

Terracotta in Architecture: Overview on Historical and Contemporary Practice in Bangladesh

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ABSTRACT

Although Terracotta is one of the oldest in almost all sub-continent and was spread out across the whole world now-a-days it has been a common, traditional, and indigenous object in Bangladesh for everyday life. Inspired by the religion or rituals, terracotta art has evolved in many ways in Bengal over time. From Babylon walls to high-performance rain screens, terracotta claddings have proven repeatedly to be technologically superior and aesthetically rich. Realizing the evolution of terracotta prepares architects to add new, creative chapters to a superior history. Through an extensive inventory of recent examples, project case studies and architectural details, this study provides a foundation for understanding the nature of the material and the opportunities it offers in the urban life. The objective of the paper is to know the evolution of terracotta as a historic, artistic and cultural materials and shapes of objects with aesthetical and technical aspects that plays an important role for place making in both exterior and interior of architectural design and building practice. The paper explores the evolution of terracotta in Bangladesh and prepares architects and builders to make new, creative uses of the timeless material. Validating the examples of expressive possibilities, this precious study can be an inspiration for students and professionals alike who are interested in creating sustainable spaces by using visual and cultural components.

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1. INTRODUCTION

The art of the Terracotta has been evolving and modifying aesthetically and technically through the ages. Earth or clay is the most easily and readily available material, the most malleable and the least resistant to shaping. It thus satisfies the creative propensity of ordinary people for aesthetic expression as much as for domestic and ritual requirements. (Sarwaswati, 1957). Since prehistoric times, the earthen material used by man in his daily life was either baked in the sun or fired for hardness and durability (Khan, 1988). The potter learned to choose the best clay to produce parts and adapt the techniques to use the type of clay found at the site where fixed. The clay pieces originally appeared to be useful and functional to serving their creators. The duality of use and functionality combined with aesthetic beauty have achieved harmony in the way that a simple earthen bowl or plate can look and feel.

A. Introduce Terracotta

Origin of the word terracotta appears at early 18th century, from Italian 'terra cotta' means 'baked earth', from Latin

'terra cotta' (Delahunty, 2008). In general, terracotta is a hard, fired clay, brownish-red in color, used for architectural decorations and facings, structural units, pottery and sculptures, or anything made of terracotta. An elaborate definition of terracotta refers to a high grade of refined or aged clay, which, when mixed with sand or grinded fired clay, can be molded and fired at high temperatures to achieve a strength and compactness not found in brick, simply put terracotta is a rich casted mud bricks or blocks (Tiller, 2004). Conversely, it is a type of earthenware, a clay-based unglazed or glazed ceramic, in which the fired body is porous. Its uses include surface ornamentation in building, cladding tiles, sculptures with bricks such as terracotta Army or Greek terracotta statues. Even before history began, Terracotta has been used as a medium for expression throughout the ages. The earliest clay objects and pottery show a true sense of artistry and aesthetic.

B. Terracotta Plaque & Pottery

This terracotta was made by burning the designed clay tablets like bricks. The main reason of these terracotta plaques in the early period was to decorate the walls and to

break the monotony of the plainness of the temple walls. These plaques also served as a source of instructions and entertainment for the pilgrims. Terracotta plaques are generally covering a large area of a temple complex. Such extraordinary work requires the services not of one modeler, but of the entire modeler's guild.



Figure 1: 'Odysseus returning to Penelope'-A classical terracotta plaque (ca. 460–450 B.C.) (Metropolitan Museum, 2022)

Pressed-clay product can also be considered as a different format of terracotta that is usually glazed, simple in shape, but has a variety of textures and finishes. Basically pottery is a ware, such as a vase, bowl, pot, or plate, shaped and hardened by heat or craft or the place where a potter works (Free dictionary, 2022).

2. ARTISTRY & AESTHETICS OF TERRACOTTA

Even before history began, Terracotta has been used as a medium for expression throughout the ages. The earliest clay objects and pottery we have found show a true sense of artistry and aesthetic.

