



A Cidade-Fortaleza ribeirinha de `MAHASTHAN' no Delta Bengali:

Em busca do padrão de ocupação tradicional
de cidades antigas

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Tese apresentada à Universidade de Évora
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Riverine Fortress city of `MAHASTHAN' in Deltaic Bengal:

In search for the traditional settlement pattern of ancient cities

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Resumo

Bengala passou por enormes experiências de desenvolvimento sócio-cultural, de estabilidade económica e de avanço da literatura e das artes. Durante o reinado Budista, Hindu e do Sultanato, a sociedade foi-se valorizando e enriquecendo com estes diferentes valores e a amálgama cultural que representaram. Esta coexistência foi evoluindo e as pessoas começaram a dedicar-se ao comércio, mas foram organizando e reformando a própria sociedade. O verdadeiro "renascimento" desta política económica e cultural Bengali seguiu um determinado caminho entre os possíveis. Para se manter e para proteger o território dos inimigos e de todas as ameaças externas, os "heróis" antigos foram previdentes, desenvolvendo uma forte capacidade em reforçar território fortificado, que designamos por cidade-fortaleza. Esta tipo de cidade histórica planeada foi implantada, com variações, neste delta Bengali; por isso, os padrões de instalação e ocupação antigos foram observados na sua relação com as margens ribeirinhas e os recursos de água adjacentes e centrados em torno de uma estrutura religiosa. Uma cronologia popular no país ajuda a compreender a formação de um povoado ou de uma cidade. Na era Budista, a comunidade religiosa, o bazar e as vias marítimas eram o ponto central que concentram a mistura de pessoas e nações. Este sítio não foi excepção do delta de Bengali, embora esta tese fosse sinuosa e estivesse no meio de uma grande rede fluvial; os antigos dirigentes face à necessidade de criar sistemas de protecção territorial foram gerando os diversos padrões de assentamento e ocupação, com mega-estruturas, infraestruturas e uma arquitectura público que se foram tornando os elementos característicos do domínio do espaço. Essas fortalezas ribeirinhas foram organizando padrões de assentamento cujas características variavam em função das percepções estratégicas e da morfologia do sítio; afinal estas foram as cidades do Delta que, além do perfil do rio, muitas vezes dependeram de influências locais e tradicionais. Neste delta Bengal, a cidade podia obedecer a tipos diferentes, mas, no geral, havia um padrão geral de ocupação das cidades que os administradores budistas antigos concebiam com um planeamento estratégico e uma morfologia que ia além da muralha do forte. O objectivo desta investigação é, em primeiro lugar, identificar e analisar a morfologia das antigas cidades-fortaleza e os padrões de assentamentos em termos das suas estratégias de defesa e da arquitectura que organizava a ligação ao rio da terra Bengali. Em segundo lugar, o contexto e a organização do planeamento e lugar das estruturas fortificadas, abordando-as numa perspectiva de conjectura, através do trabalho pictográfico e ilustrado. O antigo assentamento e a própria arquitectura de MAHASTHAN, um sítio datado do século VIII AD é um local ideal para essa investigação, dado ser um local de memória, de um espaço evocativo, ter um "sentido de lugar" e, claro, um padrão espacial tradicional flexível em relação as condições regionais e às construções tradicionais deste delta Bengali. Por fim, o estudo irá explorar a imagem (restauração conjectural) da escala da cidade, do espaço, da função e do sentido cultural do próprio bairro da antiga povoação ribeirinha, através da revisão crítica da literatura, do conhecimento das sucessivas escavações arqueológicas e com a ajuda da informação histórica pictográfica. O estudo irá explorar ainda o significado desses antigos assentamentos no subcontinente e a sua transformação em Bengali, focando as estratégias actuais de defesa e a sua manifestação física, bem como o papel que pode ter o Património Digital.

Palavras-chave: cidade antiga, cidade medieval, morfologia, padrão de ocupação, espaço cultural, padrão espacial tradicional, herança cultural, memória do lugar, diagrama, desenhos, imagens da cidade, forte do rio de Bengali, curso marítimo, cidade ribeirinha, restauração conjectural, informação pictográfica, demonstrações neo-visuais demonstrações neo-visual ", Património Digital

Riverine Fortress city of `MAHASTHAN` in Deltaic Bengal: In search for the traditional settlement pattern of ancient cities

Abstract

Bengal had passed through enormous experiences of socio-cultural development, economical stabilities, advancement in literature and arts. During the reign of Buddhist, Hindu and Sultanate Bengal the society was cherished and enriched with full of values and cultural amalgamation. Co-existence in the society evolved up and people started occupying time in trade-transaction and society reformation. The 'rebirth' of the Bengali cultural consistency took a way forward to immense possible trails. To remain retain established and to protect the territory from external forces as well as the enemies, the ancient heroes had prepared themselves, besides invented with strong capability to reinforce fortified territory or the fortress city. The historic city planning implanted with different characteristics, and prolonged with variations in this delta land of Bengal. Ancient Bengal was focused with their settlement pattern by the bank of the river or by the watery sources. Settlement in the ancient time used to develop centering a religious structure. Eventually; it is the popular chronology for deriving a hamlet or a town. For the Buddhist era, religious community, bazaar and the maritime route came to focus with the mixture of various people and the nation. Simply, it was no exception for the case of the delta land Bengal, although this mainland is curved and chiseled with cress cross river networks; the ancient heroes contributed outposts for territorial protection and thoroughly generated the pattern of settlement. Mega structures, infrastructures and public welfare architecture were becoming the notion of the domain. That river fort architecture and the settlement patterns had the strategic and morphological characteristics, which got different from other purpose built forts, nonetheless-was in consistence with the local city context. Bengali riverine fortress cities experienced lots of local and traditional influences only for being the river fort and their settlement around it, stating from the component, elements of forts and formal profile of the river. So, undoubtedly Bengal conceived unique kind of riverine oriented fortress settlement pattern, which has distinct typescripts. Even in the case of this fort formation the ancient Buddhist administrators had some strategic planning, morphology for spread city beyond the fort wall. The objective of the research is firstly to identify and to analyse the morphology of the ancient fortress cities¹ and settlements in terms of their defence strategies and river fort architecture of Bengal. Secondly the context and the planning organization and positioning the sites for fortification addressing pictographic and conjectural restoration² includes ancient city formation through river-fort architecture in Bengal. The ancient settlement and architecture, dated back 8th Century AD of a specific site of MAHASTHAN would be the intensive area of the research, its memory, space, 'sense of place' and the traditional spatial pattern would be the intensive area of the study that would remind flexible towards regional conditions and building tradition as happened in riverine ancient Bengal. Lastly the study will explore the image (conjectural restoration) of the scale of the city, space, function and cultural longing of the neighbourhood pattern of ancient riverine settlement, through the critical literature reviewing, progressive archaeological excavation and by the referencing of historic pictographic information. The study will explore for meaning of ancient settlements in the subcontinent and its transformation in Bengal with a focus on defence strategies and its physical manifestation as well as the Digital Heritage phenomenon.

Keywords: ancient city, Medieval city, morphology, settlement pattern, cultural space, traditional spatial pattern, cultural heritage, memory of place, diagram, sketches, images of city, river fort of Bengal, maritime course, riverine city, conjectural restoration, pictographic information, neo-visual statements' neo-visual statements, Digital Heritage

¹ Buddhist period: Classical Period of Ancient Bengal (late 7th till 12th Century AD)

² The restoration of a part of a text that is unreadable or completely absent in the original manuscript, which a researcher introduces into a text in the course of a scholarly description. The reconstruction of a text is based on historical, linguistic, and paleographic data. The use of certain textual elements is assumed to be systematic throughout a manuscript, for example, uniform makeup and consistency in orthography and in the use of words, syntactic forms, and expressions. Reconstruction is also possible on the basis of more general historical and philological data, as, for instance, the restoration of standard ritual or juridical formulas.

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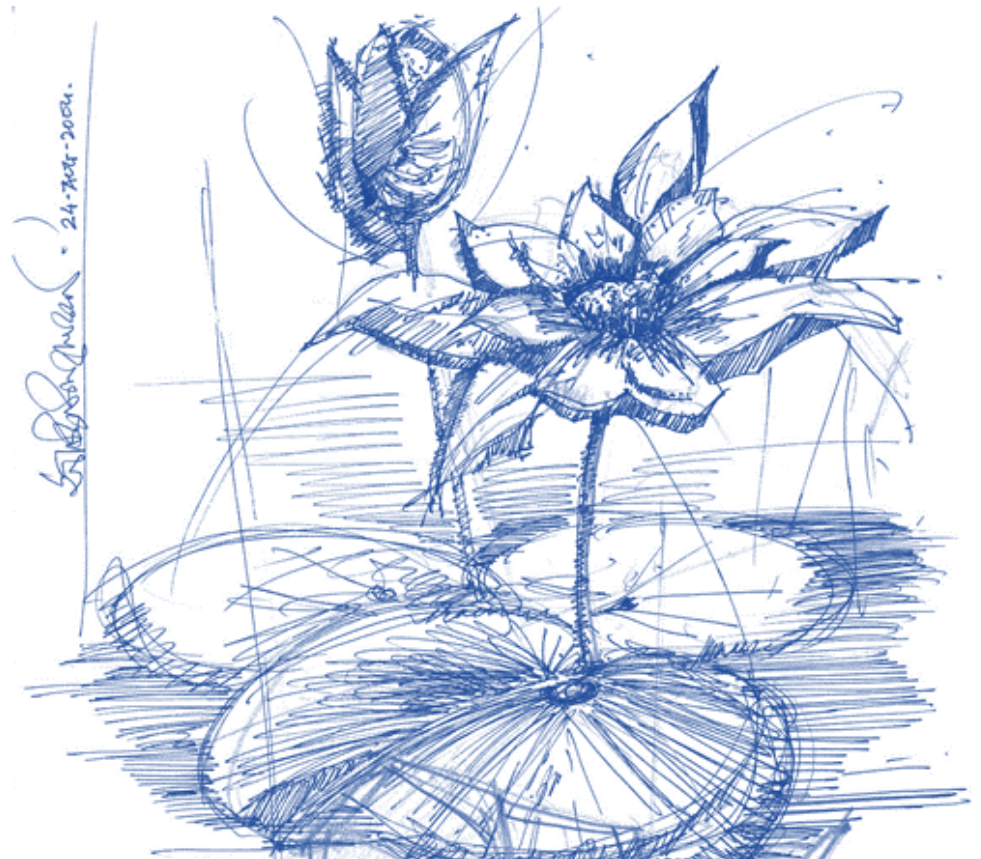
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Dedication

To My Family.....!

Remains source of Inspirations to me, ever since.....



LIST OF FIGURES & ILLUSTRATIONS:

SL	Description of the Images & Illustrations	Page number
01	Figure 01: This drawing is an inspiration for me when I started more learning about my motherland's glorious history with riverine pattern of networks....	31
02	Figure 02: while going through the ancient literature of Bengal, I was visualizing very rough idea sketch about the land formation and the political state during the B.C. and later on A.D.	32
03	Figure 03: the story of the historical studies and schooling in Bangladesh, at the same time to learn the history of the people, life and the cultural legitimacy often needed. However, the bottom up process is also necessary...	34
04	Figure 04: Probably the route map is showing the way This Scholar entered in Ancient Bengal. And he visited Pundravardhan, Gaur, the greatest monastery Sompur Vihara, which is the largest ever in subcontinent. And he passed through Samatata also... Source: Wikipedia	35
05	Figure 05: Chinese tourist and philosopher HUENG SANG (602–664) had described in his written voyage note mentioning big cities and lots of sky diminishing temples by the river side...the sketch is done by author and still a few existence could be sight out near around the rural-remote areas of Delta land. Although this evidence is erected during the pre-Mughal epoch, meanwhile the image perhaps would be the similar.	36
06	Figure 06: This figure is explaining different contextual situation although they contain the similarities from point of planning approach, but the shape and defence system would perhaps got changes for the topographic reason	37
07	Figure 07: the sketch shows the fundamental ideas generated since the Buddhist period, as The Pala dynasty (6 th -11 th AD) built the biggest Monastery in the south east Asia, which is in Bengal on the north. This had the attitude of having the fortified appearance along with the Hindu King policies of protection and introverted skills. In the sketched diagram also explained the influenced the motivation of the context, like people, land and water. This context became the statement for the Sultanate and Mughal Kings of making the fortification in delta land. So through the sketched diagram various influences are shown for making the fortress city by the river, but it sparked since Buddhist and Hindu kings...	38
08	Figure 08: cress cross river from the ancient epoch, falling and surrounding to the Bay of Bengal, in her way of journey numerous city and settlements give birth these rivers... Source: Banglapedia (National Encyclopaedia of Bangladesh)	40
09	Figure 09: the famous river valley culture Source: http://radhikaranjanmarxist.blogspot.pt/2011_08_01_archive.html	41
10	Figure 10: Mohenjo-Daro, the INDUS civilization, (2600 BCE) Pakistan, vital settlement for the generating the inland and outpost to develop commerce and trade.	41
11	Figure 11: a very common landscape of the country like fragile delta, but land form is prominent with sculpture like historic monuments. Source: Seeta Ram 1826	46
12	Figure 12: Most of the historical excellences have gone with the nature by the passage of time and as mud, sun dried brick and the burnt brick originated by clay, so temporariness in the structure and mostly for the moisture and saline factors Photo Source: Sajid Bin DOZA	48

SL	Description of the Images & Illustrations	Page number
13	Figure 14: mapping of the Basin of the Ganges and Brahmaputra, in the figure the flows of the different rivers are networking getting down from the Himalayans range and these all canals and river stream are meeting at the delta and dedicate themselves to the mouth of the Bay of Bengal. Source: commons.wikimedia.org	50
14	Figure 15: The river Padma and many other also called on as the KIRTINASHA or the destroyer of the monuments and settlements. Photo Courtesy: MAHMUD	52
15	Figure 16: political division along with the river that divides the region to each other Source: http://photos1.blogger.com	53
16	Figure 17: the huge settlement Gangaridhi, by the side of the flowing mighty rivers Ganges, Padma and Meghna intersection. And it elaborated till SAMATATA (present day of Chittagong and Camilla) Source: Sajid-bin-DOZA	55
17	Figure 18: "high as mountain peaks" or as "obstructing the very course of the sun with its lofty and imposing towers capped by golden finials or kalasas"- I was thinking like so....	57
18	Figure 19: PUNDRANAGAR, the ruins. The riverine fortress city of PUNDRAVARDHAN Vukti, Bengal	58
19	Figure 20: 'origin of a settlement'- With this title and the sketch shows some unusual things instead of military artillery, war arrangement or so on...but in Bengal city formation has some different stories...!!! The sketch shows the story of the city or the town formation in Subcontinent. Crop, granary and other goods which becomes surplus for a region they brought it to the commercial or the area where they can exchange the wealth, as well as money. While this surplus food started more on and export to the other territory or the city. With these all situation the city earns lots of revenue, eventually that became powerful and the desire to conquer the other territory with manpower, money and religious sense. City becomes more protected only for to defend from the other enemy or priest. As the city used to having treasury and granary, so fortification wall emerged and on the other hand the addiction of power of conquest continued prevailing as the routine activities for the city people. Both through the navigation and the surface the wealthy king used to attack to the other territory and established his conquer. In Bengal it was the chronological process the way a city became developed. It is very usual for most of this region.	62
20	Figure 21: one of the fortified gate complex (Kotwali gateway 13 th -14 th Century) constructed by the tiny bricks during the reign of the Sultanate Period. The massive thick walls, the archways and the causeway over the moat once illuminated the image of their mightiness and power as well as establishing the mega structure in the delta land.	65
21	Figure 22: the map of Bangladrsh id identified with the ancient, medieval and the Mughal fort perditions in the mainland Source: National Encyclopaedia of Bangladesh (BANGLAPEDIA), later illustration by the author.	66
22	Figure 23: this 'Figure Ground'-pattern of different river fortress shows possible strategies, policies, location and river orientation focused out the vital role to prevent, look after and to establish the outpost for the country's safety reason. These all plates are truly sited from the historical references.	68
23	Fig.24: for the Mughal Kings took the strategic points on the major river junction along with the outer navigation and inner navigation routes, in the satellite view we can identify the hierarchy of positioning the river forts respectively to protect the main land as well as the prime fort, different position of the river mouth, three different river forts are settled to protect the Lalbagh fort. Source: Google earth 2012 and studied out with Photoshop works by the author.	72

SL	Description of the Images & Illustrations	Page number
24	<i>Objective flowchart</i>	75
25	Figure 25: <i>This is an artist's reconstruction of Mohenjo-Daro Image credit University of Minnesota, USA. The image however shows the pattern of the settlement as well as the fabric of the city. At the same time the city dwelling characteristics and the fortification mechanism in and outside the wall have been shown, yes it could perhaps not the ultimate of all and end statement of the city, it may chances with more research practice.</i>	76
26	Figure 26: <i>This is an artist's reconstruction of the gateway and drain at the city of Harappa. Image credit Chris Sloan. University of Minnesota, USA. With this image we find the infrastructures along with the construction technique. The people and the activities of the region, through analyzed mixed media skill.</i>	78
27	Figure 27: Source: <i>Ptolemy's map- Detail of East and Southeast Asia in Ptolemy's world map. Gulf of the Ganges (Bay of Bengal) left, Southeast Asian peninsula in the centre, South China Sea right, with "Sinae" (China). http://en.wikipedia.org/wiki/Ptolemy%27s_world_map</i>	90
28	Figure 28: <i>The 'Indo-Bengal land formation'</i>	94
29	Figure 29: <i>8th century geographical situation has been elaborated with the historic references and literature reviews. The MAHASTHAN hinterland was connected with hierarchy of vicinities.</i>	96
30	Figure 30: <i>the figure ground plan is form the fortified city of KOTALIPARA, shows the supportive city</i>	98
31	Figure 31: <i>an environment of the famous city as described by the poet and philosophers. Drawing by: Artist Roy G. Krenkel-Portfolio 1979</i>	100
32	Figure 32: <i>formerly this brilliant city known as the Laksmanabati, later flourished as the sultanate city of GAUR, most outstanding Muslim city during 13th till 16th century AD</i>	101
33	Figure 33: <i>Stone inscription stating command to release food and other materials. Good governing system was executed during the time, which reflects the worthiness of the city</i>	103
34	Figure 34: <i>very common and usual type of settlement arrangement in the rural area, surrounding infrastructures are well off with inhabitant's desire. Cluster of house and linking with the organic thoroughfare are the very common and time immemorial life form of the villages...</i>	106
35	Figure 35: <i>excavation done by the French experts at the eastern rampart shows the thoroughfare pattern along with density of Buddhist timeline dwelling with special type of bricks remains. Source: 1sr interims reports 1993-1999 on Mahasthan, by French-Bangla joint excavation team</i>	107
36	Figure 36: <i>perhaps this could be the pattern of dwelling settlement with the references of the religious structures and the neighborhood style could be like the restored sketched image of MAHASTHAN</i>	108

SL	Description of the Images & Illustrations	Page number
37	Figure 37: an aerial view of the restored sketch, describing and imaging the Buddhist prioritized neighborhood in the walled city of MAHASTHAN. Approximate 8 th Century AD. PUNDRAVARDHAN	108
38	Figure 38: the monastery and its surrounding with the traditional settlement pattern	110
39	Figure 39: clockwise: a remarkable stupa temple wit terraced roofing and perhaps used to diminishing upward. This structure is today ruined, but exits with the foundation which is suitable for the tropical region	111
40	Figure 40: The same stepped STUPA temple called GOKUL MEDH with neighborhood surrounding	112
41	Figure 41: a conjectural restoration of the urban core of GOKUL, The Gokul medh (stepped temple) is visible from the hamlet.	112
42	Figure 42: economic urban life of the monastery, during the 8 th century perhaps the pattern of the vicinity would arrange to serve each other...	113
43	Figure 43-A: Area map of WARI BATESWAR, satellite view shows the existence of the fortification emblem. Source: Wikipedia, Google earth & http://mapofbangladesh.blogspot.pt/2011/11/kotalipara-upazila.html	118
44	Figure 43-B: fortified city of WARI, the river channelling used to be the source of trading and inland commerce generation, to the left the figure-ground pattern is shown.	119
45	Figure 44: the location of the MAHASTHAN site today, the adjacent area of the hinterland and positioning in the country. Source: www.mapsofbangladesh.com . Google earth	124
46	Figure 45: clockwise: the ancient track VARIND land; which is belongs to the highland of MAHASTHAN ancient city, the river system and the aqua networking attaching with MAHASTHAN, the present situation of the river passing by the ancient land. The most important reference of the site of MAHASTHAN drawn by the Sir A. Cunningham.	125
47	Figure 46: left: identification of the ancient high land along with marsh and low profiled area, which is flashes towards the vast water. Right: latest situation of land use at the cultural landscape.	126
48	Figure 47: The ruins of MAHASTHAN, Today we see the vast land scattered with huge mounds, beneath the earth lots of precious uncovered clues of civilization and heritage	128
49	Figure 48: The river terminal, which still evident with infrastructural facilities, here boats and ships used to anchor for the trade and commerce transaction from different part of the world...	128

SL	Description of the Images & Illustrations	Page number
50	Figure 49: the mighty river KOROTOA, now a day, lean and thin- a silent glory of a rich historic civilization...	128
51	Figure 50: clockwise: the bastion with the structure is a water gateway for the PALA navy, used to float through the fortified city where a huge water body designed for the reserve navy of the Pala warriors. The 2 nd image shows the technique of the fortification before the strong river. The 3 rd image is appearing the landing terrace of the ancient city and the 4 th as the same one with widen view (Jahazghata).	129
52	Figure 51: the image is justifying the inside water body for the PALA navy, perhaps this was the position for the water container to reserve the force for the next encampment. The red spot shows the specialized AQUA gate way of the fortified MAHASTHAN. Map courtesy: ASB, illustrated by Ar. Sajid Bin Doza	130
53	Figure 52: ancient city of MAHASTAN permeable with several giant gateways, they are unique. The image shows the eastern barbican gateway, the other reconstructed conceptual sketch shows its complete form	131
54	Figure 53: the urban core of MAHASTHAN had a vast area of settlement. With the political overviews the pattern vicinity used to orient in different tracks. Perhaps the most settled and glorious pattern of neighborhood used to establish during the PALA dynasty. The image is analysed with those facts and figures.	132
55	Figure 54: Area map of KOTALIPARA, satellite view shows the existence of the fortification emblem. Source: Wikipedia, Google earth & http://mapofbangladesh.blogspot.pt/2011/11/kotalipara-upazila.html	134
56	Figure 55: figure ground pattern with the river of ancient city KOTALIPARA. Generated by Sajid Bin DOZA	135
57	Figure 56: Area map of BHITORGARH, satellite view shows the existence of the fortification emblem. Source: Wikipedia, Google earth & Local Government Engineering Department Himalayan pediment plane a strong fort established to get enter in Bengal with innovative fortification	140
58	Figure 57: just on the border mark on the old in the context of the Himalayan region.	141
59	Figure 58: the figure-ground pattern is complementing the river course along with the natural fortification and the fortress attitude, meanwhile this fortified city was the northern Himalayan trading hub for the ancient Bengal.	142
60	Figure 59: the site is ruins now, covered with earth and rubbles. The moat is still visible and the central water body is still active. Source: http://www.banglapedia.org/HT/B_0557.htm	146
61	Figure 60: THE ANCIENT FAMOUS Sultanate capital of Gaur, situated both in the borderline of India and Bangladesh. Source: http://ibnlive.in.com/news/wb-gambler-puts-13yearold-daughter-at-stake-marries-her-off-to-neighbour-after-losing/439373-3-231.html	149

Sl	Description of the Images & Illustrations	Page number
62	Figure 61: the remains and ruins of GAUR fortified walls, including the embankment and the broad moat. Photo credit: author	150
63	Figure 62: clockwise: The rendered map showing the GAUR city with the environs. Source: British Library website. The ancient map of Pandua and Gaur. Source: Archaeological Survey of India. West Bengal. ASI. The ancient painting showing the glorious ruins architecture of Gaur medieval city, painted by Sitaram (1814). Source: British Library website	151
64	Figure 63: the figure shows the flow chart of different spatial organization, starts from the private to public arena. By this diagram it is easy to understand the sequential spatial pattern of the fortified Gaur city	154
65	Figure 64: spatial pattern of the master plan of entire GAUR city, the components could be identified in the different plates respecting the stratum of the fort, surrounding situation of the city that time, fort walls and embankment, thoroughfare pattern, moat, water and river route management, Inland port activities, the palace and the citadel lastly the residential Mohallah mixed-and mixed use pattern of the city.	156
66	Figure 65: the fortified fabric of Citadel and the process of fortification remains the same as the ancient time as well. In-between the massive walls this is another city, front contains Ganges river. Cartographic representation by SAJID BIN DOZA	157
67	Figure 66: the massive thick wall of the Gaur citadel and the main palace. The figure is addressing the materials of construction, restoration of the walls, ruins of the inner wall with pointer arch alcove and niches and the gorgeous terracotta works of termination bands. Photo by author	157
68	Figure 67: spatial pattern of the master plan of entire GAUR city, the components could be identified in the different plates respecting the stratum of the fort, surrounding situation of the city that time, fort walls and embankment, thoroughfare pattern, moat, water and river route management, Inland port activities, the palace and the citadel lastly the residential Mohallah	158
69	Figure 68: the inland port area, ruins part of Phulbari. Before the river Ganges and Bhagirothi. Image source: Author	164
70	Figure 69: the clay pipes was fixed over brick soling works and a tunnel cavity used to build with brick works to protect the clay terracotta pipes for sewerage system. Source: drawn by author	165
71	Figure 70: the most southern impenetrable covered with marshland and jungle setting; in this unfit region a regional style with riverine fortress with nature –urban core developed almost seven hundred years back source: Google earth and http://map.janlewala.com/2013/09/bagerhat-sadar-upazila.html	167
72	Figure 71: the mission city of ISLAM, KHALIFATABAD, usually took the opportunity to engage the river streams for the direct and indirect fortification, meanwhile, the overall land entity used to be covered by huge channelling of river and aqua networking. The figure-ground pattern reflects the scenario. Generated by SAJID BIN DOZA.	169
73	Figure 72: the fort city of DARIYAN, a complete core fortified city as European one. Generated by SAJID BIN DOZA	175

Sl	Description of the Images & Illustrations	Page number
74	Figure 73: the Mughal's establishment in Bengal, the Aurangabad fort just in front of the river Buriganga, this sketches has done by the reference of the literature	176
75	Figure 74: upper image: but eventually today urbanization, unplanned growth of the city and uncontrolled way of using river by the illegal river grabber, the fort dissipated its own riverine beauty, as it was before. Lower image: Thick population and encroachment of land is also the reason of this situation	177
76	Figure 75: facts of the fort IDRAKPUR today	179
77	Figure 76: ancient river course including the encampment attitude along with the fortification and orientation justification	180
78	Figure 77: the main gate of the fort and the huge fortified curtaining with Marlon top parapet.	181
79	Figure 78: Google earth view; and the old river course on the western side where the huge bastion is settled.	181
80	Figure 79: strategically point of fortification used to take care by the Mughals. The river was the main issue to maintain the fortification mechanism.	182
81	Figure 80: a modelling of the fort of core encampment showing the full strength of the Mughal Empire	183
82	Figure 81: the river and the fort nearby. Eventually the fort was just on the mouth of the flashing river. Source: Google Earth	184
83	Figure 82: the patterned fortified walls of Mughal	184
84	Figure 83: planning organization of the fort	185
85	Figure 84: facade of the fort	185
86	Figure 85: the façade of the HAZIGONJ fort with causeway stair, which means the fortress-ness	185
87	Figure 86: hierarchy in the bastion positioning, always provides the priority to the river stream and the flow of the river. Visual angle and other strategic parameters are also vital establishing the Mughal river fort.	186
88	Figure 87: study on the Mughal fortress strategic planning	187
89	Figure 88: still appears the vastness of the Mughal fort in the urban Dhaka. Clockwise: towards the tank and other north gate. To the upper left: the bath house of the fort in the Char-Bagh garden. At the bottom left: the southern or the main riverine gateways. On the bottom right: big polygonal bastion.	188
90	Figure 89: a conjectural drawing with illustration shows the completeness of the Aurangabad fort of Dhaka. The entire environs show the during Mughal reign of 16 th Century AD. Where we can find the vicinity profile inside and outside the fort. Eventually this fort was a riverine fortress with beautifully landscape of Mughal philosophy.	189
91	Figure 90: huge intelligent buildings were oriented towards the river emphasizing entrance in the delta region. The Mughal used to work with those issues, this is the partial conjectural restoration of the BARA CATRA (Guest house caravansary	193

of the Mughal)

Sl	Description of the Images & Illustrations	Page number
92	Figure 91: this Google earth view shows us the repetitive establishment of river fort on the river mouth, to protect the main fort the strategies used to take by the Kings and associates.	195
93	Figure 92: PAHAR PUR MAHAVIHARA, CENTRAL STUPA SHRINE: The largest Buddhist monastery. A number of monasteries grew up during the Pāla period in ancient Bengal ever in the south eastern pediment of Himalayas' developed, the PALA kingdom had the contribution behind the establishment. Image source: Sajid Bin Doza & students of architecture, BRAC University, Bangladesh	205
94	Figure 93: the raft boat used to float on the mighty river KARATOA during the ancient riverine route in Bengal. This vessel used to carry heavier trading materials and goods as well as mass commute had the part of the unique vessel.	209
95	Figure 94: the conjectural mapping of the riverine fortress city of MAHASTHAN, All these mapping and information has been contributed here are form the scientific examination of excavation and the ancient geographical information. The legends and explanation of the ancient city had attached on the next page.	211
96	Figure 95: this plate is called off Figure-Ground Pattern of the settlement phenomenon of the ancient city of MAHASTHAN. Infarct this contrast image mapping provides the historian and the planner's information about the spatial environs along with the segmental components of the city. This image helps to build the morphological statement of any city. Indeed the ancient city MAHASTHAN focused with several segmental stratum along with the land use spontaneous pattern.	214
97	Assumption plate:	216
98	Figure 96: Assumption plate: 01- This image shows the residential and dwelling and religious structure with intimate situation	216
99	Figure 97: Assumption plate: 02- Riverine city with the connection of commercial hub. MAHASTHAN, perhaps used to had the link with the river KARATOA with the trading and commercial domain,	218
100	Figure 98: Assumption plate: 02-A The innovative tiles found beneath the earth during the excavation. Two holes are identical act as the clipping. On the left the probable technique has been illustrated with the timber frames.	219
101	Figure 99: Assumption plate: 3- The riverine landscape of KARATOA, once used to dominant with the massive brick façade of the MAHASTHAN, crowned with sharp finials of temples.	220
102	Figure 100: the ruins of the bricks form temples, dwellings and public buildings. Image collected from the Department of Archaeology of Bangladesh	222
103	Figure 101: the site MAHASTHAN today, remains only the vastness of bricks	223
104	Figure 102: this structure shows the strong bastion, with several course of brick construction. That perhaps resisted the heavy current of the mighty KARATOA. On the top the elevation of the ruined bastion. Drawing source: Department of Archaeology Bangladesh	224

SL	Description of the Images & Illustrations	Page number
105	Figure 103: Assumption plate-04: The whole system of course of action, roofing with the timber framing, thatches and terracotta tiles. Extended veranda/portico with timber or stone column.	227
106	Figure 104-A: the giant tile from the dwelling units. Source: Department of Archaeology, Bangladesh. Sketch by SAJID BIN DOZA	228
107	Figure 105: floor tiles as well as the square Buddhist period bricks used to lay as the floor finish. Source: Department of Archaeology, Bangladesh	230
108	Figure 106: various size and decorated monolithic columns used to execute in different structure's ornamentation. Source: Department of Archaeology, Bangladesh Sketches by Sajid Bin DOZA	232
109	Figure 107: the ancient map of Bengal. This map addresses the Riverine route from RAJMAHAL to MAHASTHAN (Pundravardhan) Source: http://www.bpedia.org/maps/MH_0136A.GIF	233
110	Figure 108: various uses of stone monolithic in the temples and other structure, in the early PALA period	234
111	Figure 109: the south Himalayan region largest Buddhist monastery erected 8 th century AD by the PALA kings, plan and the ruins of the central stupa temple, Rajshahi, Bangladesh. Author's sketch	235
112	Figure 110: the figure-ground mapping elaborates us the possible access from the river and channels. The aqua route towards the mainland of MAHASTHAN. generated by Sajid Bin DOZA	237
113	Figure 111: Assumption plate-05- The entrance of the trading and commercial centre of the ancient city of MAHASTHAN, the image is showing the jetty is busy with trading and commuting masses.	238
114	Figure 112: the figure-ground pattern elaborates the thoroughfare situation with along with the spatial relationship at the ancient city of MAHASTHAN. generated by Sajid Bin DOZA	240
115	Figure 113: the plate is representing the contained primary spontaneous street. Generated by Sajid Bin DOZA	242
116	Figure 114: the secondary thoroughfare pattern governs mostly, entire the city area. Generated by Sajid Bin DOZA	243
117	Figure 115: tertiary street pattern, involved with most of the residential area. Generated by Sajid Bin DOZA	244
118	Figure 116: Assumption plate-06- Restored view of the bazaar at MAHASTHAN	247
119	Figure 117: The conceptual-conjectural sketches of form of art of MAHASTHAN-the ambiance along with the fabric of the Buddhist city. Sketched by Sajid Bin DOZA	251
120	Figure 118: the diagram and the segmental properties to justify the morphology of the Ancient city if MAHASTHAN. Generated by SAJID BIN DOZA	253
121	Figure 119: ancient images during excavation by the British Archaeological team BAIRAGI'S VITA (8 th Century's Buddhist Temple)	257

SL	Description of the Image	Page number
122	Figure 120: Assumption plate-07: BAIRAGI'S VITA (8 th Century's Buddhist Temple)	258
123	Figure 121: Assumption plate-08- PARAURAM PALACE (8 th Century's Buddhist Palace)	262
124	Figure 122: Assumption plate-09- Longitudinal section and the front elevation of the palace	263
125	Figure 123: Assumption plate-10- Ancient city image sometime illuminate the sense of inner lighting among the passers-by or inhabitant's mind...the temple GOVINDAVITA was a gem during the PALA time...never forgettable	266
126	Figure 124: different view showing the post excavation situation of the temple. The bottom large image shows the river KARATOA was still passing by the fabulous temple	267
127	Figure 125: the ruins of GAVINDA VITA temple, with some terracotta evidence	268
128	Figure 126: Assumption plate-11- GOVINDA VITA TEMPLE, two separate temple analysis of restoration	269
129	Figure 127: Assumption plate-12 - GOVINDA VITA TEMPLE, with the east tiny temple together	270
130	Figure 128: the tiny temple beside the southern trench, high plinth is the remarkable point along with the using of collective stone monolithic executed in the stair.	272
131	Figure 129: Assumption plate-13- Small temple with high plinth, after conjectural restoration	273
132	Figure 130: the environs of the eastern entrance and the other involvement	276
133	Figure 131: Assumption plate-14- Restoration of the eastern gate with surrounding	277
134	Figure 132: aqua entrance on the north	280
135	Figure 133: Assumption plate-15- Restoration of the eastern gate with surrounding	281
136	Figure 134: Assumption plate-16- The Gokul Steps with the other story	285
137	Figure 135: Assumption plate-17- The GOKUL Steps showing the ruins of processional steps through the terraces	286
138	Figure 136: Assumption plate-18- Conjectural restoration and sketch with the conceptual assumption	287
139	Figure 137: the planning organization of the complex monasteries.	291
140	Figure 138: technical drawing	292
141	Figure 139: Assumption plate-19- Conjectural restoration on the different structures and their facades of VASU VIHARA	293

142	Figure 140: Assumption plate-20- The top image is representing the technique of the construction and the spatial sequence. While the bottom image is elaborating the sense of enclosure and the visual angle with the vegetation	294
143	Figure 141: Assumption plate-21- Imagination and analysis of context specific VASU VIHARA	295
144	Figure 142: Assumption plate-22- Residential environs and the surroundings	300
145	Figure 143: Assumption plate-23- The dwelling with restored environs.	302
146	Figure 144: a new vive among the young chap, about the LOOK BACK ideas on the historical studies. A new way to reevaluate the historical phenomenon...!!! Cartoon by Author	309
147	Figure 145: historical literature should be syncretized with the sufficient pictographic information. Cartoon by author	310
148	Figure 146: Historical studies might not ever entitle with ‘Scary’ or ‘tiresome’ discipline anymore. It would be pleasant and timeless discipline for all. In the primary schooling; obviously research needed to provide attractive and colourful information of the historical substances on the standard books. Cartoon by author	311
149	Figure 147: A civilization never could be expressed within two panels of literary thoughts and elaboration, the world has changed enough...we might think the advanced way of communicating the common people of Bangladesh, to let them know the knowledge around the historical values of his own country, that what it was before once...!!! Image source: Sajid Bin Doza	313
150	Figure 148: the study of history in the school level needed to be changed and modified as well, it would be infrastructure with audio-visual support and to make them imagine about the ancient ambiance. Cartoon by Sajid Bin DOZA	315
151	Figure 149: to look back to the historical incidence is knowledgeable for the society as well as to keep new generations belonged with the cultural continuity...!!! CARTOON BY Said Bin Doza	317
152	Figure 150: this is the staring character of the short 2D animation movie, where he elaborates the days of MAHASTHAN, and precisely this imaginary character has the sensitive observation. The character is dressed with ancient cotton clothing, call KAMIZ and DHUTI, He is carrying a bag containing his daily needed things, and he is always with a diary, where he sketches and write down the facts and figures of the ancient city. Character by Sajid DOZA	321

Sl	Description of the Images & Illustrations	Page number
153	Figure 151: for the animation purpose several postures were drawn in the studio by the author, those practice used to be done to enhance his character in true mode. By Sajid Bin Doza	322
154	Figure 152: the other figures were drawn to support the environs of the ancient city. Generated by Sajid Bin DOZA	324
155	Figure 153: the contact lenses print has been provided to have a glimpse about the movie	328
156	Figure 154: the contact lenses print has been provided to have a glimpse about the movie. The sequential storylines are elaborating the scene.	329
157	Figure 155: the plate shows the ruins in the delta land. The tropical climate and monsoon rainfall causes the short-lasting of the structures. Generated by Sajid Bin Doza	343
158	Figure 156: this plate identifies the riverine connections in versatile way of process. The watery route became the potential maritime trade way since the ancient epoch and followed till the colonial time. Cartographic image is generated by. SAJID BIN DOZA	346
159	Figure 157: this plate is expressing the possible positioning of the location for outpost along with the main urban core of the watery civilization. Cartographic image is generated by. SAJID BIN DOZA	353
160	Figure 158: this plate explains the watery area and the positioning of the BENGAL'S most ancient city. Generated by. SAJID BIN DOZA	357
161	Figure 159: this plate elaborates the Buddhist urban morphology and the distribution of the economic life of the urban core as well as the symbolic distance Cartographic image is generated by. SAJID BIN DOZA	368
162	Figure 160: the traditional settlement pattern of the ancient cities of Bengal would perhaps conceive this six different and distinguished pattern in the macro scale arrangement.... Generated by. SAJID BIN DOZA	373
163	Figure 161: this plate separately illustrates the different domains of the settlement patterns, stating from the household till the public realm and the columns are showing the different pattern of the land use. This illustration is based on the ancient city of MAHASTHAN. The figure-ground pattern is the authentic language to understand and to communicate in the conclusion to fulfill the research quarries properly- generated by. SAJID BIN DOZA	376
164	Figure 162: "Asia in 323BC, the Nanda Empire of Ancient India in relation to Alexander's Empire and neighbors. Source: Wikipedia	383
165	Figure 163: A painting by Charles Le Brun depicting Alexander and Porus (Puru) during the Battle of the Hydaspes Source: http://en.wikipedia.org/wiki/Indian_campaign_of_Alexander_the_Great	383
166	Figure 164: political situation and territorial boundary of sub-continent. Source: compiled and generated by Sajid Bin DOZA	387

Glossary of Terms

Vocabulary	Explanation	Reference
ANGINA	Courtyard of a house	Bengali language
ARAKANI	Arakanese legends claim that the history of the Rakhine people began in 3325 BC. The presently dominant Rakhine are a Tibeto-Burman race, the last group of people to enter Arakan during 10th century and on. Various Arakanese kingdoms stretched from the Ganges Delta to Cape Negrais on the Irrawaddy Delta.	Wikipedia
BAZAAR	Traditional market place	Local terminology
BRAHMI SCRIPT	The Brahmi script is one of the most important writing systems in the world by virtue of its time depth and influence. It represents the earliest post-Indus corpus of texts, and some of the earliest historical inscriptions found in India.	Archaeological Survey of India, 1989. Salomon, Richard (1998), <i>Indian Epigraphy: A Guide to the Study of Inscriptions in Sanskrit, Prakrit, and the Other Indo-Aryan Languages</i> , Oxford: Oxford University Press, ISBN 0-19-509984-2
BURJ	Bastion, or Barbican shape cylinder for the fortress phenomenon	Begum, Ayesha. <i>Forts and Fortifications in Medieval Bengal</i> . Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. Print.
CHAITA	Term CHAITA means window, during the Buddhist period, when the Stupa used to house in the linear hall was placed in the rounded end followed by the series of Buddhist short columns, for the spiritual environs as well as to allow the east sun beam special type of window used to execute. After that the chaita hall became the famous religious place for the worship.	Brown, Percy. <i>Indian Architecture (Buddhist and Hindu Period)</i> . Kindle Edition ed. Mumbai: n.p., 1942. Print.
CHANDRAVARMANKOT	Kotalipara fort is now in ruins. The almost forgotten Chandravarmankot had two parts - the main fort-city and its adjunct. The main fort was rectangular in shape and was spread over an area of about 19 sq km; about 4.75 km in length and 4 km in breadth. The dyke surrounding the fortification wall is still visible. The adjunct city was probably to its southwest on the bank of the Ghagar river. Remarkable archaeological relics have been recovered from the villages of Gugrahati, Kurpala, Guakhola and Majhbari in the region. In a few 6th century copperplates, the Kotalipara area has been mentioned as <i>navyavakashika</i> (new formed land). In 6th century AD, this area was probably an important centre of riverine trade.	The National Encyclopedia of Bangladesh BANGLAPEDIA
CHAUKI	Common Bazaar, popularly this term used by the Mughal period, as the Mughal had the elements and hierarchy of spatial	

	connection in the fortress city morphology.	
CHAWK	The market place during named during the Sultanate period, the commercial hub at where people come for vend and to purchase the goods.	Local term used in Bengali
CLOISTER	Open court is surrounded by series of colonnade aisle.	Architectural terminology, frequently used in the basilica and the adjunct monastic corridor which was facing the courtyard.
DAMDAMA	The fortress, or the area where the soldiers take preparation for the war, encampment	(Begum, 2013)
DARBAR HALL	Audience Hall	
DUAR	The prime gate of the fortress, or the entrance pylon of the fortified city	(Begum, 2013)
DURGO	This is literally Bengali Terminology; it means the fort, fortification, fortress, and the fort city	Bengali and Sanskrit manuscripts
INDO-GANGETIC CULTURE	The Indo-Gangetic Plain, also known as Indus-Ganga and the North Indian River Plain, is a 255 million hectare (630 million acre) fertile plain encompassing most of northern and eastern India , the eastern parts of Pakistan, and virtually all of Bangladesh.	Farmers preferences for climate-smart agriculture: An assessment in the Indo-Gangetic Plain
JAINA(JAINISM)	It is one kind of ancient religion, and Jainism is from India that teaches that the way to liberation and bliss is to live a life of harmlessness and renunciation. The aim of Jain life is to achieve liberation of the soul.	<i>Encyclopedia of Global Studies</i> , SAGE Publications, ISBN 978-1-4129-9422-4 <i>Dundas, Paul</i> (2002), <i>The Jains</i> , Routledge, ISBN 978-0-415-26605-5
JALADURGA	Originated from Bengali and Sanskrit main stream; it means it has two words 'Jala' means the water or the river and the rest 'Durga' is fort, fortress, fortification. So in totality it comes up with river fortress	Bengali and Sanskrit manuscripts
JANNAT-UL- BILAD	Islamic garden	
KALASAS	The vessel shep finial on the top of the temples	
KARATOYAMAHAATMYA	Karatoya River (also spelt Korotoa) (Bengali: করতোয়া নদী), a small stream in Rajshahi Division of Bangladesh, was once a large and sacred river. A channel of it presently flows by the ancient ruins of Mahasthangarh (or Pundranagara, ancient capital of Pundravardhana) in Bogra District. The <i>Karatoya mahatmya</i> bears testimony to its past greatness	Majumdar, Dr. R.C., <i>History of Ancient Bengal</i> , First published 1971, Reprint 2005, p. 4, Tulshi Prakashani, Kolkata, ISBN 81-89118-01-3.
KATRA	Mughal house/saraikhana/caravansary	guest
KHITTA	Local terminology; it is also the place for the encampments or the gathering for the strategic plan for war, as well as the siege fort	Folk term, southern part of Bangladesh (Begum. 1992)
KOT	It is also the term; used for the fortified area, kot means the bracket place or the place of protection and fortress situation.	Local term in Bengali language. Like Devkoat, Sitakot Monastery, Kotalipara all are the ruins riverine fortress city

MAGH	the Arakanese nationalities known in Bengal as Magh	
MAHABEHARA	Sanskrit and Bengali word; means the religious residential institute or university for the Buddhist monks/pilgrims. Like Sompur Buddhist Monastery of Rajshahi, Bangladesh, the largest Buddhist monastery in the Asia.	Sanskrit manuscripts
MAHIDURGA	Mud fort, done by the Sultanate Kings, during the 13 th -till 15 th century BC.	Begum, 2013
MOHALLAH	Termed as the Muslim vicinity or neighborhood. Basically organized around the community mosque.	
PANCHATANTRA	The Panchatantra is an ancient Indian inter-related collection of animal fables in verse and prose, in a frame story format.	Jacobs 1888, Introduction, page xv; Ryder 1925, Translator's introduction, quoting Hertel: "the original work was composed in Kashmir, about 200 B.C.
PANDIT	Intellectual person	Derived from Sanskrit
PRADAKSHANA	Ambulatory circulation for the worship Parikrama or Pradakshina refers to circumambulation of sacred places in Hindu, Jain or Buddhist context. Parikrama means "the path surrounding something" in Sanskrit, and is also known as Pradakshina ("to the right"), representing circumambulation.	Bowker, John (1999). The Oxford Dictionary of World Religions. New York: Oxford University Press. p. 224. ISBN 0-19-866242-4.
TORANA	Entrance gate of the city, area or palace,	Vedic and Buddhist tile used to execute
VARIND HIGH LAND	In the northern-western region of Bangladesh is formed with elevated ancient land and most of the historical structures and forts preferred to established at the territory.	
VITA	Ancient land or ancestor's property	Bengali terminology
VUKTI	Ancient states of Bengal	Sanskrit

Contents



POTTERY / EARTHENWARE
FROM MAHASTHAN (FUDRANAGAR)
3rd C.B.C. - 13th CENTURY AD.
— *Dr. Anand K. Chavan* —
EVORA 03/12/2015

Contents

Abstract	vi
Acknowledgement	vii-ix
Lists of Illustrations and figures	xi-xxii
Glossary of Terms	xxiii-xxvi

Introduction	32
---------------------	----

Chapter 01 44

Land, people and water 46

1.1.	Context of the land of delta	50
1.1.1.	Origin of the city in Ancient Bengal	57
1.1.2.	Strategies behind choosing the sites for making fortress and other infrastructure	65
1.2.	Objective of the research	74
1.3.	Scope of research-rethinking as the advent for the nation	76
1.4.	State of Arts and Methodology of study	79
1.4.1.	General Approach	87
1.4.2.	Study Process	88
1.4.3.	Surveying and interviewing to the site cases with relevant sources around the region	91

Chapter 02 92

Ancient riverine fortress cities and settlement pattern in the Delta land

2.1.	Nature of riverine fortress city of Bengal: A contextual understanding	94
2.2.	Buddhist Monasteries as the part of the Settlement Pattern	105
2.3.	Case studies: Considering the Era (Period)	116
2.3.1.	WARI-BATESWAR (450 BCE), Fortress trade city, Norshingdhi, Bangladesh	117
2.3.2.	PUNDRANAGAR /MAHASTHAN (5 th -12 th Century A.D.), Ancient capital of PUNDRA Bengal, Bogura, Bangladesh	123
2.3.3.	KOTALIPARA fortress trade city (C 380 A.D.-467 A.D.), Gopalganj, Bangladesh	133
2.3.4.	BHITORGARH (6 th Century AD) Fortified City, Panchagarh, Bangladesh	139
2.3.5.	GAUR (11 th -16 th A.D.), West Bengal, India & Rajshahi, Bangladesh	148
2.3.6.	KHALIFATABAD (15 th Century A.D.), Bagerhat, Khulna,	166

	Bangladesh	
2.3.7.	DARION mud fortress (14 th Century A.D.), Rangpur, Rajshahi, Bangladesh	174
2.3.8.	MUGHAL river fort and adjacent neighbour settlement, Bangladesh	176
2.4.	Finally...! (Remarks)	198

Chapter 03 200

Identification, analysis, and documentation on ancient riverine fortress city of 'MAHASTHAN' in Bengal

(distinct phase: PALA 7th -11th AD)

3.1.	'Saying of' - the Chapter Three	202
3.2.	Understanding the Buddhist City Fabric of MAHASTHAN	206
3.3.	Construction Materials and Course of Action of the Ancient City	221
3.4.	Aqua Routes-The Thoroughfare and Hierarchy	236
3.5.	'The Form of Art' of MAHASTHAN	250
3.6.	To elaborate some explanation about the lost ancient city of MAHASTHAN-based on 'Form of Art'	254
3.7.	'The Assumption Plates'- is contemplating the idea of conjectural restoration by the existing remains of the structures, at MAHASTHAN, ANCIENT RIVERINE CITY OF Bengal. Dating back: 8th Century AD	255 - 303
3.8.	Certainly....!!!	304

Chapter 04 306

'A Look Back'

New way of looking at the glorious past: Conjectural and pictographic formulation of the riverine fortress cities during those time frame...!

4.1.	New way of looking back at the glorious past at the ancient riverine fortress city of MAHASTHAN	308
4.2.	Constrains in the Look Back process	316
4.3.	The storyline: 2D animated short movie 'A look back to MAHASTHAN'- Visual Diary to communicate the common people of BANGLADESH	320
4.4.	The chapter four is end with a souvenir CD. To look back...!	331

Chapter 05	332
<i>But the reality today ...and Waiting for the shining dawn...!</i> <i>(Concluding interpretation of the research)</i>	
5.1. But the reality today....and Waiting for the shining dawn...!	334
5.2. Focus on the ``void`` in the literature and historical studies in the context of Bangladesh	337
5.3. When the historical remains come across with Land, people and water...!	339
5.4. Problem and prospects in the tropical terrain	341
5.5. Reviewing Birth of the settlement patterns	345
5.6. 'Kingpost of placement'-riverine fortress city	351
5.7. Spotlight on 'Watery MAHASTHAN'	356
5.8. Silence in the historic urban core...! Now a day...	360
Conclusion and a way forward	364
Annexure	381
Bibliography	408
Web references	417

INTRODUCTION



The river Karatoa is witnessed of the golden epoch of the civilization, started almost two thousand years back & still passing by the ruined city of MAHASTHAN.....

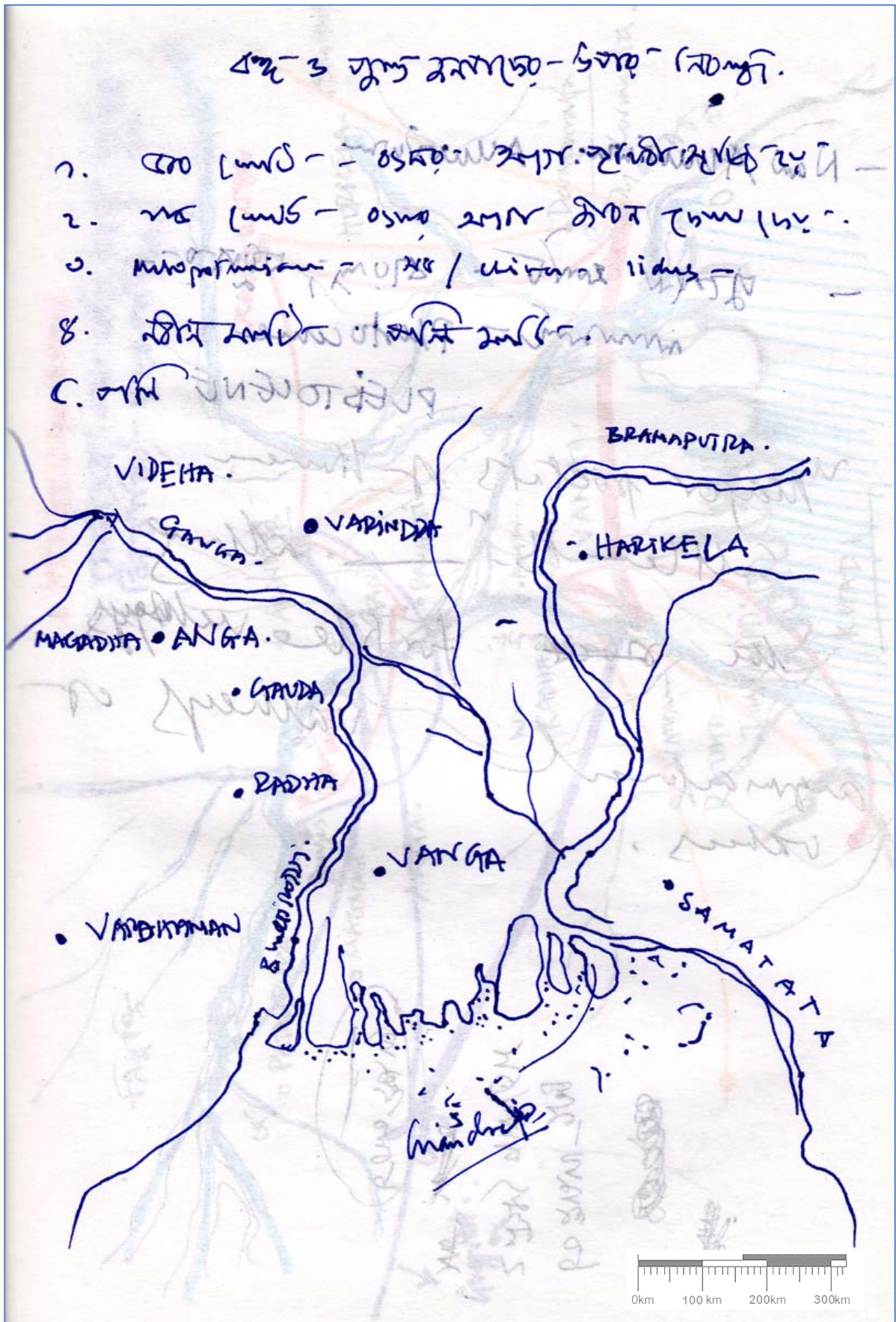


Figure 01: This drawing is an inspiration for me when I started more learning about my motherland's glorious history with riverine pattern of networks....

INTRODUCTION

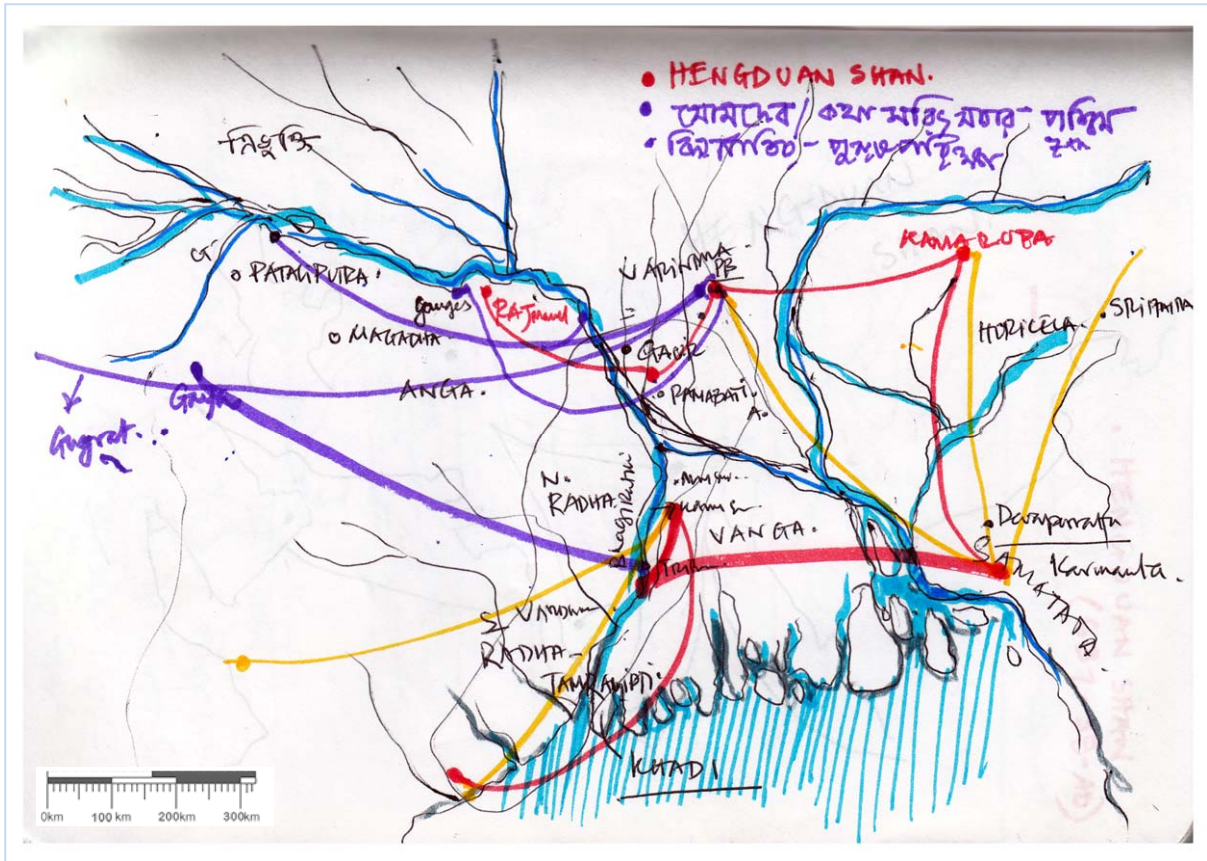


Figure 02: while going through the ancient literature of Bengal, I was visualizing very rough idea sketch about the land formation and the political state during the B.C. and later on A.D.

Delta land? What is this region? Where it is? How it derived...

Yes...to learn oneself and to recognize own authenticity, is the best virtue but also is a very difficult task as well. You might know starting from Socrates, Plato, Aristotle and even enormous philosophers since decaying instigated human being to know and to search or learn about the entity; the root and the inherency of each self. But it is really thorny to reach to the core of the source. May be that's why, we do not have any expectation, desire and motivation to pass through with the struggling chapter to accomplish our origin. But we can't avoid it or can't pass by through, otherwise we are disappeared...!!! To go forward and to uplift ones in the contemporary pace of urbanized world, essentially ancient source and reference of cultural legitimacy are obvious. It would be in search of for self enlightenment. This 'search' of course would perhaps take us returned to the path of historical evolution and evaluation.

Unfortunately, although conceiving those glorious cultural emblems, being the ancestors we are far away from nurturing our own identity and cultural continuity. Through the popular ancient literature and historical reviews it is a 'black box' to find the core of the historical essence of Bengali nation. The consequences, the new generation are not been properly indulged with the orientation of historical curriculum even in the school level. So it is complicated situation for a nation to identify their own style to be advanced a way forward.

We all know the story of the king and the kingdom, the victory, the triumphal, the ups-downs of the throne and the novelty of the great monarchy. However, it is not the matter of a single day case; it carried out throughout the passage of the time and we came to learn that history- that we learn should be part from the 'top of the Pyramid'. But elsewhere, the common people never had been the hero in the pages of the golden history. Their struggle, achievement, and good days were disappeared like dried leaves of the winter trees (Figure: 03). The cultural content, costume, custom and the lifestyle of the common people reflects the glory of a nation as well as the civilization.

To get rid of from the usual pattern of historical description and discrimination, we must seek for the legends for the common people's historical emblem. Yes, as a researcher would discover the ancient culture that was inherent since the thousands of years, the original ritual, religion, land form, belief of society and the people of the land. Through these analysis and hypothesis one can see the true scenario of the vigor of the history. Ancient Bengal was advanced with various settlements since its prehistoric period. Among those ancient settlements northern part was named as GAUR, PUNDRA and VARENDRA; at the western plane RADHA and SUHMA; on the eastern side were three grand settlements named respectively, VANGA, SAMATATA and HARICALE (Figure: 02)-

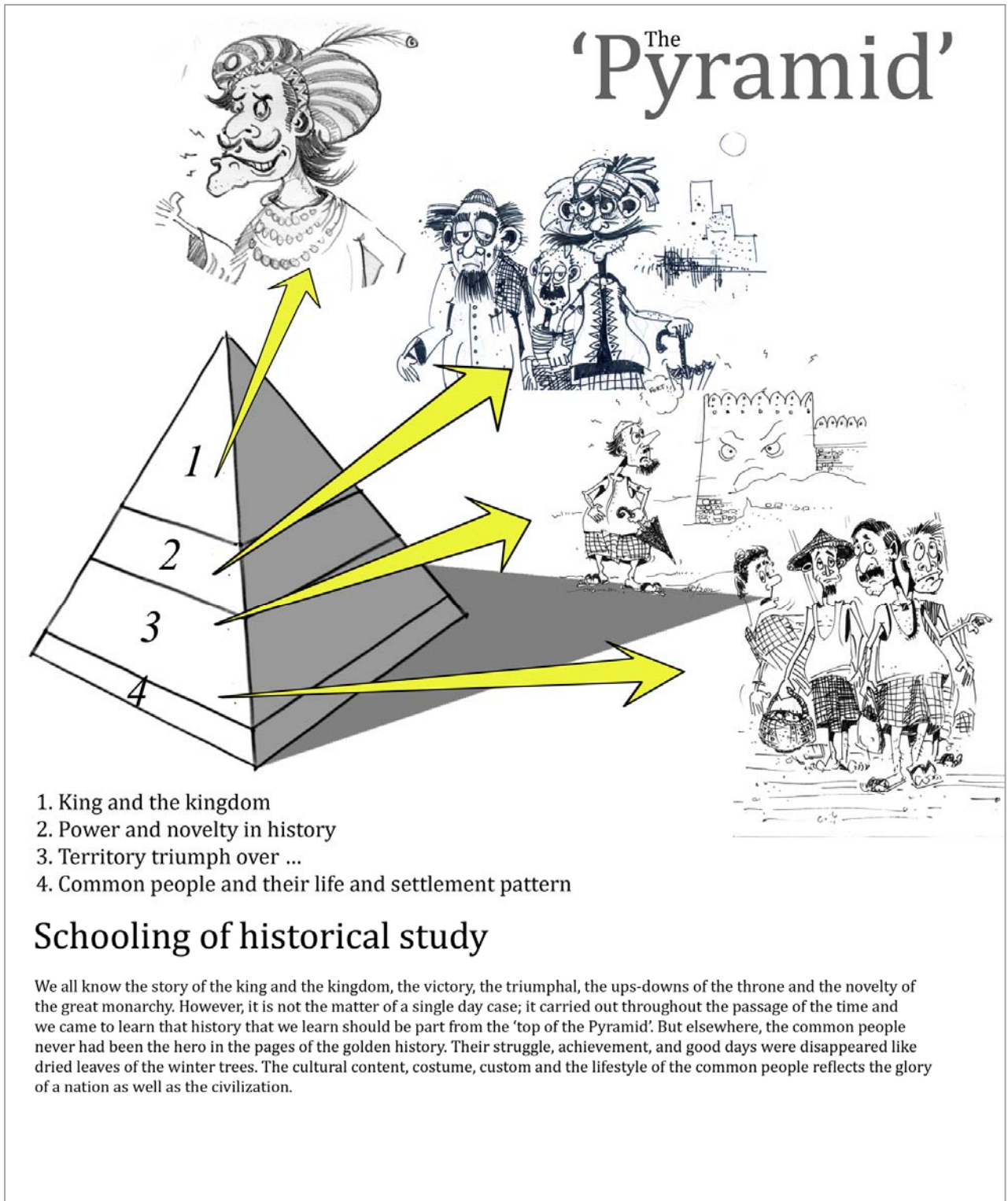


Figure 03: the story of the historical studies and schooling in Bangladesh, at the same time to learn the history of the people, life and the cultural legitimacy often needed. However, the bottom up process is also necessary...

and ancient political territories. This delta land is away from the mighty Himalayans belts only about 640 kilometers, on the contrary the basin of the Bay of Bengal on the south, positioning as a concaved situation and naturally resists all kinds of tidal surge and calamities. And obviously the mangrove forest Sundarbans. Presently on the west Behar and Orissa of India are continuing 560 k.m. of international borderlines. At the same time on the eastern and now a day southern-eastern parts are occupied by the Assam and Myanmar. Eventually the ancient Bengal had the area of 2, 16, 146 sq k.m. which is not applicable for the present land formation.

The ancient land of Bengal associated with potential natural resources. Although this land is attached part of the subcontinent, anyway the land was not contained with desert, mountains raised land and valley. But the northern land form is ancient and 42 m. above from the sea level, south-eastern part; that attached with Myanmar and hill tracks, most of the land form are plain and flat low lying as flashes to the river. And still this land is the ever largest delta in the world.

Unfortunately, having those huge settlements in this land very few were continued researches along with the city, people and the culture. Except the Chinese tourist and philosopher HUENG SANG (602–664 AD) had described in his written voyage note mentioning big cities and lots of sky diminishing temples by the river side.

Figure 04: Probably the route map is showing the way This Scholar entered in Ancient Bengal. And he visited Pundravardhana, Gaur, the greatest monastery Shompur Vihara, which is the largest ever in subcontinent. And he passed through Samatata also...
Source: Wikipedia

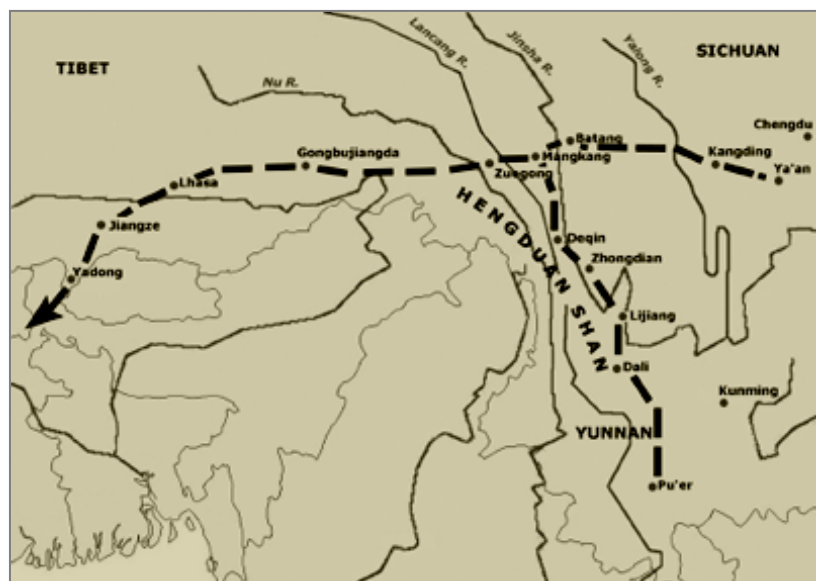




Figure 05: Chinese tourist and philosopher HUENG SANG (602–664 AD) had described in his written voyage note mentioning big cities and lots of sky diminishing temples by the river side...the sketch is done by author and still a few existence could be sight out near around the rural-remote areas of Delta land. Although this evidence is erected during the pre-Mughal epoch, meanwhile the image perhaps would be the similar.

In Bengal fort and fortification was immensely influenced by the Buddhist philosophy of strategically planning approach, Hindu kings and later on by the Muslim. The fort and fortification of Mediaeval Bengal was seen as exemplary and many later forts have grown out of the synthesis of the two main sources, the pre-Muslim tradition of the land, and the art of the building forts brought by the Muslims. Basically the fort architecture was developed and elaborated since the ancient Bengal. Eventually since the Buddhist period the people of this region earned to know the process of defense themselves from the external affairs. This process of housing large and mega structure like river forts erected by the Hindu and the Pala kings. The medieval forts are actually the matured forms of those results. The medieval heroes basically followed the process of making forts on the flat land of deltas. And later derived in the two distinct phases, the Sultanate and the Mughal. It lingered five hundred years long. (See figure: 07)

Outside the wall, is the meaning of the belonging with fortified cities, most of the ancient cities used to bracket within the fortified walls, to get rid of from the enemies, to protect themselves from the unwanted situation, to keep privacy with marking territory and to show the power of mightiness? The ancient, along with the medieval cities has the protective characteristics. However; they had the unique strategies to maintain. But somewhere these strategies were very common in making of fortified walls, fortress phenomenon used to establish with the contextual connotation. So context is a vital role to build the massive gigantic walls for protection. Till dates we find the evidence of ancient forts, even then the mud fort in Bengal erected by the Sultans (1208-1529). Even history has the golden references of those all, meanwhile by literature survey, the other pictographic documentations and some special drawing or sketches. Historians and scholars found the thorough information to identify the civilization. Almost by the detail and the precise elaboration, researchers find through those historic elaborations in sequence about the walled city or their lifestyle. The situation of the subcontinent was different than the walled cities of the western world. The European medieval cities used to combine with facilities, such as both the royal and the progeny residential zone, the palaces, the commercial area, royal bath and - administrative settings are the belonged part of the fort area, these all zonings used to remain within the protective fort walls.

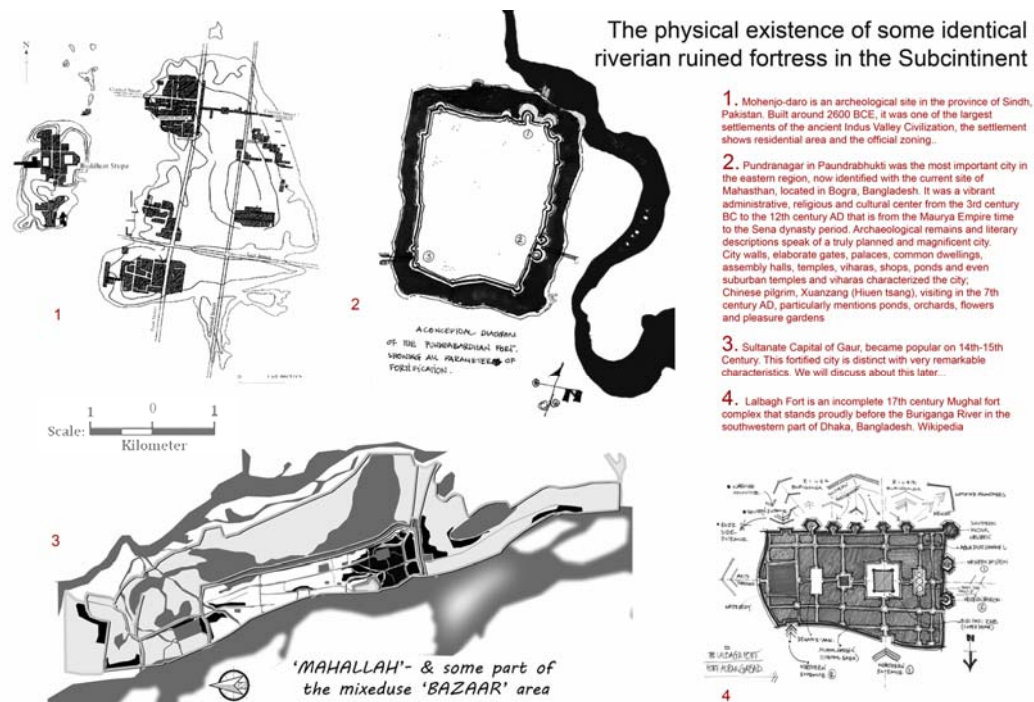


Figure 06: This figure is explaining different contextual situation although they contain the similarities from point of planning approach, but the shape and defence system would perhaps got changes for the topographic reason. Sajid doza

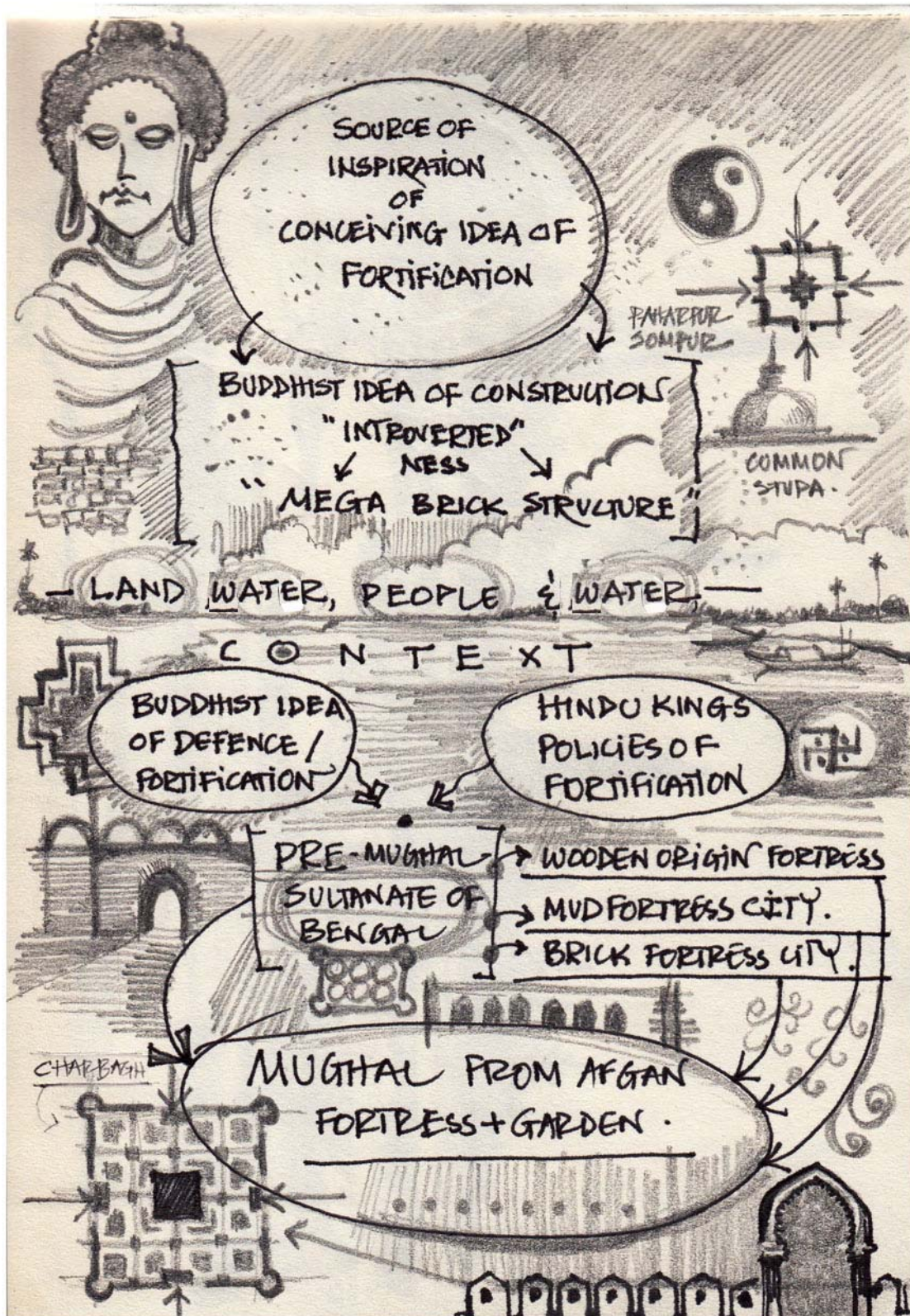


Figure 07: the sketch shows the fundamental ideas generated since the Buddhist period, as The Pala dynasty (8th-11thAD) built the biggest Monastery in the south East Asia that is in Bengal on the north. This had the attitude of having the fortified appearance along with the Hindu King policies of protection and introverted skills.

In the sketched diagram also explained the influenced the motivation of the context, like people, land and water. This context became the statement for the Sultanate and Mughal Kings of making the fortification in delta land.

So through the sketched diagram various influences are shown for making the fortress city by the river, but it sparked since Buddhist and Hindu kings...

On the other hand the sub continental medieval cities are different from the European one. For the example The Sind civilization (Indus Valley Civilization) of Mohenjo-Daro (2600 BCE)³ traces with different morphological strategic plan, the citadel or the castle used to take place in different part of the area (fig: 6), for the residential zoning the area was chosen on the other locale or the region, but used to remain adjacent the fortified area. The Indus civilization was followed by earliest civilization of Bengal conceived the same morphology. The *Pundranagar*⁴ walled city still exists with massive ruins of thick walls (Figure: 06). But what was the situation between and outside the wall?

Basically, the ancient land of Bengal derived from the siltation of mud and other riverine minerals, and became the largest land of delta in the south basin of the Himalayas. The land and the locality survive till date with the bonding. The land formation mould enormous differences in lives. Differences also seen in building of political, social and economical strategic master plan.

As the other ancient riverine settlements and civilization of the world (Figure: 09), Bengal had learnt through rich contained remarkable settlement patterns scattered by the bank of several navigating routes. Structured with huge intelligent cities as well as the fortified walled establishment. River and the flat land topography insisted and forced to conceive a new formula of generating fortress settlements. The several researches marked with those huge settlements and defined with some common or overall concept of the topic.

³ **Mohenjo-Daro** is an archeological site in the province of Sindh, Pakistan. Built around 2600 BCE, it was one of the largest settlements of the ancient Indus Valley Civilization, and one of the world's earliest major urban settlements, contemporaneous with the civilizations of ancient Egypt, Mesopotamia, and Crete. Mohenjo-Daro was abandoned in the 19th century BCE. Significant excavation has since been conducted at the site of the city, which was designated a UNESCO World Heritage Site in 1980. Source: Wikipedia

⁴ **Mahasthangarh** is one of the earliest urban archaeological sites so far discovered in Bangladesh. The village Mahasthan in Shibganj thana of Bogra District contains the remains of an ancient city which was called Pundranagara or Paundravardhanapura in the territory of Pundravardhan. A limestone slab bearing six lines in Prakrit in Brahmi script, discovered in 1931, dates Mahasthangarh to at least the 3rd century BC. The fortified area was in use till the 18th century AD.

Source: Majumdar, Dr. R.C., *History of Ancient Bengal*, First published 1971, Reprint 2005, p. 10, Tulshi Prakashani, Kolkata, ISBN 81-89118-01-3.

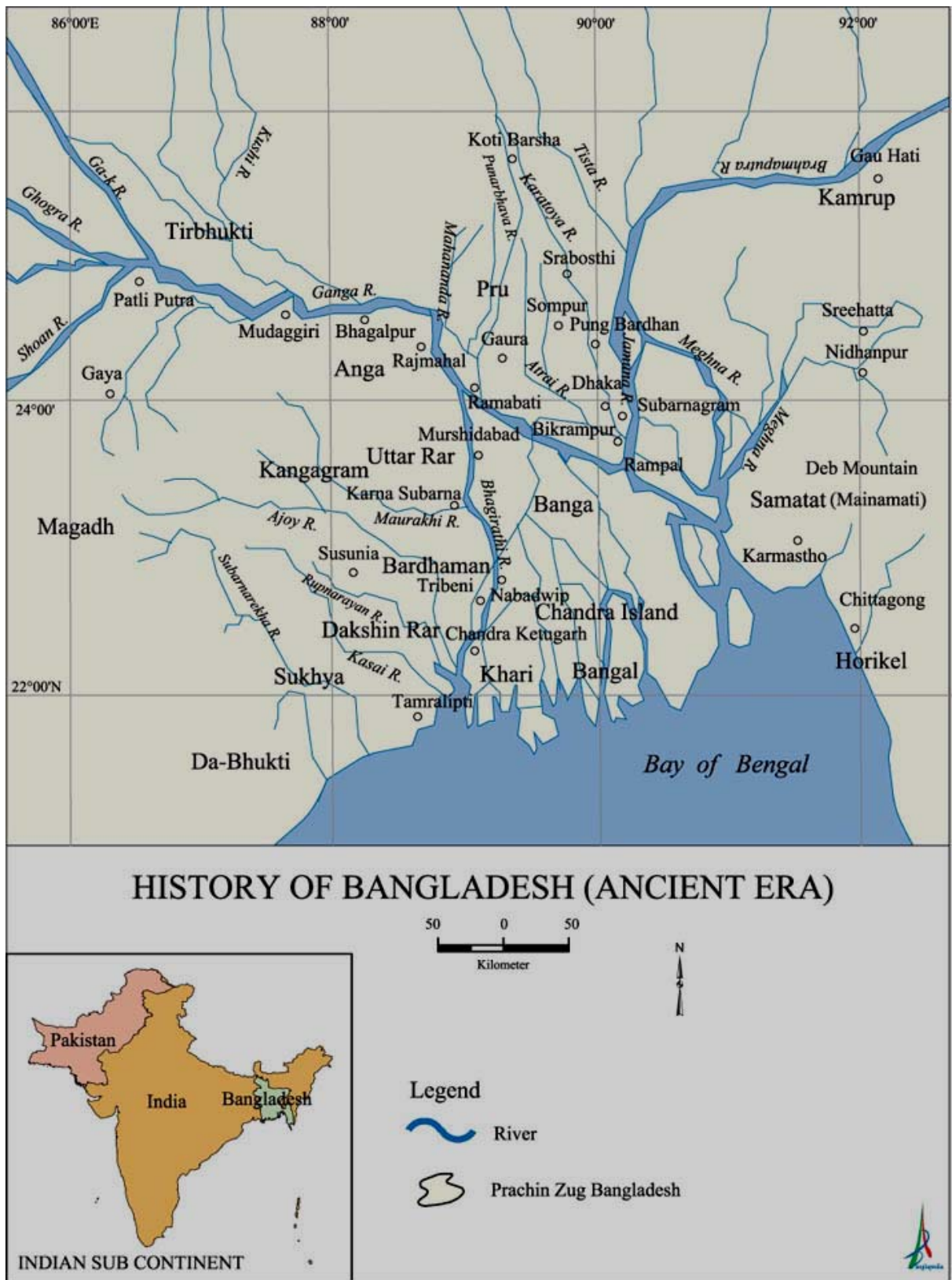


Figure 08: cress cross river from the ancient epoch, falling and surrounding to the Bay of Bengal, in her way of journey numerous city and settlements give birth these rivers...

