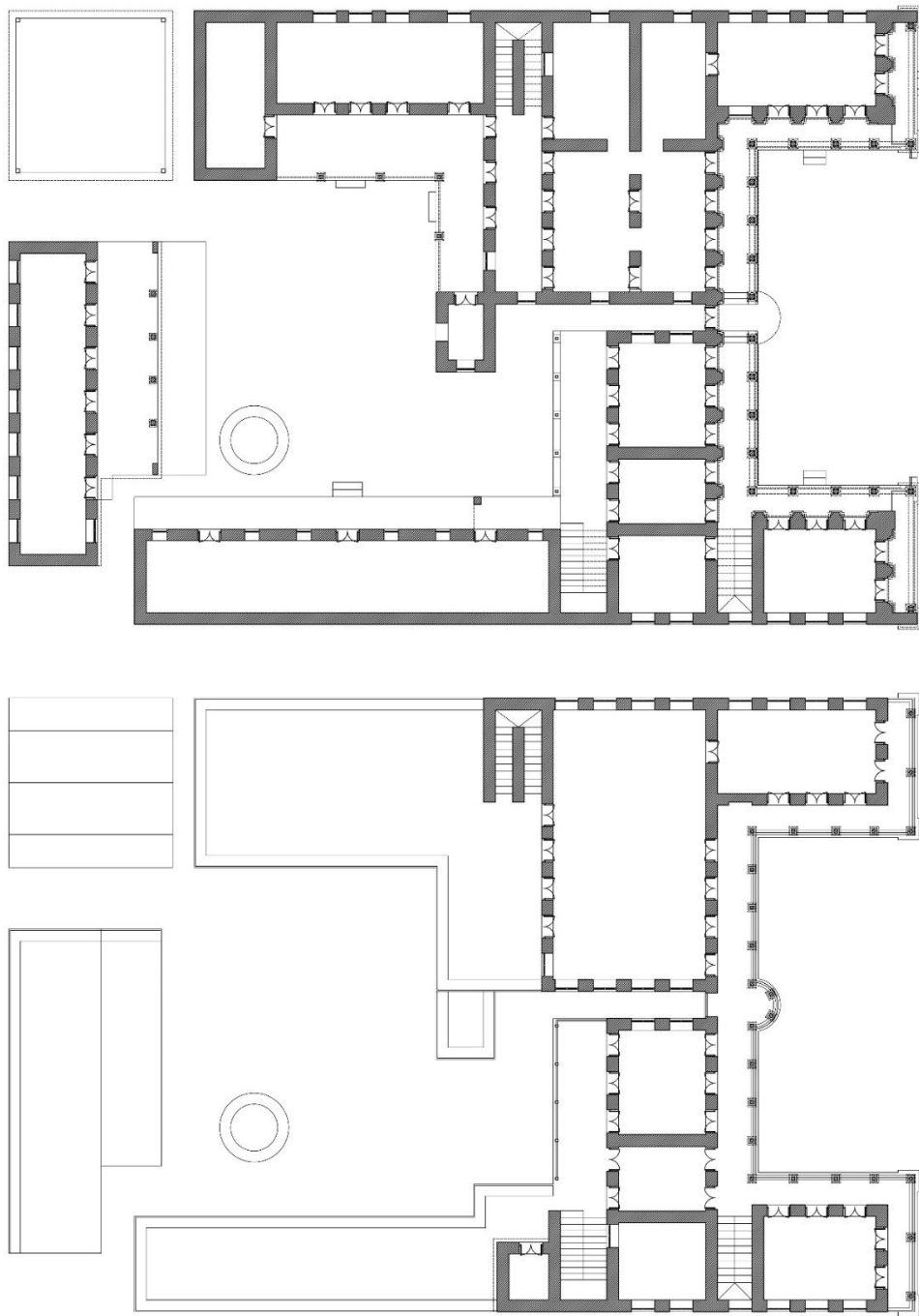


Figure 39: Building 3 (Source: Author)

4.9 SWOT Analysis

Strength

- Enriched cultural and traditional background of the place
- House of various traditional art and crafts
- Adjacent to capital city, Dhaka
- Proximity to the highway
- Significant structures and surroundings around the site
- Attracts tourists and foreigners as well as native people
- A rapidly developing area, though still holding to its root of tradition and culture
- Humble cityscape of the town
- No major annual catastrophe
- Less threat of inundation

Weakness

- Inefficient infrastructures
- The site and surrounding is not properly taken care of
- Insufficient facilities for visitors
- Narrow market exposure

Opportunity

- Potential for the assemblage of art, craft and life
- The humble surrounding will act as a positive force for craft interpretation and craft works
- Potential to flourish as a refreshing public place at the outskirts of Dhaka
- Potential for developing as a planned urban area

- Potential for the confluence of old and new
- Reviving metal works before it becomes extinct
- Potential of becoming internationally remarkable
- Can add to our schedule of non-traditional export items

Threat

- Gradual extinction of age old traditional crafts
- Industrial mass production
- Unplanned development may ruin the potentiality
- Negative forces or growth may affect the local communities
- Land encroachment

Chapter 5: CASE STUDY

5.1 Bhadra Precinct

5.2 Dilli Haat

5.3 Kolumba Museum

5.1 Bhadra Precinct

5.1.1 Background

Bhadra fort is a public space in an Old Indian city which is a pioneer in the redevelopment sector with the major intervention being pedestrianization of the area. The redevelopment plan focuses on very basic aspects of the city to be considered in details; traffic congestion, no pedestrian demarcation, dense built fabric, unorganized informal activities, scarcity of open spaces, noise and air pollution.



Figure 40: Aerial view, Bhadra Precinct (Source: VSF)

5.1.2 Project specifications

Project Title: Bhadra Plaza Development Project

Location: Ahmedabad, Gujarat, India

Architect: Balkrishna Doshi, Sangath

5.1.3 Approach to design

According to architect Doshi, the basic philosophy of the masterplan for redevelopment of Bhadra Precinct was to make the historic city-centre a walkable

zone, develop pedestrian plazas, promote the use of public transport, develop large parks, conserve the heritage monuments and make this place a true heart of this old city, Ahmedabad.



The project tries to look at the age old debate in developing countries, like India, between tending to develop new and more economically profitable areas and revitalization of old cities.



Thorough research was done on the existing factors of the site to produce an inclusive and coherent proposal for relocation of 600 street vendors. This

ensures the protection of the economically weaker group of the society by dealing with multiple parameters ranging from public policy to design.

5.1.4 Special attention

Detailed survey was done on the following aspects to create a more wholesome design:

1. Vending pattern
2. Types and typologies of stalls
3. Location
4. Movement
5. Sizes and arrangement of hawkers

6. Accounts of historical past travelers

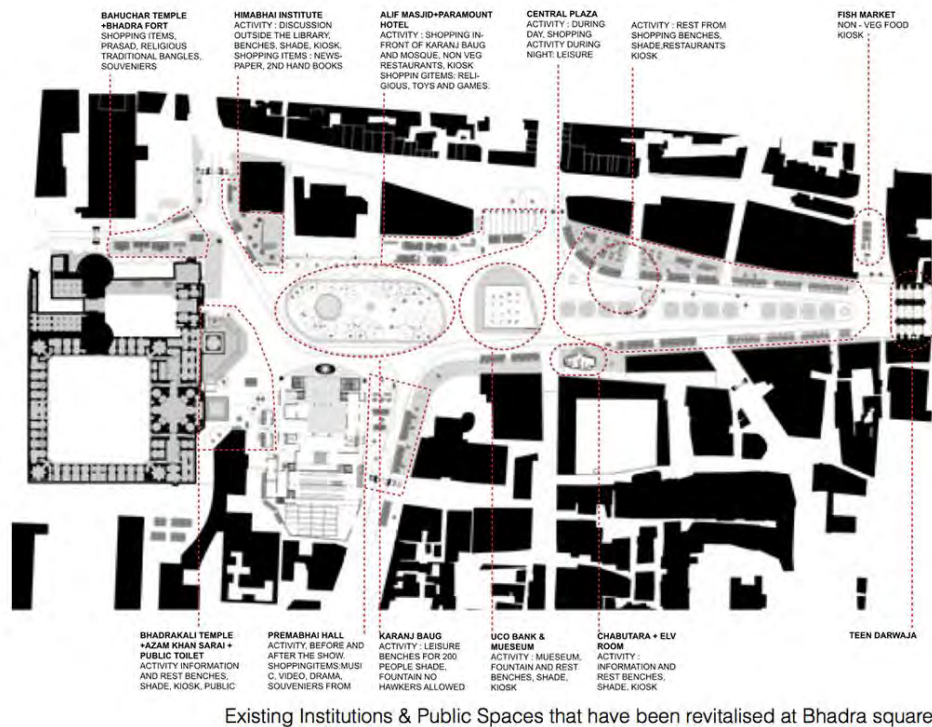


Figure 41: Survey information, Bhadra Precinct (Source: VSF)

5.1.5 Design interventions

‘The design allows the informal and formal activities occur while maintaining the quality and character of a vast public space with leisure zones with trees and shade, fountains and seating areas. Some of the other issues the project addresses are the up gradation of physical elements such as signage, lighting, landscaping and street furniture. Designed portal columns, arranged along the market space demarcate the commercial activity. These vertical elements will guide the new location of the stalls and the zones for street vendors, as well as provide light and structure for the awnings required in monsoon or summer seasons.’ (Vastu Shilpa Foundation, 2016)

