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Role of Traditional Craft in Shaping the Historic City of Moradabad, Uttar Pradesh

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1. Abstract

Moradabad is known as the Brass City of India. The paper would cover the study of the tangible heritage of Moradabad including the understanding of the historic city and identifying the historic structures of the old city. The second one would be to study the Intangible Heritage of Moradabad focusing on identifying the traditional brass making areas. This aspect would also focus on documenting the 'karkhanas' where they make brass items and the traditional knowledge system involved in the craft. This study would be based on primary on-site surveys.

After studying both the layers, the paper would also try and find the connection between the traditional craft and the historic city. Artisans form the major backbone of the city. The conditions in which they are working has a direct implication on their health, the paper would aim to study these issues and give design solutions/ proposals for the same.

Keywords: Traditional craft, Brass city, Tangible Heritage, Intangible Heritage.

2. Introduction

Moradabad is known as the "Brass City of India". It is situated in western UP. In the North, it is bounded by Bijnor district & Uttarakhand, in the east by Rampur and in the South by Sambhal district & in the west by Amroha district. It lies on the banks of the Ramganga river.

Studies have been conducted on the history of the city of Moradabad but they have not talked about how the traditional craft of the city i.e. the brass making craft has shaped the old city. This paper would be covering the following aspects: The History of the city of Moradabad, the method of making this brass product how with the growth of the city the craft clusters settled in the city and how the city was started being shaped by these craft clusters. To make any brass product, a procedure which involves seven steps is followed. In Each mahulla in the old city atleast one of these seven step takes place. It becomes important to understand the procedure involved in the process so as to understand the chain of the brass clusters in the old city.

To do this, the first thing that was done was studying the already existing literature on the History of the city Moradabad including gazettters. After studying the literature, the first thing that was done was to demarcate an approximate Old city boundary. There were a total of 70 wards in the city of Moradabad, out of which around 15 were in the old city. Surveys were done in these wards to find out where the brass clusters are still present in the old city. The network chain of the brass clusters were understood and the procedure of making these brass products was also understood, the tools involved in the process were documented.

3. Material and Methods

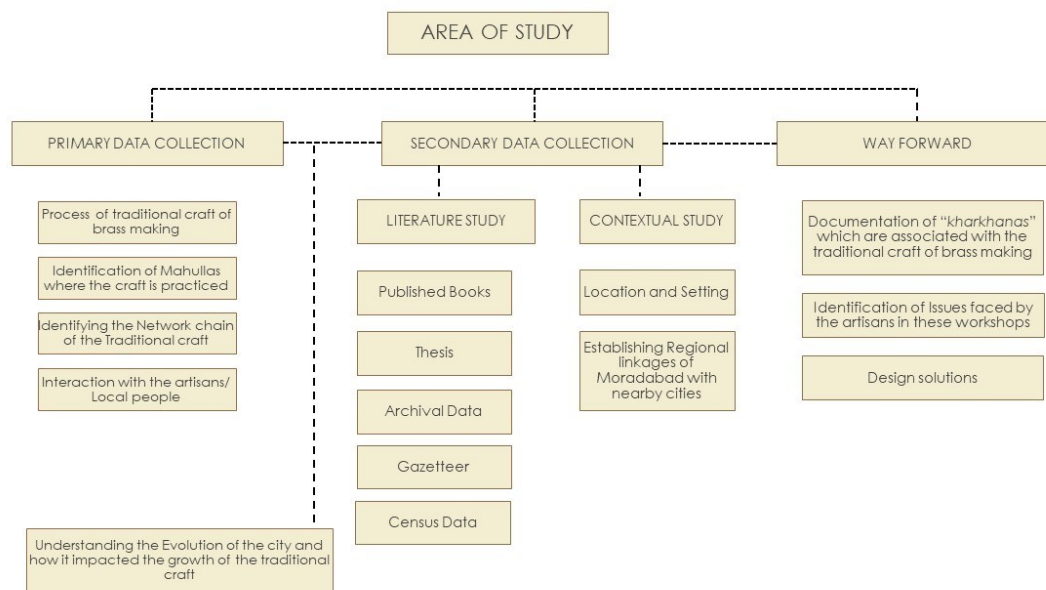


Figure 1. Structure of the Study (Developed by Author).