Source: Banglapedia (National Encyclopedia of Bangladesh)



Figure 09: the famous river valley culture
Source: http://radhikaranjanmarxist.blogspot.pt/2011_08_01_archive.html

Buddhist shrine
 built long after
 ancient city



**Ruins of Mohenjo-
 Daro, Pakistan**

Central baths

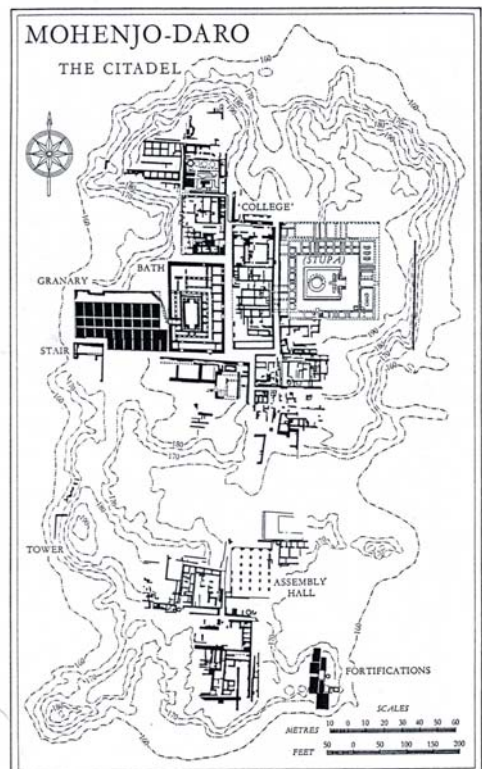


Fig. 7. Plan of the citadel, Mohenjo-daro. (Heights in feet above sea-level.)

39

Figure 10: Mohenjo-Daro, the INDUS civilization, (2600 BCE)
 Pakistan, vital settlement for the generating the inland and outpost to develop commerce and trade.
Source: Wheeler, Mortimer. *The Indus Civilization: Supplementary Volume to the Cambridge History of India*. 3rd ed. Cambridge: U, 1968. Print.

Notifying all those forts and the cities were the titling part of the researches, along with the classification of the cities in several groups as the European forts and the settlements fabric do consists. A big clue always comes to the reference of the History of Ancient Bengal's civilization-is the Mohenjo-Daro and Harappa (Indus civilization). Yes, Bengal was commercially and through the geographically was connected with the Indus civilization. Researchers and archaeologist of our country have proven the relationship. We have lots of archival artifacts, pottery, ornaments construction technique and evidence beneath. Still they are to ready for the discovering. And show the sign of relation with the renowned settlements.

Evidence and local site witness always shows the references and justifies the inherency of the civilization. But the people, culture, settlement pattern of the city, the hub of the different cultural congregation, even a residential pattern of the city, the inland port concept, what were the virtues to become the inland port fortress city, communication and the infrastructural facilities that were really achieved by the people of the ancient time however, lastly the lifestyle are unintelligible. These questions are the authentication parts of negotiating and to bring at broad day light for the detail area for the research fact. Having said that the microscopic analysis of the riverine fortress cities is still 'gone astray' cases in the history of delta land. We do not have any concrete substantiation of the 'ancient riverine fortress city', stating the zoning, strategic plan, the distinguished hierarchy of street patterns, the neighborhood style and eventually the regeneration of the ancient morphology of the ancient riverine fortress cities have the potential field of studies. The morphology of the medieval city is known to us, but being the deltaic and riverine flat land the fortress city's physical morphology would be unique with the religious monarchy.

So, at this moment may be we are impending to the focus of the area of research, yes, two basic strata; firstly the morphology of the city that means the physical aspects and description of the fortress city, why we are called of 'unique' them? And the second the life, people and cultural legitimacy of the riverine region of the fortress city.

Yes, we have only the demarcation, territorial rampart of the evidence and some of the archaeological clues that are maintaining the links with the other part of the

world's riverine civilization. Our historical chronology is still missing these cavities and motionless in questioning ourselves how those cities were like at...? Ancient Bengal, history, society and cultural deserves to be fulfilled, coordinated and needed to build bridges trans-disciplinary motivation to resolve this 'hollow space' situation.

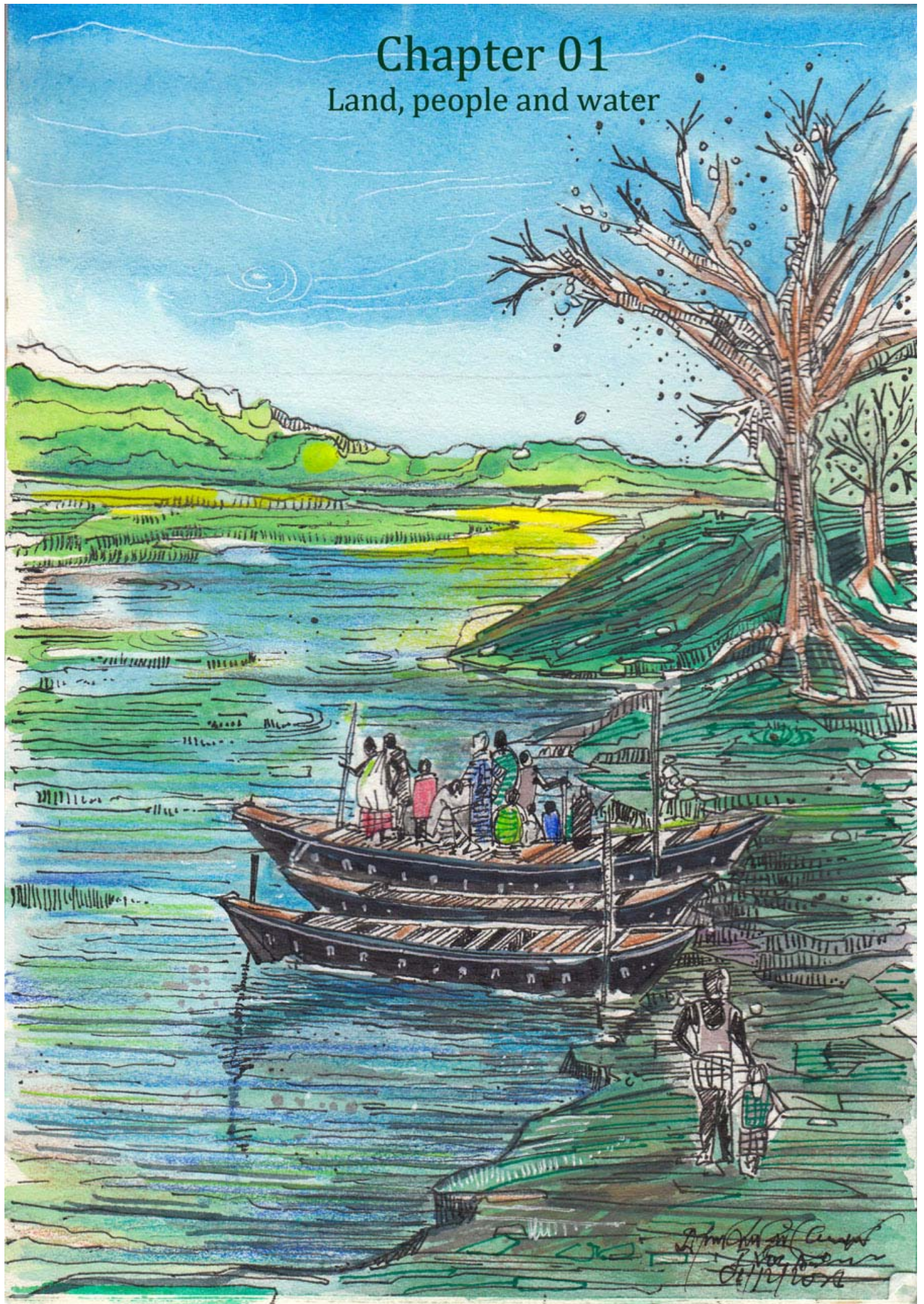
This largest delta was dotted with various ancient fortresses during different monarchies and those were unique in pattern, the settlement inside the wall and outside the post were inherent. To fill the research gap from micro to macro disciplines we have the commitment to the nation to put the scientific, philosophical and physical (visual) conception about the riverine fortress city in the previous physical orientation as well as with a new statement we call 'neo-visual statements' or the 'Digital Heritage Phenomenon'.

The research would try to explore the neighborhood pattern in and outside or adjacent walls of fortress cities of Bengal, as those are few of documentation by some scholars in the history. The research would focus on the lifestyle, spatial pattern, the morphology surrounded by the wall and the form of settlement pattern of the walled city. So, in this connection the research would have the notion to collect the pictographic information from the ancient period. The research will also address the conjectural mapping and the reconstruction of spatial qualities with the relation of the people of the localities both inside and outside the walls. Mostly the research would be based on the reference and the recollection of the memories of the ancient visitor who visited those particular areas during or the contemporary time.

As an architect and researcher of the history of arts, I prolong to introduce the given statement with scientific process of orientation. River, fortress, city, cultural longing and the pattern of neighborhood infrastructure would be the most elaborated and justified area of the research activities, which could be the initiation of filling up the research void. As a final point, the study would be based on the visual reconstruction of statements as well as the digital heritage phenomenon. This may perhaps would be the first steps of research's new dimension. In the field of history of art and architecture a missing portion could be- at least find a one direction in the long passageway of the journey of ancient Bengal's history.

Chapter 01

Land, people and water



Chapter Comprises

- 1.1. Context of the land of delta
 - 1.1.1. Origin of the city in Ancient Bengal
 - 1.1.2. Strategies behind choosing the sites for making fortress and other infrastructure
- 1.2. Objective of the research
- 1.3. Scope of research-rethinking as the advent for the nation
- 1.4. State of Arts and Methodology of study
 - 1.4.1. General Approach
 - 1.4.2. Study process
 - 1.4.3. Surveying and interviewing to the site cases with relevant sources

Land, people and water



Figure 11: a very common landscape of the country like fragile delta, but land form is prominent with sculpture like historic monuments.

Source: Seeta Ram 1826, form the British Library

Eventually, Mud is the strength for the Bengali countrymen. This mud is modified in sun-dried bricks and then into the kin-burnt and lastly for the ornamental settings. Terracotta became the glorious form of ‘climate protector’⁵ for the Architecture of Bengal. From the beginning, human being always seeks for the protection and safe accompany. It is so indigenous for the human settlement, next it became as the part of the household and onwards the fortification for the city. The huge gigantic infrastructure turned into the fort and fortress of the city. In Bengal the situation was unique, to prevent enemy attack various mud fort were built.

The excessive monsoon rain, varying between 70 to 100 inches in a year the highest in the subcontinent which falls between June and September and the excessive humidity averaging well over 80%, encourages the growth of wild vegetation. Once

⁵ Climate protector: could be termed as the cladding elements, such as terracotta, traditionally used in the historical building as the ornamental block as well as the extra jacket to protect from the moisture and saline factor.

an historic building has fallen into a state of neglect it is quickly overgrown by heavy foliage and this plays havoc with its structure. Especially damaging is the Banyan tree, which holds the building in its fatal grip of fast expanding roots, like an octopus, until the structure is gradually torn apart. The devastating effect of the vast and complicated hydrographic system is also largely responsible for the obliteration of many noble monuments of the country, which accounts for the total extinction of a large number of ancient sites and monuments caused by the fluctuation of river courses, often on an enormous scale. As Bengal is essentially deltaic in character, a rich deposit of soft alluvium is left annually by the receding flood waters of innumerable rivers. This clay, a cheap but excellent plastic medium, is readily available for the abundant manufacture of bricks, which explains why the chief building material for most of the monuments of Bangladesh is brick.

That is why use of stone in Bengal was and still is very rare, because there are no accessible limestone deposits in the Delta. Any stone had, of necessity to be brought from long distance away. As a result brickwork has been the main building material to dominate the traditional architecture of Bengal throughout all periods.

Most of the pre-Muslim buildings were built with highly perishable but indigenous materials such as mud, bamboo, reed and wood; only the more pretentious buildings were constructed of kiln-burnt bricks, laid in mud mortar. However, as a result of the copious monsoon rains, the monuments soon crumble to the ground. Deliberate destruction caused by man has also been extensive. Many monuments, which might have escaped natural annihilation due to the use of more durable building materials were purposefully destroyed by each new conqueror, Either to satisfy his iconoclastic zeal or to secure readily available materials for the erection and embellishment of his own edifices. Added to this, the age-old activity of vandalism to ancient monuments and jungle clad mounds for the illegal extraction of bricks or for treasure-hunting is a common phenomenon. With the increased building activities in Bangladesh after the Liberation War (1971) bricks, especially ancient bricks, were greatly sought after because of their quality and market value. As a result the ancient mounds, which so long remained untouched because of superstition, soon became inviting targets for wholesale looters.⁶

⁶ Ahmed, Nazimuddin. Discover the monuments of Bangladesh. Dhaka: University Press Limited, 1984. 13.



Figure 12: Most of the historical excellences have gone with the nature by the passage of time and as mud, sun dried brick and the burnt brick originated by clay, so temporariness in the structure and mostly for the moisture and saline factors
Photo Source: Sajid Bin DOZA

Context of the Delta Land



Photo courtesy: Sajid Bin DOZA

1.1. Context of the Delta Land



Figure 14: mapping of the Basin of the Ganges and Brahmaputra, in the figure the flows of the different rivers are networking getting down from the Himalayans range and these all canals and river stream are meeting at the delta and dedicate themselves to the mouth of the Bay of Bengal. Source: commons.wikimedia.org

The formation of the delta land acts to spread riverine topographical orientation, which finally flashes to the mouth of the Bay of Bengal. Perhaps nowhere in Asia has the nature confer her rewards or the blessings, so the fertile alluvial plains roll out into the vast ocean of lush green paddy field. And that draw out for infinite distant horizon; with the colorful shallow hills and on the most of the Bengal's borderlines. This flat land is versatile also; cut by enormous deep canyon, Open and large valleys, hills streams and thickly covered with evergreen forests, which occupy the various color of the nature and the dramatic sequences of the six seasons crammed with the vibrant and festive natural cheeriness; where the modest people of this land tune their songs of life. The season has its own diversity making people their own legitimacy of culture. And that cultural vicinity is harmonized with the river, earth air and the hemisphere. It is indeed the vast garden where the land, water and the forest pulses with the multitude of merrily colored song birds. The beauty of the landscape is extended with fertile and alluvial sedimentation of blessed and teem crops.

Consequently, it is often certain that the ancient chroniclers, when praising the captivating of the beauty, having described the country as “land of emerald and silver”- a garden fit for the kings or even as the Mughal official documents styled it “Jannat-UI-Bilad”-the paradise of countries.⁷

It has been said before that Bangladesh is the largest delta in the world and truly the gift of the mightiest of rivers such as Brahmaputra, the Padma and the Meghna which together with their countless tributaries, sweep across the vast basin in a bewildering network of channels and streams. These widen rivers acting as the arteries, indeed largely responsible for shaping the destiny of the land and its people.

The Gangatri glacier⁸ (Figure: 14) is the primary source of generating the mightiest Ganges river and travels all the way through India and while entering to Bengal named river Padma and other Mahananda. The gift of the rivers thereby enriches the land with life giving fertility which sustains a teeming population virtually without any mechanical aid.

The flat land topography has the nature of shifting the river course from the main one, and streaming to another and creates cross cross networking and derives hierarchy in the flowing of the navigation route, with this natural land formation numerous famous settlement and fortress developed on the both side of the riverine route to engulf the own territory and to protect the area from external forces. By these banks of the watercourses hamlet, city and the fortress means became so dependent and the aqua source for the people of this land was essential and eternal elements of life. Agriculture was the main occupation of the common people of Bengal, meanwhile this delta land was attached with kings and kingdom, people and the trade, essentially river side or the bank of the most of the major stream vibrant with population and city's surrounding environment. Sky reaching spire tower temples with beautiful colors were observed and they were activated with lots of rituals. Many noble historical monuments triumph over along their yielding banks.

⁷ Ahmed, Nazimuddin. Discover the monuments of Bangladesh. Dhaka: University Press Limited, 1984. 14.

⁸ Gangotri Glacier is located in Uttarkashi District, Uttarakhand, India in a region bordering China. This glacier, one of the primary sources of the Ganges, is one of the largest in the Himalayas with an estimated volume of over 27 cubic kilometers

Yes this yieldingness had the power to put the settlement preserved or sometime it is destructing for the people and the settlement. The elastic form of the bank of river has potentials for all the seasons, having all kind of the infrastructures settled by the empire of the region those banks faces the daily life pattern of the common people, the ritual activities along the side of the river, the communication, and the beauty of the settlements was a very joyful role for the people of the fortress city.

The river Padma and many other also called on as the KIRTINASHA or the destroyer of the monuments. Hence still researchers are searching for some of the lost settlements that had gone and grab by the mighty rivers. Essentially, a settlement evolves and also eliminated only for the navigation course shifting. We have lots of

Figure 15: *The River Padma and many other also called on as the KIRTINASHA or the destroyer of the monuments and settlements.*
Photo Courtesy: MAHMUD



example all over the world and obviously in this subcontinent also. Therefore the river courses sometime brought up both the joy and misery to the people and the land.

The three main natural division of the delta corresponding general to the major ancient and contemporary political demarcation which known as the early historic period of the delta land. The region on the north comprises modern Rajshahi Division, which is enclosed roughly by two grand rivers, the Padma and the Brahmaputra. Which was in the ancient time corresponding as the PUNDRAVARDHANA Province for which the VARENDRA was the most important district.

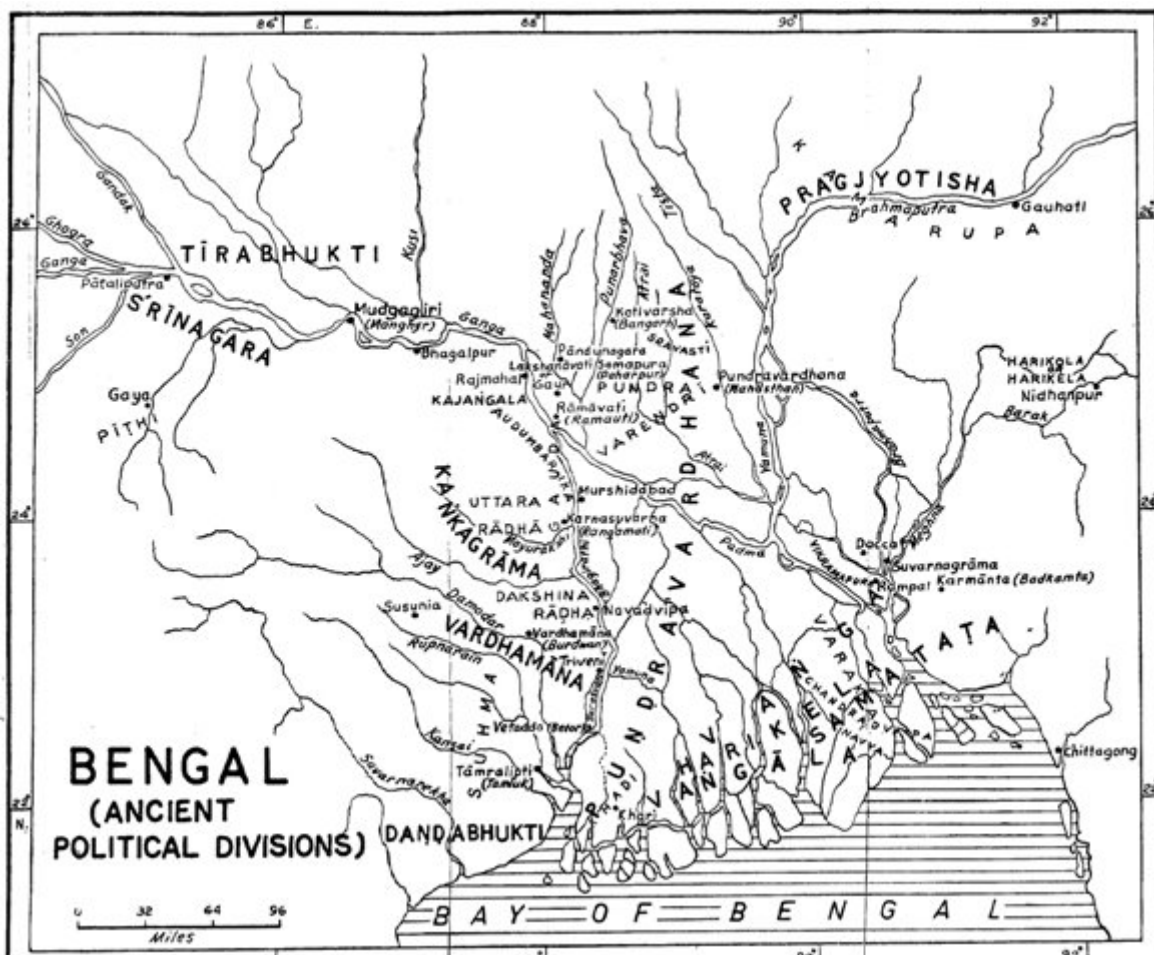


Figure 16: political division along with the river that divides the region to each other
 Source: http://photos1.blogger.com/x/blogger/5167/3388/1600/487207/Map_of_ancient_Bengal.jpg

The flatland mass in-between the Padma, where the lower reaches to the Brahmaputra and the estuary of the Meghna formed the central divination known to Pliny and Ptolemy as the territory as the 'GANGARIDAI'⁹ (Figure: 17). Kalidasa¹⁰ mentioned the same territory as the land of the Ganges. Beyond the Meghna and in the east, roughly comprising the present Chittagong Division, which could be called of ancient administrative district of SAMATATA. (Figure: 16)

During the Pala-Shena periods there are two main geographical divisions. The *Gauda* and the *Vanga*. *Gauda* included both *Radha* and *Varendra*; the territory of *Vanga*, later synonymous with *Vanga*.

Because of the natural fertility, climate fabled riches, this mainland used to always attracted by the new settlers, traders, and the conquerors, mostly it used to be form the western part of the world. Meanwhile it could be named as the vast area of melting point of various ethnic groups that mingled together and formed a hybrid population with a dominant non Aryan strain. Form the Vedic reviews it is recognizable that it is abundantly clear where the aboriginals of the Bengal were altogether different in race and culture form Vedic Aryans.¹¹

Later on with the advent of the Islam in Bengal during the early 13th Century and the invasion of the Muslim traders, missionaries and migrant the city and the settlement pattern had turned into another typology. Observation to be noted that the new element in the already multinational population became increasingly evident. So it is one kind of turning point in the delta land as the Muslims ruled the country for about six hundred years and intermixed freely with the local people. So the result began almost long association is apparent. And became the Muslim majority state.

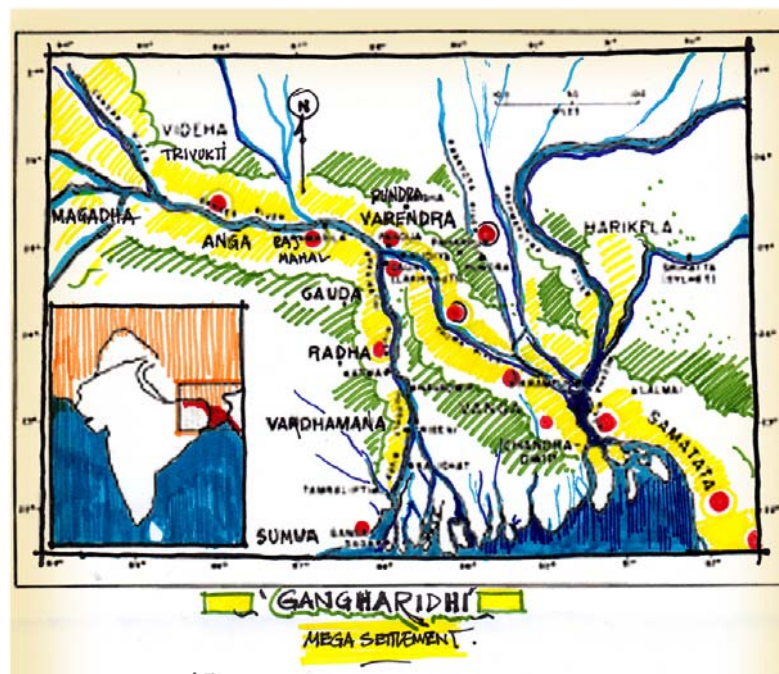
In this literature connection, stating form the Vedic, Buddhist and the Hindu context, the land of delta had the orientation with different, vivid ritual and the long tradition of spiritual cultural continuity, and obviously that might affect in the city formation

⁹ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 14. Print.

¹⁰ Kālidāsa was a Classical Sanskrit writer, widely regarded as the greatest poet and dramatist in the Sanskrit language. His floruit cannot be dated with precision, but most likely falls within the 5th century AD. Source: *The Recognition of Sakuntala: A Play In Seven Acts*. Oxford University Press. pp. ix.

¹¹ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 17. Print.

pattern. Because the city would be generated then with the triumph of the religious boundary, where the city morphology used to conceive very different strategic plan, like the Indus Civilization and in our delta land the *Pundranagar*, which might have the clear zoning based establishment. And that must be followed by the Hindu and the Pala kings. Eventually the ruin of the city provides us the answer with having those criteria. However, through the natural settings and the attachment of the religious, perhaps the spiritual meanings the Buddhist and the Hindus city formation in the Bengal was an identical pattern which was not truly in the Islamic city that created by the sultans and the Mughals. Most evidentially we have the reference about the '*Gangaridhi*'- was supposed to be the huge form of settlement evolved only for the mighty river Ganges and the other interconnection of the river.



Gangaridai, meaning "Wealth of the Ganges" ; Sanskrit: Ganga Rashtra, meaning "Nation on the River Ganges"-was an ancient state found around 300 BC where the Bengal region lies today (present-day Bangladesh and the West Bengal state in India). It was described by the Greek traveller Megasthenes in his work Indica.

The Greek and Latin historians suggested that Alexander the Great withdrew from India, anticipating the valiant joint counterattack of the mighty Gangaridai and Prasii (Nanda) Empires, the latter located in central Bihar.

Figure 17: the huge settlement Gangaridhi, by the side of the flowing mighty rivers Ganges, Padma and Meghna intersection. And it elaborated till SAMATATA (present day of Chittagong and Camilla)
Source: Sajid-bin-DOZA

So, in the term of context of delta Bengal would contain several city formulas which are still defused to us. Consequently- research has the capability to extent rethinking the ancient city in the delta and their formulation and pattern of fabric of the city.



A household material as the indigenous settings, which are the part of the settlement pattern, this uniqueness in materials and diversified course of action creates the pattern fabric. Image courtesy: Sajid Bin DOZA

1.1.1. Origin of the cities in the Ancient Bengal

Although numerous literary and epigraphic records, As well as the accounts of a few Chinese-Buddhist pilgrims visiting Bengal between the 5th and 7th centuries, testify



Figure 18: “high as mountain peaks” or as “obstructing the very course of the sun with its lofty and imposing towers capped by golden finials or kalasas”- I was thinking like so....sketch: Sajid Bin DOZA

to the existence of a large number of cities, fortified palaces, temples, monasteries and stupas, with the splendor of such structures being described as “high as mountain peaks” or as “obstructing the very course of the sun with its lofty and imposing towers capped by golden finials or kalasas”- (Figure: 18), there are unfortunately no vestiges of any such ancient edifices surviving above ground today which were erected before the advent of the Muslims in Bengal. The reasons for such obliteration are many, but primarily the destructive forces of nature and man are responsible.

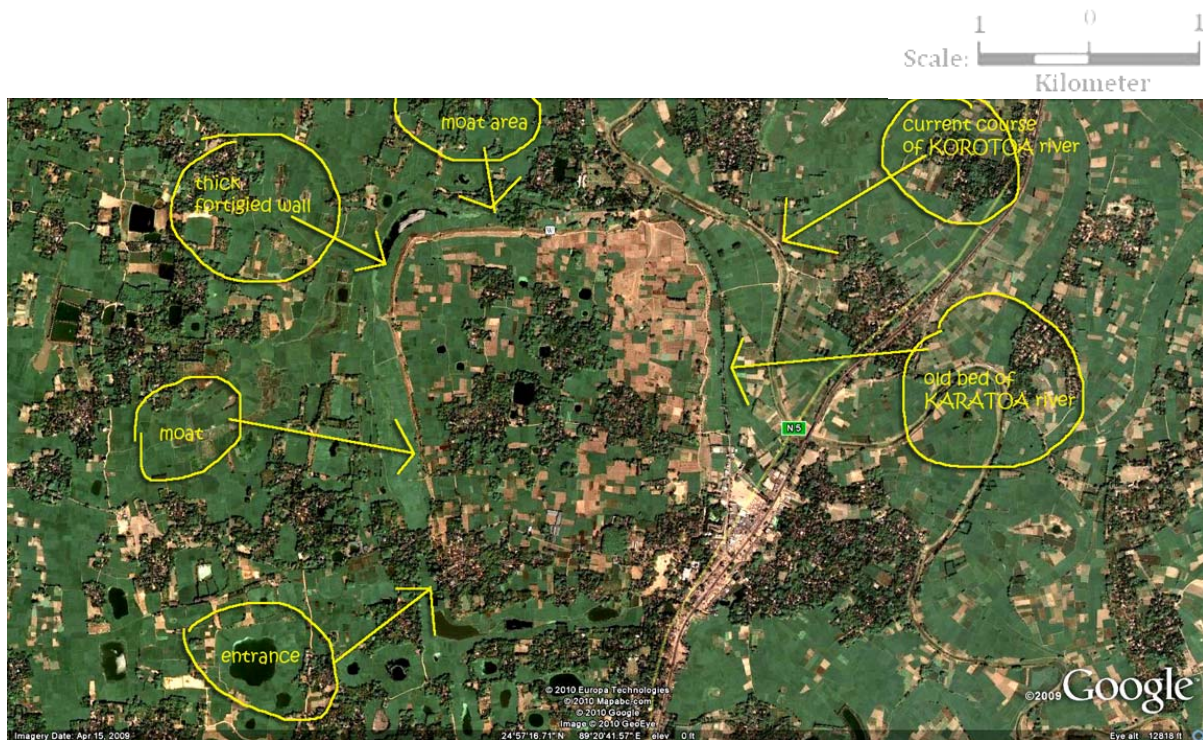


Figure 19: PUNDRANAGAR, the ruins. The riverine fortress city of PUNDRAVARDHAN Vukti, Bengal

To search for the ancient cities and settlements, Bengal, the region needs to look back at the pre historic political and topographical territory. In the previous discussion the chronological developments of Bengal elaborated through the invasion and conquer of the political-outpost. But the perspective was totally different. It was more about the diplomatic and political judgment point of views. In summery or in 'nut shell' Bengal was disintegrated in various and small parts of political arena. And those territories were dominated through kings. But we only knew about the king and this kingdom, as usually left and faded the origin of the city and the importance of the city and settlement pattern. Researchers have described those territories as the settlements. But the question still arises, how the region evolved?

The advantage of the region or the city? The fortification and other defensive mechanism of the city as being the fortress riverine one? These are the common and vital findings to secure the birth and the abandons of the city.

In this subcontinent the settlements and the city formation generated since 3rd century B.C., or even earlier. These cities and settlements were famous for their locality and inherent spatial pattern and later became the 'mega settlements'. As we know the most common and famous settlements around the world are respectively

the Indus riverine city and settlement at Indo-Pakistan, the famous city and settlement pattern of the Mesopotamian riverine mouth, Iraq and Iran. The Nile civilization at Egypt, the Ganges river civilization at the largest delta land and lastly the Yellow river civilization in china (Figure: 09)

The most common thing here is prominent with the water source or the navigation route. The ancient trade and commerce used to have the communication mostly through the maritime tracks. Now the source of the references of the information of having these huge cities regenerated and restudied, the contemporary researcher of during the time explained through the Buddhist and *Jaina* manuscripts. And many unknown information explored about the ancient cities by those texts, it should be mentioned during the 6th Century B.C. *Gautama Buddha* and the Mahavira¹² was born. So the socio-cultural along with economic scenario of the city and the settlement were reflected on those texts where their lives and purposes were detailed elaborated.¹³

*Anguttara *Nikaya, Lalitavistara* and by the Jaina script *Vagabati Sutra* are the authentic references to notify and to essence the ambience of the settlement. Eventually through those epigraphic documents 16 mega riverine fortress cities were identified in ancient Bengal.

To assume the origin of the city-settlement pattern in Bengal, it is necessary to learn the growing and evolving the cities in the greater-India. During the epoch north India was famous for the trading of iron. And this material started to change the life of the

¹² **Mahavira** (540 BCE–468 BCE), also known as Vardhamana, was the twenty-fourth and last *tirthankara* of Jainism. He was born into a royal family in what is now Bihar, India. At the time of his birth, the whole town marked prosperity in term of agriculture, health, wealth and wisdom. It is for this reason that he was named as Vardhman (Hindi: Vridhi) by his parents. At the age of 30 he left his home in pursuit of spiritual awakening (Diksha). For the next 12 and half years he practiced intense meditation and severe penance, after which he achieved Kevala Jnana or enlightenment. He travelled all over India for the next 30 years to teach his philosophy which is based on ahimsa, satya, asteya, brahmacharya and aparigraha. Mahavira attained nirvana after his physical death at the age of 72. He was one of the most popular propagators of Jainism, and he is regarded as a reformer of Jainism rather than its founder.

Source: <http://www.encyclopedia.com/topic/Mahavira.aspx>

¹³ Shahnawaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 4. Print

community as well as the settlements. A new dimension added after the use of the stones for various purposes. Agricultural development flourished, unused land occupied with cultivation, and consequences stoke up of granary and food. In this connection extra granary and other corps were started to deliver to other part of the region, while some region began exports of good to other constituency.

So firstly, the city formation originated with trading and commerce. Obviously by the river side, with this chronological development the region becomes crowded with various exchanges and the king of the hamlet or the region congregate the power and territory becomes expanded. Following all these developments; the defensive system of the region emerge and the region is marked with some defensive mechanism and the result comes up with the river based fortress city.

During the development for 'protectiveness' the leader or the king of the area or the city desired continuing to take hold of more and different region and make the small town or tiny fortress city, in this reason north Indian small city combine known as the mega-settlement.

The generation of city or the riverine fortress city at north India, was similar to develop city or kingdom in the Bengal region, nevertheless there was some uniqueness. In Bengal the city and settlement generated before 3th Century B.C., the ancient kingdom and the story about the king had been described in the very primitive and manuscripts named *Deepbangsha* and *Mahabangsha* from Synghol. In these two ancient references describe two kings, who born before the Gautama Buddha's birth. And very interestingly they established Bengali kingdom in modern Srilanka.¹⁴

But Bengal observed and experienced with various and numerous settlements pattern before, but the sometime merged with the other bigger settlement and faded with the passage of time. Among them those cities and settlement still survive they are as *Gaur*, *Vanga*, *Pundraa* etc.

¹⁴ Shahnawaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 13-14. Print.

Now let us just take focus on the other part of the formation of the city and settlement in Bengal. Although during the PALA dynasty the settlement and city flourished to its full extent. The other matter of generation of city is the river and the deity. Both these two subject are unique for the delta region. And it is a different formula of developing the city beside the river and to house the religious emblem. Religion is a very sophisticated and powerful phenomenon during the ancient epoch, king and conquer desired to establish religious means of structures for their worship and secondly for the common people. Meanwhile the city and settlement of Bengal delta land generated not only with the political and geographical reinforcement, but the formula of the birth of the city was river and God.

To explain the scenario chronologically; river is the potential transportation network for the delta land. King or the Maharajas always seek for the better and facilitated navigation route to establish the contextual city by the bank or on the mouth of the rivers. The area used to entitle with a religious monuments and the strategic plan of the city used to be distinguished by hierarchy based. Most often cases the religious establishment Housed on the secured zone, the monasteries or the religious school used to be recognized around the tombstone as for the example Indus (Pakistan) and the *Pundranagar* (Bogra, Bangladesh). The ancient city formation is also focused and oriented with zoning principles; for the riverine fortress city it is like a circular/radial manifestation.

However, sourcing out the origin of the city; it is actually experiential phenomenon in the history of settlement pattern. Bengal, as mentioned before were popularly known for the river network. Another criterion is obvious to discuss for the riverine fortress cities. The 'inland port'-terminology; some of the city-settlement pattern owned the famous for the inland portal activities. So precisely what is inland-port fortress city? City-territory when act as the hub and junction for the traders and commercial activities through internal navigation networking system could be pronounced as the inland port city. This kind of city usually plays the vital role in the commuting and communication of good from one region to another, as for example, the *Wari-Batesware* trade city, *Pundravardhan*, Gaur and the *Kotalipara* inland port cities used to have the vital and vibrant occupancy during epoch.

Indeed three preferred principle of originating the riverine fortress city in the delta land:

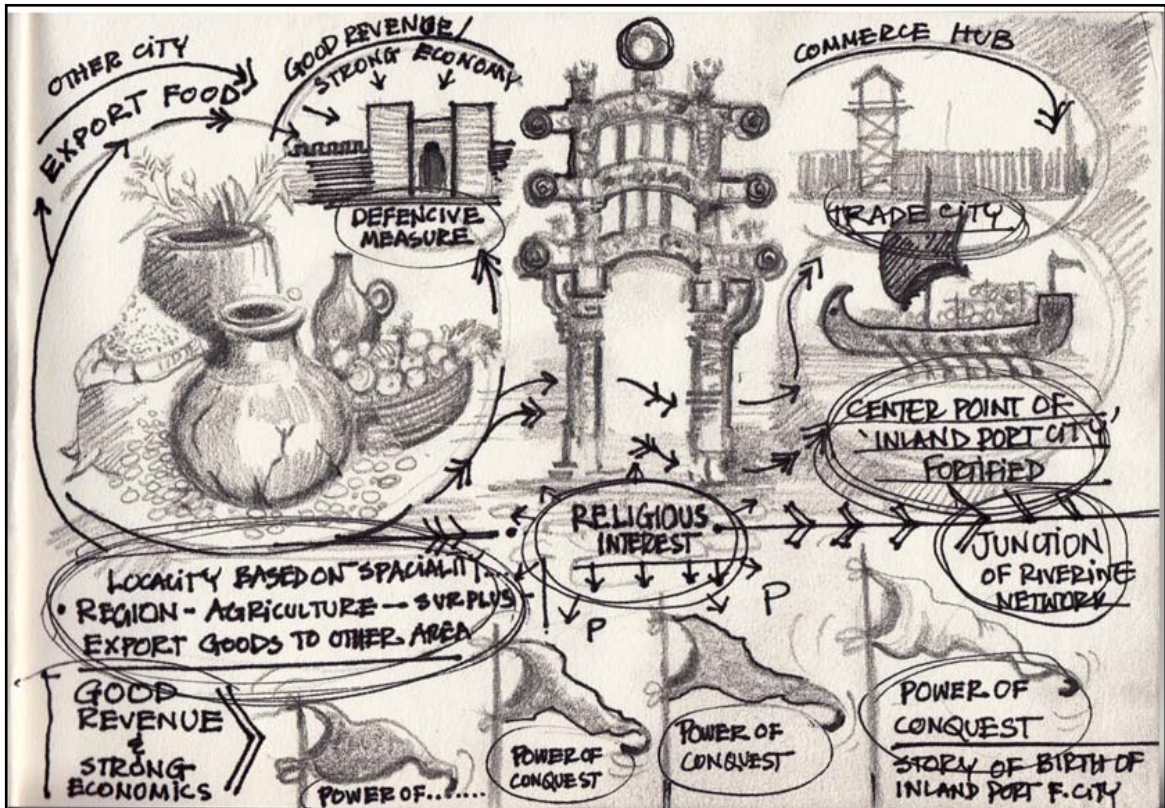


Figure 20: 'origin of a settlement'

With this title and the sketch shows some unusual things instead of military artillery, war arrangement or so on...but in Bengal city formation has some different stories...!!!

The sketch shows the story of the city or the town formation in Subcontinent. Crop, granary and other goods which becomes surplus for a region they brought it to the commercial or the area where they can exchange the wealth, as well as money. While this surplus food started more on and export to the other territory or the city. With these all situation the city earns lots of revenue, eventually that became powerful and the desire to conquer the other territory with manpower, money and religious sense. City becomes more protected only for to defend form the other enemy or priest. As the city used to having treasury and granary, so fortification wall emerged and on the other hand the addiction of power of conquest continued prevailing as the routine activities for the city people. Both through the navigation and the surface the wealthy king used to attack to the other territory and established his conquer. In Bengal it was the chronological process the way a city became developed. It is very usual for most of this region.

- a. The specialty of the area, capability of export goods from one region to other.
Power to conquer new territory.
- To resist and to protect themselves the fortification or the mechanism of the buttressing evolved
- b. Religious nucleus, with spiritual elaboration of the riverine cultural activities with the motive of believes; and generate with the phases of the different aspect of speculation.

- This kind of riverine city could be the fortress character, because of having the religious content, defensive and other battered measured were obvious for this kind of cities.
- c. The city originated with riverine location; the inland port characteristics.
 - The embankment works one kind of initial fortification
 - The entire embankment is occupied with commercial junction and interaction activities
 - Different tiers of fortification could be found in this kind of riverine settlement.

Fort is a structure used for the purpose of defence against attacks and usually having troops stationed. Generally, there are two types of fortifications: permanent and field ones. The former is usually of great strength, erected in times of peace as a defence against attacks. It is meant to defend cities, border outposts, sea or river coasts, and trading centers. Permanent fortifications include walls, castles, forts and fortresses. Field fortifications are constructed hastily in time of wars. They include trenches, foxholes, weapon emplacements, and mine fields, breastwork made of logs, mud walls etc. and obstacles such as barbed wire.¹⁵

It is told before, Bengal was consisted of mud forts and those forts were generally called *Durgo*¹⁶. This term popularly applied to all kind of fortification. This term 'fort' can be synonymous, such as *duar*, *kot*, *burj*, *khitta*, *damdama*, *chauki* etc. the topographical specialty of the terrain of Bengal turned into the unique morphology for the case of river forts. In the riverine Bengal, the fortification was established at the junction and mouth of the rivers. Defence system has molded in to another Dimension for this region, having been in this climatic situation the river fort of Bengal evolved with innovative ideas and approach, at the same time flooding and monsoon time made the defence system impregnable.

River of Bengal acted as the arteries, greatly responsible for shaping up the Bengal's river forts. Some records refer to have the existence of numerous mud forts from north to the south in Bengal. The climate, geography and the material perused to

¹⁵ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 42-45. Print.

¹⁶ *Durgo*: is the fortified premises surrounded by battlements and thick high wall for the resistance, and moat or trench was offset surrounds

emerge the strength of Bengal's forts dependences predominantly on the natural mechanism defences and not only on their fortified walls. Significantly, Bengal contained mainly two types of forts; mud-forts (*Mahidurga*) and water-forts (*Jaladurga*).

*Wari bateswer*¹⁷, which recently found, was an ancient emporium¹⁸. The ancient trade city beside the old course of river Brahmaputra. Still the project is going by the research. The city was connected with the contemporary famous and grand commercial trade city of the south East Asia. "*Sounagora*" ancient trade city at the south-eastern part of Bengal, mentioned by Greek geographer, astronomer, mathematician Ptolemy in his book *Geographia*. The other emporia mentioned in Ptolemy's work include Arikamedu of India, Mantai of Sri Lanka, *Kion Thom* of Thailand. All of these were the most ancient civilizations in their respective regions, each was a river port, and all of them produced monochrome glass beads. The artifacts found at *Wari-Bateshwar* bear similarity with those found in the other emporia sites.¹⁹

Eventually this site is exposed with pit dwelling house, that would be the first example in Bangladesh, and it is very much similar with the pit dwelling of Pakistan and Indian desert area where weather was having the brutal character to assist people for the pit dwelling shelter. For Bengal region is it usual to have same atmosphere was prevailing during those days? It is also a matter of query. But this trade city was fortified and intellect with trench and several ramparts the earliest fort of Bengal, the *Pundrabardhan* city was fortified. The city was facilitating of having the *Karootoya* River as well as fortification. The partial rectangular shape fortified walls was massive thick and the bastions are still evident showing their sense of fortification. It is however that the entire fortified city was dug-up with trance/moat to prevent enemy's attack.

¹⁷ The Wari-Bateshwar region in Narsingdi, Bangladesh is the site of an ancient fort city dating back to 450 BCE. The 2500-year old ruins being unearthed near the old course of the Brahmaputra River are a major archaeological discovery in South Asia.

¹⁸ Rahman, Sufi Mustafizur. "Wari Bateshwar Shekorer Shondhane :উয়ারী-বটেশ্বর শেকড়ের সন্ধানে: Boi-Mela." *Wari Bateshwar Shekorer Shondhane: উয়ারী-বটেশ্বর শেকড়ের সন্ধানে: Boi-Mela*. Prothoma / প্রথমা, Jan. 2013.

¹⁹ Chakrabarti, Dilip. "Ancient Bangladesh: A Study of the Archaeological Sources with an Update on Bangladesh Archaeology, 1990-2000." (*Book, 2001*) [*WorldCat.org*]. Oxford University Press, Delhi, 1992.



Figure 21: one of the fortified gate complexes (kotwali gateway 13th-14th Century) constructed by the tiny bricks during the reign of the Sultanate Period. The massive thick walls, the archways and the causeway over the moat once illuminated the image of their mightiness and power as well as establishing the mega structure in the delta land.

1.1.2. Strategies behind choosing the sites for making fortress and other infrastructure

To start discussion on the strategic planning and choosing the sites for the riverine fortification, it is necessary to remember the topographical feature of the deltaic Bengal. Firstly the flat land, secondly the riverine route priority, thirdly the junction of the rivers and the one-sided land (with three side navigation potential), the natural forestation, fourthly the elevated land or the range of rampart (natural), and the fifthly and finally the selection of the sites for the commercial potential and also for the networking with the other part of the trade cities of the subcontinent. Eventually these were the fundamental issues to settle the specialized city in the fertile land of delta. But through the historical evaluation and the modern day military siege mechanism; the strategies and the conception were conceived by the heroes of the historical period were authentic and rational. As the result; the situation was different from the other sub continental prototypal fortress, and became the -

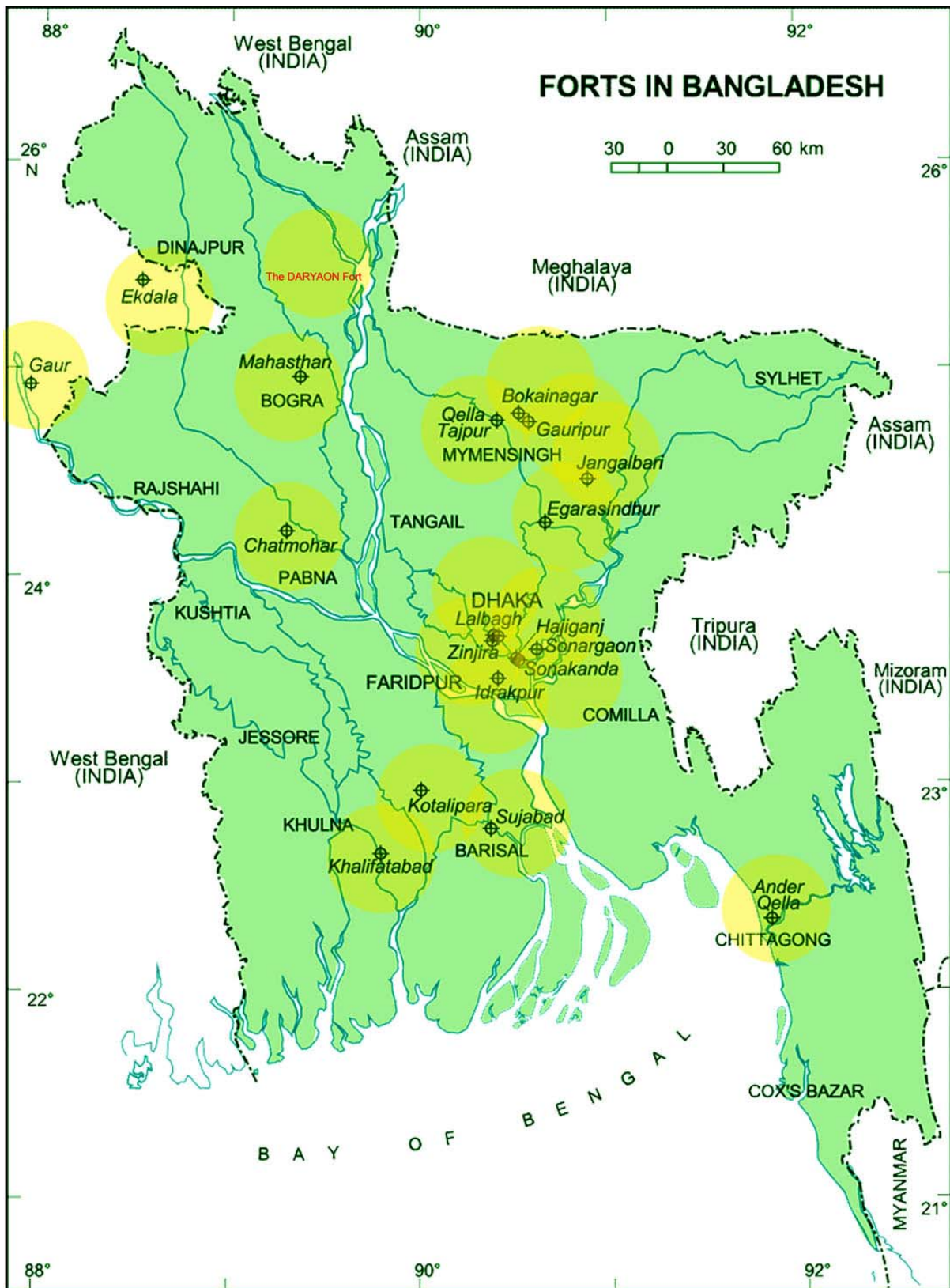


Figure 22: the map of Bangladesh identified with the ancient, medieval and the Mughal fort locations in the mainland. Source: National Encyclopedia of Bangladesh (BANGLAPEDIA), later illustration by the author.

exception from them. So let us try to elaborate by the calcification of positioning and to house the mega structure during the days.

The ancient Bengal naturally and geographically was connected with entire subcontinent and also linked with the other part of the world. It must be said that for the importance of communication surface and the navigation route were prioritized. Conquer the territory, religious procession and convoy, export-import, trade and commerce would pass through these routes. However, the cultural exchange, language transaction, literature, knowledge and practice of science at the last the art and architecture flourished only for those connections.

To study about the fortification on the riverine mouth and the region; it is important to have the proper knowledge of mapping in-between the river connection and the settlements.

By the potential river side (single river stream course)

As the river always plays the vital role of making the settlement, the heroes of the ancient Bengal always took the opportunities on the major course of the stream of the river side to settle the mega structure, because to protect the territory from the rivals. There was a policy used to apply by the planners of the city; if the river is flown from the one side and the other side is seen, actually here it is mentioning the single stream of the river course, several strategies used to take to justify the site as the authentic for them. According the grammar of the fortress establishment the planners or the heroes of the city formed the defensive mills, dock, and water gate along with the obstacle across the river. (Figure 23)

The potential they used to occupy, being the single steam of the river course is kind of safe guarding instead of multi-facing rivers courses. It helped the Bengal's king territory to protect from the pirates and vandals.

For example the *Pundranagar* of *Pundra*, Bogra, Bangladesh, follows the same strategies and settled the greatest riverine fortress city ever. This is still just beside the river *KOROTOA*.

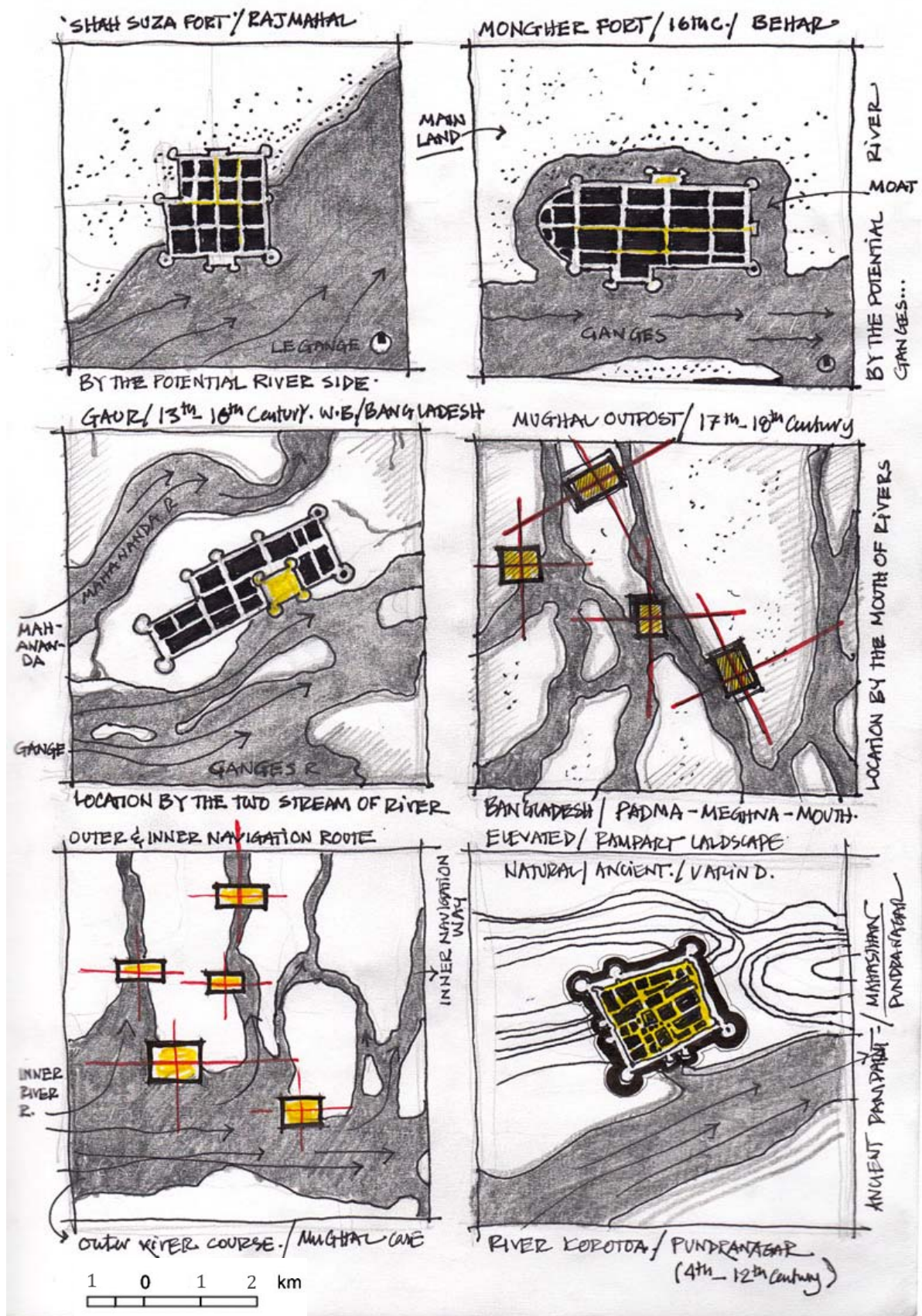


Figure 23: this 'Figure Ground'-pattern of different river fortress shows possible strategies, policies, location and river orientation focused out the vital role to prevent, look after and to establish the outpost for the country's safety reason. These all plates are truly sited from the historical references. Developed by Sajid Bin DOZA

Location by the two streams of the rivers (Figure 23)

It was practiced before to locate the potential site for the river fortress, at the edge of the two distinct rivers, from where the one river changes the course lines and appreciate the advantageous of the flat land to secure the defensive measures. The advantage was taken to serve the natural flow of streaming of river as the tool of the fortification measures. To follow and to monitor the navigation route. The strategies of the fortification at the particular location are involved with several mechanisms.

In this circumstance, embankment, lists and wet moat were to needed to evolve. Because the two stream of the river courses are passing through the edge of the fortified city, in this case the authentic prospect to resist and to protect the city form aggressors, those treatment used to carry out. For example in the Delta land Gaur (Lakhnawouti) sultanate capital of Bengal was settled with the two stream of the river, but generated from one main stream of Ganges. The river Padma and the river Mahananda were passing through by the two sides orienting east and western direction of the fortified city of Gaur.

Location by the junction of the mouth of the major rivers

The kings and the heroes of the ancient Bengal used to take opportunity most, to establish the settlement with fortification around those locations, having said that those areas are the curtail points to be the outposts for the defense. And most of the ancient riverine fortress took the strategies to establish the structure around this type of venerable landform. Essentially to look after the territory and this kind of cities used to perhaps several defensive curtaining as well as walls including infrastructures. (Figure 23)

Outer navigation & Inner navigation route: (Figure 23)

To control the entire river networking during the period and to manage the external-internal trading administration, the site selection theme was dramatic. To manage the river administration and to protect the main land, several technical and specialized fortress measures used to pursue on the outer navigation route such as the defensive mill, flanking tower and different kind of obstacles across the river. So that the invasion would take more struggles to break through those structures ultimately overriding time to reach the attack point, in the meantime the 'delaying of

invasion' is a part of strategy to watch out for the defender. And they may take position for the fact and situations.

At the same way the inner navigation network used to have the different strategy to turn over the protection from internal conflict, which might cause harmful for the fortress city. Eventually sometime the internal state policies derived this kind unrest and started attack to the settlement from the river route, which was basically internal navigation assault and it was common phenomenon positioning potential outpost for maintaining defense strategy. So technically both the internal and external maritime routes were important to settle down the fortified settlement on the bank of the courses. For the example the Mud fort of the sultanate period (1298-1529) used to practice with these strategically formation to resist their territory. And later on followed by the Mughals, to protect the main fort they established several fortress and settlements respectively to guard. They positioned strategically those river fort both in and outer navigation routes.

On the elevated land form (Figure 23)

The rulers of Bengal had the advantages of having the vast flatland while establishing the mega structure like fortress. But initially; the land used to taken care of to be raised from the natural geo-physical strata, usually in every riverine fortress city characterized with moat, trench or foci, this deep channel or the trench was artificially dig up and the removed earth was leveled for the elevation of the entire fortress. So usually the moat water was supplied through the adjacent river and the height of the city was gained by the filling earth form, 'enceinte' is a vital element for the fortification. Most of the riverine fortress of ancient Bengal were build with enceinte and surmounted by the deep channel. Enceinte- is also necessary for the delta land, because monsoon rain helps to increase the river water level during the rainy season and the land city mainland would be elevated from the ground level as the ground always flashes to the river. So inundation and other serge or floods could not hit the city because of its highland. In the military point of view watching for invasion is also primary issue to be elevated.

On the natural range of the rampart (Figure 23)

It has been recognized that Bengal is afloat land with having few hills on the south-eastern and north-eastern part. But there is another land form exists on the northern eastern part of the delta land. Called Varind high land. This Varind is the ancient landform of ever in deltaic Bengal. And the ancient mentors fascinated to establish their one of the territorial siege mechanism along with the settlement on the northern land of Bengal. As a results the north-western and north-eastern part s are still dotted with ruins of the fortified settlements. Because the Magh and Chinese uses to invasion form the upper river Brahmaputra and its surrounded region. This landform is elevated and most of the riverine fortress with mud structure used to be built. Because of free from the flood plains. (Figure 23)

Strategically, the river Ganges, river *Tista* and the river Brahmaputra respectively are flowing down from the highland basin and as the ancient territory of Bengal used to famous for their huge settlements outposts and other location identification were necessary for the heroes of ancient kingdom.

So eventually, they posted several settlements during their reigns and also as the importance of geo-political boundaries, to put the common people and the settlement safe from any kind of disintegration.

It is true; Bengal experienced building huge structure since Buddhist era, still the *Pundrabardhan* and *Mahavihara*²⁰ of *Paharpur* and *Shalbon* ruins²¹ shows us there brilliant craftsmanship and credibility to build this kind of huge structure. It is also noticeable that both the *Paharpur* and the *Shalbon* both *Mahavihara* were the fortified complex. So the attitude of having the concept of fortification by means of construction is bit familiar to the people of Bengal. But the common people sometime react on this kind of huge structure; they think to have the architecture by means of a liberal and democratic way.

²⁰ Buddhist Monastery in Bengal

²¹ Another Buddhist Monastery at the South eastern part of Bangladesh

Sultans and other Pre-Muslim rulers adapted the primitive (Buddhist and Vedic) procedure with the amalgamation of the local and the prevailing style. Being the tropical region south-east Asian managed to handle big or the mega structure both on earth and even on the water. Although the materials constrain, in Bengal conquers were confident to stable a huge form of structure in the fertile land with the vision of the historic overview.

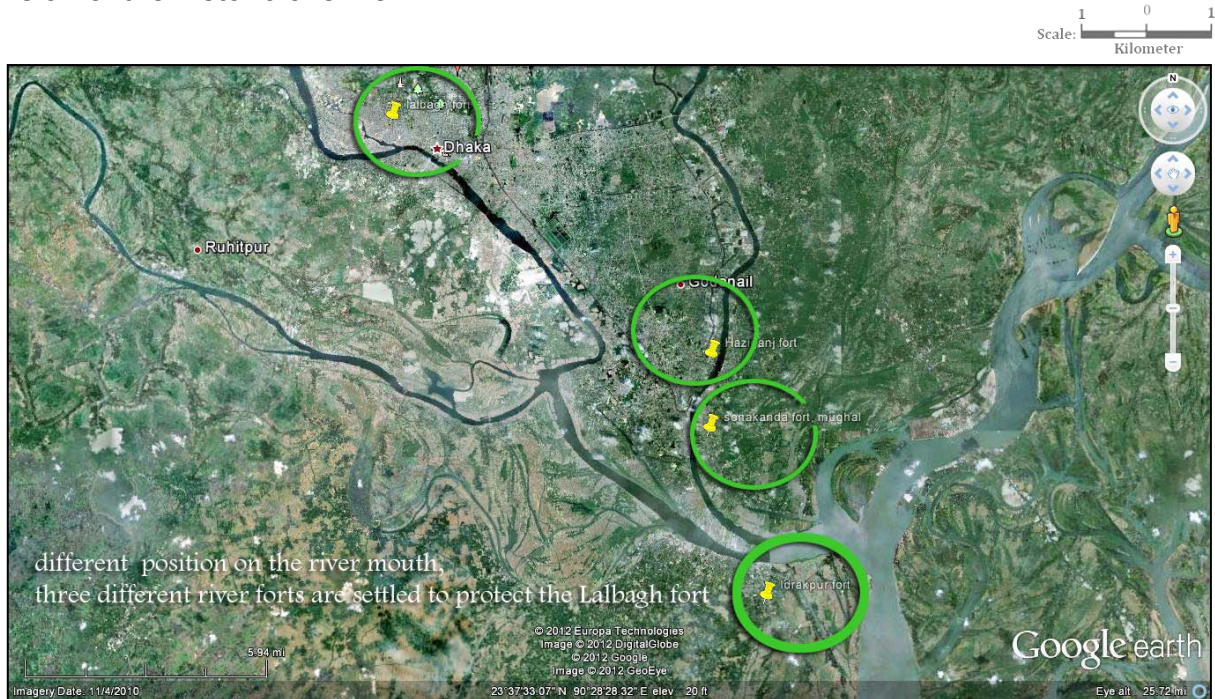


Fig.24: for the Mughal Kings took the strategic points on the major river junction along with the outer navigation and inner navigation routes, in the satellite view we can identify the hierarchy of positioning the river forts respectively to protect the main land as well as the prime fort, different position of the river mouth, three different river forts are settled to protect the Lalbagh fort
 Source: Google earth 2012 and studied out with Photoshop works by Sajid Bin DOZA

Intelligent structure could be termed as; the structure with proficient structural advancement, the structure which has the diversified functional curriculum, structure that grew with ‘purposeful’ technique and having purposeful building this kind of configuration is associated with supportive and special tasking. Such situation was observed during the medieval period. It was comprehensive to build structure in such manners.

It is also important to select sites for the mega structure like fortress, *Pundrabardhan* is such example which methodologically and rationally developed by those phenomenon. The practice of making huge or the mega structure in our land was laborious, but the value of the architecture became a unique characteristic for the region of Delta area. In the summery it could be mentioned that, Setting, availability

of building materials, traditional craftsmanship, the nature of the course of waterway and lastly the strategy of positioning the placement for the river fort were the identical key elements to settle the mega fort structure. The independent sultans built unique river fort in Bengal, Gaur is another best example among these. Unfamiliar geo-physical environment shaped the river fort architecture of in an expressive silhouette; the flat land and the river with tidal force along with the critical setting the fort used to build up. On the northern region of Bengal the defence system of the fort was allocated just on the mouth of the river, so that the enemy could not get into the internal navigation channel. Once the outer navigation flow is blocked or protected it was impossible to penetrate through the outer navigation network to the inner route. Major junctions of the river route were chosen by the sultans. The connectivity, stimulation, course of action and the settings of land is along with physiographic formation of the river and land was totally a synchronized phenomenon to house a river fort. Peculiarities in land formation evolved fort architecture of in forceful characteristics from the other forts of the sub-continent. Most of the mud fort used to build during the sultanate era, and these forts used to choose the site on the comparative elevated land for the clear vision, some time the elevated ground was developing by digging up the land and with the proper fortification planning moat was designed. Sometime the sultans choose the natural rampart for fortification also.

So the strategy of choosing the site was mainly evolved with the location matter, basically on the deltaic edge or mouth the Pre-Mughal and the Mughal people established the mega structure like river fort. Advantage of waterways, ground-height, rampart, tidal force of river and the slope of the embankment were the main involved components of establishing the river fort of Bengal. The sultans took necessary defensive measures and evolved river forts in the delta. The river forts mark a blending of the defensive requirements of the sultans and the physiographic peculiarities of Bengal.²²

The forts of this (sultanate period) period were of the following categories: (i) *Damdama* Forts (or siege-forts); (ii) Capital Forts; and (iii) Border Outposts.

²² Begum, A. *The Hajiganj fort and its architectural remains*. Dhaka: National Academy of Fine & Performing Arts. 1996

But the forts built during the Mughal period in Bengal may be arranged under three heads: (i) Border Outposts; (ii) River Forts; and (iii) Palace Forts.²³

A comprehensive study of the origin, growth and development of ancient fort architecture in Bengal makes it clear that it did not reach its climax in the Mughal period. The ideal type of fort building was built during the early Buddhist and Hindu and followed by the independent sultans. The achievement in the field is best reflected in the full-fledged example of the *Pundranagar* and citadel of Gaur.

1.2. Objective of the research

We have tried to identify the site situation, location matter and positioning the river fortress on the frazil land of the delta. To start objective of the research we must link the scenario with the form of art of the city, people and functions. At the same time we would seek for the original settlement pattern and the fabric of the city critically however, that is needed to justify the fortress including the riverine city.

The objective of the research is firstly to identify and to analyze the 'morphology of the ancient riverine fortress city and settlement' in terms of spatial pattern of ancient Bengal. It is about the findings of the people, habitation and search for the city's inherent 'form of the arts'. This research would find the fabric and the pattern of the city, its planning approaches, and the hierarchy of the built form, street patterns, water supply-sewerage system, other infrastructures and commercial activities by the river side. This is related to the site selection and choosing of the fortress application.

So, secondly, the strategies behind choosing or positioning the sites. Since Bengal is a flat land and mostly the river routes have been passing through the flashing land. To establish a huge public hub, accordingly the city turned into the certain pattern with the defensive system; topographically or the geographical situation governs to choose the land or the setting. Tis part of the objective criteria is vital issues to elaborate. The research desire to understand the policies, strategies and to choice

²³ Begum, A. Mughal forts in South Asia: An architectural study. Proceedings from *IAHA'04: The 17th Conference of International Association of Historian of Asia*. Dhaka. 2004b

the location for establishing the fortified city considering all kinds of protective administration. Through this objective issue issues researchers might find the proper and the possible orientation of settling the riverine fortress city phenomenon on the venerable land of the delta. This strata of the objective prolongs the conception of fundamental and the primary aspect of fortification in Bengal. The research is focused to the ancient city formation, understanding the physical pattern of the city, which is essential. As we knew that Bengal history is lacking



behind of these field of research, meanwhile the art and architectural historical background are mostly missing part in the literature. So, thirdly, objective is to justify the and documentation on spatial pattern of the residential and the commercial fringe by the bank of the river. To view history in a different way, the advanced possibilities to understand olden times through 'Digital Heritage' would be the notion of the research outcome, through this outcome the research would not desire to fulfil the cavity of the historical information but also the objective of the research would be aligned with the usual study of history. Starting from the school level one student can clearly understand the glory and the details of specification of the historical glorious past of his motherland Bangladesh.

And finally, focus on an ancient riverine fortress city 'conjectural-formation' through ancient literature reviewing and by the evidential reflection from the sites. The Hindu and Pala architecture was not strictly domestic, and remind flexible towards regional conditions and building tradition as happened in Bengal. The study will explore for

meaning of visual ancient settlements in the subcontinent and its transformation in Bengal with a focus on defence strategies and its physical manifestation as well as the digital heritage phenomenon.

1.3. Scope of the research: rethinking as the advent for the nation

What scope would be sourced out form the research? What is the potential of this research in the national as well as in the international field of development of academia? Based on the primary question; the research scope is to fulfill cavity in-between the imperial historical boundaries and the historical background of the physical manifestation. Historical literature is all about the thinking of theoretical approaches towards the imperial achievements were absent of the common people's triumphs, sorrow and the pattern of the ancient city-settlement. A vital gap also observed while continuing research in between the archaeological exploration and theoretical knowledge in terms of technical supports of elaborating the historical knowledge. The research orientation would take the opportunities to create bridge among trans-discipline. To fulfill the historical research in the scientific background with the help of the pictographic elaboration and 'authentic imaging' for unfold the neo approach in the study of history of art's field, we may call it 'Digital Heritage Phenomenon.'



Figure 25: This is an artist's reconstruction of Mohenjo-Daro Image credit University of Minnesota, USA. The image however shows the pattern of the settlement as well as the fabric of the city. At the same time the city dwelling characteristics and the fortification mechanism in and outside the wall have been shown, yes it could perhaps not the ultimate of all and end statement of the city; it may chances with more research practice.

It is necessary for the country like Bangladesh where ancient historical study is based only on the monolithic course of curriculum; starting from the primary education till the higher studies in the history of arts; the whole mechanism of continuing syllabus is out of context now. This research would fulfill the spontaneous relationship both in the field the art history and also develop the skill of growing the new skills for elaborating heritage in a new Language.

So what kind of scope of context would this research be seeking to?

- A new search would be expected to amalgamate the contextual analysis along with the image making description.
- Primary education of Bangladesh would find privilege to rethink about the history course in a modified path/with lots of pictographic analysis.
- For the researchers of the particular field; would find the initial or primary database (harmonized with conjectural restoration related with the study) to continue their findings. It may perhaps could be the beginning and explore in different branches of the disciplines.
- The restored pictographic elaboration could help the common people to receive and to recognize better in accepting the 'historical chronological phases of Bangladesh'

Statement: A way forward to the nation

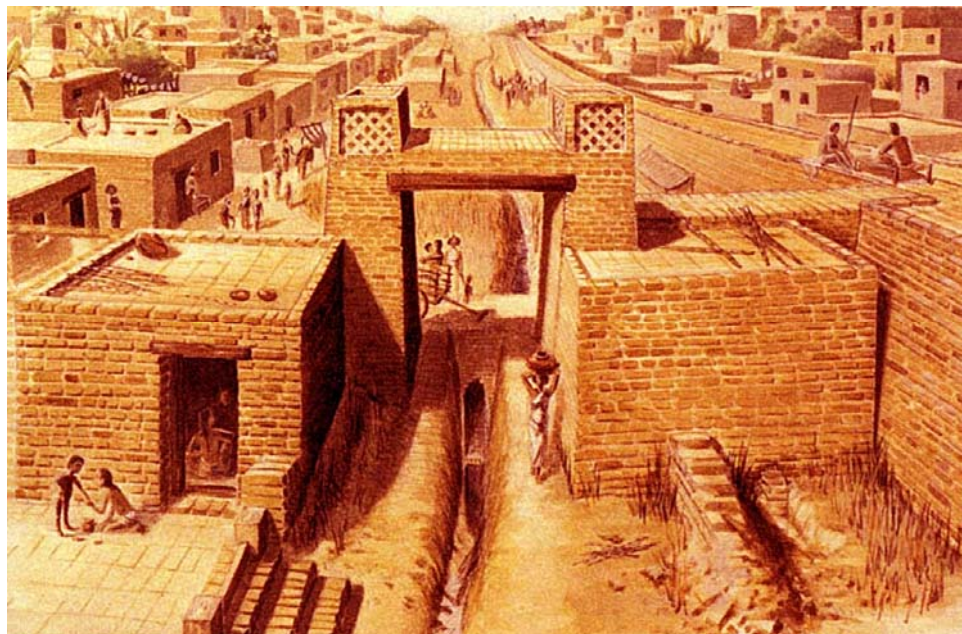
History and historical analysis is always changing with new findings and discoveries. Astonishing ideas and innovative formulation of historical evidence are still excavated beneath the earth, while researchers explore the colourful and intelligent structure of the ancient epoch. We think sometime, the history is backdated and it has no contribution in the advanced, contemporary pace of life and fading past. This notion of thinking needed to be rethought. Eventually, in Bangladesh the evaluation of the historical study and practice of the related phenomenon are very seldom and inadequate. We have the long political history stating the king and adjacent establishment of the situation. In the field of the historical arena; historical education in Bangladesh is unwell to collect and to continue the historical research in the trans-disciplinary field. People are less aware regarding the historical motivation. It is not the people's blemish or culture. But Since the schooling and in the educational curriculum, heritage and core historical studies are in a neglected

situation in the learning align. While the young generation are getting far away from the nurturing the particular issue. In Bangladesh vast area of research for the historical studies has potential, but skill, knowledge and the technical know-how are few and under applied in the field of the heritage site. More knowledge and feedback of study is necessary for the nation to promote forward and farther investigative cultural heritage study analysis. The research objective is very distinct at the three focused area to fill the gap of the knowledge of rethink and to admire country's own historical image in the nation's mind as the mental mapping.

This scope of the research is profound with another notion of thought to restructuring the curriculum of Historical studies in the primary education of schooling of Bangladesh. New generation are the backbone of the nation, along

Figure 26:
This is an artist's reconstruction of the gateway and drain at the city of Harappa. Image credit Chris Sloan. University of Minnesota, USA

With this image we find the infrastructures along with the construction technique. The people and the activities of the region, through analyzed mixed media skill.



with other understanding, the youth are allowed to learn their glorious historical situation in a very spontaneous path obvious not in the way of very common as usual thought. School of history, culture, arts, heritage and architecture have authentic right to involve with the other parameter of study from the beginning of a fresher/student.

Continuing the cultural legacy of the glorious facts of Bengal, only to confer the knowledge of innovation of learning the heritage in an artistic and dramatic appreciation could take the nation to the way of progression and prosperity.

1.4. State of arts of the research: Importance of the subject

“Riverine Fortress city of MAHASTHAN in Deltaic Bengal: In search of the traditional settlement pattern of ancient cities”—titling the research focus. Ancient Bengal had the opportunity of having the location advantages, because of the Bay of Bengal, on the south, on the north the rivers are criss crossing and coming down to meet the sea, and from the topographical point of view Bengal became the richest and famous river ports and hub for the maritime circulation. It should be mentioned that this delta land was chosen by the historic monarchy for the trade and to settle with their triumph as well.

This research is to provide a clear conception about the fortification in the delta land with local course of action, since the Buddhist era the idea of fortification, notion of introvert architecture and the massive brick constructions for the monasteries were executed. The research would like to focus and to connect with the ancient form of fortification. As the other monarchies and rulers used to follow the same path of conception for housing the enrichment.

So in this focused phenomenon, the search is obtained to relate with the ancient form of the fortification. The Hindu kings and the Emperors of Bengal followed the chronological way of developing the fortification along with the settlements on the flat land of Bengal with bricks.

Both the Sultanate and Mughal rulers; although they had the contained formula²⁴ of establishing fortification brought from their homeland Asia Minor (Constantinople); but was humbled to pertain the contextual flavor in constructing the mega architecture like the fortress cities in Bengal. Obviously with the settlement pattern in and around the fort walls of the city or its establishment are the major area of the research and the summery would be drawn up with the image of restored environment or ambience with the proper state of the arts that may be the conjectural restored sources at the end of the study.

²⁴ Contained formula: is inherited by the predecessor's art of war and fortified attitude, all the way from Persia.

Many research studies were explaining the fort and the fortress phenomenon, but as mentioned above that 'settlement pattern' – has no clear elaboration regarding this, meanwhile, classification of forts and their characteristics were noticed. To elaborate the state of the arts of the discussion the research complies the need to provide some references to make the urgency of the study.

What kinds of works have been done on the topic?

The research titling "Forts of Medieval Bengal: An architectural studies"- Ayesha Begum at her research²⁵, authentically expressed the classification of forts over the subcontinent, in that research Bengal's contextual fort were also mentioned. Natural source of defence was focused point of notion in this reach. Also paying attention on the defence strategy and components of fort architecture. All these explanation was documented in literary format. And thoroughly mention the name of the forts in different region and the topographical situation.

Mrs. Begum also addressed on the entire area of ancient Bengal is dotted with numerous forts. Due to scarcity of stone, forts in Bengal were usually mud-built. Almost all pre-Muslim forts of Bengal were mud-forts. However, with the passage of time these have turned into mounds. So far as ancient and early medieval Bengal is concerned it is very difficult to reconstruct the history and architectural pattern of the forts due to extreme scarcity of structural evidence.

She also noticed in her dissertation that- fortifications of medieval cities like *SONARGAON* and *KALIFATABAD* cannot be traced accurately due to the encroachment of the rivers. In the capital city of *PANDUA*, some remains of fortification walls have survived. *EKDALA* was a siege type of fort or *Damdama* fort and is typical of the forts of Sultanate Bengal.

The city of *GAUR* with its central citadel is the lone surviving structure of fort architecture and the last specimen of its kind stated by professor Begum. On the other hand, even here a good number of buildings are known to have disappeared

²⁵ Begum, A. Lalbagh: The Mughal Fort. *Journal of the Bangladesh National Museum*.1993. 2(1)

while some survive in dilapidated condition in this once famous capital. Gaur sultanate capital was the full bloomed city with trans-disciplinary approaches that still shows the contemporary solution, formation of a sustainable city.

She also mentioned most medieval cities were defended by means of surrounding rampart walls. In some cases, for additional protection, vigorously fortified citadels were added in one corner of the town. And remarked - 'The outer fortification and central citadel of Gaur, even in their ruins, are not difficult to identify'.

"A comprehensive study of the origin, growth and development of medieval fort architecture in Bengal makes it clear that it did not reach its climax in the Mughal period. The ideal type of fort building was built during the time of the independent sultans. The achievement in the field is best reflected in the full-fledged example of the citadel of Gaur".²⁶

According to the book "Discover the Monuments of Bangladesh" Nazimuddin Ahmed²⁷ edited by John Sunday, 1984, UNESCO, Dhaka- in the chapter 'medieval fort'- the author mentioned on the north and north western part of Bengal, which is partly ancient land form and elevated from the sea level at about 12 m. the geographical as well as the topographical advancement name *Varind* high land, was preferred by the heroes of the territories and Ahmed drew some statements regarding the Ahmom Kingdom²⁸ near the Karatoa bank. Some part of the area were for them also crowded by river forts. In the reference Ahmed notified the views of strategic point of settle the forts on the north to the south of Bengal to protect the land from the Magh and other Arakani pirates.

He also clearly stated characteristics of the mud forts and their existence now the present days. The elements of those forts and their location advantages elaborately discussed in the book chapter. Ahmed focused thoroughly from the northern

²⁶ Begum, A. Lalbagh: The Mughal Fort. *Journal of the Bangladesh National Museum*.1993 2(1)

²⁷ Ahmed, Nazimuddin. Discover the monuments of Bangladesh. Dhaka: University Press Limited. 1984. Print.

²⁸ The Ahom Kingdom. *Circa* 1826. The kingdom was founded by Sukaphaa between the Dikhau and the Dihing rivers in the 13th century, and by the end of the 19th century, the western outpost was the Assam Choki, or Hadira Choki, contiguous with British territories. The southern boundaries was defined by Doboka and Dimapur. The eastern portion around Bengmara, the Matak regions, was under the autonomous control of the Barsenapati. Jorhat became the capital of the kingdom after the Moamoria rebellion.

topography to the southern part of the Bengal side. Ahmed explained Hindu king monarch, with their own developed fortification process that influenced the Bengal's northern enormous mud forts. After the arrival Muslim monarchy in between 13th century the Bengal kingdom expand as far as the river Karatoa. Beyond this lay three distinct lines of defence to protect the southern frontier of the Hindu Kingdoms of north-east Bengal and Assam. In fact, the first line of defence was the river Karatoa itself, which seemingly was then a large river and thus an effective barrier.

Other than that Ahmed also elaborated different river forts of pre Mughal and their position on the northern part of Bengal. Maintaining the river controlling management. Lastly he also mentioned about the Mughal river and encampment forts on the south eastern part of Bengal. He relentlessly described the Mughal fort characteristics and their other components as well.

A.K.M. Shanewaz, in his book 'The Cultural Heritage of Bangladesh', 2009, Banglabazar, Dhaka- basically focused on the 'medieval Bengal' socio-cultural scenario. He described in detail about the land, people and cultural legitimacy of Bengal. The book chapter focused part was prominent and guided by the medieval art, literature, architecture and the social life.