Perhaps the charm of terracotta stems from the magic of its creation. We know that in its gestation it is a smooth substance, easily yielding to the touch of the hand, accountable to modelling and remodeling, which is transformed by the action of fire into matter that is at once firm and stable whose fragility and breakability also conserved as a whole. But after all, its sensorial charm is continued. A fine piece of pottery, like a fine sculptural piece, invites us to touch, to caress, to knead, to feel its weight, its curves, the texture or smoothness of its surface. It is an art to creativity and an art to harmony. It is an integrated response to need and the beauty.

3. HISTORY & EVOLUTION OF TERRACOTTA

A. General History of Evolution

Terracotta of burn clay is the most ancient material that and comprises the earliest art products of all the pliable media. It is used as a medium of figurative sculpture in many of early civilizations. Minoans, Egyptians, Greeks, Mesopotamians, Iranians, Chinese, Polynesians, Indians, and pre-Columbian Americans (Khan, 1988).

The History of Terracotta is considered to have begun in the period 29,000 to 25,000 BC, when the earliest known ceramic (molded of clay and fired) objects were crafted. (Bryk, 2022) The firing of clay was not far behind when nomadic man settled down and discovered fire. Pinch pots which made of balls of clay, into a finger or thumb is inserted to open, are probably the first pottery. Ancient potters partially solved the fragility and porousness by rubbing the surfaces with a rock or hard wood before firing. Decorations were usually the result of tool incisions or insertions into soft clay. Early potters made objects that could be used for practical purposes, as well as objects that represented their prolific deities. (Encyclopedia, 2018) Ancient Egypt and Middle Eastern civilizations used clay for construction and household use as early as 5000 BC. The ancient Egyptians were involved in pottery on a much larger scale by 4000 B.C. Mud bricks were also used as building materials. (Bryk, 2022) The Greeks began placing pots on wheels and creating wonderful forms in the first millennium BC. Also pre-Columbians, ancient Iberians and Romans molded pottery with relief decoration. Ancient Japanese also made beautiful pottery for domestic use and religious purposes also (Encyclopedia, 2018).

Clay has been a popular medium for creating decorative objects for centuries. In ancient times, humans were proficient in agriculture and animal husbandry as well as handicrafts. He burned the soil and made a variety of useful things. The burnt clay dolls, ornaments, birds, designs, etc. used to make art objects. The history of this burnt earth art has gone back to the distant past the Copper Age.

for more than 100 years, Terracotta has been an integral but largely unknown part of America's architectural legacy. Later it begins in the nineteenth century and reach in peak in the Art Deco period. During renaissance period, terra cotta has been used to adornment of facades, rooflines, openings and create many of the most famous and fanciful architectural reliefs (Tunick, 1997).



Figure 2: Pottery excavated from the ruins of the Indus Valley Civilisation

B. Brief History in Bangladesh: Through the Ages

i. Ancient Period

The history of terracotta art in Indian sub-continent goes back to the ancient past. Long before the use of stone became common, terracotta was a medium of sculpture and art. (Goswami, 1959) Harappan urban culture also used a large number of terracotta human and animal figurines.

(Vats 1940) Having connection with the terracotta practice of the rustic cultures, the art seems to represent the trendy plastic expression of the common people of Bengal (Khan, 1988).

Terracotta emerged in Bengal, in all probability, in or around 1500 BC. This delta is alluvial in nature and fine clay is its distinctive geological feature. The inhabitants use this natural resource for making numerous potteries specially found as household decore Archaeological sites, such as *Mahisdal, Bharatpur, Mangalkot, Chandraketurgh, Tamralipti, Pandu Rajar Dhibi, Rajbadidanga, Harinarayanpur* and *Bangarh* of West Bengal and *Raja Harish Chandrer Badi, Mahasthangarh, Govinda Bhita, Bhasu Vihara, Wari-Bateshwar, Mainamati* and *Paharpur* of Bangladesh have produced varieties potteries, specifically Black-and-red Ware, Northern Black Polished Ware, Rouletted Ware, Amphorae, Black-slipped Ware, Knobbed Ware etc.