Procedure of Making Brass Products

There are seven steps involved in the craft of brass making namely: Mould Making, Melting, Casting, Scraping, Engraving, Coloring, Polishing.

Out of these 7 steps, 5 of the steps namely Mould Making, Melting, Casting and Engraving and Coloring are still carried out by the traditional method but the other 2 namely Scraping and Polishing.

Mould Making/ *Darza Banana*

The initial stage involves creating the mould or 'master-piece' that will be used to replicate multiple products through casting. Typically, wax is the preferred material for making the mould as it is soft and malleable. Alternatively, wood may also be used. To facilitate the sand-casting process, the 'master-copy' is always designed in two or more detachable halves. This allows for easy removal of the mould after casting.



Figure 1. Images showing Artisan doing Mould Making on wood (Clicked by Author)

Melting/ Galana

Brass is prepared by melting scrap-metal to coal-fired furnace. The furnace is made of brick so that it can withstand the melting point of brass i.e. 1000 degree Celsius. The raw materials are a mix of many metals namely copper, zinc, lead, etc. in a specified ratio. A flux is also added to remove the impurities. These are molten in a huge container (*ghadiya*) for about twelve hours to produce 350 kilogram of brass at one go. The molten metal is left to cool on basic iron moulds to form strips (*silli*) that are then sent to the casting craftsmen.



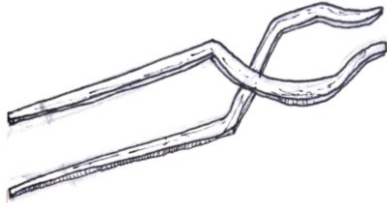
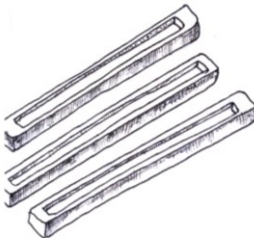

Tool name	Description	Image
Ghadiya	It is a vessel made of mixing different types of material namely bitumen which is also used to make roads, scrap material etc. It has a height of 1200mm, width of 700mm and is 110 kg in weight. In one round i.e., in 1 <i>tao</i> roughly 150kg coal is required for melting. 1 <i>tao</i> takes around 5 hours and can melt and produce around 500kg of brass. The cost of one ghadiya is roughly Rs. 35,000/-	 
Chimta	Chimta is used for holding and keeping the ghadiya in the furnace, It has a height of 1800 mm and is made of wrought iron.	
Silli	Silli is the local name for the frame in which the molten material is put to cool. 1 Silli is 7kg. Approximately, 100 silli can be made from melting 500kg of material. This can be done in 12 hours.	
Chota Ghadiya	Chota Ghadiya is 4kg in weight, 100mm in width and 150mm in height. It is used to pour the molten metal from the Badha Ghadiya to the Chota Ghadiya.	

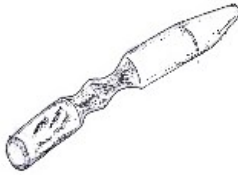

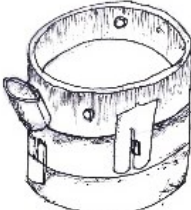
Table 1. Traditional Tools Used in the process of Melting (Images and Sketches Author generated)
Casting/ Dhalai

Sand casting is the traditional method for creating brass items. In this process, sand is utilized to form the mould box, consisting of two halves, in which the metal is cast. The sand is prepared which is a mixture of the *Reta* which is brought from the riverbed of Ramganga, *Balu*, which is the sand of Registaan and *Sheera* which is mixed to settle the sand. All these combined are locally known as '*Masala*,' is tightly packed around the 'master-copy' locally known as '*Darza*' to shape the mould. The '*Sheera*' acts as a chemical binder that helps maintain the mould's shape until it is removed, allowing molten metal to be poured into the created cavity. Once the casting has cooled for a few minutes, the metal product is taken out from the mould box. The sand and the 'gating' (a pathway in the mould that guides the flow of molten metal into the cavity) are separated from the cast by using a hammer. These components can be reused in subsequent castings.