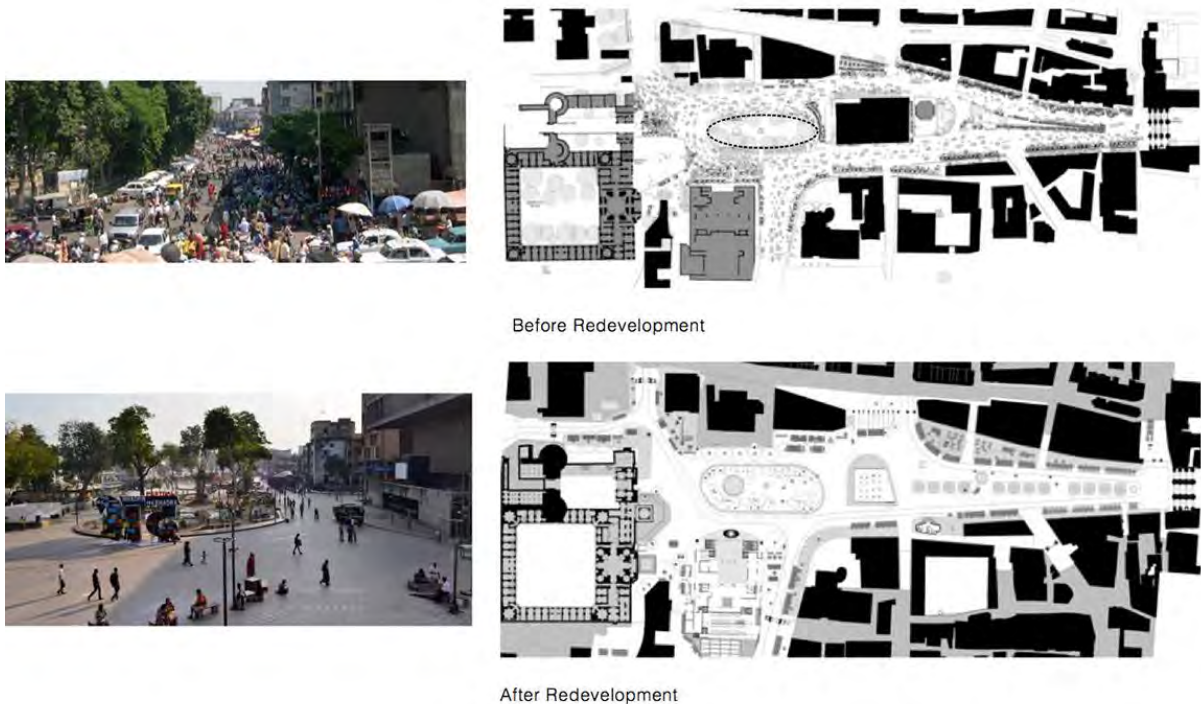


Figure 42: Design interventions, Bhadra Precinct (Source: VSF)

5.1.6 Impact of intervention

- The diverse community of the residents of the walled city are benefitted instead of revaluing the land of the rich
- Conservation and adaptive reuse of the Bhadra Fort
- Consequently the surround buildings were upgraded due to an increase in demand for space required
- Many of the abandoned upper floors in the site were converted to restaurants and offices thus increasing the income source for the community
- The impact gradually seeped along the axis of the Plaza into the bazaar street that connects to Manek Chowk (an open space that hosts commercial and leisure activities) towards the east, and Sabarmati River towards the west.
- Played a major role in the recognition of Ahmedabad as a World Heritage City in 2017

5.2 Dilli Haat

5.2.1 Background

Dillihaat is a bazaar in the heart of the city, which showcases the crafts and cultural activities. It provides the ambience of traditional haat. It has emerged as a food and crafts bazaar and turned into Delhi's one of the most loved urban leisure spaces. Designed to be a public space- it is a platform for showcasing regional crafts and food of India. (PSDA, n.d)



Figure 43: Bazaar view, Dilli Haat (Source: PSDA)

5.2.2 Project specifications

Project Title: Dilli Haat

Location: New Delhi, India

Site Area: 2.4 Hectares (6 Acres)

Architect: Pradeep Sachdeva Design Associates

5.2.3 Approach to Design

- Opened in 1994 to provide a platform to the artisans from different parts of the country.
- The designer has taken the effort to provide the ambience of a traditional Rural Haat or village market, but one suited for more contemporary needs.
- It tries to catch the spirit of the Indian handicraft and cuisine
- To increase the interaction between people & artisan. The haat is an important tourist attraction in Delhi and every day locals and tourists gather here, to shop for exquisite handicraft items or just to have a nice time with their families and friends.

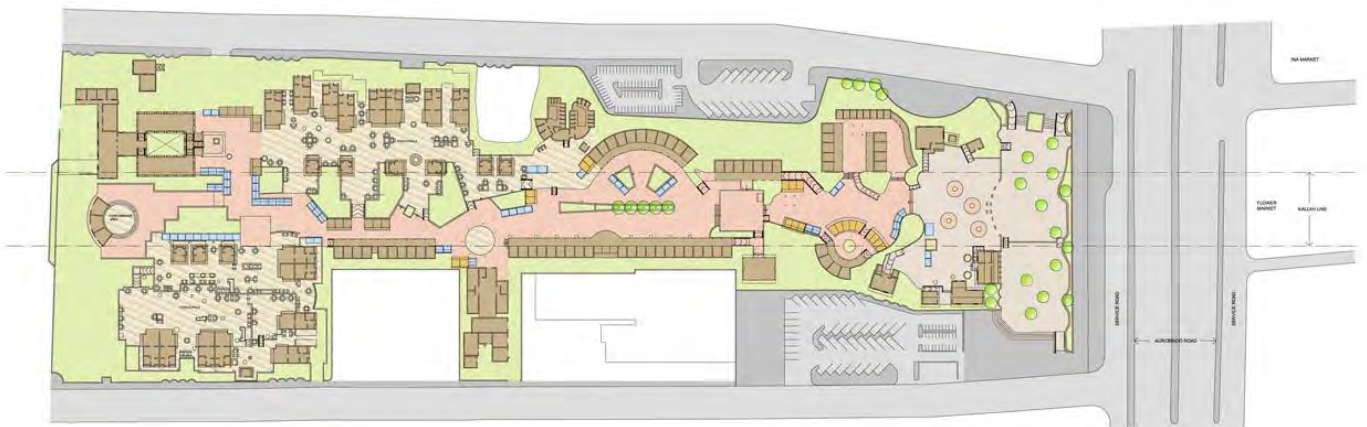


Figure 44: Masterplan, Dilli Haat (Source: PSDA)

5.2.4 Site zoning, open spaces and circulation pattern

The site is elongated & very linearly spread. Buffer area provided to cut off the main complex area from busy Aurobindo Marg. Prime importance is given to the shop areas, which is located near the entrance. Sufficient car & 2-wheeler parking is provided. Food courts, recreations facilities are provided at the end of the site.

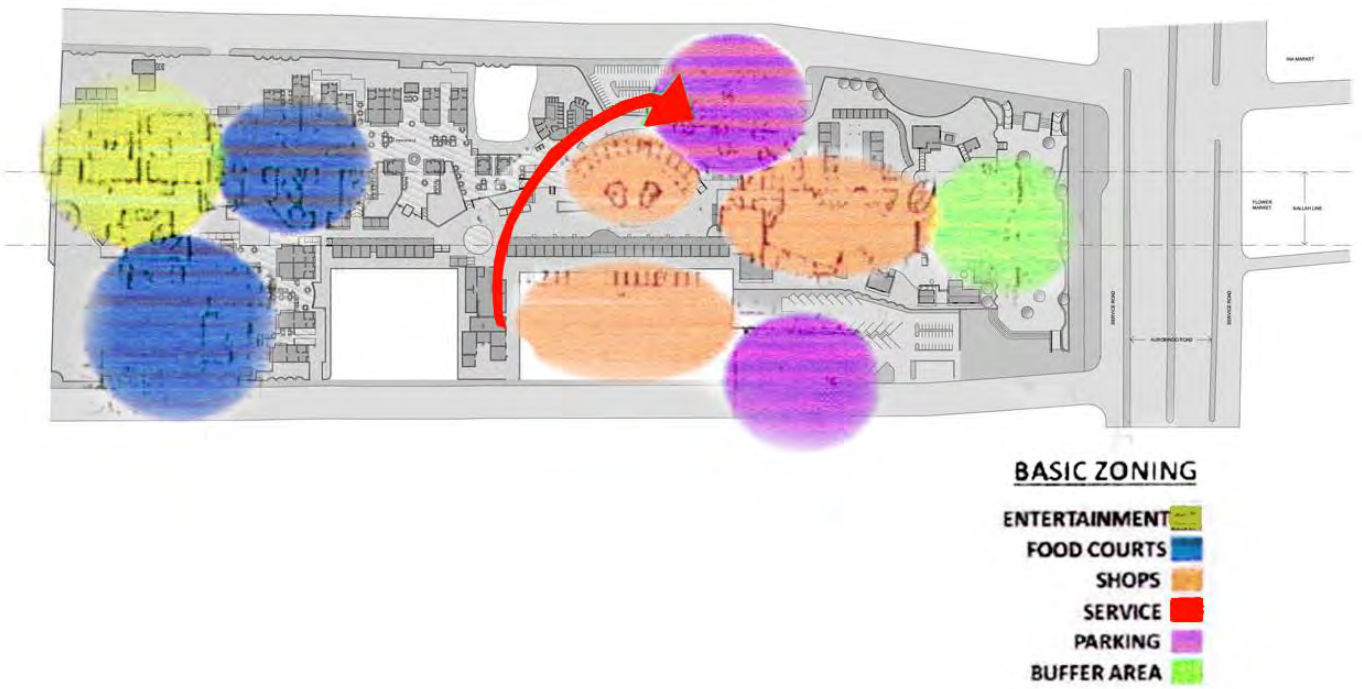


Figure 45: Site zoning, Dilli Haat (Source: Author)