Among all chapters the book has tried to create attraction on the social and contemporary life of the ancient Bengal. The ups and downs of society, racism, Hindu cast and the cultural continuity during the ancient and medieval era were discussed area. Relationship and hierarchical social strata are the informative part of the study. Going through this literature review, one can visualize the structure of the trade and commerce activities obvious the religious sequences. Meanwhile the facts and the figures of the common people of the fortress city; in and around the walls were taken to account of to promote the different levels of the social infrastructure.

The book also took the attraction of overall phenomenon regarding the 'co-existence' –in the social life as well as the contemporary social form of the time. The story is not all about the empire's achievement and desire, but also the story of common people are laid down in and outside the walls. Through this literature review social

infrastructure and the clues of the society formation would be the resourceful agenda for the state of the earth.

According to A. M Chowdhury wrote in BANGLAPEDIA²⁹, National Encyclopedia where mentioned *Pundranagara* the earliest urban centre in Bangladesh, the antiquity of which goes back to the 4th century BC. The earliest mention of the name (*Pudanagala*) is found in Brahmi inscription³⁰ during archaeological excavations have proved the antiquity of the place. On the basis of the above mentioned Brahmi inscription, HIUEN-TSANG's account, who visited the place in the 7th century AD, and the early medieval literary text of *Karatoyamahatmya*.

He also elaborated the *Pundranagar* continued to be the administrative headquarters of the territorial division *PUNDRAVARDHAN*. From the *MAURYAN* period to the end of the rule of the Palas, if not of the Senas. In the Gupta period it was the centre of their rule in Bengal, the capital of Pundravardhan *bhukti*, situated on the western bank of the Karatoa it was well connected with other parts of Bengal through land and river routes and it thrived as an important centre of trade and commerce throughout the ancient period. It continued its importance in the early Muslim period.

Aniruddha Ray, from Islamic History and Culture, University of Calcutta, West Bengal, India, in his report "Archaeological Reconnaissance at the City of Gaur: A Preliminary Report", *Pratna-Samiksha* (Calcutta), 1995, No 2-3, 245-63;-explained Gaur, City one of the largest medieval cities in the Indian subcontinent, was the capital of Bengal from c. 1450 AD to 1565 AD. Located on the eastern strip of land between the Ganges and the *Mahananda* rivers, in lat. 24°52' N. and Long. 88°10' E. in his report the Gaur city of Sultanate Bengal got the priority for the both imperial zone and also for the common people's lifestyle, their trade and commerce situation. Mr. Ray thoroughly explained the commercial area of the Gaur walled city. The residential pattern and the materials of construction including the finishes also. The

²⁹ BANGLAPEDIA: National Encyclopedia of Bangladesh

³⁰ Brāhmī is clearly attested from the 3rd century BCE during the reign of Ashoka, who used the script for imperial edicts. It has commonly been supposed that the script was developed at around this time, both from the paucity of earlier dated examples, the alleged unreliability of those earlier dates, and from the geometric regularity of the script, which some have taken to be evidence that it had been recently invented.

Source: Daniels, Peter T., and William Bright. *The World's Writing Systems*. 1st Ed. New York: Oxford UP, 1996.

streets having hierarchical pattern, the sewerage system, the elites house descriptions and the focused Gaur as the inland port of south east region. Professor Ray also mentioned about the *Chaitannya*³¹ and Allauddin Hussain Shahi³² (1459-1565). The reading also addressed on the social and core socio pattern of the people of Gaur. Mohallah became popular during the Sultanate Gaur. So brilliantly he explore the Gaur city had the two types of fortification one is the moat and the embankment and another is massive walls. Professor Ray also noticed that the city was developed since the Buddhist and Hindu period; lots of Buddhist and Hindu evidence are identifiable in the site which was later the commercial hub of Gaur.

In the BANGLAPEDIA, National Encyclopedia of Bangladesh, Jasmin Sultana have given important information regarding the *KOTALIPARA* fort, it is one of the ancient Bengal's trade city. The city was fortified with walls and rampart and the different part of the cities were adjacent. Many evidences have found to justify the riverine fort city. The trade city Kotalipara had connection with poles apart riverine trade city in this south eastern region. She also explained *Kotalipara* a fortified city of the ancient independent kingdom of *VANGA*. Situated on the river *Ghagar* about 28km southeast of the district town of Gopalganj, it was also known as *Chandravarmankot* and is mentioned in the *Ghughrahati* copperplate of *Samacharadeva*. JAMES WISE³³ thought it to be the capital of the '*Gangaridhi*' state mentioned in Greek accounts. However, it seems more reasonable to link it with the ancient 'Vanga' state. According to her discussion Bengal was suppose to be aligned with for its and that compiles the inland port city also, eventually they have connection among them in terms of the city trade-transaction.

³¹ **Chaitanya Mahaprabhu** (also transliterated **Caitanya**, *caitanya mahāprabhu*) (1486–1534) was a reincarnation of Krishna in eastern India (specifically the states of West Bengal, Bihar, Jharkhand, Manipur, Assam, Odisha & (East Bengal now Bangladesh) of pre-Independent India) in the 16th century

³² **Ala-ud-din Husain Shah** was an independent late medieval Sultan of Bengal, who founded the Hussain Shahi dynasty. He became the ruler of Bengal after assassinating the Abyssinian Sultan, Shams-ud-Din Muzaffar Shah, whom he had served under as wazir.

³³ **Wise, James** civil surgeon of Dhaka in the 1860s and a writer. He had eagerness not only for medical science but also history. He sent a considerable number of impressions of stone inscriptions for Blackman's *Contributions to the Geography and History of Bengal*.

Farida Nilufar, Department of Architecture, BUET. In her article³⁴ “Gardens, Parks and Open Spaces in Capital Dhaka: Mughal Period”- Professor Farida had pinpointed on the Mughal open spaces of the ruling time of Mughal Dhaka. The present Dhaka city has much struggled surviving Mughal evidence, as Dhaka was the Mughal capital (1608-1764). She also distinguished different spatial pattern according the Mughal city pattern, the green garden space and the public gathering spaces for the congregation. Ms. Farida also mentioned the morphology and the expanded nature of the growing Mughal city of Dhaka.

She also elaborated consciously on Mughal city Dhaka, had in way a unique character with large ‘gardens’, within and outside the city. The Mughal city prime commercial space the ‘*chawks*’- is the most vibrant spatial order in the subcontinent, she mentioned that. The city was existed with two categories of open spaces, some were planned and others were spontaneous. On the other hand, the Mughal influence on the advancement of Dhaka was limited compared to their involvement in other parts of Indian subcontinent. Especially in northern India. She mentioned – ‘Mughal’s inspiration to build great cities was not supported by the landscape and weather of this region’.

The most important means was focused by Ms. Farida “Mughal administration was mostly busy to solve local problems other than building the city”. But still the empire of Mughal faced practical limitations; Mughals had left the trace of Lalbagh Fort, Chawk Bazaar, Bagh-i-Badshahi, which prolong their ideology to build monumental cities. Besides, there were gardens surrounding the palaces and inside the Old fort of Dhaka. Also focused on the street patterns with hierarchy although they were spontaneous, in its dense fabric. Open squares (courtyards) with public buildings - *KATRAS* and mosques were the identical structures of the period. Unavailability of a cartographic map of Dhaka of Mughal period, much information is taken from the written documents.

In the journal of medieval Mughal town planning titling “A report on Medieval Town Planning in India”- information have been provided elaborately on Sultanate kingdom

³⁴ http://www.academia.edu/245119/Gardens_Parks_and_Open_Spaces_in_Capital_Dhaka_Mughal_Period

and Imperial Mughal era. The report is definite to the ruler's identification and their role of works during the reign of the respective Sultans, The Froze shah Kola, fortress fort - is the mentioned in this chapter with the zoning and strategic policies of fortification. The early medieval structures and their establishment of pre Mughal period also described in the report. On the other hand the imperial Mughal period and their chronology of conquer were shortly described in the literature. But the Mughal city planning and their components of the city in the subcontinent was the preferred topic. Components of the city were elaborated with short notes and the town planning of Mughal conception was focused area. Simultaneously the policies of Mughal garden and the spatial environs were discussed phenomenon at the writing.

Identifies any controversies within the field?

The area of the field of study is occupied with ancient and medieval river fort information. Although each research is elaborating the characteristics and the description of the general idea of the situation.

The research demands more information regarding the ancient riverine fortress city characters, the order of the organization and the pattern of the settlement and the city in a 'crystal clear mental image'.

This 'crystal clear mental image'- is obvious for continuing the micro research in to the macro parameter. But having all these different orientation of studies the research is still misty with the contemporary database and the technical point of views. Most of the study except the Shahnewaz and Roy could perhaps shows some dim illuminated orientation for continuing the research now on. While both of them have brilliantly draw by written description a picturesque environment of the people, land society and the city itself. These clues are very essential in the new road map of our research demand. Meanwhile, the other relevant studies catch the potential for various clues. Off course still those research are not deal with confusion and controversy, but need further illustration to keep in the popular mind as the mental image, form that point of view, our research is really seek to look at.

Any recent research which has raised questions about earlier assumptions?

There are no research previously built up with the combination and condition of multidisciplinary process, it is hard to find such example to compare with city and settlement pattern with visual elaboration, but except few researches were published in a very small scale. So continuing practice with the conjectural restoration illustration and its supportive phenomenon are still missing part in the history of art and development institute. So the field is unoccupied and missing this part of research activities.

Concludes with a purpose or thesis statement

To end with the state of the arts; it is obvious for the research is to orient with the research theme, and then the missing part of the literature reviews; that would lead to the 'white page'- from there the initial statement could be drawn, as an architect and the researcher, I would prefer to drive the research may take the responsibilities to promote the riverine fortress city- With the findings and proper elaboration of value, people, demand of the spatial qualities, the ancient morphology of the riverine fortress city pattern, cultural prototype and along with their conjectural image pattern This statement will sum up and evaluate the state of the art in this field of research; in a review that is an introduction or preparatory to a thesis or research report,

1.4.1. General approach

The research would follow the approach to go by the usual or the general reference which is the justified statement for the study. So the general approach would be entitled with:

- The ancient historical literature or the epigraphic support would perform better role for findings.
- Relevant researches; that may be the way guidance approach, through the light of the relevancy studies some assumption could be drawn for the desire research.

- Statements of the ancient voyage made by the philosophers and explorers might show the path of research goal and could elaborate with the research interest.
- Pictographic information; Cartographic information, Ancient photographs and drawing, perhaps be the clue of the research.
- Ancient trade route identification and analysis takes the research scale to the different dimension.
- Existing Site surrounding and the remains of the ruins: and present situation have the possibilities of having some clues to deal with the research importance.
- Study of the ancient river course and their pattern of changes would be a vital observation to identify and to reconstruct settlement pattern in a physical approach.

1.4.2. Study Process

This particular research is following the ancient history, culture, people and the micro level of understanding of riverine fortress city and settlement patterns. In this passage of the vast historical knowledge of journey the study notion is aimed to unfold the morphology of the ancient city and the settlement pattern through the visual state of medium. The research would explore with a new language of skill; drawings and reconstruction of the visual circumstances.

Yes, the research is valued with a new idiom of understanding the ancient historical knowledge, not only through the literature writing but with the scientific justification of conjectural restoration of the image of the study and the area of research.

To nourish those virtual pictographic researches, site analysis, justification of the statement of the historical travelers and the philosophers' references are very much fundamental database to secure the imagination of the thought.

The Research would keenly need to study the ancient configuration of the cartographic mapping to 'uplift' the environment, along with the ancient diary of the

famous tourists and philosophers; proper reviews of the relevant topic are necessary to cross-check with the time line process and also with the western writer's point of views. Research must occupy the other part of the world's knowledge to understand the views of the state of the facts. So study process might have the consideration to juxtapose the criteria to satisfy the study process.

Sources of historical specimen (primary and secondary sources):

To justify and to unfold the ancient historical statement of Bengal there are references and sources would be discussed, some ideas and guidance are elaborated herewith. There two process of practicing and coordinating historical studies; primary and secondary sources. In the evidential field of historical research the primary resources contributed a lot to justify the archaeological exploration and hence it is often called archaeological resources.

The reference and resources of Ancient Bengal Primary resources

- a. **Artifacts:** the site Mahasthangorh, Mainamati, Varatvaina, Wari-Bateswer etc. where the artifacts were found and the civilization is judged with those evidential elements.
 - This evidence provides information and condition of the ancient contemporary socio-cultural life style.
 - Provides the idea and situation regarding the contemporary religious means
 - Generally four course of sources states the socio-cultural condition of the community
 - i- Costume, hairstyles and ornamentation
 - ii- Musical Instruments
 - iii- Vehicle and arms

Basically at the archaeological sites usually contains religious sources. Such as

- Buddhist religion related cultural edifices; that form stone to convert in terracotta
- Hinduism and Jainism consist of some cultural edifices.

Local ritual and folk arts have got some kinds of cultural influences in the field of the archaeological resource.

- Terracotta and sculpture were embedded with Ramayana, Mahabharata Krishna-story for the daily worship- an authentic source for the reformation of history.

- **PANCHATANTRA** is elaborated on the temple façade with medium of terracotta. On the other hand the literature resources are concern with ancient **RAMCHARITA** or **CHARJAPOD**; by translating we can find research evidence and the contemporary situation of society and cultural concern.

Inscription and copperplate:

Restructuring the political, social, and economical up-lift of ancient Bengal, the impact of the inscription and copperplate is the direct and authentic finest sample to understand the contemporary condition. The inscription used to curve on the sculpture or on the establishment as the routine works during those days. But the copperplate used to distinguish for the feudal lord or for the official, and it was elaborated.

Sculpture, art and architecture:

Buddhist and the Hindu period is the golden era for the introducing sculpture works. Identifying the sculptural formal expression, entity, ornamentation and the stylistic appreciation are could be the source of research evidence.

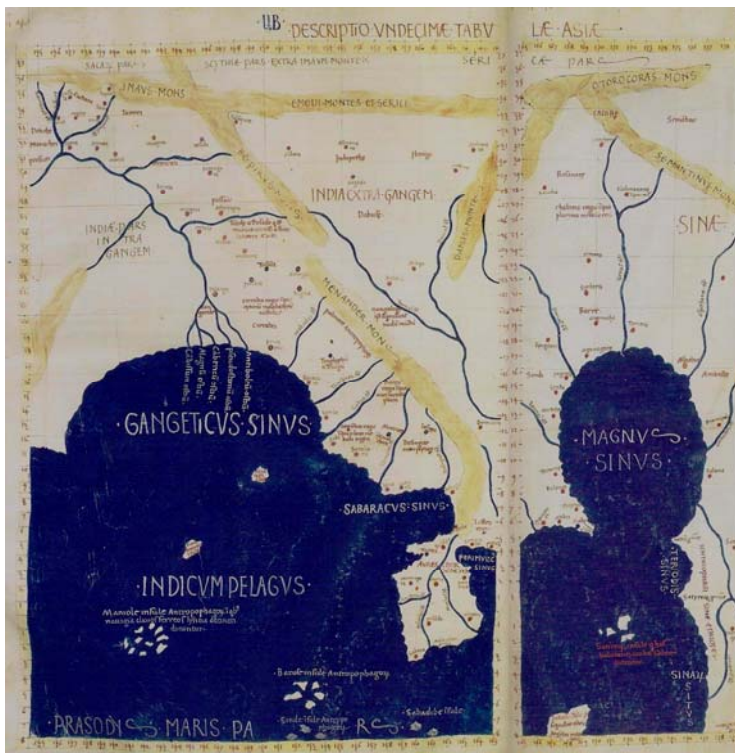


Figure 26:
Source: Ptolemy's map- Detail of East and Southeast Asia in Ptolemy's world map. Gulf of the Ganges (Bay of Bengal) left, Southeast Asian peninsula in the center, South China Sea right, with "Sinae" (China).

Source:
http://en.wikipedia.org/wiki/Ptolemy%27s_world_map

Secondary Resources:

The resource of secondary data are entitled and collect or gather source from the ancient traveler who visited the ancient Bengal, the cities, structures and the locality. They have their own writing in original and references are collected from their diary. Especially with the passage of time lots of Chinese voyagers traveled through ancient settlements of Bengal and they documented with some of contemporary situation of the society as well as the statement of the area. In this case there are three distinguished tourist writers; they are FAHEYAN, HUENSUNG and ITSUEE.

1.4.3. Survey and interviewing the site cases with relevant sources around the region

Technically and theoretically, research is needed to justify with the with the multidisciplinary approaches. Literature reviewing is the authentic field of the search for knowledge. At the same time practical database and site existing site situation could be the form of gathering the resources as well. This kind of research is obviously would be leaning with existing site forces and the current situation of the region parameters. Eventually local historical elaboration is an important practice of involving in the research criteria. Local means and the statement of the 'living human heritage'-at this case are very much essential. In this connection study process also could be entitled with the tensional activities with the field works, different views and opinions would be coming up to testify the research in full bright terms. Local experts and specialists could draw important comments that may align with the research study process. This study process is trial and error medium of understanding to reconstruct knowledge skill for restoring the ultimate scenario.

Eventually, interviewing to the local experts, site evidence, nearby situation and the literature elaboration would be compiled together for the research database as the documentary film, because the short development documentary would eliminate much confusion for this kind of research. So in line with this study process or the methodology, short film (5-10 minutes) documentary would be appraised phenomenon for the research initial role of activities.

Chapter 02

Ancient Riverine Fortress Cities & Settlement Pattern in the Delta Land



Chapter Comprises

**2.1. Nature of riverine fortress cities and settlement pattern in the
Delta land**

2.2. Buddhist Monasteries as the part of the Settlement Pattern

2.3. Case studies: Considering the Era (Period)

2.3.1. WARI-BATESWAR (450 BCE), Fortress trade city, Norshingdi,
Bangladesh

2.3.2. PUNDRANAGAR /MAHASTHAN (5th-12th Century A.D.), Ancient
capital of PUNDRA Bengal, Bogra, Bangladesh

2.3.3. KOTALIPARA fortress trade city (C 380 A.D.-467 A.D.), Gopalganj,
Bangladesh

2.3.4. BHITORGARH (6th Century AD) Fortified City, Panchagarh,
Bangladesh

2.3.5. GAUR (11th-16th A.D.), West Bengal, India & Rajshahi, Bangladesh

2.3.6. KHALIFATABAD (15th Century A.D.), Bagerhat, Khulna, Bangladesh

2.3.7. DARION mud fortress (14th Century A.D.), Rangpur, Rajshahi,
Bangladesh

2.3.8. MUGHAL river fort and adjacent neighbor settlement, Bangladesh

2.4. Remarks

2.1. Nature of riverine fortress cities and settlement pattern in the Delta land



Figure 28: all ancient settlement along with the river beds, Bengal land formation covered with sediment topography, which ended towards by the flow and fall in to the Bay of Bengal. Generated by Sajid Bin DOZA, with the association of Google earth image

In Bengal, the land formation and geographical situation governs to adapt the pattern of settlement and its other phenomenon in diverse morphology. The ‘Ganges valley civilization model’ shifted and changed the fabric of city pattern in different area through the way of long flowing courses. Stating from the Indus civilization (Indo-Pakistan) till Pundranagar (Pundrabardhan, Bengal) the mode of the fortified urban orientation and concepts excelled vital morphological substances due to the contextual constituents. However, most of the ancient cities of the sub-continent characterized with some distinguished ideology in developing the urban context; the religious attachment with the city, trading priority and fortification to resist the rival and the natural disaster are the prominent factors. Meanwhile, river and water courses became the imperative instance for trade and commerce appreciation. Although the city was fully religious and major areas of establishment occupied with the religious and monastic activities in and around the fortified walls, so the ‘morpho-structure’ would have the focal point or the focused area, in the subcontinent the Ganges Valley was blessed with both the religious origin and the inherent flourishing trading center. City and settlement is a changing pattern of system, it changes, and it moulds itself with the need of movement and time. It always tries to keep balance to maintain the relationship with the natural and manmade intervention.

The '*Indo-Bengal land formation*' covered with sediment topography, which ended towards by the flow and fall in to the Bay of Bengal. (Figure 28)

The MAHASTHAN (Pundranagar 3rd BC-12th AD) ancient city of Bengal established by the side of the incensed/frenzy river KOROTOA, and the river had the ancient internal navigation route system, it has been observed and witnessed linked with several famous ancient cities, during the contemporary time and MAHASTHAN became a inland port city, so by the definition; an inland port city used to engaged with particular geographical situation, the elevation of the mainland and the network with other territories. However, at the same time ancient deltaic fortress cities amalgamated with the religious connections, as we observed for instance; that MAHASTHANGARH was properly cherished by religious infrastructures and through the historic references we find the city was ornate with stupas and temples, those are diminishing in the sky with shiny finials. Having said that, the environs of the city had the strong and mega engineering fortification. To control river courses, the massive thick walls constructed spontaneously with the contour of the rampart, eventually the high track of VARIND ancient land form was the position of the MAHASTHAN. The religious settings and infrastructures were identified as the hierarchy based pattern. For instance, within the fortified wall of MAHASTHAN Buddhist temples were located or constructed with several stratum, the primary stratum was entitled with mass activities and more rapidly to the river landing terminal or terrace; from where gathering of mass occupied the commercial and trading zone. Densely shops and Trading hubs were enclosed with public space and temples³⁵. The city also includes other official structures and infrastructures around the trading area at the north-eastern and north-western part. Tiny temple was excavated from the site of MAHASTHAN, eventually the location of the temple was at the initial second stratum, so in this zone could be termed as the semi-residential and the religious-institutional area. Mostly occupied with stupas and temples and some part of the pilgrims residential units. Not mostly as the monastery but the ambiance could perhaps would as well.

³⁵ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. Print.pp-2

The ancient Hinterland of Pundranagar (MAHASTHAN) assumption 'THE TOPOGRAPHY' during middle of the 8th to 9th Century AD. The PALA Kingdom.

Figure ground pattern of the settlement characteristics of the riverine ancient Bengal. Stating from the different realm and stratum.



Prepared by: Sajid Bin DOZA
Based on the MAHASTHAN and its Environs Cartographic information of P.C. Sen (1929 AD)

Figure 29: 8th century geographical situation has been elaborated with the historic references and literature reviews. The MAHASTHAN hinterland was connected with hierarchies of vicinities. Generated by Sajid Bin DOZA

And lastly stratum occupied with cluster of dwelling units and streets or pavers. Eventually more detail would be focused on the further paragraph. (Figure 29)

The residential area of the ancient neighborhood occupied with different occupational masses. For example, merchandiser, social worker, gold smith, black smith, farmers and porter were the inhabitants of the area, in most often cases the morphology remains same and it has been observe in other fortress cities. Like, PATALIPUTRA (পাটালিপুত্র), KOTIVARSHA (কতিবোড়ষো), RAMPAL (রামপাল), RAMABATI (রামাবতি) KORNOSUBORNO etc.

From time immemorial, the ancient Bengal is dotted with agro-based settlement and territories where dense population used to remain, but eventually, the localities used to grow up beside the river and the navigation routes. Meanwhile these mighty rivers frequently changed the courses and unprecedented floods forced to shift the settlement from one place to another. To keep the monarchy controlled and stabled, the MAHARAJAS (Kings) of Bengal established important cities near and around the water courses. Sometime the MAHARAJAS of Bengal used to build cities considering the potential of the area; such as the famous religious localities or often at the forthcoming commerce and trading oriented areas. In the PALA period the socio-cultural structures built up with based on the simple lifestyle, agricultural involvement, handicrafts and religious belief of domestic lifestyle. The ancient deltaic fortified urban core perhaps developed with two distinguished settlements, the city itself and to support the city strong agricultural based hamlet, meanwhile this hamlet always supported the urban core with food and other daily lifestyle uses as well as the trading supports. As usually, the city inhabitants were local elite, people from the forum of the palace, creator, artists, sculptures, merchandisers, etc.



Column capital of the late GUPTA and early PALA style
8th -11th Century AD. Sandstone. MAHASTHAN SITE Museum. Bangladesh



Figure 30: the figure ground plan is form the fortified city of KOTALIPARA, shows the supportive city. Generated by Sajid Bin DOZA

The riverine cities of Bengal corresponded the similar morphological patterns as existed in PATALIPUTRA, SRABASTI, AYUTTHAYA, INDRA-PRASTHA, PURUSHPUR, KAPILA-BASTU. These north Indian fabulous ancient cities were the jewels of olden sub-continent. Eventually, the cities like PUNDRANAGAR, KOTIBARSA, TAMRO-LIPITI etc. used to carried out all Indian ancient city style; during those contemporary days. Many evidence, literature, manuscripts references found mentioning the contemporary style of the cities.

Through this process the stylistics appreciation of the city could be understandable, meanwhile how it was before? We can find clues through this process. Initially we discussed that the ancient deltaic fortress city and its growth. By the side of the river KARATOA the Bengal's remarkable fortress urban context developed respectively since MURYAN, Gupta and Pala dynasties and became the capital of Bengal. The

specialization of this fortress city grew to cherish the religious mission of Buddhism, institutional expansion and as the inland port city activities with networking.

The fort city KOTIBORSHO (7th-11th Century AD), became the influential city during the reign of the Pala, Chandra and SENA Empires. At the same time BIKRAMPUR (770-1174, ruled by the Buddhist and till existed during the reign of Mughal period) became famous and well known for the Buddhist and Hindu religious activities, cultural and educational longings.

On the other hand PANCHANAGARI (by the side of the river Karatoa, Dinajpur, northern part of Bangladesh), PUSHKARAN, SREEPUR and RAMPAL all these renowned ancient cities developed during the Pala Kings and later further with the involvement of SENA Empires.

Especially, KOTALIPARA (540 Century AD), in the southern-eastern region of Bengal, were developed as the trading fortified city. This part of the ancient Bengal was dead-remote, it is really difficult to raise a civilization during those epoch, this city had two different part, residential, and trading with fortification, The names of three independent kings GOPALCHANDRA (c 540 AD), DHARMADITTYA (c 570 AD) and SAMACHARADEVA (c end of 6th century AD) developed the city respectively with effort and best concern.

SANDHAKAR NANDI³⁶, epic poem 'RAMCHARITA' described the ancient RAMAVATI, capital of RAMPAL, brightened elaboration could be found. He expressed in his writing³⁷...

³⁶Sandhyakar Nandi was an ancient poet from the Pala Dynasty. He was born in a Kayastha family of Vrihadvatu village near Pundravardhanapura in Varendra, Bangladesh. (Wikipedia). He wrote the epic poem Ramacharitam. A palm-leaf manuscript of the Ramacharitam discovered by Haraprasad Shastri is preserved in the museum of the Asiatic Society, Kolkata

³⁷ Majumder, Ramashchandra, Bangladesh Itihash, *Prachin Joog (Ancient Period): kolkata, 1974, 206*

“The huge wide streets are surrounded by brilliant white palaces covered with golden glided and shining with gold vase finials above the skyline. In many places temples, stupas, Buddhist monasteries, beautiful gardens with water bodies, sports complex, and several of eye catching landscape used to uphold the art and aesthetics of the city. Precious jewels, costumes, lifestyle, pure tune of instrumental music and authentic classical music used to make the city life and the inhabitants vibrant and cheerful. At the same time these all phenomenon uplifted the cultural identity in a higher summit.”...



Figure 31: an environment of the famous city as described by the poet and philosophers.

Drawing by: Artist Roy G. Krenkel Portfolio 1979.

Source: <https://www.pinterest.com/pin/158540849358915011/>

The Pala kingdom used to establish numerous fortress cities for the sake of prevailing and to control more than the territories all over the subcontinent. These all fortress cities contained citadel, residential blocks, several multipurpose buildings, cantonments, market place, temples streets, pedestrians and gardens.³⁸

The existence of these fortress cities were documented in the ancient regal copperplate manuscript since 6th till 13th Century AD. This time period duly marks the High epoch of Buddhism in ancient Bengal. In the ancient Buddhist copperplate, it has been mentioned; many ancient cities erected during the Pala dynasty and all of them were situated by the Ganges river valley or by the side of the mighty Goddess River Ganges. However it was important to create outposts over the Ganges valley (main stream of river course) starting from RAJMAHAL till PATALIPUTRA and passing through all the way entering Bengal, was protected to resist enemies and to protect the mainland. (Figure 32)

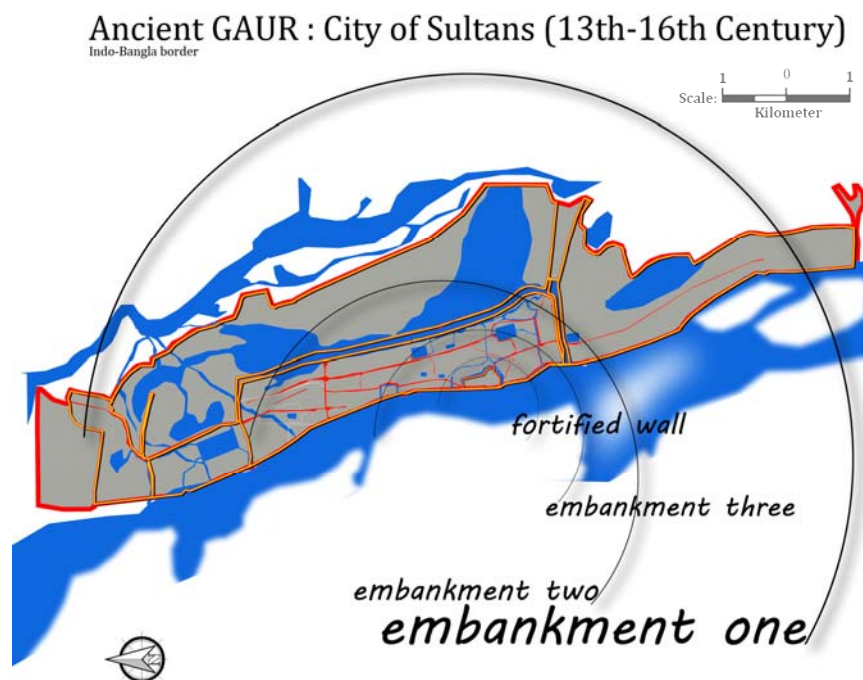


Figure 32: formerly this brilliant city known as the Laksmanabati, later flourished as the sultanate city of GAUR, most outstanding Muslim city during 13th till 16th century AD. Generated by Sajid Bin DOZA

³⁸ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. 3. Print

During the later phase of SENA period, King LAKSHMAN SENA far from RAMAVATI established a vast urbanization named LAKSHMANAVATI, at the meeting point of river *GANGES* and *MAHANANDA*, and away down from RAJMAHAL at about 25 miles. This city used to occupy the total land area about 10/15 miles across. This city had the great substantial fortified phenomenon. (Figure 31)

Observation

So, this reading provides us a glimpse about the nature and pattern of the fortified deltaic cities at and around the Ganges Valley. To understand the 'Nature of the city' is an important term as we are trying to identify the ancient urban matter, in the sub-continent ancient cities and settlements are complex substance to figure out physically. Most of the ancient cities are denoted back from more than thousands of years, more authentically Vedic and Buddhist period essentially have the ancient city formation, but those all are disappeared. Why?

Very easy to say, climate, moisture, inundation and materials are the prime means of erasing the glorious civilizations beneath earth. Last of all what we find; we find some references of very ancient copper plate writing, ancient drawings, literatures; as in the case of Bengal the ancient Historic traveler's 'diary-writing' helped out to refer the city position in a more satisfactory process. Those ancient documents had the elaboration about those cities. Sometime with surrealistic description or some other time preverbal with socio-cultural aspect of the area. Especially, for the case of ancient Bengal, physically most of the ancient cities only have the demarcation, but those natural landscapes became mounds or by some means dilapidated and people do not know nothing regarding the sites.

Within these all constrains, the researchers and scholars since couple of decayed trying to investigate the city and settlement in the delta land of Bengal. Many ancient historical incidences came in to the broad day light, some are still missing apart from the research, only for the exploration, and such as for the site MAHASTHAN, area was so huge and unprecedented to implement excavation on the field was really not only a difficult matter but also consumption of money, skill and energy. To find the detailed area components of the city a researcher must have evidential supports or

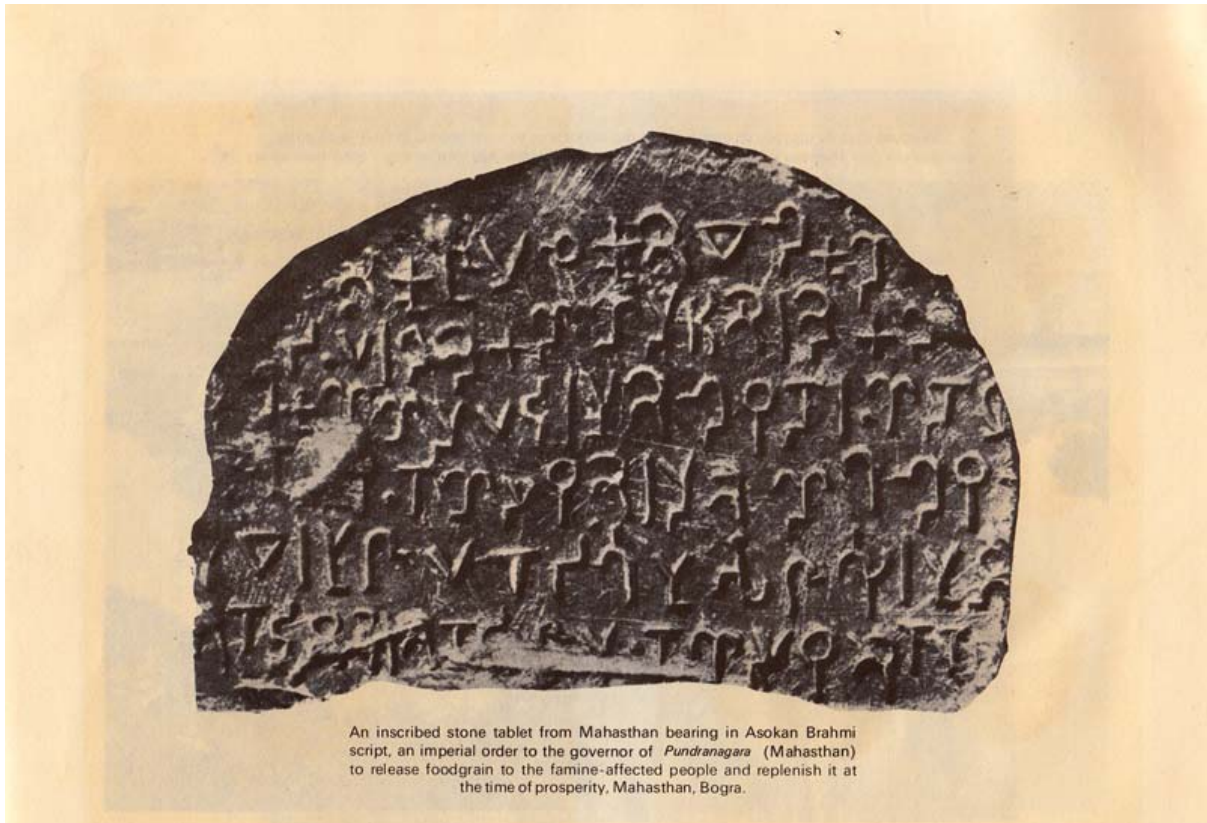
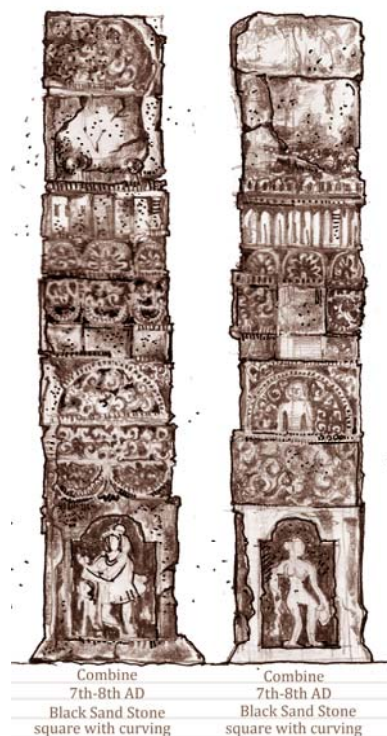


Figure 33: Stone inscription stating command to release food and other materials. Good governing system was executed during the time, which reflects the worthiness of the city.
Source: Bangladesh National Museum

documents that may hold up the black hole for the investigation, ancient cities in the subcontinents occupied with vivid nature of the planning, as we discuss regarding the ancient cities beside the Ganges valley, through literature review and antique inscription substantial references found to restore and to rebuild the lost historic situation. By this process the nature of the ancient city and related phenomenon could be sort out, although archaeological evidence becomes the prime factor to secure those references and clues, the ancient cities here described; all of them have been executed through the archaeological explorations and reported with clues and fundamental orientations. Meanwhile physical existences of those ancient cities are belonged with some primary scripting.

So it is intense search for knowledge and sophisticated comprehension, to accumulate nearest situation to rich the destination of the investigation, gathering form those sites. By means of collecting all those queries and questioning, we may ride on the perfect road-map, and that would perhaps the versatility in components of the ancient cities by the river with huge fortification.

Lastly, the Ganges Valley Ancient City basically combined with commercial hub before the river, the religious structures like monasteries and stupas were the legendary establishment in the first ring. Streets maintained the hierarchy, bazaar on the streets and prominence in religious and congregational activities used to contribute the lifestyle as economic life of urban core. Besides this city fortification became the important factor for the rulers of PALA kingdom. At last it could be shared that yet strangely enough it was precisely during this period that MAHAYANA Buddhism, under the patronage of the PALAS, became a dynamic international force and exercised a great influence in the ancient river fortress city planning.



Column of the GUPTA and early PALA style with delicate floral and figure carvings
MAHASTHAN SITE Museum. Bangladesh

2.2. Buddhist Period Settlement Pattern:

Buddhist Monasteries as the part of the Settlement Pattern

So the delta land fortress urbanism used to combine with several concerns; the land formation, the river, the settlement configuration in and outside the walls, moreover the religious inputs. Interestingly, this hinterland fortified urban settlement pattern could be observed in distinct typesets.

- *The settlement pattern inside the wall and*
- *The Monastery centric settlement. (Monastic Settlement Pattern)*
- *Marin martial settlement*

Nevertheless, to describe something about the settlement and neighbourhood fabric/pattern we might focus on our prime case study site of MAHASTHAN (Pundranagar). The city was walled but centring the walled city urbanization had generated 5 miles in radius.

The settlement pattern since in the ancient Bengal distinguished with unique characteristics, no matter what it is within the walls or in some other areas. The river has great impact to shape over the pattern of the settlement of delta region. From time immemorial, Bengal observed the civilization and neighborhood fabric clustered in a group with several infrastructural facilities; like tank (water body), agricultural land and prairie area for cattle. Meanwhile, the pattern generated from the rural settings and to format it in the urbanize context the 'fabric of pattern' converted in to close clustered phenomenon, as we knew the ancient deltaic riverine fortresses elaborated with zoning or hierarchical pattern, the residential or the neighbor area of the fortress urban core had the tendency to evolve the housing pattern in adjoined cluster form. Most of the cases the footprint were along with street, small courtyard, common sharing areas like water landing terrace, plinth of the religious congress, bazaar and specially the frontal street or lanes. Above and beyond, being a tropical region, foliage was the common attitude towards growing the settlement. Through this pattern sense of micro-climate used to occupy the particular small area. (Figure 34)

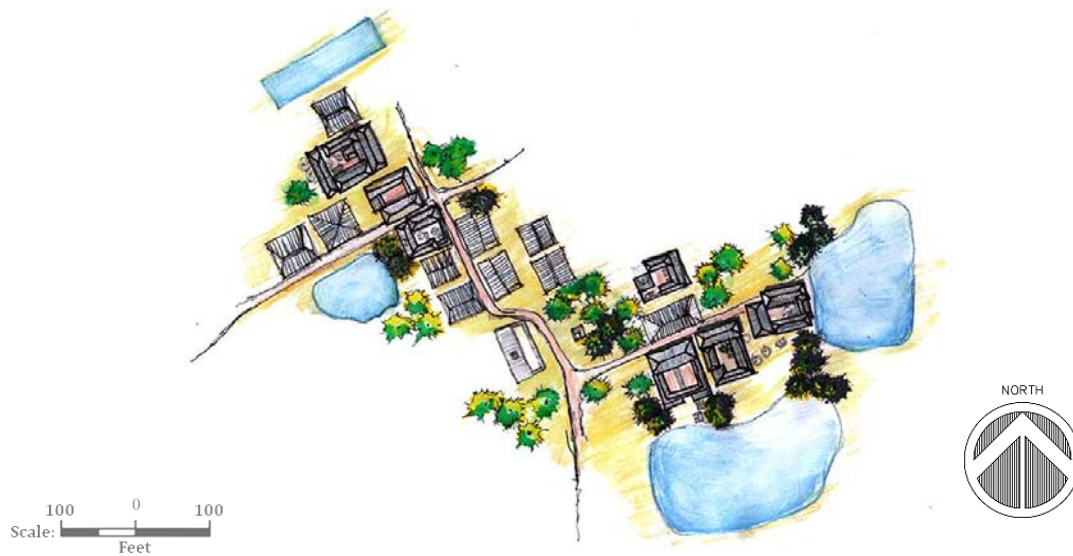
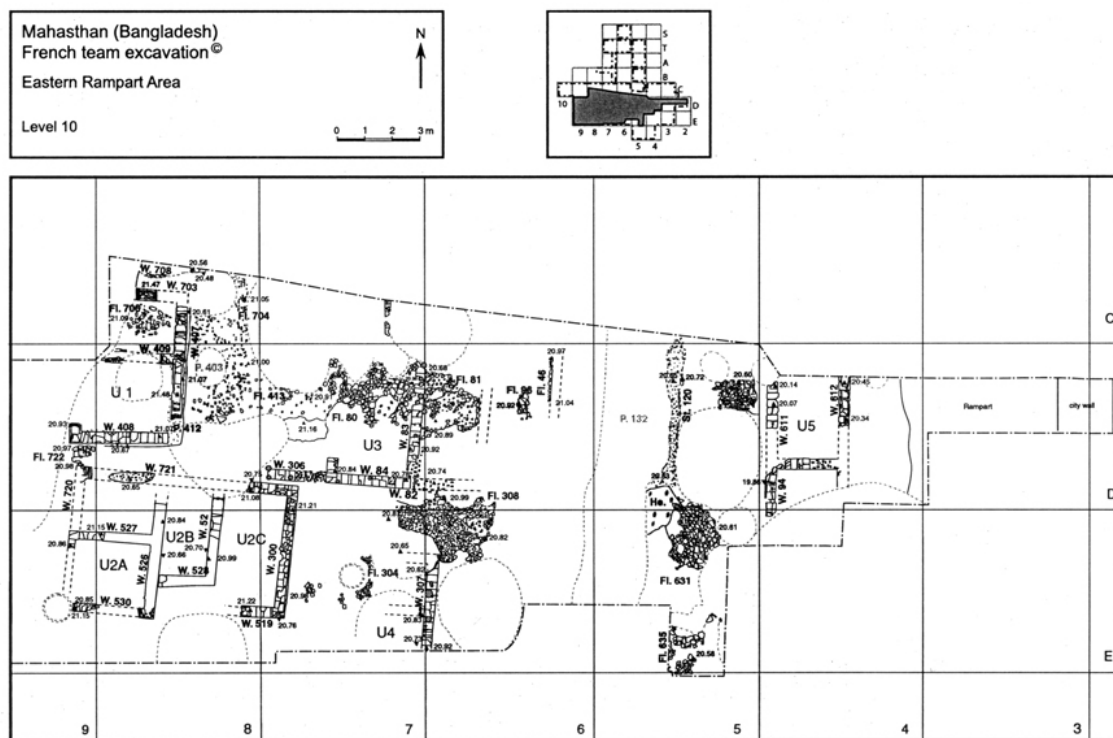


Figure 34: very common and usual type of settlement arrangement in the rural area, surrounding infrastructures are well off with inhabitant's desire. Cluster of house and linking with the organic thoroughfare are the very common and time immemorial life form of the villages. Source: students of 4th year of architecture, BRAC University of Bangladesh.

Other than that, Bengal, since ancient epoch is titled with 'hot humid region', because of the river and plain/flat (majority) landscape. Disaster, flood and other rudeness of climatic expression is a part of daily lifestyle of the people. Many civilizations erased due to this violent catastrophes. This is one of the prime reasons in keeping preserving the pre-historic and historic cultural heritage. At the same time, temporary construction materials, like clay and sundried bricks remain also the reason to continue with the tress of historical longings.

The topography became the vital factor settling down residential zone in the riverine fortress cities. To avoid the natural disaster and as because of by the side of the river, the housing unites usually grew on the elevated land form. At once, also to protect the intense residential area from the invaders. The population of ancient city used to maintain with per unit house inhabitants. Through the research discovery each unit contains five people during the PALA time. Within the wall the occupation of the people reputable with shoulders, officials, creator, poet, goldsmith, blacksmith, potter and smith.

Often the cluster was in group, however the neighborhoods was connected each other with several datum, such as the water body, streets or the connection of organic brick paved lanes or streets. Eventually the neighborhood had the attachments with the stupa or the temples. In MAHASTHAN the excavation by the French-Bangla team discovered this type of neighborhood situation form the north-eastern rampart, and streets are aligned in organic pattern. In Bengal other ancient cities also drew the same characteristics of settlement pattern, with the scattered clustered group. (Figure 35, 36, 37)



V. BERNARD, M.-F. BOUSSAC, J.-Y. BREUIL, J.-F. SALLÉS

Figure 35: excavation done by the French experts at the eastern rampart shows the thoroughfare pattern along with density of Buddhist timeline dwelling with special type of bricks remains.

Source: 1sr interims reports 1993-1999 on Mahasthan, by French-Bangla joint excavation team

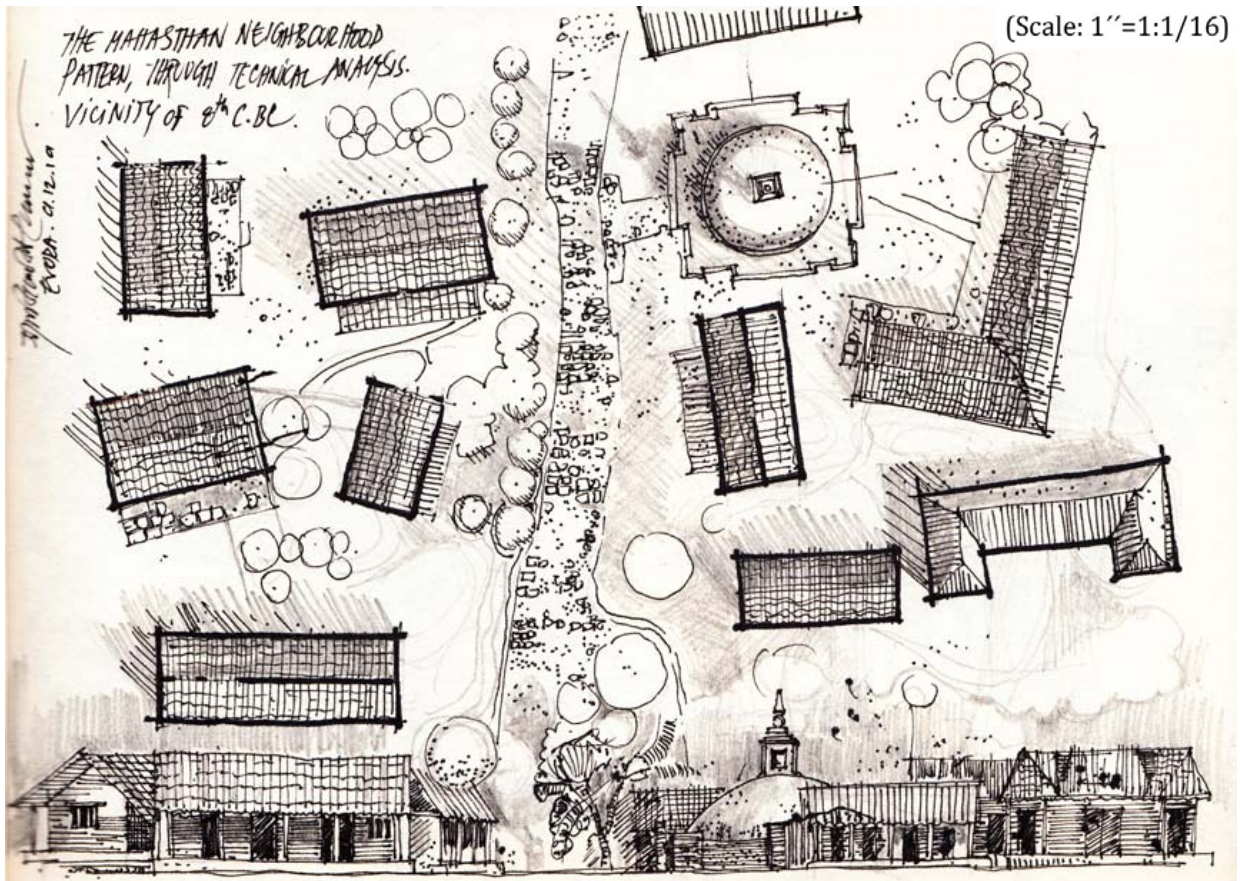


Figure 36: perhaps this could be the pattern of dwelling settlement with the references of the religious structures and the neighborhood style could be like the restored sketched image of MAHASTHAN. Sketch by Sajid Bin DOZA



Figure 37: an aerial view of the restored sketch, describing and imaging the Buddhist prioritized neighborhood in the walled city of MAHASTHAN. Approximate 8th Century AD. PUNDRAVARDHAN

The Monastery centric settlement. (Monastic Settlement Pattern)

Monasteries in the early days of Buddhism were merely a garden retreat where a number of irregularly grouped buildings were to be found for the accommodation of monks who congregated there during the rainy season. Usually these were sighted in secluded surroundings in order to avoid the turmoil and bustle of the city's crowded life. But within walking and begging distance of the city on which the monks primarily depends for their living.

Among all the decision, Buddhist period carried out an unparalleled pattern of settlement in Bengal, importantly the Buddhist religious territories used to occupy with monasteries, stupas and temples. Especially in MAHASTHAN it had been observed, the city was spread over from the centre to the main urban core. Having said that, the common settlement pattern used to prevail in and around the hinterland. Although, Buddhist pilgrim settlement pattern was unique and it generated adjoining 'the religious establishment'.

Those stupas and temples are located between MAHASTHAN and VASU Bihar (reputed monastery of mid-7th century), and may represent an attempt by those who sponsored the construction to bring activities closer to the city while that time maintaining a symbolic distance between the economic life of the urban core and the contemplative life a purely religious domain. Within the walls of MAHASTHAN there are reports of religious structures dating to PALA period as well. The French archaeological team discovered near the gateway on the southwest interior walls corner of the fortification³⁹. A pair of temples of 8th – 11th century AD was associated with neighborhoods' and it was thick.

The main notion of this religious settlement used to envision a supportive neighborhood although the monasteries are self-sufficient with infrastructures, perhaps, when a huge purposefully site specific mega-structure is established, informal development of housing grow with the organic sequences. However, that might have various or scattered orientation. It is common in all over the subcontinent with the settlement, which might have the progression or develop around the

³⁹ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 70. Print.

prestigious monument; the same obsession occurred in the case of the Buddhist pilgrim neighborhood patterns. One question may arise; do the ‘twice-patterns’ of neighborhood used to intermingle each other? The answer possibly would be...

Yes, the Buddhist pilgrims and the common people countenanced the interaction obviously during the enticement of the religious missionaries, often in the health concern interface and in the commercial hub (bazaar). This special kind of settlement pattern had versatile fabrication in and around urban core. Truly depends on the mass of the monuments. So it could be the unique in footprint or figure-ground pattern. The other infrastructural matters used to go with the major thoroughfare orientation, or along with the streets and lanes. Although most of the construction was with temporary materials, but some evidence still gives the references aligning with this observation, (see figure 38, 40 & 42)

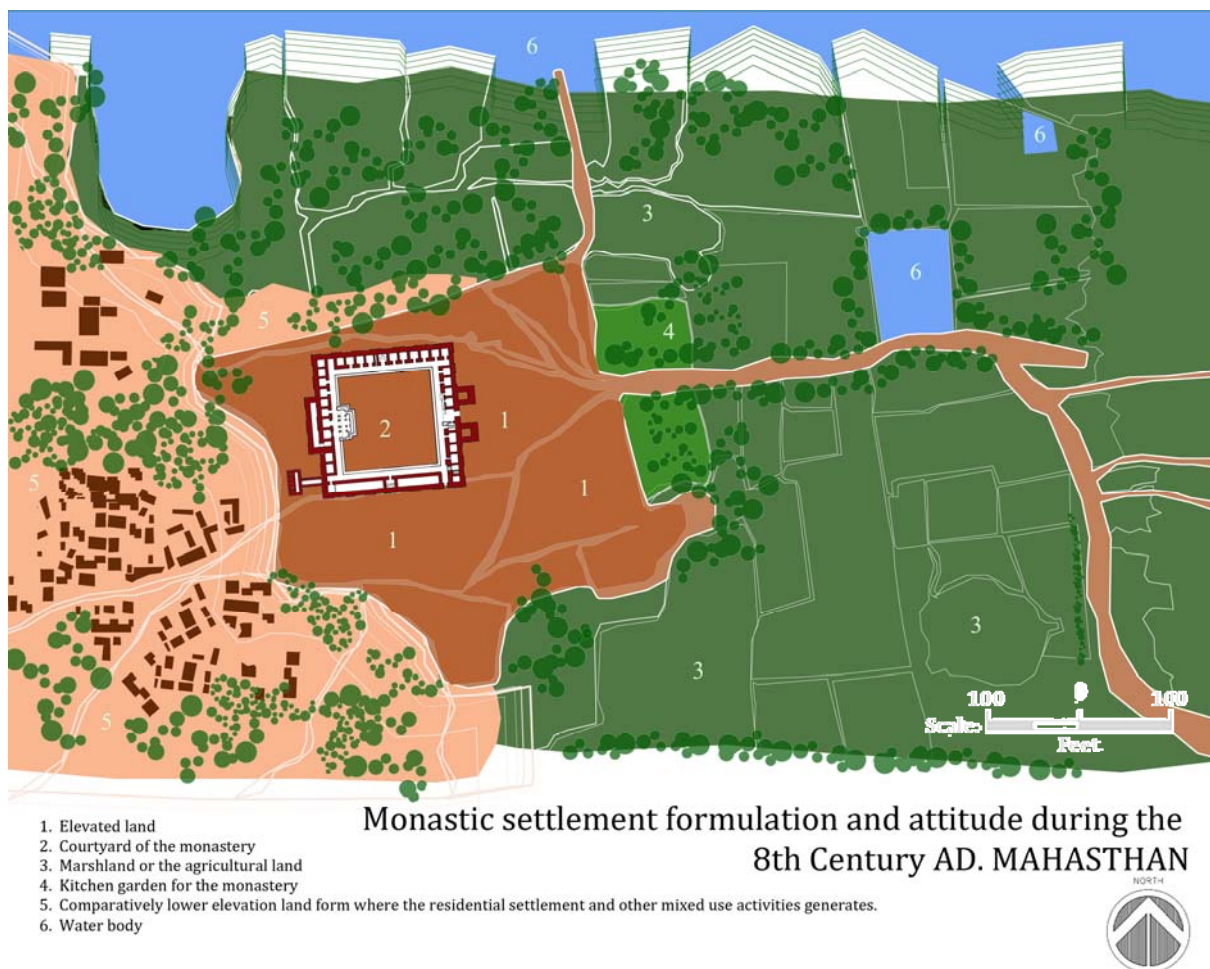


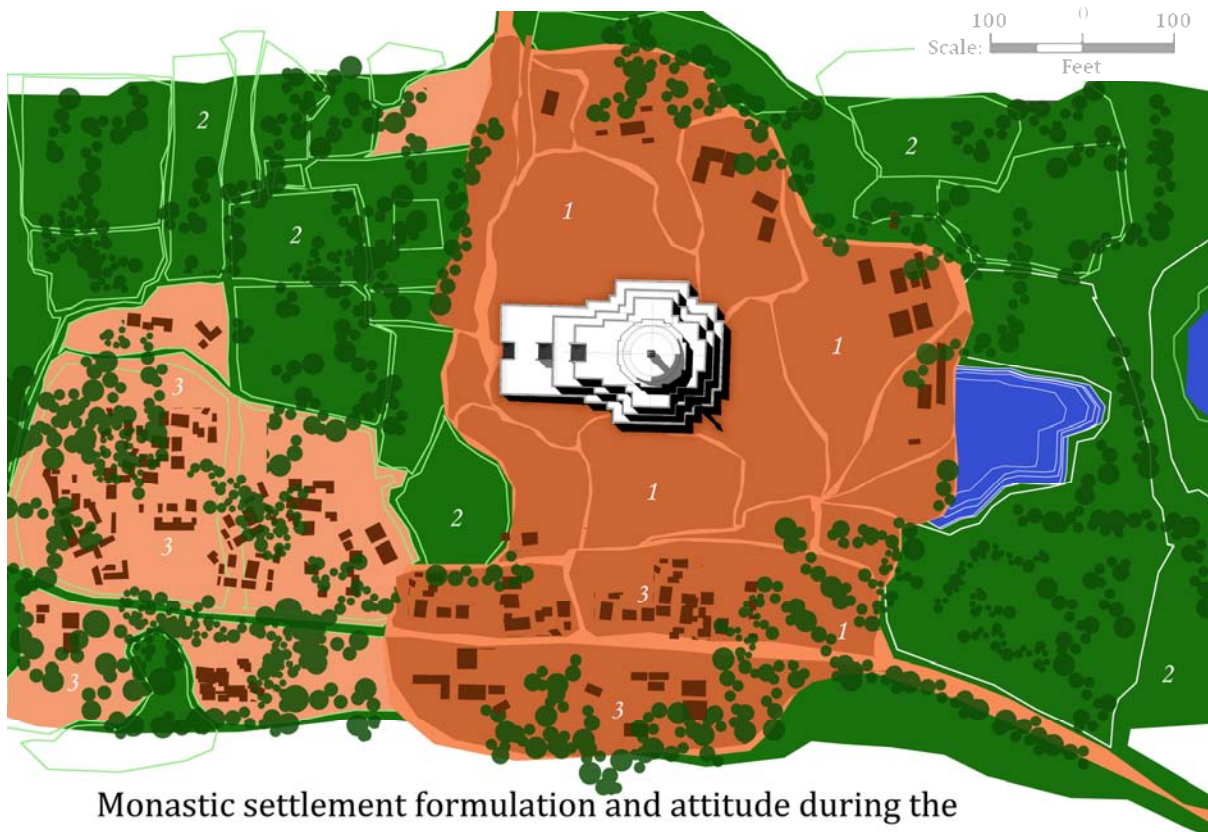
Figure 38: the monastery and its surrounding with the traditional settlement pattern.
Generated by Sajid Bin DOZA

The south-western part of the MAHASTHAN urban core, structure discovered and it is totally dissimilar from the north-western part of the city. It is really most distinctive architecture with a kind of artificial hill and name is GOKUL MEDH (step). in the southern rampart of the MAHASTHAN, this curious construction was built with lattice of bricks cells solidly filled in with the earth appearing a densely packed terraced monastery, with completely extra ordinary course of action. The construction was greatly enlarged in the subsequent PALA period. ⁴⁰ GOKUL Step was the stepped Buddhist stupa temple, and it was gigantic, a similar tiny urban core generated to feel up the economic life of the city (Figure 41). This monument was also alike of the BODHNATH Stupa founded on 7th-till 8th century in Kathmandu, Nepal. The surrounded inhabitant pattern used to compose with artificial ponds and following the mass order. The common people housing in Bengal is combined with mixed use pattern, for this region, the settlement pattern was obviously spontaneous and frequent.



Figure 39: clockwise: a remarkable stupa temple wit terraced roofing and perhaps used to diminishing upward. This structure is today ruined, but exists with the foundation which is suitable for the tropical region

⁴⁰ Alam, Md Shafiqul, and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 70, Print.



Monastic settlement formulation and attitude during the 8th Century AD. MAHASTHAN

- 1. Elevated landform, where the most often the monument or the monastery established
- 2. Agricultural or the marsh land
- 3. Residential, neighbourhood pattern with mixed-use activities around the monastery or the stupa-temples



Figure 40: The same stepped stupa temple called GOKUL MEDH with neighborhood surrounding



Figure 41: a conjectural restoration of the urban core of GOKUL, the GOKUL MEDH (stepped temple) is visible from the hamlet. Restoration sketch developed by Sajid Bin DOZA

Vasu-Bihar

Monastic settlement formulation
and attitude during the
6th-8th Century AD. MAHASTHAN

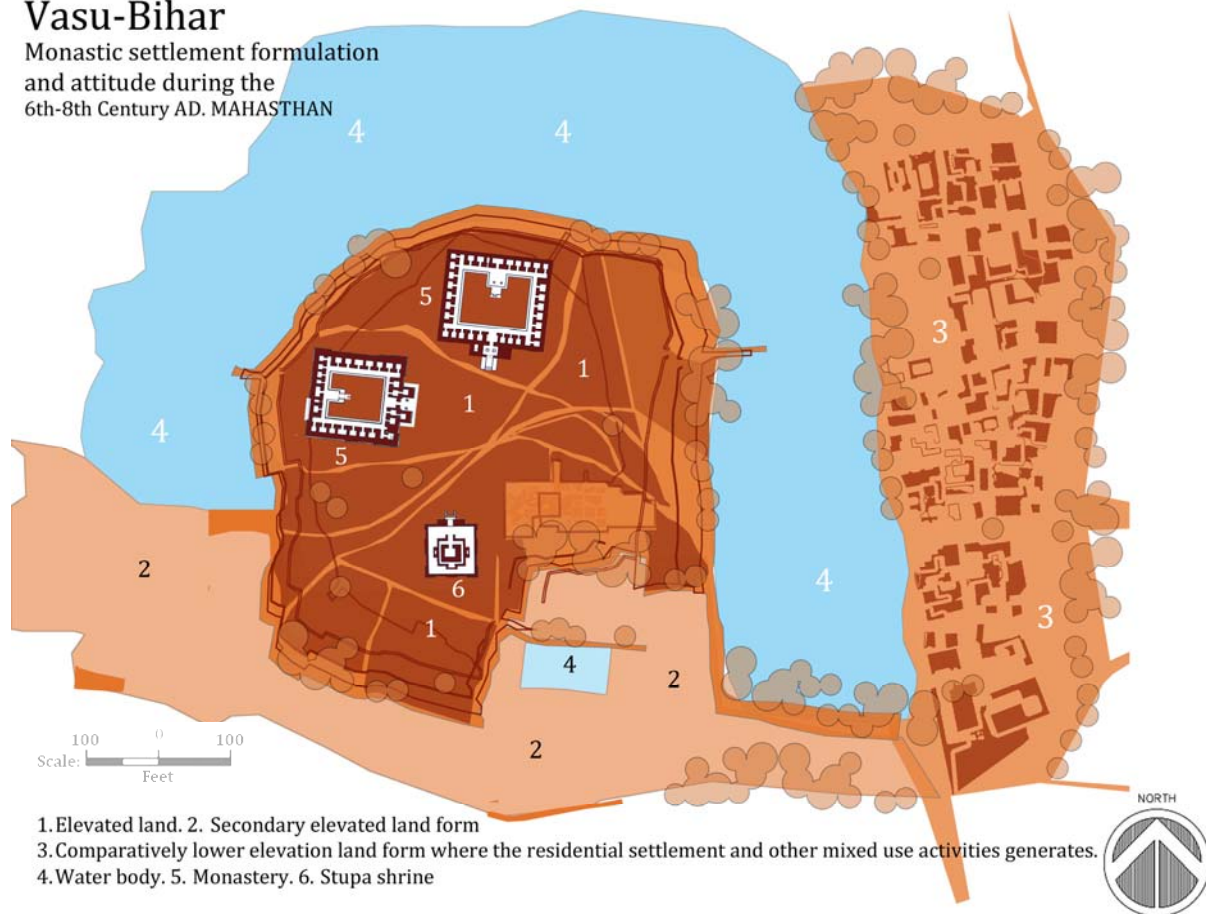


Figure 42: economic urban life of the monastery, during the 8th century perhaps the pattern of the vicinity would arrange to serve each other. Developed by Sajid Bin DOZA

More settlement pattern could be justified with the understanding the strategic plan of the ancient cities, let's start with another civilization of ancient Bengal which is almost beneath the decay of time. The riverine fortress urbanization 'Wari-Bateshwar' region in Narsingdi, Bangladesh is the site of an ancient fort city dating back to 450 BCE. The 2500-year old ruins being unearthed near the old course of the Brahmaputra River are a major archaeological discovery in South Asia.⁴¹ The fortress city was vast in areas, at the same time rampart used to govern the entire region; thoroughfare had the great impact to the settlement. It seems the housing and fabric pattern used to have elaborate hierarchy in designing the spontaneous city. Almost scatted and densely populated housing pattern used to prevail in this ancient city. Along with the thoroughfare became the significant symbol of

⁴¹ https://www.google.pt/?gfe_rd=cr&ei=Yqg_VKjnC9GZ-AbisoGADg#q=wari+bateshwar

urbanization. It is supposed to be the settlement pattern duly developed around the WARI-Citadel. On the other hand as we are oriented with the scattered pattern of settlement with infrastructures, the rampart used to set with the linear form of settlement pattern, which continued almost all over the territory. River ARIELKHAN and the bed of Brahmaputra extensively used for passing through by this early settlement and huge population were directly commuted in the different part of the subcontinent.

Settlement pattern in Bengal was brilliant. To be secured from the external forces or invaders and also to prevent different sort of calamities the MAHARAJAS of this territories built the fortress urbanization logically. River network, High land, moats, trench connected with the river, positioning different functions along the area and lastly the importance of the site revealed to settle a fortress territories in delta land. The ancient settlement pattern of BITARGARH, 6th century riverine fortress was an unusual territory, the old Himalayans pediment plain in the north Bengal. The river Karatoa and its branch TALMA flow just by the site and extraordinary twin fortified wall settlement generated during the Gupta epoch. A larger city with urban central core by means of double fortification/ring fortified wall, the second wall contained the citadel and relevant official darbar and other administrative facades. And the first fortified walls were spread with the organic urban fabric, trading and commercial area used to be in the middle of the area and other by the side of the river, to catch the potential of the river-scape. Two distinct different strata to serve the fortress city by the bottom of the Himalayan older pediment. So the extreme point of view settlement and inhabitant pattern grew around the ancient Bengal, and they all are unique in generating the pattern of environs and vicinity.

Marin military settlement

Although Deltaic fortress settlements grew by the bank of the water ways, till then there are some pattern of settlements developed with noticeable manners. Because, the settlement in the delta land possessed the notion to promote the security through the maritime routes. It was a major strategic plan for the PALA Navy Territorial Army; they were keened in the aqua fortification only as because of the delta and the

geographical situations. Some special riverine fortress cities were specialized and conceived the theme, while building fortress cities. Among them in Bengal, at the northern part; the riverine city of MAHASTHANGARH (3rd BC-12th century AD), BHITORGARH (6th century AD) and down to the southern part KOTALIPARA (380 AD). At the same time, these cities contained huge population as well as broad neighborhood pattern. These kind of riverine forts are the 'juxtaposition of dual user pattern'. The physical pattern of this city allowed vast water body within the territory of walls;

Special channeling was taken through the surrounding moat to control navigation. Separate gateway executed only for this water access. During the warfare this system temporarily worked as the outpost encampment of the naval force of PALA king. All those riverine forts contain the tresses of the huge waterbed which is now become as the inundation area of the ruin forts. The settlement pattern obviously reached to the point of extremely ordered these forts cities used to contain disciplined barracks, used to place at a separate zone. Although this situation occurred once in a while to take position on the safe area. Form the point of the settlement pattern; this fabric of establishment is identical, but for the sake of the organic development of the other settlements the footprint remains mundane. On the other hand, the type of settlement pattern is unique, if we draw a figure-ground pattern focus would be going towards the vast artificial lake (not exist today, except low land and during rainy season inundation occurred). So if city contains a natural or manmade infill that creates impacts on the entire fabric of the urban core, it means that settlement would have been as the datum of all various activities of the city life. In the settlement pattern this type of situation would became necessity, especially in the remote south near to the Bay of Bengal outpost became necessity, same as necessary on the north, form where most of the rivers are entering to the largest delta land of Bengal.

2.3. Case studies: Cataloguing Considering the Era (Period)

The research is valid to understand other deltaic riverine forts in Bengal as well as in the sub-continent. Although the study has been analysing the nature of the fortress cities and the pattern of the settlement, but to execute the overall phenomenon regarding the settlement and fort pattern; case investigation and analysis is authentic. As the study is focused on the riverine fortress settlement pattern- it is utmost important and essential to review and to visit the historic sites of the relevant case studies. As because this observation and evidential effects could fetch the uncovered thought of clues, that may perhaps prevailed in the investigative sites. Having said that, the case studies are allocated according the time period. The case studies are also allocated with the cataloguing profile, meanwhile the topographical information is the authentic data to understand the situation of the ancient cities, its location and challenges of evolving the civilization. The research also would explore through the cataloguing the diversity in the city creation, and to unfold the virtue and the specialty of the study format. This cataloguing is to find the compilation including database to have vivid comments field of optional outreach, to accommodate qualitative and the quantitative elaboration;

Cataloguing helps to make easier or popular understanding to communicate common people, easy receivable, communicative medium of language. As a researcher I wish to come closer with the research matter, and intend to put trans-disciplinary approaches for researches.

2.3.1. WARI-BATESWAR (450 BCE), Fortress trade city,

Norshingdhi, Bangladesh

Establishment of the City: c. 200 B.C

Founder/kingdom of the city: during the reign of Mauryan dynasty

River nearby: Brahmaputra, Arialkhan

Type of the city: trading fort city

Remakes of the city: almost three thousand years old ancient trade routes

Reason for abandon:

Name of the present location: BELABO, NORSHINDHI, BANGLADESH

The geographical importance of the ancient fortified city WARI BATESHWAR in generating the settlement and civilization:

As it had been told before that most of the settlements developed beside the rivers, for embellishment this condition is prime and authentic. Since the prehistoric period it might be comprehended to fulfil this condition as WARI-BATESHWAR served. The ancient city was situated just by the foot of the vast dry forest and ancient landform of MADHUPUR rampart. The old course of river BHRAMAPUTRA, its branch ARIALKHAN, GANGAJOLI and KOYRA had been passed through this ancient land form. Distinctly river ARIELKHAN and old course of BHRAMAPUTRA are 4 k.m. away towards north, south and east. Eventually, this geographical situation along with high land form engaged to settle down with urban core as the WARI-BATESHWAR. The archaeological evidence of the ancient city is survived beneath the earth with 48 different spots or archaeological remains. The researcher of the particular project are still exploring enormous investigative samples and profiles.

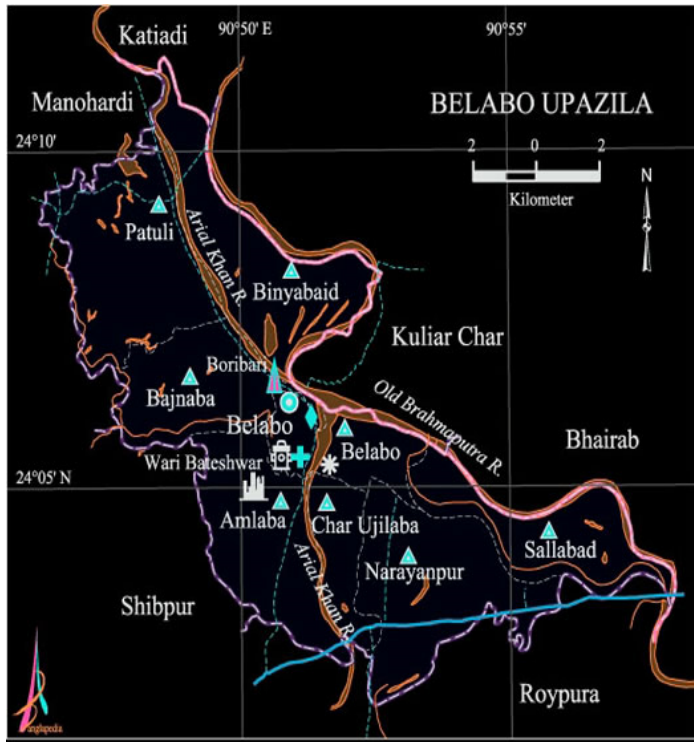
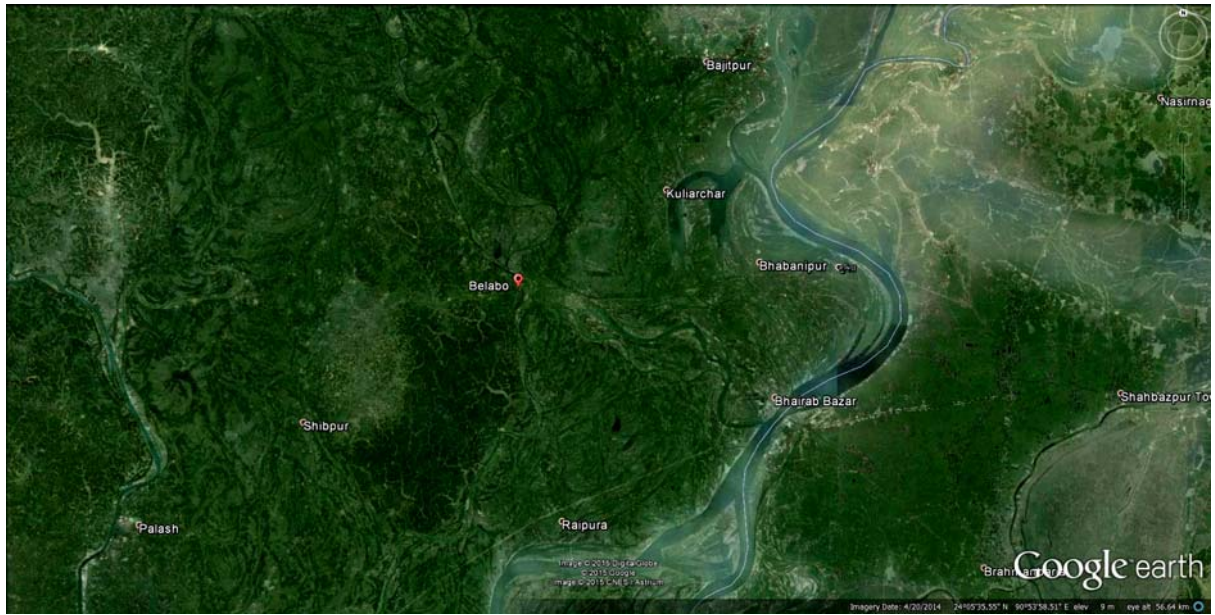


Figure 43-A: Area map of WARI BATESWAR, satellite view shows the existence of the fortification emblem

Source: Wikipedia, Google earth & <http://mapofbangladesh.blogspot.pt/2011/11/belabo-upazila.html>

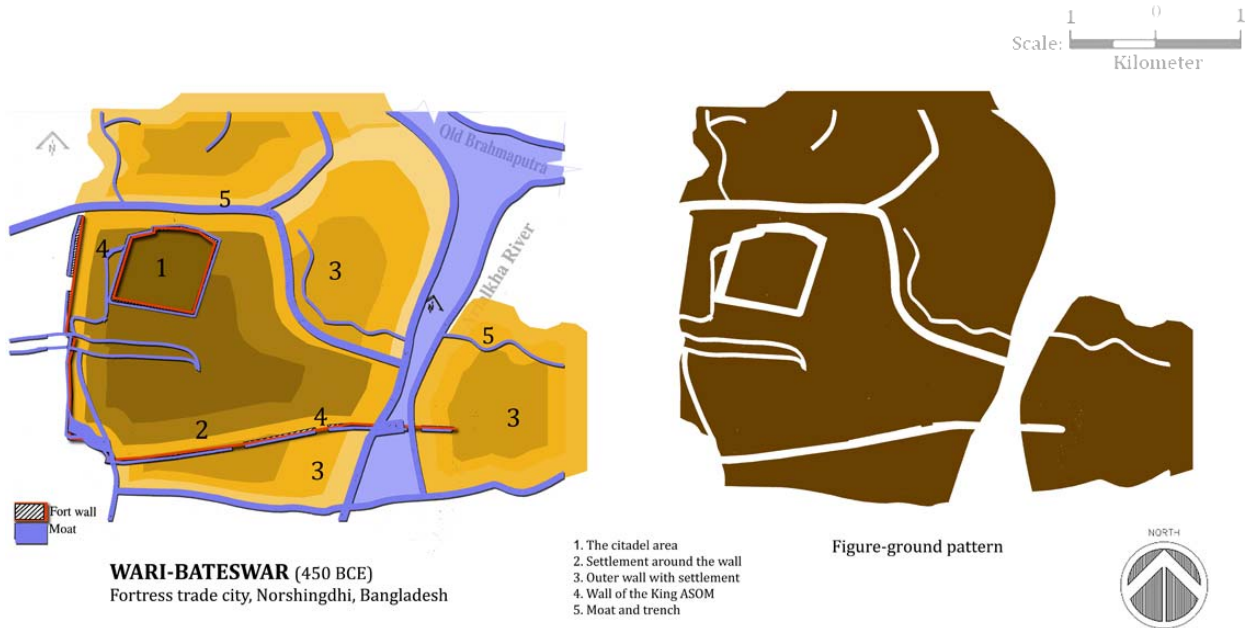


Figure 43-B: fortified city of WARI, the river channeling used to be the source of trading and inland commerce generation; to the left the figure-ground pattern is shown. Developed by Sajid Bin DOZA

WARI-BATESHWAR as the fortified trading inland city:

Archaeological investigation, excavation and surrounding environs supports the researchers and stating that, WARI-BATESHWAR once was a prominent trading fortified city. Practical situation of WARI village, previously turned as the main centre point or the urban core of the locality. Nevertheless, the archaeologist have intensely explored the 600x600 square meters thick fortified walls along with the evidence of the ancient riverine city, which was decayed down the earth. Still the historic landscape exists with the moat and trench. According to the maritime heritage, this civilization had the connection with the north western part of the subcontinent and other famous riverine cities along with the MAHASTHAN (Pundranagar). More physical existence found from the site, lots of colour stones and parts of the pottery have been found while excavation and during the cultivation of the land by the farmers.

“Logical reasoning” regarding settlement pattern:

How the settlement developed in this landform of WARI-BATESHWAR? basically the settlement of the common people grew and involved around the marshland and side of the rivers, many clues found while excavation took place ant he site, vital point is the population always choose the high-topography of the land form. 36 settlement and neighbourhood infrastructures were explored found by the river ARIALKHAN,

GANGAJALI and KOYRA, rest of the found through excavation by the side of the hugs lakes of the particular geographical situation.

Through the analysis it had been found, the landform of the neighbourhood was in elevated area at about 3-6 meters high. By the geological statistics it was found that the locality was inundated several time due to flash flood in 1988 and 1998. All the 48 sites of settlements remain dry due to the elevation of the land form, records by the Centre for Environmental and Geographic Information Services of Bangladesh. Many of these ancient area never been changed by the natural calamities as they are entitled as the historic landscape of the country from time immemorial.

Such as for the case of the MAHASTHAN, seventeen stratum of tresses of civilization were unearthed, meanwhile they are dated back from B.C., most of the riverine settlement generated along the river side, and riverine agro-economy trading and commerce used to grow up through these urban core. However, by the passage of the time the rivers always changes its course of pattern and the impact come on the civilization either abounded or shifting the urban core and old settlement becomes dead. So settlement pattern is a vital issue while always shifting and generating by the side of the water course, we have discussed some categories of the settlement pattern which are the common pattern of the riverine fortress cities. Having said that, for the case of WARI-BATESHWAR, the river was supportive in terms of growing and increasing the area of the settlement fabric. And remain unchanged till dated (topographical hierarchy). Eventually, geographical conditions engaged common people to be occupied with the agriculture, trading and fishing based socio-economic structures. Only for the topographical situation the overall settlement pattern of this tropical region advanced with linear pattern urban core and settlement.

As WARI-BATESHWAR was fortified with twin walls, the central wall was containing the citadel and official longing, at the same time the outer wall eventually elaborated with cluster of dwellings. The outer wall has the tress of fishing appliances excavated by the researchers (archaeologist) could perhaps assume the occupation of this common people was primarily fishing. It could be happened because, the river BHRAMAPUTRA old course was quite widen and full of current for fishing in terms of navigation. Many ancient cities used to raise their economic uplift' through fishing or

agriculture. In this delta land most of the ancient cities used to have the common occupations.

Was *WARI-BATESHWAR* really formed the ancient sentiment pattern?

The ancient city WARI-BATESHWAR, still missing investigative issues. But it has come up with a great impact following the typology about fortress city, the extensive excavation demands to establish the major scheme of the city was double stratum of fortification, running through moat and the two rivers adjoining hub, that evolved the trading based city by the two mighty rivers. This is common to most of the cases in our country or delta land. But when the research extend to focus on the fabric of the city, the things becomes unusual; why this happened?

As we know the fortified deltaic city derived with acute situation (from the geographical point of view), nevertheless, this kind of city gains the socio-economic outputs during the emergence of trading and commerce networking. At the same time for the Strategic plan of the city developed due to the topographic condition, so it became vivid and diverse orientation in planning organisations. It was not exception with ancient trading city of WARI-BATESHWAR also. The outer walls perhaps was dense with residential and mixed-use conception, as the city outer wall was perpendicular and parallel with the both two rivers. So the attachment with the river for the trading and commute goods and people were rationally occupied there. Moreover, the presence of the rampart reinforced to grow habitation over as well. It needed to be considered that neighbourhood situation within the outer wall would be linear with clustered pattern. The units of dwelling used to build with sundried and burnt fine aligned bricks. Even for the earth build house would perhaps build during those days.

This ancient riverine city demands to be the oldest civilization that could be refers through the archaeological excavation and exploration. But it is also clear that, city was productive with colour stones, glass and the brick bonded streets (explored through excavation), might occupy with several glass industries and lastly the city grew into connected with naval communication. City like this, needed to remain all those mode of situation. Two thousand and five hundred years back the city could

have the agrarian society, or later shifted as the trading conurbation to indorse the demand of the existing time (during the days).