ii. Pal Period

In Bengal, terracotta plaques or small murals for hanging on walls were first found in the Shunga period I the second century BC, almost 5,000 years old. To make the architectural style attractive, the progress of the terracotta art in the buildings came to a complete standstill in the post-Pal era. This is probably the result of the pressure of works of art against the prevailing norms developed in the later period. After Paharpur and Mynamati, there is no consistency in this artwork for centuries. But it is conceivable that in the countryside this descriptive art sustained its existence in various forms and mediums. For example, scroll painting, idol making, wooden cover of the illustrated manuscript, etc. (Banglapedia 2021).

iii. Gupta Period

It is said that terracotta art was prevalent during the Gupta period, one of the best times of Indian culture. Once upon a time, stones were brought from different parts of India and then stones were cut and temples were built in this land of poly clay. It was labour-intensive and time-consuming. Later, terracotta became important in its own art form. So the industry didn't suddenly grow (Topadar, 2020).

In Bengal, terracotta ascribed to the Gupta period has been found at a number of ancient sites. From Mahasthan in Bogra district, there has discovered some terracotta figures and other objects. As bas-relief art of post-Gupta period, terracotta was confined to eastern India, particularly in Bengal, where it blossomed and established the practice for the architectural ornamentation. (Lalgupta, 1972) A crucial site of terracotta industry in Bengal is located in the Lalmai-Mainamati ridge of Comilla district. Specially the territory also has the largest gatherings of ancient Buddhist relics in Bengal. (Khan 1988) From the Ananda Vihara, an enormous number of terracotta plaques have been discovered, a magnificent monastic establishment at Mainamati. It also centre of the last great Buddhist establishment that flourished here at 7th century. (Rashid, 1977) Sompur Vihara of Paharpur in Rajshahi District has the largest numbers of pre-Muslim pottery art in Bengal. (Khan, 1988) The Paharpur terracotta plaques and the clay replicas of the stone sculptures on the basement floor of the temple which

represent various scenes and figures in an uncomplicated and vigorous form (Majumder, 1963).



Figure 3: Mainamati Terracotta ornamentation, Comilla (world-heritage, 2012)



Figure 4: Paharpur Terracotta ornamentation, Bogra (wikimedia, 2007)

From the 16th century onwards, terracotta art originated throughout undivided Bengal mainly in the temple architecture.

iv. Sultanat, Mughal & Colonial Period

During the Sultanate period, Bengal had already developed a distinct language, culture and architecture. In which terracotta took place as a ornamentation for its structural and exterior elements (Afzal, 2018).

Towards the end of the twelfth century, the conquest of Bengal by the Afghan leader Bakhtiyar Khalji led to the construction of mosques in Bengal and the introduction of terracotta ornaments on the mosques. At that time stone and hardwood materials for building construction were rare and expensive. (Ahmed, 2021) Bengal's important contribution to the terracotta panel and refrigerator industry in the exterior decoration of brick architecture. Due to the scarcity of stones in this region, it was common to burn bricks to make buildings, statues, sculptures, tiles etc. Initially, it was a simple mosque, but later it was carved in stone in the form of terracotta designs on the mihrab and outer walls and on the tomb cover. The motif of the bell and the chain, the blossoming lotus bears that proof. However, due to the inadequacy of the stone, the motifs are again in the terracotta (Rasel, 2014).

The kantajew Brick Temple is renowned as an outstanding monument in the subcontinent for its exquisite 18th-century terracotta practices. It exhibits an enthusiasm of a mature art along with its architectural excellence at its best in Bengal. Every inch of its wall surface from base to the crest ornamented with thousands of floral, figural and arabesque

patterns in unbroken panels, depicting episodes from the great Hindu Epics (Ahmed, 1990) these were the first attempt at architectural ornamentation that broke the monotony of exterior façade walls. The terracotta temples of Bangladesh were built in accordance with the architectural traditions in response to communal needs of local people (Mahmud, 1993).