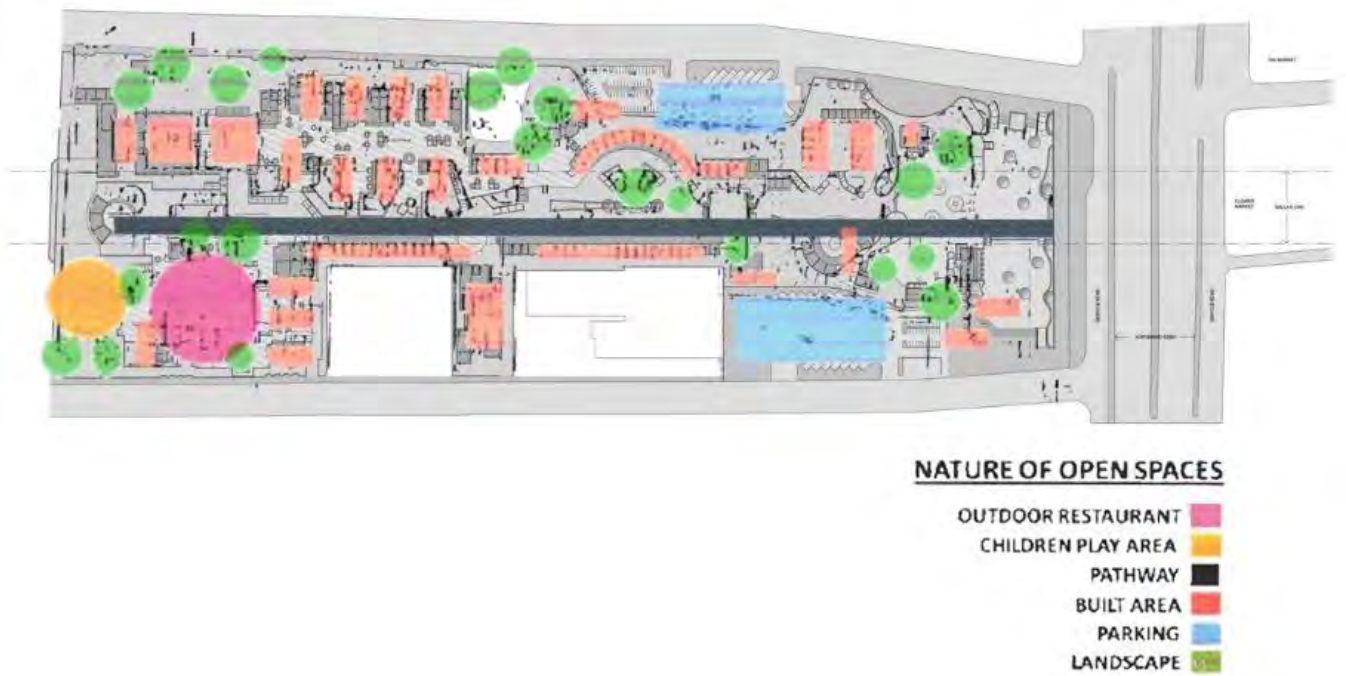


Figure 46: Nature of open spaces, Dilli Haat (Source: Author)

All the buildings in the complex are in single story; therefore the circulation pattern consists of pedestrian movement. Because of the linear site, pathways are also formed linearly & focus the axis even more.

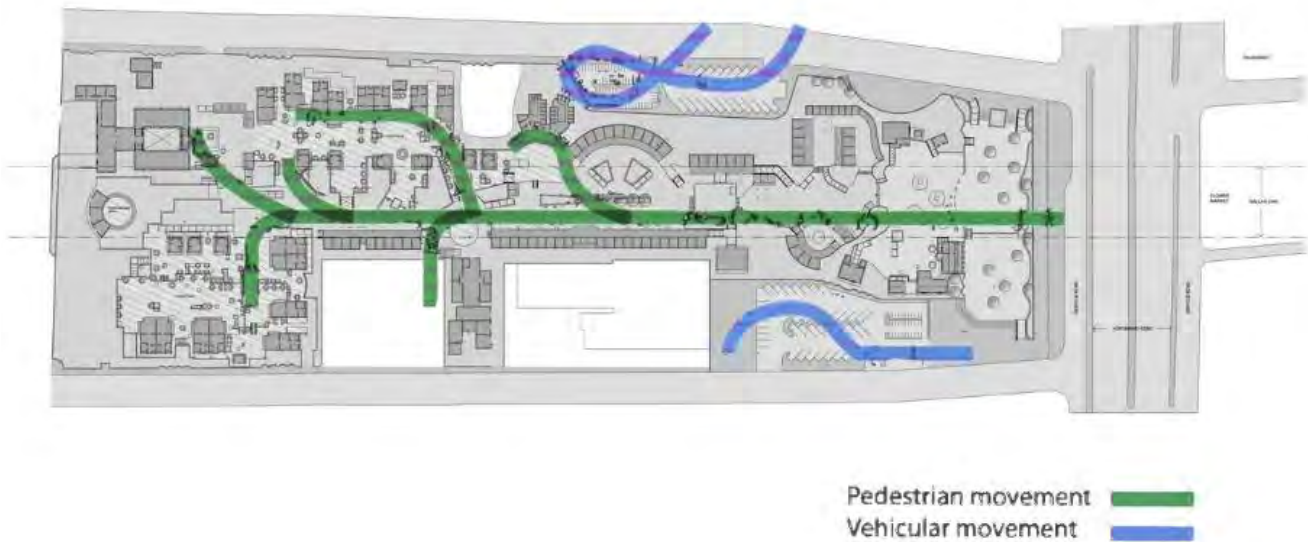


Figure 47: Circulation, Dilli Haat (Source: Author)

5.2.5 Findings

The architectural features of the complex have especially been designed in the traditional North-Indian style, with brickwork jali (lattice) and stone roofs. A hall in the complex caters specifically to the exhibits of the handlooms and handicraft. A souvenir shop, also displays attractive ethnic products.

- Small thatched roof cottages and kiosks, without any concrete structures, provide a village atmosphere. The shops are set up on platforms, which act as a link in the Bazaar design. The courtyards between the shops are paved in stone and interspaced with grass to retain a visual softness.
- Most of the buildings in this complex are single storied. 3M height is provided except the store room, which is of double storied height (6M).

- Separate pump room and electric substation are provided, which close to the service road. There is a large back- up generating capacity for electric failures.
- The landscaping of the area incorporates colorful flowering shrubs and trees, thus the entire complex is in harmony with the environment



Figure 48: Site images, Dilli Haat (Source: PSDA)

5.3 Kolumba Museum

5.3.1 Background

The Kolumba Museum is a remarkable work of Swiss architect Peter Zumthor, a Pritzker Prize laureate. In a display of mastery and sensitivity, the architect manages to fuse the ruins of a destroyed Catholic church, with modern, sober and minimalist architecture, and highly sensitive to the theme of the works it houses: religious art.



Figure 49: Street view, Kolumba Museum (Source: Archdaily)

5.3.2 Project specifications

Project Title: Kolumba Museum

Location: Cologne, Germany

Architect: Peter Zumthor

5.3.3 Approach to design

Peter Zumthor won the competition with an ambitious and humble idea at the same time: the building completely surrounds the ruins of the church and in fact merges with them while using the upper level and a side wing to house the exhibit areas.

Zumthor's design delicately rises from the ruins of a late Gothic church, respecting the site's history and preserving its essence. "They (the Archdiocese) believe in the inner

values of art, its ability to make us think and feel, its spiritual values. This project emerged from the inside out, and from the place”, stated Zumthor.

Externally, the building is characterized by its massiveness, a simple and severe composition of warm-colored volumes and thus integrates both to its urban context as well as the historic site where is located.



Figure 50: Interior showing walkway and columns above ruins, Kolumba Museum (Source: Archdaily)

5.3.4 Materials and details

- Grey brick to unite the destroyed fragments of the site. These fragments include the remaining pieces of the Gothic church, stone ruins from the Roman and medieval periods, and German architect Gottfried Böhm’s 1950 chapel for the “Madonna of the Ruins”.

- The texture of thin grey custom made brick frames the remains of the old chapel achieving a remarkable integration between new and old.



Figure 51: Custom-made brick detail and joinery, Kolumba Museum (Source: Collected)

- Perforations on the facade, forming a kind of lattice made on the basis of the bricks themselves. This effect lightens the perception of the volume.

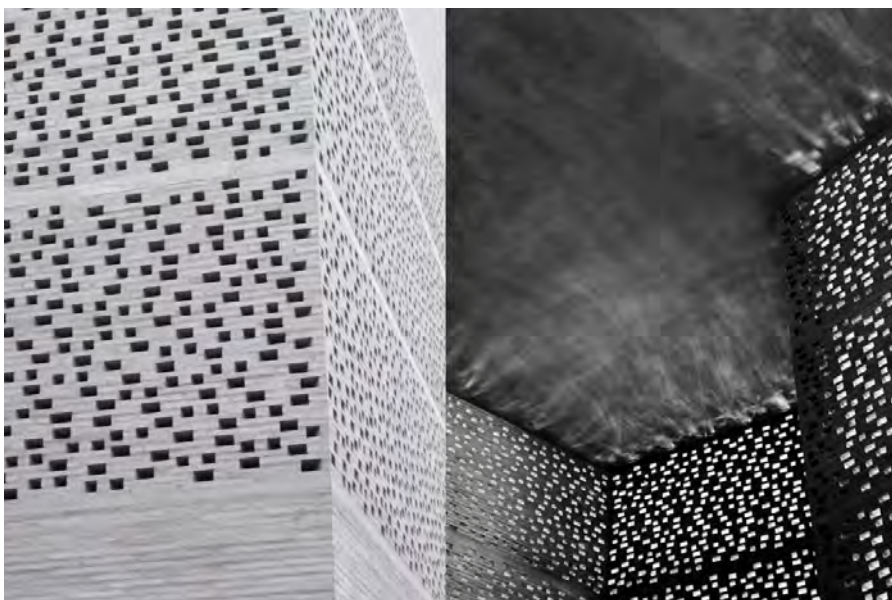


Figure 52: Perforations on wall, Kolumba Museum (Source: Collected)

Besides the chapel, the building includes 16 exhibition rooms arranged on three levels, including the area on top of the church, and at the heart of the building, a secret garden

courtyard – a quiet and secluded place for reflection. In these areas, works of ancient and contemporary religious art works are displayed, including some books of sacred art. The building also opens its views to some courts designed in a serene Zen minimalism, which houses works by famous sculptors like Richard Serra and Joseph Wolf.



Figure 53: Courtyard at the heart of the building, Kolumba Museum (Source: Collected)

5.3.5 Findings

- The visitor is able to walk throughout the chapel by means of a winding passage which lies over the ruins. This is a resource is used in some archaeological sites in order to allow visitors to experience the sites from up close, but reducing the impact on heritage



Figure 54: Winding passage over ruins, Kolumba Museum (Source: Author)

- The architect has wrapped both the octagonal chapel as well as the Roman ruins with a double height nave supported by thin metal columns. This monumental space is dramatically lit up since indirect light filters through the lattice in the walls.