Figure 2. Images showing Artisan Casting using the Master Mould. (Clicked by Author)

The sand that was used in the process had the following components: Retta, which is the sand from the banks of the river Ramganga, Baalu which is the sand imported from Rajasthan and Sheera. Sheera is added to the mixture to maintain the consistency of the sand mix. The price of sheera is Rs 90/L

Tools name	Description	Image
Musli	These tools are used for the preparation (<i>Thukai</i>) of sand.	
Gatta		
Saancha	Saancha is the local name for stencil in which the brass products are made	

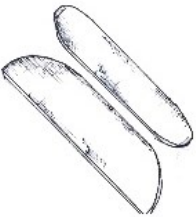
Patti	The master mould is kept in the box and the sand is poured in it, the sand is levelled using a Patti.	
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Table 2. Traditional Tools Used in the process of Casting (Images and Sketches Author generated)

Scraping/ Chiseling

Once the cast metal has solidified, it is placed on a cylindrical wooden block, which is then attached to the headstock of a lathe machine. Chisels and files are used to scrape the spinning cast, removing any rough edges or irregularities and smoothing its surface. This process helps to refine the shape and enhance the overall appearance of the brass product. In the case of products made in multiple parts, they may be welded together before undergoing the scraping and polishing stage. Any metal shavings generated during the scraping process are collected and reused in the next melting batch, reducing waste and optimizing resource utilization.

In earlier time, chiseling was also done by hand. Skilled artisans would use handheld chisels and hammers to carve intricate designs and patterns onto the surface of the brass. The process involved carefully striking the chisel with the hammer, gradually removing small portions of the brass material to create the desired shape and detail. The artisans' expertise and precision were crucial in achieving the desired outcome, as any mistake or miscalculation could significantly impact the final product. This traditional method of hand chiseling required patience, craftsmanship, and a keen eye for detail.

Engraving/ Ulchai

Engraving is a highly intricate and artistic process in brassware making. The first step in engraving is to sketch the design on paper, capturing all the intricate details. The design is then scaled-up according to the size of the product it will be engraved on. Measurement is crucial during this process to ensure that the pattern looks harmonious and well-proportioned.

After talking to the artisans, I came to know that the inspiration from these designs came to them by different things like various forms of nature such as trees, flowers, birds, and animals. Geometric patterns influenced by Mughal architecture are also commonly used. Not only this, some of the artisans also try to mimic the carvings that are made on the buildings too.

To begin the engraving process, an outline of the entire design is made using a fine engraving tool. This tool is hammered with a wooden block to create the desired lines and shapes. After the outline is complete, broader engraving tools are used to work on the background and create depth within the pattern. This step adds texture and enhances the visual appeal of the engraved design. Engraving requires a high level of skill and precision, as it is the stage where the artistic finesse of the brassware comes to life.

There are different tools, locally known as kalams which are used for the engraving work. These different tools have different thickness and are used for intricate engraving work.

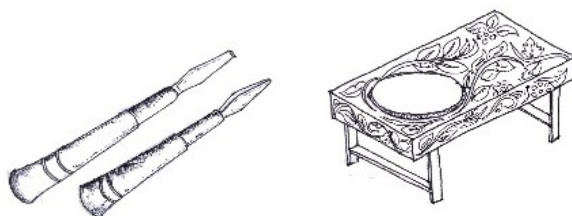


Figure 3. Images showing (Left to Right) Artisan doing engraving work in his workshop, Kalam used for engraving, Table on which the product is kept during engraving, finished engraved product. (Images and Sketches Author generated)

Coloring/ Rang Bharai

In some cases, the engraved areas are filled with colorful lac or enamel to further accentuate the design and add vibrancy to the brass product. This is done using a home-made equipment which is powered by coal. The heat of the equipment is controlled by hand. Firstly, the colors of lac are prepared into thin rolls. The product is kept at the top of the equipment, the surface of the product gets heated and the tip of the colored roll also. It becomes easier to color the product after heating.