Figure 5: Darasbari mosque ornamentation, Chapainawabganj (IRB-travel-Team, 2022)



Figure 6: Kantajew Temple ornamentation, Dinajpur (Nijhoom Tours, 2022)

Early terracotta plaques exemplify the use of clay as a sophisticated expression of urban culture. (Schendel, 2009) The best known are magnificent plaques from an area in the south-western delta that archaeologist refers to as Chandraketurarh now just across Bangladesh's western border with India Initially the Muslim Sultans didn't accept the terracotta art of the country as they were opposed to any kind of figural representation (Mahmud, 1993).

Muslim Terracotta art in Bengal is an independent art style. Although some influences come from the Persian art tradition and the pre-Muslim Bengal art, Muslim Terracotta appears a happy blending of both and developed a fusion style with a distinct characteristic of its own. (Khan, 1988) Terracotta rose to the status of a main art form in Muslim decoration. (Khan, 1988) Kalifatabad monuments at 15th century, the almost austere or plain wall surfaces and later buildings unmistakably discontinue the influence of the Tughlaq architecture (Khan, 1988). Terracotta ornamentation followed during the Afghan period (1538-75) in our region and under the Mughals latter preferring plaster decoration for their buildings (Khan, 1988).

During the colonial period, the intrusion of European culture between the zamindars and the nobility, and the 'babu culture' in the mix of European-Bengal culture, resulted in

the creation of western-style houses and buildings in the country. As a result, the uses of the terracotta tablets were lost (Rasel, 2014).

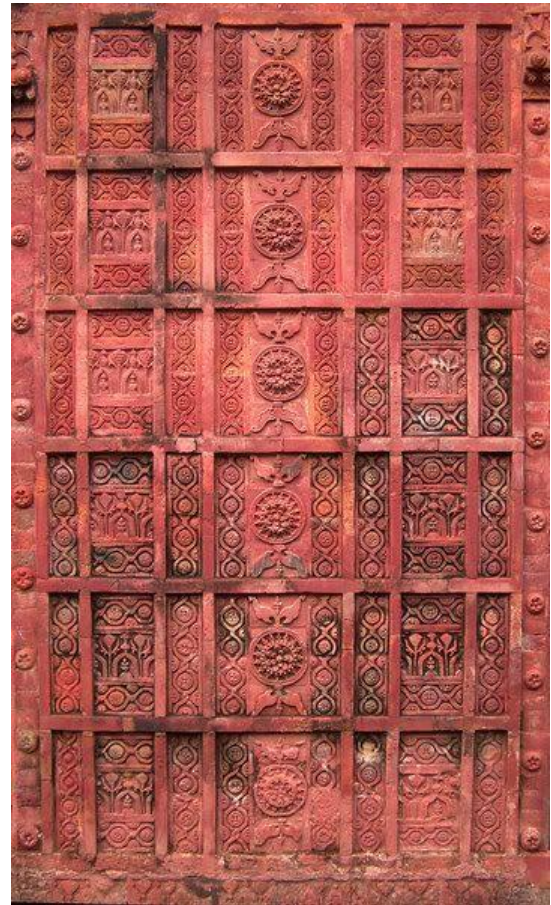


Figure 7: Terracotta ornamentation, Atiya Jami Mosque, Tangail (Ahmed, 2015)



Figure 8: Khalifatabad monuments: Chunakhola Mosque terracotta

v. Modern period

In modern time, we can see a great use of terracotta pottery day to day life. Terracotta Pottery is used in homes and even gardens. Whether it is inside to entertain guests or showpieces on the rack or wall decoration frames or in the garden, pottery add a beauty to our lives.

Terracotta plaque or tiles have a long history in numerous parts of the world. While many ancient and traditional roof styles included more elaborate sculptural elements than flat roof tiles, the possibilities of terracotta decoration of buildings were again respected by the designers and architects in the 19th century. They often using alternative thicker pieces and surfaces that are terracotta decorated, not flat.

Modern examples demonstrate not only its aesthetic qualities, but also its value as a environment friendly energy-efficient material. Architectural terracotta is durable, and it weathers well. The historical buildings prove the strength of the material even when exposed to the changing natural stains well as the chemical pollutants and grime of large cities. Terracotta rain-screen or cladding can help improve its thermal performance by shielding a building from sunlight, rain, wind, and snow. It will take less energy to cool and to heat the building, ultimately reducing its consumption.