Figure 55: Section, Kolumba Museum (Source: Author)

Chapter 6: PROGRAMME DEVELOPMENT AND FUNCTIONAL ANALYSIS

6.1 Program Derivation

6.2 Possible user group

6.3 Functional flow and Programmatic analysis

6.1 Program Derivation

In order to derive program the main focus that was taken into consideration was to figure out the steps that can be taken to promote tourism. The steps are:

- Development of craft
- Improve tourism conditions (Accommodation, Restaurant, Infrastructure, etc.)
- Promote craft (Cultural tourism destination)
- Specialized tours
- Craft information centre
- Showrooms
- Museums
- Collecting Sagas/Stories
- Training course (Design promotion centre)
- Promote local entertainments (Music, Drama, Fairs, Festivals)
- Trade fairs and skills exchange

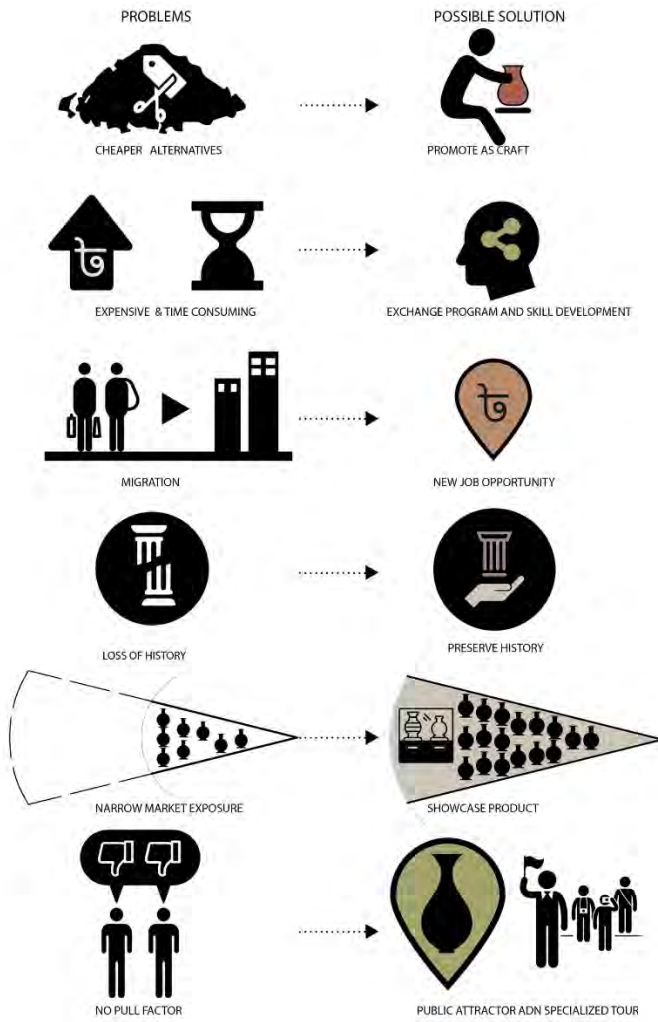


Figure 56: Problem and their possible solutions (Source: Author)

6.2 Possible user group

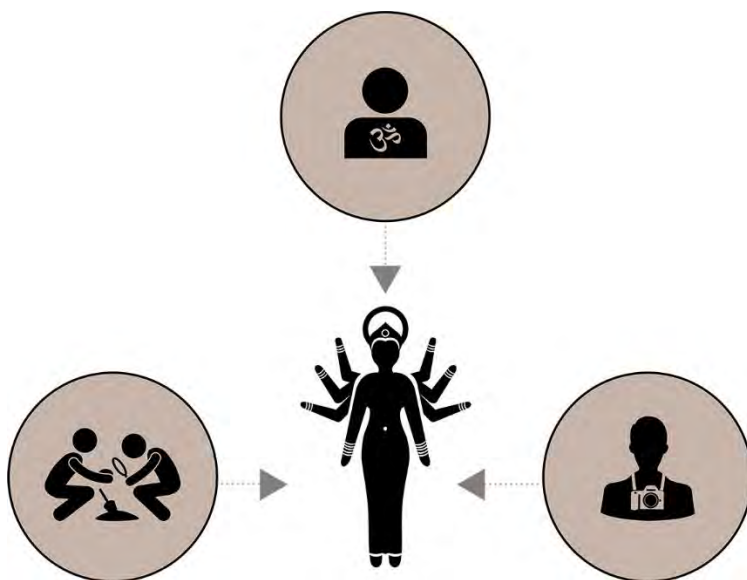


Figure 57: Possible users of site (Source: Author)

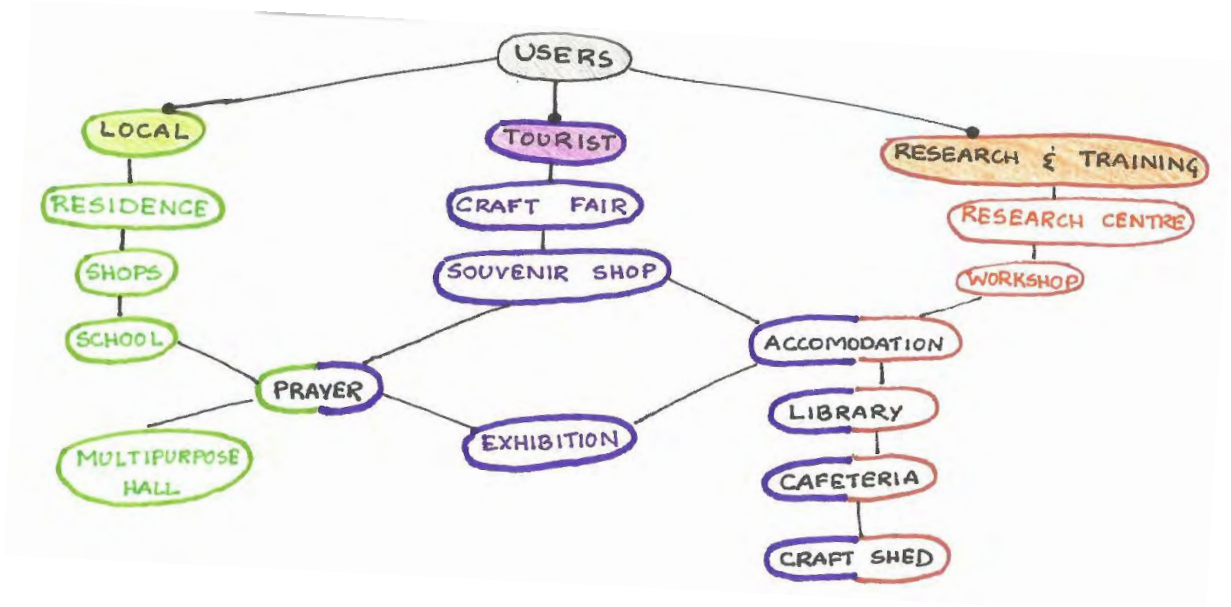


Figure 58: Programs based on users' needs (Source: Author)

6.3 Functional flow and Programmatic analysis

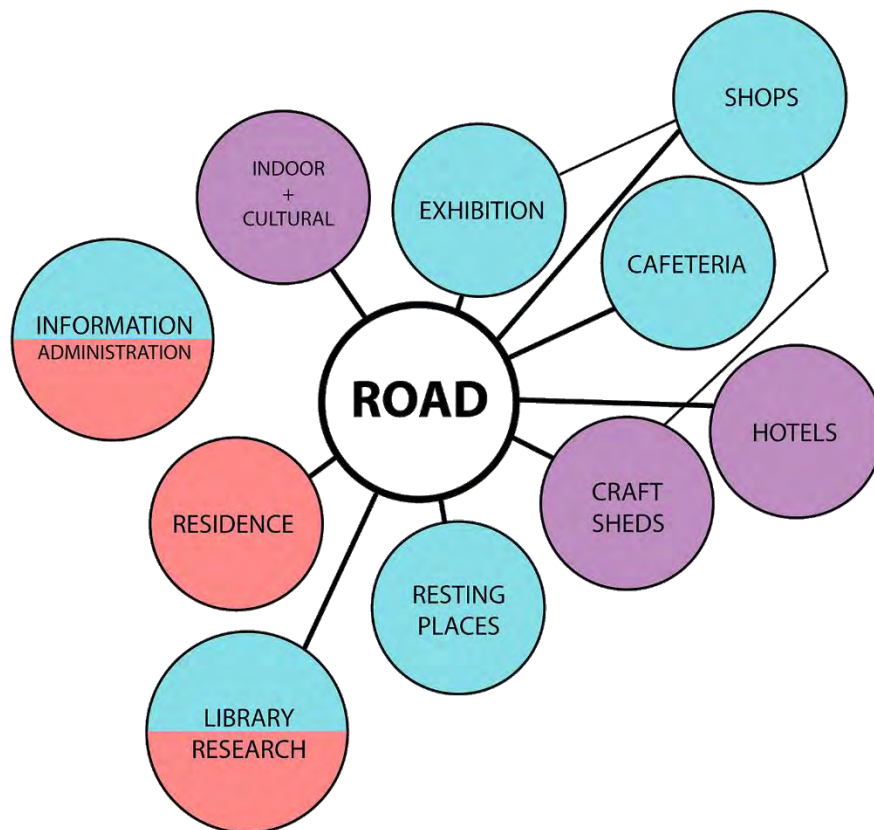
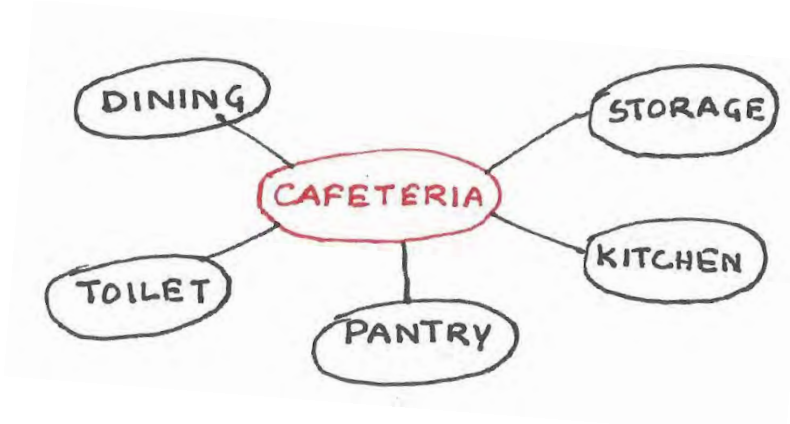
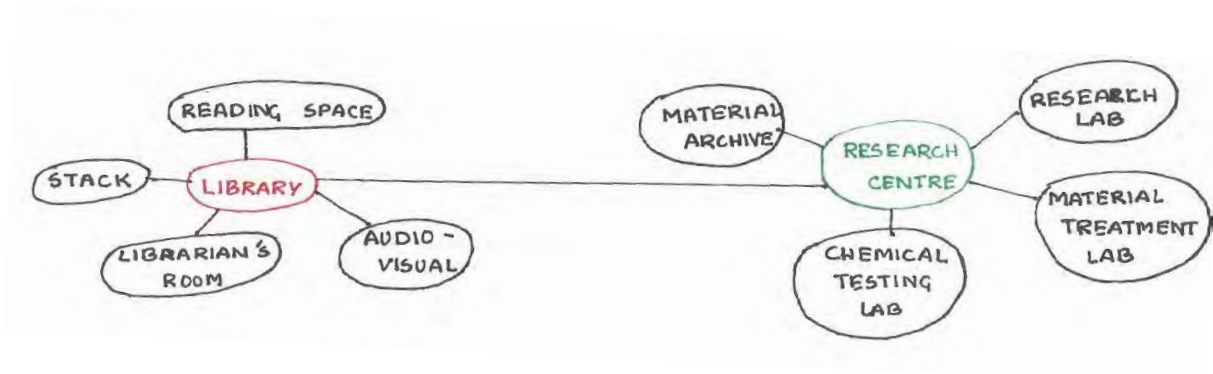


Figure 59: Functional flow of programs (Source: Author)

6.3.1 Cafeteria



6.3.2 Library and Research Centre



6.3.3 Workshop

Workshops differ according to the requirement of detail and type of work i.e statue/idol making are different from the daily ware and ornaments making workshop. Usually the detailing of the intricate designs are done in the assigner's house as they require higher patience level and other considerations.