Rang Bharai requires different tools for coloring any brass product. Khurpa is the tool used for chiselling the extra color and Batti is the thin color made of lac.



Figure 4. Images showing (Left to Right) tools used for Rang Bharai namely Khurpa, Batti, Home-made equipment powered by coal, Artisan doing Rang Bharai. (Images and Sketches Author generated)

Polishing

Polishing mainly includes cleaning the brass ware with a soft scrub and then buffing it on the machine for golden sheen.

History and Evolution of Moradabad and its Brass Clusters

Before 1632

Moradabad was known as Chaupala (a group of 4 villages) before 1632 and it was ruled by Raja Ramsukh Katehria who took refuge on the banks of the river Ramganga.

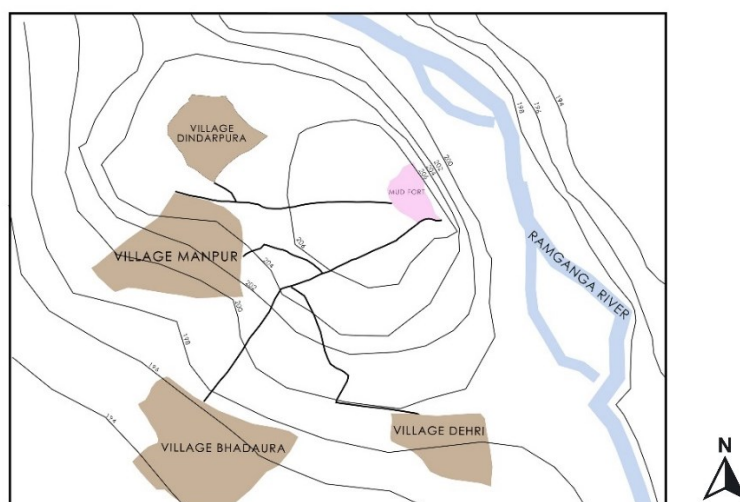


Figure 5. Images showing Moradabad of 1632 with the present-day contour showing the fort on the highest level. (Author generated)

1632 – Late 17th Century

In 1632, Rustam Khan on order of Shahjahan came to Chaupala with 5 working classes namely Carpenters, Ironsmith, Barbers, Cooks and Tailors. Chaupala was named as Moradabad on the name of Murad Baksh, prince of Shahjahan at that time.

1. Jama Masjid was constructed in 1632 by Rustam Khan.
2. In the Mughal Cantonment area of Katghar, the Ironsmiths and the Carpenter resided. The ironsmiths started making weapons.
3. The carpenter started making wooden buildings in the late 17th century.
4. All the wealthy people used to live in areas like Lal Bagh, Faiz Gunj.
5. Major Trade of brass products, weapons etc used to happen in the area near Faiz Gunj known as Mandi Baans.

18th Century

- Moradabad was a walled city with the following gates like the Amroha Gate, Sambhal Gate, Delhi Gate. The city started expanding beyond the walls.
- The following mahullas came into existence where the artisans involved in the traditional craft of brass making started blooming: Nawabpura, one of the oldest muslim quarters, Diwan Ka Bazar- which was founded by Kanh Mal- minister of Nawab Dunde Khan, Asalatpura- named after Asalat Khan-governor of Sambhal. The craftsman involved in the brass making increased. Till this time, the craftsman were majorly located in the Katghar area.