A large number of chips, flakes, and cores have generated the assumption that WARI was a semi-precious stone bead centre. The city wad popular with trade relation between South-east Asia and WARI-BATESHWAR as a manufacturing centre. ⁴²



⁴²Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 105. Print

2.3.2. PUNDRANAGAR /MAHASTHAN (5th-12th Century A.D.), Ancient capital of PUNDRA Bengal, Bogra, Bangladesh

Establishment of the City: 3rd B.C

Founder/kingdom of the city: during the reign of PALA dynasty

River nearby: KARATOA

Type of the city: riverine trading-religious fort city

Remakes of the city: PUNDRA was famous for spectacular city pattern

Reason for abandon: change of river course, political

Name of the present location: MAHASTHAN, Shibgonj, Bogura, Rajshahi, Bangladesh

Civilization always shows the smartest virtue to the contemporary lifestyle of the fastest urban inhabitants, we always think and some believe the past is a brawl, it should be eliminated... throw it out...!!!

But what ancient historical background prevailed; if we just look back we would be humble to that ancient crusade, would perhaps raise salute to our processors. Yes, just to look back to the ancient time and to see the advancement of doing the meticulous involvement embryonic pattern of settlement... is astonishing! It should be appreciated, as we are here to appreciate the remaking of (virtual city) the lost ancient riverine fortified city of MAHASTHAN (*Pundranagar* 3rd B.C.-12th Century B.C.).

Among the famous well-fortified ancient cities, the name of PUNDRABARDHANA or *Pundranagar* identified with the extensive remains of MAHASTHAN comes first. Though the ancient monuments of *Paharpur* and *Mainamati* were religious in character, they were sufficiently fortified and surrounded by massive walls.

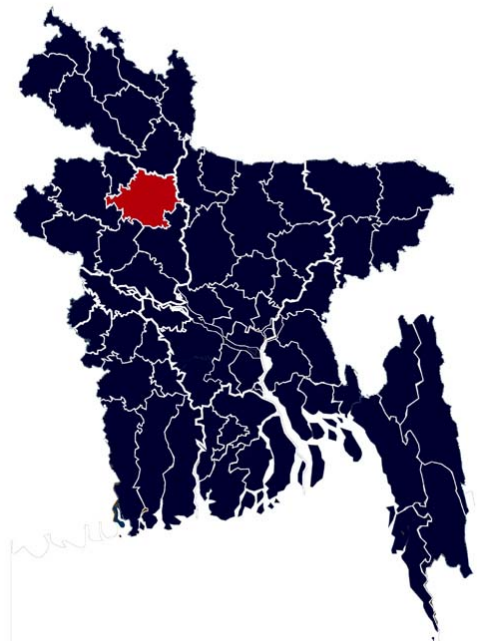
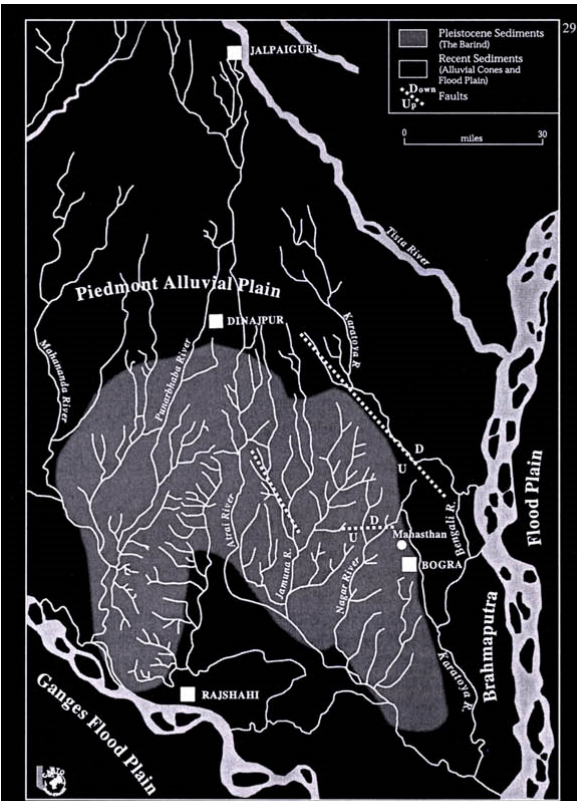


Figure 44: the location of the MAHASTHAN site today, the adjacent area of the hinterland and positioning in the country. Source: www.mapsofbangladesh.com. Google earth



The river system in the Barind area (J.P. Morgan and W.-G. Mc Intire)



Excerpt from a British map, 1910

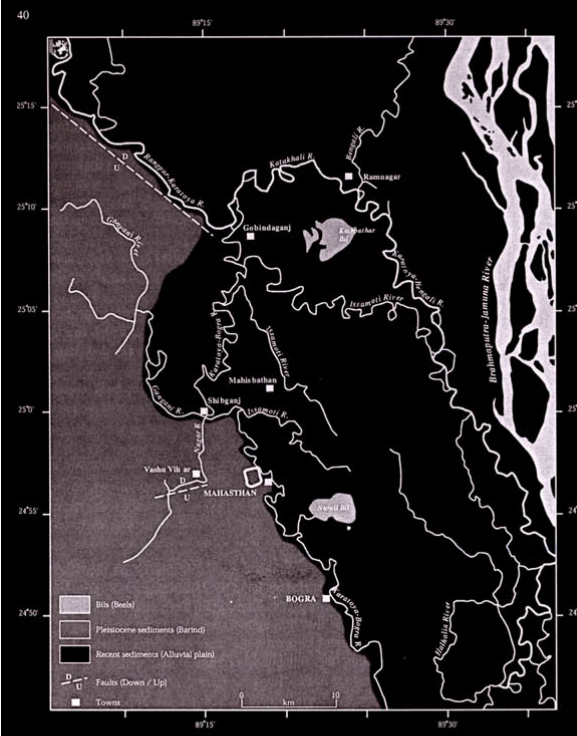
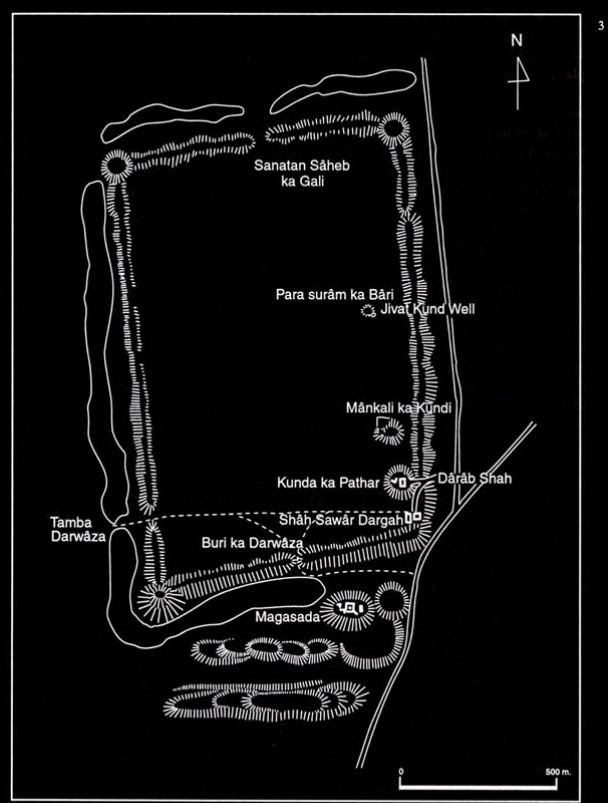


Figure 6. The present river system in Mahasthan area (C. Allemand, 1998)



Sketch-plan of the site drawn by Sir Cunningham

Figure 45: clockwise: the ancient track VARIND land; which is belongs to the highland of MAHASTHAN ancient city, the river system and the aqua networking attaching with MAHASTHAN, the present situation of the river passing by the ancient land. The most important reference of the site of MAHASTHAN drawn by the Sir A. Cunningham. Source: First Interim Report 1993-1999.

MAHASTHANGARH is situated about 12.87 km (8 miles) north of Bogra town. Now

the extensive ruins of MAHASTHAN are spreading along the western bank of the old river KARATOYA. MAHASTHAN literally means 'great place' or 'great city' and MAHASTHANGARH 'great fortified city (citadel)'. It is well fortified enclosure oblong in plan and bounded by brick rampart wall with corner bastions, some of which are of 10.5 meters height. The southern corner of the fortress is about 15 meters in high. The site was originally protected on the eastern side by the KARATOYA River. There are dried up moats on the other three sides of the fortified city, the moat on the west *Gilatala* and on the north *Kalidaha Sagar*. It was the provincial capital of Mauryas in the 3rd century B.C. and of the Imperial Guptas from the 4th to 6th centuries A.D. From the 3rd century B.C. to the 12th century A.D. the northern and western parts of the country were ruled successively by the Mauryas (3rd century B C), the *Guptas* (5th to 6th century A D), the *Palas* (8th to 11th century A.D.) and also a minor Hindu dynasty before its conquest by the Muslims in 1205 A D. It continued to flourish till the 15th to 16th centuries A.D. The extensive fortified city on the western bank of the river KARATOYA, represent, therefore, about eighteen hundred years of intensive occupation.

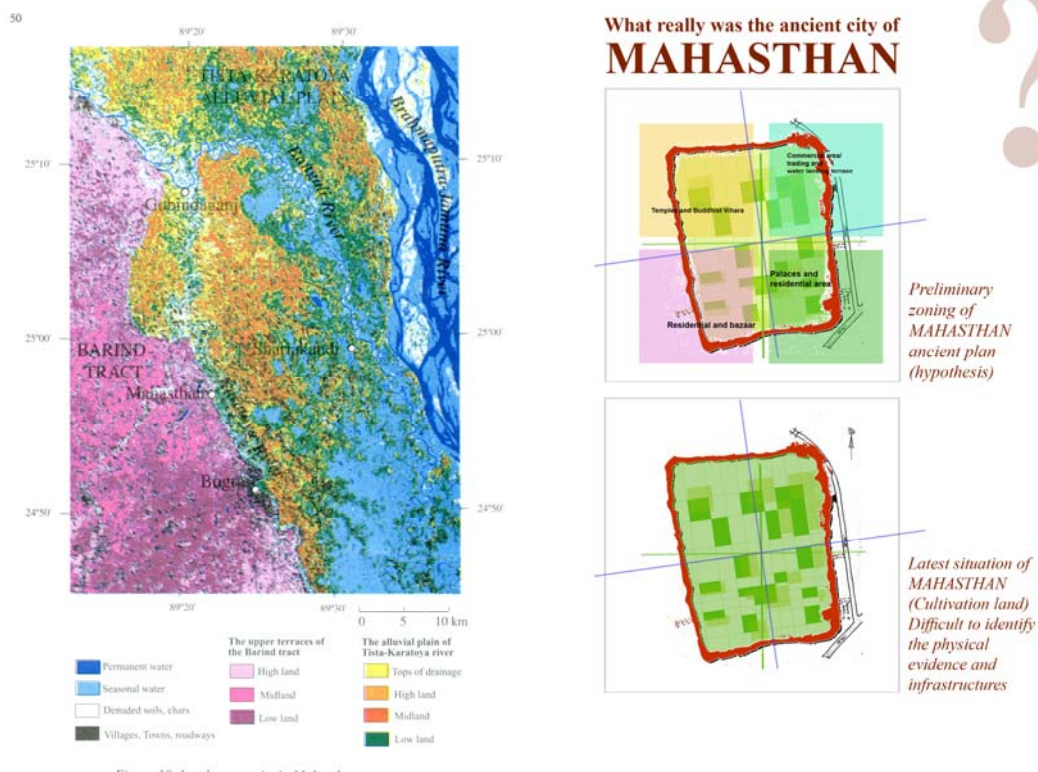


Figure 46: left: identification of the ancient high land along with marsh and low profiled area, which are flashes towards the vast water. Right: latest situation of land use at the cultural landscape. Image source: left- First Interim Report 1993-1999. Right-generated by Sajid in Doza

The identification of the ruins of MASHASTHAN with ancient *Pundranagar* is reconfirmed by the discovery (1931 A.D.) of a remarkable limestone inscribed tablet bearing six lines in *Ashokan Brahmi* script (3rd century B.C) Evidence of continued occupation at the site has been supplied by discoveries of *Sunga* terracotta and *Kusan* coins. The excavations of two of its several mounds carried out in 1928-29 AD revealed structures from the Gupta period to the eleventh century A D, the Pala level being rich in molded terracotta plaques of *Paharpur* type.

The river KARATOYA lying on the east of the city served as an inaccessible line of defense while the other sides were protected by moats running along the strongly fortified ramparts. MAHASTHANGARH consists of a massive fortified oblong by 1,372 m (4,500 ft.) broad which rises to an average height of 4.6 m (15 ft.) from the surrounding land. Now the rampart being largely decayed and dilapidated, the present entrances are merely openings in it. No traces of any formal gateway to the city can be found now.

However local people have various names for the opening in the dilapidated surrounding rampart. The main gate to the west is the *Tamradvara* or a copper gate. Besides the flight of steps at south east corner leading up to the shrine of Saint *Mahi Sawar Balkhi*, is the Darab shah gate at north of the shrine, and opening leads to *Siladevir Ghat*. On the north side is the *Sanatan Shaheber Gali* leading up to *Govinda Dhap* and *Ghagarduar* village across the *Kalidaha Sagar*. The opening on the south is called the Burir Darwaza. Mahasthangarh is full of brick mounds, Called '*dhap*' within a radius of eight kilometers. There are about forty eight mounds in various sizes. The traces of so many ruins in and around MAHASTHANGARH not only indicate its size in early times but also its prosperity and political importance. At that time, the KARAROYA was a major river. In twelfth century Sanskrit text *KARATOYA MHATMYAM*, 'the greatness of *Karatoya*' the sacredness of the side MAHASTHAN and its environs is described. Following the footsteps of Xuan zang, the 7th century Chinese traveler, Alexander Cunningham visited MAHASTHAN in 1879 A.D. and identified the place with the site of PUNRAVARDHANA, the capital city of the *bhukti* or province of the same name. An early reference to the city of PUNRAVARDHANA is made in Rajatarangini of Kalhana (circa 12th century C.E.)

Figure 47:
The ruins of MAHASTHAN, Today we see the vast land scattered with huge mounds, beneath the earth lots of precious uncovered clues of civilization and heritage...
Image source: Sajid Bin DOZA



Figure 48:
The river terminal, which still evident with infrastructural facilities, here boats and ships, used to anchor for the trade and commerce transaction from different part of the world...
Image source: Sajid Bin DOZA



Figure 49: the mighty river KOROTOA, now a day, lean and thin- a silent glory of a rich historic civilization...
Image source: Sajid Bin DOZA



Figure 50: clockwise: the bastion with the structure is a water gateway for the PALA navy, used to float through the fortified city where a huge water body designed for the reserve navy of the Pala warriors. The 2nd image shows the technique of the fortification before the strong river. The 3rd image is appearing the landing terrace of the ancient city and the 4th as the same one with widen view (Jahazghata). Inage source: Sajid Bin DOZA and the student of Architecture BRAC University

Dikshit's excavations near the north eastern part called *Munir Ghon* exposing well-fortified ramparts with bastions. The first excavation on the rampart was started by K. N. Dikshit in 1928-29 A D. the excavation activity was confined to three mounds (1) *Bairagi Bhita*, (2) *Gobinda Vhita* and (3) a portion of the eastern fortress wall together with a bastion situated at are-entrant angle of the great wall known as '*Munir Ghon*'. Dikshit exposed a portion of the eastern rampart wall, 3.04 m (10 ft) high and at least 3.35 m (11ft wide), built of bricks and the core filled with brick-bats laid in mud mortar. This portion of the wall with collaborate defense arrangements belonging to the Pala period was probably created to serve as a watch-tower to guard the river site. The earliest phase belonging to the Gupta period (4th century) and represented by two massive parallel walls extended towards the Museum across the channel linking *Kalidaha Sagar* with the KARATOYA. This portion of the ruins is called *Jahazghata*. This was evidently the main jethi (Figure 50) of this great city and

port for Communication with, outside. A very interesting feature of this fort has been revealed during the excavation on the northern ramparts of the fort in 1988.

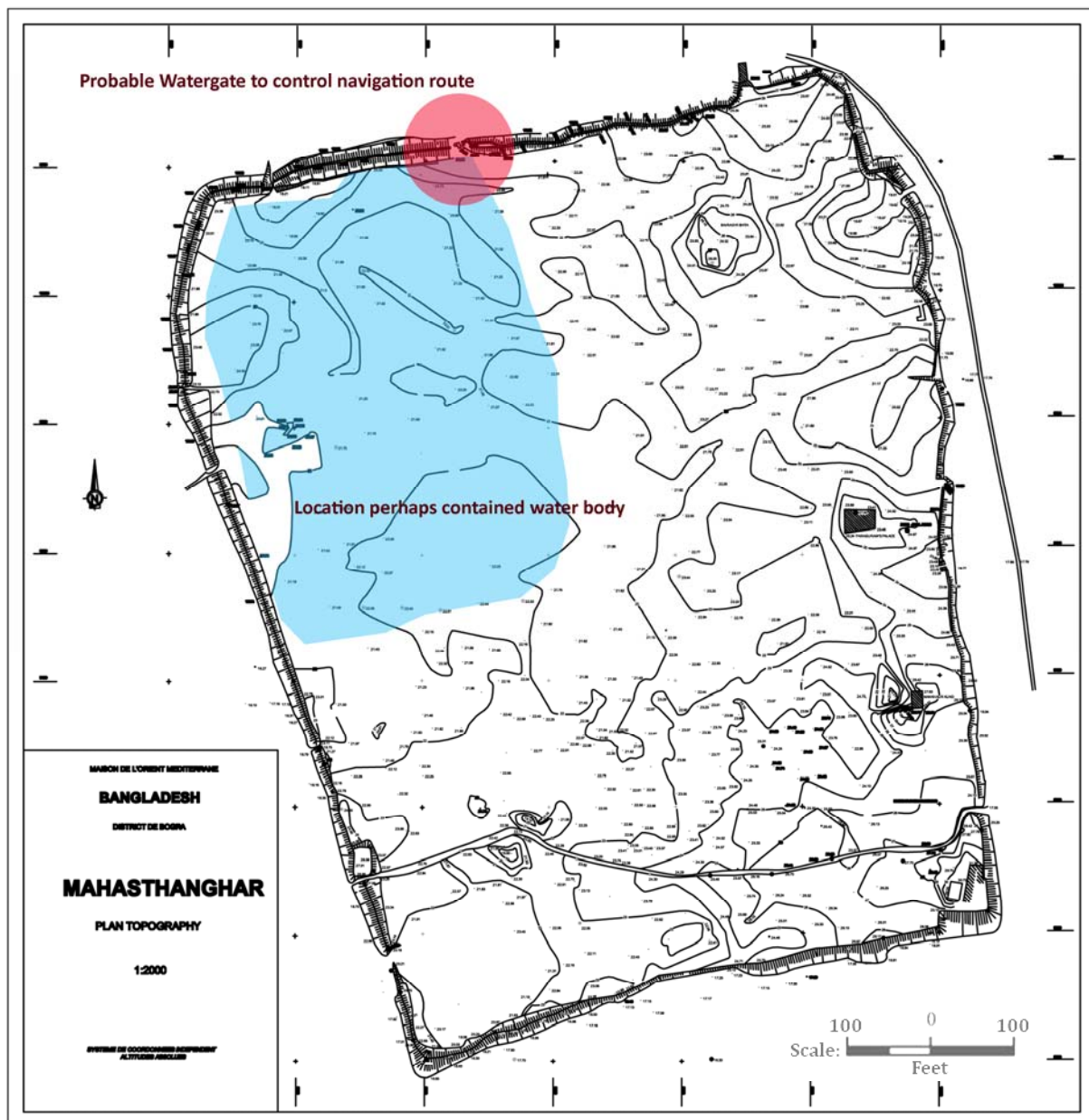


Figure 51: the image is justifying the inside water body for the PALA navy, perhaps this was the position for the water container to reserve the force for the next encampment. The red spot shows the specialized AQUA gate way of the fortified MAHASTHAN. Map courtesy: Department of Archaeology Bangladesh, illustrated by Sajid Bin DOZA

The main purpose of that excavation was to investigate the character of an opening in the defense in that part called *Kataduar*. Though the excavations were not complete, it has been found that this was an ancient gateway, paradoxically not for communication by any passage but by a water course connecting the large body of water now called *Kalidaha Sagar*, an integral part of the ancient moat surrounding

the fortification walls. The passage apparently connects another large body of water inside the fort which was evidently a vast lake in ancient times which supplied drinking water, especially during a siege. It occupies the whole of the North West corner of the fort, about 1,500 ft east-west by 1,000ft. North-south. We naturally presume on sufficiently acceptable archaeological ground that the present *Kataduar* was the Watergate of this great fort for the use of Pala navy for taking shelter inside the well-protected fort during time of insecurity, otherwise the outer lake (Kalidaha Sagar) served as the normal base of the Local force.

The mighty KARATOYA was only a stone's throw, via *Jahazghata* at the north-east corner of the fort. Water was undoubtedly used as an important weapon of defense of the great fort, quite in line with the general character of the defense system of Bengal.

Incidentally, this excavation has also revealed another significant fact; the earliest character and date of the fort. Digging at the lowest level has exposed the original mud wall of the fort very hard and sticky whitest grey potters clay, at the base of which were found a number of N B P shreds, unmistakable evidence of Maurya

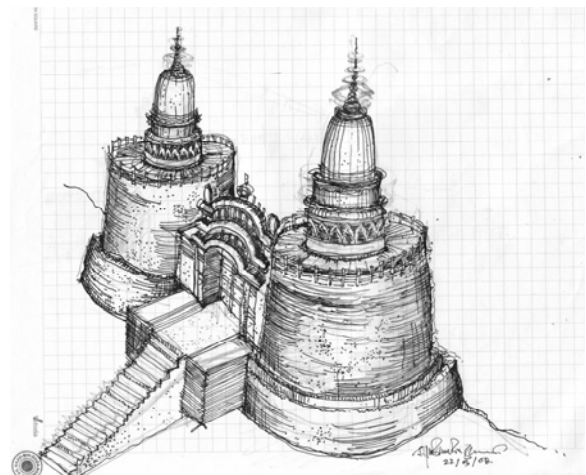


Figure 52: ancient city of MAHASTAN permeable with several giant gateways, they are unique. The image shows the eastern barbican gateway, the other reconstructed conceptual sketch shows its complete form, image and sketch (restored) by Sajid Bin DOZA

construction of the fort in the 3rd century B C. So far our information regarding Maurya occupation of the site is confined to the MAHASTHAN inscription of Maurya date and a few of archaeological objects of Maurya and Sunga dates, none from any stratified level.

In the recent excavations in 1992 AT MAHASTHAN was uncovered what we regard to be one of the main gates of the fort in the middle of the north side. This is undoubtedly the best preserved gate well protected by two bastions on both sides. This gateway is claimed to be the main gate of the fort. The claim requires further substantiation. From the above study it is evident that MAHASTHAN is the largest, earliest and best preserved fort not only of Bangladesh but also of the whole of Eastern India. Its classic shape and preservation makes it one of the most attractive in class in the subcontinent. This fort and the city it dominates have been profoundly praised by the Chinese pilgrim Huen T-Sang who stayed for some time in the Buddhist establishments, now excavated at *Vasu Bihar* and Bihar and by *Kalhana's Raja Tarangini*, which mentions the historic *Skandha* Temple, identified with the present *Skandha Dhap* on the KARATORA about 6-11km (4 miles) north-west of the fort But we would perhaps have to be satisfied with such written records and excavation reports of the fort which may not last physically even in our own time. The excavations at MAHASTHANGARH by the Bangladesh-France joint archaeological team which has been working at the side for the last Seven years have revealed five periods of occupation, The remnants of these periods are important sources of Bengal history.

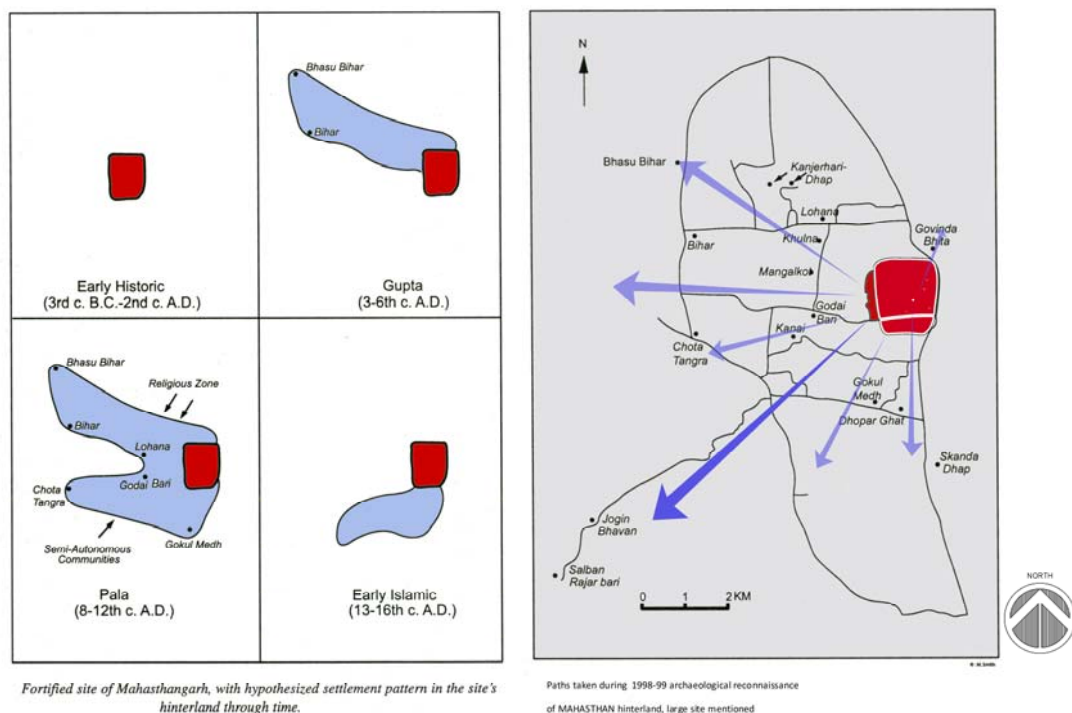


Figure 53: the urban core of MAHASTHAN had a vast area of settlement. With the political overviews the pattern vicinity used to orient in different tracks. Perhaps the most settled and glorious pattern of neighborhood used to establish during the PALA dynasty. The image is analyzed with those facts and figures. Based on the interim report of the French-Bangladesh excavation team

2.3.3. KOTALIPARA fortress trade city (380 A.D.-467 A.D.), Gopalganj, Bangladesh.

Establishment of the City: 6th A.D.

Founder/kingdom of the city: during the reign of PALA dynasty

River nearby: GHAGAR

Type of the city: riverine trading fort city

Remakes of the city: Southern coastal marine fortification

Reason for abandon: change of river course, political

Name of the present location: KOTALIPARA, Gopalganj, Bangladesh

Kotalipara fort is situated just beside the river Ghagar, the river rises from the marshes from the north and flows down to join the river Madhumoti. The most interesting of this fort is its existence at the present area. This fort KOTALIPARA used to term as the ancient city of CHANDRAVARMANKOT⁴³. The reference was taken from the ancient copper inscription of SAMACHARADEVA. CHANDRAVARMANA ascribed the fort to execute once and we found this reference form the SUSUNIA rock inscription. This inscription is placed in Bankura district of West Bengal. Fort like KOTALIPARA, is in completely remote end of the country, eventually it was more complex to establish fort like the during those contemporary day, bas because this area during that period, obviously was a part of the mangrove forest at the same time it would be the area of march land, getting conquered in this area to establish a fort like this it is the tendency to promote the good notion and to spread over the civilization and the settlement pattern around the mangrove area.

The post Gupta period (6th century A.D.) is an ambiguous period in the history of Bengal, however; providentially, with the analysis of some coins and inscription it was observed and some information used to identify about the 6th century's political

⁴³ a.) Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 112. Print
b.) Begum, Ayesha, 'Kotalipara fort and its Remains', *Shilpakala*, NAFP, Dhaka, 1997, 114-117. Print

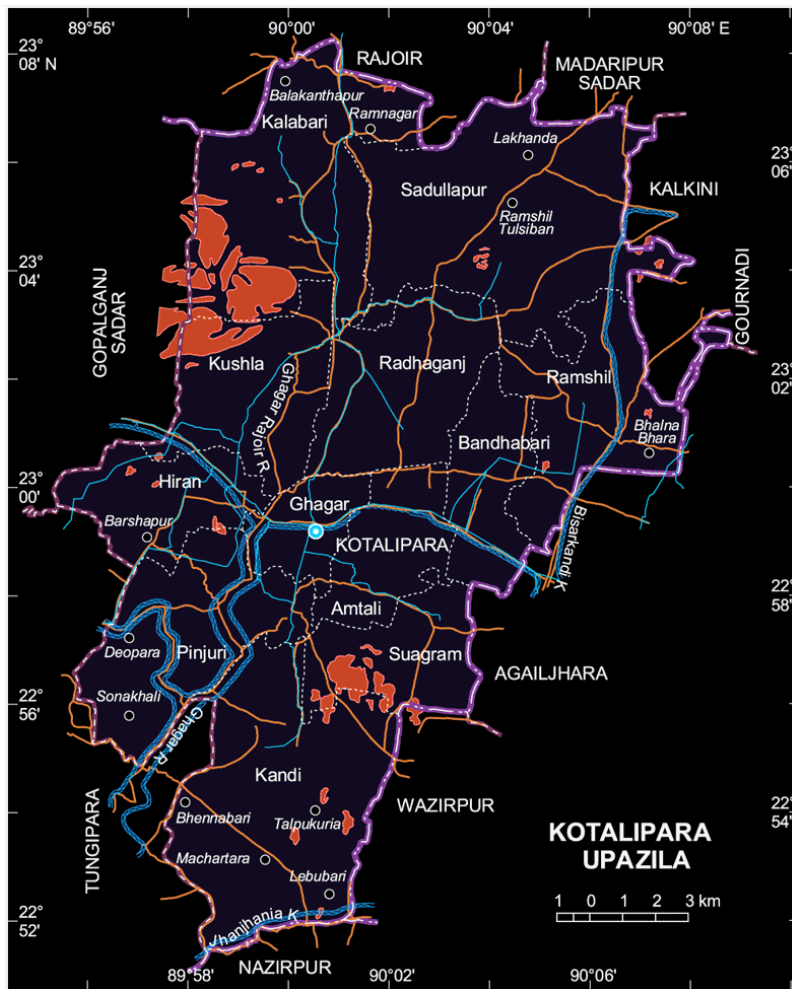
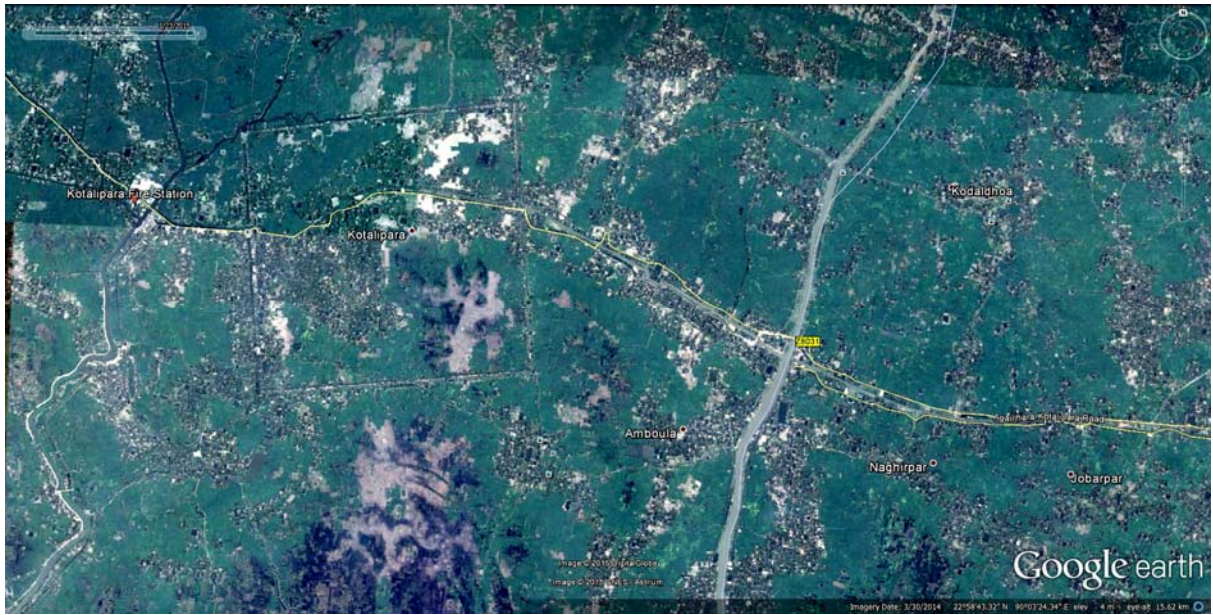


Figure 54: Area map of KOTALIPARA, satellite view shows the existence of the fortification emblem
 Source: Wikipedia, Google earth &
<http://mapofbangladesh.blogspot.pt/2011/11/kotalipara-upazila.html>

situation. From these all information it was found this was the early and independent kingdom of Bengal. The most fortunate thing is that five inscription found in and around the site mentioning the gold coins of the Gupta Empire. They are respectively the SMAUDRAGUPTA and CHANDRA GUPTA II, SKANDAGUPTA and SASHANKA , have been found in KOTALIPARA, Madaripur, Jassore (South Bengal).by this information, it could be elaborated in the history the monarch of the south Bengal was consisted in the same area of the KOTALIPARA. Eventually it was the independent monarch in Bengal governed by the GOPALCHANDRA,

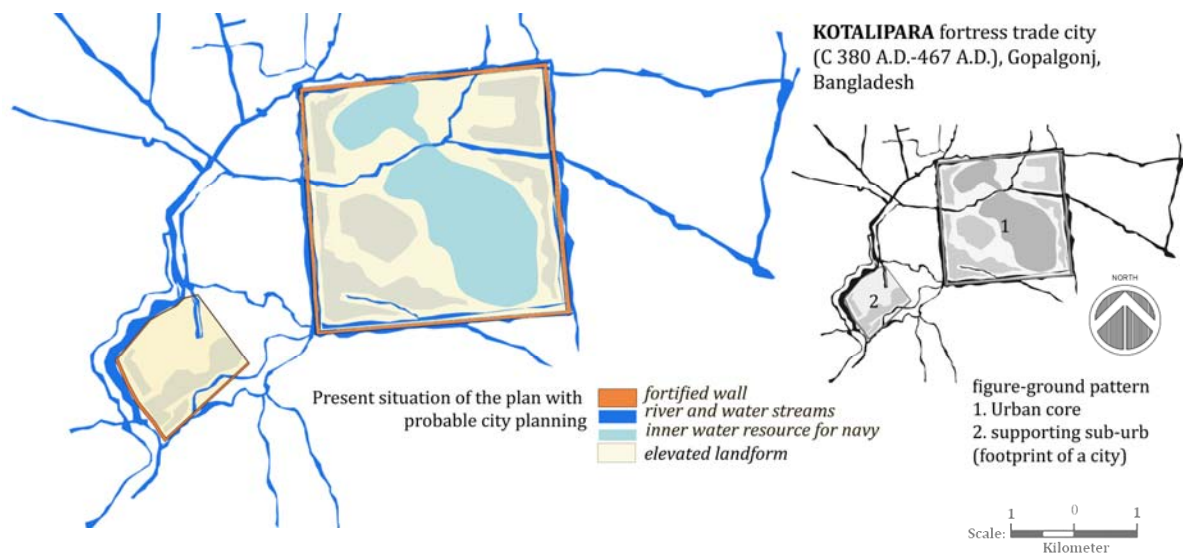


Figure 55: figure ground pattern with the river of ancient city KOTALIPARA.
Generated by Sajid Bin DOZA

DHARMADITYA and SAMACHARDEVA during this critical territory of south estate. A systematic excavation can recover the vestiges of this remains.

The intelligence of the riverine fort was the organizational sequences. The shape of the fort was square and maintaining 23 sq.km (3X3Miles). The rampart was high and engaged with moat both inner and the outer wall of the high rampart. The river was just on the west and special kind of channelling used to flow through the fort and adjacent the area. The technical height of the wall used to be around 15ft to somewhere 30 ft. ⁴⁴

⁴⁴ *Bangladesh District Gazetteer*, op. cit., p. 359

The fort KOTALIPARA was the earliest centre of culture in this part appear to have the settlement around this magnificent fort⁴⁵. Furthermore, '*epigraphic evidence prove that the marshy area of the KOTALIPARA was once a thriving seat of civilization and possibly a centre of sea-borne trade and commerce*'.⁴⁶

There is ample evidence to prove that this part of the country suffered in remote antiquity from a general subsidence, due most probably to a great earthquake. This event can be dated on the evidence of the plates in the last quarter of sixth century AD.⁴⁷ The vicinity of CHANDRAVARMANA's fort began to be water clogged and became unfit for habitation. The headquarter of the locality had to shifted towards the north or more suitable land and people also migrated there. According the scholar of historian of Bengal, the kingdom shifted to Modern Dhaka.

There was a presumption from the legends of the HARAHA stone inscription of ISANAVARMA (C.554. A.D.) Mentioning about an attack and was defeated the GAUDAS who were compelled to seek shelter on the sea shore (actually the Bay of Bengal).⁴⁸ *Gauri* inscription of PROBODHASIVA (C.10th-11th AD) stated that –out of fear of the *Kalachuri* king the lord of GAUDA lies in the watery fort in the sea.⁴⁹ Neither the KALACHURI king and nor the GAUDA king identified and the sense of the reference is not so clear, due to the damage condition of the inscription. However in the context of the known events the verse may indicate a temporary refuge of a contemporary PALA king in one of the CHANDRA strongholds of lower Bengal in some place like KOTALIPARA.

The nature and feature of KOTALIPARA fort indicate that the water, that is the river and the swamps constituted the most powerful and prominent characteristics of the area and which obviously was an element of great protective and defensive force against enemy attack. The natural inference is that the KOTALIPARA fort was

⁴⁵ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 113. Print.

⁴⁶ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 113. Print.

⁴⁷ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 114. Print.

⁴⁸ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 115. Print.

⁴⁹ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 113. Print.

probably the watery fort of the south. At present there are four ridge like high bank on the four side of the fort, existing now at four villages. But a large area in the centre is marshy (lowland). As a result of natural depression in the area as suggested by the geographers there was broad opening passage of communication with the near of the river for the facility of an inner harbour or safe refuge of the naval force inside the fort. And if by any chance this was the watery fort of south Bengal near the sea as the vaguely referred to by PROBADASHIVA's inscription it could be suggested from the existing nature and feature that there was an inner harbour for the refuge of the navy inside the KOTALIPARA fort with passage or outlets connected depended for its defines as well as for offence on a large and strong navy.⁵⁰

While investigating the characters of the existing features for the fort a few significance facts have come out which are as follows:

- KOTALIPURI fort undoubtedly the oldest and largest fort in the region of South Bengal, though very badly preserved at present.
- Its origin cannot impose fact to be ascribed to a ruler on no other basis than common name.
- The relation of water with the defensive character and functions of the fort, a peculiar characteristics in the deltaic Bengal, is nowhere more apparent and more convincing.
- Water, an eternally disturbing and obstructing elements to land based man, has been turned into an effective instrument of defense or offence by these almost semi-aquatic people. It must have posed an insurmountable barrier to invaders from outside.⁵¹

⁵⁰ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 114. Print.

⁵¹ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 115. Print.

To explain about the settlement pattern or the footprint regarding the vicinity of the fort, except any exception, we have the clue to identify the area of the settlement pattern of KOTALIPARA fort. The site evidence still exist with sunken part of landform which now a day engaged with water clogging; supposed to be the inner harbor of the fort once, and perhaps the settlement used to be scattered around the rampart. As we have experienced before, that the highland is preferred by the people to establish their territories in the delta land of Bengal. As by the references the fort had other territorial sub-city at the adjacent southwestern part and comparatively smaller in area with irregular plan, but eventually connected with the river and cannels. This peculiar fort might have the settlement in the smaller part of the city also. This fort used to be the only one center of the cultural and riverine civilization in Bengal during the 6th century AD, obviously and logically the fort population used to have a large amount of.

The KOTALIPARA fort city; having the southern part of Bengal possibly had the linear cluster of inhabitant pattern; because of having the linear rampart on four sides of act as the embankment. At the same time the square organization allows to arrange the inhabitancy definitely from the fringe area to the center, as because these peripheral ramparts were the most potential area for the mixed use pattern of lives. Hereby it would be mentioned that, the central part along the harbor side of the fort used to be occupied official and public buildings, may be the most precious structures.

There is few references we find from the historical references, but the aerial view and the site condition indicates that the near western part of the KOTALIPARA city a small town or hamlet became developed. Site evidence shows the territorial water channel with the irregular pentagon shaped area. All the side of the area took the potentiality of having the aqua channeling over through the edging. City and the settlement pattern changes with rationality, power, and political decision and river courses for sure for the delta land. The ancient city used to have a foot print of the area also, probably the footprint of the KOTALIPARA fort city had this notion of having small town that might would support the fort city for the point of the agricultural and manpower. And later became the ``plugged inn`` of the fort city of the KOTALIPARA.

2.3.4. BHITORGARH (6th Century AD) Fortified City, Panchagarh, Bangladesh

Establishment of the City: 6th-7th Century AD

Founder/kingdom of the city: during the reign of Prithi Raj of PALA dynasty

River nearby: river TELMA and SALMARA

Type of the city: riverine encampment and trading fort city

Remakes of the city: positioning and the organizational approaches

Reason for abandon: political

Name of the present location: Umar Khan Union, Panchagarh, Rajshahi, Bangladesh

The BHITARGARH fortress ruins is situated between, 88°35'14" to 88°35'58" East and 26°20'58" to 26°24'12" North in the Old Himalayan Piedmont Plain⁵². This unit underlies most of Dinajpur region. It occupies an old part of the Tista sedimentary buff at the foot of the Himalayas (Map). It accompanied with a braided river landscape. Which laid over as multifaceted arrangements of broad ridges intermixed with numerous shallow former channels and basins. The upland soils and most depression soils have textures between loamy sand and sandy clay loam⁵³, and all are underlain by sand. Almost the whole landscape, except for the highest ridge sites, becomes wet or trivially flooded in the monsoon season. River channels crossing the unit are entrenched 5-7m the surrounding landscape and are subject to flash floods following heavy rainfall locally and in the adjoining Himalayas.

The fort BHITARGARH is a unique form of defensive fortification in the region of Delta land. The situation of this excellent fort is extreme north of Bangladesh and bordering the international boundaries with India in the present days. Having said

⁵² Brammer, Hugh. *The Geography of the Soils of Bangladesh*. Dhaka: UP Limited (UPL), 1996. Print.

⁵³ Adams, Robert McC. *The Natural History of Urbanism, Ancient Cities of the Indus*, Gregory L. Possehl, 1950. (ed.), Delhi.

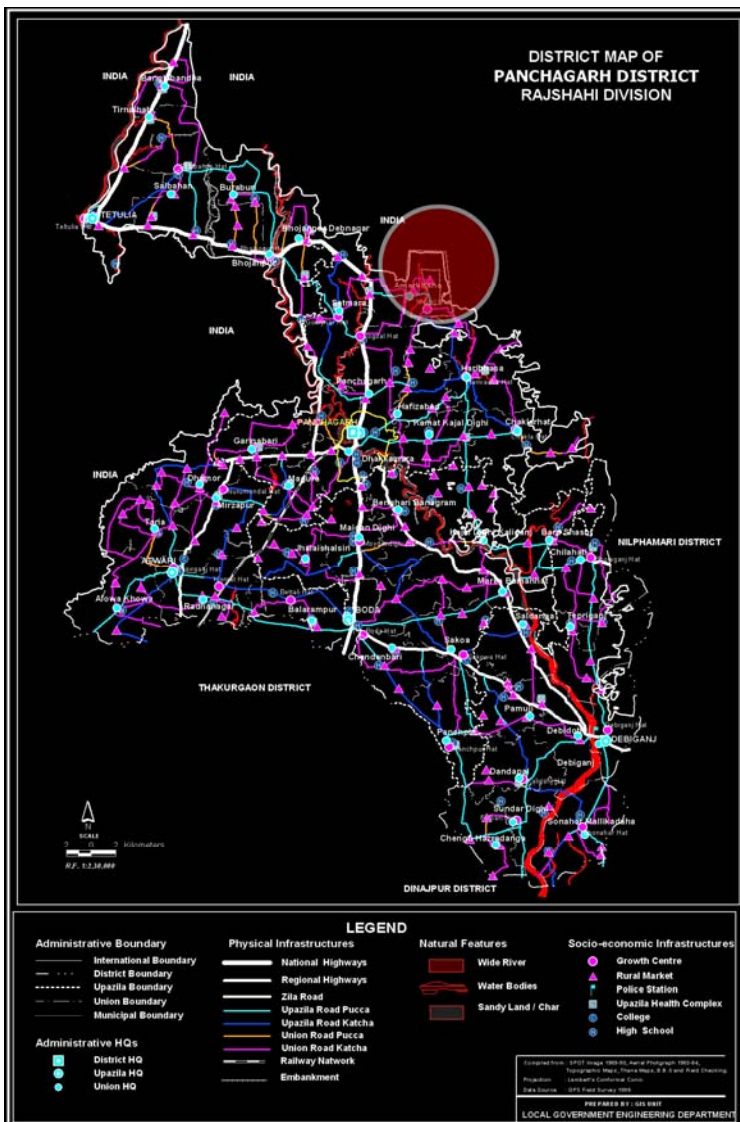
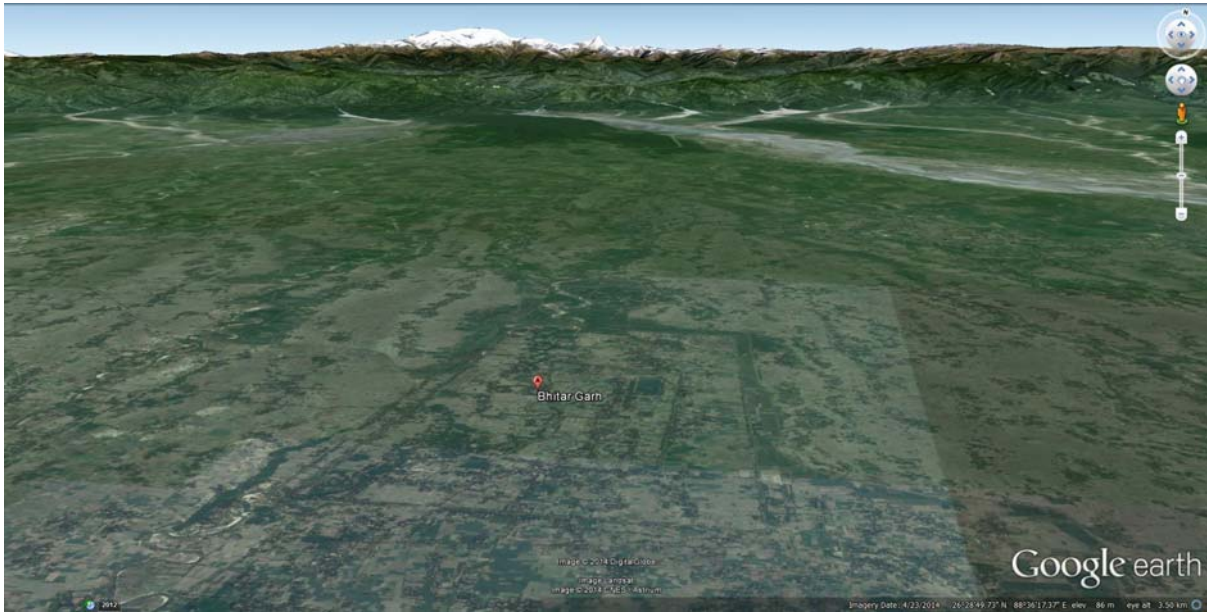


Figure 56: Area map of Bhitorgarh, satellite view shows the existence of the fortification emblem
Source: Wikipedia, Google earth & Local Government Engineering Department



Figure 57: just on the border mark on the old Himalayan pediment plane a strong fort established to get enter in Bengal with innovative fortification in the context of the Himalayan region.
 Image courtesy: Google Earth

that the fort is occupying the ancient defensive mechanism and still working like the entrances to Bengal from the hilly land Shiliguri, Jolpaiguri and the other seven sister of India. However, this fort used to work like the embarkation hub for the foreign people during the 7th century AD. Moreover two rivers are engaged with this oblong shaped fort is still passing cardinally name Salmara and another just by the northwestern side name Talma. Both the rivers used to act as the fortified instrument although being the natural elements. It must be considered that the riverine fortress city most often time took the strategy to use and to find the maximum potential form the river, the heroes, perhaps definitely used to involve seriously of having by the desire results, scientifically and naturally positioned the fortes city. In the case of BHITARGARH, the same thing happened. The fort contained several DUAR (entrance), the spectacular mud fort of BHITARGARH occupies a very important strategic entry point from Jalpaiguri to the northern part of Bangladesh. While the eastern and northern ramparts are the extreme boundary and the fortified lines between India and Bangladesh.

The ruins of BHITARGARH is irregular and oblong in shape, at the same time the method of fortification of the fort is successive earthen rampart with sundried and burnt brick are also seen. Measuring the outer earthen wall is 4.27m (14ft) high at the highest point. While the breath of the earthen 28.75 m (93 ft.)The western and

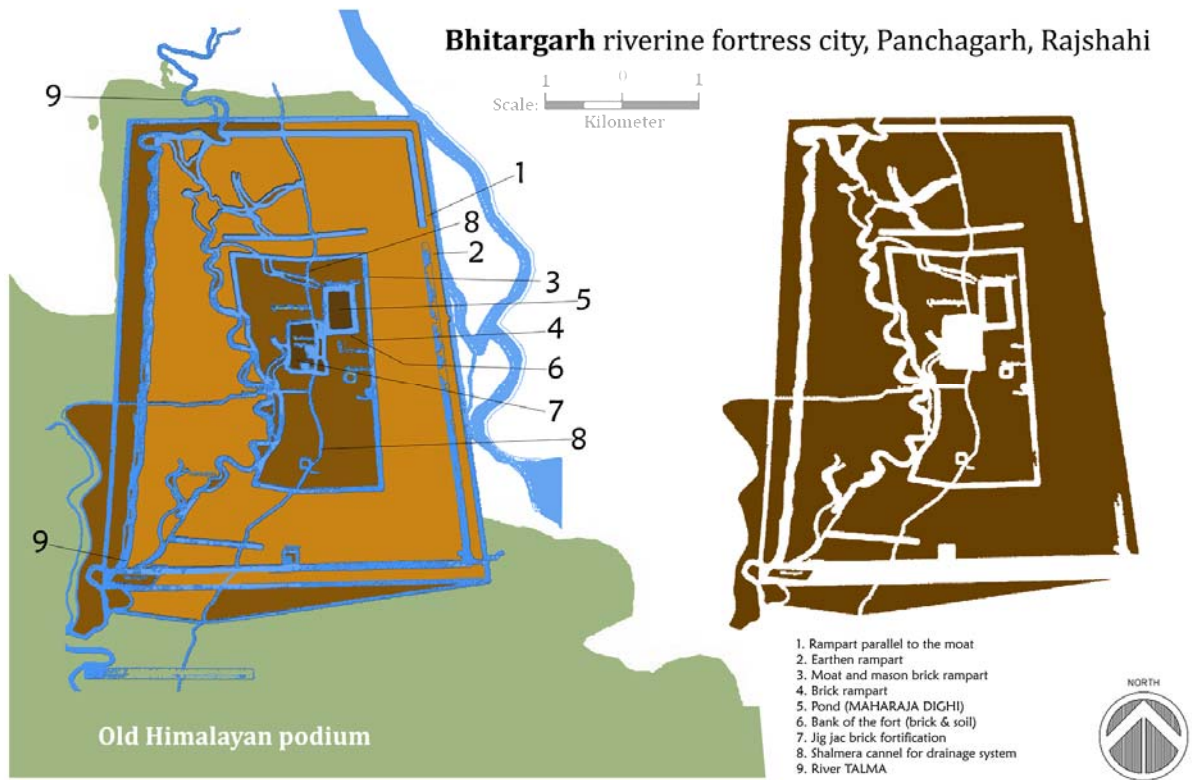


Figure 58: the figure-ground pattern is complementing the river course along with the natural fortification and the fortress attitude, meanwhile this fortified city was the northern Himalayan trading hub for the ancient Bengal. Generated by Sajid Bin DOZA

eastern wing runs 5708.90 m (18,730 ft.) and 5547.36 (18,200ft) respectively. The land form is having a sunken quality of area which is known as the KAL DUAR (meaning the door way of horror). That had the total length of 2828.54m (9280ft). Meanwhile the inner fortification wall represents a similar oblong plan having walls of different lengths. The constructions of the thick walls are with the bricks and earthen materials. The square size or the tile size thin thickness bricks was used in the wall and other remains. The fortified inner deep area also conceived with a large water body- and the other vestiges are allocated within the vast area. Most of the remains in the site are heaps of bricks that indicate lots of permanent structures buried down the earth. BHITARGARH is the fort of immense dimensions. Very recently a survey and investigation team had been working and unfolds numerous information. The investigation revealed that, the site of BHITARGARH is enclosed within four concentric quadrangles created with ramparts. Structural remains of the ramparts, constructed with earth as well as the bricks. Still those are witness in the site. All quadrangles are surrounded by the moats, except the innermost enclosure.

During the 7th century AD, This “Fort City” (locally known as “Durgo Nagar”) was part of an important ancient trade center and route. The city accompanied business with

faraway countries such as Sikim, Tibet, Bhutan, China, Nepal, Bihar, West Bengal and *Pundrabardhan* by land and water ways. The artifacts discovered in this “Fort City” are different from those found in Assam, Kuchbihar, Moinamoti, Paharpur and MAHASTHANGARH. The city was encompassed by four walls. The two outer walls are made of soil and have moats around them. The inner two walls are made of bricks. Full excavation of this Fort City in BHITARGARH will take a long time even if resources can be mobilized⁵⁴.

The architecture of these two temples points to their being part of a bigger monastery, the excavation in this area started in 2009, and 8 archeological sites including Stupas and Temples have been discovered so far. The previously discovered Stupa and Temple in this area are thought to be around 1,400/1,500 years old.

Systematic archaeological investigations at BHITARGARH Walled city from 2008 to date have revealed numerous unique features. Some of these are as follows:⁵⁵

- a. BHITARGARH is the largest fortified settlement in South Asia, extending over an area of about 25 square km.
- b. Enclosed within four concentric quadrangles surrounded by ramparts and moats, BHITARGARH was an urban settlement.
- c. Well-planned internal layout and public architecture of BHITARGARH are exclusive.
- d. An extensive water-body *Maharajar Dighi* with ten brick-paved *Ghats* and brick casing lofty embankments makes BHITARGARH exceptional.
- e. BHITARGARH might have functioned as an independent city-state governed by an autonomous administrative system sometime between 6th and 12th century CE.

⁵⁴ <http://bgpsbd.org/>

⁵⁵ <http://bgpsbd.org/>

- f. The inhabitants of BHITARGARH had developed quite an ingenious structural feat for irrigation and cultivation throughout the year.
- g. The importance of BHITARGARH primarily lay in trade because of its strategic position on the ancient overland and riverine routes connecting Tibet, Sikkim, Nepal, Bhutan, Assam, Koch Bihar and the regions of the middle and lower Ganga valleys.
- h. Two rivers Karatoa and Tista played a very important role in the trade of the ancient city-state.
- i. Archaeological and natural beauty of BHITARGARH makes it very special for cultural and -eco-tourism.

It is clear from the above statement that BHITARGARH contains immense potentiality in terms of history and heritage of Bangladesh in particular and South Asia in general. Unfortunately, the archaeological remains of this ancient city are gradually disappearing due to human and natural activities. Therefore, it is suggested that necessary steps should immediately be taken to protect the archaeological heritage site of BHITARGARH in Panchagarh district under the provisions of the Antiquities Act.

What was the fabric of the settlement? Since thousands of year, this hinterland housed lots of civilizations, till then; a school of traditional pattern in evolving settlements had been laying over the urban cores in this delta. Obviously, but the settlement pattern in the BHITARGARH was perhaps, exception from the other part of the vicinity of ancient urbanization. In the case study, we have observed the forms and shapes of various fortress cities changed according to the geographical, political, climatically and lastly often shifted by trading based communication situation. Most often cases there are two communications were prominent during the ancient epoch, one is the trading route through the land and undoubtedly through the riverine of maritime passage. BHITARGARH fortified city was eventually famous and well-known for the trading overseas through both the aqua and land based routes. City and settlement becomes dependent on the surplus of food and infrastructural development. BHITARGARH fortress city was developed with agrarian

economy, and cultivation was the other source of occupation. At the same time this area is ancient Himalayan pediment foot, for this intention rocks were available just beneath to the pit layer of the soil (30 ft. beneath earth), in this connection the city used to have the trading with rocks through the Himalayan region and furthestmost north and north-eastern part. Being the trading with the boulders, some parts of the ramparts are scattered with rocks and probably used to reinforce the embankment and fortified rampart. In some other cases the bonding of the rock was the unique ideas in this region, and inhabitant must have the influences from the Himalayan indigenous pattern of building the homestead. It would be noticed that the region as it is under the slope of the mighty Himalayas the cultural transaction and the living pattern could might have some influencing mater among the dwellers of the city. Such as the inhabitant of the ancient city might had the construction process to build house with the wood, as wood were the most common living construction materials in that part over and alone. Meanwhile Bengali people from the ancient epoch conceived the roofing construction with wooden members and bamboos. So the city vicinity could had the technology and having sense of wooden homestead construction. Earth and thatched construction is the inherent quality of the delta land people. But for the case of this ancient fort city, composite construction of action could be the innovative part of building the civil architecture. However, there are two temples found after excavations and by the investigative analysis it is discovered that the plinths of the temples used to have the traditional terracotta brick construction, having said that the temples are notified from the early Buddhist period. Dated back 1500 years. So, it is authentic that; the religious structures in hinterland of delta were found those were built with terracotta bricks and it is evident with its existence, except only the plinth form the Buddhist period. The secular structures in this region often built with the temporary construction materials, although bricks and burnt bricks used to present there, climate, moisture, saline and flash flood disappeared those all.



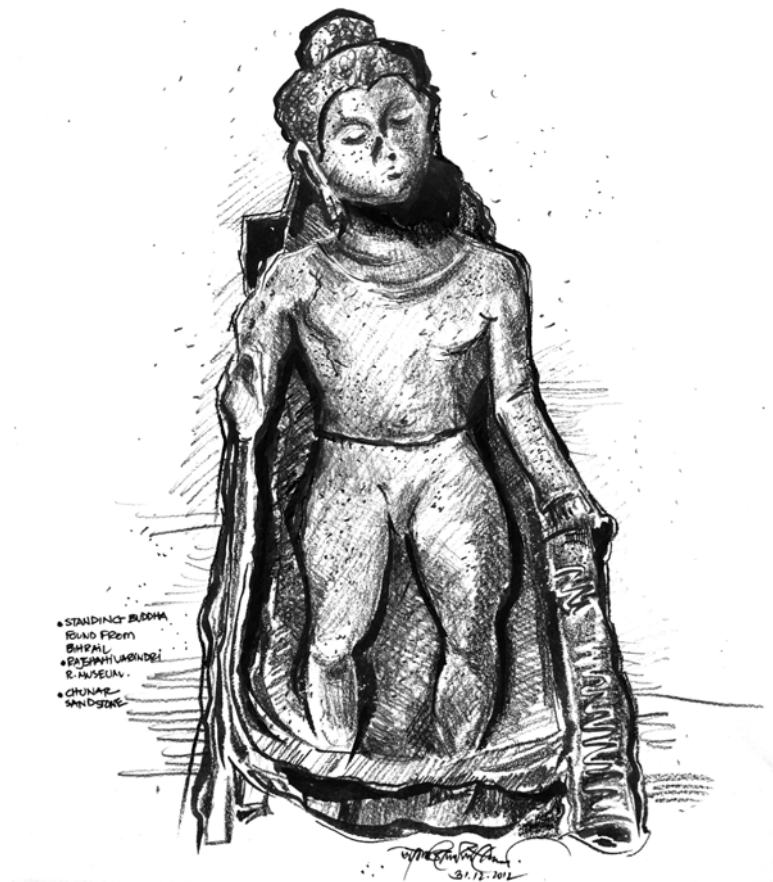
Figure 59: the site is ruins now, covered with earth and rubbles. The moat is still visible and the central water body is still active.

Source: http://www.banglapedia.org/HT/B_0557.htm

Let us put the focus on the situation at the fort BHITARGARH; as we were discussing about that two occupations was prominent in this land among them agriculture and cultivation is one. So what is the clue? The central huge water body which still exist today is the reference of those parameters, and along with the reservoir natural stream of water incorporated for the agricultural irrigation in this fort. It is amazing to notify, this quarter layers of fortified city had the full thrived agricultural practice. And fundamentally, consuming the topographical slopes, water reservoir and the natural river streams inside and outside the walls massive agricultural cultivation used to occupy as well.

While agro-based vicinity dominated with the association of the boulders trading, there the neighborhood pattern would be combined with the mixed use form of pattern, bazaar, streets and the building masses had the humbleness with mundane profile. The urban core definitely vibrant with the agro-trade grounded socio-economic profile. Ramparts are the most suitable position to develop localities around, because of obtainable water resource, as we discern, subsequently ancient Bengali populace is popular with land and water, it is authentic in this fort area the form of the settlement pattern derived through cluster and linear pattern. Streets in between the fortified wall used to play vital role to arrange the vicinity with infrastructures, in the case of the agro based zone, the clusters used to arrange with farmland and authenticated with courtyard house, perhaps might be with the wooden origin.

BHITARGARH, settled in the extreme region of north Bengal, is a peculiar intelligence of urban core. Where scientific coordination fuses with the natural potentials and combine these mechanisms worked like the 'artery and vein' of human body. A city with full of militarized brashness and threshold of overseas trading, whereas on the other hand full stroke agronomic repetition; must be the glorious sophistication to that contemporary span of time, meanwhile the civilization left for us the positive meaning of creating the green city determinative formula, that we are realizing today and crazy for it now a day...



2.3.5. GAUR (11th-16th A.D.) West Bengal, India & Rajshahi, Bangladesh

Establishment of the City: 6th-15th Century AD.

Founder/kingdom of the city: Sena and Sultanate Kings

River nearby: river Ganges and MAHANANDA

Type of the city: riverine and inland trading fort city

Remakes of the city: positioning and the organizational approaches

Reason for abandon: political, river course, water clogging & diseases

Name of the present location: Maldah, West Bengal, India, Chapai-Nawabgonj, Rajshahi, Bangladesh.

Sometime in 1243–44 AD, residents of Lakhnauti, a city in northwestern Bengal, told a visiting historian of the dramatic events that had taken place there forty years earlier. At that time, the visitor was informed, a band of several hundred Turkish cavalry had ridden swiftly down the Gangetic Plain in the direction of the Bengal delta. Led by a daring officer named Muhammad Bakhtiyar, the men overran venerable Buddhist monasteries in neighboring Bihar before turning their attention to the northwestern portion of the delta, then ruled by a mild and generous Hindu monarch. Disguising themselves as horse dealers, Bakhtiyar and his men slipped into the royal city of Nudiya. Once inside, they rode straight to the king's palace, where they confronted the guards with brandished weapons. Utterly overwhelmed, for he had just sat down to dine, the Hindu monarch hastily departed through a back door and fled with many of his retainers to the forested hinterland of eastern Bengal, abandoning his kingdom altogether.⁵⁶

⁵⁶ Maulana Minhaj-ud-Din Abu'l-'Umar-i-'Usman, *Ṭabaqāt-i-Nāṣirī: A General History of the Muhammadan Dynasties of Asia, Including Hindustan (810–1260)*, trans. H. G. Raverty (Calcutta: Asiatic Society of Bengal, 1881; reprint, New Delhi: Oriental Books Reprint, 1970), 1: 557–58.

This account by Minhaj is the earliest narrative we have of this important event. It is likely that some of the historian's informants had been eyewitnesses to the events they described; some may well have participated in them.

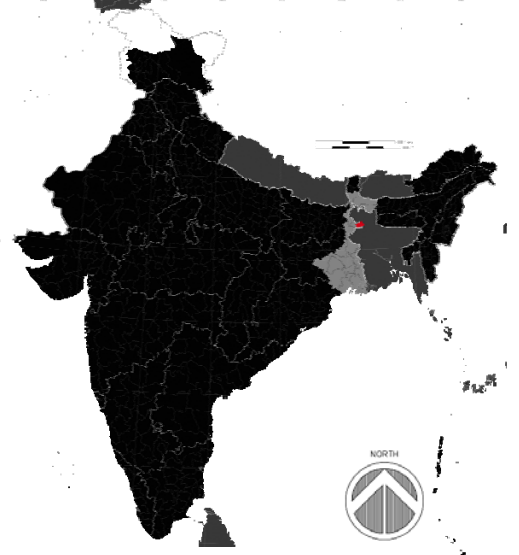


Figure 60: THE ANCIENT FAMOUS Sultanate capital of Gaur, situated both in the borderline of India and Bangladesh.

Source: <http://ibnlive.in.com/news/wb-gambler-puts-13-year-old-daughter-at-stake-marries-her-off-to-neighbour-after-losing/439373-3-231.html> & compiled by Sajid Bin DOZA



The ancient city GAUR; previously called LAKSMANWATI, because the Hindu king, who departed through the back door was chased by the tall man with long hand and daring officer of Turkmen, his name was LAKSMAN Sen. This is happened during the Sena period, and Lakshman Sena was the hero of Bengal, meanwhile according to his name the beautiful city named LAKSHMANWATI. Through the historical references it is recognized that Islam came to Bengal and the hinterland with this incidence. Islam also became flourishing during the independent Sultans period (1208-1545AD) and few times onwards. Later the whole territory of Bengal was conquered by the Babar's Great kingdom MUGHAL.

But regarding the Lakshmanwati, the city urban core was flourished couple of decays before, and was growing with full of prosperity. The Buddhist sign of evidence still remains and evident throughout the site. Basically this city was engendered during the reign of the Buddhism of Pala Kingdom. So since a long length, over centuries the ancient city GAUR became the provincial urban inland trading city of Gaur and during the reign of the Sultanate period the city bloomed in to full extent.



Figure 61: the remains and ruins of GAUR fortified walls, including the embankment and the broad moat. Image source: Sajid Bin DOZA

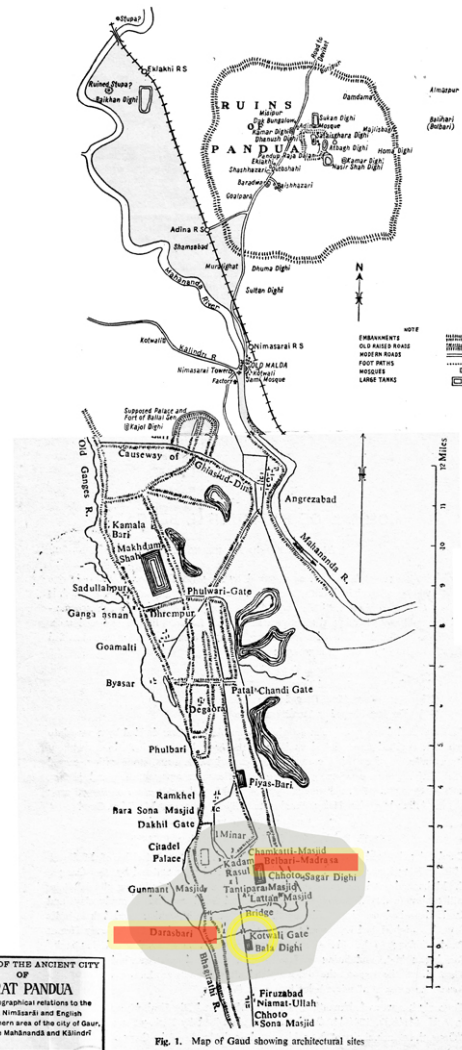
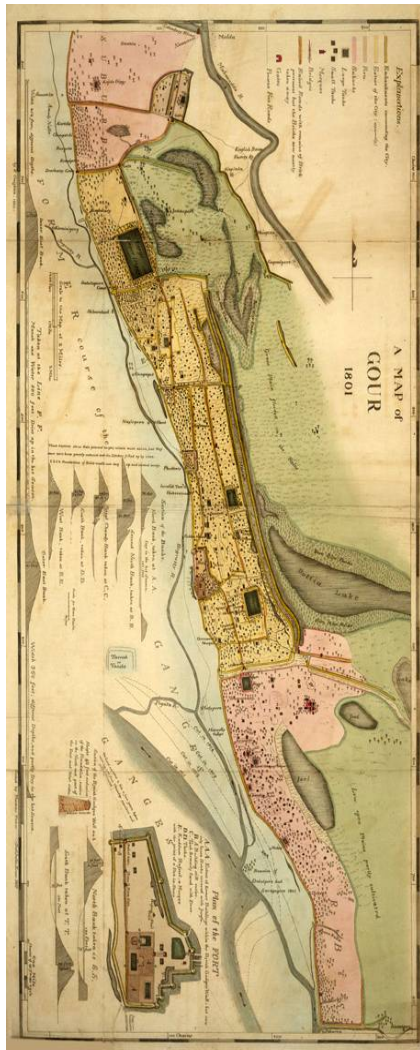


Figure 62: clockwise:

The rendered map showing the GAUR city with the environs.

Source: British Library website.

The ancient map of Pandua and Gaur. Source: Archaeological Survey of India. West Bengal. ASI. The ancient painting showing the glorious ruins architecture of Gaur medieval city, painted by Sitaram (1814). Source: British Library website

The name of the GAUR is of considerable antiquity. It is situated in the district of Maldah, West Bengal, India and some parts of Chapai-Nawabgonj in Rajshahi, Bangladesh. The name of the urban core changed through the age but original name GAUR has never been lost or forgotten completely.

Ptolemy and Strabo mentioned GAUR as 'GOURO' Rennel in his 'A Universal Atlas-1799 AD'- noticed about the ruined city as 'Ruins of GAUR'. Other than that, some copper plates identified with inscription that the king Mahipal and Narayanpal betrayed the Buddhist antiquities of GAUR.⁵⁷ Enormous numbers of artifacts, decorative columns and sculptures used from the Buddhist and Hindu period were found in and around the historic place, which later reused during the reign of Islam and those elements reused in making mosque, civil infrastructures and madrasahs. Once, one Jain writer passed through the city and elaborated the ruins city of GAUR. So under Muslim ruling Bengal it indicates that it was a prosperous city once and owe its origin to pre-Muslim time. The Pala was succeeded by the Sena and it is definitely known that Ballal Sena ruled with his imperial capital at GAUR. The city GAUR was the 'metropolis' of Bengal under the Hindu king.⁵⁸ 'the site of GAUR was a narrow strip of land between the Ganges and Mahananda river, would appear to have been selected chiefly for the convenience of water communication with all parts of the country. Its position is shown in the accompanying map, where the Bhagirathi River represents the old course of Ganges.' now there are few remains to represent vigorously the splendor and prosperity of the ancient city.

Characteristics of the medieval city of Gaur:

(Both for walls and out of the walls)

One of the brightened examples, **Gaur, City** one of the largest medieval cities in the Indian subcontinent, was the capital of Bengal from c. 1450 AD to 1565 AD. Located

⁵⁷ a.) Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. Print. p 131.

b.) A copperplate was discovered at the Khalimpur, near ancient city of GAUR in 1893 AD. Revealed that Mahipal and Narayanpal betrayed the Buddhist antiquities of GAUR.

⁵⁸ W. W Hunter, *op. cit.*, p. 51

on the eastern strip of land between the Ganges and the Mahananda rivers, now in present India and Bangladesh.

From the early fifteenth century, Gaur and Pandua⁵⁹ were becoming populous. Perhaps it was the pressure of population that led Sultan Nasiruddin Mahmud to shift the capital to Gaur from Pandua. The rise of the overseas port of Saptagram (another inland port of India) took place around the same time. Since then, the immigration to Gaur continued at a brisk pace while other towns on the Bhagirathi also began to grow, mostly acting as suppliers of textile to Saptagram and Gaur. It is significant that the city of Gaur began to grow towards the south beyond the wall, whose remains have been recently explored by a Bangladesh team⁶⁰.

Analysis and identification of the spatial pattern

Gaur, the sultanate capital of Bengal is the finest example of medieval city in the subcontinent. The city was designed with the proper notion, intellectual planning organization, the city was fortified with three layers of massive embankment and fortified walls, where numerous ditches and designed moats or the trenches were dug for strengthening defense. The natural settings also allowed to making the strategic plan brilliantly, because the entire area was beautifully bounded with double and triple layer of fortress battered walls, and the landscape of the area inherently was unique of having the dense mango garden, up to that time this area is dotted with garden of mangos, still the ruins of Gaur left tresses those evidence for us.

Henry Creighton⁶¹, an indigo planter living near Gaur, gave a description of the morphology of the city in 1786, including a sketch of the place and superb drawings of its monuments. He found the ruins of the city extending up to ten miles in length and one and half mile in breadth, lying between the Ganges and the Mahananda; the latter became a lagoon by the end of the fifteenth century.

⁵⁹ PANDUA was the Sultanate capital of Muslim Bengal in 1338 and 1500 AD

⁶⁰ Banglapedia and Department of Archaeology Bangladesh

⁶¹ Henry Creighton, *From 'Views at Gaur', six aquatints by James Moffat after Henry Creighton, published by Moffat in Calcutta 1808.*

Components of the City

First of all the city was elongated north and south, because as usual the river Ganges and its main branch of course Mananda was flowing by the eastern and western bank of the region. The city took the advantages of having river route from the most twin elongated edge of embankment, naturally grew like the quality of the 'Inland port of Bengal'. So the spatial strategies were entering towards

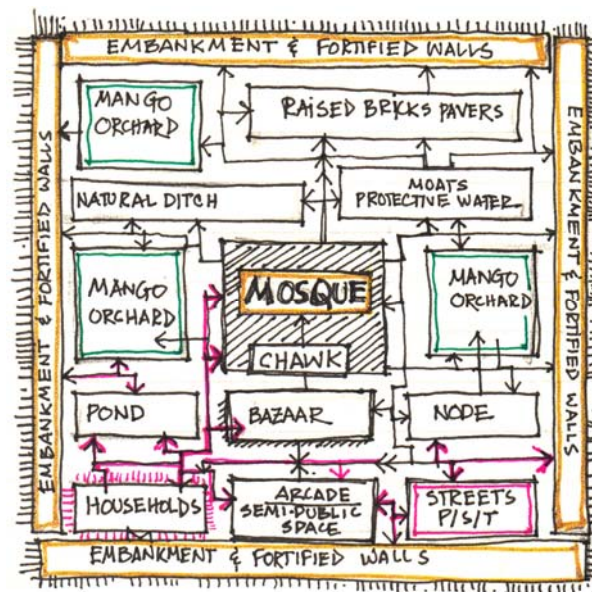


Figure 63: the figure shows the flow chart of different spatial organization, starts from the private to public arena. By this diagram it is easy to understand the sequential spatial pattern of the fortified Gaur city. Flow chart by Sajid Bin DOZA

chronologically from the huge gathering space to the smaller one. Meanwhile, the Jahazghata (Boat landing terrace), the embankment, fortified walls, the triumph-gateways, the inherent topographical quality with mango garden, natural ditch, moat, citadel, the paved street pattern, mosque, tomb, Mohallah (residential area) and the bazaar are the elements of city of Gauda (figure: 64) and see (figure:65). The city had the progression of spatial linkages, so how it was? It is easy to identify from the peripheral embankment, then the gigantic gates used to activate as the thresholds. While the massive thick battered walls and the embankment used both as the path and the strong edges. The path, on the other hand streets and lanes are circulating in-between the building masses, especially through the *Mohallah* and the bazaars. Indeed the spatial sequence came to end at the courtyard of the single storied dwellings.

The city had the 'stratum based zoning'. *Broad sense of spatial feature*

The first stratum was lying with grass field that used to maintain water during the rainy season. Meanwhile the grass field was utilized as the cultivation field for the state granary. Within this first layer of the walls permanent water bodies was remained for the retention of water supply for the community (see fig: 64).

Beyond the first stratum of the embankment and the fortification the suburban area used to be developed during those days, these area was happened to be generated following towards the north-western and the south –eastern part of the city. Basically the settlement was growing at those regions and migrant form other area settled in the suburban area (see Figure: 64 plate).

The second stratum the embankment and the fortification used to be the effectual one, while this strong line of embankment and the fortification was running from extreme north-western part to the south eastern and eventually expected to expand to the southern part of present territory of Bangladesh. Where the Choto Sona mosque (Small Golden Mosque), Darasbari and khaniadighi mosque are situated. Although the wall was turned into the sharp western face heading to the Kotwali Darwaza, but the city remains the tress of continuing its boundary further south. Especially this bracket of embankment and the fortification used to contain deep moat in between the third one on the eastern high land. The pattern of the wall was organic or irregular because of the geographical deviation (Figure: 64 & 65).

The third stratum happened to be running shortly corresponding the second one and both the embankment and the fortification were heading towards the Kotwali Darwaza. This was associated with mosque, tombs and the commercial districts. The landscape is uniquely generated with broad dense of mango garden. So the neighborhood pattern used to be familiar with the ground character. Within this wall the main fort –citadel, the famous mosques and the residential *MOHALLAH* were associated in. the other infrastructures were established in between this wall.

Citadel walls are dedicated with the royal palace (see fig: 64) and the landing terrace. This is the main protected area is fortified by connecting moat with Ganges.

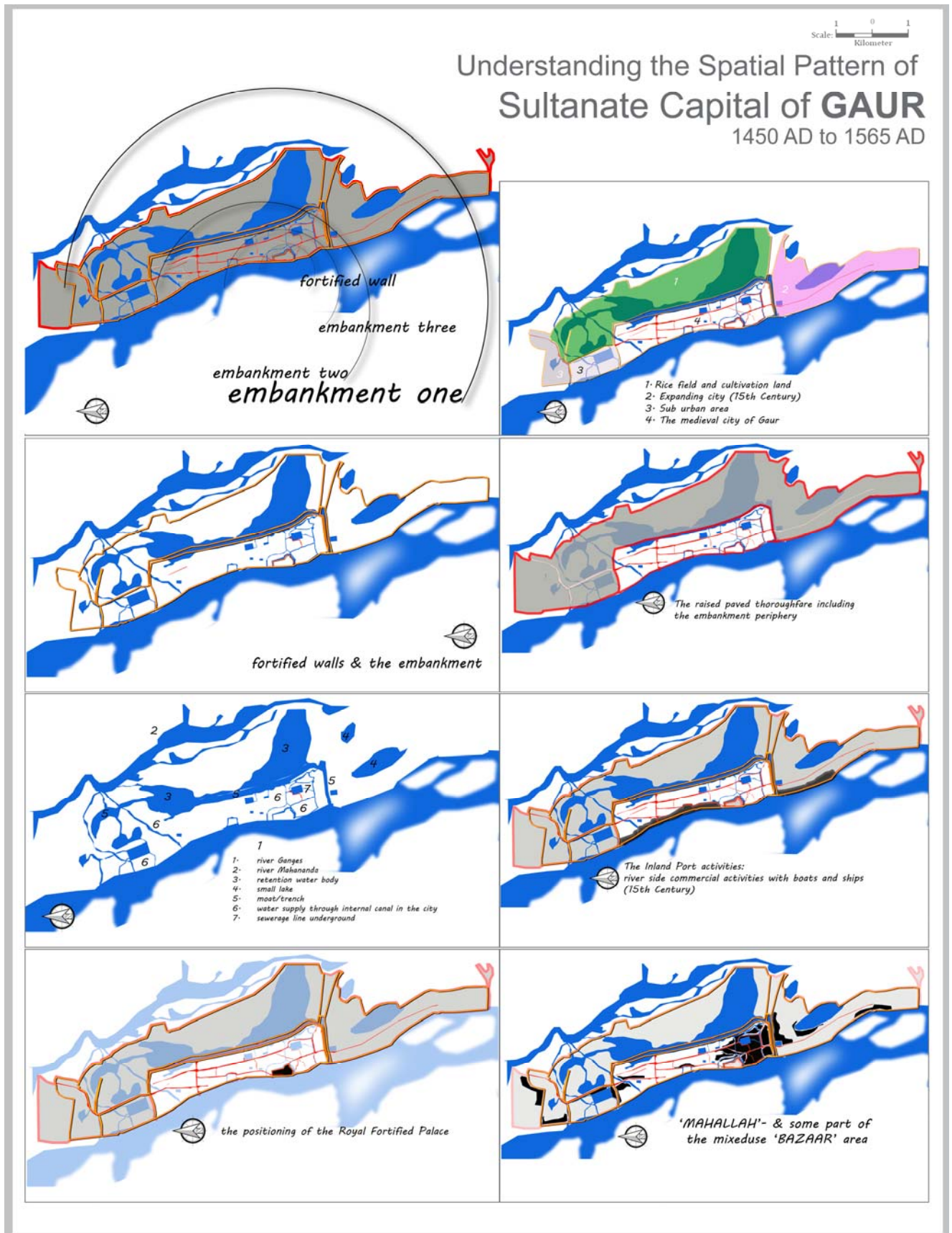


Figure 64: spatial pattern of the master plan of entire GAUR city, the components could be identified in the different plates respecting the stratum of the fort, surrounding situation of the city that time, fort walls and embankment, thoroughfare pattern, moat, water and river route management, Inland port activities, the palace and the citadel lastly the residential Mohallah mixed-and mixed use pattern of the city. Developed by Sajid Bin DOZA

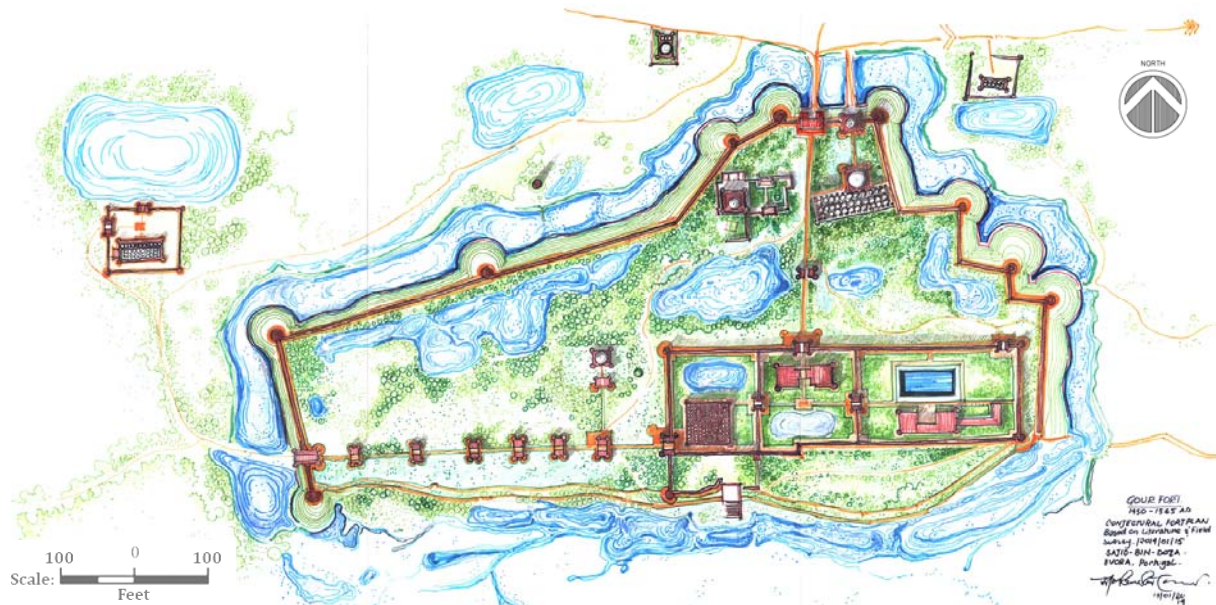


Figure 65: the fortified fabric of Citadel and the process of fortification remains the same as the ancient time as well. In-between the massive wall this is another city, front contains Ganges River. Cartographic representation by SAJID BIN DOZA

t the same time the commercial area Phulbari (see fig: 64 & 65) of Gaur is having the same situation and connecting with the moat at the river Ganges side. So the main third wall is for the imperial settings only. This fortification contains the three segments in the inner side with water bodies. Apart from this the entire area was dotted with big and small tanks, some were dug by the Sultans some were natural.