Workshop 01: The daily ware and ornaments making workshops are usually belong in the artisans' residence. Usually these artisans live in a cluster to facilitate working. In some cases, some artisans join together to rent a space and create a workshops. In those cases the workshops spaces also accommodates kilns and detailing area.



Figure 60: Metal ware Workshop 01 (Source: Author)

Workshop 02: Assigner or Banik House is built housed in the colonial buildings existing in the town. This encompasses a house built around a courtyard where the rooms lead off the central space and the verandas form the spaces where men work on the different stages of the casting process. Work is also carried out in the courtyard and accompanying sheds to burn and dry the artwork.

According to Sukanta Banik, the wax molders work in a room which consists of small tables with fitted hoods. The hood is made from timber and black cloth. It contains 4 x 200 watt electrical bulbs. They create a warm environment which softens the wax and allows it to be retained at a workable temperature. A small kerosene lamp is used to give intense localized heat to tools and wax objects. Bowls of water are used to cool the wax once it is formed.

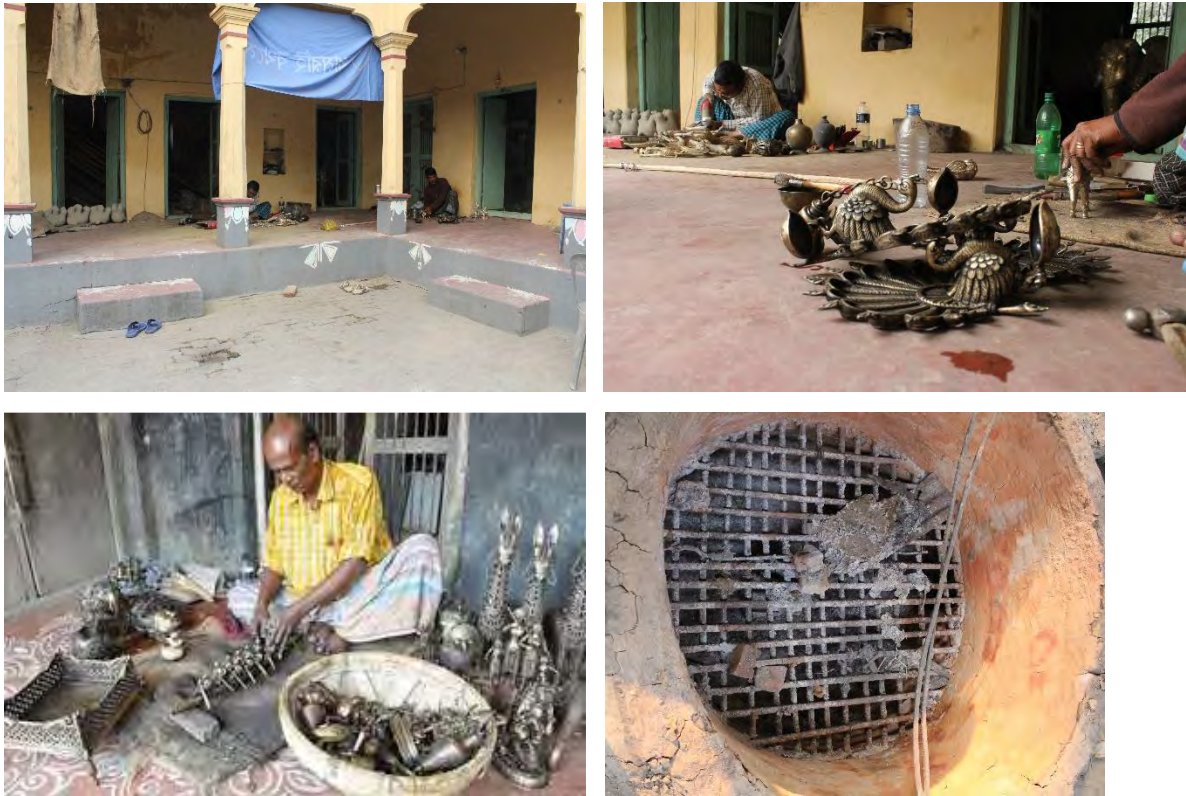
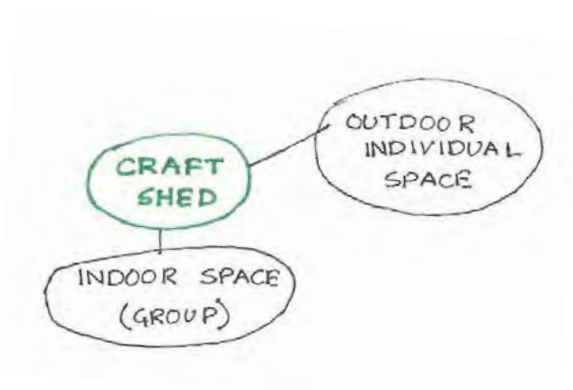


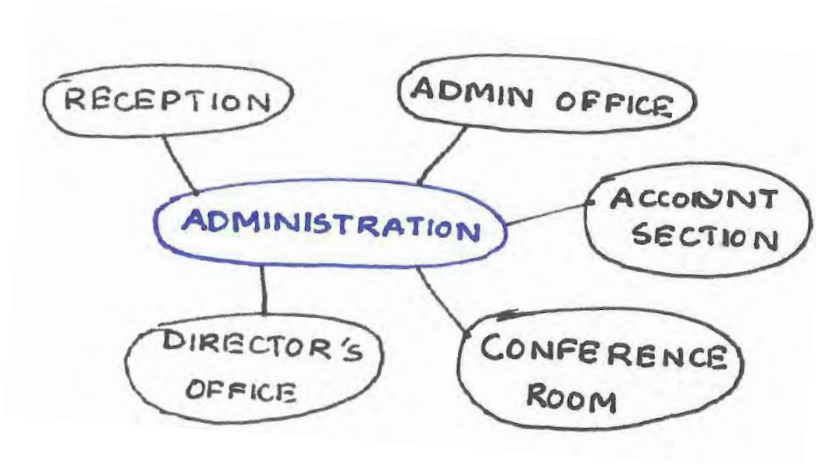
Figure 61: Metal ware Workshop 02 (Source: Author)



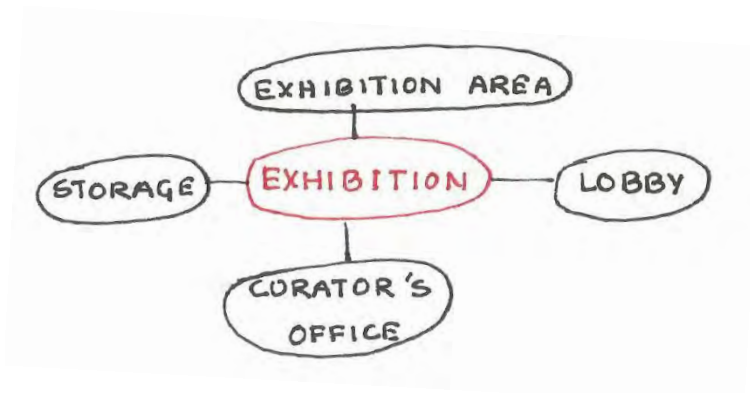
6.3.4 Craft Shed



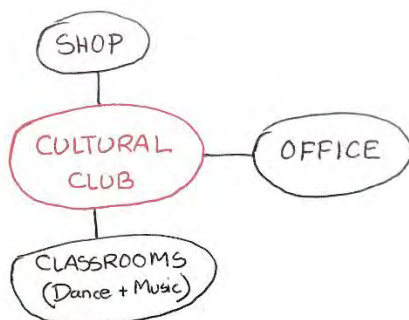
6.3.5 Administration



6.3.6 Exhibition



6.3.7 Cultural Club



Chapter 7: CONCEPT & DESIGN DEVELOPMENT

7.1 Introduction

7.2 Interventions

7.3 Plans

7.4 Details

7.5 Elevations and Sections

7.6 Design considerations

7.7 Rendered Images

7.8 Model Images

7.1 Introduction

The project is theorized to create a bridge between the artisans and art enthusiasts. The idea is not only to uphold the history and traditional culture but also to improve the situation of the people who have been involved with these crafts for generations.