4. TERRACOTTA IN CONTEMPORARY ARCHITECTURAL PRACTICE BANGLADESH

The use of the term terracotta has now expanded a terracotta mural can be a perfect timeless version for conveying the sense of aesthetics articulated with trends and traditions along with cultural influence. Clay symbolizes to colors and themes as well. Ancient traditions and the existence of clay have made terracotta popular in interior design as a separate them. Terracotta murals are more durable and relatively cheaper. Costly paintings can be damaged; and even can fade by time. However, if external damage is protected, terracotta murals can last for a lifetime, if external corrosion is prevented.

In contemporary architectural practice, the use of terracotta can be seen in both the interior and exterior of the architecture. The terracotta plaque or mural in our country is so different that it can easily be incorporated our post-modernist architecture, both in indoor and outdoor environment (Naheer, 2022). But the utility and manner of its use in the two parts are different.

A. Terracotta Inside

As an integral part of Bangladeshi culture for hundreds of years, pottery has now become a popular interior decoration material across the country, which are now used as showpieces and for adorning lavish homes. (Sharmin & Ahmad, 2019).

Once upon a time, it was considered as a handmade rural product but out of this picture, there are at least 700 shops in Dhaka city selling traditional pieces of handmade clay pottery. Now-a-days clay pottery appears to be making a comeback in popularity with a new form of designs and fashion. The industry is regaining its glorious days attracting more and more local and foreign buyers. In this

cosmopolitan city, a terracotta pottery, showpiece or mural in indoors tables, walls, workplaces remind us of our roots.



Figure 9: Terracotta handcraft (B Property, 2022)

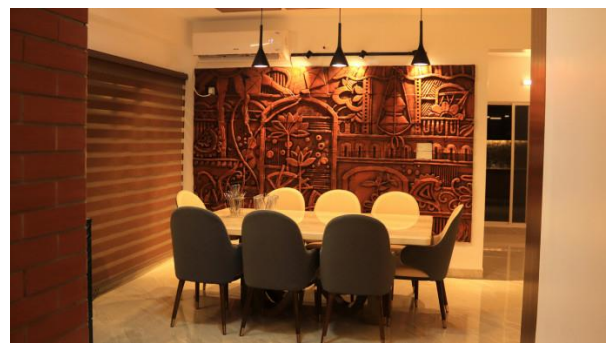


Figure 10: Modern Wall Terracotta of Bangladesh (Example 1) (Naheer, 2021)



Figure 11: Modern Wall Terracotta of Bangladesh, (Example 2) (Naheer, 2021)

In an indoor room or gallery, use of terracotta break the monotony of surface. Sometimes it represents the aristocracy of the residents as well as the choice and cultural awareness. To keep vernacular image in the home decor, a terracotta mural can be a perfect addition. Terracotta murals create an artistic atmosphere in the lobby or garden. Besides, commercial public places as like restaurants, small offices owners nowadays want a specific theme for their premise. Therefore, the terracotta theme can be a great way to bring the native atmosphere inside the enclosure. In this case, terracotta pots or small wall pieces for wall decor, Terracotta blocks, bells, pots etc. are being used to decorate the vertical enclosures and even ceiling.



Figure 12: The seven Bir Sreshtho or the the most valiant heroes of our Liberation war on terracotta mural, designed by Dr Azharul Islam Sheikh Chanchal (Naher, 2021).



Figure 13: The mural of 'Memory Eternal' premise at the University of Dhaka, depicting the liberation war martyrs of the university (Mrinal Haque, 2022)

B. Terracotta for Place-making

Terracotta is among the oldest of manufactured building products, yet it has once again become a sustainable material of preference in contemporary façade design. Full of earthy energy, this prehistoric material generates a certain warmth and aristocracy feeling and enhances even the coldest color themes, and perhaps that is why terracotta murals or terracotta themes remain classic pieces in architectural space creation. It is one of the most popular choices for decorating a landmark, a plaza or any outdoor breathing zone in Bangladesh. Terracotta plaque either replicable product or onsite casting format appears to be make a return in popularity with new design and technique wooing the people back.