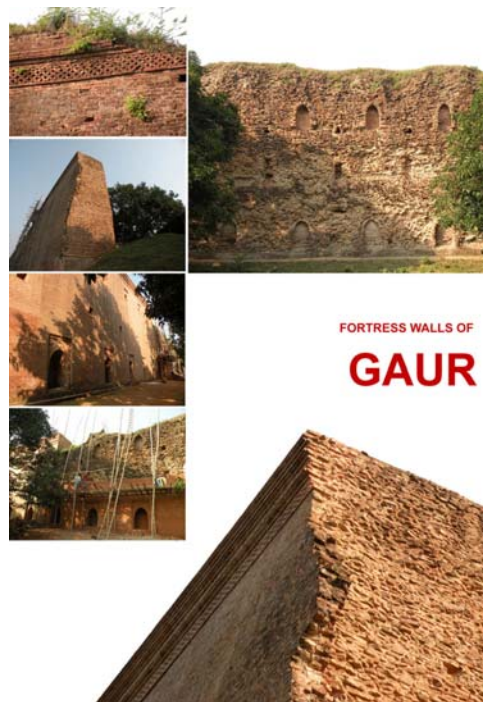


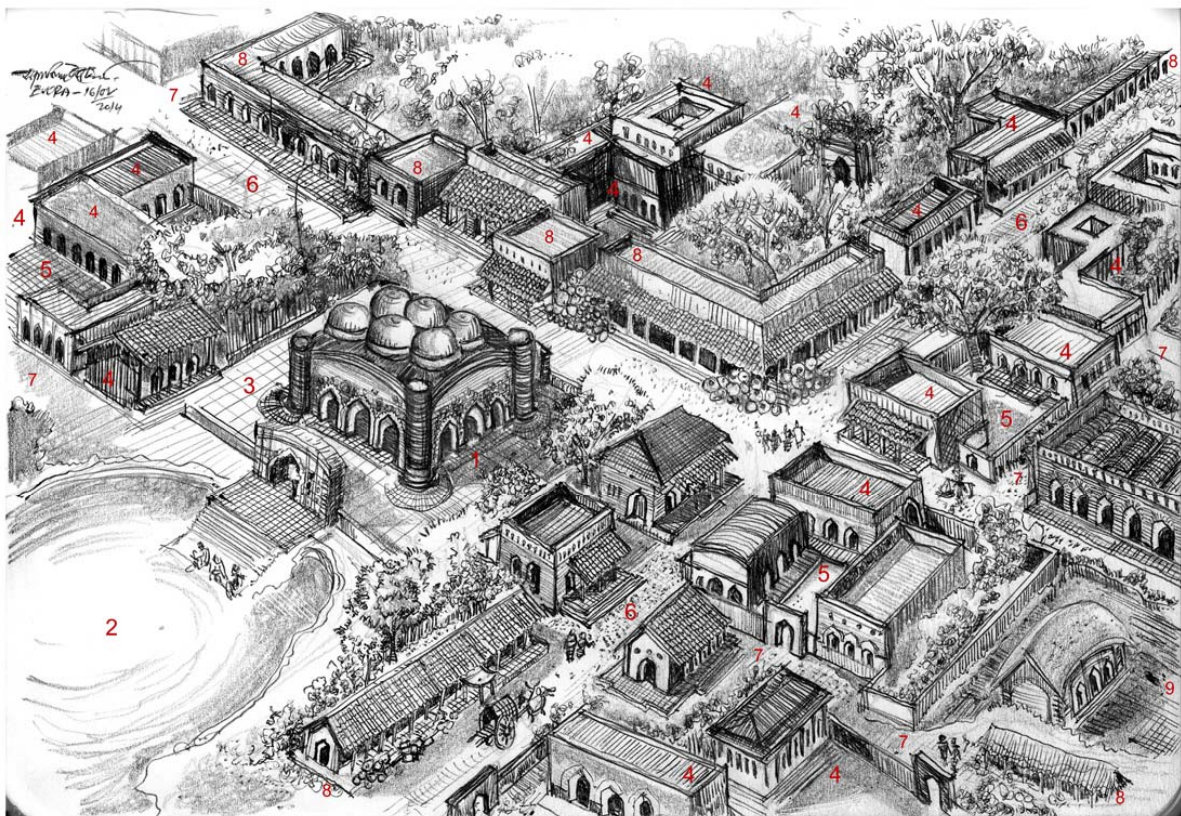
Figure 66: the massive thick wall of the Gaur citadel and the main palace. The figure is addressing the materials of construction, restoration of the walls, ruins of the inner wall with pointer arch alcove and niches and the gorgeous terracotta works of termination bands. Image source: Saiid Bin DOZA

Mohallah with mosque

Although the city was scattered with beautiful mosques, but those mosque was basically the community one, so the city was evolved with some groups of community or the neighborhood pattern, on the Muslim term it is called MAHALLAH. Mohallah is the heretic group of people or the community who live in cooperative society, sometime the traditionally neighborhood or community could be a Mohallah. Eventually, in the case of Gaur city Mohallah generated perhaps through the mosque because the mosque was the administrative hub for the State of Sultanate society during the sultanate period. Such as governing the society, educational facilities, the

‘MOHALLA’- of Sultanate Capital of GAUR City (c. 1450 AD to 1565 AD)

Conjectural sketch and illustration by: Sajid-Bin-Doza. Based on original literature reviews by the historians



1. The Mosque. 2. The Tank/pukur. 3. SHAAN/outdoor space for congregational prayer. 4. house/dwelling pattern. 5. Courtyard of house. 6. Street. 7. lanes/goli. 8. Mixed-use structure/bazaar. 9. Other religious structure.

Historical notes about the city and the neighbourhood pattern of GAUR

The liberal attitude of Husain Shah towards his Hindu subjects is also an important feature of his reign.....ANIRUDDHA RAY, "Archaeological Reconnaissance at the City of Gaur: A Preliminary Report", Pragna Samiksha (Calcutta), 1995, No 2-3, 245-63;

According to a contemporary Vaishnava poet, Sultan Alauddin HUSSAIN SHAH saw a procession led by CHAITANNYA(1486-1534) on the opposite bank of the river....ANIRUDDHA RAY, "Archaeological Reconnaissance at the City of Gaur: A Preliminary Report", Pragna Samiksha (Calcutta), 1995, No 2-3, 245-63;

The density at Gaur would however be over two thousand persons per square mile in an eighty square mile area. The analysis of revenue data, given by Abul Fazl(January 14, 1551 – August 12, 1602) was the vizier of the great Mughal emperor Akbar, and author of the Akbarnama, the official history of Akbar's reign in three volumes, (the third volume is known as the Ain-i-Akbari) and a Persian translation of the Bible. He was also one of the Nine Jewels (Hindi: Navaratnas) of Akbar's royal court and the brother of Faizl, the poet laureate of emperor Akbar

Antenhadu de Lopez, (Portuguese historian) left a description of the houses. The buildings were low-lying, wrought with gold and bluish tiles and they had numerous courtyards and gardens. The floors of each house were covered with ornamental tiles

The Portuguese found the streets well mapped out and arranged. Certain types of goods, like weapons or sweetmeats or food, were sold on separate streets, as in other large medieval cities of the Indian subcontinent. The Portuguese favorably compared this city with Lisbon

Figure 67: spatial pattern of the master plan of entire GAUR city, the components could be identified in the different plates respecting the stratum of the fort, surrounding situation of the city that time, fort walls and embankment, thoroughfare pattern, moat, water and river route management, Inland port activities, the palace and the citadel lastly the residential Mohallah mixed-and mixed use pattern of the city. Sketches by Sajid Bin DOZA

forum for the society and congregation of prayer as well as the other Islamic festival. Beside this, a 'co-existence' of religious rituals was the part of the society. It is noticeable during the sultanate period many Hindu bricks temple were erected and the people from other religion could perform their rituals and the festivals.

Husain Shah's (reign 1494–1519) long reign of more than a quarter of a century was a period of peace and prosperity, which was strikingly contrasted to the period, that preceded it. The liberal attitude of Husain Shah towards his Hindu subjects is also an important feature of his reign⁶². According to a contemporary VAISNAVA poet, Sultan Alauddin HUSSAIN SHAH saw a procession led by CHAITANNYA (1486–1534)⁶³ on the opposite bank of the river. Mohallah was evolved based some master occupation, like *Tanti* (wavers), potter, gold smith, black smith, sculptor or craftsman, and carpenters. In the medieval city of Gaur these *Mohallah's* used to have group together. The *Mohallah* has some characteristics, the entrance of the residential units used to be seated just on the winding lane or the street. One *Mohallah* contained small nodal or the square point where some commercial transaction used to be happened. Those nodes were connected to another *mohallah's* node. Indeed *Mohallah* is a cluster of house with mosque, bazaar, courtyards, and as the circulation spine streets or the lanes are the connectivity in-between the residence of *Mohallah*, the Gaur city prevailed this pattern, because some evidence found from the site that depicting the density, localities used to live in the southern part of the citadel of the palace wall. Local legends identified the high area south of the citadel, from where Buddhist and Hindu icons have been found, as the commercial centre of Gaur. Traditionally it is termed Lal Bazar, while a section of it is called Mahajan Tola. Contiguous to the citadel and of one mile in square area, where cowries and coarse pottery are found in profusion, the ruins indicate the existence of several *Mohallah* or wards dating from pre-Islamic days⁶⁴.

⁶² Majumdar, R.C. *The Delhi Sultanate*, Mumbai: Bharatiya Vidya Bhavan. 2006. (ed.).215-20. Print

⁶³ Chaitanya Mahaprabhu is revered by devotees as an incarnation of Krishna and Radharani as avatars of the Parmatma, or Supreme Godhead. He was born in a Bengali Hindu family. According to *Chaitanya Charitamruta*, Nimäi was born on the full moon night of 18 February 1486, at the time of a lunar eclipse

⁶⁴ ANIRUDDHA RAY, "Archaeological Reconnaissance at the City of Gaur: A Preliminary Report", *Pratna-Samiksha* (Calcutta), 1995, No 2-3, 245-63

Population and density of the Gaur

The city seems to have been densely populated. The Antonio de Britto, Portuguese interpreter in 1521 speaks of a high density of population. He found it difficult to move through the crowded streets while the nobles used to employ a number of retainers to clear the way.

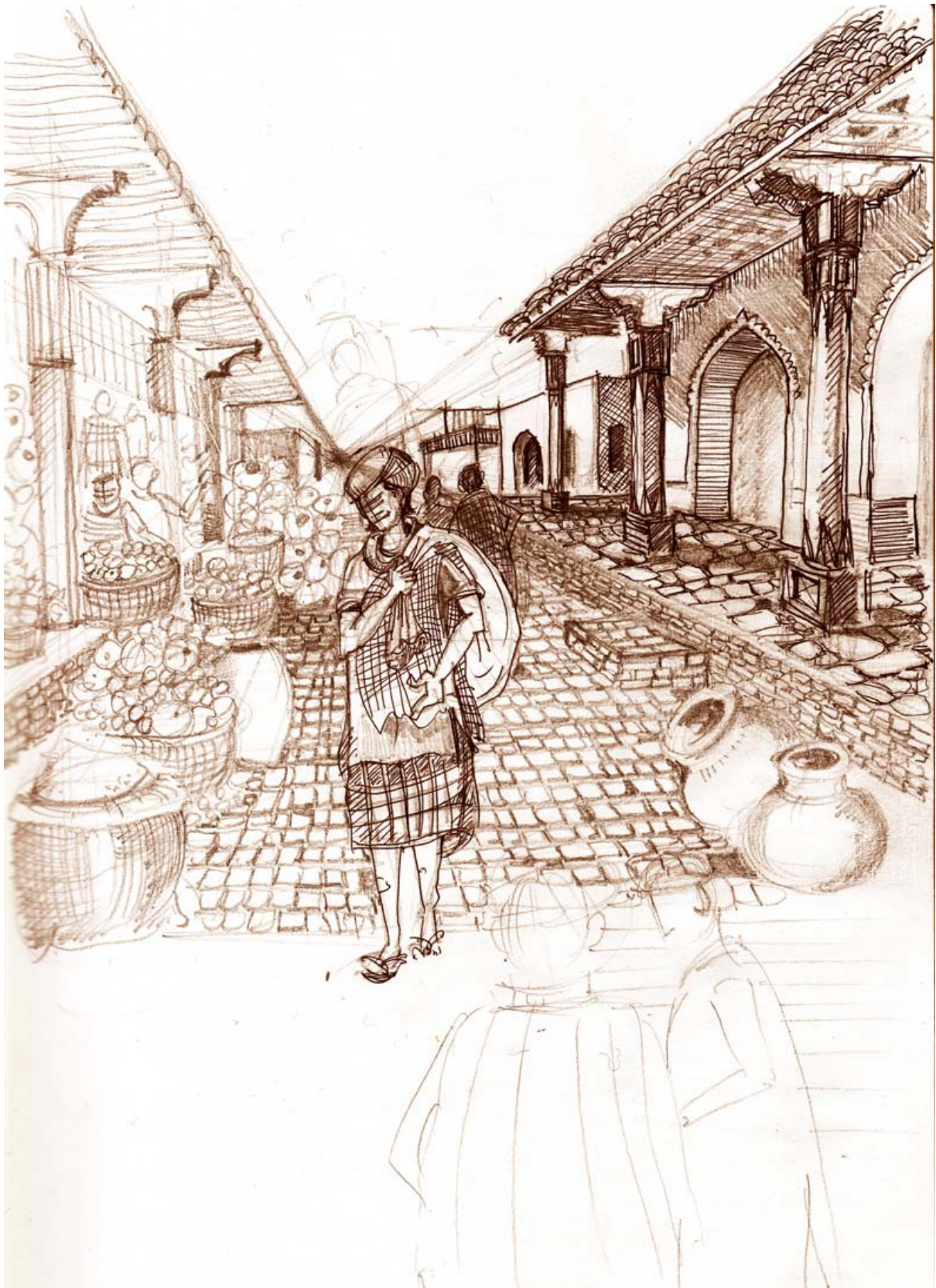
Fariya Y Sousa (Portuguese historian of seventeen century)⁶⁵, and following him others, put the number of inhabitants at twelve lakhs while the visiting Frenchman put the population at forty thousand hearth. Taking five persons per family, the population would come to two lakhs, quite close to two lakh twenty thousand of contemporary Fathepur Sikri. The density at Gaur would however be over two thousand persons per square mile in an eighty square mile area. The analysis of revenue data, given by Abul Fazi⁶⁶ in 1595-96, obviously based on earlier revenue figures, would give an idea of the tremendous draw of the Gaur area and its high density of population.

Residential units (characteristics of the dwelling): *Scale, proportion and street-façade relationship*

The medieval town Gaur today is the ruins of brilliant historic mosque, tombs, triumph gate ways, and undoubtedly this city was colorful from its origin. The religious buildings of Gaur were colored with enameled tiles, the entire mosque was enveloped with beautiful blue, sap green, yellow ocerd and white designed motif. Still witness on the Gumti Gate (see fig: 14), Latin Mosque, Chika Mosque (see fig: 14) and few in Dakhil Darwaza (entrance gate). It is proven by many other voyager from china, Portuguese and Bengali Vaishnava that the Gaur city was charming with colorful and

⁶⁵ **Manuel de Faria e Sousa** (18 March 1590 – 3 June 1649) was a Portuguese historian and poet, frequently writing in Spanish.

⁶⁶ Shaikh **Abu al-Fazal ibn Mubarak** (Persian: ابو الفضل) also known as **Abu'l-Fazl**, **Abu'l Fadl** and **Abu'l-Fadl 'Allami** (January 14, 1551 – August 12, 1602) was the vizier of the great Mughal emperor Akbar, and author of the *Akbarnama*, the official history of Akbar's reign in three volumes, (the third volume is known as the *Ain-i-Akbari*) and a Persian translation of the Bible. He was also one of the Nine Jewels (Hindi: Navaratnas) of Akbar's royal court and the brother of Faizi, the poet laureate of Emperor Akbar.



Ancient Bengal settlement pattern used to combine with mixed use situation, Bazaar, the residential units, colorful claddings, wooden roofing members with curving and the same time the streets, lanes are covered with pavers of terracotta plaque. This sketch shows the conjectural restored view of the street bazaar of the ancient GAUR Sultanate capital of Bengal 14th Century A.D. Conjectural sketch by Sajid Bin DOZA

fabulous architecture, at the same time the city was getting popular also, perhaps it was during the reign of the Sultan Hussain Shahi (1494-1519). Secular or people's architecture during those days was not mundane. Most of the Mohallah was vibrant with people as Gaur city was highly populated. Bazaar or the commercial area was lively with transition. The streets were heading (see figure: 67-a) towards the entrance of the courtyard house; the geographical situation of Gaur city was dotted with ditch and small tanks. So house forms sometimes generated along the edge of the tanks, but mostly these are the indigenous construction.

Along the streets single storied and low heighted dwelling form developed, with courtyard, apart from this blue and yellow ocard color dominated enameled tiled (see figure: 67-b) single storied low house were developed, as because these dwelling almost belongs to the well-off families. The basic materials was used the square small thin brick terracotta and the on red ting bricks enamel coating or the tiles used to implemented.

Sometime the columns of the dwelling were with solid logs of the trees, on the other hand the *darbar* hall was used by the monolithic. Roofing pattern is not for the residential units, but it may perhaps be usual to cast roof with rafter and purlin wooden joist and bamboo in deep interval. Although during the sultanate period dome making chairmanship took the achievements, till then for the residential roofing commonly they used to prefer the terracotta flat tiles and sometime the curved one. To make the roofing compressive strengthen system, adopted the narrow brick vaulting in the inner side of the roof. The dwellings used to be interactive with the streets.

Castenhada de Lopez⁶⁷ (Portuguese historian) left a description of the houses. The buildings were low-lying, wrought with gold and bluish tiles (see fig: 67) and they had numerous courtyards and gardens. The floors of each house were covered with ornamental tiles (see figure: 12). Humayun's companion, author of the *Waquiyat-i*

⁶⁷ **Fernão Lopes de Castaneda** (Santarém , c. 1500 - Coimbra , 1559) was a historian Portuguese in rebirth . His "History of the discovery and conquest of India by the Portuguese," which stands for the abundance of geographic and ethnographic objective information, was widely translated throughout Europe.

*Mustaqui*⁶⁸ stated that Humayun was struck by the Chinese tiles, which were used on the floors as well as walls of the rooms. There is no mentioning of any double-story house at Gaur, although the Portuguese interpreter has described the underground room of the *darbar* hall. Between the citadel and the eastern embankment, a ruined structure, supposed to be the house of a legendary merchant, Chand Saudagar, has been identified as the BELBARI MADRASA, the only one found so far within the walled city. The raised land on both sides of the canal from the Belbari Madrasa to the west, where fine ceramics have been found, would suggest that it was an area inhabited by upper class people. The frontal area of the land gradually slopes down to the canal. The area from the Chhota Sagar Dighi (lake) to the eastern embankment seems to have been occupied by marginal people as no ruins or artifacts have been found.

The thoroughfare pattern of Gaur medieval city

The street was built by the red ting bricks and comparatively elevated form the ground level. The street was hierarchy based, the first layer street, the second layer street, the third was the winding-narrow one and the forth one was the embankment peripheral street. According to the master plan the major avenue was elongated north and south. And other was connecting in several patterns.

The city had two big paved roads, parallel to the river, in the north-south direction, crisscrossed by smaller lanes and canals, some of which still exist. The first layer streets usually passed by the long distance area, citadel, tomb and mosque were located on this street.

The second layer one was executed with the connection of two parallel primary streets, so several connection were networked, basically Mohallah (see figure: 67-b) used to be started through this second layer of the street, on the both side the commercial activities or bazaar was the form of structure and usually nodal point and the mosque would be the intersection point of two secondary street.

⁶⁸ ANIRUDDHA RAY, "Archaeological Reconnaissance at the City of Gaur: A Preliminary Report", *Pratna Samiksha* (Calcutta), 1995, No 2-3, 245-63;

The winding-narrow lanes passed through the densely populated area of the residential area, Gaur had this kind of residential area as we known before from the historic references.

The embankment is the form of infrastructural phenomenon, so the entire fortified walls were ringed with the embankment street as well as the encampment chain or the regimented chain.

The Portuguese found the streets well mapped out and arranged. Certain types of goods, like weapons or sweetmeats or food, were sold on separate streets, as in other large medieval cities of the Indian subcontinent. The Portuguese favorably compared this city with Lisbon⁶⁹.



Figure 68: the inland port area, ruins part of Phulbari. Before the river Ganges and Bhagirathi.
Image source: Sajid Bin DOZA

City water supply, canalling and sewerage networking

The Chhota Sagar Dighi connected to canals winding through the different areas of the city. One can still see the parallel double canals running towards the Ganges, one carrying the waste.

As seen on the survey map of 1849-52, the canal cuts the Nawabganj-Pandu road twice, with bridges on them. The three-arched bridge over the canal flowing past the Belbari Madrasa is still intact. Since the eastern part of the land is higher than the

⁶⁹ Aniruddha Ray, “Archaeological Reconnaissance at the City of Gaur: A Preliminary Report”, *Pratna-Samiksha* (Calcutta), 1995, No 2-3, 245-63;

city, the water of the lagoon flowed through holes in two embankments to supply water to the city; the Chhota Sagar Dighi served as the reservoir. The principal canal runs in front of the Chamkathi (leather cutter) Mosque. The bridges, having one to seven arches, would indicate the volume of water flowing by. That there was a sewerage system, mostly of clay pipes under the ground (see figure: 69), could be seen in one of the ruined houses of the area between the Ganges and the Bara Sona Mosque.

So, the canal used to carry the supply water and the bridge in-between the Chamkatti mosque and the Chhota sagardighi, and other one was passing towards Ganges. While passing by the neighbor community; just parallel to the Chhota sagardighi and the neighborhood of Chamkathi mosque Mohallah.

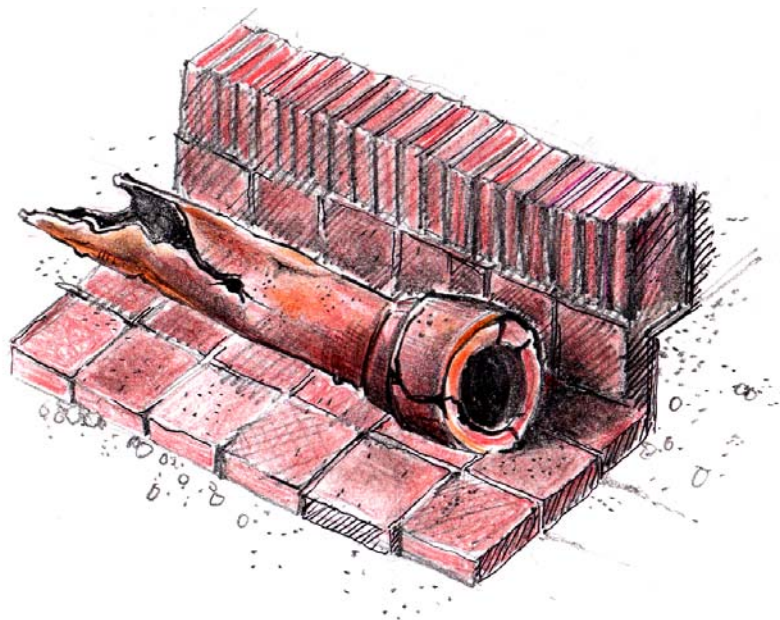


Figure 69: the clay pipes was fixed over brick soling works and a tunnel cavity used to build with brick works to protect the clay terracotta pipes for sewerage system. Source: drawn by Sajid Bin DOZA

2.3.6. KHALIFATABAD (15th Century A.D.), Bagerhat, Khulna, Bangladesh

Establishment of the City: 15th Century AD

Founder/kingdom of the city: Khan Jahan Ali (independent Sultan)

River nearby: river VAIRAVH

Type of the city: riverine encampment and trading fort city

Remakes of the city: positioning and the organizational approaches

Reason for abandon: political, geographical mater

Name of the present location: Umar Khan Union, Panchagarh, Rajshahi, Bangladesh

The great tidal force of Sundarbans, an ideal habitat of the magnificent Royal Bengal Tiger, stretches along the indented coastline of the Bay of Bengal in the Khulna and Bakergonj districts for about 274 kilometers. In place, it penetrates as far as 80 to 124 kilometers inland from the sea. Subject to periodic tidal flushing, the Sundarbans, which is notorious for their unhealthy and extreme saline climate, make up for about half the districts of Khulna and marked as a negative tract on the population map as they are virtually desolate of human habitation. The heavy mangrove forest floor is interested by large, shark-infested rivers with their bewildering maze of ever shifting tributaries. In this inhospitable region an affluent township was systematically laid out by a nebulous warrior-saint in the mid-15th century, it has been known from his inscription as ULHGH KHAN JAHAN, at the present site of Bagerhat, Bangladesh- A significant name, meaning the 'habitat of tigers'. The emergence of new Land along the coastal belt of the Sundarbans and its subsidence from time to time in the past are common natural phenomenon in the area. Even through this inhospitable area remains forbidding to human settlement there is unmistakable event that, from time to time especially in the middle-ages. There were repeated attempt by adventurous navigators to settle there only to be foiled by the hostile nature and the depredations of the pirates.

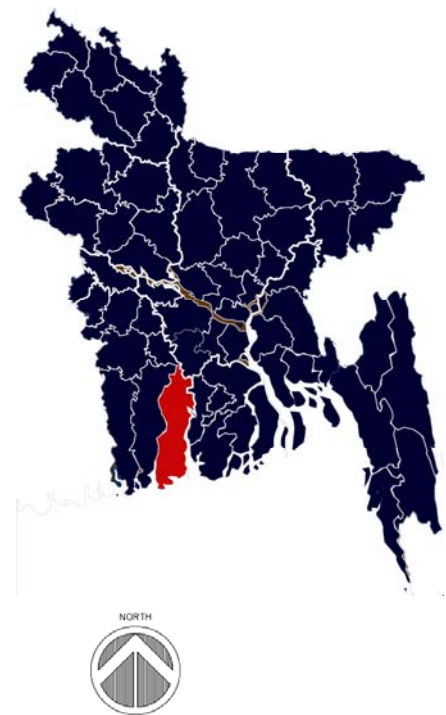
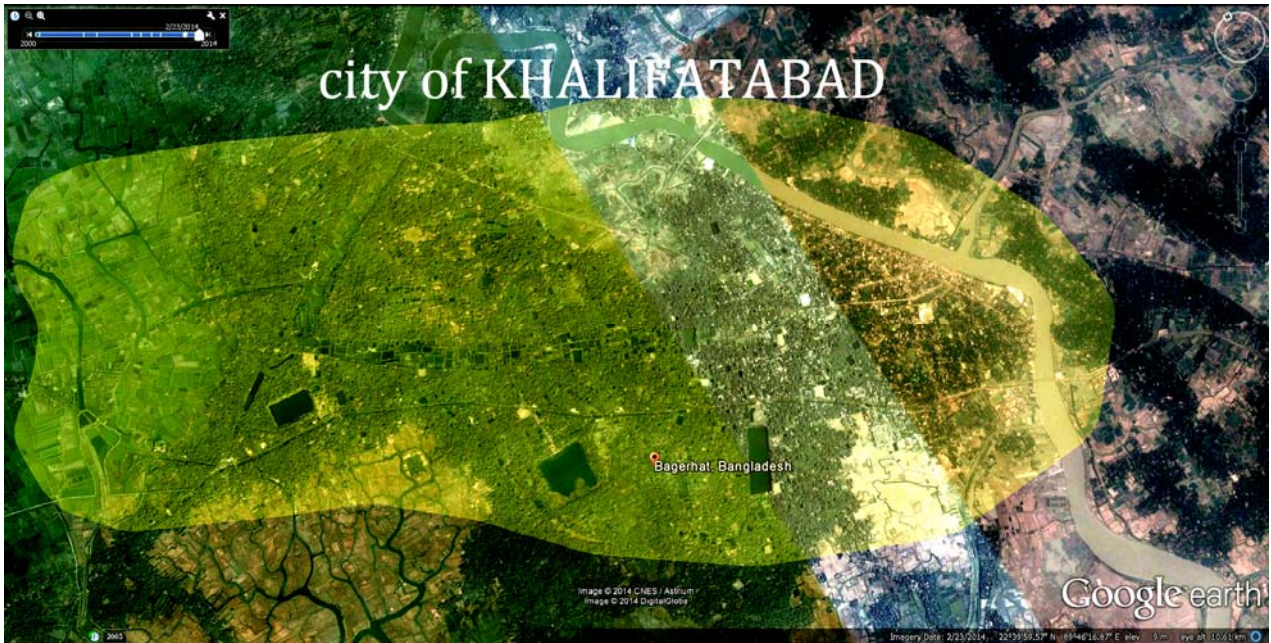


Figure 70: the most southern impenetrable covered with marshland and jungle setting; in this unfit region a regional style with riverine fortress with nature –urban core developed almost seven hundred years back. Source: Google earth and <http://map.janlewala.com/2013/09/bagerhat-sadar-upazila.html> & Compiled by Sajid bin DOZA

However, in support of his claim, besides the discoveries of many Hindu-Buddhist stone sculptures fished out of ancient tanks from this vast area, he gives an extremely interesting account of a large number of ruins of temples, mud-forts, embankments, highways, dwellings, ponds, mosques and distinctive edible fruit

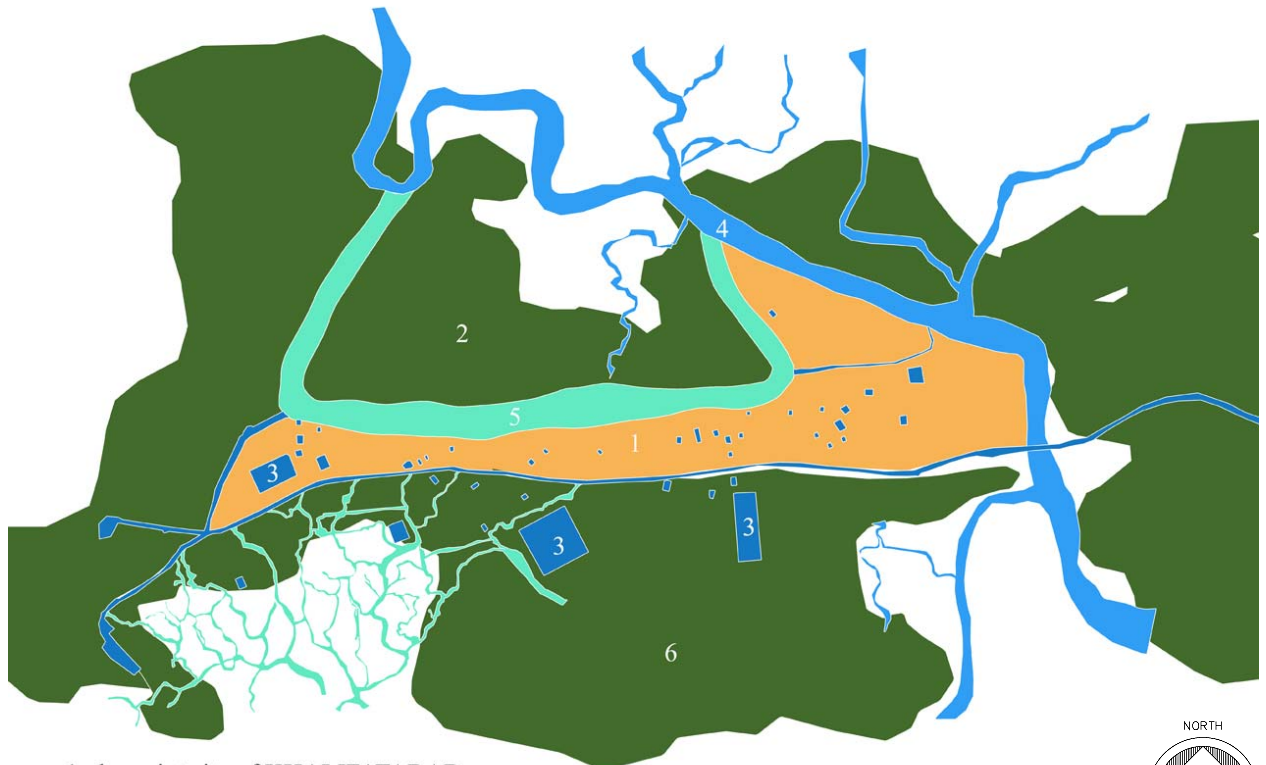
bearing trees found usually near human habitation, but unusual in such mangrove forest.⁷⁰

It was clear that, in this region Buddhist and Hindu settlements occupied with enormous references, deep in the forest and other impenetrable area was housed by the Buddhist community during those days. In Bagerhat itself there is sign to notice the colonization had took place before the reign of the KHAN JAHAN in the mid-15th century, eventually with all facts and figures, it was justified that the region was bloomed with Buddhist and Hindu settlement just between 9th and 12th centuries AD. So primarily it is identified that having the forbidden natural settings of the Sundarbans, there were initiation to establish the settlement, but the natural hazards of the coastal forest belts were repetitively housed by the human attempts. Secondly, the popular fallacy that KHAN JAHAN was the first adventurer, who cleared a part of the dreaded virgin forest and established a Muslim mission colony, is not correct. Meanwhile the great saint resettled the region on an earlier Hindu-Buddhist foundation that had been abandoned due to unfriendly nature.

KHALIFATABAD was the southernmost outpost of Bengal under the Independent Sultans of Delta, (Figure 71) during the reign of Sultan Nasiruddin Mahmud. In the middle of 15th century the urbanization was established by the warrior-saint KHAN E JAHAN, with the new vision of regional architecture style. The holy saint KHAN JAHAN became the first governor of the region and is likely to rule it from his provincial capital HAVELI-KHALIFATABAD. Most of the establishments of his township have disappeared with the passage of time. Only a few survive most of which are religious buildings like mosque and mausoleum. Not a single secular structure excepting road is visible now. Water tanks may be related to both type of establishments. So whatever evidences of Bagerhat >Kalifatabad still traceable can be distinctly divisible into two groups: serving monument and structural ruins buried in the earth. The former group comprises Shaitgumbad Mosque, Singar Mosque, Bibi Begonia's Mosque, Chuna Khola Mosque, Naygumbad Mosque, Ranavijaypur Mosque,

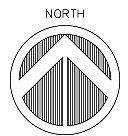
⁷⁰ AHMED, NAZIMUDDIN. *THE BUILDINGS OF KHAN JAHAN: In and Around Bagerhat*. Dhaka: U Limited, 1989. 16. Print.

KHALIFATABAD (15th Century A.D.), Bagerhat, Khulna, Bangladesh



1. the mint city of KHALIFATABAD
2. Adjacent jungle settings
3. Moat and ponds
4. Existing course of water
5. Ancient bed of river VAIRAB

plan of the city KHALIFATABAD



Scale: 1 0 1 2 km

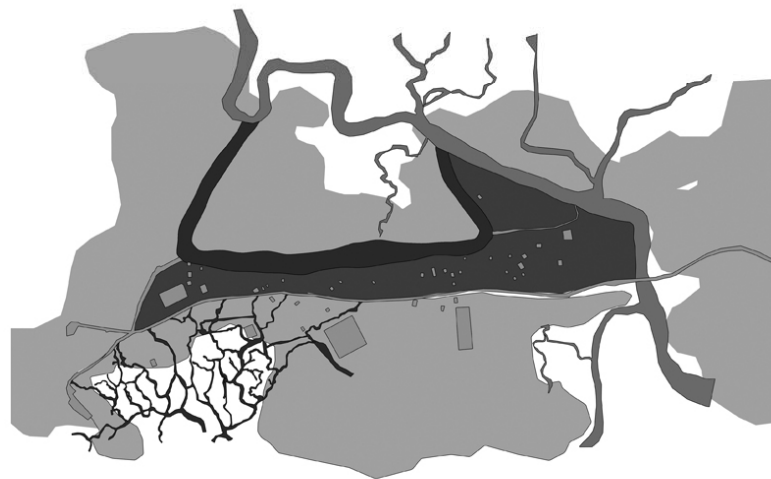


figure-ground pattern of the city with surroundings

Figure 71: the mission city of ISLAM, KHALIFATABAD, usually took the opportunity to engage the river streams for the direct and indirect fortification, meanwhile, the overall land entity used to be covered by huge channeling of river and aqua networking. The figure-ground pattern reflects the scenario. Generated by SAJID BIN DOZA.

Rezakhoda Mosque, Zindapir Mosque, Sabekdanga Monument and Khan Jahan's Tomb. In the latter group there are many structural ruins scattered in and around Bagerhat town. A few of them are in the form of low mounds while some others are almost levelled down to the surrounding land surface. Some of them are Khan Jahaner Vasatbati, Bara Adina Masjid, Jahazghata, Kotwali Chawtara etc. This township has been inscribed on the World Cultural Heritage List in 1985 by UNESCO under the title 'Historic Mosque city of Bagerhat'.

Eventually this township became the popular urban hub during the independent sultanate epoch. Very linear and governed by the rivers on both side a provincial capital developed with infrastructural facilities, groups of community mosques and the networking with other part of the area through the mosque administration became the intelligent advent of administrative ruling. Popularly known as the mint city of the independent sultanate Bengal. The city was known as the mosque-city of KHALIFATABAD, now it is the world heritage site, announced by the UNESCO. The city once contained 360 identical designed groups of mosque.

The whole city strategic plan was executed by the aquatic-streaming; the linear mint city is fully fortified with natural source of means. The old course of VAIRAB River shaped and chiseled up the entire city. Although heavy tidal current was a vital issue during that time, nevertheless both the natural and possibly manmade channeling used to control the aqua-balance in and outer watery part of the 'thin city'. Geographically thousands of creeks are cross-crossed through the mainland along with sustaining the whole aqua discharging system naturally and some parts of them used to canal through the main land towards the natural streams. Very consciously the aqua fortification, thought during that time, which still shows its brilliance. Upper northern side the river VAIRAB was controlled in several points with extended embankments. As the city was named by means of the mosque city, community small or single domed mosques helped to control the Mohallah. Mosques maintained the multipurpose functions, such as the prayer, assembly, gathering, madrasah (Islamic residential institute) and other administrative schedule used to take place for the particular region. Being the inhospitable dread land and continuous tidal inundation, this was protected by creating high mounds of piece of land to established small mosque, as by digging the huge ponds to reserve the sweet water

in this saline affected region. The ponds and the water bodies conceived with other thoughtful matters. Building materials was a great scarcity in the southern part of Bangladesh. The huge ponds were intended by excavating the mud and had been replaced to create small highland for the mosque or other infrastructure, eventually mud was used for making the tiny square bricks for the structures. Manpower was engaged to settle down for the constructional infrastructures. At the same time in the rainy season the pond or the reservoirs filled up with water set fit for functioning and drinking water. Through this process neighborhood developed around the huge water body/by the side of the ponds and a pattern of settlement used to inherit around the city of KHALIFATABAD.

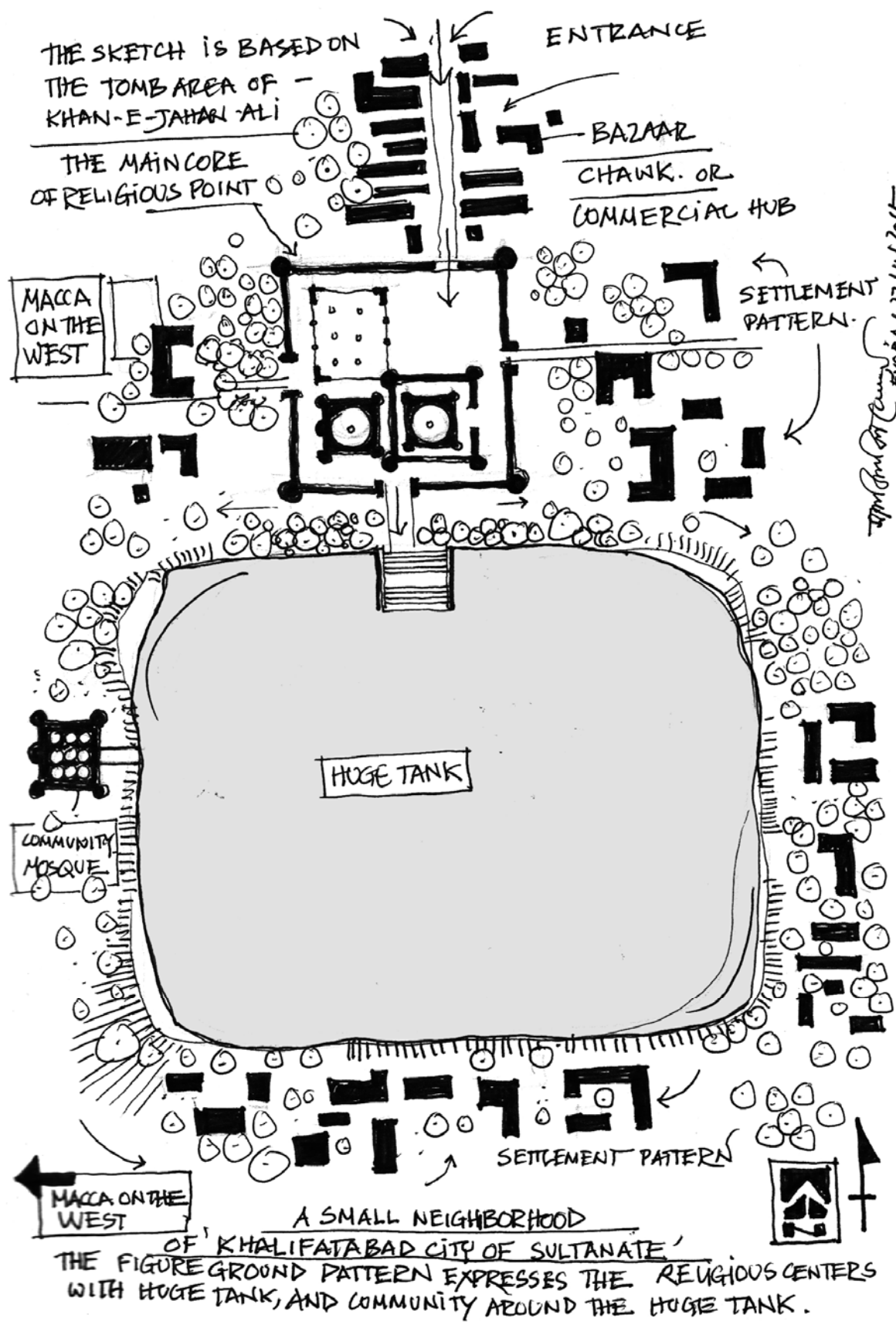
It is presumed that the fortification of KHALIFATABAD was provided by the natural defense of the river VAIRAB on one side and the defense embankment with walls, marshy land and thick jungle on the other side. It is also presumed that the walls, there has been any, were very similar to those of the outer ramparts of GAUR city. The inner side of the brick wall perhaps with mud ramparts, used for the army of the fort to watch over. In the defense and fortification cases of Bengal, for the nature of topography, the structures of the forts were determined by the river and marsh land. Eventually this situation also made easy/resolved by the extreme engineering with creating high artificial rampart, obviously natural rampart was been always preferred for the embankments and walls. For the case of the KHALIFATABAD, it is hard to identify the fort structure comprising large number of rivers, marshy lands and forests. However, the density of remains till exist in the hinterland reflect the healthy urban settlement policies in the unfriendly dread forest area where tidal syndrome is the common and often part of the nature. The mosques which still exist are the core point of the neighborhood pattern. The infrastructures and the other secular remains which had been tresses out or dilapidated; those all structures are in respect to the city planning is astonishing. The warrior-saint KHAN JAHAN elaborated the mint-city of KHALIFATABAD with the new theme, probably the ecological conception; enduring with the river, jungle and the sea. On the other hand, it is needed to be clarify; due to the natural boundaries, the spontaneous growth of the city was considered for the living standard in the jungle settings and enormous sweet water pond was dig out adjacent near by the mosque. Strong statements could be the novelty to establish ponds (which helped to insist multipurpose reasons) for ensuring

the micro-climatic region among all neighborhoods. The KHALIFATABAD city within the unprecedented and inhospitable region drew the sign of innovative pattern of the settlement with the natural resource of fortification, which is not only the legends of spreading the mission of Islam in the jungle but also mending solution for the settlement pattern in jungle settings. Obviously the sixty domed mosque is undoubtedly the center of the city administration and the jewel of Kalifatabad. This mosque contains diverse function and built such huge for the ruling and to create the profile of strength of Islam in the venerable and dread region. To establish faith and respect on Islam the mosque was derived with the friendly blending of local influences.

Endowing with the summery, it is clear that defense and fortification of KHALIFATABAD was provided by the river VAIRAB on the one side. Besides there were several cannels and impenetrable formation of land and jungle. It is also approved that the establishments within the KHALIFATABAD city ensure the strong and strengthen mater of defense used to prevail in the mint city. All these together assists KHALIFATABAD as a fort and warrior saint KHAN JAHAN was the preached and spread Islam in the southern part of Medieval Bengal, consolidated the power of Islam settling the throne in the jungle. Even though, there is no mention of any noteworthy structure of fortifications in that area, he established his place in the hearts of the local people through his superb religious life and therefore, it might safe to understand, his defense measures perhaps, was quite strong and scientific.



The tomb and the mosque of the KHAN-E-JAHAN of KHALIFATABAD city of Sultanate Bengal (15th Century AD)



The Sultanate Mosque City of KHALIFATABAD (15th Century) used to have the settlement pattern around the waterbed, where the main focus was in the mosque and the community used to facilitate with the water body and obviously the micro climate was changed due to the watery source.



2.3.7. DARION mud fortress (14th Century A.D.), Rangpur, Rajshahi, Bangladesh

Establishment of the City: 15th Century AD

Founder/kingdom of the city: King NILAMBAR

River nearby: river KARATOA

Type of the city: riverine encampment and trading fort city

Remakes of the city: positioning and the organizational approaches

Reason for abandon: political

Name of the present location:

DARYAON fort situated on the ancient bed of the river KARATOA, the picturesque ruins of a heavily fortified citadel, the popular name of the fort is DARIYAON fort. This fort is still surviving with the half buried in the jungle near the Kantaduar village in Rangpur District. The nature of the fortification of the citadel is consisted of three distinguished belts of ramparts built by brick core arduous proportions. Four deep moats separated these walls. Still we can find evidence during the rainy season with water clogging. The local people identified with seven massive ramparts alternated by seven foci in the fort, perhaps used to exist before. The interesting part of this fortress is the projecting screen walls. Which resemble the modern barbicans set right angles from the concentric circumvallation pf regular defense wall. Occupying about six hundred acres of land. This oblong fort ruins rises about average 20 ft. from the surrounding ground level.

DARIYAN Fort (Fort of Raja Nilambar)
 Chatrahat, Rangpur , Rajshahi, Bangladesh

Scale: 1 0 1 2 km

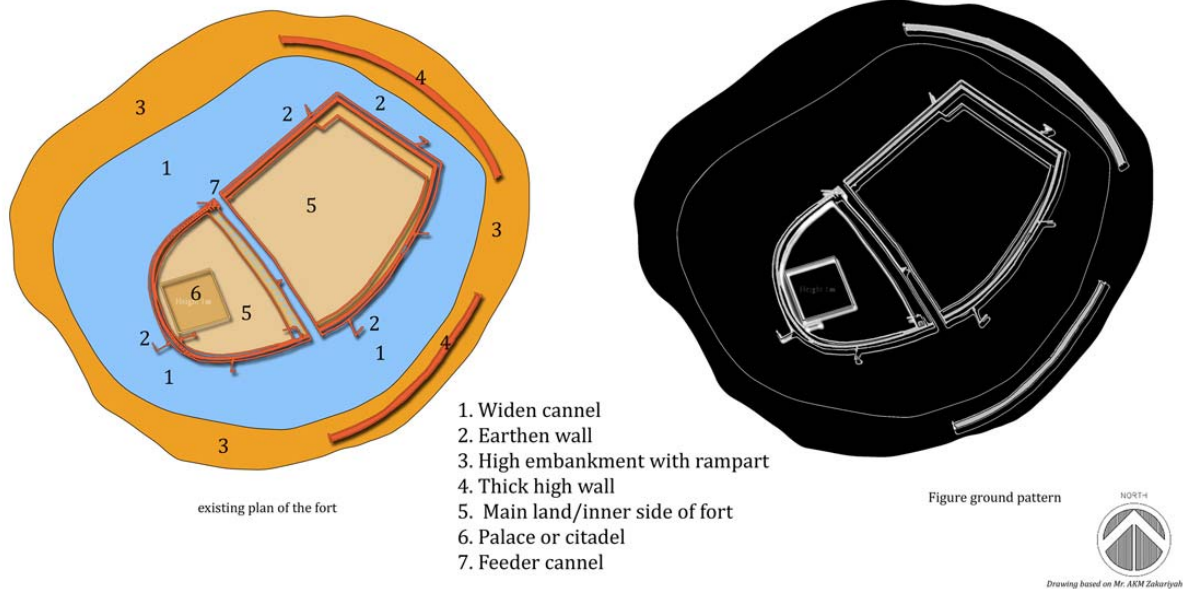


Figure 72: the fort city of DARIYAN, a complete core fortified city as European one.
 Generated by SAJID BIN DOZA.

Inside the ring of the ramparts a high rectangular table land is dotted with several mounds which cover the ruins of various buildings. The defense wall built with the earth and the brick works. This fort developed with the nucleus formation, because the restricted part of the fort was belong with the palace and the other official structures. Through the ruins and site condition it was perhaps clear of having strong barrier with the common part of the fort, usually ancient and medieval Bengal has difference of identifying the fortress organization.

For the case of the Dariyaon fortress, it was organized with the strong fortification with series of moats and high walls used to apply; eventually the medieval heroes were more concern with the physical structure, which would be the dominant, powerful, dread and impermeable for the common people sometime. Here exception for the GAUR the sultanate capital of Bengal. The GAUR was democratic in this case meanwhile for the city planning. I should be noticed that the Dariyaon fort is missing those characters to amalgamate the pattern of the city. So bold and settled situation in making the fortress city, almost the cantonment and the military barrack. Within this rationalities; vicinity of the city used to grow in a regimental style. Of course it is common for the case of the fort Dariyaon fort. Garrison characteristics force to quite out the organic pattern of settlement from the inner part of the wall. So the consequences, settlement pattern developed outskirts of the fortress.

2.3.8. MUGHAL river fort and adjacent neighbor settlement, Bangladesh

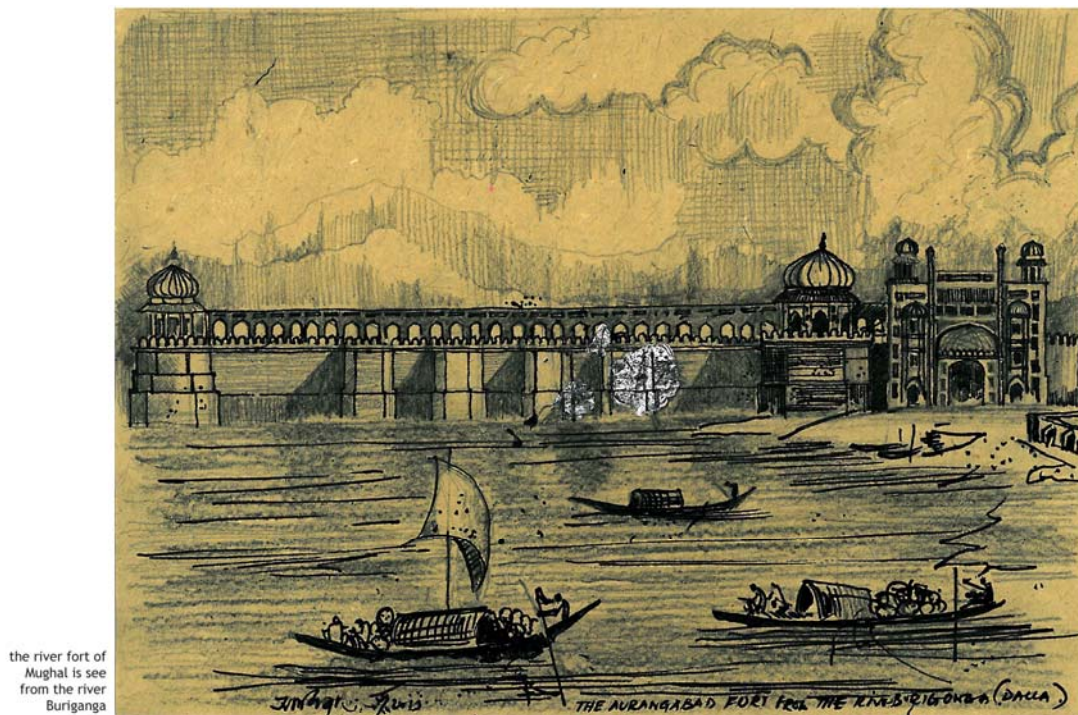


Figure 73: the Mughal's establishment in Bengal, the Aurangabad fort just in front of the river Buriganga, this sketch has done by the reference of the literature.
Conceptual sketches by Sajid Bin DOZA

Fort architecture in the subcontinent is 'huge intelligent structure' built by the Mughal Heroes. It was the process to prevent and to secure a city as well as the territory from any kind of disruption and disintegration through the fortified wall profile. The strategies, approach and positioning of those forts were governed by the contextual specification. All different forts of Mughals had different notion of accomplishment. Fort architecture in the subcontinent was initially developed by the Mughals to protect the territory from the invaders. Later those forts became huge and complex.

The planning approach and the morphology of the fort architecture were justified according to the relative factors. The Mughal Fort is a Medieval-era mega bricks-built building. It is the Indian unique building, replacing the Castle. The Mughal Fort improves the city's defensive strength and provides some culture every turn. Building walls are prerequisite for building the Mughal Fort. The Mughals were concern about the environment. Surroundings and buildings had the integrated and mutual dialogue which could be seen and still exists. Mughals ruled most of the subcontinent until the mid-19th. During their rule they constructed elaborate forts across the countryside which served as administrative centers and living quarters for the occupiers.



Figure 74: upper image: but eventually today urbanization, unplanned growth of the city and uncontrolled way of using river by the illegal river grabber, the fort dissipated its own riverine beauty, as *ti* was before.
Lower image: Thick population and encroachment of land is also the reason of this situation:
 Courtesy-Google image

These forts were beautiful structures, fitting palaces for the rulers of a vast empire. Several - including the magnificent "Lahore Fort" and Red Fort of Agra – and the Lalbagh fort (Aurangabad fort) survive today and remain as some of the largest tourist attractions both in Pakistan, India and Bangladesh. Monuments to the Mughals' power and style was expressive, expression of the forts had the image to create mightiness and discipline. Bengal became a province of the Mogul Empire and was ruled from Delhi by the governors of Bengal (1576). Although the Moguls

are termed "the great builders" in the history of Indian architecture, their efforts in Bengal were subdued compared to the ongoing contemporary architecture being practiced elsewhere in the subcontinent. The local Mughal phase in Bengal was combined with local scale and proportion, and finally the thick plaster was motif-with projected and recessed works, it is obvious the Mughal built forts in Bengal on the river track to protect the state from the Magh and Arakani pirates. So termed as and became the river fort for the Bengal, being the river fort, its characteristics is different from the Imperial Delhi. Mughal built several river forts on the mouth of the river. That fort architecture had the strategies and morphology to remain retain consistence in the city. Bengali Mughal-river fort experienced lot of local and traditional influences only for being the river fort, stating from the component, elements of forts and formal profile of the river fort changed in Bengal. So undoubtedly Bengal conceived a different kind of Mughal River oriented fort, which has distinct characters. Even in the case of this fort formation the Mughal had some strategic planning, morphology to spread city beyond the fort wall.



Form, Expression and Functional Meaning of Mughal Fort Architecture: The Approach, Circulation, facade appearance and 'Fortification Mechanism' of the River-Forts of Bengal:

Idrakpur river fort

Established by: Mughal Subahdar MIR JUMLA

Year of Establishment: 1660 AD

River route: On the bank of *Ichhamati* river

Intended to counter: The advances of the MAGH and Arakanese raiders by water

The Approach and orientation:

The orientation of the fort-machicolated merlons with engaged rounded corner bastions pierced by musketry, is open towards the river the huge drum is protected with shallow curtain wall and probably it was towards the river. The rectangular big courtyard is bracketed with loft Marlon walls and the smaller area containing a round drum of huge dimension surrounded by another series of similar curtain walls. Approach of the fort was from the north. Single gateway with Mughal defensive characteristics.



Figure 75: facts of the fort IDRAKPUR today.

Source: <http://icwow.blogspot.pt/2010/06/munshiganj-idrakpur-fort.html>

The fort remains with two adjunct part, to the river with big drum for the battlement and a shallow curtain wall surrounded.

Circulation: A striking feature of this river fort is an enormous circular platform on the river side (fig. 4). This huge platform evidently was used for mounting cannons and also as a watch tower. The big drum is connected by a causeway stair, the central courtyard is not has link with the outer one.

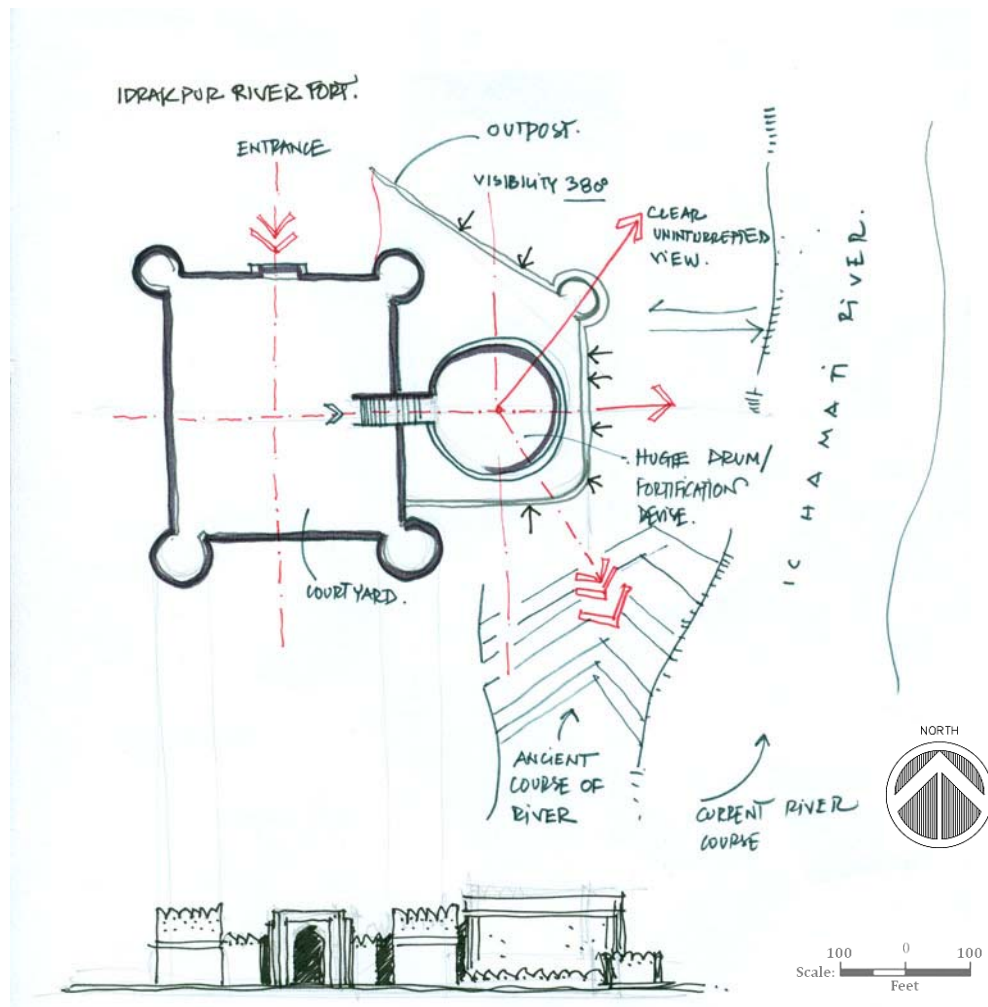


Figure 76: ancient river course including the encampment attitude along with the fortification and orientation justification. Conceptual sketches by Sajid Bin DOZA

Facade Appearance: the huge drum for the battlement is dominant from the outside. The façade has the hierarchical endeavor in the from the north elevation

Fortification Mechanism: built just on the river edge. Huge elevated drum: is adopted to secure the 360 degree vision towards the river. The frontal shallow

curtain wall was engaged for the initial resistance and to hold back enemies for a while.

Rectangular courtyard: had the advantage for reserved soldiers, as well as for infrastructural purpose. The courtyard had the purpose of Arsenal, tents and multipurpose activities for the soldiers

Sonakanda river fort

Established by: Mughal Subahdar



*Figure 77: the main gate of the fort and the huge fortified curtain wall with Marlon top parapet.
Source: <http://traavelbangladesh.blogspot.pt/2012/09/sonakanda-fort.html>*

Year of Establishment: mid-17th century

River route: On the eastern bank of Sitalakshya river

Intended to counter: The advances of the MAGH and Arakanese raiders by water

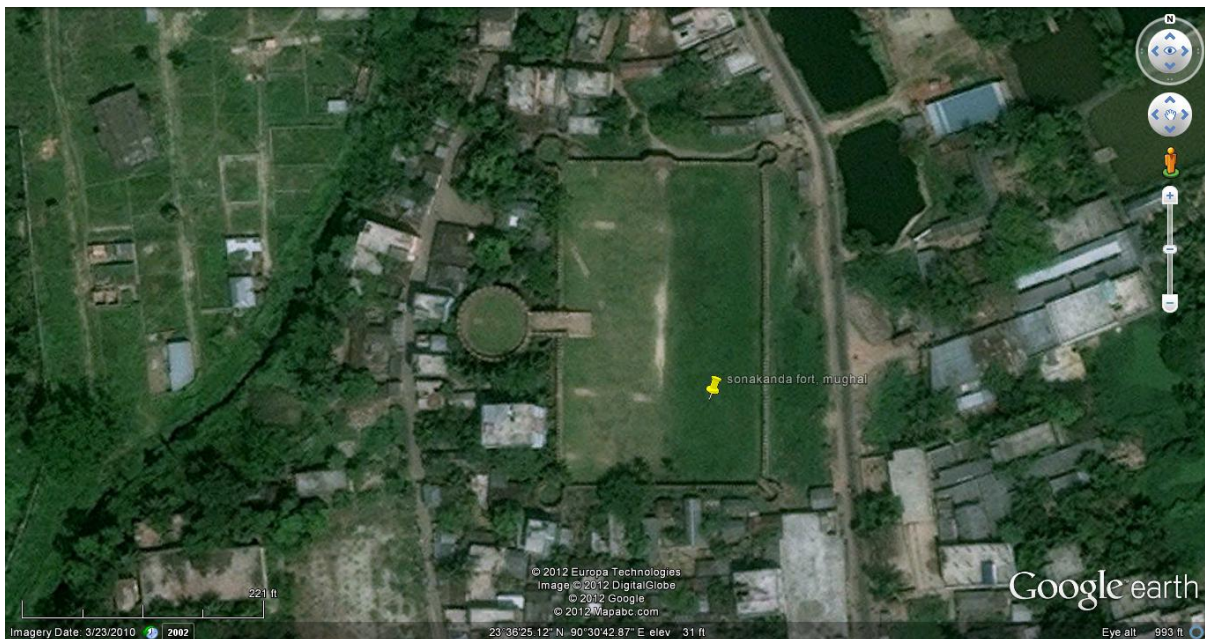


Figure 78: Source: google earth view; and the old river course on the western side where the huge bastion is settled.

The Approach and orientation:

This river fort is usually consists of single entrance, which is chamfers and projected bit outwards (fig.5). This river fort has the strategic importance before the Hazigonj and Lalbagh fort. The river fort is focused with a massive artillery circular drum platform with Marlon, for the innovative course of war and defense the planning was justified like the way. The whole rectangular courtyard is screened and protected with curtain thick walls in which the various activities used to do by the Mughals soldiers. The massive artillery drum bastion is exposed towards the river Shitalakshya to have the maximum aperture at the river horizon.

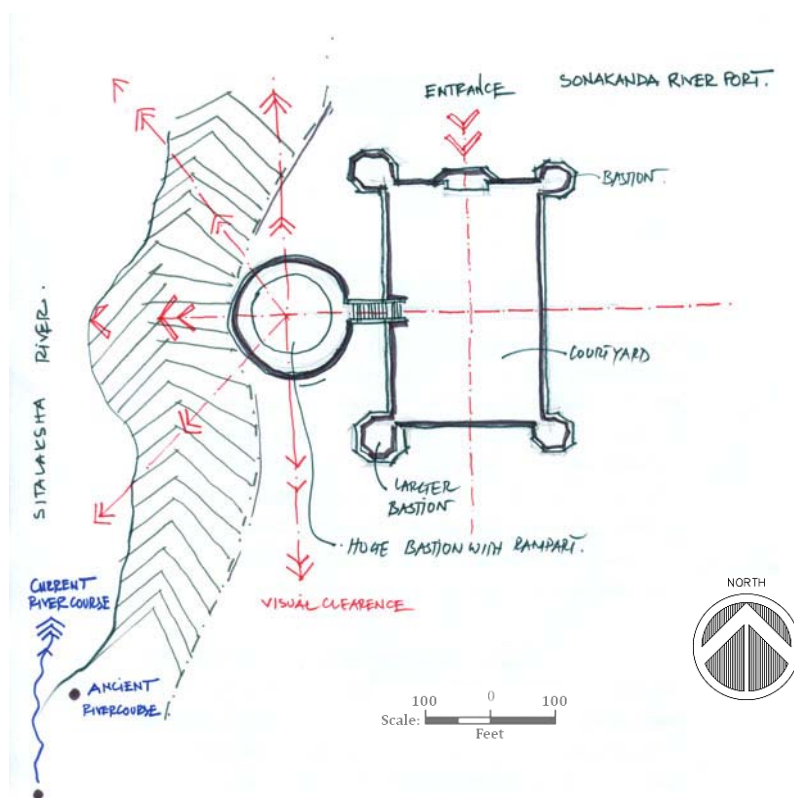


Figure 79: strategically point of fortification used to take care by the Mughals. The river was the main issue to maintain the fortification mechanism. Conceptual sketches by Sajid Bin DOZA

Circulation: The artillery is consists of two different tired circulation one is rampart and another is elevated one. The fort has two main parts; one is a fortified rampart wall of enormous dimension, which has numerous wide and narrow loopholes. And the other part, the most important one, is a raised outwork on the western face. Excepting the artillery platform, there is no trace of any permanent structure within the fortification walls. All round, the walls are crowned by machicolated merlons, which are on average one meter high.

The defensive walls and the massive artillery platform, ring rampart, with elevated platform. Which is the most focal point of the fort. The rectangular corners are fortified with polygonal bastions, which is bit unusual in the case.

Facade Appearance: The most important element of this fort is the elaborated huge bastion drum. That is the powerful emblem of this river-fort as well as the mightiness is evident of great Mughal.

Fortification Mechanism: built just on the river edge. Huge elevated drum: is adopted to secure the 360 degree vision towards the river. The frontal shallow curtain wall was engaged for the initial resistance and to hold back enemies for a while. Rectangular courtyard: had the advantage for reserved soldiers, as well as for infrastructural purpose. The courtyard had the purpose of Arsenal, tents and multipurpose activities for the soldiers

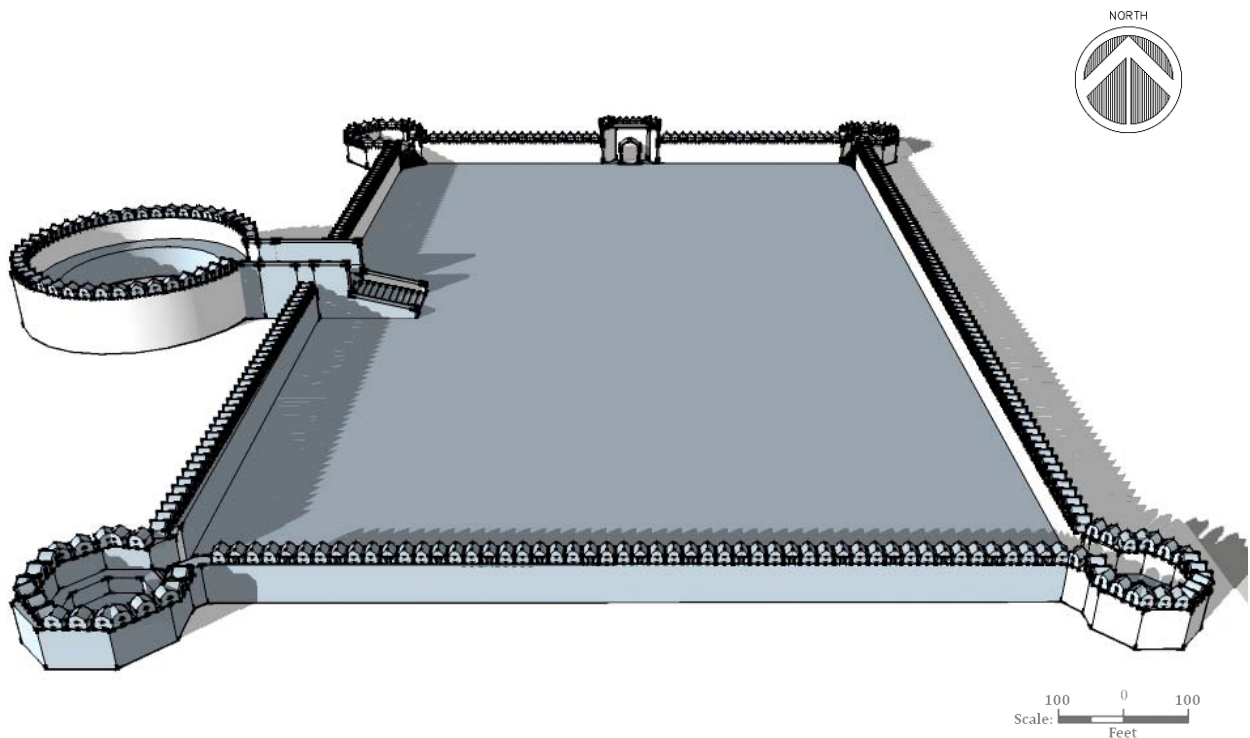


Figure 80: a modeling of the fort of core encampment showing the full strength of the Mughal Empire
Generated by Sajid Bin DOZA

Hazigonj river fort



Figure 81: the river and the fort nearby. Eventually the fort was just on the mouth of the flashing river. Source. Google Earth

Established by: Established during the time of *MIR JUMLA* Mughal Subahdar

Year of Establishment: mid-17th century

River route: On the bank of Sitalakshya river

Intended to counter: to counter the raids of the Maghs and the Arakanese

The Approach and orientation:



Figure 82: the patterned fortified walls of Mughal

Fundamentally the Hazigonj fort is different from other river-fort. The shape size and the approach of the river-fort (Figure.83) has unique quadrant. The fort is irregular hexagon in shape; each corner is articulated with big and small size circular bastion. This is the only fort where we can find the edged rampart for defensive coordination. These entire rampart is connected with stairs, all these stairs are ended before the

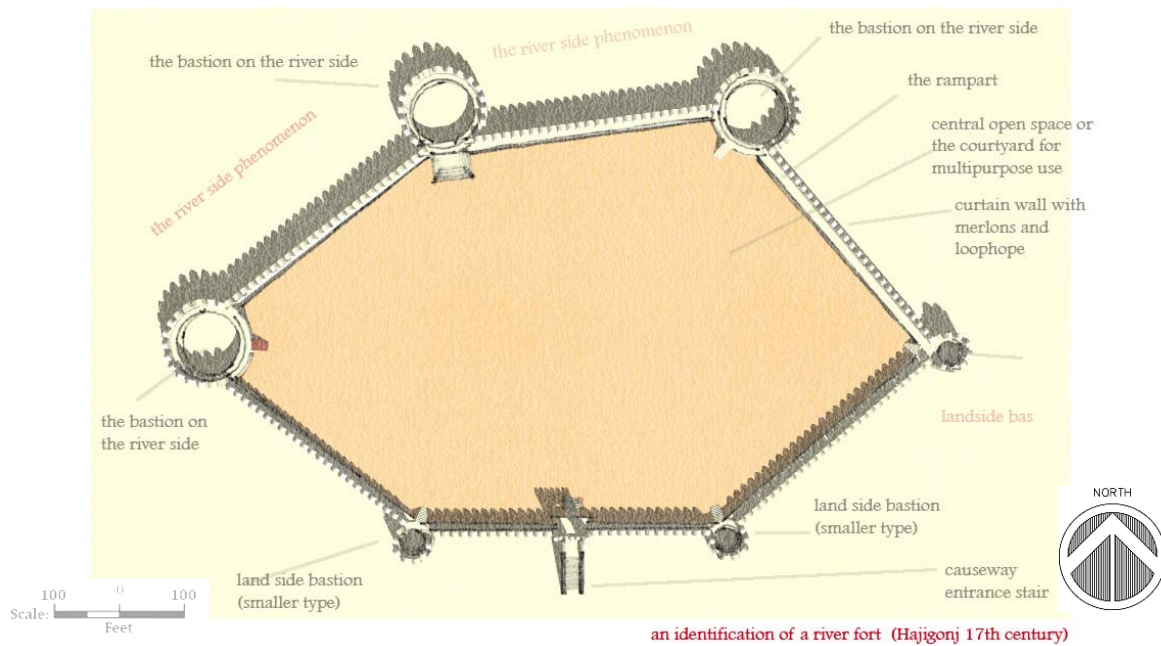


Figure 83: planning organization of the fort. Generated by Sajid Bin Doza

bastions. The deck of rampart is running through the entire curtain thick walls including the bastions.

Three bigger bastions are faced at the river side to sense the orientation in priority

Circulation: Particularly in this fort, the rampart is very much evident and still has the distinct circulation line, which is surrounded by the entire curtain walls. The inner courtyard is used for the multipurpose military activities.

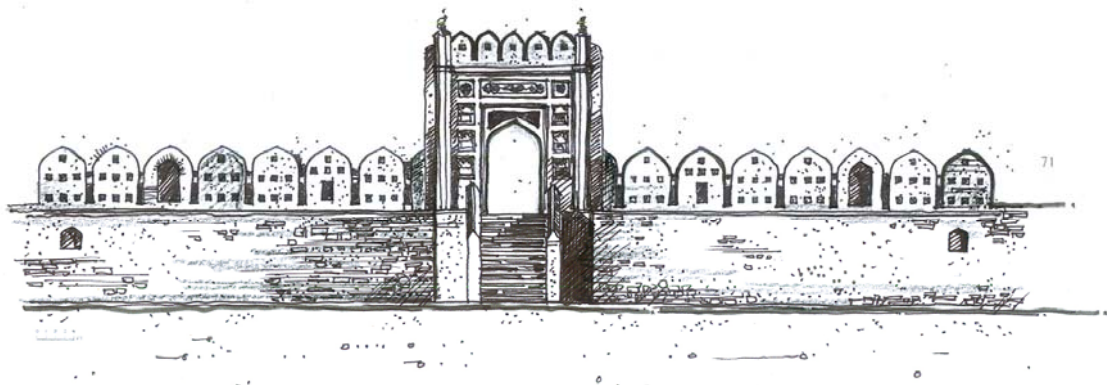


Figure 85: the façade of the HAZIGONJ fort with causeway stair, which means the fortress ness Sketch by Sajid Bin DOZA

The fort is controlled with single entrance reflecting the true Mughal arch and the gateway, particularly in this fort, the rampart is very much evident and still has the distinct circulation line, which is surrounded by the entire curtain walls. The inner courtyard is used for the panel works

Lalbagh river fort

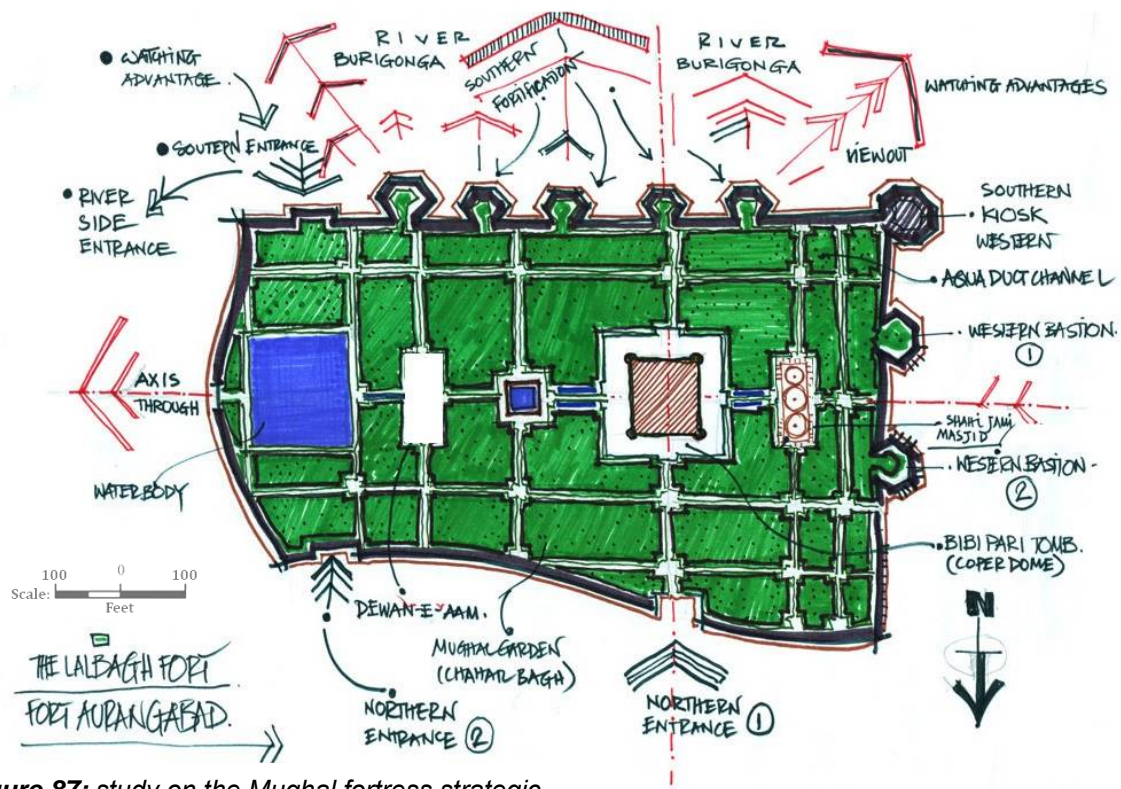


Figure 87: study on the Mughal fortress strategic

Established by: an incomplete Mughal palace fortress.

1678 AD by Prince Muhammad Azam, for the duration of his 15 month long vice-royalty of Bengal, but before he could complete the work he was call to mind by Aurangozeb. Shaista Khan, successor of Muhammad Azam failed to continue the work of the fort. His daughter Bibi Pari died 1684 and stopped the entire works of the fort.

Year of Establishment: 1678 AD

River route: on the river Buriganga in the southwestern part of the old city of Dhaka

Intended to counter: Arakanese, Portuguese and Magh

The Approach and orientation: This is a palace fortress, having all kind of facilities for the Mughal people. Both the southern and the northern gates ways had the priority in this fort. But the river fort has the sign to render attention on the southern side as well as the riverside. The entry approach is concern with the axis. But the fort is ornate with the influence of Munhall garden theory. So the landscape deliberately deals with the circulation.

Circulation: The fort is embedded with Mughal garden-scape. The circulation was bold from the riverside as well as from the north side also. So a clear rampart can be still visible at the southern part of the fort.

Facade Appearance: South façade of Ialbagh fort is the most precious scheme. The southern main gate (indo-Indian) provides the information of a rich vigor of Mughal. The entire wall fort is covered with thick plastered curving.

The fort is associated with seven bastions of them the southern corn is emphasizing still today.