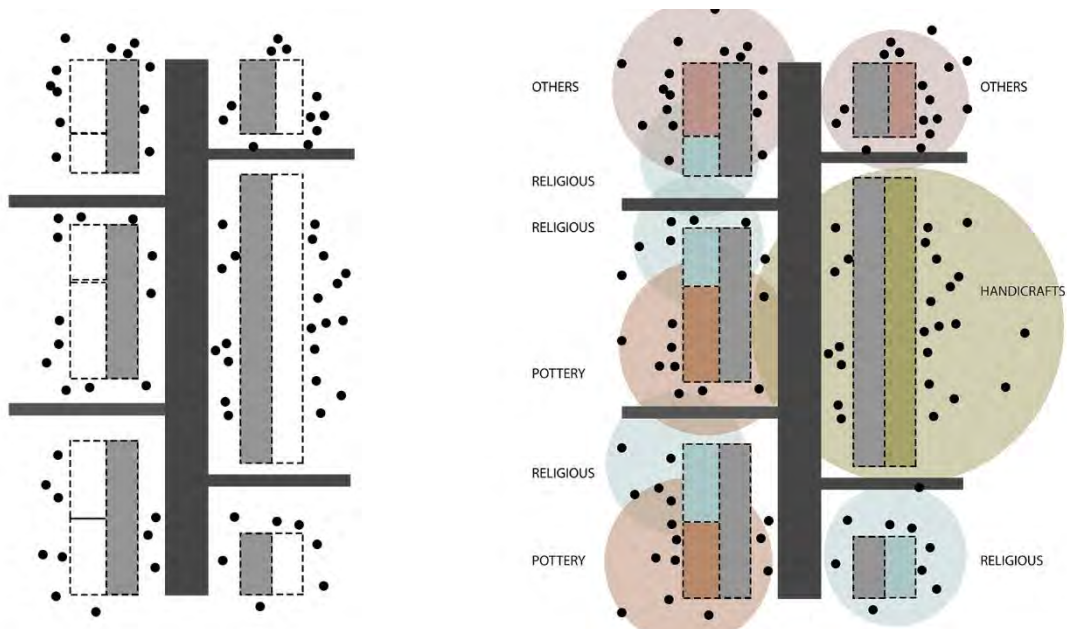


Figure 62: Attracting people (Source: Author)

As we have established that only metal craft is unable attract enough people to generate a considerable amount of economy, it is suggested to create a Dynamic hub by introducing other cottage industries of Dhamrai. This will result in a community revitalization through physical concentration and along with that will also generate tourists.

7.2 Interventions

7.2.1 Conceptual interventions

- The main idea is to create a heart within the site which will house these various cottage industries creating a focal point for anyone visiting the area.

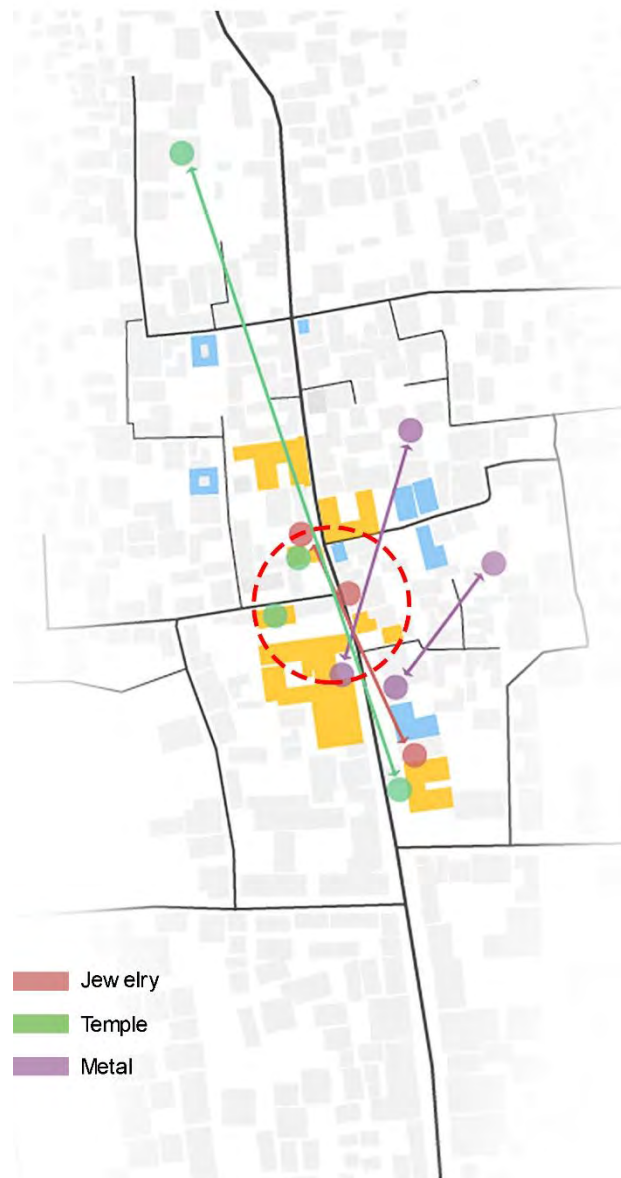


Figure 63: Creating a heart (Source: Author)

- It is proposed to pedestrianize the path starting from Rath and ending in the next intersection. Proper alternative routes would be provided thus not hampering the daily lives of the residents of Dhulivita. This will also help accommodate the surge of pilgrims during Rath Yatra

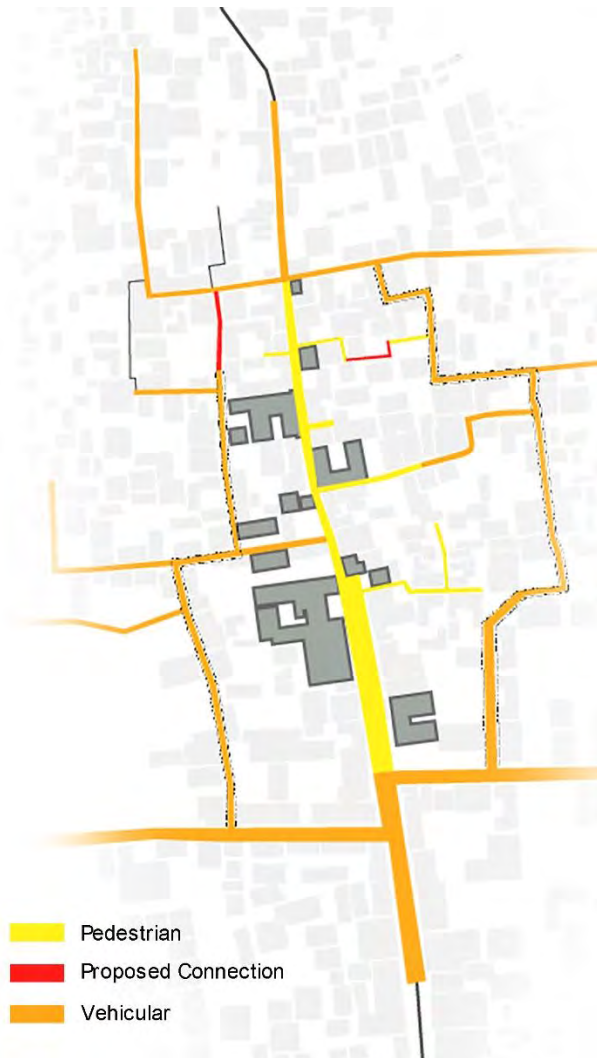


Figure 64: Pedestrianizing the public space (Source: Author)

- A connection between the disconnected dots is created. There will be 2 such connections: linking the heritage buildings and bridging the temples.



Figure 65: Connecting the disconnected (Source: Author)

7.2.2 Main intervention: No intervention

Taking inspiration from the metal casting technique that put Dhamrai in the map, Lost Wax method (Replacement of wax by metal in a mold to create the statue), the primary goal is to retain the exterior as it is while improving the interior to achieve the best result. The idea is to intervene as little as possible to retain the integrity of the site. This is done by uprooting 3 one-storied commercial blocks while introducing the new

function to the area. Along with that it is made sure that the commercial blocks are replaced with more shops to ensure a balance.

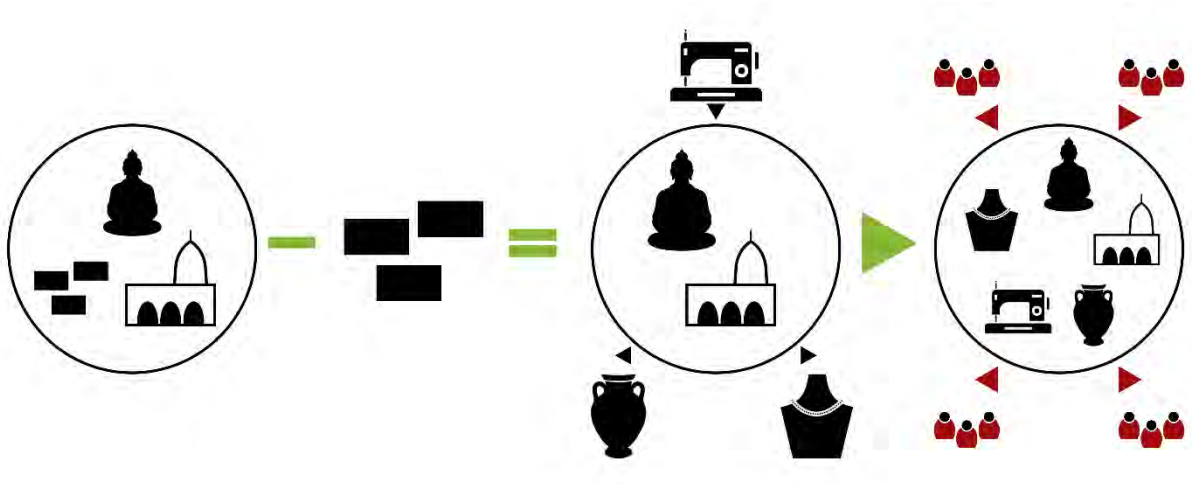


Figure 66: Main intervention (Source: Author)

7.2.3 Macro interventions

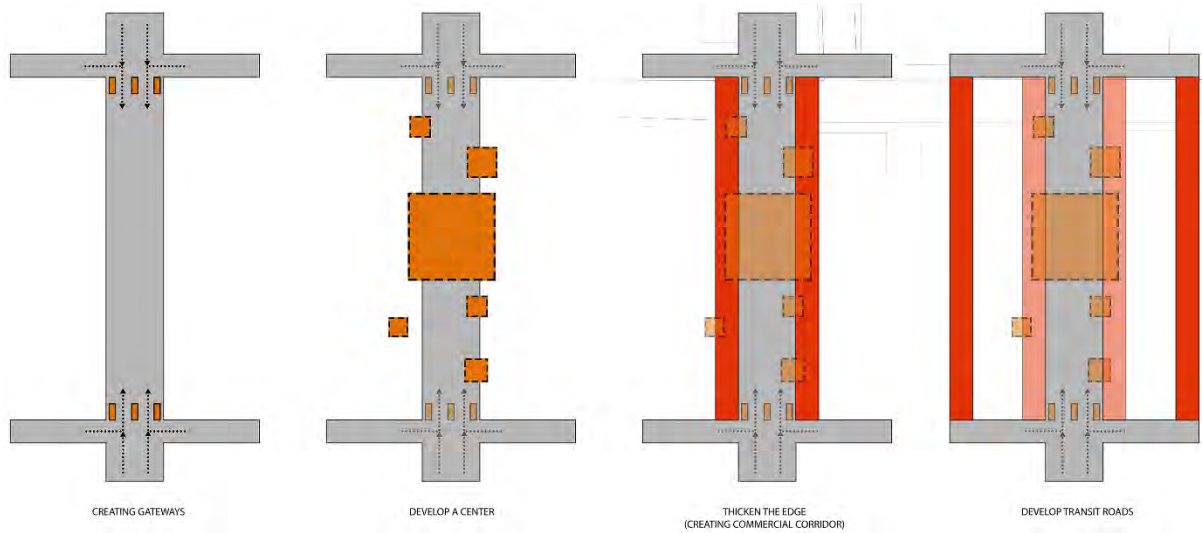


Figure 67: Macro interventions (Source: Author)