Figure 14: Modern Wall Terracotta (The Business Standard, 2022)

It had always been popular in traditional Bengali folk symbols is creating terracotta wall. However, in recent years, the liberation war has also become popular as a subject matter (Naher, 2021). Terracotta has been used to tell stories or emphasis them. Clay has been used to supplicate. It has been used to express social and religious ideals (Tanim, 2011).

A bright interpretation of brick architecture, the distinctly modern uses terra-cotta tiles arranged in geometric lines to blend with the surrounding buildings. A new trend of residential building design by the Architects in Banani neighborhood at Dhaka. The terra-cotta shows homage to the older brick buildings that surround it. It has applied for roof tiles, statues, capitals, medallions, plaques, murals, landscape elements and other small architectural decorations.



Figure 15: The mural of 'Memory Eternal' premise at the University of Dhaka, depicting the liberation war martyrs of the university (Naher, 2021)



Figure16: Terracotta Mural on the front façade of International Mother Language institute, Dhaka (Shovon, 2021)

As terracotta, one of the most popular medium for decorating a landscape or a garden or a plaza or any outdoor spaces is considered currently in Bangladesh. Terracotta tiles are either a replicable material or a resurgence of old popularity with new designs and techniques for wall textures. Building terracotta walls has remained popular as part of traditional Bengali folk culture. In the lobby of five-star hotel Sonargaon, the tradition has been presented in front of domestic and foreign visitors and tourists through terracotta. The various activities of farmers including flower beds, cow carts, paddy cutting, etc. are unspoken expressions of our environment, nature or preferences. The terracotta mural at the Bangladesh Army Headquarters and the Bangladesh Military Academy depicts the glorious sacrifice and bravery of the nation.

In recent years, our social and political movements have become popular in terms of subjects. An initiative has been taken to decorate the history of independence through terracotta. Various glorious chapters of the liberation war have come alive through terracotta designs. Examples include Bangladesh Agricultural University, Army Golf Club, Dhaka University, Bangabandhu Military Museum, Bangabandhu Novo Theatre, Rajshahi College, Muktijodha Smriti Soudha, Rangpur's terracotta murals are particularly noteworthy. Similarly, the essence of language movement is emerging on the walls of Bangla Academy and International Language Institute. In the terracotta painting of Bengal Academy, mother's love is presented as an abstract expression of love for mother tongue. On the other hand, in the exterior of Mother Language Institute, the alphabets of different languages of the world have been composed through terracotta.

Terracotta endure to remain an important part of our modern architectural place making and space articulation and an intellectual blending can be find at some projects. That use of terracotta in characterizing public spaces in our modern architectural practice is a brilliant reflection of ingenuity and creativity. An exceptional wall in the open square in Suhrawardy Udyan is decorated with terracotta. The entire history from the language movement to the freedom war and the moment of victory is recorded in the same canvas. This terracotta wall along with the calm green garden is silently teaching the history to the residents of the busy city. Also a mural built in road island adjacent to the British Council of Dhaka University for memory of martyrs, has been able to capture the roots-searching character of the entire educational institution.



Figure17: 'Struggle for Independence', Terracotta Mural, Museum of Independence- Wall, Suhrawardy Udyan, Dhaka, (Wikimedia, 2015)

5. CONCLUSIONS

From the early period of *Bengali* culture, Terracotta has represented the identity and lifestyle while the artisans' works include making pottery, toys of clay and many idols of gods and goddesses have been the custom of Bangladeshi culture. Over time, in modern civilization, it has gone beyond mere convenience to become our building partner. Existence of terracotta changes the physical quality and character of built space and can simultaneously influence the cultural and emotional sensitivity. From the above historical description, we can say that Terracotta is an undeniable heritage of the past & present community and can act as bridge for these two. As a cheap material, it could be transformed precious art piece because it has a rich traditional heritage values, indigenous manufacturing processes, rich technical & artistic values as well as interactive cultural orientations to the new generation. The affinity of terracotta with the place created by architects today can be effectively exploited if terracotta can be transformed into a more tech-friendly, durable and accessible material while keeping its original artistic nature.

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