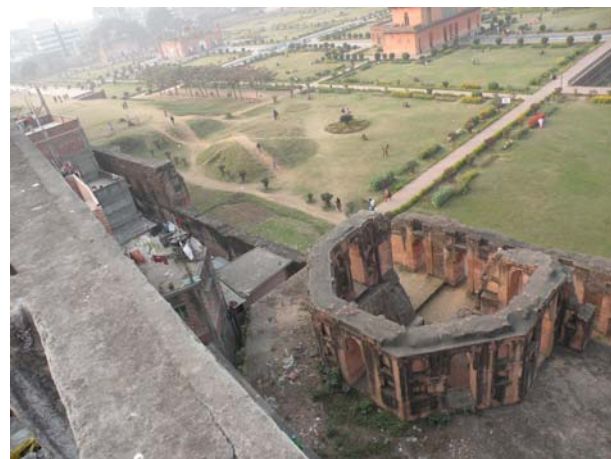


Figure 88: still appears the vastness of the Mughal fort in the urban Dhaka. Clockwise: towards the tank and other north gate. To the upper left: the bath house of the fort in the Char-Bagh garden. At the bottom left: the southern or the main riverine gateways. On the bottom right: big polygonal bastion. Image source: Sajid Bin Doza

Fortification Mechanism: The southern rampart and the entire southern part of the river fort was designed so to resist the enemies form abroad.

Conjectural restored sketch of the Aurangabad River-Fort (Lalbagh Fort) and the Mughal neighbourhood around the fort (1678-95)

01. South Eastern Gate to the riverside. 02. Polygonal bigger bastion facing the river. 03. The outpost artillery 04. Regular bastion for protection 05. Kiosk and jharokha for observation 06. Rampart circulation for the shoulders with secondary screen 07. Mughal aqua supplying reservoir 08. Southwestern secondary screening with ramparts circulation 09. Famous Mughal Garden "Cahar-Bagh" 10. Terraced garden with patterned paved and water flowing 11. Admin and storage 12. The Bibi Pari Tomb 13. The Shahi Mosque 14. Mughal Royal Residential Area. (un-built) 15. Northern Gate 16. Northern lofty and decorative gateway 17. The Residence and the Hammam (royal bath) of Siastha Khan 18. Central Fountain 19. Water tank 20. Fortified wall 21. Node of the Mahallah (neighbourhood)

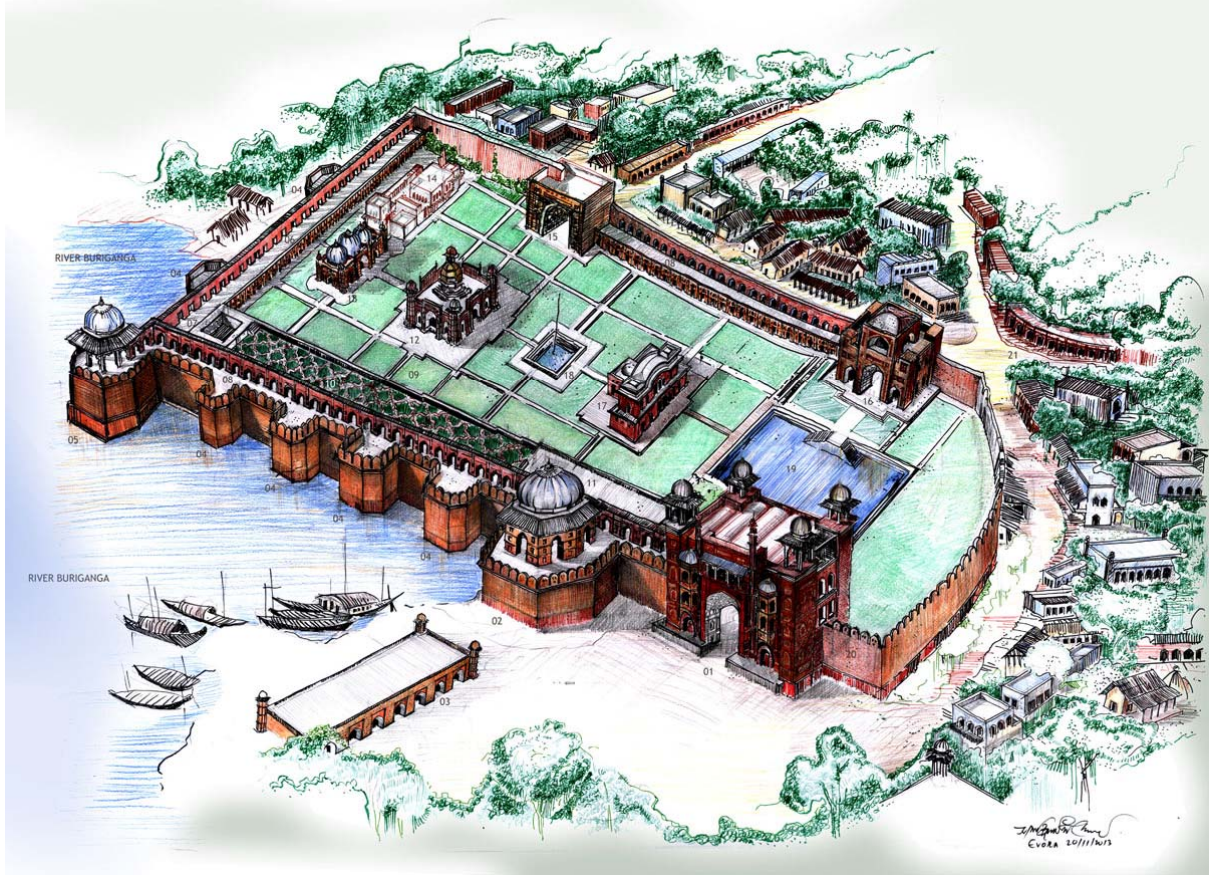


Figure 89: A conjectural drawing with illustration shows the completeness of the Aurangabad fort of Dhaka. The entire environs show the during Mughal reign of 16th Century AD. Where we can find the vicinity profile inside and outside the fort. Eventually this fort was a riverine fortress with beautifully landscape of Mughal philosophy.

Conceptual 3D sketch generated by Sajid Bin DOZA

Interpretation & summery

Basically Bengal derived from the siltation of mud and other riverine minerals. The land and the locality survive till date with the bonding. The land formation mold enormous differences in lives. Differences also seen in building of political, social and economic strategic master plan.

In the political area, Bengal had experienced ruling from the Buddhist, Hindu, Sultanate, Mughal and lastly the Colonial monarch. Moreover this region was also the precious hub of cultural congregation, so the monarchy of the Bengal in different time embedded with mixture of ritual and cultural diversity. To be particular, the art and the architecture of Bengal bloomed in full extend since the Great Ashoka ruling. Numerous school for art and architecture flourished during the days, and we had the authentic schooling of Dhiman and Bit-Pal. Stone was not the inherent construction materials for us, but it was carried through from the Rajmahal of India. So stone is precious for us, though we used it in various structure extensively.

Mud is the strength for the Bengali countrymen. This mud is modified in sun-dried bricks and then into the kin-burnt and lastly for the ornamental settings. Terracotta became the glorious form of 'climate protector'⁷¹ for the Architecture of Bengal. From the beginning, human being always seeks for the protection and safe accompany. It is so indigenous for the human settlement, next it became as the part of the household and onwards the fortification for the city. The huge gigantic infrastructure turned into the fort and fortress of the city. In Bengal the situation was unique, to prevent enemy attack various mud fort were built.

Bengal was consisted of mud forts and those forts were generally called *Durgo*⁷². This term popularly applied to all kind of fortification. This term 'fort' can be synonymous, such as *duar*, *kot*, *burj*, *khitta*, *damdama*, *chauki* etc. the topographical specialty of the terrain of Bengal turned into the unique morphology for the case of river forts. In the riverine Bengal, the fortification was established at the junction and mouth of the rivers. Defense system has molded in to another Dimension for this region, having been in this climatic situation the river fort of Bengal evolved with

⁷¹ Climate protector: could be termed as the cladding elements, such as terracotta, traditionally used in the historical building as the ornamental block as well as the extra jacket to protect from the moisture and saline factor.

⁷² Durgo: is the fortified premises surrounded by battlements and thick high wall for the resistance, and moat or trench was offset surrounds

innovative ideas and approach, at the same time flooding and monsoon time made the defense system impregnable.

River of Bengal acted as the arteries, greatly responsible for shaping up the Bengal's river forts. Some records refer to have the existence of numerous mud forts from north to the south in Bengal. The climate, geography and the material perused to emerge the strength of Bengal's forts dependences predominantly on the natural mechanism defenses and not only on their fortified walls. Significantly, Bengal contained mainly two types of forts; mud-forts (*mahidurga*) and water-forts (*jaladurga*).

The whole Bengal is dotted with numerous forts. The materials unavailability was the prime-problem for the construction of such huge structure. The wider Bengal was perforated with lots of forts, due to the materials constrain and short lasting tendency, those forts are no longer today, but may exist with earth mound. The Pre-Mughal fort was built with mud. Bengal was famous for its mud forts, its planning organization, fortification policies, its setting with the nature and positioning along with the river.

The earliest fort of Bengal, the Pundrabardhan city was fortified. The city was facilitating of having the Karaotoya River as well as fortification. The partial rectangular shape fortified walls was massive thick and the bastions are still evident showing their sense of fortification. It is however that the entire fortified city was dug-up with tranche/moat to prevent enemy's attack.

In Bengal fort and fortification was immensely influenced by the Hindu kings and Muslim. The fort and fortification of Mediaeval Bengal was seen as exemplary and many later forts have grown out of the synthesis of the two main sources, the pre-Muslim tradition of the land, and the art of the building forts brought by the Muslims. Basically the fort architecture was developed and elaborated in the two distinct phases, the Sultanate and the Mughal ones. It lingered five hundred years long.

'Huge Intelligent Structures'

It is true; Bengal experienced building huge structure since Buddhist era, still the *Pundrabardhan* and *Mahavihara*⁷³ of *Paharpur* and *Shalbon* ruins⁷⁴ shows us there brilliant craftsmanship and credibility to build these kind of huge structure. It is also noticeable that both the *Paharpur* and the *Shalbon* both *Mahavihara* were the fortified complex. So the attitude of having the concept of fortification by means of construction is bit familiar to the people of Bengal. But the common people sometime react on this kind of huge structure, they think to have the architecture by means of a liberal and democratic way.

Sultans and other Pre-Muslim rulers adapted the primitive (Buddhist and Vedic) procedure with the amalgamation⁷³ of the local and the prevailing style. Although the materials constrain, in Bengal the conqueror were confident to stable a huge form of structure in the fertile land with the vision of the historic overview.



The mega structure fort AURANGABAD (17th Century) by the Mughal, on the river BURIGANGA, the south facade was interactive towards the river. And the huge entrance could be seen. This is a restored sketch drawn by the author.

⁷³ MAHAVIHARA is the Buddhist Monastery of residential university for Buddhist pilgrims.

⁷⁴ Shalboan: Moinamate Monastery is known as the Shalboan behar

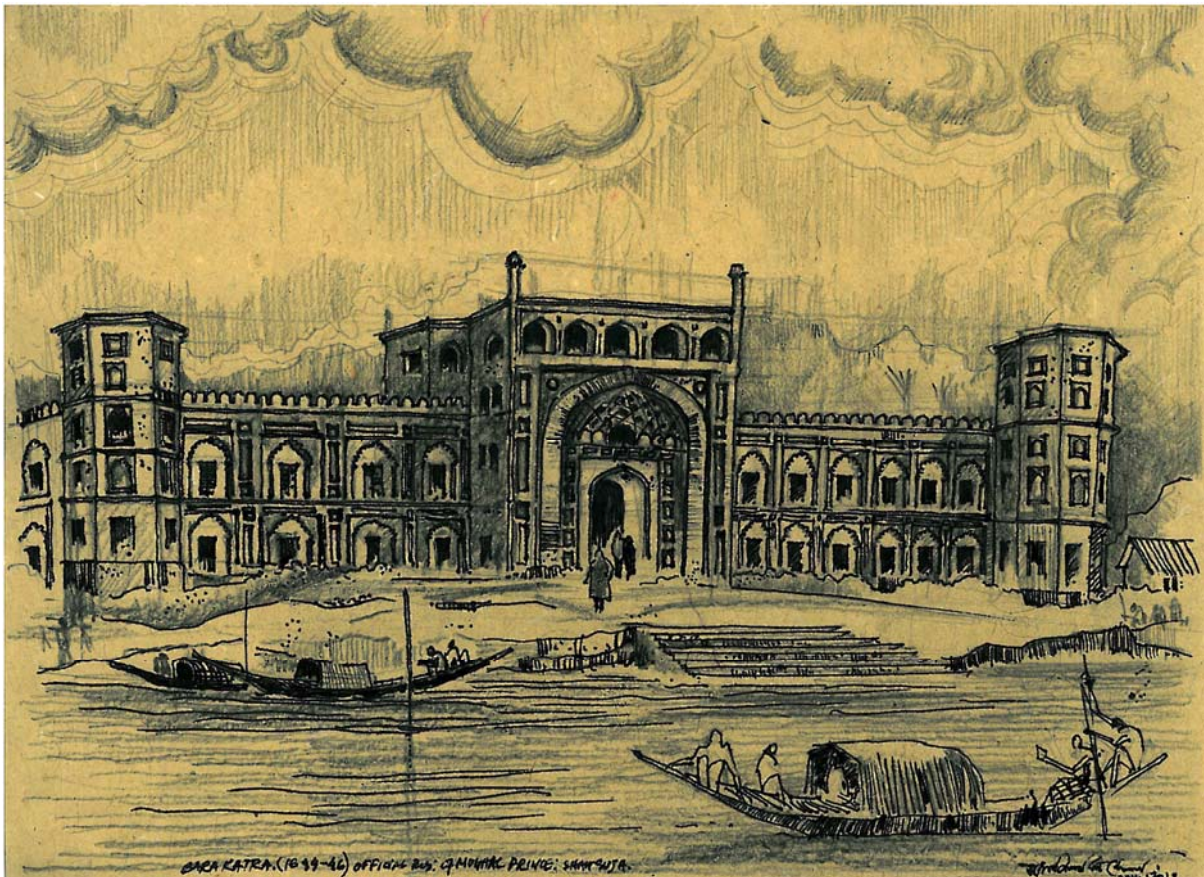


Figure 90: huge intelligent buildings were oriented towards the river emphasizing entrance in the delta region. The Mughal used to effort with those issues, this is the partial conjectural restoration of the BARA CATRA (Guest house caravansary of the Mughal)
Conjectural restoration sketch by Sajid Bin DOZA

Intelligent structure could be termed as; the structure with proficient structural advancement, the structure which has the diversified functional curriculum, structure that grew with 'purposeful' technique and having purposeful building this kind of configuration is associated with supportive and special tasking. Such situation was observed during the medieval period. It was comprehensive to build structure in such manners.

It is also important to select sites for the mega structure like fortress, *Pundrabardhan* is such example which methodologically and rationally developed by those phenomenon. The practice of making huge or the mega structure in our land was laborious, but the value of the architecture became a unique characteristic for the region of Delta area.

Setting, availability of building materials, traditional craftsmanship, the nature of the course of waterway and lastly the strategy of positioning the placement for the river fort were the identical key elements to settle the mega fort structure.

The Mughals entered in India with the advent of the Great BABAR, a warrior from Kabul, Afghanistan. Delhi became captured by the mighty convoy of the Mughal. And gradually spread over the subcontinent. Bengal became one of the major part for the trading. The provincial authority developed by the Mughal and under the cultural development cherished to the society. Although, Pre Mughal political situation was balanced substances that was prevailing in the society. So, the Mughal was lucky to restructure the society smoothly. Fortification method was inherited by the ancestors. So the battlement in field with the instant action was a very common treat for them to fight in. for the topographical reason, in the delta the fortification method became complex for them to resist the invaders. Henceforth, the Mughals stood on the strict policies to control over the maritime route of Bengal. Results outpost with regimental attitude, artillery fortress and cantonment city developed in the delta land. However, it was a kind of learning form the Sultanate period that how to reinforce the fortification with the mud built fort beside the rivers. The Mughals followed the formula from the ancient riverine fortress, and used to put the functional aspects and zoning in their fortification. A happy blending of organization and context specificity grew up with the conception of 'new river fort' by the Mughals.

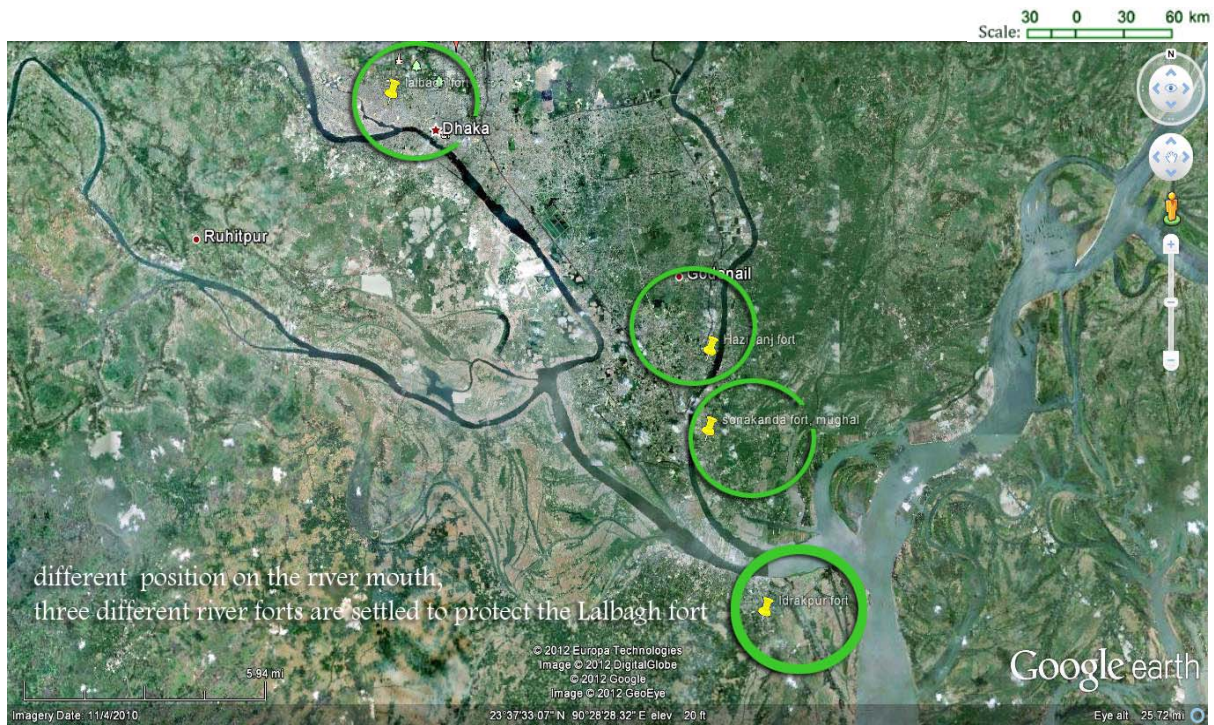


Figure 91: this Google earth view shows us the repetitive establishment of river fort on the river mouth, to protect the main fort the strategies used to take by the Kings and associates.
Generated by Sajid Bin DOZA

Strategy behind Site Selection for the River-Fort by the Mughals

The independent sultans built unique river fort in Bengal, Gaur is another best example among these (Figure 91). Unfamiliar geo-physical environment shaped the river fort architecture of in an expressive silhouette; the flat land and the river with tidal force along with the critical setting the fort used to build up. On the northern region of Bengal the defense system of the fort was allocated just on the mouth of the river, so that the enemy could not get into the internal navigation channel. Once the outer navigation flow is blocked or protected it was impossible to penetrate through the outer navigation network to the inner route. Major junctions of the river route were chosen by the sultans. The connectivity, stimulation, course of action and the settings of land is along with physiographic formation of the river and land was totally a synchronized phenomenon to house a river fort. Peculiarities in land formation evolved fort architecture of in forceful characteristics from the other forts of the sub-continent. Most of the mud fort used to build during the sultanate era, and these forts used to choice the site on the comparative elevated land for the clear vision, sometime the elevated ground was developing by digging up the land and with the proper fortification planning moat was designed. Sometime the sultans choose the natural rampart for fortification also.

So the strategy of choosing the site was mainly evolved with the location matter, basically on the deltaic edge or mouth (Figure 91) the Pre-Mughal and the Mughal people established the mega structure like river fort. Advantage of waterways, ground-height, rampart, tidal force of river and the slope of the embankment were the main involved components of establishing the river fort of Bengal. The sultans took necessary defensive measures and evolved river forts in the delta. The river forts mark a blending of the defensive requirements of the sultans and the physiographic peculiarities of Bengal.

A comprehensive study of the origin, growth and development of medieval fort architecture in Bengal makes it clear that it did not reach its climax in the Mughal period. The ideal type of fort building was built during the time of the independent sultans. The achievement in the field is best reflected in the full-fledged example of the citadel of Gaur.

Summary of Sultanate River Fort:

The first line of defense used to be done by the Hindu Kings in North- Eastern India

- a. Based raised on huge earth dumped area to secure the visibility from all side
- b. Basic intention was to build over elevated area of the city. Not only to achieve the security and military system but also to stimulate an image of power sitting on the top.
- c. The exterior part of the mud walls used to have the expression of mightiness
- d. Mostly the sultanate river fort used to build with the mud, wood, bamboo and sundried brick
- e. It has been observed that some of the sultanate fort built with two to three layers of curtain mud walls, and rampart corresponding through the middle of any fortified walls, like DARYAON FORT, in the old bed of Karatoa River. This fort had seven ramparts.
- f. Water body, cannels, and trenches/moats were installed and engaged for fortification.

Summary and basic characteristics of Mughal river fort

- a. The Moghul river fort is the modification of the sultanate fort, because the Mughals used to follow the strategy of making of river fort on the water.
- b. The river mouth, the elevated land, junction of two or three secondary rivers, inner navigation route were the popular sites for choosing the river fort of Bengal.
- c. The river fort of Mughal is consists of a single entrance with Mughal 'entrance-emblem'.
- d. The merlons of the thick walls has identical value to express the '**Mughal-façade**'
- e. Most of the river fort is consists of one or several important bastions and the artillery elevated drum, these elements were engaged in plan to provide clear vision
- f. Some river fort is leveled with rampart surrounded, like the Hazigonj river fort is one of them, the rampart or the elevated terrace used to help the proper fortification system for the Mughal soldiers.
- g. Sometime tower was used in the river side façade to have the clear look toward the flatland of delta
- h. The bastion of the river fort has varieties. Some of them are circular and some of them are polygonal, Idrakpur fort and Hazigonj fort, all these are having the cylindrical bastion. Both the Lalbagh and the Sinakanda forts are consisting of polygonal bastion.
- i. Being the river fort all the forts of Mughal Bengal are conscious about the orientation. All the forts grew up addressing the river course. Like the giant bastion and the other bastions are comparatively bigger in form and the bastion at the land side are bit smaller.

2.4. Finally...! (Remarks)

Indeed the river fort architecture of Bengal is resourceful and could be termed as the powerful massive 'deltaic solution'. From time immemorial fortification and natural substantial always oriented the people of his land with some sense of fortification, although the Mughals, the Sultanate, and other Emperor of the period tried the same attitude that was done thousands of years back, by the predecessors. The influence, typologies, positioning, materials and other infrastructural phenomenon however were the pathway for the other ancestor's kings and people. The brilliance of the ancient riverine fortress city is a unique example for the ancient Bengal's heritage.

On the other hand the fertile and flat lands mold the defensive architecture in to a native form or suggestion. However, very few river forts have survived the ravages of time. Nevertheless, an interesting group of fortress built in 17th century by the Mughal, which guarded the water routes towards Dhaka against the recurrent plundering raids of the Arakanese and Magh pirates. Summery tried to identify and to analyze the ancient, Pre-Muslim and Mughal river fort, characteristics, their strategically location for setting, the technique of safeguard from the pirates and lastly the context specificity of making this kind of river fort with some unique morphology. It is clearly evident in the research that the technique and the process to house a river fort was pre-learning, from the Hindu Kings of North-Eastern part of Bengal. By the course of time the Sultans adopted of building the river fortress in this plain land, it became comprehensive for them to find the opportunities of establishing mud river fort in this region. From the history it is clear that the centuries, and due to the changing fortunes of these highly vital frontier outpost, several types of both temporary and permanent structure were built within the fort and river-forts area. All the remains of mud fort today are a scattering of bricks bats. But these mud river forts contained other structure inside, the fort, Jami mosque, residential units palace and landing water terrace which are evident.

The Mughals had the notion of introducing the high test or the environment with the architecture as well as the structure. Although they were new in Bengal but well off kingdom in Delhi Sultanate, the Mughal was experiencing the other river fort was built by the sultans and the Hindu Kings. Perhaps, Mughal learnt lot of tips of fortification in this tropical region from the former kingship. So the existing three river

fort including the Lalbagh fort Mughal showed the act of the war in to an art form. And this act of war is entitled in the form of architecture as fortification. Bengal was never deprived by the Mughal, particularly for the fort architecture. They examine, analyzed, tested, implemented and lastly approached locale, for establishing such huge intelligent architecture. And the result came out so strong, so bold, so specific and soulful. In the arena of the architectural world, Bengal's river-fort style achieved the global platform.

It is also noticeable for builders like Mughal to handle the structural articulation in the deltaic situation. Subsequently the river networking and the marshland management was complicated issues to build a fort on it. Bricks were used fully for the construction of such bigger structure in the unfavorable land. Here the paper tried to induce the happenings of the river-fort's different phenomenon, its growth and critical comparison among them.



The Mughal settlement pattern, along with the market or bazaar. Called CHAWK. A common pattern of the Mughal Settlement. The restored environment drawn by author.

Chapter 03

Identification, analysis, and documentation on
ancient riverine fortress city of

MAHASTHAN in Bengal

(Distinct phase:
PALA 8th-12th AD)



BY THE ARTIST (Lina)
EVORA 20/11/2020

Chapter Comprises

Identification, analysis, and documentation on ancient riverine fortress city of MAHASTHAN in Bengal

(Distinct phase: PALA 8th-12th AD)

3.1. Notion & Understanding Chapter 03

3.2. Buddhist City Fabric of MAHASTHAN

3.3. Construction materials & course of action of the ancient city

3.4. Aqua route-Thoroughfare and hierarchy

3.5. 'The form of art' of MAHASTHAN

3.6. 'The Assumption Plates'- is contemplating the idea of conjectural restoration by the existing remains of the structures, at MAHASTHAN, ANCIENT RIVERINE CITY OF Bengal. Dating back: 8th Century AD

3.1. 'Saying of' - the Chapter Three:

Ancient city of MAHASTHAN, erected 3rd Century B.C. this is the huge settlement ever developed since the MAURYAN period⁷⁵. A notified phase in the history of the subcontinent which had the influence in the delta land of BENGAL. Eventually during the particular time span, the socio-cultural aspects used to start with the dominance of the Great ASHOKA. The MAURYAN Empire was an efficient and highly organized autocracy with a standing army and civil service. This bureaucracy and its operation were the model for the *Artha-shastra* ("The Science of Material Gain"), a work of political economy. By his hand the Buddhism flourished and much is known of the reign of the Buddhist MAURYAN Emperor Ashoka (reigned c. 265–238 BCE or c. 273–232 BCE) from the exquisitely executed stone edicts that he had erected throughout his realm. These comprise some of the oldest deciphered original texts of India. Ashoka campaigned little to expand the realm; rather, his conquest consisted of sending many Buddhist emissaries throughout Asia, south East Asia and commissioning some of the finest works of ancient Indian art.

After Ashoka's death the empire shortened because of invasions, defections by southern Princes-(MAGADHA), and quarrels over surmounting. The last ruler, Brihadratha, was killed in 185 BCE by his Brahman commander in chief, Pushyamitra, who then founded the Shunga dynasty⁷⁶, which ruled in central India for about a century. This dynasty even ruled remarkably in the eastern and extreme south eastern part of the subcontinent.

Bengal was fully covered and comprehensively expanded with this ruling. Pundranagar or MAHASTHAN ancient fortified riverine city used to decree over by this autocratic power. The site excavation of MAHASTHAN explores numerous tiny-miniature forms of art relief and terracotta works. With the excavation done by the British archaeology team in 1928-30 AD., enough evidences were notifying to establish the historical writing to support the 'dawn of the story of MAHASTHAN'.

⁷⁵ The Mauryan Empire was a geographically extensive Iron Age historical power in ancient India, ruled by the Mauryan dynasty from 322–185 BCE

⁷⁶ The Sunga Empire or Shunga Empire was an ancient Indian dynasty from Magadha that controlled vast areas of the Indian Subcontinent from around 187 to 78 BCE. The dynasty was established by Pushyamitra Sunga, after the fall of the Mauryan Empire.

However, those artifacts, other potteries, use of clay for different installation and household appliances reflect the rich vigor of the cultural legitimacy of the Shunga phase. Nevertheless in the history it is a deep cavity to understand the form of the city of MAHASTHAN (Pundranagar). Obviously, it is identical that the city could perhaps flourish with mass elaboration. Meanwhile it never mentioned or discovered the situation of the pattern of the settlement of MAHASTHAN during that epoch. So, again the question may be raised...then what happened to the city?

The answer could have the same potency again; tropical climate, marshland form, moisture in the wind, heavy rainfall and lastly for the use of temporary roofing construction along with burnt bricks that are fragile in the humid-climate and flash flood wash out most of the infrastructures. So it is hard to find the references and evidences beneath the earth.

The same thing was happened with the GUPTA period (6th AD) with the early phase, having said that the ancient city of MAHASTHAN started again flourishing with full extent, at the age of post GUPTA and early PALA (Buddhist) timespan. Substantial amounts of relics and evidence were discovered relevant to the particular style. The late GUPTA and early PALA style were struggling then; it was the moments of the turning verge to justify the Buddhist religious emblem in the delta land.

Although the PALA rulers used to tackle the states governance with matured indicators and taking place to build the biggest Monastery in the south eastern Himalayan pediment region at Paharpur (Bogra, north Bengal). So, for the rulers it remained a struggle first time to focus on the identification in creating the religious establishment with the founded stones and monolithic from abundant Hindu temple. (See figure 92)

Fairly, the Pala kings and the administration had the notion to blend the local influence in the specialized structure. The local construction materials and the craftsmanship adapted to involve the force toward establish city and settlement with the mission of the Buddhist novelty. The temples and the stupas found their own style and form in this Pundranagar or MAHASTHAN, the Buddhist temple during the Pala period became the icon of the city. Besides these, the stupas establishment and other monastic developments were ongoing. These all parameters of developments took place in the sites of MAHASTHAN and outside of the fortified walls. The urban core of MAHASTHAN became connected with the new economic

life zone, perhaps may call as the 'monastic neighborhoods' (discussed in the Chapter-02). This system of expanding the healthy city planning- is nothing but illuminate the regionalization in the resource and manpower as well as the strength of kingdom.

Hiuen-Tsang, the Chinese traveler, Ptolemy, Greco-Egyptian writer, Atish Depankar, the Buddhist teacher and philosopher and many more ancient renowned scholars mentioned about the city of MAHASTHAN. Those observations were definitely about the dwelling of the city was lucrative, the thoroughfares of the city, the temples were reaching the sky with golden finials, stupas are colorful and the monasteries used to consume crowded students.

The archaeological excavation of British Raj (1920s) and later the ASEP (Archaeological Survey of East Pakistan, 1961) and French- Bangladesh joint excavation thoroughly unfolded important clues that support the neighborhood pattern of MAHASTHAN, along with the other purposeful buildings and religious establishment.

The Chapter 03 is dedicated for the authentic conjectural conceptual illustration about the ancient city, the component, the circulation, the art of the building, the stylistic appreciation, the temple and the stupas, connectivity with the public and the private realm, riverine permeability, and finally the morphology of the Buddhist style riverine city. The pictographic analysis would be the process of justification while add the conjectural sketches of the part of the ancient city.

Alternately, another decision would be prioritized in this chapter 'the course of construction of city components'. The nature of the construction materials, the availability of the materials, and different part of the structure of dwelling, Method of construction and composite process of making a structure would be the addressed part of the particular chapter. The observation of the research in this chapter has been allocated with plate module. The module would be justified with literature elaboration and the pictographic information synchronized with the author's freehand-sketches that represent the conjectural restoration about the components of the lost ancient Buddhist city of MAHASTHAN.

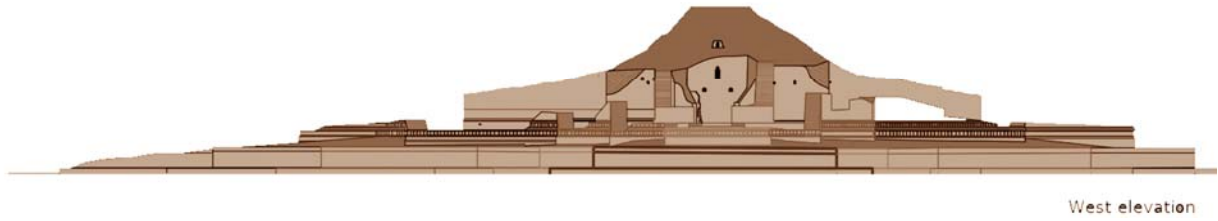


Figure 92: PAHAR PUR MAHAVIHARA, CENTRAL STUPA SHRINE: The largest Buddhist monastery. A number of monasteries grew up during the Pāla period in ancient Bengal ever in the south eastern pediment of Himalayas' developed; the PALA kingdom had the contribution behind the establishment. Image source: Sajid Bin Doza & students of architecture, BRAC University, Bangladesh

3.2. 'The Buddhist city fabric'- of MAHASTHAN

The ancient city of the planet had some basic similarities, for instance; common components of the ancient urban core evolved with the same situation. Eventually, the livelihood belongs to the space, sense, surrounding, comfortable and over all with the strengthen protection for the invaders. Whereas, it was not so proper in shape for the south eastern Asian ancient city morphology. The south-eastern ancient city morphology mostly developed and depends on the agro-based or trade-based economy. In Bengal, it was prototypal and the riverine settlement became the priority. The river became the access for the fortune and natural means of aqua barrier helped in fortification for other invasion.

Sometimes, 'subcontinent ancient urban core formulation'- depends on the ritual and spiritual inspiration, essentially- the dominance of the spiritual and religious impacts affects the commonalities, the whole components, and the city notion aims towards the religious vision. Very simply, as for example the Madurai (final phase) temple city, South India, Banaras by the river Ganges, Haridwar on the Himachal state of India, Jaipur with the NAVARATNA approach, India, the Taxila, Afghanistan (Gandhara, Greco-Indian), and Pataliputra by the Great ASHOKA. Those ancient cities, most of them disappeared, became ruins or modified popularly to identify its originality; however, would be difficult.

Meanwhile, mapping of an ancient city in the south East Asia is diverse, complicated mechanism are related with the trade and commerce. On the other hand it had been sight that-with the drift of religious mission, the formal shape of the city could perhaps change; and this is the magic of the delta line ancient city. Most of the ancient cities used to be networked by the organic settlement, at the same time cosmic influence also shapes the organization of the city. Except the Roman had achieved the grid-iron and other orthogonal organization which are seems to be the prototypal. Locating the ancient city and their fabrication, natural means used to be the prime discipline, or focus on the religious matter.

'The Buddhist city fabric'- in Bengal; the situation is continuously with the religious superstructure and the other infrastructures or the supportive arrangement would

step aside with the landmark. Most often time those other erection; we call them the 'secular' structures become to the inhabitant of the city or for other purpose use. So the ancient riverine city could mitigate with basic and identically two type of structures one would be the 'religious' and other would be the 'secular' one.

The terminology 'Buddhist city fabric'- what impact could cover in the overall city formation or in the pattern of developments, definitely the Buddhist city fabric would contain the 'X-factor' or something which vividly create dialogue in-between inhabitants and the image of city fabric. In the end, MAHASTHAN riverine fortress city had been experienced with many civilizations, stating from MAURYAN, SHINGHA, early PALA, GUPTA, Late PALA, SENA and the Sultanate epoch, the ancient landform of MAHASTHAN is contentiously altered with many settlements and situation. It might be possible that the city changed with different images-faces since and respectively over decades. Since the city and the settlement pattern are like a 'fluid element', it changes, it shapes and it appears in different look according to the desire of the 'politics and power'.

Moreover the ancient city form is predominant with impulsive growth, in the case of MAHASTHAN the scenario is the same, the organic pattern occupied most of the area while the religious structures used to base in its own orientation, among all structures the religious edifices and the monuments would possibly strikes as the city image or the skyline with an spiritual connotation.

Hence, with these settings the city might have the picturesque and that unknown factor longed to be discovered.

Consequently, with the orientation and the positioning of the religious buildings spatial quality of the city would change because of the public space and other setback extended. After all, the setback area and the space for the people around and in the religious building is a rational element. Although the ancient city of MAHASTHAN had been experiencing a great amount of population density had the important matter in the city of MAHASTHAN. Having said that, the thickness of the domestic fabrication at MAHASTHAN during PALA ruling was noticeable, but the

ratio of open spaces governed by the religious infrastructure might be merged with the other dense fabrication of the city.

The other dense fabrication; it is assumed to be the commercial area near the boat landing terrace of the city, locally known as the *Jahazghata* (water landing terrace). With the site remains and ruins on the northern and eastern part of the fortified city, it was clear that the city had huge struggle with the mighty river KARATOA, over the decayed the tresses of resisting the river course creating huge bastion and curved thick walls were captivating.

At the same time the design of the jetty and other infrastructure that used to relevant with the landing jetty and terrace; till dated it is quite understandable, eventually British Raj (1920s) excavation proofs the legitimacy of this riverine busy trading and religious PALA period city used to connect and commute with numerous kinds of naval vessels and extinct beautiful eye-catching ``raft boats`` (figure 93). The approach to the city was identical, reason behind is the elevation of the natural rampart and the thick and heavy high wall reaching height about the almost 40 Ft. or 12.192 meters. So huge causeway with stairs used to connect the mainland. Although the city MAHASTHAN was a typed walled ancient river oriented city, however still the city is fluid in other ends,

To identify the fabric of the ancient riverine city, it is also important to include the walls characteristics, the nature of the walls that might be integrated with other infrastructure. Yes, the open space, the historic areas, the monuments, intangible heritage activities and lastly promote the uniqueness in the one territorial boundaries could be the elements of the ancient urban core as well as the urban fabric.

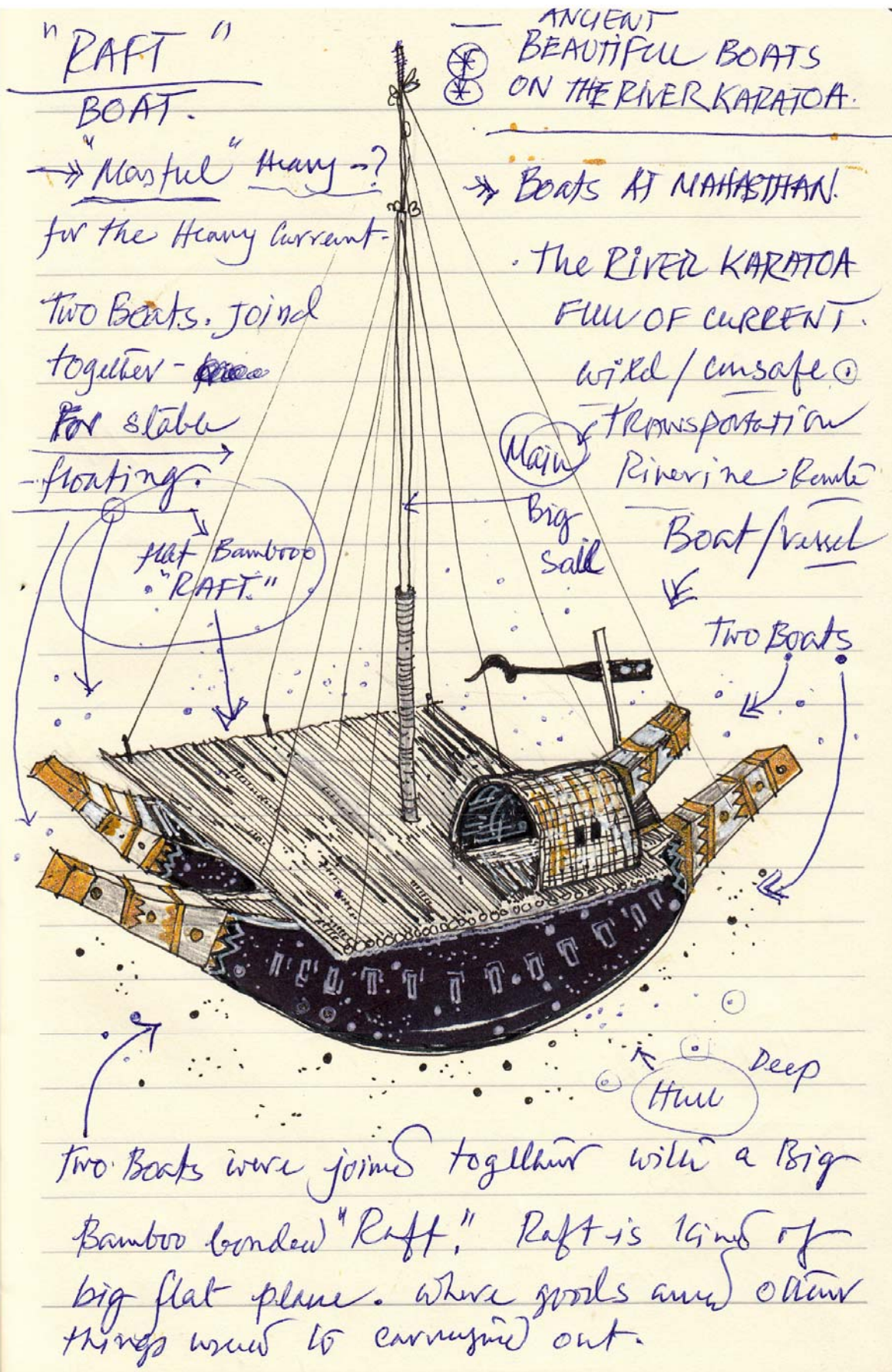


Figure 93: the raft boat used to float on the mighty river KARATOA during the ancient riverine route in Bengal. This vessel used to carry heavier trading materials and goods as well as mass commute had the part of the unique vessel. Sketch by Sajid Bin DOZA

MAHASTHAN is one kind of the walled ancient riverine trading cum religious priority; that survived till 13th Century, according to the historians. Although MAHASTHAN is called a rectangular walled introverted ancient city, however the city peripheral wall used to have the irregular rectangular in shape. The authenticity of this irregular rectangular planning organization is still greatly evidential in the site. Most probably; the construction of the fortified walls considered and followed the natural rampart as the ancient city of MAHASTHAN is settled on the Paleolithic land form name VARIND. So considering all situations, the city used to develop on the original formation of the landform.

Moreover, the wall, is not uniform in thickness, it varies from 6 ft (1.82 m) to 18 ft (5.4864m) with cavity-double wall process of construction. To justify this issue, it is something to observe; at the eastern side rampart and fortification wall is irregular and comparatively thicker. (See figure: 94)

On the other hand the walls at north-eastern and other part of the north-western portion are more curved and free flowing. Besides the thickness of the walls, corresponds more defensive with bastions and special treatment in masonry works as well. This kind of masking and measuring in the fortified walls used to apply for the heavy current in the river, to resist and to defuse the strong current hit on the surface of the walls. Convex and concave appearance on the wall surface help to dissolve direct hit of the mighty river's current. (See figure: 94)

Probably for the context of the MAHASTHAN, north-eastern walls used to conceive with these syndromes. Heavy current perhaps frequently collapsed the wall which used to act as the fortification as well. So to get rid of this serious natural force the river faced facades used to design according the hypothesis.

Well, to see the situation on the reverse side of the ancient of MAHASTHAN, on the western side the moat used to surround by the walls. So fewer attempts used to take on those sides, results almost straight walls was considered carried with fortified attitude. (Figure: 94)



Figure 94: the conjectural mapping of the riverine fortress city of MAHASTHAN, All these mapping and information has been contributed here are form the scientific examination of excavation and the ancient geographical information. The legends and explanation of the ancient city had attached on the next page. Generated by Sajid Bin DOZA



Ancient Riverine fortress city of MAHASTHAN (Pundranagar 3rd Century B.C.)

Legends & Explanations

This Cartographic illustration and information states the conjectural restoration of the ancient riverine fortress city of Pundranagar, capital of Ancient PUNDRABARDHANA BHUKTI (regional capital). This particular cartographic illustration and information elaborates the settlement pattern of the ancient city during 8th till 11th Century AD. Indeed; focus on the "Buddhist period city planning and settlement pattern" of Northern part of ancient Bengal.

Zone A: this zone particularly occupied by the riverine activities and watery cultural practice, the temporary water outpost was establish to reduce the riverine trafficking and for other infrastructural support. The Govinda vita (6th AD) Buddhist Temple is the part of the outpost and just on the edge pf the river.

Zone B: mostly occupied with the riverine navigation and trading purpose. The north and northern eastern parts of the city used to combine with trading, commercial, bazaar, public space and religious structures. Among them in this particular zone the inland water body perhaps could be executed.

Zone C: basically this zone perhaps, used to be associated with mix used opportunities. The temple, stupas, monasteries, bazaar and few residential area could be aligned with this zone. Especially the religious and monastic settings were preferred, however the part of commercial area happened to be there.

Zone D: religious establishment including the monasteries were occupied here and residential areas perhaps were surrounded as well.

Zone E: majority were purposed with the dwellings and inhabitants. Few religious establishment might be situated during those days.

Zone F: foremost often; might be settled with dense population with small dwelling or housing.

Identification of the conjectural strategic plan of MAHASTHAN

1. Main stream of the river KOROTOA
2. Temporary outpost
3. The inner course of water
4. Eastern Entrance (Allowed Permeability both for marine and surface access)
5. Outer fortified wall followed the natural rampart level
6. Entrance for the surface and other purposes
7. Low laying marsh landform
8. Moat, trench acts as the aqua-fortification
9. Control/entrance at the south-western side
10. Inner navigation network
11. Huge water body inside the wall used to act as the PALA Navy's reserve force inside the walls.
12. Zigzag street pattern with pavers (burnt bricks)
13. Stupas (Buddhist's pilgrim holey shine, that represent the grave of Gautama Buddha
14. Late GUPTA and early PALA Buddhist temples
15. The main shipyard
16. Entrance for the marine vessel
17. Bastion for watching and to control the current of river
18. Buddhist pilgrim's residential units

This Cartographic illustration and information states the conjectural restoration of the ancient riverine fortress city of Pundranagar, capital of Ancient PUNDRABARDHANA BHUKTI (regional capital). This particular cartographic illustration and information elaborates the settlement pattern of the ancient city during 8th till 11th Century AD. Indeed; focus on the "Buddhist period city planning and settlement pattern" of Northern part of ancient Bengal.

To analyze the fabric of the ancient city, walls consequently have the 'datum' importance to elaborate the pattern of the settlement. It always identical and integral part of the ancient cities. Permeability, access and coordinate axial location are the constituent part of this matter. Indeed, the wall and the city fabric complement both in justifying an ancient city fabric. And at the same time the Buddhist ancient city of MAHASTHAN passed through with such scenario once during the Pala dynasty.

Religious buildings used to have the footprint with the identical plinth allocation. In due course, the temples and the stupas used to relate with mass gathering, open space-that always used to vibrant with pilgrims. In the setting of the MAHASTHAN ancient urban fabric stupas contained with *pradakshina* (the ambulatory circulation) and the adjoining spatial linkages, similar to open space and temporary shades. So, when stupas used to establish on the ancient city that usually became as the focal point of the urban fabric. The temple of the late Gupta and early Pala phase used to contain the morphology of tall and slender with single GARVA-GRIHA (shrine chamber) and single spire on the top. The temple used to have frequent gathering and it used to be around the temple arenas.

Although in MAHASTHAN, the temples that excavated during 60s⁷⁷ that perhaps used to design with outer veranda. The drawing of the excavated temple (*Bairagi's Vita*, see figure 119) reflects the statement. Even for the glorious temple and landmark of MAHASHAN *Govinda Vita* Temple (6th -9th Century, see figure 125) had the same 'form of art' of expressing the terracotta temple. Terracotta craftsmanship used to become the authentic and signature element for the PALA kingdom as well as the entire empire. The temples and the stupa bases had the face lifting with terracotta precious works, and obviously in the image of the city fabric it used to hold valued impact. So it is imaginable for the urban fabric of the Buddhist time in MAHASTHAN, the temples has the vivacious relationship with the common structures and other infrastructures.

⁷⁷ Archaeological Survey of East Pakistan, 1960-63

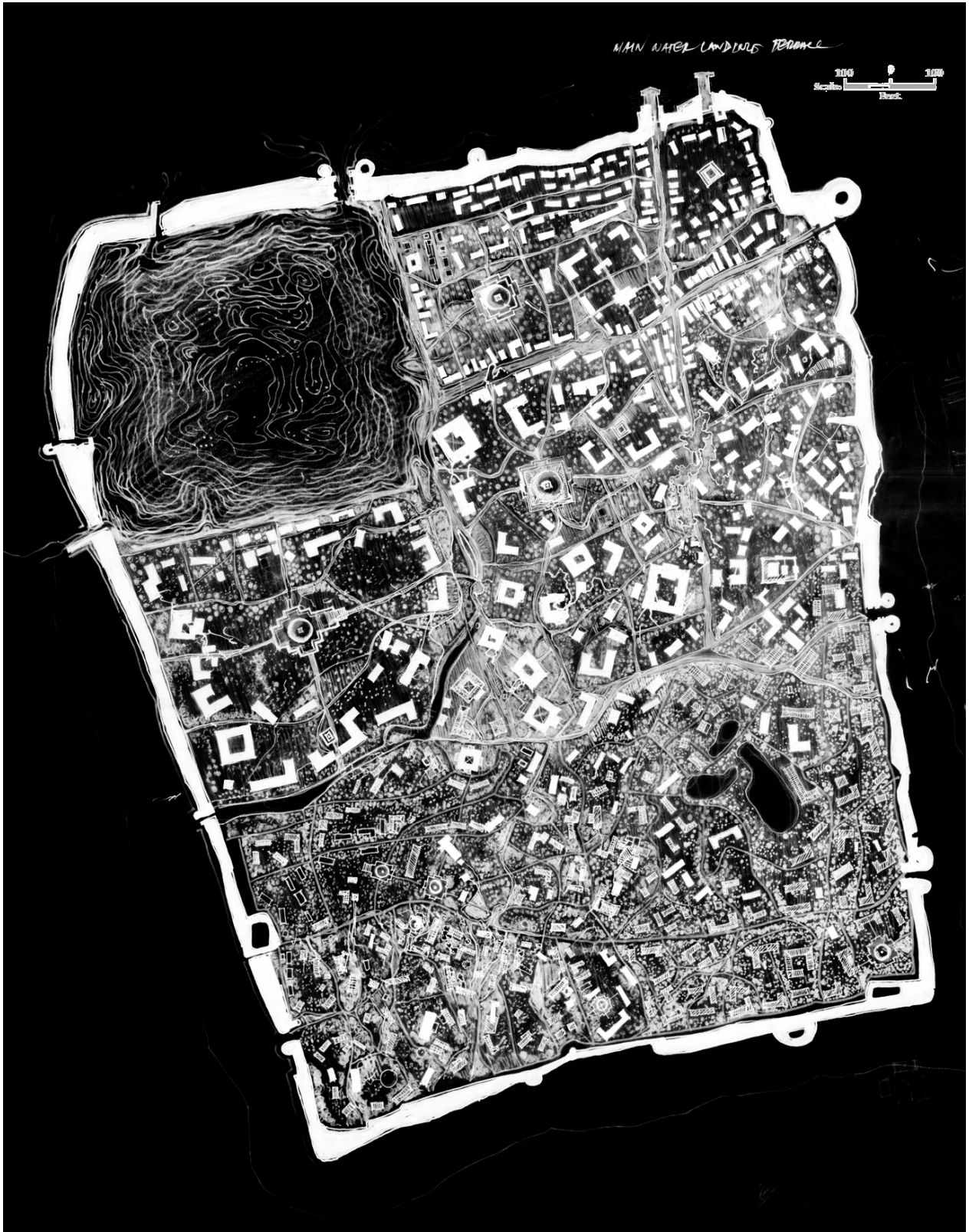


Figure 95: this plate is called off Figure-Ground Pattern of the settlement phenomenon of the ancient city of MAHASTHAN. Infarct this contrast image mapping provides the historian and the planner's information about the spatial environs along with the segmental components of the city. This image helps to build the morphological statement of any city. Indeed the ancient city MAHASTHAN focused with several segmental stratum along with the land use spontaneous pattern. Generated by Sajid Bin DOZA

While, the residential or the dwelling structures used to have the position in spontaneous relationship, they had been identically sharing the courtyard along with the streets, neighboring space, temples, stupas and gardens. Thick vegetation used to dominate all around the city, because of the tropical region. (Figure 94 & 95)

Probably, the domestic or the dwelling pattern often enclosed towards the religious monuments⁷⁸. Stupas and small temples were positioned just alongside or the nearby the secondary streets on more close to the lanes. It is like the cultural practice- still could be seen in the old town of Bengal region; with the sequence of containing the religious place within the cluster of the housing or residential pattern. Time immemorial, this pattern still exists in the riverine delta land.

So religious motivation and focus used to be the part of the lifestyle of the inhabitant. In the city fabric the residential zoning of MAHASTHAN used to have a moderate fabric by enhancing the tall slender temple and the stupas with open space for congregation. (Figure 95)

Sooner or later, it used to happen with the southern-eastern and some south-western part occupied with mostly the domestic residential allocation. Usually the roofing pattern of the dwelling had some different portrayal, as mentioned before that ancient Buddhist city perhaps could carry the image of the local handmade terracotta roof tiles works, referencing the archaeological excavation team of British Raj found lots of damaged roof tiles beneath the earth⁷⁹. Roofing pattern had several stylish approaches to enrich the fabric of the ancient city, having said that the roof of the dwelling used to construct with pitch slope to pass away and to quick removal of heavy rainfall.

⁷⁸Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 93. Print.

⁷⁹Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 96. Print.

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Neighbourhood at the ancient city

(streets and vicinity)

8th Century AD



Restored Scenario of the Neighbourhood

*The domestic or the dwelling pattern often enclosed towards the religious monuments .
Stupas and small temples were positioned just alongside or the nearby the secondary streets
on more close to the lanes. It is like the cultural practice- still could be seen in
the old town of Bengal region; with the sequence of containing the religious place
within the cluster of the housing or residential pattern.
Time immemorial, this pattern still exists in the riverine delta land.*

Figure 96: Assumption plate: 01

*This image shows the residential and dwelling and religious structure with intimate situation
Developed by Sajid Bin DOZA*

So *dochala*⁸⁰, *Chouchala*⁸¹ Bengali style roofing remained visible in the fabric of the city with red ting terracotta color in the green vegetation background. Small or tiny dwelling sometime grouped together or sometime scattered with huge and small shading eventually used to create harmonious city fabric. (Figure 95)

To end up with up residential fabric in the ancient city of MAHASTHAN, the whole scenario of the dwelling units used to have the mundane image (figure 94), with the small and tiny beautiful stylish house-form. Where the religious accompanied structures support the daily lifestyle of the inhabitants. Small shops, narrow streets used to vibrant with the vivid activities. The setting or the organization of the dwelling used to maintain with mostly organic situation, natural or informal thoroughfare had passed through the dwelling and the surrounding of the dense housing area.

(Figure 96)

For the residential or the secular buildings bricks became the common material in use as the construction materials. Exposedness of the bricks started the manner for the residential appearance. In the Buddhist city fabric bricks with exposed surface with lime mortar used to be the façade of the tiny residential units. But it was usual for the monastery and the other multipurpose structure also.

Nevertheless, here is a question arises..., that is what about the monastery and the structure that could have multipurpose use. To explain, monastery is kind of structure that accommodate the combine situation, a residential institution that has all kind of self-supportive opportunities and facilities, for the other cases the commercial area or the bazaar could be the temporary structure, but in ancient city the density of the temporary structures would occupy more space in the main river stream line or by the river side. (Figure 97)

⁸⁰ *Dochala*, is the traditional Bengali vernacular type of roofing, mentioning two sided sloped roofing with the thatch or the terracotta handmade roof tiles.

⁸¹ *Chouchala*: the same as the *Dochala* roofing, based on the traditional rural Bengali style with four sided slope to pass rain water quickly. The material of construction remains same.

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Bazaar at the ancient riverine city

(commercial HUB)

8th Century AD



Restored Scenario of the River communicated Trading

This plate elaborates the cut away view off from the fortified walls, to show the topographic situation leading with the river. The land formation and the contour of the ancient riverine city has shown here by the conjectural sketch.

The sketch also addresses the connection in between the commercial hub as well as the bazaar and the river also.

Actually, the loading and unloading of the goods through water vessels are delivered to the landing terrace of the river KARATOA and that is directly connected with the mainland of the trade and commerce centre of the city.

Figure 97: Assumption plate: 02

Riverine city with the connection of commercial hub. MAHASTHAN, perhaps used to had the link with the river KARATOA with the trading and commercial domain,
Developed by Sajid Bin DOZA

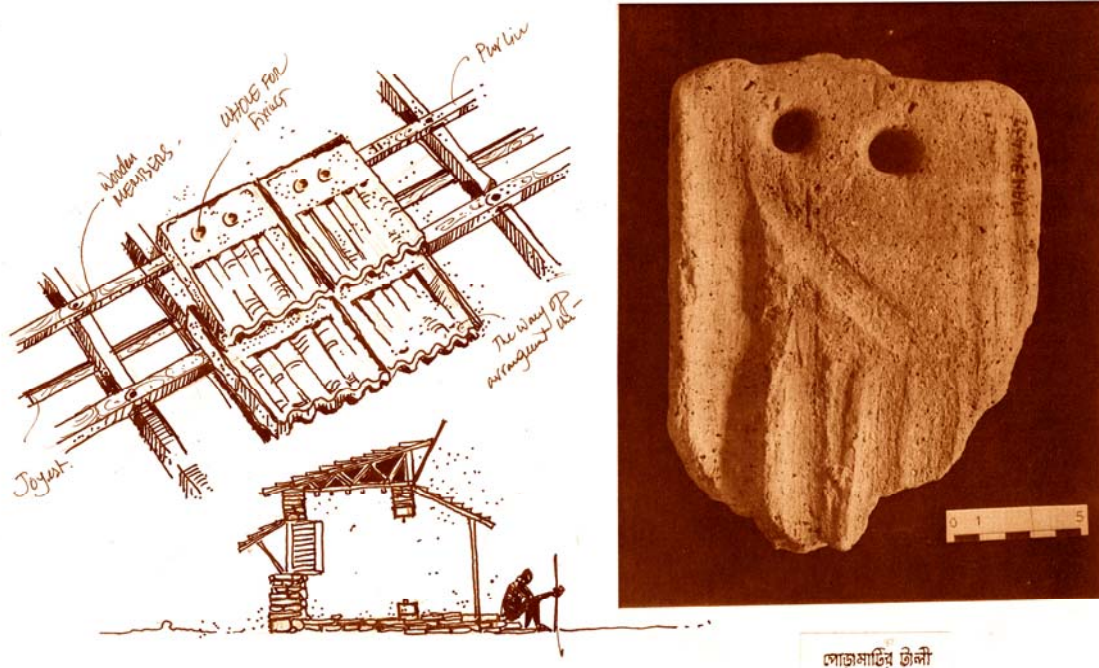


Figure 98: Assumption plate: 02-A

The innovative tiles found beneath the earth during the excavation. Two holes are identical act as the clipping. (Image source: Department of Archaeology Bangladesh) On the left the probable technique has been illustrated with the timber frames.

Developed by Sajid Bin DOZA

To start elaboration about the Monastery; fundamentally the structure used to belong for the religious attachment. Buddhist pilgrim-ness used to have the inert dogma to be so polite and to remain in introvert context, as the common people might not have the connection with this institutional motivation or attitude.

Eventually, Paharpur Mahavihara (Sompur Great Monastery 8th Century AD) (Figure 92) was complete out of the local community. But for the case of MAHASTHAN, there are few small residential institutions used to occupy in the mainland of the ancient city. Although those used to have been located in separate zoning, however-the pilgrims possibly had the connection with the common people, perhaps for the missionary purpose and for the health rationale.

The monasteries had comprehensive vocabulary, the term `comprehensive` here used as the happy blending with the dwelling masses of the city, though the monasteries were larger in scale, but the city fabric could have the hierarchy and harmonious scale. The monasteries used to have the internal courtyard to serve the ever day schedule.

Forthrightly, elaborating the monasteries, dwelling, temples and stupas in the Buddhist ancient fabric had an invisible order which might have to pronounce as the natural spirit of making of a Buddhist like city.

So religious structure along with stupas, monastery and temple used to be the prominent aspects in the urban fabric, it could be focused and also iconic factor for the fabric of the city. Where the residential area with some mixed use purpose could be the common base of the city fabric. An ancient city fabric mostly popular for its royal structures and marvelous settings. When recalling the image of the ancient city–riverine settings, big temples with gathering of people.

Yes, this is the basic for the two distinctive cases. People and the life is the mater in this situation.



Figure 99: Assumption plate: 3
*The riverine landscape of KARATOA, once used to dominant with the massive brick façade of the MAHASTHAN, crowned with sharp finials of temples.
 Developed by Sajid Bin DOZA*

3.3. Construction materials and course of action:

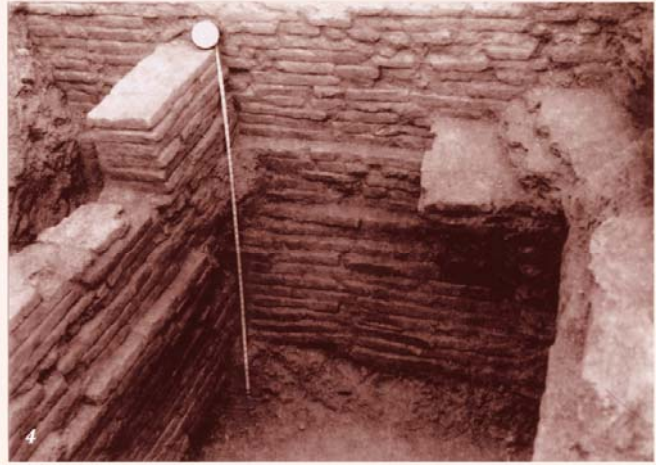
Embankment and rampart with BRICKS

The ancient city of MAHASTHAN laid on the just beside of the river KARATOA. Once the western bank of KARATOA was protected by heavy and massive masonry works and the bricks used to be the main course of action to build this ancient city construction (fig 93). The embankment, the fortified walls and barbican of the outer skin walls were built with the square thin tiles like brick construction. Those specialized bricks used to call the Buddhist time bricks or PALA period brick (figure 100). This specialize brick justified more compressive strength with strong lateral strength. Although the brick had the dimension approximately 30 cm X 30 cm, thickness about 5 cm (figure 101,102). This square shape thin tile like brick flourished during the PALA time almost all-over in the subcontinent. Obviously, this brick also called as the terracotta brick. The bricks have a chronological development in Bengal; Pala builders took all the opportunities engage the module of the bricks in building the different or various types of structures. MAHASTHAN ancient city is one of the best examples where the combination of various construction materials engrossed in making stupas, temples, embankment, bastion, monasteries and the dwellings. (Figure 102) As here mentioned about the chronological process of development on brick- it was emerged with the rational manifestation during the early epoch. The sacristy of other alternative construction materials posed brick to become popular module of construction. From time immemorial, delta land people used to with mud or earth construction. The vernacular architecture and the other ancient structure before the Ashoka Great (282-186 BC) domain, perhaps constructed with the earthen materials, besides the roofing and other reinforcement occupied with the thatch, straws, bamboos and timber or wooden purlins. (Figure 98)



Gallery

from the historical statements (1920s)



1. The residential area occupied with special Buddhist period brick, even the layout is visible.
2. The temple plinth is full of stuck bricks
3. Dwelling plinth covered with square PALA style bricks
4. Thick monumental brick walls with the thin square bricks
5. The temple's outdoor verandah is designed with bricks
6. The peripheral area of the temple is bracketed with brick masonry

Image courtesy: the Archaeological Survey of Bangladesh
Image taken during the British RAJ period in 1928-30

Figure 100: the ruins of the bricks form temples, dwellings and public buildings. Image collected from the Department of Archaeology of Bangladesh. Developed by Sajid Bin DOZA



Figure 101: the site MAHASTHAN today, remains only the vastness of bricks.
Image source: Sajid Bin DOZA

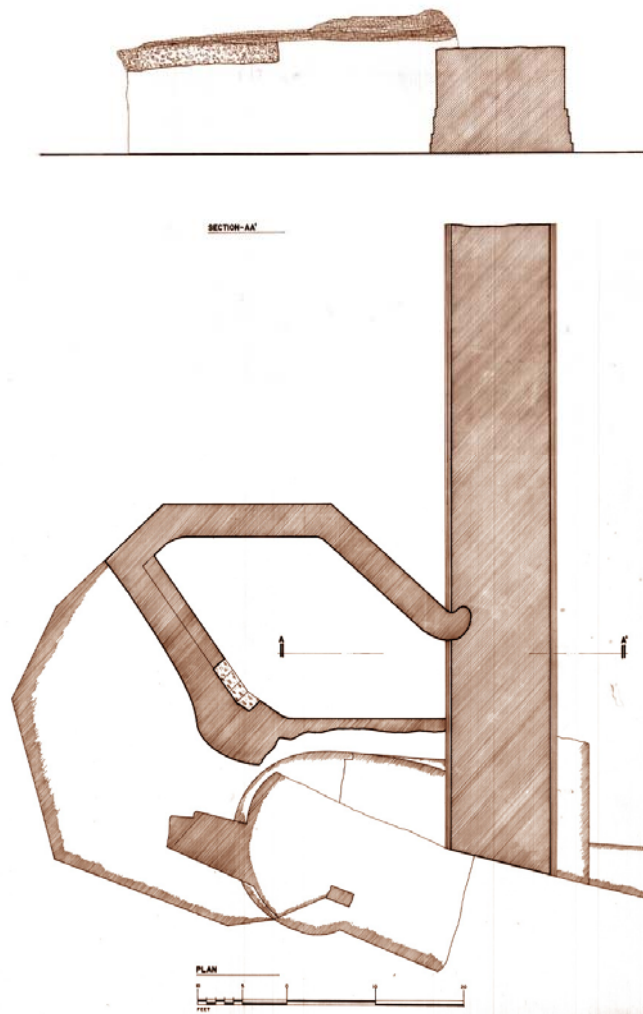


Figure 102: this structure shows the strong bastion, with several course of brick construction. That perhaps resisted the heavy current of the mighty KARATOA. On the top the elevation of the ruined bastion. Drawing source: Department of Archaeology Bangladesh

Bengal is criss crossed with rivers and the flood plain is almost same corresponding the sea level. As flood and flash flood is the common disaster had been frequent since the beginning of the delta topographic situation, temporary structures used to common during the arrival of the MAURYAN dynasty. With the arrival of the CHANGRA GUPTA MAURYAN, the political mode changed and the delta-people started corresponding with the monarch mechanism. 'Wooden origin'⁸² became the

⁸² During the Mauryan period, wooden craftsmanship flourished in the building structure, in the mean time wooden work became special and innovative during the particular period.

popular method of construction and it spread over not only in the *Pataliputra* (capital of *MAURYAN*) but blown out in Bengal as the superb process of constructing roof and other tensile structures. Where sundried brick developed from fine earth along with burnt brick became the easy available building construction materials. Since then in the history, it is noted as the brick is the prime resource building material in hinterland of Bengal.

The making of the MAHASTHAN fortified walls still shows the glory of brick mason course of action. Temples and other religious structures happened to started with brick module of construction and very shortly PALA builders added the relief art⁸³ or beautiful sculptures on plaque of burnt clay called terracotta. Eventually, terracotta became as the outer skin protector of the brick buildings. Decorative terracotta plaques used to set on the main core of wall as the cladding, it resists moisture, heavy rainfall on the surface and saline factor.

Eventually, it was a functional as well as the aesthetic amplification concerning the ornamentation on the facades of the prestigious structures. Bricks have been blended in the lifestyle pattern of the people of riverine Bengal since rapport. Ancient city of MAHASTHAN, though developed on the natural rampart of the VARENDRA antic land formation, nevertheless the site used to consider digging huge water body on the north-western part of the fortified wall securing the naval army as facilitating the reserved force in hand. This huge lake was artificial, and while digging the earth the PALA ruler set a plant for burnt brick form the excavated earth. So it was cast in site and ready for implementation process for the further construction and development.

Ultimately, the ancient city of MAHASTHAN, wherever still the farmers dig for the cultivating the land, just about 60 cm, while digging the land bricks; bulks of bricks come out beneath the earth, every sq. m of soil is still embedded with ruins bricks. Who knows those bricks may show another threshold and new possibilities in the history of the ancient city of MAHASTHAN.

⁸³ Relief art: terracotta ambushed works. On the outer surface it was used as the cladding materials.

Craftsmanship of wooden, bamboo and thatch construction

Wooden construction was familiar to the delta land people, because the pitch (slope on two sides or four faced inclination) roofing- system had been the ancient method of craftsmanship in the most often construction wooden partial and timber used to be the framework before tiles laying or the thatch-straw bonding was executed. There were two major elements for the roofing construction, rafter and joist. Traditionally the rafter is the bigger ribs and joist is the alternate directional ribs, comparatively smaller. So this is the way of preparing the frame for the four sided incline roofing. (See figure 103)

There are other processes of preparing the walls and the roof, the bamboo is another comprehensive material and found all over the country. Framing, fencing, wall buttressing and lastly for all purpose was used. In the ancient city of MAHASTHAN, bamboo used frequently in the temporary shades and roofing in the residential area to rest the roof tiles and other roofs materials.

Time immemorial story to mud thatch and straw...

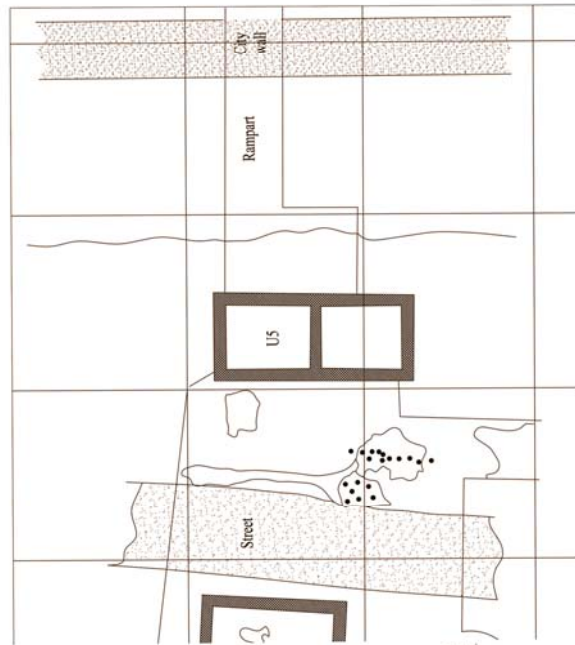
Thatch and straws are the most common building materials since the dawn of the delta land immersed. Mud structure always complements for the roof and other side screen preparation. This material is the part of the lifestyle of the riverine people, and keep belong the cultural legitimacy of the primitive shelter as well as the fundamental vernacular architectural setting of time immemorial.

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Unit Study (House pattern) 8th Century AD

Restoration of the Dwelling UNIT

The unit 5 shows the restored image of the dwelling. The construction materials in detail, along with the roofing pattern, the small single storied unit had the sequence with tiny portico with semi open space towards the streets.



(Scale: 1"=1:1/16)

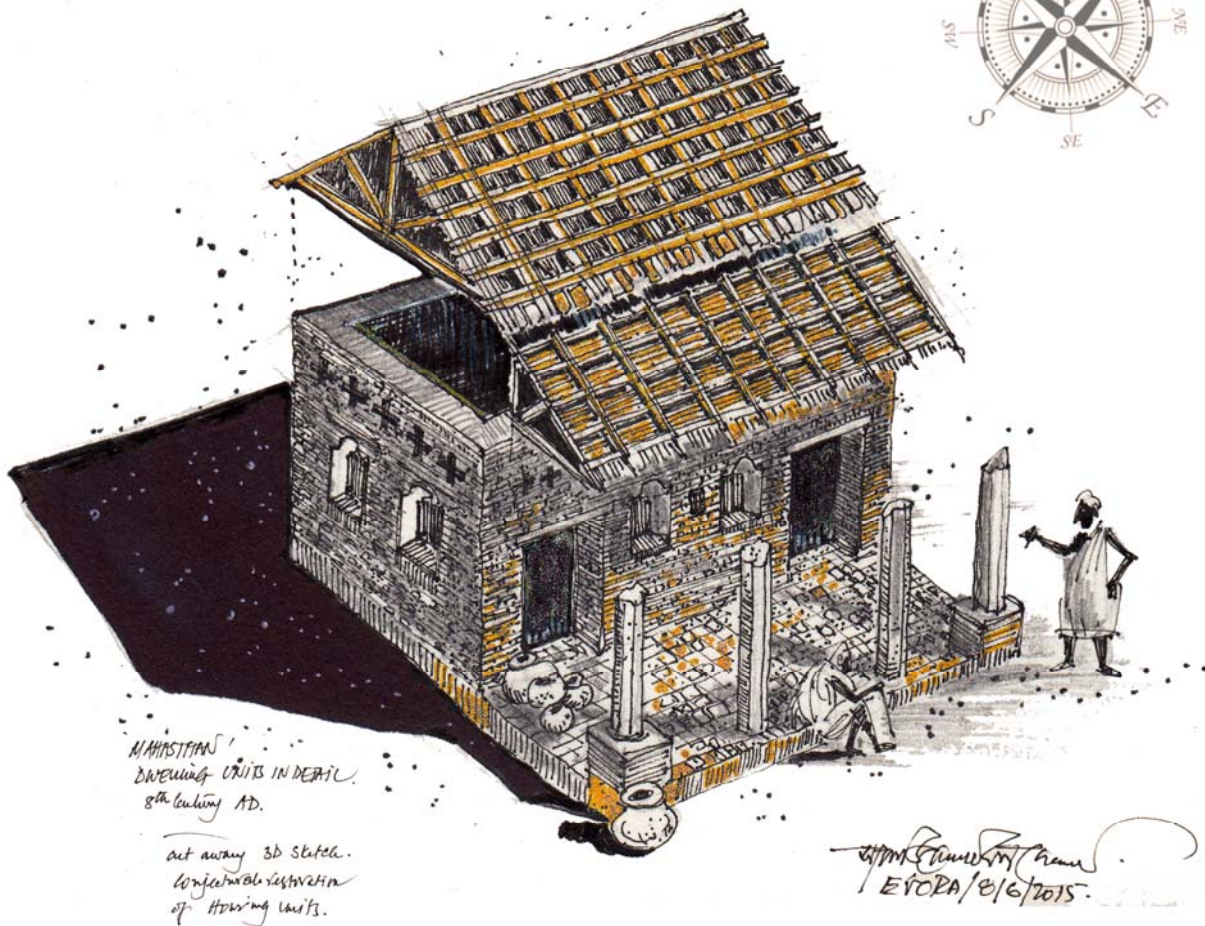


Figure 103: Assumption plate-04:

The whole system of course of action, roofing with the timber framing, thatches and terracotta tiles. Extended veranda/portico with timber or stone column.

Developed by Sajid Bin DOZA

Innovative roof tiles...

To start story about the roof tiles, MAHASTHAN it is needed to share for the research; 'the magnificence of the roof tiles'. This is basically terracotta tiles red ting color. Archaeologist while excavating the site during the time span 1993-1996; in the southern eastern rampart, huge broken tiles with innovative style the tiles of the PALA dynasty discovered⁸⁴.

To elaborate the innovative tiles- it is rectangular in shape, 85 percent surface of the roof tiles is textured with corrugated, heavy tiles on the upper side was comparatively plane and two identical holes are visible, and it is one of the unique material justification with the technical process. The tiles of larger size 42X21.5 cm with linear traces of burnt wood beams reflect the combination of the tying material would have been wood as the frame works (figure 99). It is also discovered that the dimension of the room of the dwelling used to maintain a module about 4m. Consequences, the roof tiles had two holes to put the pin or the binding elements with the wooden rafter and joist, tiles would have been placed one above another and it started from the bottom of the heavy wooden frameworks. The possible covering the roof with the framework used to be aligned with the shorter length of the room size.

Particularly the roof tiles, the wooden frameworks and the size of the room might have the synchronized amalgamation or proper tuned unique units in maintaining the construction.



Roof Tile

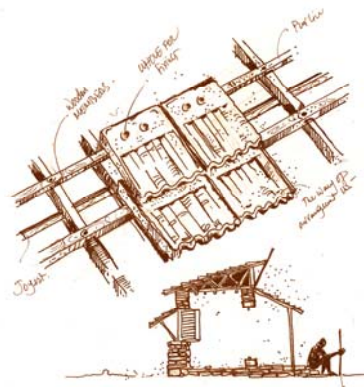


Figure 104: the giant tile from the dwelling units

Source: Department of Archaeology, Bangladesh. Sketch by SAJID BIN DOZA

⁸⁴ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 106. Print.

Floor tiles

The floor tiles or the floor finish usually exposed with the main core of the foundation bricks, as the PALA period bricks are square in shape and it appears almost as the base tiles, the finish quality of the bricks are colored inherently red ting terracotta. So it was comfortable to put the square bricks on the floor with thin layer of mortar works. Many dwelling floors have been excavated with square colored terracotta floor tiles as well as the top finish with the usual bricks (figure 96). Even for the religious architecture the floor finish remain the same materials along with the main core of bricks as appeared. Monasteries and other multipurpose structure observed the same notification although these buildings used to occupy with all the time with public and masses.

(See figure 105)



Gallery

from the Historical Statements 1920s



- 1. Square Buddhist bricks acts as the floor finished tiles*
- 2. The corner of the room is evident with the square floor tiles*
- 3. Prominently floor tiles is in well situation in a cella*



Figure 105: floor tiles as well as the square Buddhist period bricks used to lay as the floor finish
Source: Department of Archaeology, Bangladesh. Developed by Sajid Bin DOZA

Stone splendor in MAHASTHAN...

Stone is like a dream to the people of delta. Moreover this hinterland used to occupy with marshland, fertile ground, foliage and vegetation, stone was imported from Rajmahal, Behar, India. Situated on the north-western part of Bengal. However, the Ganges connects with Bengal to Rajmahal; it is the place from where the kings of Bengal used black basalt and sand stone. During the late 6th century using stone was a prestigious trade emblem to orient the monarchy. Late GUPTA period stone became moderate uses in the construction of the religious structures. Such as monolithic column, lintel of the structure, on the door seal and vividly on the sculptures. Black basalt stone took shapes into beautiful stone live size divinities and other Gods. As Bengal's craftsmen used to habituate with terracotta figure on mud, it was not too much difficult for them to find the new media of crafting arts on the stones, especially black basalt stone. So sculptures and decorative elements curved by the stones started using on the red ting terracotta brick surface. For instance, the Mahavihara (Giant monastery) of Paharpur (Sompur Mahavihara) in the 7th to 8th Century AD. Series of stone sculptures and plaques used at the bottom of the base of the central shrine. Beautifully curved stone plaque, stating god-mythology, lifestyle, and socio-cultural scenario of the contemporary time and poses of animals. This monument was ornate preciously both with terracotta plaque and the stone reliefs. So stone crafting and curving during became the focal part in the mode of construction. Not the whole building but on the entrance, in the chamber of the central shrine, the east entry door frame, columns, stair and the alcoves were engaged with the stylish black basalt stone curving. (Figure 106)

Mastering on this craftsmanship of stone curving flourished in the early epoch of the PALA time, the Buddhist school started promoting the schooling on stone curving elaborately. Two people flourish this stone curving in the Bengal region and became history in the art and sculpture. *DHEEMAN* and *BEATPAL*⁸⁵ father and his son flourish the school of sculpture during this period and Bangle achieved the ultimate crown. PALA period is called the golden epoch in the history of hinterland. Now a

⁸⁵ Father and son, best sculptors ever during the reign of PALA time. This two person flourish the Buddhist school of sculpture all over the subcontinent.

day we know this PALA sculptures as the 'Plastic Art'⁸⁶. Only because of the smoothest curving on the black basalt stone ever shining in the period of the time.

The base field of curving on stones was introduced by the GUPTA kings. In the late centuries of GUPTA period Hindu deities were created by the sculptors was astonishing. The elaboration and details on the body face and posture was highly appreciable. *Shiva, Parvati* and *Surya* and many more deities curved on black basalt stone used to display on in the *GARVAGRIHA*. Mystic and spiritual environment perhaps evolved with the play of lighting and shadows. Columns beams and lots of sculpture of Buddha along with other deities found during the excavation in 1920, 1960 and later 1993-96. Most of the sculptures are displayed in the VRM⁸⁷ and rest of them in the site museum of MAHASTHAN.