7.2.4 Micro interventions

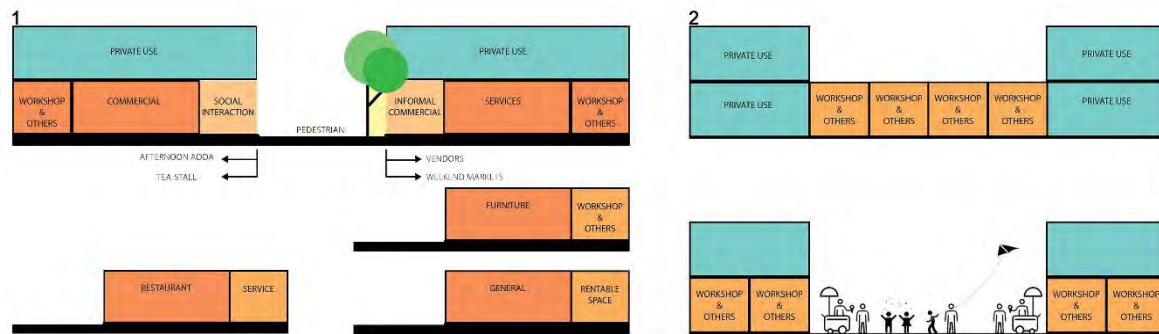


Figure 68: Micro interventions (Source: Author)

- Ground floors or partial ground floors have to be rented out for public accessibility. Accommodation/ private zone would start from first floor. While this ensures privacy, it also broadens the edge of the pedestrian without physically altering it. Also, renting ground floor for commercial usage increase its rent while reducing energy usage and these can be used as incentives for home/land owners
- In cases where there are single-storied commercial blocks, they can be housed in the ground floors of residential buildings. This not only ensures the first point but also provides an open space for the community improving their quality of life

7.3 Plans



Figure 69: Masterplan (Source: Author)

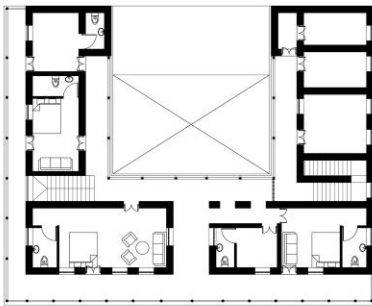


Figure 70: First floor_ Building 5

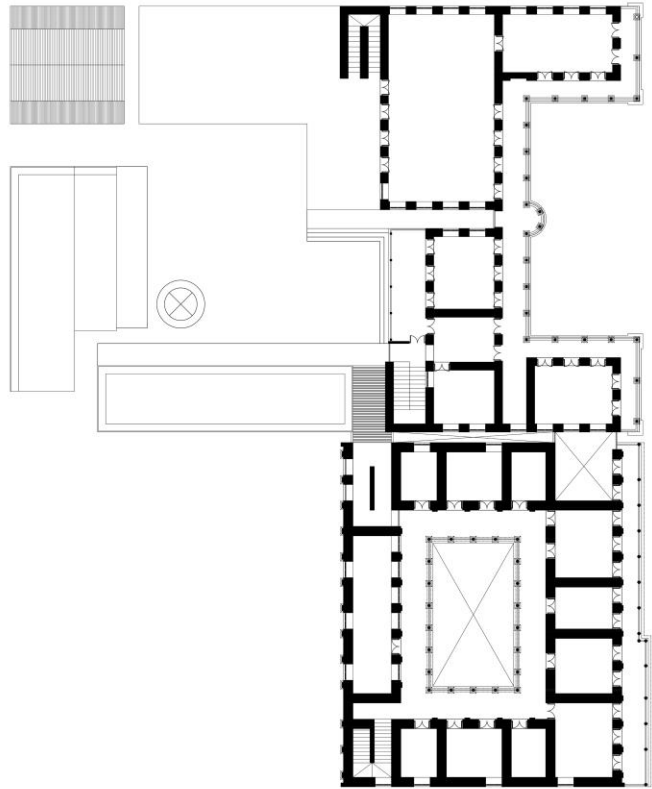


Figure 71: First floor_ Building 2 & 3 (Source: Author)

7.4 Details

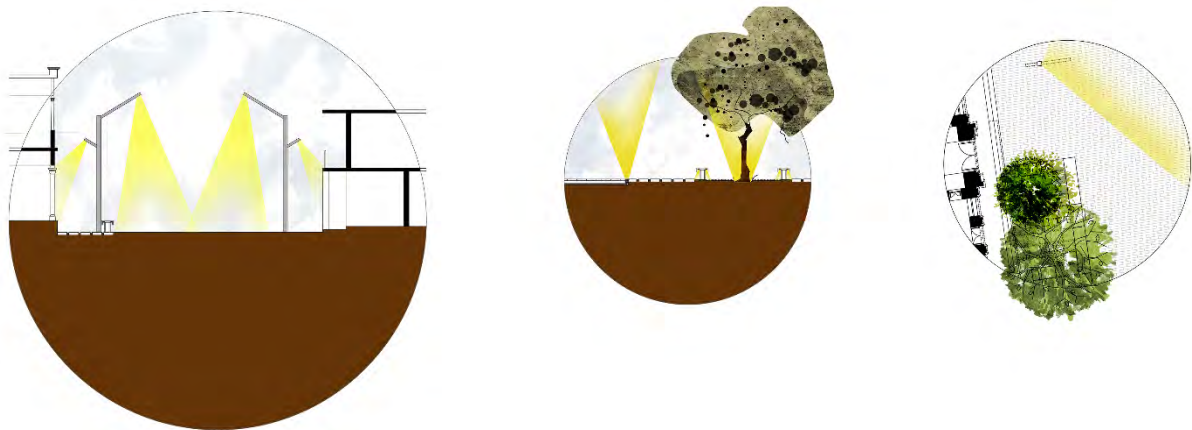


Figure 72: Design details (Source: Author)

7.5 Elevations and Sections

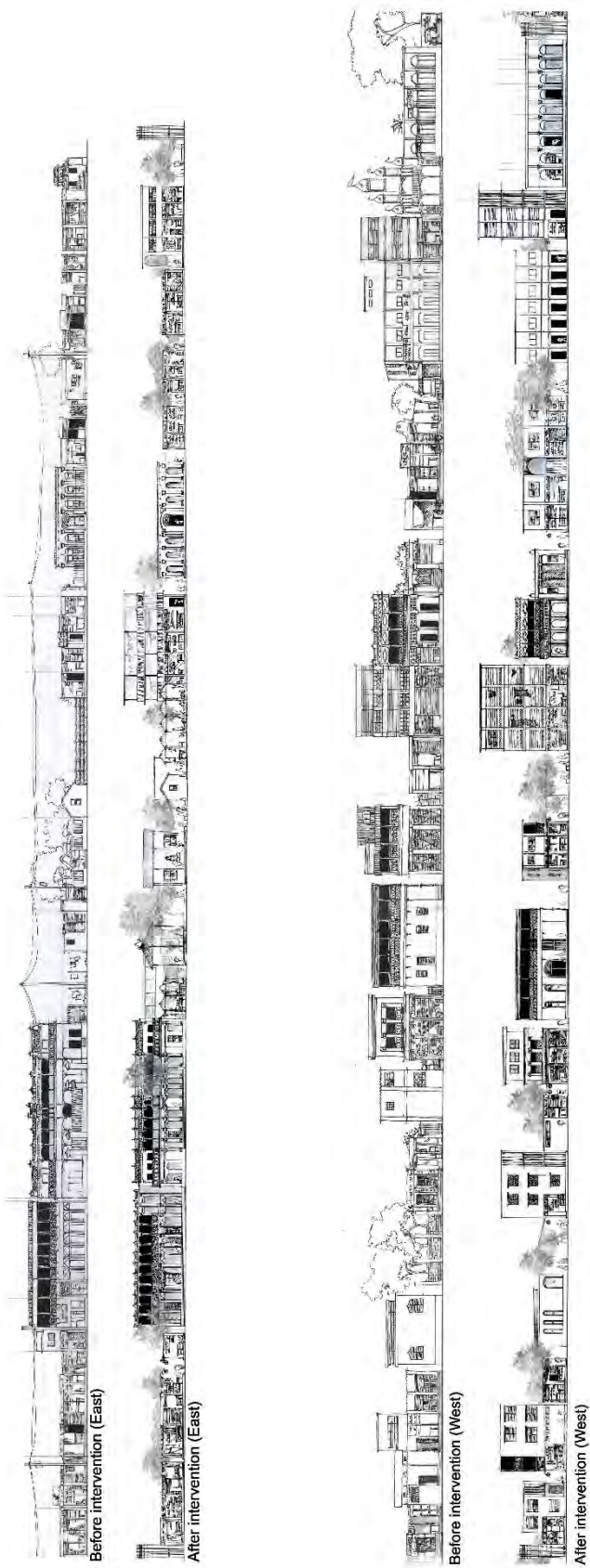


Figure 73: Elevations (Source: Author)

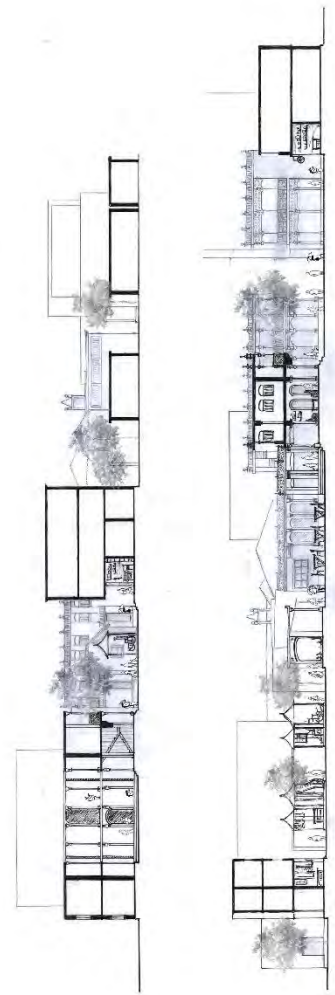


Figure 74: Sections (Source: Author)