19th - Mid 20th Century

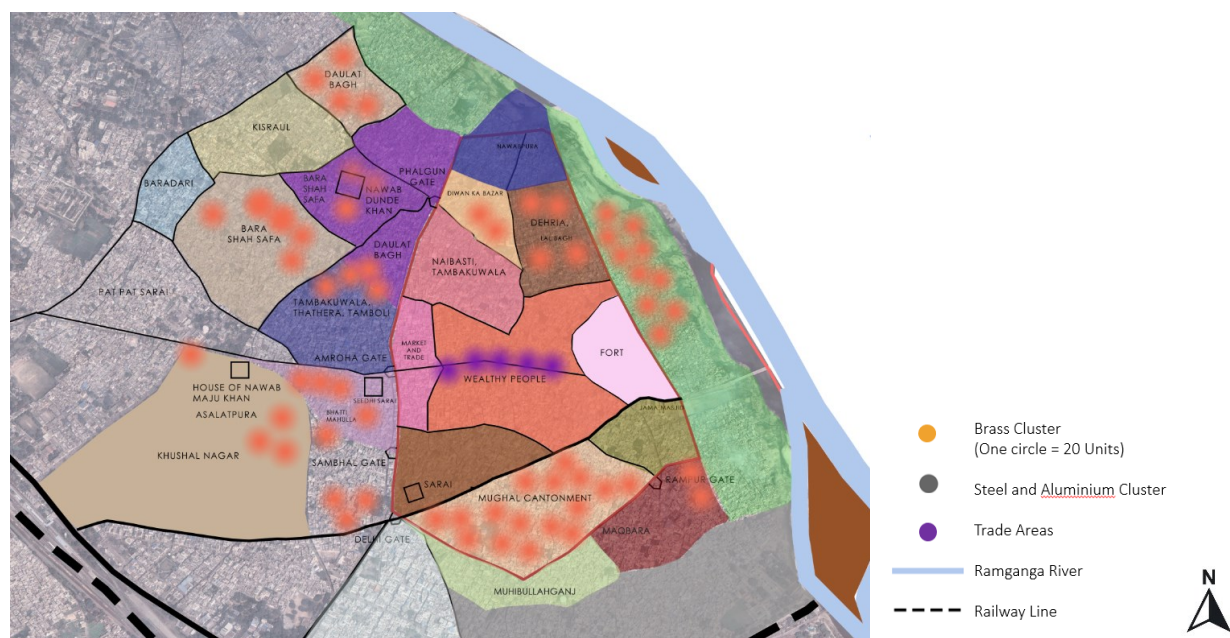


Figure 6. Images showing Traditional Brass Clusters from the 19th-mid 20th Century
(Preliminary data referred from Mohd Danish, Added data and Observations by Author)

- The Orange dots represent the Major areas involved in Brass work in Moradabad in the 19th-mid 20th century.
- The city expanded even more and the Mahullas like Baradari, Pat Pat Sarai, Mahibullah ganj came into existence.
- The Brass clusters started spreading in different parts of the old city like Diwan ka Bazar, Bada Shah Safa, Faiz Gunj, Nai Basti, Sambhal Gate, Faiz Gunj, Daulat Bagh, Katghar was the Mughal Cantonment area which was where the craftsman who started the craft used to live.
- The purple dots show the areas of Mandi, Chowk, Bartan Bazar where major trade of Brass Products used to happen.
- Thathera Mahulla, Tambakuwala, Tamboli also had craftsman who were skillful in the art of brass making. The names of these areas were given based on the caste of people.
- Bhatti Mahulla expanded and developed just outside the city wall. It was where the furnaces were located. It has a strategic location with respect to the prevailing winds of the city.
- Sand used for the Casting Process was procured from the banks of the River Ramganga.

Post Independence

The clusters have started shifting outside the Old city and to the northern side of the city, close to the banks of the river Ramganga. These include areas like Karula and Lajpat Nagar where there are assembling units, Peetal Basti which include the Big Manufacturing Units The city also started developing.

The clusters of Brass started reducing Post Independence. The black color dots show the steel and aluminium clusters that started coming up in place of brass.