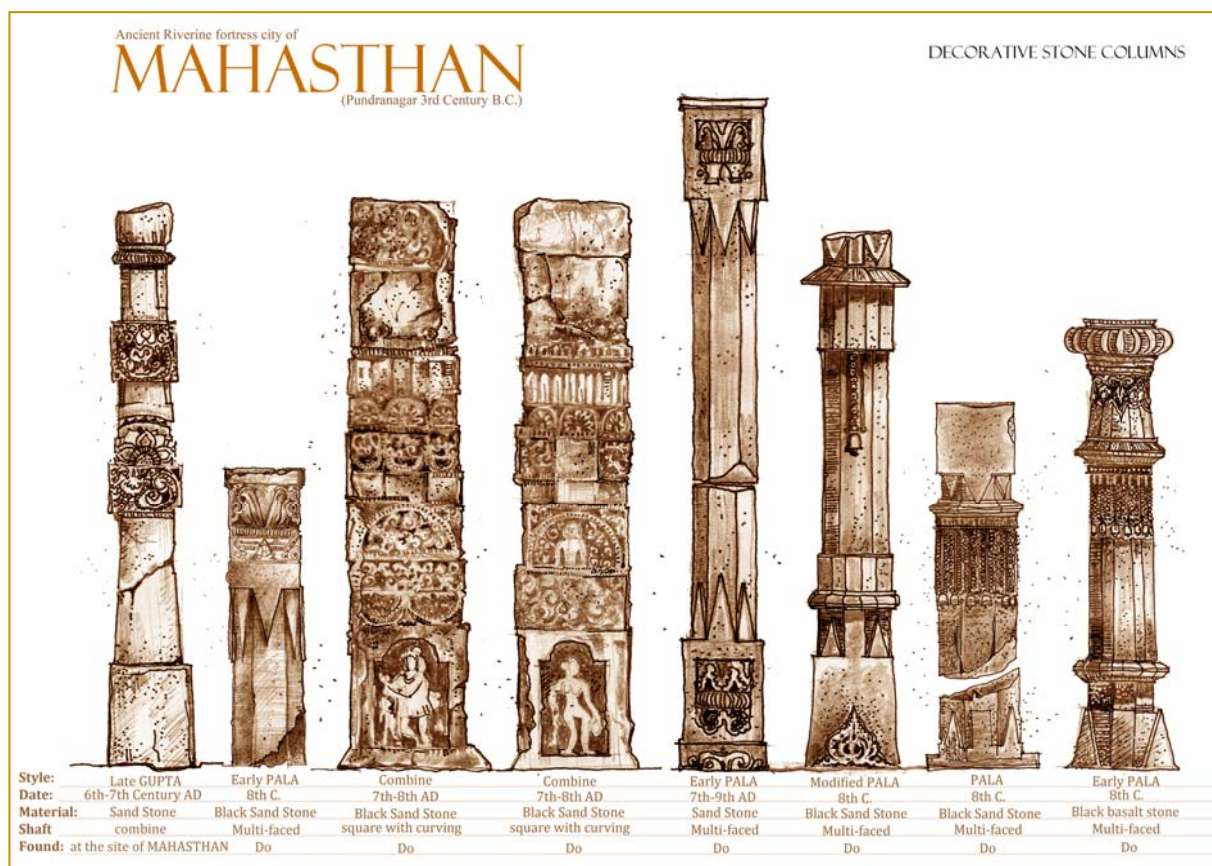


Figure 106: various size and decorated monolithic columns used to execute in different structure's ornamentation.

Source: Department of Archaeology, Bangladesh. Sketches by Sajid Bin DOZA

⁸⁶ Plastic art: during the 6th to 8th Century, PALA kingdom, the artistic appreciation on sculpture built by the black basalt stone, in different Buddhist school. The sculptural qualities reach at the high level and even for its stylistic appreciation. So this achievement is named later on the black basalt stone as the plastic art.

⁸⁷ Varendra Research Museum, Rajshahi, Bangladesh

As stone was unavailable, however simultaneously prestigious for Delta region context as well. Stone had to import by the river or by surface form Rajmahal, (Figure 107) where the riverine route became popular through the Ganges Valley civilization. The particular aqua routes prolonged to establish trading in between the ancient cities.

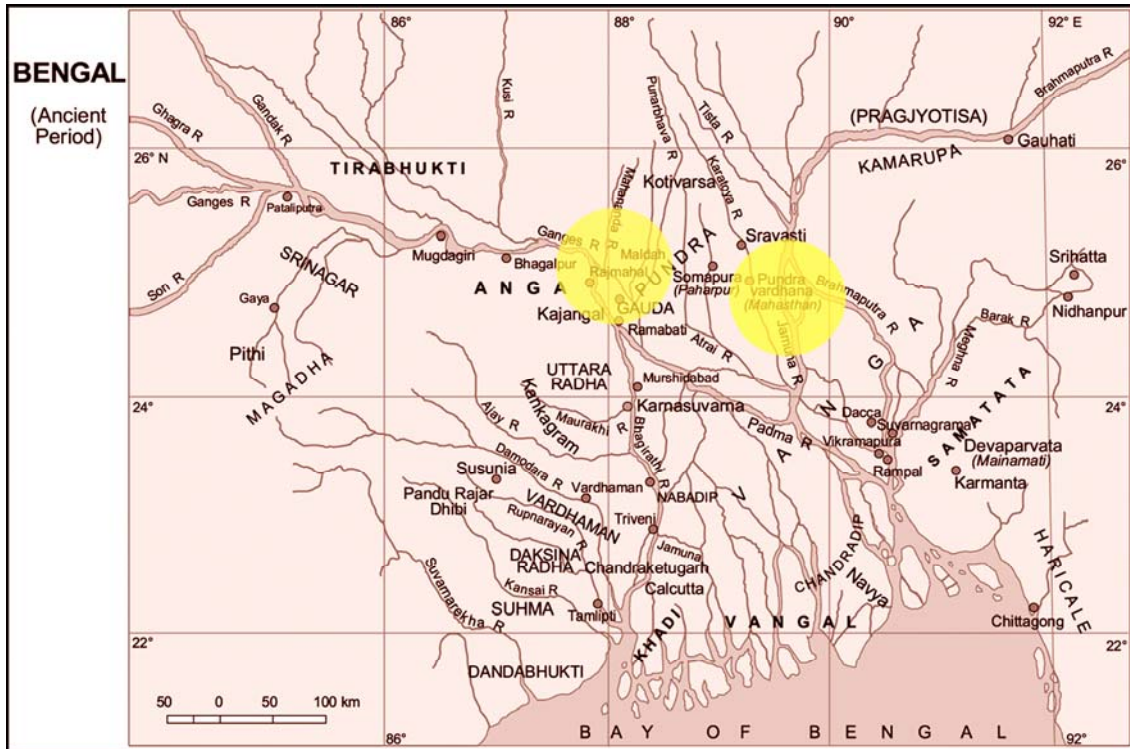


Figure 107: the ancient map of Bengal. This map addresses the Riverine route from RAJMAHAL to MAHASTHAN (Pundravardhan)
 Source: http://www.bpedia.org/maps/MH_0136A.GIF

Monolithic columns were reused for further construction, from the damaged or abundant temples and other structure. Even tresses have been found during the excavation, stones that were used to secure the sewerage system and for the waste disposal tunnel. The modified stone works used to set on the bricks façade, or reinforcing the brick with lintel works. Basically stone were used in the plinth of the religious structure; sometimes the abundant structure’s plinth would have been recycled by the builders. Stairs and other visible corners used to mold with the sand stone works. (Figure 108)

Gallery

from the historical statements (1920s)



1. The stone monolith used as the channeling for infrastructure of the temples
2. Sometimes used as the stair trade and riser. These all monolithic belongs to Late GUPTA and Early PALA Dynasties.
3. Decorative GUPTA style beams, used as the top step

Image courtesy: the Archaeological Survey of Bangladesh
Image taken during the British RAJ period in 1928-30



Figure 108: various uses of stone monolithic in the temples and other structure, in the early PALA period, Source: Department of Archaeology, Bangladesh

Lastly, one thing is noticeable, through the discussion- brick became the prior construction material during those days, a statements of orientation- contemporary bricks in the timeless procedure. The whole city was built with bricks and through lying we still find in the site. PALA builders had the capabilities of having the sense of mega monuments as well as the huge structure. The example again comes up in mind the PAHARPUR MAHAVIHARA (Figure 109). On the other hand, beautiful temples with the slender tower pattern (will be discussing in the assumption plate) used to be the great magnificence with the brick construction. Stupas and other monasteries were crafted with different stylish approaches. A city that became splendor of brick bounded art of architecture along with the spontaneous development.



Figure 109: the south Himalayan region largest Buddhist monastery erected 8th century AD by the PALA kings, plan and the ruins of the central stupa temple, Rajshahi, Bangladesh.
Author's sketch

3.4. Aqua route-Thoroughfare and hierarchy

The hinterland of MAHASTHAN positioned on the ancient high rampart of the VARENDRA elevated land form. Sincerely and respecting the main topography the fortified walls and the establishment grew. The urban core of the city, its zoning and other formal aspects of the city have been discussed on the previous writings. Critical landform was chosen by the sovereign; where most of the orientation had been occupied with marshland and riverine landscape. To explain the permeability through the aqua circulation; the intelligent layout designed perhaps by the PALA navy.

Entrances and Aqua thoroughfare of MAHASTHAN

The eastern rampare along with the fortified walls were perforated with several outposts and entrances. Those aqua permits used to act as the surface entrances also. So duel purpose used to take place from each entrance. The fortified entrances possible used to act as the land mark of the city, possible the entrances landmarks appeared as 'Buddhist notion' stylistic profile. Wooden construction preferred major element of the mass. According to the topographical formation and the archaeological excavation reports unfold the three major entrance on the eastern and upper northern side. Basically these entrances faced the mighty river KARATOA. So major access and the thoroughfare pattern further served according the perforation of the eastern side. Identically there should be path of the streets aligned with the main entrances.

On the other side (western side) fortification wall is straighter and used to have at least four opening, and in the general plan of MAHASTHAN it is mentioned along with five gates and five opening still exists⁸⁸. Eventually there would be another gate or the formal entrance on the northeastern side called JAHAJGHATA (see figure 111, water landing terrace for the boats). That was supposed to be another formal entrance from the river KARATOA. The positioning of the *Jahazghata* entrance is designed with multiple junction of the river KARATOA and the trench artificially

⁸⁸ According to the drawing of Alexander Cunningham, Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001.15.Print.

tunneled by the PALA kings to create three side watery defense; respectively north-western, south western and western region low-lying moist land. So almost three sides of the moat or trench fortified city along with the widen river KOROTOA on the entire north eastern edge secure the ancient fortified trading fortress city of MAHASTHAN form the invasion of enemies. (Figure 110)

Fundamentally, this water chained fortification used to act like the aqua thoroughfare for the locale. Although this part of the cannels possible was the restricted zone, but popular navigation used to serve as well.

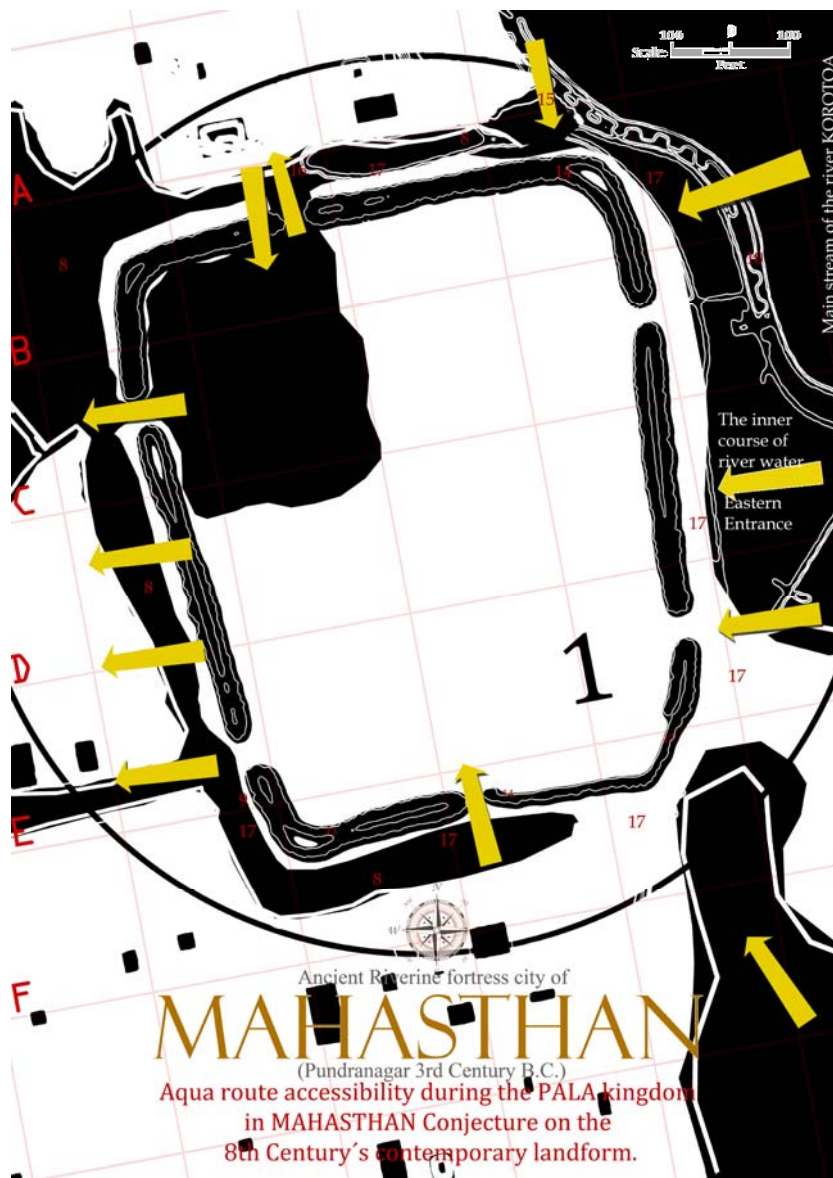


Figure 110: the figure-ground mapping elaborates us the possible access from the river and channels. The aqua route towards the mainland of MAHASTHAN. Generated by Sajid Bin DOZA

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Riverine Entrance of the city *(entrance from the water route towards commercial HUB)*

8th Century AD



Restored Scenario of the River communicated Trading

*This is the restored image of the riverine trading hub of the MAHASTHAN ancient city
(The entrance form the river).*

*Very usual situation has been elaborated in this plate, the riverine livelihood and the trading city
preciously depends on the river route, which has been shown here. Boats and river vessels,
small and giant on various types, all the way arrive from different region and countries to
settle their trade and transaction. By the side of the river, city is the happening place ever.
City born by the river and dies also by the river, but the historical remains left for us to find
the glorious ages of the predecessors.*

Figure 111: Assumption plate-05

*The entrance of the trading and commercial centre of the ancient city of MAHASTHAN,
the image is showing the jetty is busy with trading and commuting masses.*

Generated by Sajid Bin DOZA

Thoroughfare inside the walls:

The previous discussion (3.2) has elaborately mentioned about the city fabric of MAHASTHAN, it was even researched through critical site evidence and the proper examination, that the city residential area was not alike the formal organisation, but obviously a spontaneous one. The streets used to guide the cluster of the house pattern, as it had been observed the ancient city of MAHASTHAN, possible stratum with three kinds of zoning. The frontal approach used to deal with the commercial and trading sectors by means of the association with religious settings. The middle stratum used to serve with as the religious, residential cum bazaar and the lower as well as the southern part used to engaged with mostly the residential and few religious involvement. In due course, the thoroughfare pattern (Figure 112) also develop with the need of the occupants. The thoroughfare network is like the flow of circulation. So by demand the hierarchy of the circulation was adopted. Thoroughfare network is governed in the ancient city of MAHASTHAN according to the land use pattern. Certainly, the pattern in the ancient city possible would have the some common aspects. Different sagement of the streets and lanes could connect each other, the scale, proportion, visual angle and the surface of the facades sometimes have impact on them. That is why in the fabric of the city, it is always necessary to analyse the street network and other circulation patterns. As the ancient city of MAHASTHAN used to perform with several opening and gates of the entrance complexes, naturally the thoroughfare would generate from the starting point of the walled city entrance axis. For the case of the MAHASTHAN it was not exception, the main thoroughfare used to have gone through east to west in the other part of the opening, while from the north to the south prominently two more thoroughfare passing and crossed both of the alternate direction of streets, all are assumed as the primary streets (Figure 113) and establishment near by occupied with stupas, monasteries and commercial center along with some temporary structure. The pattern of the thoroughfare at the city was organic and that used to passed through as the stream of young river. Among them some streets are adjoining and met the religious settings with the cardinal direction. Mainly to focus and to get approach to the temple-stupas through the primary streets used to create branches of streets may called the secondary streets.

Ancient Riverine fortress city of
MAHASTHAN
(Pundranagar 3rd Century B.C.)



Thoroughfare Pattern

Over all Figure-Ground Pattern

Figure 112: the figure-ground pattern elaborates the thoroughfare situation with along with the spatial relationship at the ancient city of MAHASTHAN.
Generated by Sajid Bin DOZA

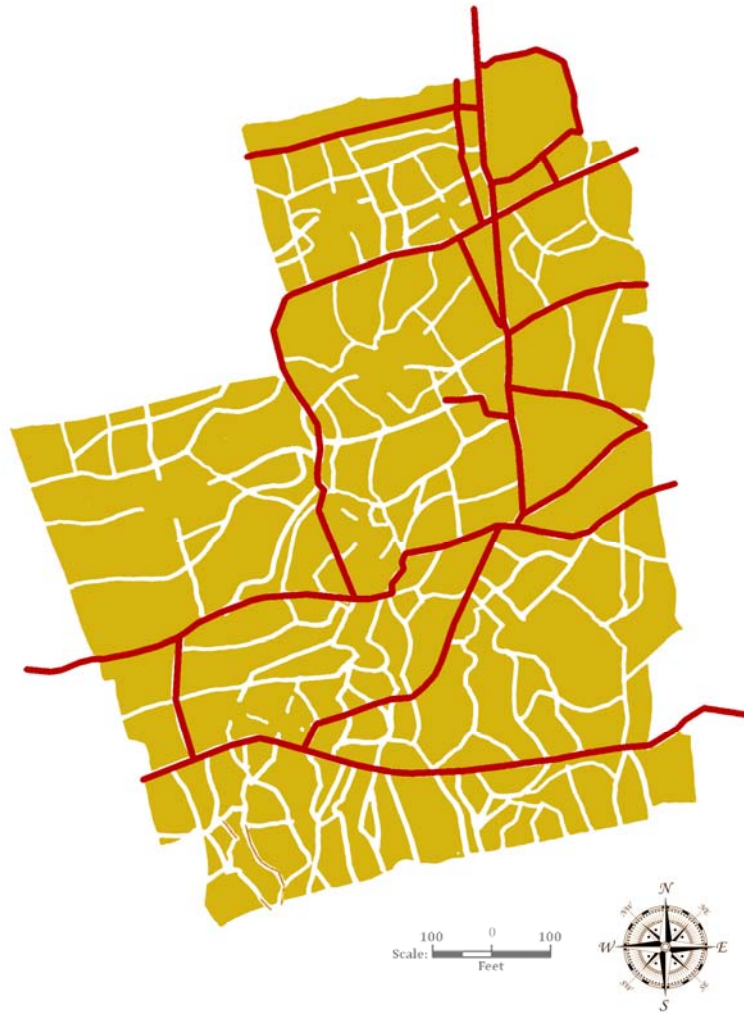
While discussing about the secondary street, mostly passing through towards the inland area of the city, such as- by connecting the one primary street to another edge. According to the Hierarchy this thoroughfare network covers most of the developed area.

For instance, MAHASTHAN ancient city is laid with secondary street networks (Figure 114). It is prominent and controlled on the edge with the primary type of the streets. About 55% of the entire urban fabric of the ancient city of MAHASTHAN engaged with thoroughfare network, where the secondary street pattern in and around with spontaneous relationship. As the PALA builders used to consider the topographical judgment; the street networks followed the soft contour of land along through most often from the northern part to the extreme to the southern part. So this segment of secondary street pattern fundamentally used to start from the commercial hub and continued to the dense part of the residential area, and contributed linkages with other land use pattern. The secondary street width by the dimension used to be approximately 5 ft (1.6 m). Through the reference of excavation of the archaeology of France-Bangladesh (1993-99) in the vicinity area, a part of the thoroughfare tress reflects the idea of the construction materials and the spontaneous characteristic of the street pattern.

The tertiary street pattern. (Figure 115); in the MAHASTHAN ancient city used to term as the lane, winding streets and narrow path. About 20% of the land used to be occupied and networked with this stratum. Mostly the network used to limit with the thick residential units and corresponded the religious structure. Like the stupas and small temples. Small and tiny house form used to link with this thoroughfare system. Intimate and very narrow apertures had the spatial qualities of the network. (Figure 115)

In the southern western and eastern part of the ancient city of MAHASTHAN a primary thoroughfare used to be the datum of the tertiary pattern of streets that continued to both of the lower eastern and western ends.

Ancient Riverine fortress city of
MAHASTHAN
(Pundranagar 3rd Century B.C.)



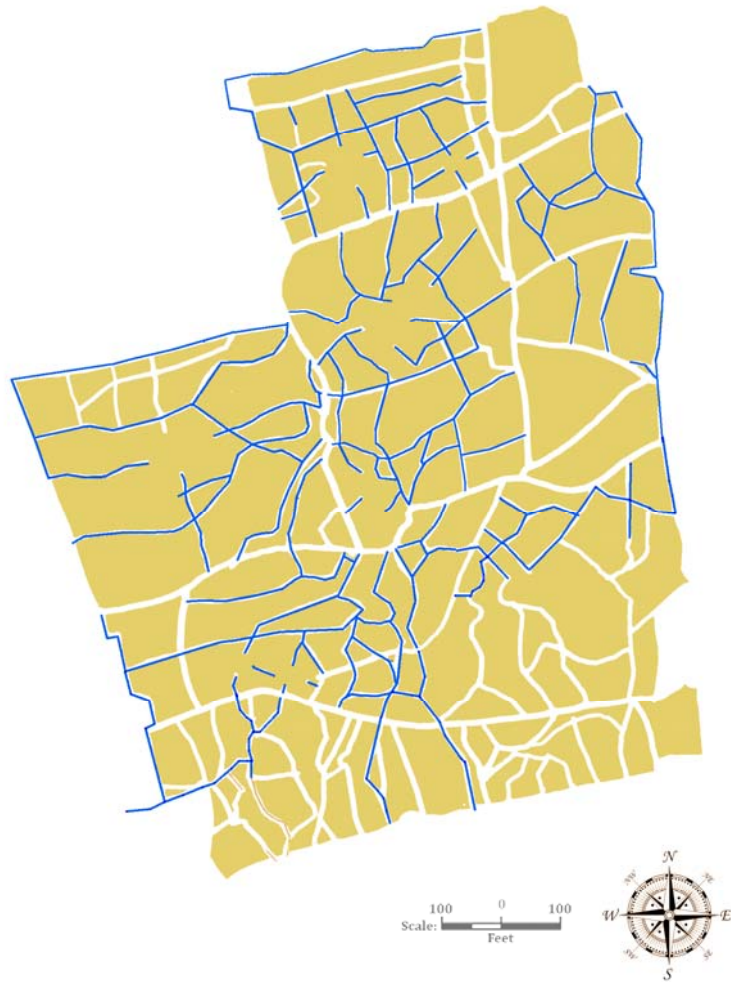
Thoroughfare Pattern

Primary streets



Figure 113: the plate is representing the contained primary spontaneous street.
Generated by Sajid Bin DOZA

Ancient Riverine fortress city of
MAHASTHAN
(Pundranagar 3rd Century B.C.)



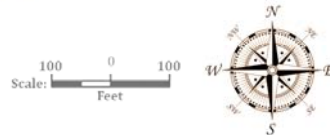
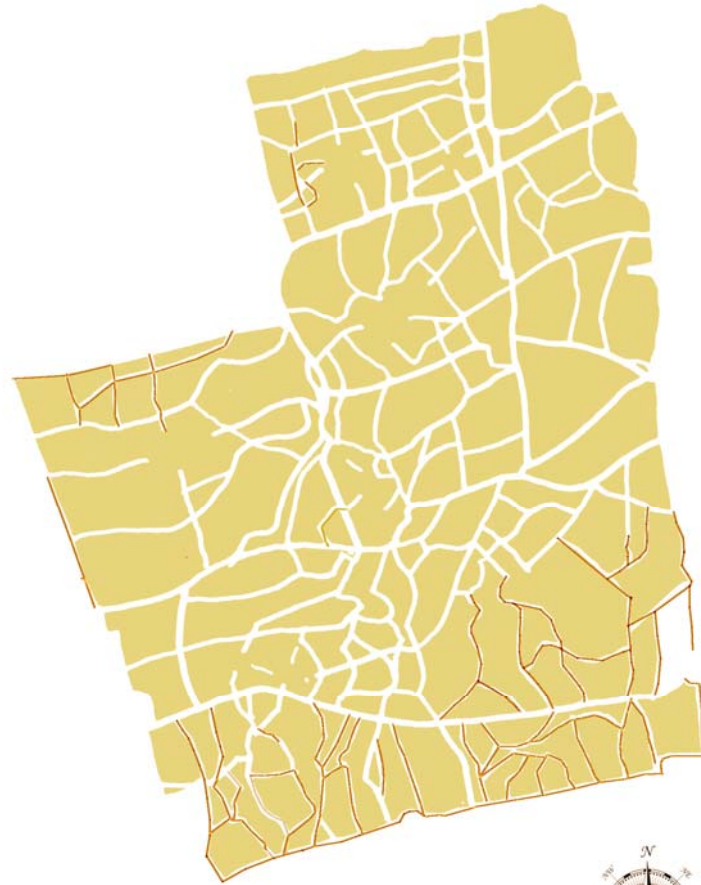
Thoroughfare Pattern

Secondary streets



Figure 114: the secondary thoroughfare pattern governs mostly, entire the city area. Generated by Sajid Bin DOZA

Ancient Riverine fortress city of
MAHASTHAN
(Pundranagar 3rd Century B.C.)



Thoroughfare Pattern

Tertiary streets



Figure 115: tertiary street pattern, involved with most of the residential area.

Generated by Sajid Bin DOZA

Activities on the streets

The behavioral pattern on the streets in this urban core of MAHASTHAN used to pass a vibrant time with enormous doings. To start the eventful activities on the street of the ancient city of MAHASTHAN it would be noticed that- common gathering spaces and the congregation area in the tropical climatic land of Bengal happened to be informal one, still this situation could be seen in some part of the rural areas. Bazaar and streets are the combine part of trading transaction.

From the time immemorial the thoroughfare of this deltaic region always used to eventful with vivid functions. Participation of mass, market place, communication, interaction and street bazaar were the popular assemblage that became the cultural pattern of the delta people. It happened perhaps for the perishable good or food, as because the main food of the region is fish and rice, sometime potatoes and other vegetable. While the fishes and other food are taken from the origin of place, for its perishable quality it was happened to sell in the way to communication and interaction. (Figure 116)

Consequently, the seller when sell something it remains fresh and the buyer purchase it instantly from the way. Thus, it could be one of the reasons for being so popular about street bazaar. Accordingly, the perfect scenario possibly had been experiences the streets of the ancient city of MAHASTHAN. Eventually, this cultural pattern introduced lots of socializing aspects while interacting in the street bazaar. People used to know other neighbor, interaction with other inhabitant, economic advancement, and importance of the street and lastly the gathering of vicinity. So, street act as the multipurpose function in the settlement pattern in the delta land.

Even the aqua based or floating bazaar is popular in this hinterland. Several Boats are gathers together with lots of raw foods and other important materials. And by the boats the purchaser used to go to the river to buy. In Bangladesh this cultural practice is still appeared.

So thoroughfare for both aqua and the street hierarchy used to contain vibrant activities, this is a very import and noticeable aspect for the MAHASTHAN also, river

KARATOA used to be the best source of marine resources, at the same time on the western and southern western part laid on with marsh land, feasible for the cultivation, so perhaps the ancient city MAHASTHAN was a self-sustain well off urban core.

Scale and the visual angle from the street and the facades

To identify the scale of the city of MAHASTHAN, it could be visualize that- the city used to have the elevation moderately single stories.

- Foliage used to be the prominent observation on the hinterland of the city.
- The thoroughfare pattern was natural and followed the situation of the original rampart.
- So the facades and the foliage perhaps was the combine canvas for the city façade.
- While the religious building acted as the glorious and gem for the vicinity.
- The ancient urban core façade used to shine with the pinpoint crowned golden finial and the slender vertical tower of the temples. The same situation used to habit with the stupas and other tiny and moderate religious structures.
- Narrow streets and the high pick tower temple, creates the distortion. But these peculiarities used to be the unique sense of the visual angel.

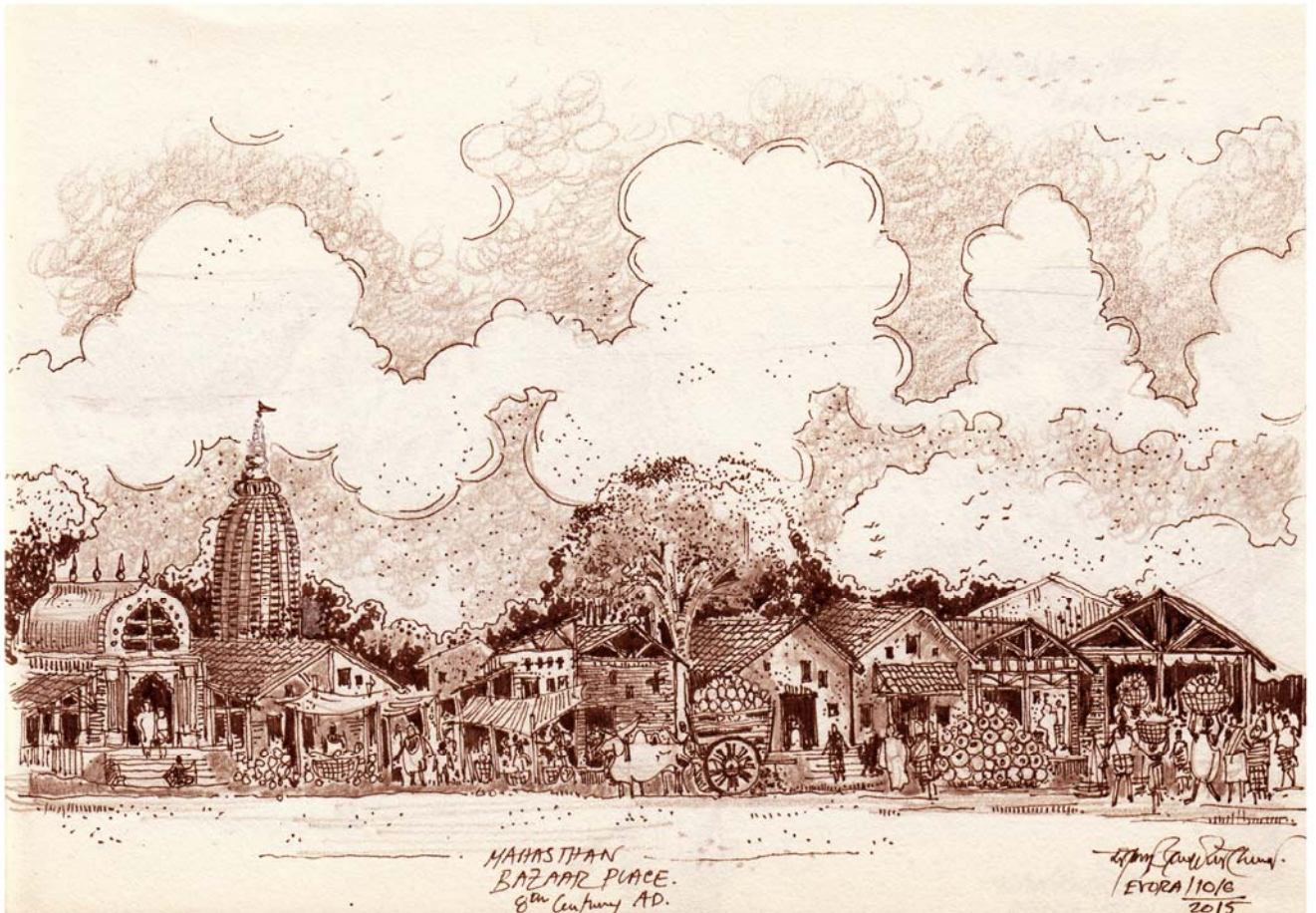
- For the case of the visual angle, streets and facades of MAHASTHAN; the city of trading and religious manner existed as the urban cores were various and multipurpose urban facilities during the ancient time.

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Bazaar at the ancient city

(commercial HUB)

8th Century AD



Restored Scenario of the Bazaar

The plate represent the conjectural restored environment of the busiest and vibrant traditional space of the ancient city of the MAHASTHAN. Varieties of activates used to generate in this gathering space. This spatial situation used to help with the interaction, communication trading with the other locality or region and the social cohesion among the vicinity.

Bazaar is still today in the most popular gather and congregation place in the time immemorial delta land

Figure 116: Assumption plate-06

Restored view of the bazaar at MAHASTHAN. Generated by Sajid Bin DOZA

Some thoughts considered by the PALA Rulers making a huge urban core of MAHASTHAN

The 'urban fabric' terminology is common to all, however, when it is specialized with particular period of style, or how an ancient city grew beside the mighty river considering the huge area 1.525 sq. km. of an ancient elevated land. When the ancient urban core was developed with certain ideology or thematic approaches that used to involve trading and religious center. Considering to the issues the image of the city and the various pattern of the fabric while combine a whole it marks to analyze as well as vitally needed. There are important and special clues used to include with the city fabric.

To mention them- firstly, all about the monarchy and administrative system of the urban core. It means the power, mightiness, and other influential situations are involved with the city. As the PALA administration was organized and noted in the history as the golden period of PUNDRABARDHANA Vukti⁸⁹ on ancient Bengal. So city administration as well as the socio-economic sectors and the contribution to the state had been carrying out successfully.

Secondly, the dictum of making the city of MAHASTHAN, Obviously, often Buddhism was covering during the 8th century till 13th and before, religious and socio-cultural aspects belonged as the demand and identity of the vicinity. Subsequently, aim of the city used to fix with lots of religious motivation and settings.

To mention the city MAHASTHAN-Thirdly, Systematic approach to govern the organogram and administrative situation of the urban core found 'well-off' substance.

What could be the well-off mater?

The positioning of the monasteries inside and outside the wall including the settlement adjoined ancient urban core started networking with the monastic settlement, which was the spellbound decision during those epochs. City should be

⁸⁹ Vukti: it is kind of regional estate of the ancient Bengal.

fluid and should not bracket within the wall, this was the strategies of the PALA kings.

To mention, the ancient city MAHASTHAN, fourthly, respecting the original topographic characteristics the zoning based city fabric developed. Although the city pattern used to have the organic one, nevertheless the density from the north to the south had hierarchy, a level of sequence, for instance- the commercial cum religious hub along with street bazaar, immediately after- the monastic setting and then residential approaches started with huge concreteness.

Indeed, the settlement pattern of MAHASTHAN was a kind of `architectural programme`. A full package of art and architectural values, that used to occupied with inhabitants both rationally and aesthetically. Now a day, while strategic plan is generated by the planners and the coordinated team, they take the references form the ancient or the medieval city fabric. We should yield some very uncommon issues and put in the contemporaries' ideas, obviously this part of the practice is appreciable.

However, for the case of MAHASTHAN, although few remains are there, still the pattern of the settlement and urban core fabric is unidentifiable; this chapter tries to search issues that are completely missing from the history of ancient city pattern. The investigation aim could contribute some brilliant clues for the further research to explore the lost city of MAHASTHAN.



3.5. 'The form of art' of MAHASTHAN

'The form of Art' – is engaged in this writing to evaluate the component of the city. Definitely, for the ancient city, it is fascinating and thoughtful discussion, also to entitle an ancient ruin city that have less existence and most of the happening are beneath the earth. Form of art is generally applied to analyze and to criticize functionality, rationality and the aesthetic value of the object. So it is elaborative and convenient for an object to start analysis and synthesis. Consequently, it basically jerks with the artistic appreciation.

Artistic appreciation, can't it be applied to evaluate an ancient riverine fortress city? Perhaps, for the reason- city is a system, it is just like the multidisciplinary and complex mechanism, on the other hand, city could be termed as a canvas of painting; that may have the texture, color, dark, bright, smell and the idea. Yes, a city is alike a thoughtful painting. A relief painting, that is associated with height, open space, fluency or stroke, density and thickness, light and shadow, solid-void and natural or geometric.

It is now justifiable to relate the form of art with a city as well as the ancient one. For the case of the ancient city this concept or the theme is more authentic as because the ancient city fabric is bonded with spontaneous setting of different functions. Besides, the ancient city could fulfil a pattern of fabric that might consist since the epoch. To build a city like MAHASTHAN, it was a hard game to establish a Buddhist prioritized interpretation, as to begin the emblem in the city of MAHASTHAN. Here is the point to understand the theme and the image of the city, it would be mentioned that although MAHASTHAN used to have the connection with INDUS civilization, however, the ancient city of MAHASTHAN used to not look alike as the MAHENJODARO (INDUS Valley Civilization). For the reason that, the ancient city of MAHASTHAN had a different urban form of arts. To explain the arts of the city of MAHASTHAN, it is necessary to understand the settings of the ancient city, the resources of the city, the situation, surrounding and lastly the earth form of the city as well as the-----

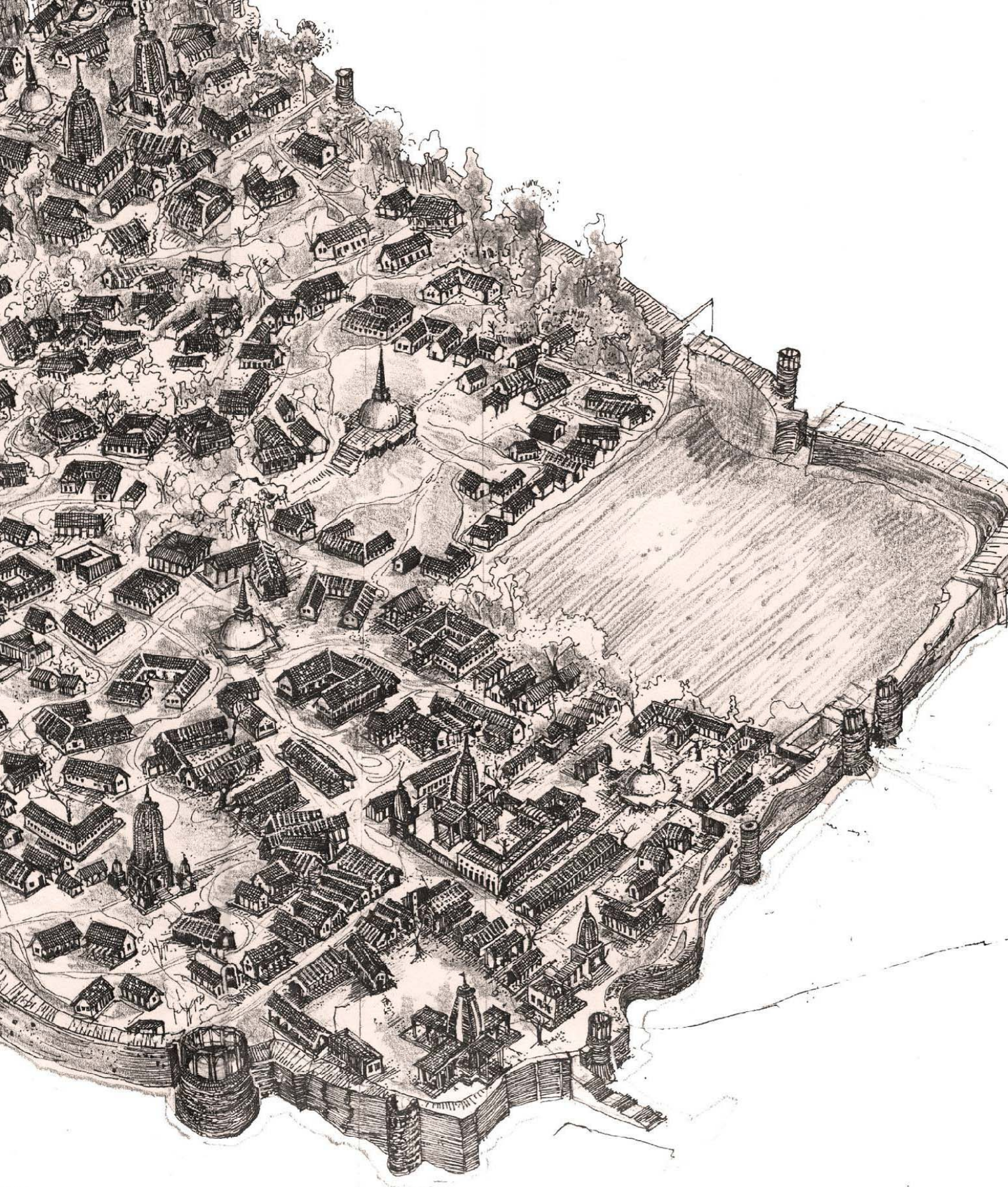


Figure 117: The conceptual-conjectural sketches of form of art of MAHASTHAN-the ambiance along with the fabric of the Buddhist city. Sketched by Sajid Bin DOZA

topography. Those mentioned merits generate the great impact to promote the artistic appreciation of a city. Moreover the city itself, coordination with the urban core and the natural resources (river, forest, agricultural field), the policies to adopt the minerals as the strength of the city, it may perhaps also- set the notion to turn into the artistic and functional city. Additionally, the city if itself designed or developed with the principal elements, that makes the city efficient for the inhabitants as well as for the overseas and inland trading facilities also. (Figure 117)

Ancient city formation is also intensely pertinent with attachment of the religious prediction. This issue might influence to the city's growth, and eventually imprint unique identity and entity on the urban fabric (Figure 118). The religious settings invite people for gathering; however the approaches and the spatial environ turn into an individual footprint on the mapping of the ancient city. While the public building and structure, like the monasteries functions are introverted and a different footprint it creates on the urban fabric, which is identical, dwelling and other infrastructure are amalgamated together and creates a natural but manmade silhouette with spontaneous setting, since time immemorial. It must be mentioned here, the mass commuting and the people from different origin and various land when arrive and roam around the city fabric, it is another cohesive relationship with the city footprint.

People from different part of the region would come and city should be vibrant with this mood and attitude, a joy-ness would prefer in the city inhabitant. These entire phenomenon described above are the statement to term the 'form of art 'of the ancient city.

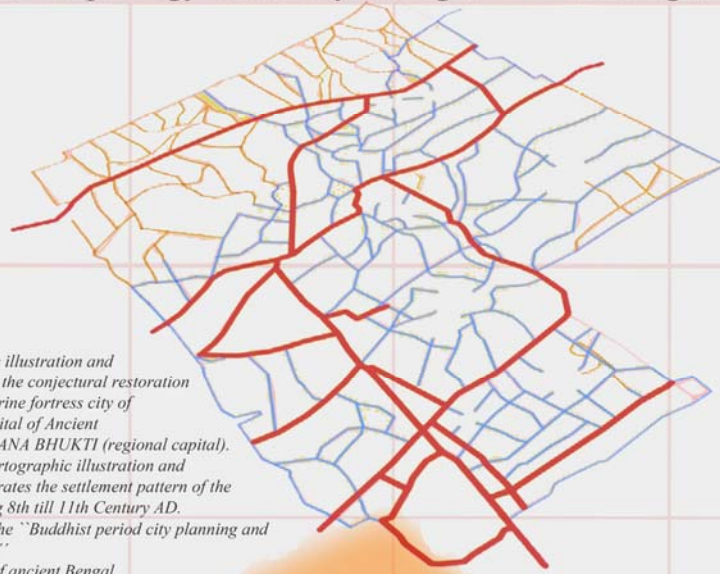
This statement or the observation is applicable today in the contemporary time to make city artistic and a form of art. The suggestion is timeless and time demanding now a day to rethinking the contemporary city formation. The temple at the riverside, possible integrated the artistic value of the city by both with the communication and religious prolonging.

Ancient Riverine fortress city of MAHASTHAN

(Pundranagar 3rd Century B.C.)

The Morphology of the city during the PALA Kingdom (8th Century AD)

This Cartographic illustration and information states the conjectural restoration of the ancient riverine fortress city of Pundranagar, capital of Ancient PUNDRABARDHANA BHUKTI (regional capital). This particular cartographic illustration and information elaborates the settlement pattern of the ancient city during 8th till 11th Century AD. Indeed; focus on the "Buddhist period city planning and settlement pattern" of Northern part of ancient Bengal.



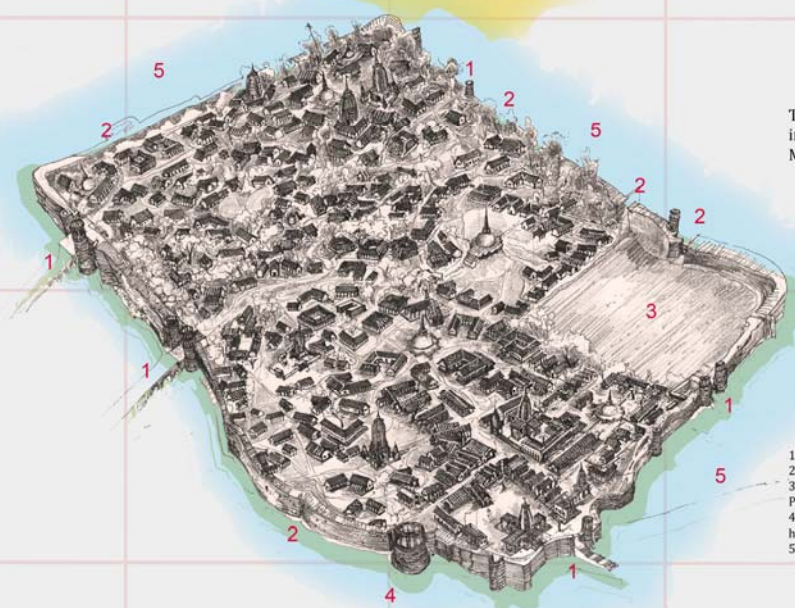
Thoroughfare system

- Primary streets
- Secondary Streets
- Tertiary streets



Land use strategic plan During the PALA Kingdom 8th century AD

- Trading and commercial mixed use zoning
- Palace & other official
- Religious & mixed-use
- PALA Navy retaining water body for reserve navy force
- residential /dwelling



The *Buddhist Urban fabric* in the ancient riverine city of MAHASTHAN

1. Permeability/ Entrance gateway
2. Local aperture /opening
3. The water body for the PALA navy reserved force
4. Giant bastion to resist the huge current of the mighty KARATOA
5. Moat or trench



Figure 118: the diagram and the segmental properties to justify the morphology of the Ancient city if MAHASTHAN. Generated by SAJID BIN DOZA

3.6. To elaborate some explanation about the lost ancient city of MAHASTHAN-based on 'Form of Art'

With the reference art of the city- possible justification with the organic city pattern existed, besides the natural rampart the PALA sovereign used to consider as the basic of the base. By considering the ancient VARENDRA rampart, the Buddhist builders obligated to create the massive walled city and that used to have the small and big temples in different nodal points, the city used to have the brick build structure, that theoretically appeared the red ting terracotta color, consequently a reddish hue used to seem over the city with several hierarchy of mass along with deep vegetation, also a part of the form of the art of at MAHASTHAN. (See figure 117,118)

'Form of art'- could be termed in morphology also. Usually this term morphology often use in the urban design and strategic planning. Here in the ancient city of MAHASHAN; this term has been used to analyze the city with more imaginative process. Hence, it would be sophisticated rendering to explain the ancient city and its components in a more artistic and multi diver's alignments.

Consequently, the morphology of MAHASTHA; ancient city is needed furthermore analysis and justification in the sense of form of art. Although the meaning are the same till the research demands some actual and practical substance that might prove the analysis and synthesis in doing on the authentic direction. The ruin site of MAHASTHAN had been going on continuous excavation since 1920s form the British RAJ period. Since then lots of mounds were discovered and the scholars came to a result. Based on that excavations and the synthesis this chapter 03 is obliged to continue the research in to the further direction. This direction would prefer '**restoration sketching**' and '**art and architecture**' disciplines to unfold the matter of the form of art or the morphology of the city component.

To justify further the 'form of art'- the research demands '**assumption plate**' to evaluate the ruins and the restored structure as the chronological reference.



Terracotta Seal, Mahasthan.

The 'Assumption Plate'-is contemplating the idea of conjectural restoration by the existing remains of the structures, at the site of MAHASTHAN, ancient riverine city of Bengal. Dating back: 8th Century

The Buddhist temple 6th Century AD

(BAIRAGI'S TEMPLE) Excavation by the British Raj in 1920-30 AD

The site specimen: ancient religious structure (8th Century)

Local term of the structure: BAIRAGI'S VITTA.

The existing remains show some identical part of the temples, the temples are genuinely the Buddhist series group. Some striking definite structural site visit statement along with the archaeological reports and field survey reflects the shape, materials, style and the purpose of the structure.

With the projection of all existing situation of the ruins, some common features are unfolded in the assumption panel.

- The temple was crowned with SHIKHARA (high spire)
- The temple is formed with moderate brick based plinth, the shape and size of the bricks are square, approximately 30.48X30.48 cm. The façade of the plinth used to decorate with terracotta precious works.
- The outer ambulatory circulation path is identifiable with narrow outer side corridors that posted with stone Gupta and Moderate PALA delicate columns.
- The decorative sand stone columns used to install along with the ambulatory circulation and that used to shade with local roof tiles with terracotta works. Which were very common for the structure of this territory as well as a process of local craftsmanship.
- The planning organization used to allow the public participation, so the extension of the ambulatory circulation shading used to projected entrance side or the eastern side.
- The SHIKARA used to build with thick brick layers and the tower or the spire used to be thin and slender with high AMLOCA and finial.

Gallery

from the Historical Statements 1920s



1. plinth of the temple with outer ambulatory circulation
2. the corbeling corner of the temple with brick pavers
3. other plinth of the portico entrance of the temple

BAIRAGI'S VITA Temple



Source: Department of Archaeology - Bangladesh

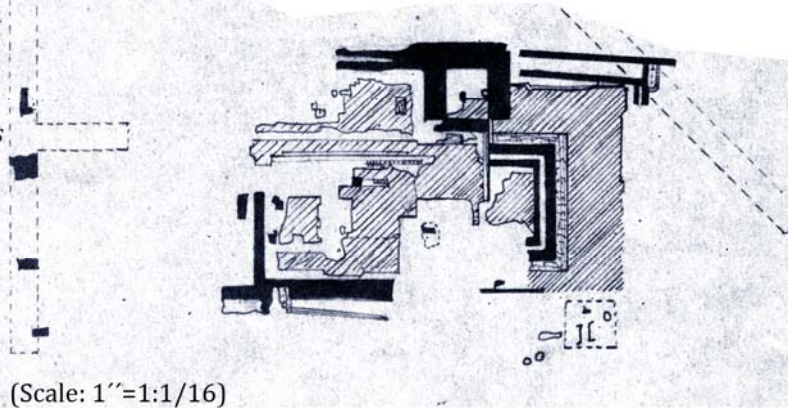
Figure 119: ancient images during excavation by the British Archaeological team BAIRAGI'S VITA (8th Century's Buddhist Temple. Compiled by Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN

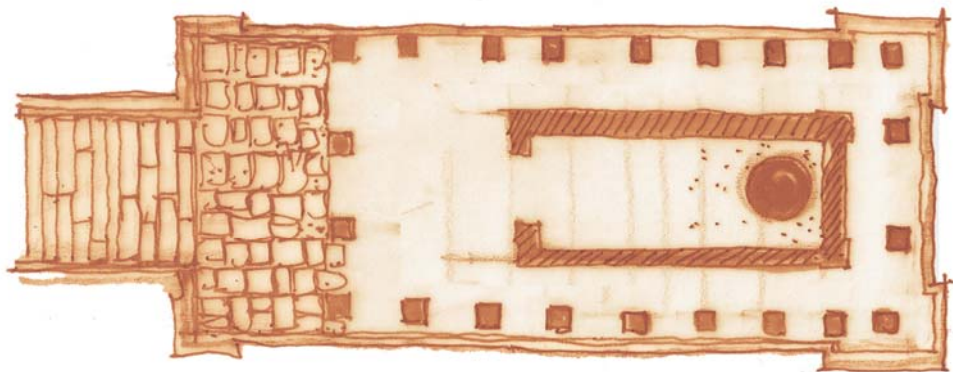
The 'Assumption Plate'-is contemplating the idea of conjectural restoration by the existing remains of the structures, at the MAHASTHAN, ancient riverine city of Bengal. Dating back: 8th Century

The site specimen: ancient religious structure (8th Century)

Local term of the structure: BAIRAGI'S VITTA.



Existing situation of the temple (Scale: 1''=1:1/16)

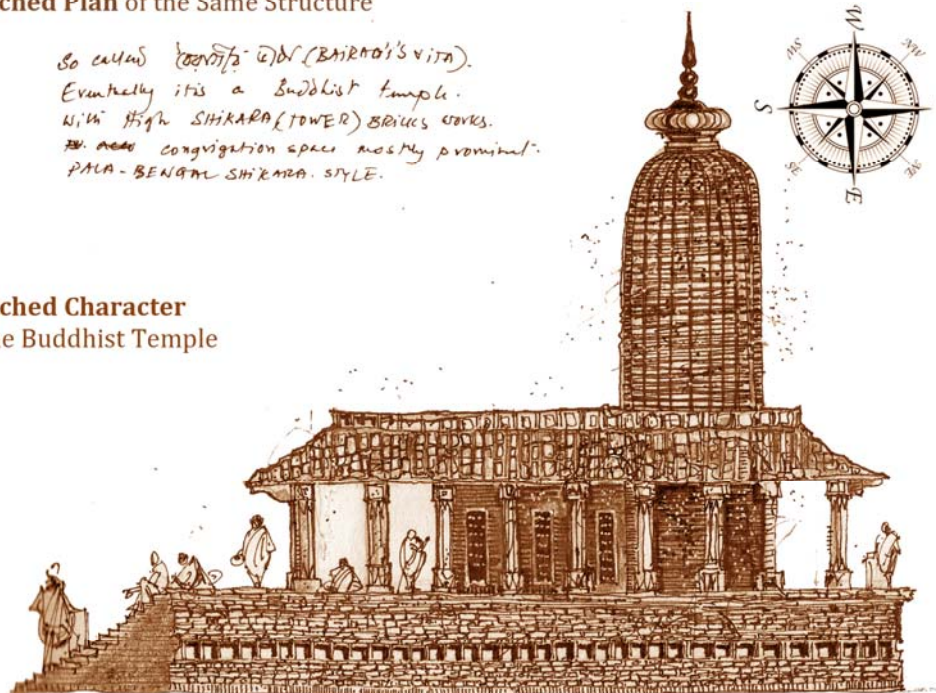


Restored Sketched Plan of the Same Structure

So called (বাইরাগি'স বিটা) (BAIRAGI'S VITA).
 Eventually it is a Buddhist temple.
 With High SHIKARA (TOWER) BRICKS WORK.
 And congregation space mostly provided.
 PALA - BENGAL SHIKARA. STYLE.



Restored Sketched Character Elevation of the Buddhist Temple



EVORA. 05.04.2015.

Figure 120: Assumption plate-07: BAIRAGI'S VITA (8th Century's Buddhist Temple)
 Compiled and restoration generated by Sajid Bin DOZA

The Buddhist temple 8th Century AD

(PARASURAM Palace/TEMPLE)

Excavation by the British Raj in 1920-30 AD

The site specimen: ancient religious structure (8th Century)

Local term of the structure: Parasuramvita

PARASURAM Palace, a Buddhist period structure, as per as the evidential statement, the remains used to belongs the PALA king's palace cum religious place also. Although the structure has sequences form the approach to the inner courtyard. The planning organization has some clear traditional attachment. Four mass coordinately engaged in the inner courtyard, appearing the contextual meaning. Meanwhile, this structure had been used by several ages and many evidence found during the excavation by the British RAJ in 1920s.

The outer courtyard possibly used to allow mass gathering, with few structures. Temporary structures used to have the decorative canopy to provide shade for the common people. Although still some evidences are submerge beneath present landscape. The structure had a big entrance and it is associated with some other facilities.

PARASURAM structure during the Buddhist epoch, used to be combined with both the residence for the noble of MAHASTHAN, at the same time worked as the *DARBAR* hall or the hall of audience. Although the structure had gone through by adopting different periods, however the functional orders along with the organizational approaches seemed to be as protected dwelling with huge walls.

Parasuramvita Palace, archaeological site located in the citadel of MAHASTHANGARH, about 200m north of MANKALIR KUNDA, ascribed by local tradition to be the palace site of the last Hindu king of the area, PARASURAM (Parashuram).⁹⁰ Excavation (1961) in the site revealed cultural materials of the Pala, Muslim, and Colonial periods. In the lower level, remains of buildings and a few

⁹⁰ Das, Gopal Krishna, and Kumkum Jennera Kumu. *Oitihashik MAHASTHAN (ঐতিহাসিক মহাস্থান)*. Ed. Md. Mosharaf Hossain. 2001 ed. Dhaka (ঢাকা): Dhakeswari Library (ঢাকেশ্বরী), 37. Print.

terracotta plaques of the Pala period have been unearthed. In the middle level remains of buildings and associated glazed pottery represent the Muslim period.

Assumption:

PALA dynasty in Bengal particularly on the northern part built lots of structures including the monasteries. Importantly, the evidences and tresses of dwelling units or the residential area for the inhabitants and occupation mass only found and discover preliminary nowhere except MAHASTHANGARH site. However, the references of the palace or castle architecture form the PALA age are missing. This PARSURAM palace is the only reference still exists today with ruins, since then the inner courtyard would be possible greater reference to justify the residence for the loyal or elites of MAHASTHAN. Practically flat roof construction during that period was harder and difficult. So during the PALA dynasty- roof had been treated with several stylish approaches.

For the ordinary structure and huge public accommodation the builders were bound to use with wooden members. With the bricks, PALA builders were excellent in building roof pattern along with barrel vault and spite type tiling. Eventually, it could be assumed- PARASURAM Structure had a beautiful face-lifting, dating back to PALA time. Spire type roofing used to enhance to show the glory as well as the form of art had been elaborated with the loft elements. This Buddhist structure used to appear as the temple before the dwelling zone, as because of height, the structure's finials flashed out with shining sun.



Terracotta Plaque- Goddess (11th Century), MAHASTHAN
Sketch: Sajid Bin DOZA

Gallery

from the Historical statements (1920s)



PARASURAM PALACE

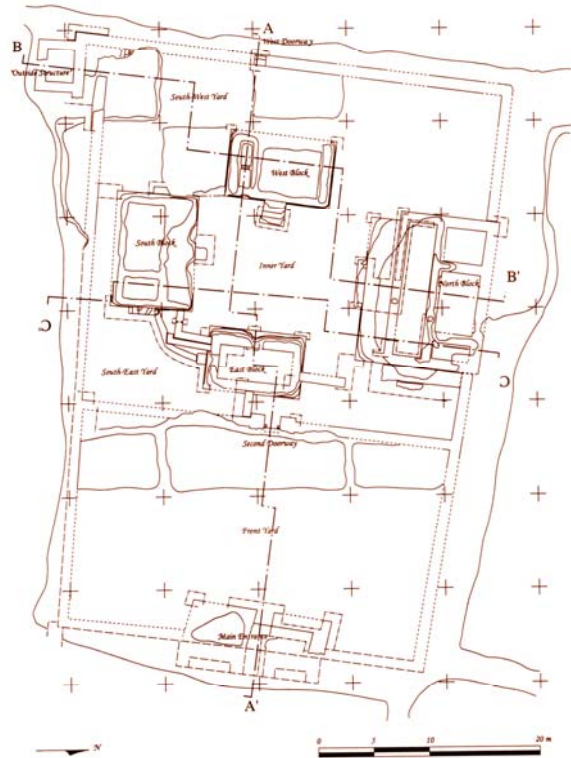
8th Century AD



*PARAURAM PALACE (8th Century's Buddhist Palace)
Image source: Sajid Bin DOZA*

BUDDHIST TEMPLE AT MAHASTHAN

Parasuram Palace (Buddhist Temple)



Existing situation of the temple
(Scale: 1"=1:1/16)

Survey of Parasuram's Palace, Laurent Volay, 1995

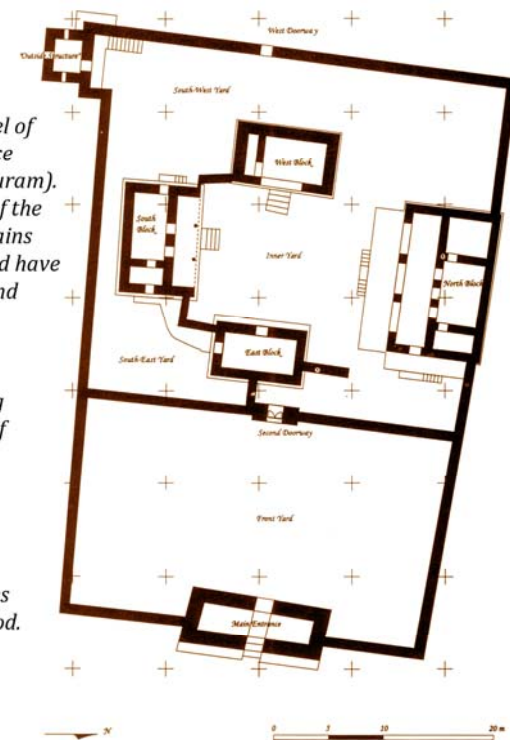
Restored Sketched Plan of the Same Structure

Parasuram Palace archaeological site located in the citadel of Mahasthangarh, ascribed by local tradition to be the palace site of the last Hindu king of the area, Parasuram (Parashuram). Excavation (1961) in the site revealed cultural materials of the Pala, Muslim, and Colonial periods. In the lower level, remains of buildings and a few terracotta plaques of the Pala period have been unearthed. In the middle level remains of buildings and associated glazed pottery represent the Muslim period.

Perhaps the palace during the PALA –density was mixed complex. The two courtyards used to correspond gathering of mass. The planning organization still has the evidence of the dual courtyard. The frontal spatial zoning, although it is still unclear that, during the PALA ruling period if the structure could exist or not, eventually the excavation in 1961, and 1996 had the evidence of Pala period bricks and the later structure was developed according to the older one. This structure could perhaps had the possibilities as the palace cum religious combine during the PALA period.

The site specimen: ancient religious structure (8th Century), or Elaborate residence

Local term of the structure: Parasuram palace



Proposed restitution of the plan of Parasuram's Palace, Laurent Volay, 1995

Figure 121: Assumption plate-08
PARAURAM PALACE (8th Century's Buddhist Palace)
Drawing source: Department of Archaeology. Bangladesh
Compiled and generated by Sajid Bin DOZA

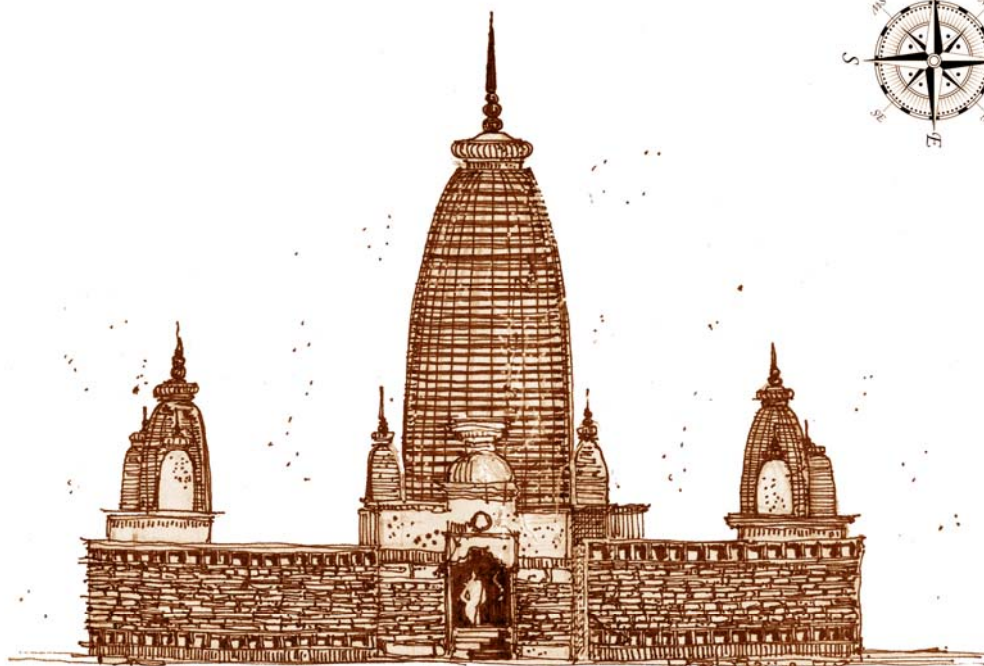
BUDDHIST TEMPLE AT MAHASTHAN

Parasuram Palace



(Scale: 1"=1:1/16)

Restored Sketched Section of the Same Structure



(Scale: 1"=1:1/16)

Restored Sketched Character Elevation of the Buddhist Temple

Figure 122: Assumption plate-09
Longitudinal section and the front elevation of the palace
Compiled and restoration drawings generated by Sajid Bin DOZA

The Buddhist temple 8th Century AD (Govinda Vita Temple) Excavation by the British Raj In 1920-30 AD

The site specimen: ancient religious structure (8th Century)

Local term of the structure: GAVINDAVITA

Mostly lucrative and impressive structure of the temple excavated during the BRITISH RAJ in 1928-29. This temple is situated just outside of the northern wall of the walled city of MAHASTHAN. The positioning of temple is very critical as well; the river KARATOA on the north-eastern portion and moat was designed consciously to divert the huge current of the river. So basically the location of the structure is on the junction of the river and the canal. The river used to pass through in-between the main walled city of MAHASTHAN and GOVINDA VITA temple Site. Crisscross River KARATOA passes just in front of the temple, basically the temple has its landmark position still shows its ruined splendor. The entire environs and the elevated land form where the temple was positioned that indicates this GOVINDA VITA Temple, was something very iconic and special in the hinterland, during the PALA ruling. The 'KARATOA MAHATMA' ancient Sanskrit literature in between 12th & 13th Century AD, vigorously mentioned a holy city beside the river KARATOA developed and on the extreme northern side a landmark temple named as GAVINDA or VISHNU temple. It is needed to mention that the time period is just after the PALA ruling era. As the period was denoted with the HINDU SENA decree.

Since the temple was mentioned in the writing of the ancient literature and the location say the temple is none other than, except the GOVINDAVITA temple. The temple was adjoining with two different structures. The historians notified the temples chronology, the bigger one on the western part is older and later phase, and the small one just was developed in front of the river KARATOA. This temple supposed to be the big congregation for the religious purpose, as the river KARATOA was the Goddess River and a secret one. City and the landmark are allied on some basic ideologies. Establishment of the superstructures for the inhabitants and the tourists who used to arrive in the city, the GIVINDAVITA temple is the gem of the city of MAHASTHAN that used to create the mental image about the ancient city of MAHASTHAN. Moreover the crowd in front the river for the holly bath and other ritual activities sense the previous prestige of the temple. (See the figure 116)

Assumption:

the ruined structure at the western side has the marks of high and the elongated plinth. since the beginning the plinth was built, and mostly it was the congregation area of the temple, where the pilgrims used to gather for the religious purpose, at the same time the temple previously faced towards the KARATOA river and the Goddess river is the part of the ritual, that is why it perhaps might attached, the length of the temple as well as the plinth of the temple seems used to meet meeting towards the river. The first phased temple on the western side had the sign to contain the outer ambulatory circulation. The circulation was guided by probably the series of stone or wooden decorative columns. The roof above the outer ambulatory circulation used to construct with the local made terracotta flat roof tiles. Aligned with the outer slope for easy passing of the rain water and climatic protection used to engage in the structure. The GARVA GRIHA used to have a huge spire with brick terracotta corbelling and detailed offset. The probability on the top having an AMLOKA with KALASHA finial by the copper works. The plinth was eventually high, because of the river, to protect the temple form flood and water clogging. Processional grand stair used to engage with the plinth, which is now covered by the further construction of the tiny temple in form to that one. To the east the ruins evident with a small temple, that used to constructed after the western one (Figure 123). Both the temples perhaps would have the harmony in the form of art, as well as similar in morphology. As they are adjacent, might have appeared like one temple. Even being the tiny front temple, there was a hierarchy in between both of the temples with the human visual angle. The tiny temple later on established on the frontal plinth of the older and bigger on from the western part, followed by the same processional stair used to connect to receive the navigation route. At the same time to take the people to the river for the holly bath as the part of the ritual, and other religious functions.

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Riverine Entrance of the city (entrance from the water route towards commercial HUB)

8th Century AD



Restored Scenario of the River communicated Trading

MAHASTHAN is situated by the western side of the mighty river KARATOYA, intelligently the city was developed since the 3rd century BC. Particularly this riverine city flourish with full bloom during the PALA kingdom. The city was very much famous for the trading and as the important inland port of the region. The art of the city was brilliant and its image of making as the landmark was fascinating. the city was designed although spontaneously, however the positioning of the religious structures used to appear deep impact on the commuter's mind.

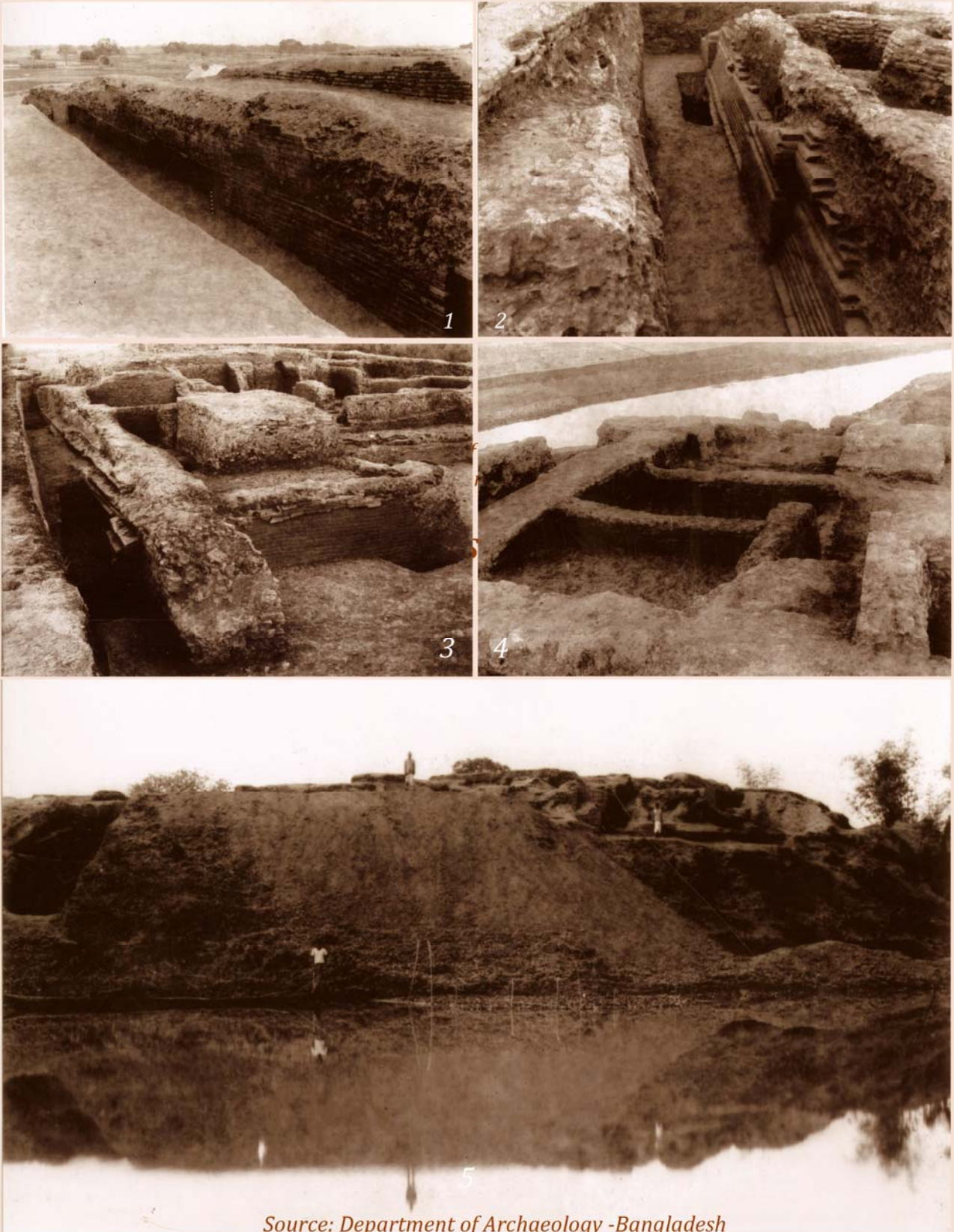
An image of the ancient riverine fortress city of MAHASTHAN; left something great memory that never unforgettable. The city's important religious structures used to locate on the perfect settings. Among the GOVINDA VITA temple was the outstanding for its location and just to the entrance of the riverine route.

A perfect picturesque scenic beauty that always attracted the travelers as well as the commoner's mind. the art of the city sometime belonged very eternal attitude.

Figure 123: Assumption plate-10

Ancient city image sometime illuminate the sense of inner lighting among the passers-by or inhabitant's mind...the temple GOVINDAVITA was a gem during the PALA time...never forgettable. Restoration sketches generated by Sajid Bin DOZA

GAVINDA VITA Temple
Gallery
from the Historical Statements 1920s

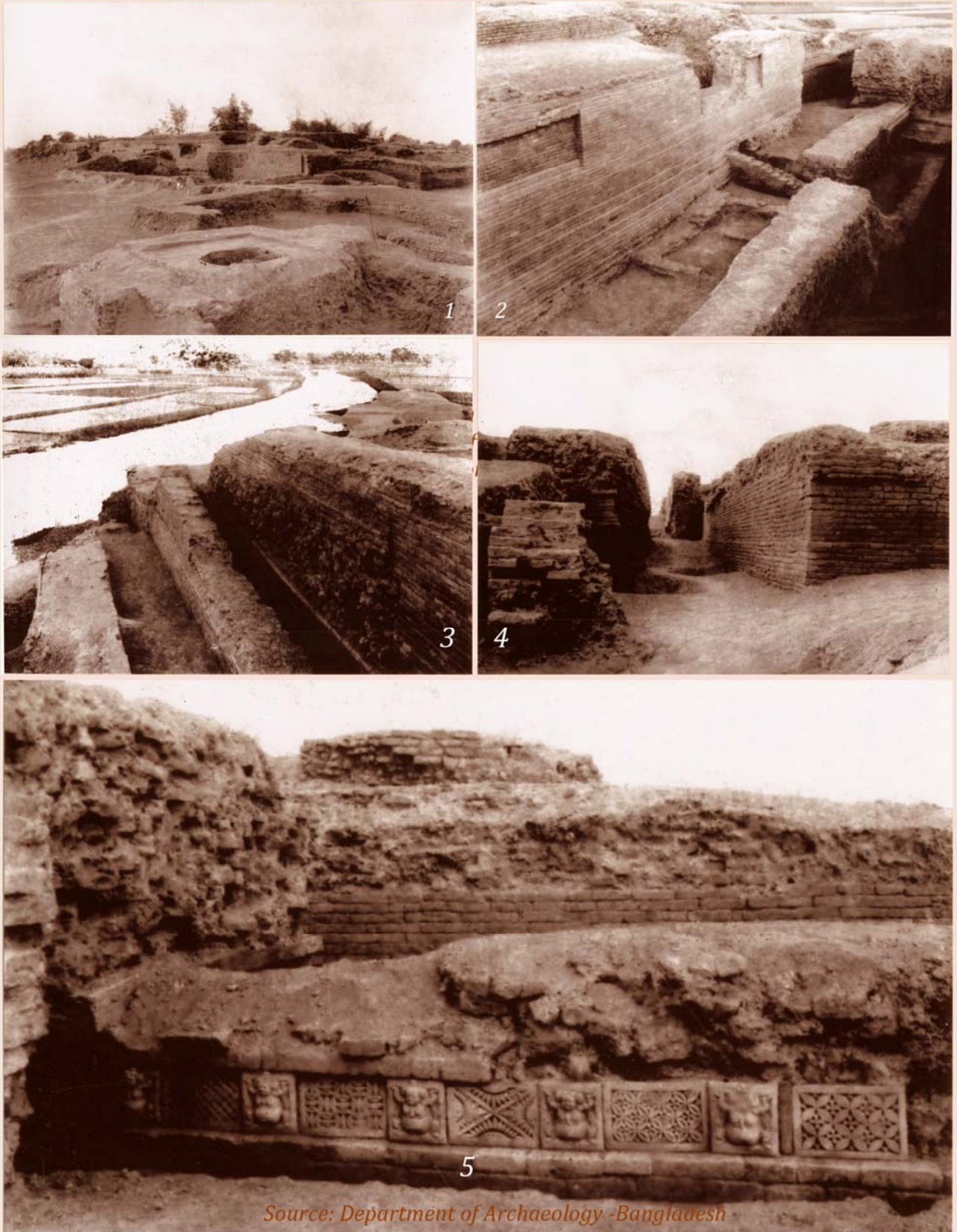


Source: Department of Archaeology -Bangladesh

Figure 124: different view showing the post excavation situation of the temple. The bottom large image shows the river KARATOA was still passing by the fabulous temple.
Compiled and generated by Sajid Bin DOZA

Gallery

from the Historical Statements 1920s
GAVINDA VITA Temple
(6th -8th Century)

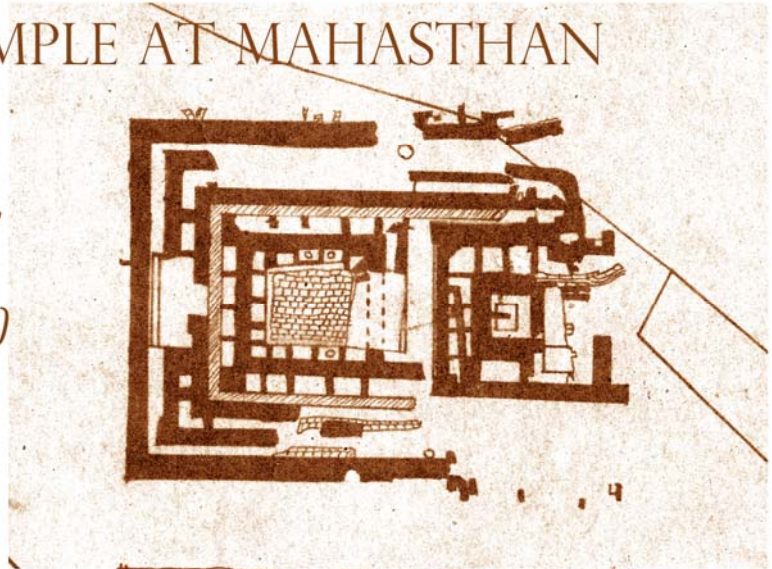


Source: Department of Archaeology -Bangladesh

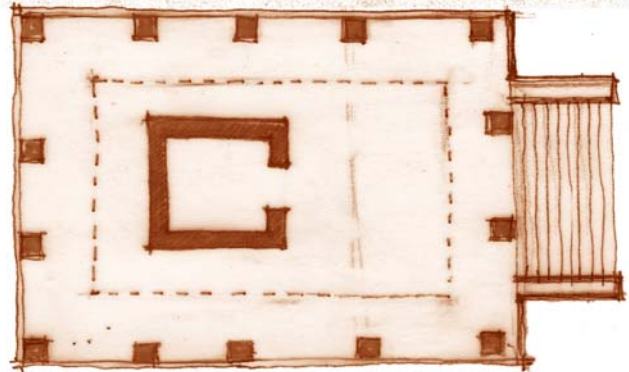
Figure 125: the ruins of GAVINDA VITA temple, with some terracotta evidence
Compiled and generated by Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN

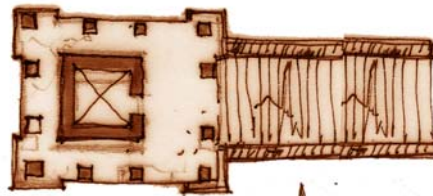
*Temples by the river
Karatoa
(Gavinda Vita Temple)*



Existing situation of the temple
(Scale: 1"=1:1/16)



Restored Sketched Plan of the Temple 01



Restored Sketched Plan of the Temple 02

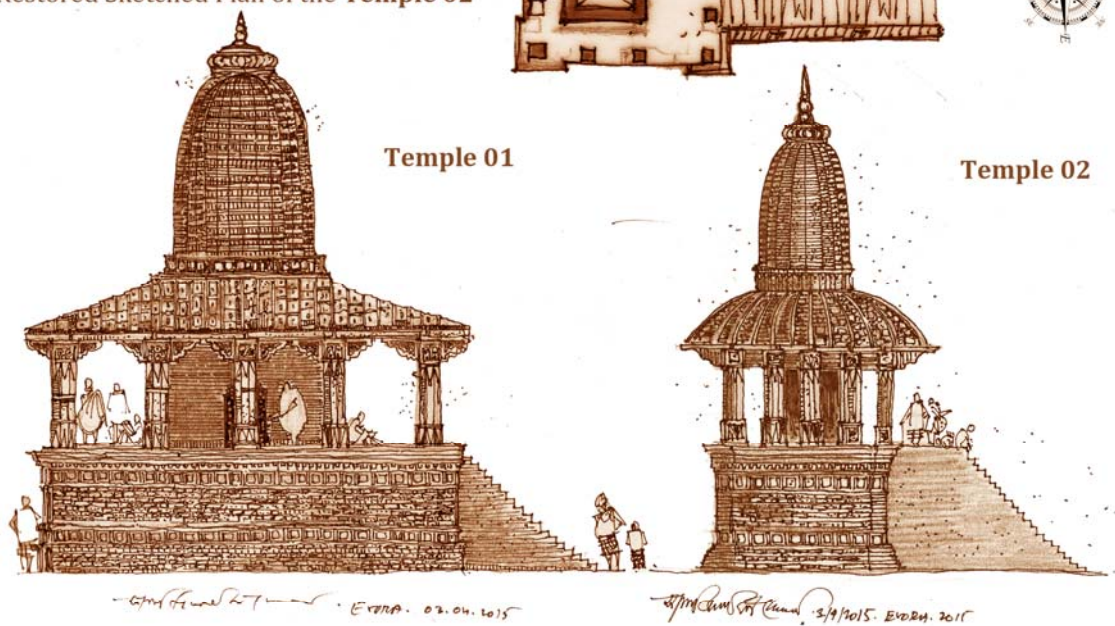


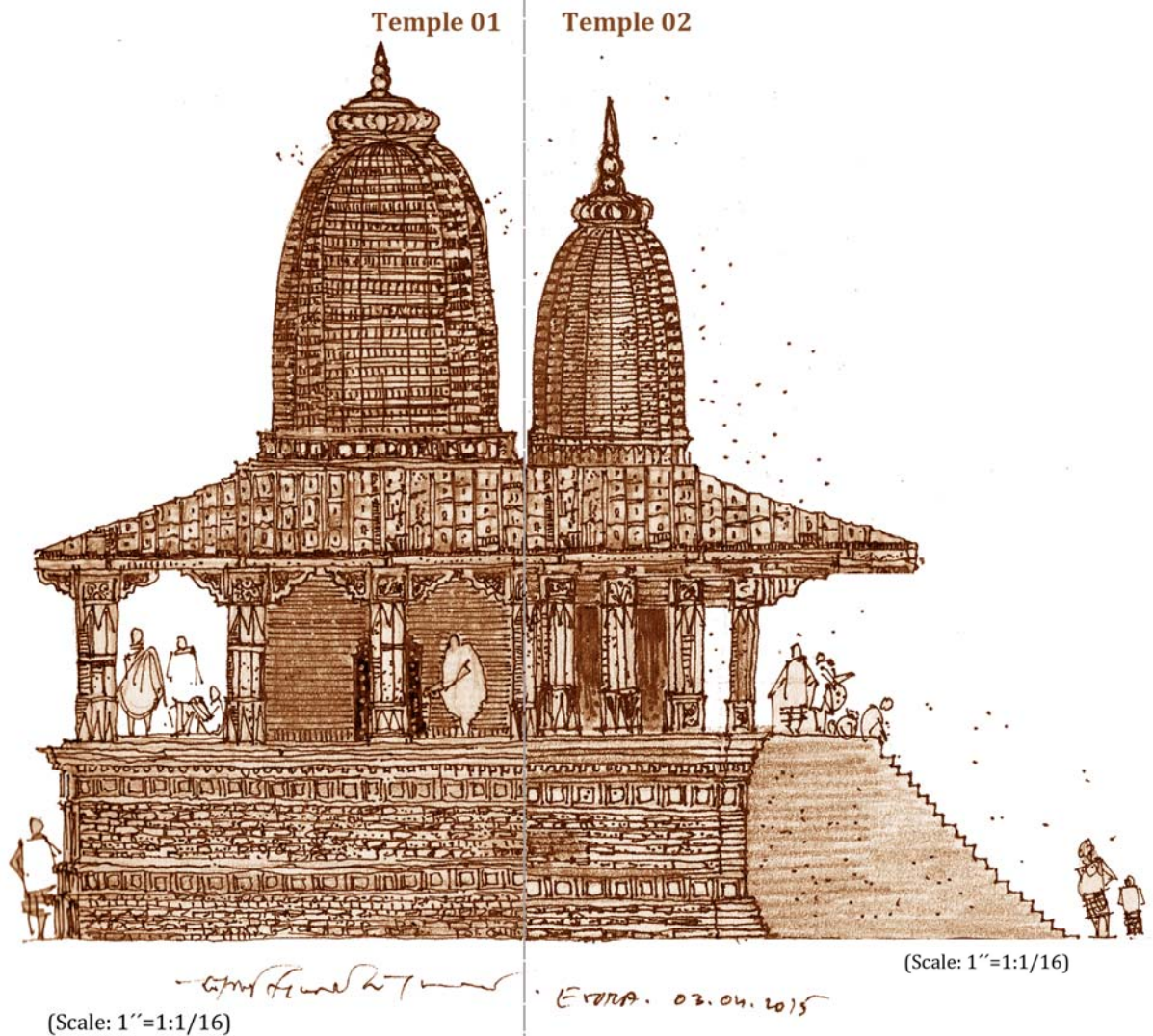
Figure 126: Assumption plate-11
GOVINDA VITA TEMPLE, two separate temple analysis of restoration
Compiled and restored drawings generated by Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN

Temples by the river

Karatoa

(Gavinda Vita Temple)



Restored Sketched Plan of the both **Temple 01 & Temple 02**, combine together

Figure 127: Assumption plate-12
GOVINDA VITA TEMPLE, with the east tiny temple together
Compiled and restoration drawings generated by Sajid Bin DOZA

The Buddhist temple 6th-8th Century AD
(Small temple at the Southern trench of Commercial area) tiny
temple with high square plinth
Excavation by the British Raj in 1920-30 AD

The site specimen: tiny high plinth temple (6th-8th Century)

Local term of the structure: not applicable

During the excavation in 1920s, a tiny temple was found during the archaeological examination. The small temple is associated with high plinth along with some stone columns were found nearby. With the identification, this temple used to be contained with single GARVAGRIHA and surrounded with outer ambulatory circulation, guided by as previously the stone Buddhist stone multi-faced columns. It might have terracotta flat roof tiles, shades outer wards as the GOVINDA VITA temple appeared with slope. This temple is kind of community worship shrine, it used to serve the neighboring and adjacent vicinity. Although the temple was tiny but the height of its spire was slender and topped with finial.