7.6 Design considerations

7.6.1 Possible activities in the Centre

- Weekend market
- Community gathering
- Cultural performances
- Village Fête

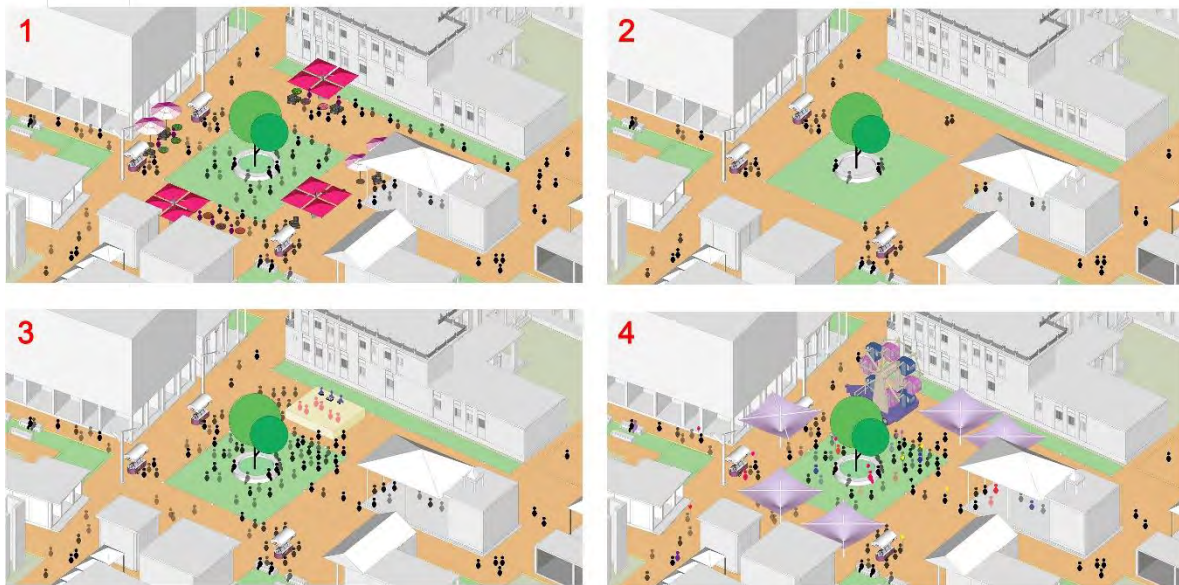


Figure 75: Possible activities in the centre (Source: Author)

7.6.2 Miscellaneous information

A few activities centres were tried to establish with the centre being the biggest focus. These activities range from pilgrims coming to visit rath, to children playing in the school field, to afternoon community gatherings, etc.



Figure 76: Activity centres across site (Source: Author)

Lighting have also been considered in the design. Lampposts, ground lighting and street furniture lighting were used appropriately.

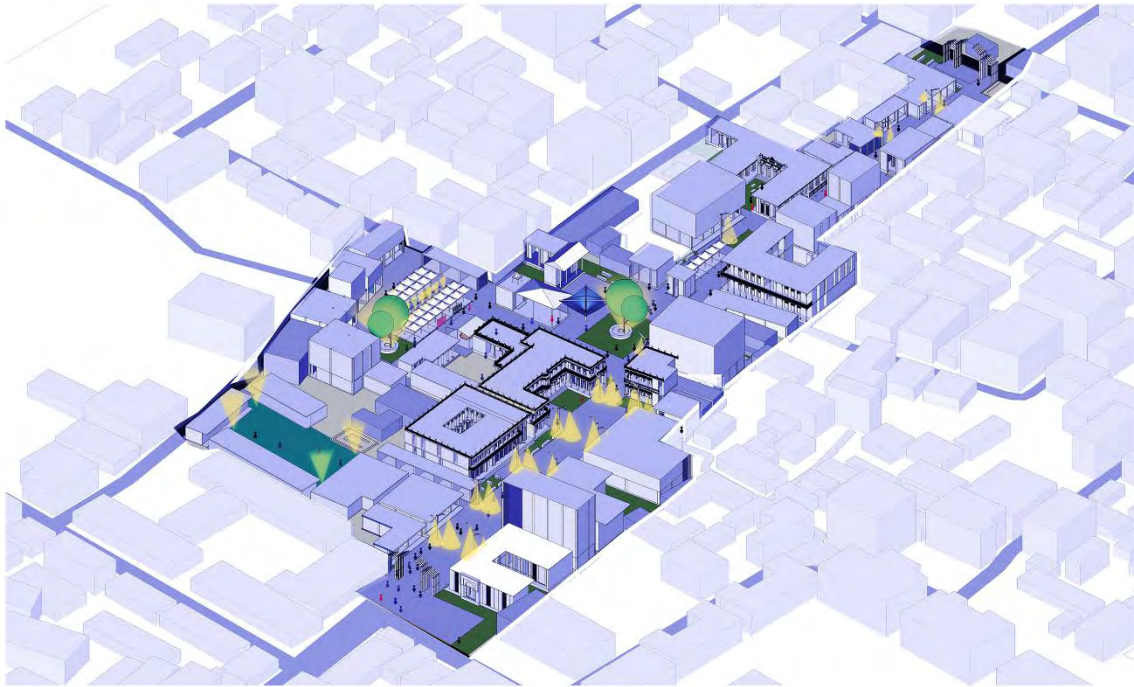


Figure 77: Lighting across site (Source: Author)

Shops were placed according to their zones. For example, while the cottage industry shops were placed near the core of the site, departmental shops, tea stalls and other daily need shops were spread out throughout the site to tend to the community



Figure 78: Zoning after intervention (Source: Author)

7.7 Rendered Images



Figure 79: Rendered images (Source: Author)

7.8 Model Images



Figure 80: Before intervention (Source: Author)

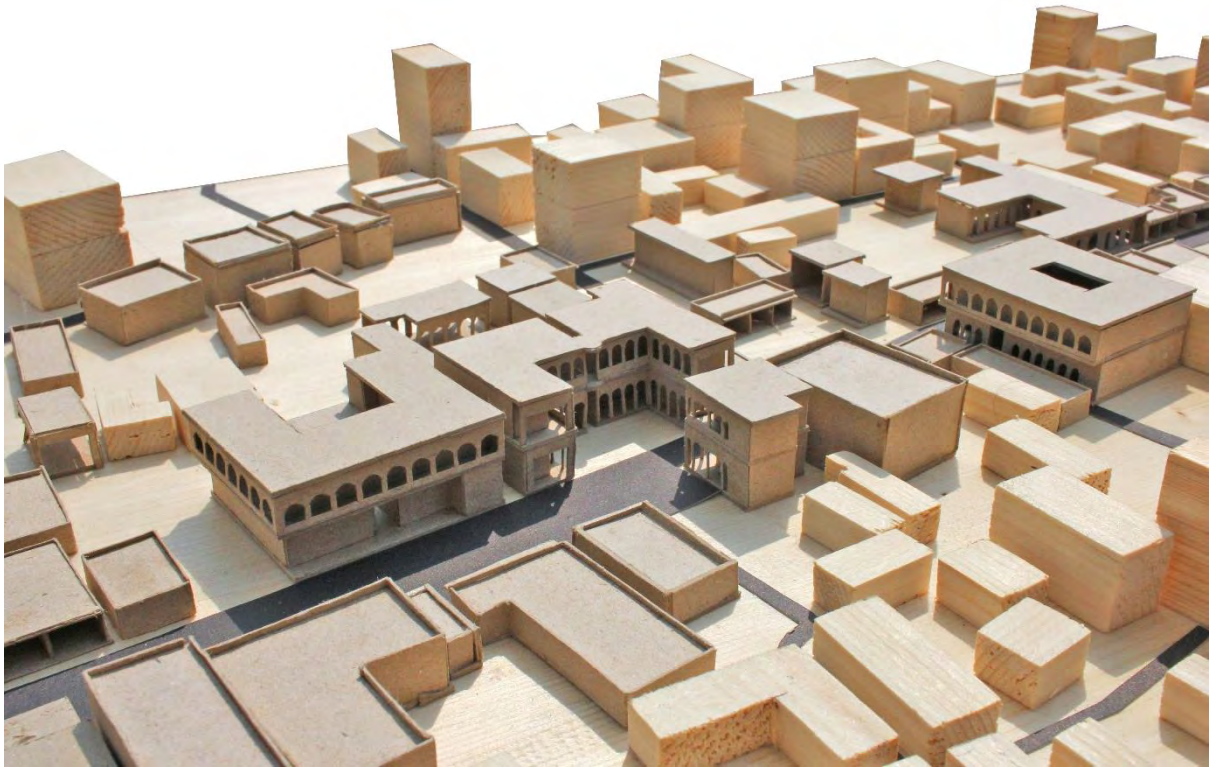


Figure 81: After intervention (Source: Author)



Figure 82: Site model (Source: Author)







Conclusion

The primary aim of this project was to focus on the present scenario of the metal crafts sector of our country and its constant degradation. It was to offer an interactive platform to connect the universal artists, artisans and art enthusiasts in one thread.

Prominent architect Charles Correa had once said, 'Architecture should always be simultaneously both old and new for it comes into being in the intersection of 3 major forces. The first represents the technology & economics; the second, culture and history and third, the aspiration of people'. Keeping that in mind the author tried to learn as much as possible from what the site and its rich history had to offer and then tried to implement those in the design accordingly.

This resulted a project where the main goal was to do minimum intervention to get the maximum result. In a micro scale this was achieved by using adaptive reuse of the colonial buildings and accommodating the additional functions in them. In a broader scale, this was done by protecting the integrity of the urban morphology and making use of the grey spaces and new zoning principles. All of these aimed towards attracting a larger tourist base to Dhulivita while offering a better quality of life for the inhabitants. Like the Lost Wax method of metal casting, the exterior remained as it is while the interior was changed for a better outcome.

Thus, the small part of Dhulivita became more than just a home to the remaining metal artisans. It turned into a Mold Town: a town where the past IS the future.

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