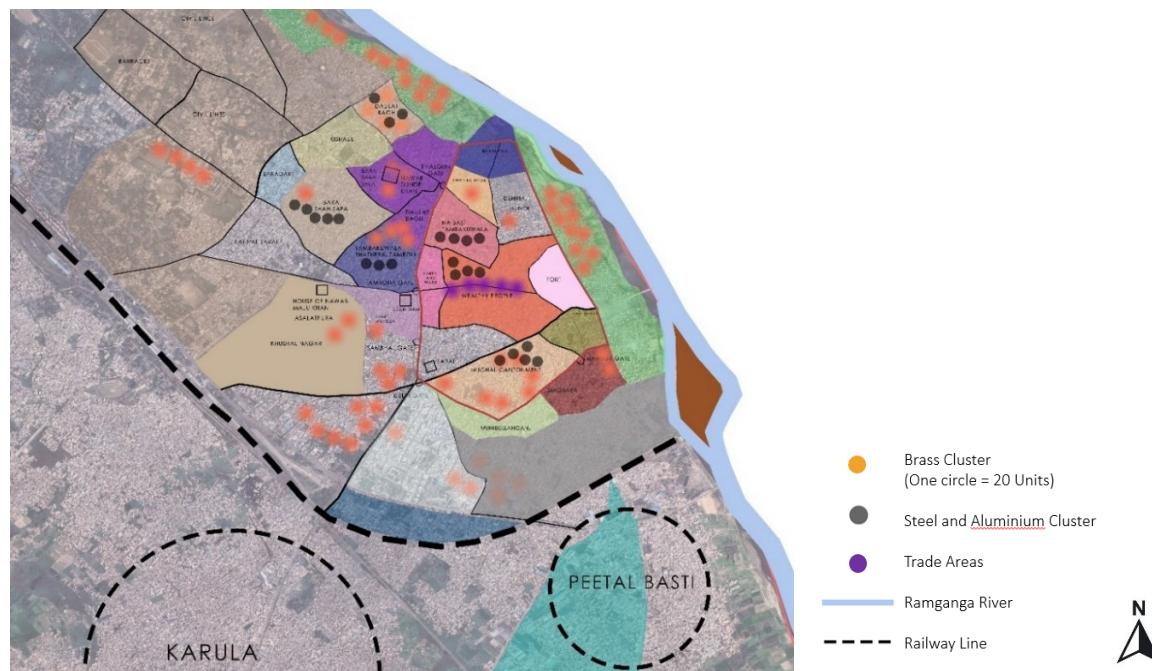


Figure 7. Images showing Traditional Brass Clusters Post Independence (Preliminary data referred from Mohd Danish, Added data and Observations by Author) (Gambhir)

4. Results

As discussed earlier, the craft had a significant role in shaping the historic city of Moradabad. There are different areas in the city are known for different steps of the process of making brass. Those are as follows:

Faiz Gunj: Warehouses, Storage, Trade and Marketing

Peer Gaib: Moulding, Casting

Lal Masjid: Electroplating, Chiseling.

Bartan Bazar, Mandi Chowk: Local market of the city. Around 84% people are involved in marketing and packaging business.

Sambhal Gate: Around 60% residents are involved in Hammering, Embossing, Chiseling

Asalatpura: 78% Residents involved in Polishing and Engraving work.

5. Discussion and Conclusion

The traditional craft has a high cultural value in the city, and it is observed that rise in demand of these products and coming up of new technologies, the number of artisans performing the craft manually have reduced and many artisans have shifted to machine work. It is very important to spread the knowledge of this traditional craft and document this craft so that people understand its importance. Shifting to machine work has reduced the finesse the hand-crafted products has to offer.

There is no handbook available for the upcoming generation to refer and learn the traditional craft. There should be awareness programmes, exhibitions which showcase the importance of the traditional craft.

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Conflict of Interests

The authors declare no conflict of interest.

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