Assumption:

Particularly, the temple enveloped with red ting terracotta brick works, a bottom up process enhanced the temple's elevation. Thin and slender tall spire is the main landmark state of affairs of the temple. The finial with AMLOKA used to engage on the top of the brick built tall spire, the temples during the particular period enhanced vertically to show the mystery and the spirituality among the common inhabitants, art of the city is also inclined with the form of artistic elaboration and its proper location within the city. It used to be as the integral part of the art of the city as well as the stylish part of the ancient settlement.

The temple was single shrine, philosophically and rationally; to decentralize the function of the religious means it was necessary to allocate the different temples to the different position of the walled city. It makes the sense about the sophistication of the ancient city planning; especially during the PALA kingdom and their form of construction were balanced in positioning the piece of the form of art for the city in the justified position.

Gallery

from the Historical Statements 1920s
Tiny High Plinth Buddhist Temple
(6th -8th Century)

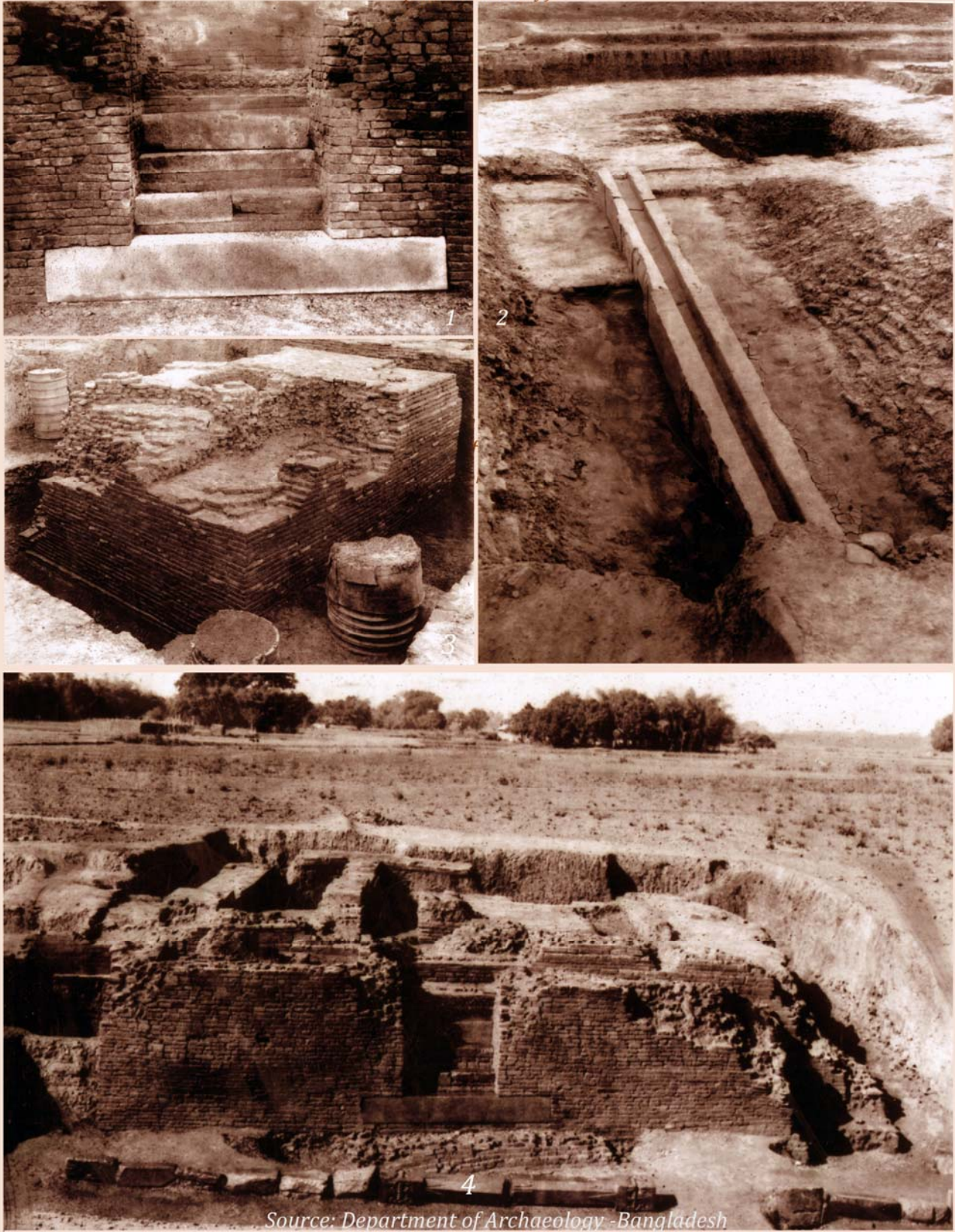
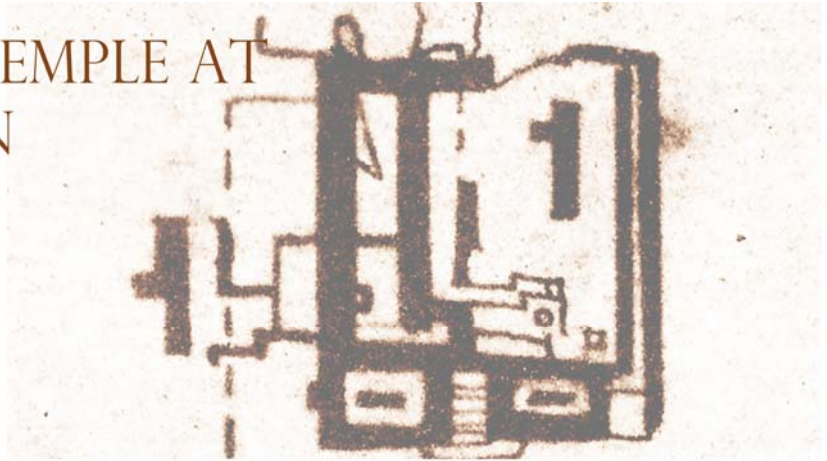
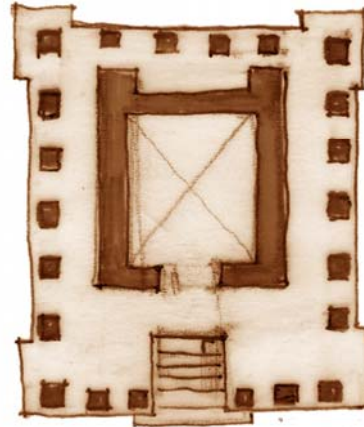


Figure 128: the tiny temple beside the southern trench, high plinth is the remarkable point along with the using of collective stone monolithic executed in the stair. Compiled and generated by Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN



Existing situation of the temple
(Scale: 1''=1:1/16)



Restored Sketched Plan of the Same Structure

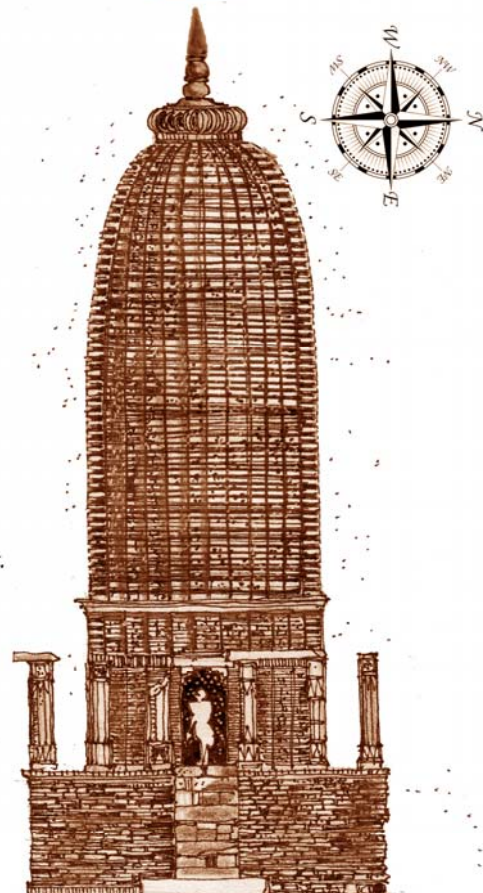
SMALL TEMPLE AT THE SOUTHERN TRENCH

In this site investigation, one temple was found by the excavation, was having high plinth, although the plinth of the temple floor is tiny. However, the site evidence is still witness with scattered construction elements. Such as the sand stone column. And the base of the temple used to ornate with terracotta works. Single Shrine supposed to be with SHIKARA as the PALA temple occupied with high tower, that was the identical feature of the temple. Thick terracotta brick corbeled works used to appear on the spire. At the summit of the Shikhara, golden kolosa-finial with Amloca perhaps could be seen. Like other Buddhist temple, the outer ambulatory circulation used to provide with local roof tiles made by the area people. The sand stone used to installed from the late Gupta style abandoned temples or the used to modified it.

The site specimen: ancient religious structure (8th Century)

Local term of the structure: high based Buddhist Temple

Restored Sketched Character Elevation of the Buddhist Temple



SMALL TEMPLE AT THE SOUTHERN TRENCH.
 The temple base is high, and covered by thin terracotta
 style

Figure 129: Assumption plate-13
 Small temple with high plinth, after conjectural restoration
 Compiled and restoration sketches generated by Sajid Bin DOZA

The Fortified Gateway

Eastern side entrance

The site specimen: Fortified permeability to the ancient city

Local term of the structure: Eastern gate

MAHASTHAN ancient fortified city, as we know had been sequenced with the topographical features, and the natural rampart was respected, eventually the entrance gates to get access into the walled-city used to have strategically located. Basis on the aqua route, surface connection and the possibilities to protect the land form the invaders, the entrance gate complex used to execute. Besides, the entrance used to build with the several components. Through some critical observation, site survey, case study analysis, analyzing on the contemporary style prevailed that period and lastly with the archaeological examination those elements were secured to identify as the components of the fortified gates.

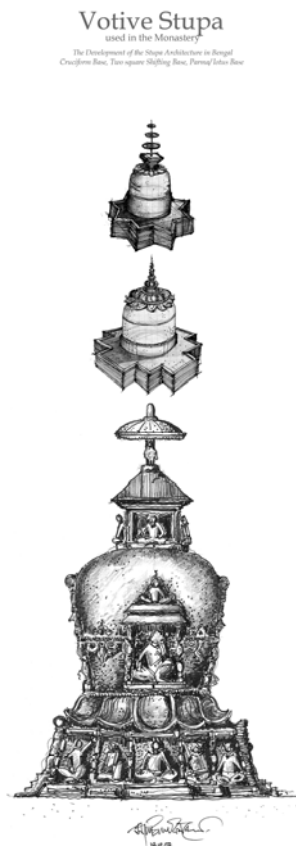
Bastion became popular element for the battlement and also for the fortified establishment, beside the river it is almost common in the act of fortification, the projected surface provides the orientation for the army to look over far and could manage the situation. Along with this all phenomenon on the eastern side of the fortress city of MAHASTHAN, still exists with the massive brick works and with this circumstance it could be considered that a causeway used to remain in this entrance.

The causeway is the connecting bridge in-between the walled city and the outer part of the mainland. It used to construct with heavy wooden members and the bamboo and other substances used to engage making of this kind of path. It used to be suspended or supported over the fortified walls, perhaps sometimes the cause way used to be as the processional staircase. Being the MAHASTHAN used to have the Buddhist religious city, ceremonial stupas used to establish on the both sided of the causeway.

The entrance gateways also combined with the huge door built by the strong wood with different method of construction, the TORANA-is the parts of the door and used to build with the plaque of the wood, as the concept of the TORANA inspired by the *Sanchi Stupa*, Bhopal. The huge thick fortified walls articulated along with the bastions so carefully, the craftsmanship of the mason work should be appreciated. (See the figures 130 & 131)

Assumption:

The outer surface or the façade of the fortified city is kind of contentious wall runs all the periphery of the area. The entrances and the hierarchy of the walls along with some small holes are the breaking of the monotony of the city bared walls. At the same time the entrances used to glorify the image of the city form the river KARATOA. Ancient city like the MAHASTHAN, basically characterize as the form of art – The outside fortification with brick color used to carry the advent of new hue in the hinterland.



Different kind of votive stupas, MAHASTHAN
Sketch: Sajid Bin DOZA

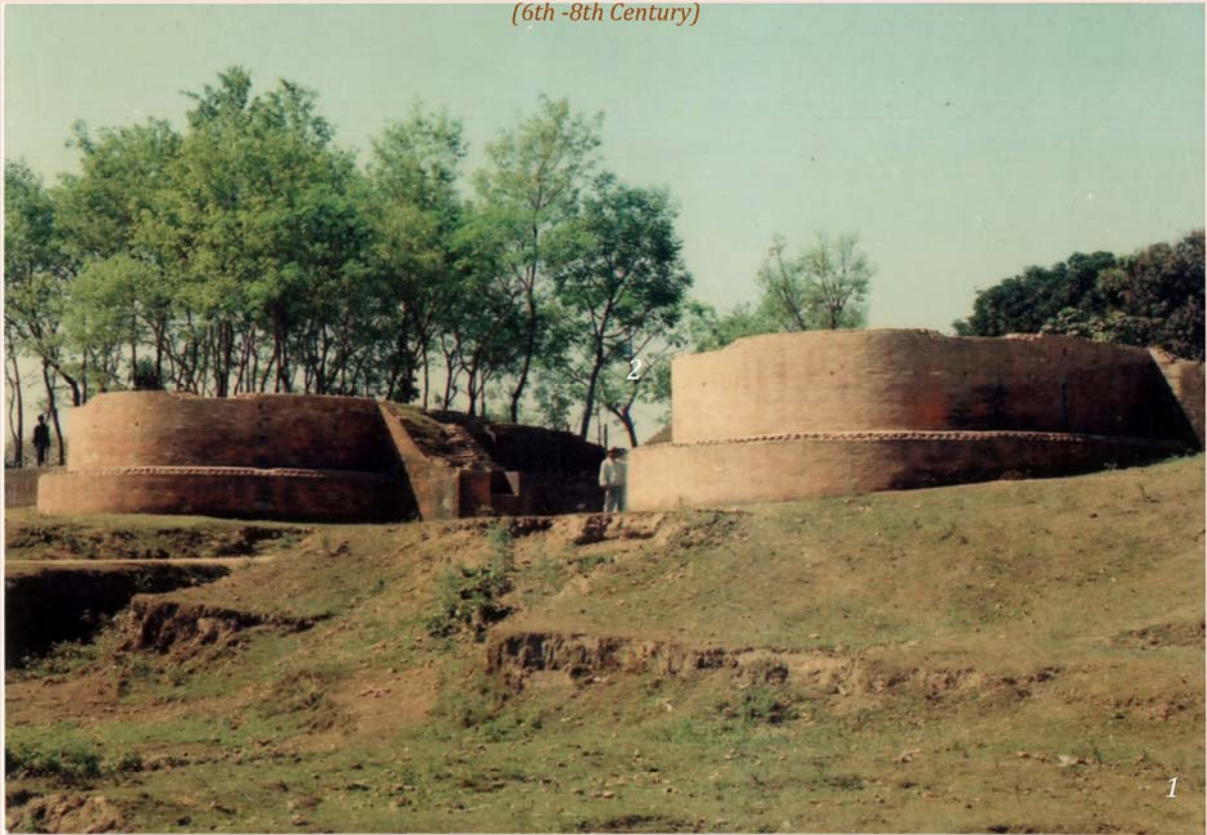
Gallery

from the Historical Statements 1920s

The Fortified Gateway

Eastern side entrance

(6th -8th Century)



1. The giant bastion of the eastern wall, strong fortified situation, perhaps used to have the causeway over the moat
2. The wide panorama of the ruined wall of MAHASTHAN, on the left the eastern entrance could be visible with huge and massive walls

Source: Department of Archaeology -Bangladesh

Figure 130: the environs of the eastern entrance and the other involvement
Compiled and generated by Sajid Bin DOZA

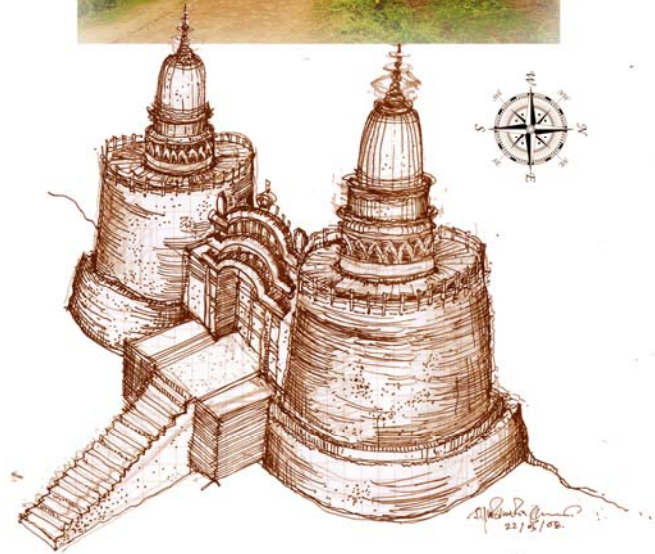
BUDDHIST TEMPLE AT MAHASTHAN

Eastern Entrance with Barbican (Gavinda Vita Temple)

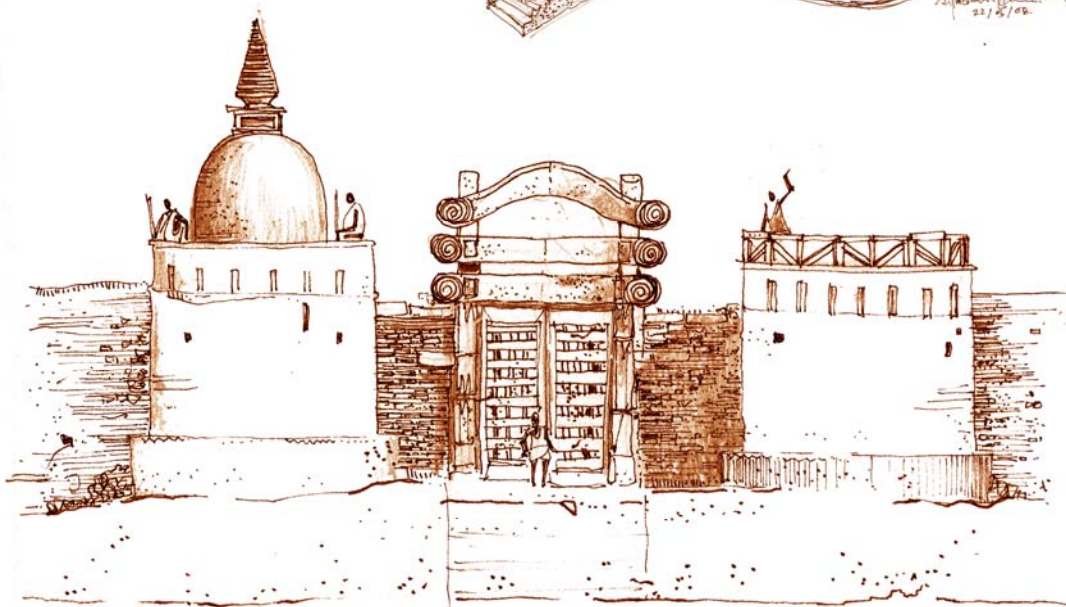


Existing situation of the Entrance

(Scale: 1"=1:1/16)



Restored 3D Sketch of the structure



Restored Frontal Eastern Facade Sketch

(Scale: 1"=1:1/16)

Figure 131: Assumption plate-14
Restoration of the eastern gate with surrounding
Compiled and restoration sketches generated by Sajid Bin DOZA

The Fortified Gateway

KANTA-DUAR (Northern entrance)

Aqua-entrance:

Portal entrance for the PALA Navy

The site specimen: north side contains an aperture with some infrastructure, excavation 1988.⁹¹

Local term of the structure: KANTA-DUAR

This entrance used to occupy with the aqua circulation for the PALA navy. According to the excavation during 1988⁹² and other scholars decided that the particular gate is actually used for the commuting the fleet of the PALA trained navy. To reserve the surprise navy force during the attack it was the strategy of the PALA commander of MAHASTHAN. It is also mentioned within the wall on the north-western side a huge area used to dig artificially for the water navigation. Still the sunken structural tress we see in the current land form. Probably, this part of the shutter used to lock with channeling system. Two identical bastions still show the battlement attitude.

This part of the land formation is high so that the permeable system through the navigation could have good circulation rather have inundation. Two gigantic big bastion uses to activate like the watch tower. Two inner sides used to catch the heavy wooden gates and positioned perhaps in the middle. The fortress wall along with the aqua entrance is the brilliance engineering done by the PALA kings. (See the figure 132, 133)

⁹¹ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 100. Print.

⁹² Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 100. Print.

Assumption:

Art of the form as well as the city is also based on the situation, location and resources. The city would be also amplified with the tune of the three matters. Yes, MAHASTHAN the ancient city of Buddhist religion, trading and Commerce City used to develop by the side of the KARATOVA river. The stylish and artistic part of the city is its need with the time and preference with function. It is an important part of a city to survive alone with those virtues. Besides, the city was functioning with the contemporary needs, using artificial water body for the battlement and the same time occupying the trading and commerce hub. The religion priorities harmonize with the architectural style and good formation of city planning. The north gate was intelligently elaborated by the PALA lord; sense of putting the importance of the battlement attitude in the city is splendid.



Terracotta Surya image, Mahasthan.

Gallery

from the Historical Statements 1920s

The Fortified Gateway

KANTA-DUAR (Northern entrance)

Aqua-entrance: portal entrance for the PALA Navy

(8th Century)



Image Source:

<http://www.panoramio.com/photo/38759997?source=wapi&referrer=kh.google.com>



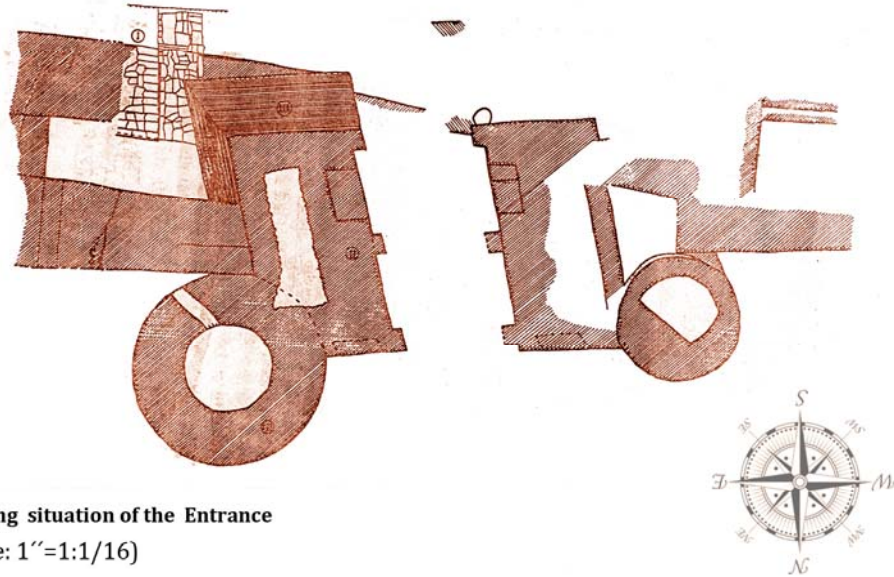
1. The aqua entrance of the fort, PALA navy used to arrive from this watery gate in to the retained water body with fleets
2. The curving of the brick masonry making marvellous brick mega structure

Source: Department of Archaeology -Bangladesh

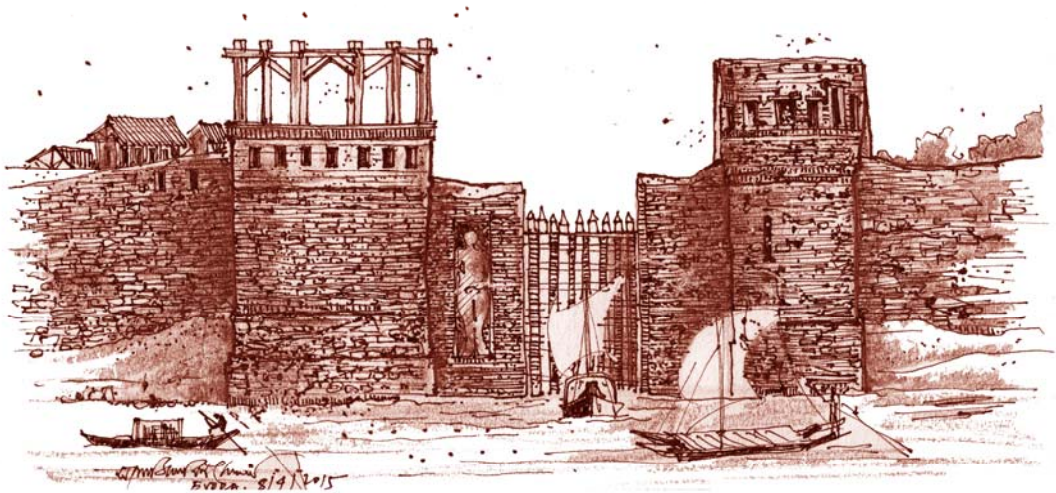
Figure 132: aqua entrance on the north
Compiled and generated by Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN

Kanta Duar -aqua entrance
portal Entrance for the PALA Navy



Existing situation of the Entrance
(Scale: 1"=1:1/16)

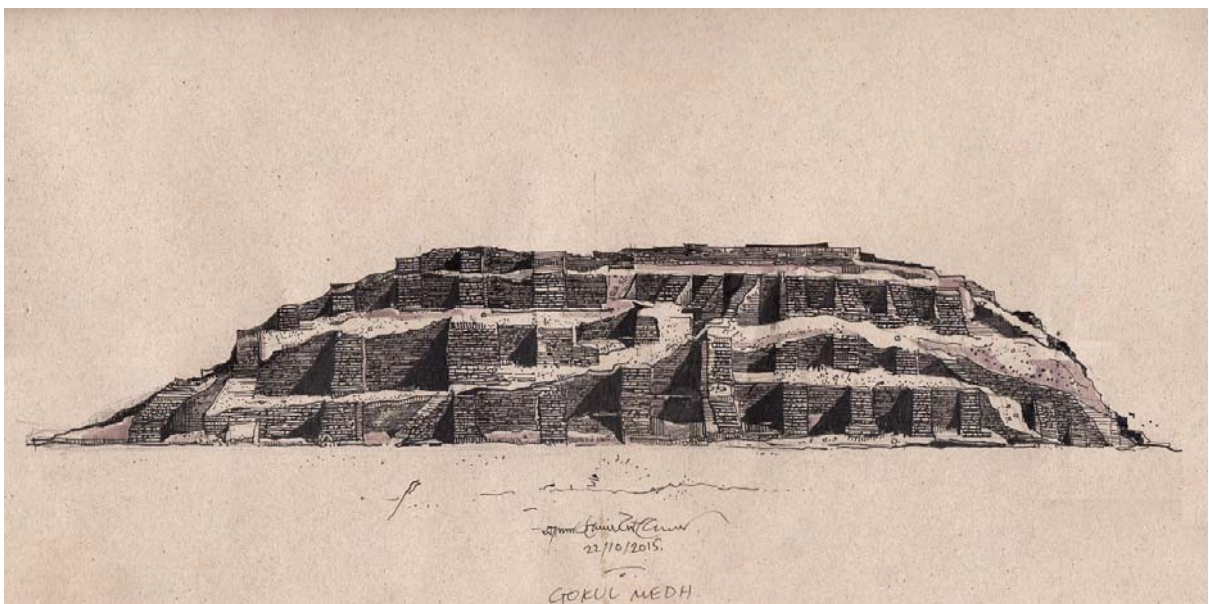


Restored Frontal Eastern Facade Sketch
(Scale: 1"=1:1/16)

Figure 133: Assumption plate-15
Restoration of the eastern gate with surrounding.
Compiled and restoration sketches generated by Sajid Bin DOZA

GOKUL MEDH

The stepped/terraced stupa,
Piling style



The Buddhist terraced stupa temple 6th-8th Century AD

**(GOKUL MEDH) the stepped/terraced stupa,
Piling style. Excavation by the British Raj in 1934-36 AD**

The site specimen: ancient Buddhist religious structure (6th-8th Century)

Local term of the structure: Gokul Medh/Lakshindhor er Medh

Stupa temple with a very different mode of style was identified just at the southern side of the urban core of MAHASTHAN. This structure was basically a Buddhist pilgrim center with stupa temple. The structure contained stepped bases with diminishing upward. With beautiful processional stair on the west side of the monument. The three terraced platform with crowned by huge stupa once. Topped with pyramidal finial. The huge stupa on the top was destroyed later during the SENA period and built there a temple. The top bas is considered the octagonal shape and it was the authentic tress to justify the existence of the stupa over it.

The most inquisitive constituent is the contextual understanding of building the public religious structure in a dramatic way of representation. Usually Bangladesh is almost a country of flat land. Very few hilly topography remains in the south-eastern and north eastern part of the country. Having this flat topographical fetchers flood and inundation is very frequent during the rainy season, the rivers over flooded and the situation is water clogging and flashes away the most of the ancient structure since the decay.

in that sense the structure if the GOKUL steps is the brilliant among all other structure, this religious structure maintain the climatic condition of the region, at the same time considered the flood plain and created the sustainable bases with rhythmic connotation.

Planning origination of the structure was in cruciform shape. The reason behind having the shape is all about the comprehensive load and that is really visible with the ruins. The retaining walls are looking like the cubicles or the cella, the local

people called it as the blind cella. By the laws of construction, they are the massive thick retaining walls crossover and joined together to take the huge load of earth. (See the figure 134)

Assumption:

A good solution and representation of contextual specificity tender the sophisticate PALA builders to this hinterland. More precisely, this is the authentic process to build architecture in such hinterland and this process would validate for this contemporary situation.

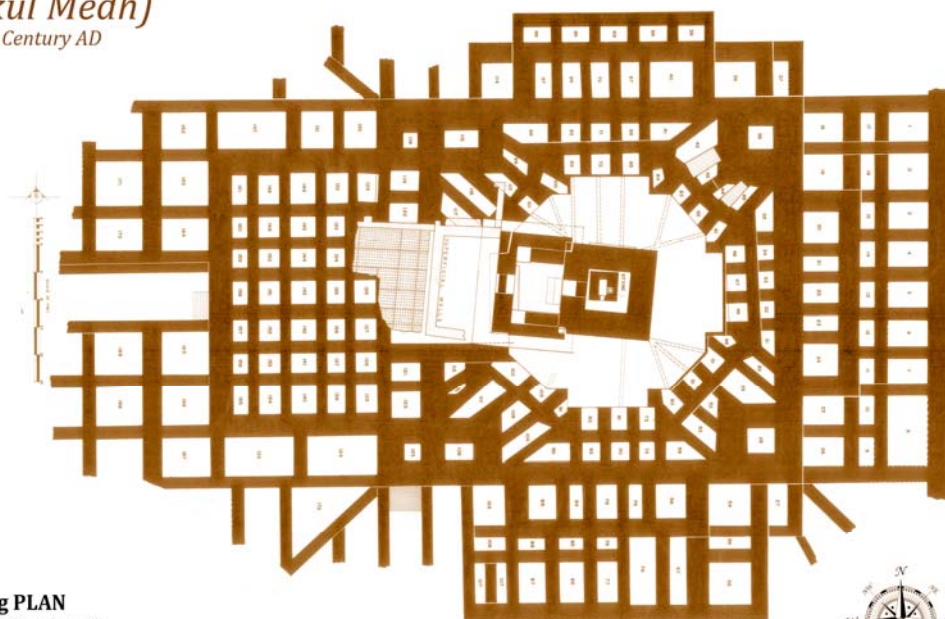
Almost more than thousand years ago the art and architecture of this region had reached the pick of the summit, with responsive and climate friendly establishment. The people of this region used to have the friendly collaboration with the urban core along with the fascinating temples and the stupas. Stupas later became in the ancient city of MAHASTHAN- a focal point of the gathering, a place for religious congregation at the same time as the vibrant urban space of the PALA period. It is clear to state regarding the form of art as well as the form of the city that the ancient city of MAHASTHAN used to excel with the art of the ancient city, the stepped Buddhist stupa is an emblem to define another way form of art of MAHASTHAN.

BUDDHIST TEMPLE AT MAHASTHAN

Terraced Stupa

(Gokul Medh)

6th -8th Century AD



Existing PLAN
(Scale: 1"=1:1/16)

image from the south west corner



Present situation of the temple

Figure 134: Assumption plate-16
The Gokul Steps with the other story
Compiled and generated by Sajid Bin DOZA
Image source: Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN

Terraced Stupa

(Gokul Medh)

6th -8th Century AD

Site plan: restored with the stupa termination (Scale: 1"=1:1/16)

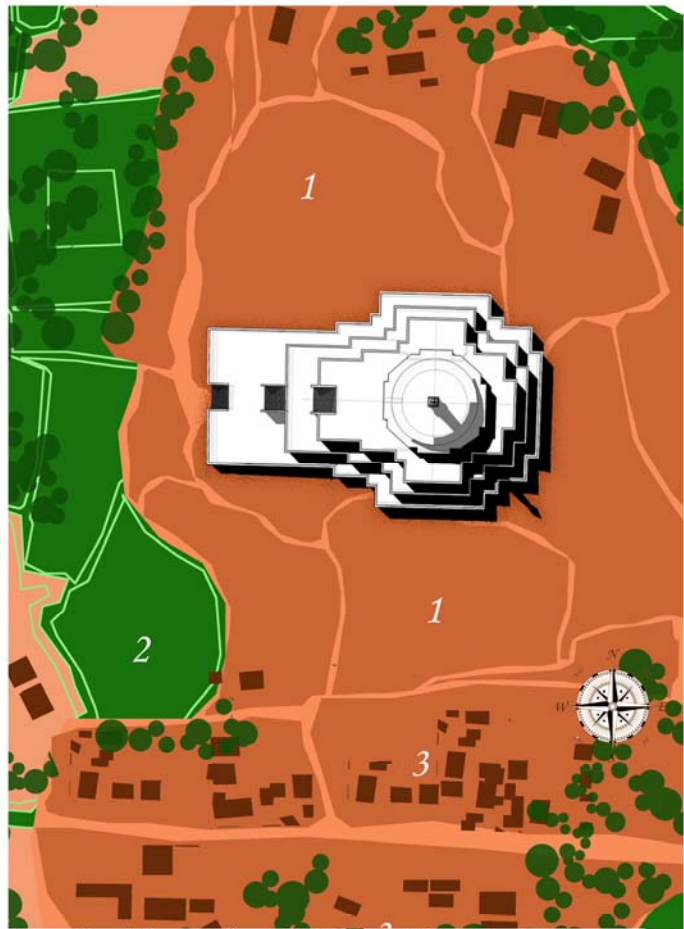


Image from the WEST side, still witnessed with the evidence of the processional stair or gallery stair

Monastic settlement formulation and attitude during the 8th Century AD. MAHASTHAN

1. Elevated landform, where the most often the monument or the monastery established
2. Agricultural or the marsh land
3. Residential, neighbourhood pattern with mixed-use activities around the monastery or the stupa-temples



Present situation of the temple

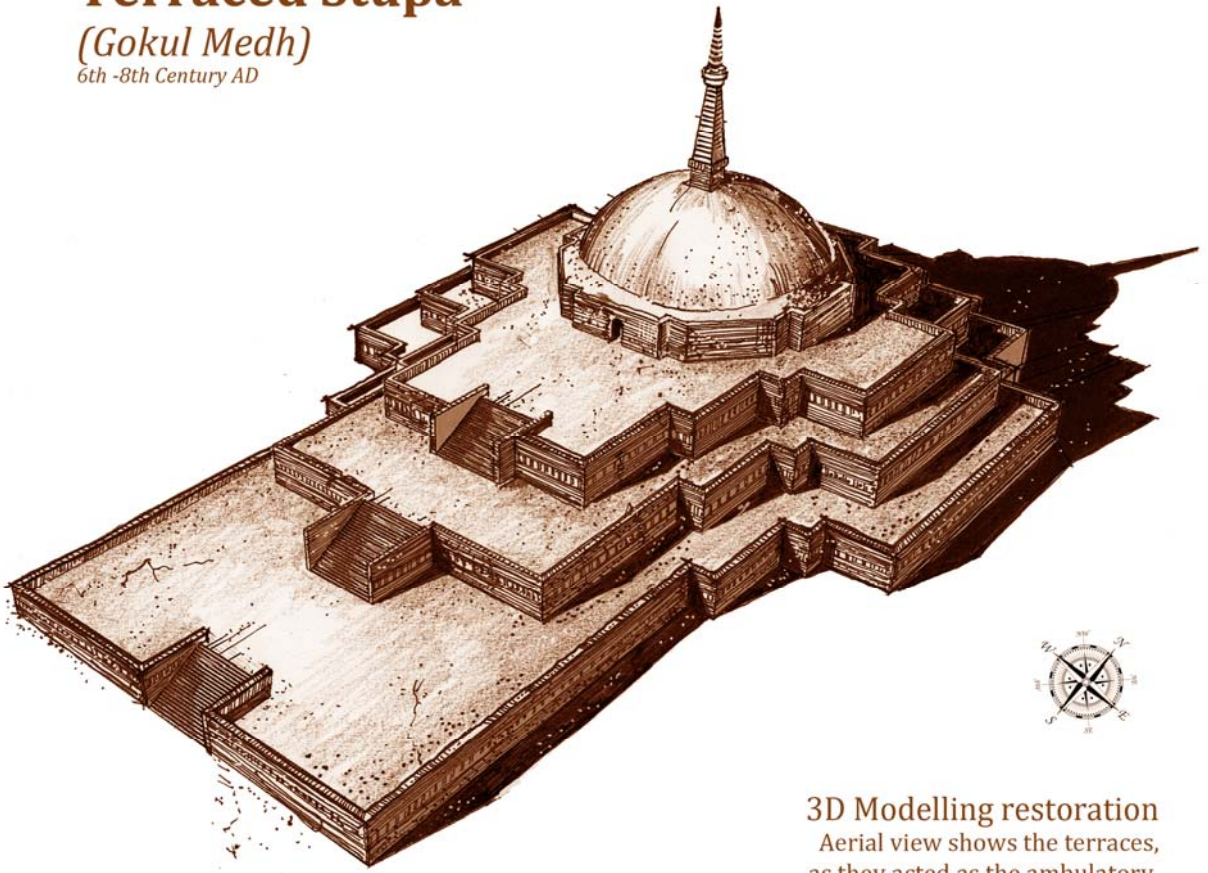
Figure 135: Assumption plate-17
 The GOKUL Steps showing the ruins of processional steps through the terraces
 Compiled and generated by Sajid Bin DOZA
 Cartographic drawing Image source: Sajid Bin DOZA

BUDDHIST TEMPLE AT MAHASTHAN

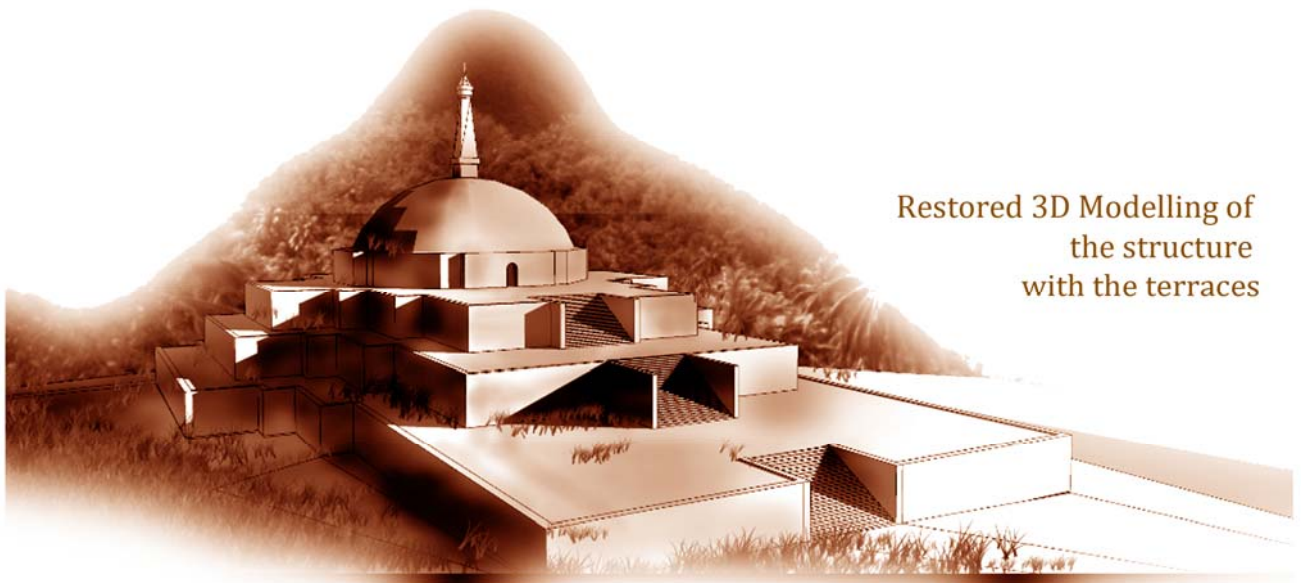
Terraced Stupa

(Gokul Medh)

6th -8th Century AD



3D Modelling restoration
Aerial view shows the terraces,
as they acted as the ambulatory
circulation and the top base is
crowned with stupa



Restored 3D Modelling of
the structure
with the terraces

Figure 136: Assumption plate-18
Conjectural restoration and sketch with the conceptual assumption
Restoration drawings developed by
Sajid Bin DOZA & Farhana Nizam Chowdhury

The Buddhist Vihara (Buddhist Monastery)

6th-8th Century AD

(VASU Vihara).

Excavation in 1976 AD

The site specimen: ancient Buddhist Monastery structure (6th-8th Century)

Local term of the structure: VASU Vihar

Buddhist monastery is a vital establishment in city planning during the PALA epoch. For the case of the ancient city of MAHASTHAN-the urban core was also in decentralized mode, we knew it from the chapter 02. The term `economic life of the city´ used to generate by the Buddhist monasteries. Monastic settlement, it was also mentioned in the previous chapter 02. Monasteries or VIHARA put vital role in elaborating the art of the city in MAHASTHAN, as well as the network within the other adjacent urban core.

About the VASU VIHAR it was situated adjoining to the small village name VASU, a river named NAGAR was passing by on the eastern side and on the western coast the Vihara VASU. Still the river is there but it became out of navigation and also changed the course. This site was discovered by the Alexander Cunningham, in 1920s.⁹³ By the reference of the Chinese traveler passed by the monastery during the 6th century AD. This monastery is the phase of the MAHAYANA Buddhist period. Form the different part of the region the pilgrims, wisdom and famous people used to gather for the knowledge sharing⁹⁴. It was a residential institution with two different blocks.

Planning organization of these monasteries was scattered. Why? Was it really scattered or it was deliberately created?

⁹³ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. 42-43.Print.

⁹⁴ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. 42-43.Print.

The ancient rampart of VARENDRA used to spread over the region, as it is known to all that the MAHASTHAN ancient city deliberately developed on the prehistoric landform of VARIND. And VARENDRA is an elevated land form prehistorically generated and the oldest landform in the northern region. To focus observation on the VASU Vihara, it is also situated on the same range. And the topography is contour based. And the land formation is also governed by the water bodies. For instance on the east of the Vihara the river NAGAR used to have the main stream, on the south and north could perhaps situated grand lakes and on the north-eastern part the village VASU was settled. Probably for the contour quality of the land single huge compound might have difficult to consider, besides fragmented several structures would precisely authentic for the site. The positioning of the three structures respectively the monastery 01, monastery 02 and the huge stupa shrine are interacting and belong to each other with some invisible source/force of the nature, a meaning of healthy enclosure and creating wisdom of discourse. There is no unite or regular measurement to distinct or to identify the structures in a process of method or a system, but the two monasteries seems like are humble to the stupa shrine or mentioning the hierarchy.

The monasteries used to contain 700 pilgrims in and around the area⁹⁵, the monastery 02 still has the sign of having 24 numbers of cell for the pilgrims, square and one side opening. The huge courtyard has the permeability from all side, and the verandah used to have liked the ambulatory circulation.

The entrance of the monastery is consists of outer visitor hall and in the west a small inner visitor hall. It seems like the entrance of the structure was covered with wooden supported roof tiles. In the western side of the courtyard an exposed plinth could be seen along with the verandah, it was the place of the ritual during the full moon (PURNIMA). The form of art of the monastery was square and the surface used to be exposed ornamental terracotta and bricks.

⁹⁵Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. 43. Print.

As same as the Monastery 01 was having the numbers of cells 26. The architectural stylistic appreciation and the form of art remain the same but this monastery is smaller in scale and the ornamentation used to have similar one. However the entrance sequences were different, it less elaborative in the frontal façade and the height used to have more than the smaller one.

Now the fascinating stupa temple, it perhaps had three tires and the last one was crowned with huge stupa. The terrace or the ambulatory circulations for the three tires were diminishing toward the stupa crown. A processional stair ruins still observed in the northern side of the temple (the temple is north faced). The excavation of the site was take place on 1976, and many justifiable evidence were collected through the examination, and the monastery used to continue till the end of the 11th century, some of the archaeological references reflects the facts⁹⁶.

Assumption

Beautiful environment used to have been passing by the pilgrims of the Buddhist religion. As by the conception of the main ideology of the Buddhism the space, nature, the quality of the site and the building setting in the nature were harmonized with the entire Mother Nature. Huge foliage, the grand lakes on the other side river NAGOR and the small hamlet all make the sense of the quite, calm and introvert environment as the Buddhism is followed by. Elevated land form and the reddish hue terracotta small detailed structures with stupa temple mundane in the nature with humbleness...indeed the statement of place of wisdom in the Mother Nature.

⁹⁶ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. 43. Print.

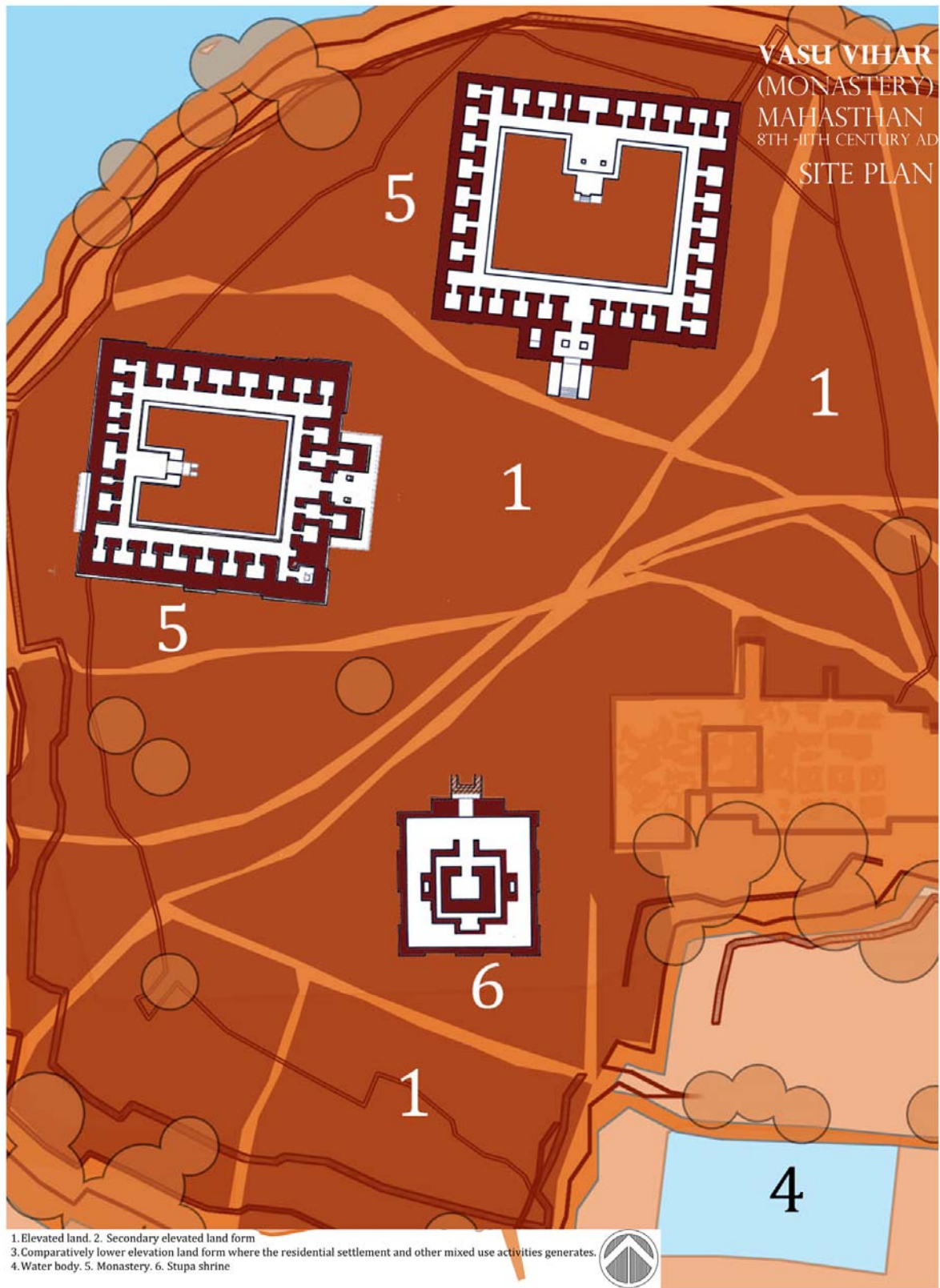
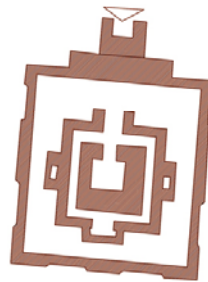
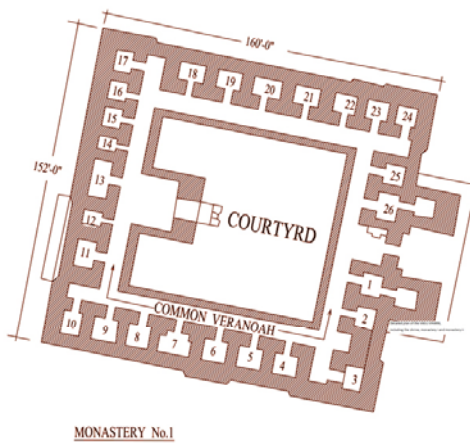
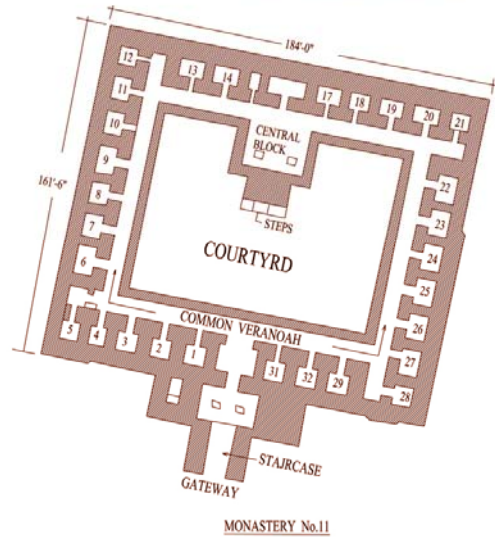


Figure 137: the planning organization of the complex monasteries.
Cartographic image generated by Sajid Bin Doza

**VASU VIHAR
(MONASTERY) AT
MAHASTHAN
8TH -11TH CENTURY AD**

PLAN OF BASU VIHARA
MAHASTHAN, DISTRICT-BOGRA.
(BANGLADESH)
(Scale: 1"=1:1/16)



**DETAILED PLAN OF THE VASU VIHARA,
INCLUDING THE SHRINE, MONASTERY I AND MONASTERY II**

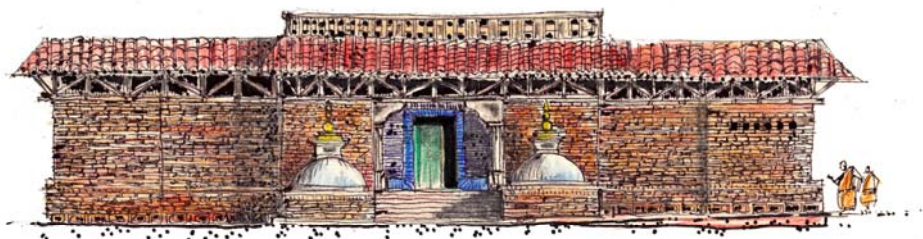
Figure 138: technical drawing. Source: Sajid Bin DOZA
Scale: as shown

**VASU VIHAR
(MONASTERY) AT
MAHASTHAN
8TH -11TH CENTURY AD**

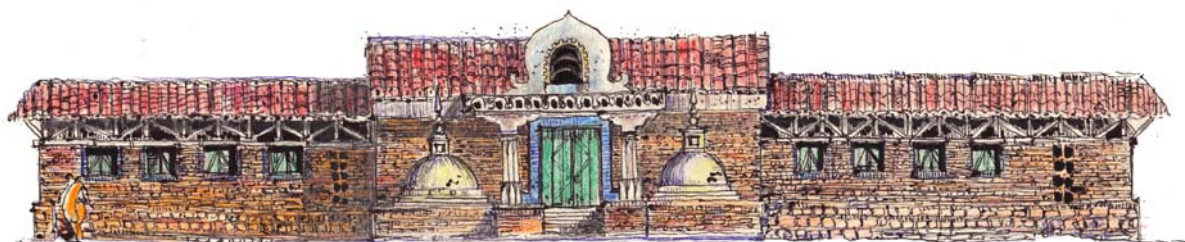


THE CENTRA STUPA TEMPLE
WITH THREE TIRES

Sajid Bin Doza
ESORA - 11/6/2015



MONASTERY I

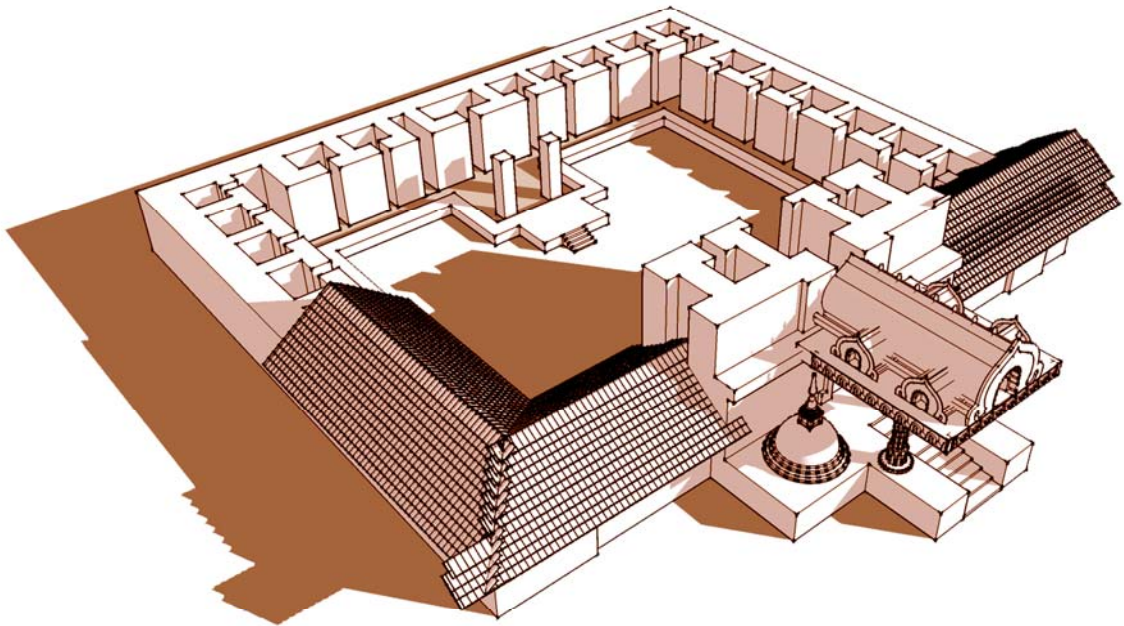


MONASTERY II

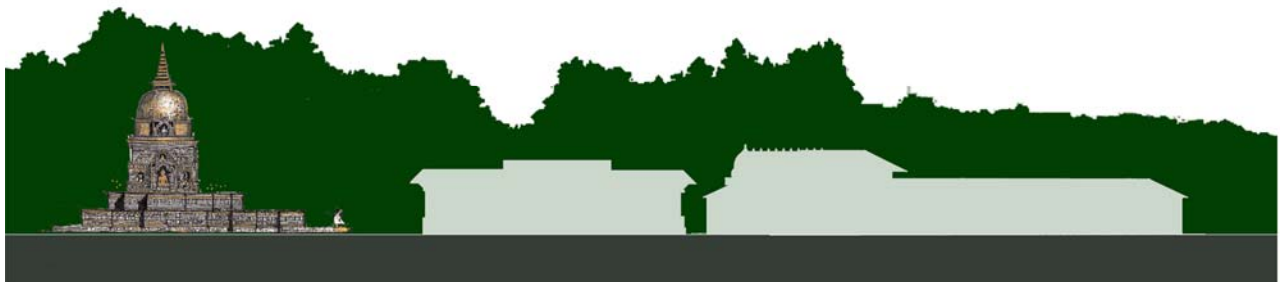
(Scale: 1"=1:1/16)

Figure 139: Assumption plate-19
Conjectural restoration on the different structures and their facades of VASU VIHARA
Developed and conjectural sketched by Sajid Bin DOZA

VASU VIHAR (MONASTERY) AT MAHASTHAN
8TH -11TH CENTURY AD



The monastery of VASU Vihar is the unique one among the others in the PALA Style. . This cut away view shows the form of art of the structure, its spatial linkages, course of action, sequences, approaches and setting of the monument in the esteem of green vegetation



(Scale: 1"=1:1/16)

Restored massing diagram of the Monastery Complex VASU Vihar.
Analysing the entire surrounding along with the central Stupa shrine.
FIGURE-GROUND Pattern of the VASU Vihar's environs and the spatial quality including the visual angle

Figure 140: Assumption plate-20

The top image is representing the technique of the construction and the spatial sequence. While the bottom image is elaborating the sense of enclosure and the visual angle with the vegetation

Developed by Sajid Bin DOZA

Gallery

from the Historical Statements 1920s

The Buddhist Vihara (Buddhist Monastery) (VASU Vihara).

(8th Century)



*I went through some precious literature and historic reviews eight months back, to investigate again VASU VIHAR, although I went to the site several time, when reached at the site, I felt like something... that is guiding me a way ... which was really unexplainable, the site, the environs and the ruins of the complex trying to elaborate their exquisiteness with the long age back stories, I tried to listen to the story, but it was so whispering and trailing in the wind, actually I was missing something...when I look at the ruined stupa shrine, I could perhaps imagine the scale and the spatial emblem of the locality.
Standing on the open to sky veranda of the monastery,
I can picture the facades of the monasteries, the colour, the shining detail in the clear sky and the feeling of silence. The silent space -that really motivated me, imagining those inspecting ...I really become astonished with the magnificence and the contextualizing art and architecture through merging by the use of the nature...
I now really believe.
Nature is power...*

Imagination & illustration: Sajid Bin DOZA

Figure 141: Assumption plate-21
*Imagination and analysis of context specific VASU VIHARA
Generated & conjectural view prepared by Sajid Bin DOZA*

The Residential Area: neighborhood pattern

8th Century AD

(Eastern rampart and from other archaeological excavation).

Excavation in 1976 & 1993-1999 AD

The site specimen: foundation and structural evidence found by the French- Bangla Archaeological Team.

Local term of the structure: residential area along with some mixed-use and religious establishment.

Through the archaeological excavation, several housing was discovered extending only over a couple of square meters; primitively mud and wood were used independently but they might also have been used sometime along with amalgamation. The point is, through the excavation, the post whole were found on the earthen foundation, basically wooden post and the foundation used to be the earthen.

Perhaps there must be some different architectural combinations using the wood and mud. The inner area of the dwelling were narrow and it seems most likely that such houses were not in storied, keeping a single ground level, as the thickness of the walls are heavy, about .030 to 0.40 meter deep. Noticing factor was floor and walls were built quite differently. The floor of the dwelling made of virgin soil (clay and clay tiles), on the other hand the walls used to build with mud mixed temper like pottery shards and the fragments of the baked bricks⁹⁷. So, the adhesive becomes more reinforced while it joins with bricks.

⁹⁷ Alam, Md Shafiqul, and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 93. Print.

In the later excavation the typical housing area were discovered with the partial quarry. The excavation state this level while –`importantly change occur form the level 5, continue for a long period, creating a new phase in the history of what can then be called a real city⁹⁸. Settlement in MAHASTHAN was identified by the two major syndromes, as because this syndrome is vital in proofing the housing as well as the construction details. For instance:

a. The occurrence, for the first time broken tiles was identifiable, the earliest evidence so far of this type of roofing;

b. The presence of numerous fragments of baked bricks used as temper or binding materials in the construction of mud walls also reused in some cases for the domestic use. And

c. Several now objects form the daily lifestyle. Like mounded terracotta plaque, associated with numerous small object (bead, finger-ring etc.)⁹⁹, the excavation, identified the residential unite with the kitchen, area, and several narrow rooms along with porch. Roof tiles and some are previously used to have the thatched roofing system. It was different forum in the roof tiles used to have the dimension with more than 16 cm wide, some fragmentary ring; 9cm height are remains of circular wells built by it may perhaps the prototypal fetchers to justify the residential units.

There were several categories of building in the basis of the construction, such as the mud walled, baked bricks for the roofing sometime it used to have the piling up technique, a technique still used a few decades ago before the age of concrete.

⁹⁸ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 98. Print.

⁹⁹ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 101. Print.

During the excavation, most often cases one archetypal pattern was came in to the focus with the house is associated with semi-open space or a small porch at the entrance. More precisely, the house pattern in MAHASTHAN used to align with the row-type and some used to have the pattern of courtyard cluster with the deep vegetation and foliage. It is clear that, almost through the excavation the roofing pattern used to involve with timber joist and the purlins, the triangular timber frame on which the roof tiles used to lie-down. Special kind of treatment used to apply to hang the rectangular tiles, the tiles contained two holes and grove appeared longitudinal, obviously the technical process is well mastered. Which suggest that it was adopted since long.¹⁰⁰

Fundamentally, the structure of the dwelling used to carefully layout, with a very intelligent combination of the mud builds walls and tile roofs.

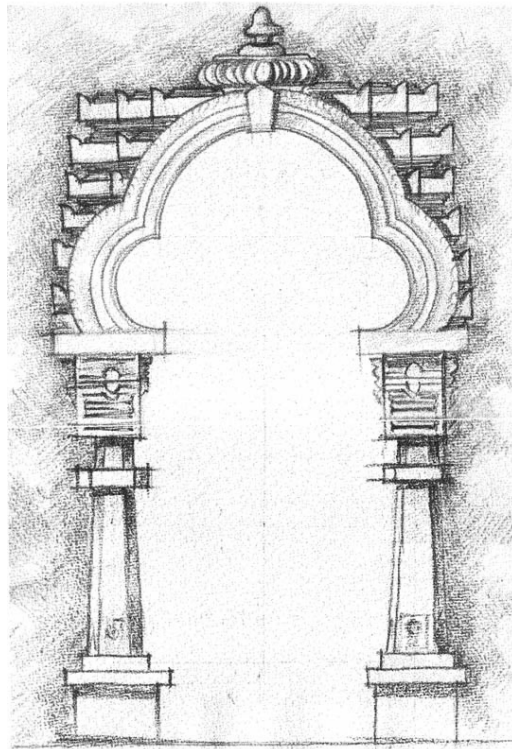
It was supposed to be very identical and willingly infer; that the place belonged to well off people living in a city of MAHASTHAN, in full expansion and include in an active exchange network. For the meantime, the whole site of MAHASTHAN especially the south-eastern and the south western part were occupied with heavier population, as a matter of fact¹⁰¹- the progression of the settlement was not uniform all over the site of MAHASTHAN: it was verified that some structure used to lasted long duration, some were repaired or rebuild. Other was trembled down.

Nevertheless, this is the process to get ruin substance of the urban contexts, while the inhabitant start quitting the city, MAHASTHAN the urban context had a great fire hazard during the end of the Pala dynasty. To start with the settlement situation and the additional infrastructure of the ancient city of MAHASTHAN; it is now exposed and it is currently almost clear with the archaeological evidences the residential

¹⁰⁰ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 106. Print.

¹⁰¹ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 145. Print.

pattern used to build with the square bricks and the thick walls with small room. The dwelling unit used to combine in series side by side with an external posted portico or timber column used to rest the outer semi open portico. The main roofing used to have with the special type of tiles articulated with the timber frame work. The settlement used to engage with the lanes, (Figure 142) where along with the residential small unites, scale is very intimate and the visual angle of the façade, the street and façade remained probably the human. The central lane or the pedestrian used to divide the spatial organization along towards the north and south axis. On this axis the movement of the traffic function was identified and evidenced by quite hard-bitten surface.



TORANA, Varendra Research Museum. Rajshahi, Bangladesh
Sketch: Sajid Bin DOZA

BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Ancient Dwelling of the city (at the eastern rampart of the city)

8th Century AD



Restored Sketch of the Vicinity

We perceive the settlement as the nucleolus of the urban core, the settlement or the vicinity is the main lashing element for a rising and promising domain. On the other hand- to protect the motherland from the invaders the common people used to take very active role to secure the land.

Inhabitants are the assets; the city gets the inherent quality of various cultural dimension.

The MAHASTHAN dwelling was different from other ancient city, it was like as the architectural programme in the systematic approach dated back during the PALA period.

The assumption plate describes the intimate neighborhood and their spatial connection with the street and the gathering space. Narrow Street is busy with several activities.

And the dwelling pattern is humble with the nature, single storied.

Figure 142: Assumption plate-22
Residential environs and the surroundings
Developed by Sajid Bin DOZA

It was previously mentioned in the chapter 02, is elaborated with the pattern of the dwelling, could possibly had several varieties, among them the cluster and linear pattern observed popular, as because the traditional know how, experiences and the social cohesion was the understandable factor to adopt these kind of the pattern. For the case of the linear pattern could be governed by the pedestrian or the street pattern, meanwhile the street inside the walls used to have a dominant footprint to organize and to re-decide the further pattern of dwelling. At the middle of the urban context of MAHASTHAN.

Occupation based dwelling-hierarchy used to have an impact in the settlement pattern. More consistently, there were not at all particular zoning for the socio-cultural hierarchy, the ancient city residential zoning did not reveal the common people's lifestyle in the different distinction, rather the structure of the dwelling used to have the single story, at the same time the course of action remained the same. Possibly, there were dwelling larger than the regular one, however just adjacent the compactness of dwelling coexisted, through the excavation form the level 12 this reference was found.

``Tuneful and at the same time homogeneous``- massing-façade appearance and virtual scale might generate the difference in the precinct of residential are.

Why single storied dwelling used to have during the PALA time?

Basic construction process in the tropical region and being the riverine delta, mud became the popular course of action for making buildings and structure especially for the secular part. However, gradually mud had been turned in to the baked and burnt brick and later terracotta ornamentation was convinced to build structure with the bricks. Brick has good quality for compressive load. To rich the height with the brick was really difficult to build small structure, rather to build a larger structure, brick could perhaps use as the tapering wall thicker form the bottom base is easier, and the delta people didn't have the skill then to act dwelling multistoried through the process.(Figure 143)

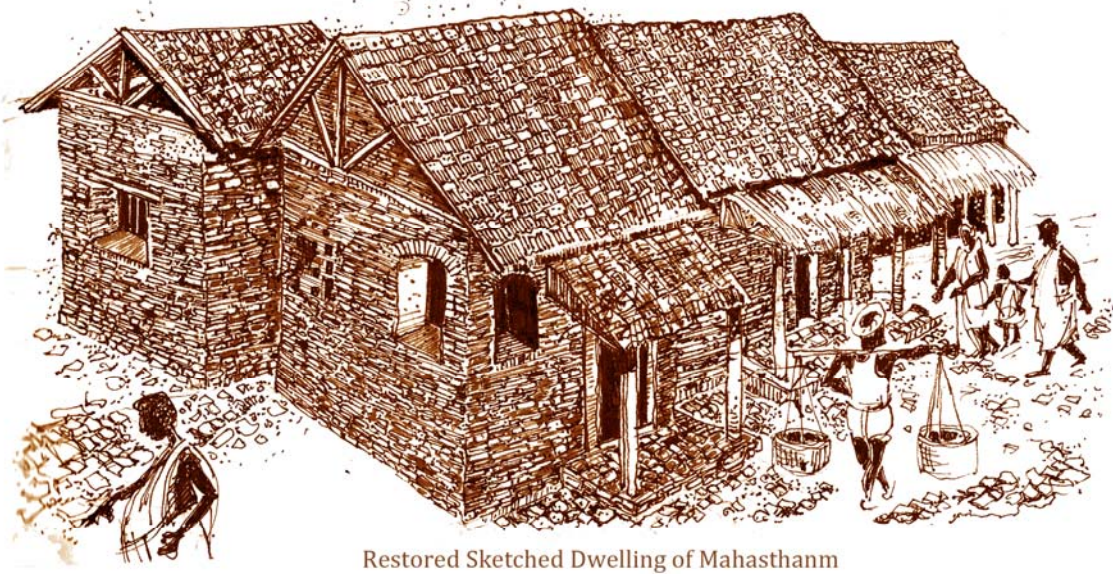
BUDDHIST SETTLEMENT PATTERN AT MAHASTHAN

Dwelling at the Eastern Rampart



French Team Excavation.
the foundation and other
situation are elaborated here
Excavated plan

(Scale: 1"=1:1/16)



Restored Sketched Dwelling of Mahasthanm

Figure 143: Assumption plate-23
The dwelling with restored environs. Restoration sketches and developed by Sajid Bin DOZA

The roofing pattern of the dwelling used to be as usual, the Bengal's pitch roofing was popular for the common settlement pattern. Meanwhile the commercial area roofing system might have the elaborate style with four sided pitch for the storage of the goods. Even if for the religious MANDAPA the roofing pattern remained the same. (Figure 143)

Façade of the residential area appeared mundane, (figure 142) having being the single storied structures the entire residential area of the ancient city of MAHASTHAN would look like the development of the ground, it probably seemed to like the buildings are merged down with the foliage and having the red terracotta color on the surface, the priority of the hue of the area used to sprinkle with reddish ting illumination, while the background remains varieties of green hue.

The semi-open space of the dwelling or the in front portico had a vocabulary with the façade; this element scaled down more the spatial organization in relation with the human height. Indeed it could be or used to be as the eye sodding environment for the inhabitants.



Terracotta Plaque- Goddess (11th Century), MAHASTHAN
Sketch: Sajid Bin DOZA

Certainly...!

In the settlement pattern of the city, especially in the ancient city, street, façade, masses and the visual scale are very vital issues to evaluate the quality of the spatial situation of the ancient city. MAHASTHAN is that sort of city which did not have really so lavish and highly ornate castle, but the humbleness architecture related and derived through the traditional valued form time immemorial in the land of delta, where the people remain modest, simple, unassuming and occupation oriented within the spontaneous massive thick fortified walls which also respected the natural topography of the ancient landform.

It is likely that the inhabitants of the dwelling area of MAHASTHAN used to hold well off community in terms of the wealthy vicinity. It is observable and contextual that in a larger aspect the entire neighborhood as well as the city inhabitant and the other phenomenon of occupancy stating from trading, agricultural, pottery, goldsmith and the other influential occupational used to have the greater excel of network in and around the city although being a fortified city. As discussed before that MAHASTHAN is not an urban context just within the wall, having the fortified situation this city expanded across its radius may call it a 'fluid city'.

Yes, it happened perhaps only for the pattern of settlement is allocated in several comprehensive contexts as well. For instance, the urban core, economic life of the city, monastic hub settlements and more on.

In the bold thick line, we may entitle the riverine city of MAHASTHAN as the prosperous typeset. A perfect typeset of ancient city of the Ganges Valley Civilization groups. On the other hand the city could be described as the two sided one. Although more and more involved into the *Indo-Gangetic Culture*. Perhaps develops at the same time a strong and bold inherent Bengali culture.

MAHASTHAN, it is an extremely analytical and a long process to justify the overall scenario of the city. So, it is mandatory to elaborate the analytical point of view with some segmental profile. The above all discussion, has a great deal of information belongs to support the dwelling as well as the inherent cultural legitimacy of the

people. Through the excavation, the examination of other substances, frequent site survey and the intense literature-technical justification reflects the city used to associate with numerous occupants, directly involved with the city development greater networks during the PALA kingdom administration. Seems like having the monarchy ruling there is a republican sense of socio-political practice used to cherish and continue among the inhabitants; precisely might had the freedom to their civil liberties and goodness.



Terracotta Head- Goddess (11th Century), MAHASTHAN
Sketch: Sajid Bin DOZA

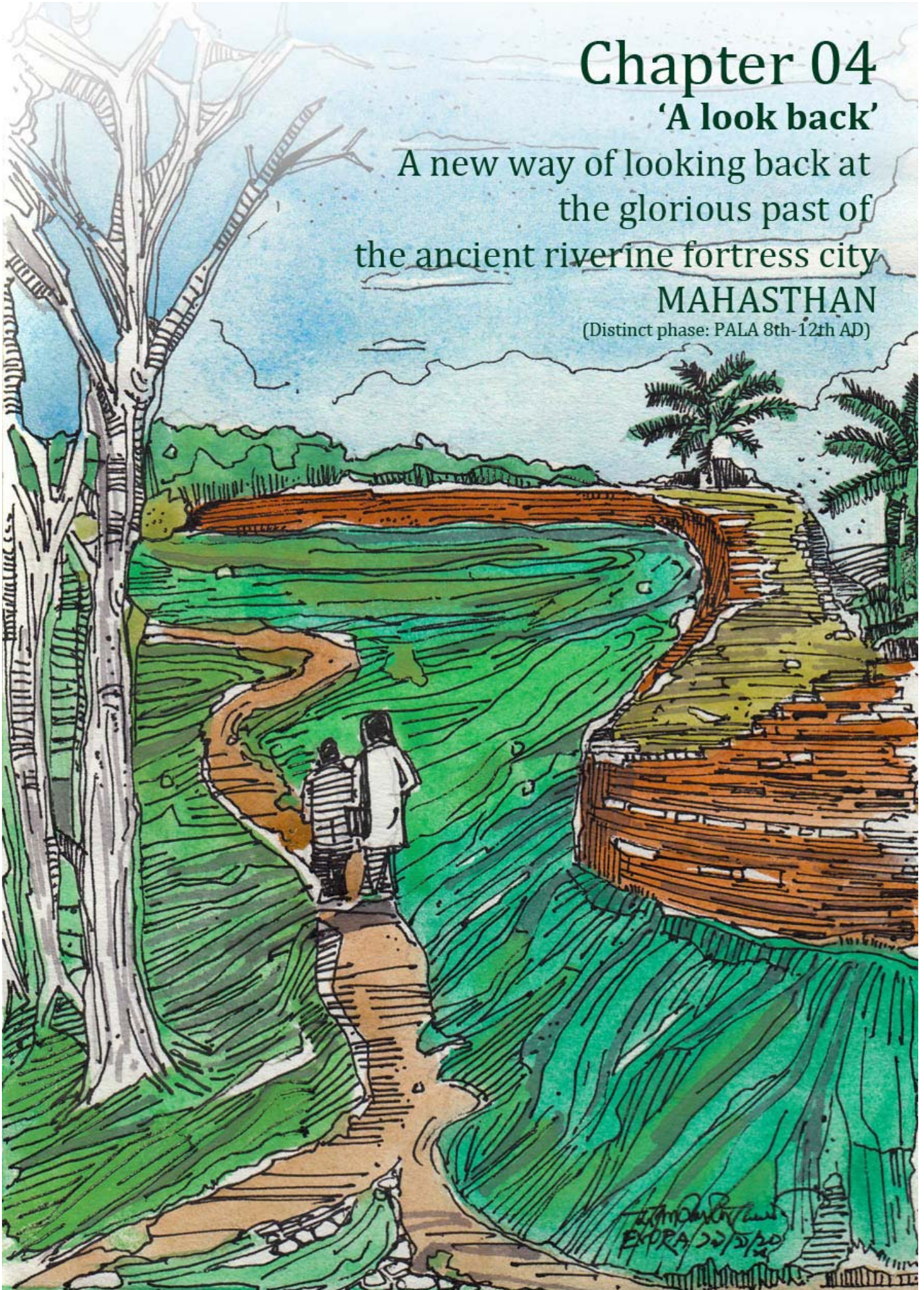
Chapter 04

'A look back'

A new way of looking back at
the glorious past of
the ancient riverine fortress city

MAHASTHAN

(Distinct phase: PALA 8th-12th AD)



Chapter Comprises

`A Look Back`

4.1. New way of looking at the glorious past:
Conjectural and pictographic formulation of the riverine fortress
cities during those time frame...!

4.2. Constrains in the Look Back process

4.3. The storyline:
2D animated short movie 'A look back to MAHASTHAN'- Visual
Diary to communicate the common people of BANGLADESH

*The chapter four is ended with a short animation film on
MAHASTHAN based on the city prevailed, during 8th Century AD
(DVD). To look back...!*

'A look back'

4.1. A new way of looking back at the glorious past at the ancient riverine fortress city of MAHASTHAN

Looking back to the situation is individual and unique. On the other hand, Imagination and justification of the issues are also entitled with versatile descriptions. It could be explained with various possibilities. Some 'look back' situations are so undesired and some are pleasant. However, in the process of analytical establishment in discovering the historical state of affairs 'look back'- format is an essential and valued process to justify the bygone essence. There are many historical resources and cultural heritages had been faded down and disappeared from the glorious chapter of the historical chronologies. Many of them are unidentifiable because of not having the proper clue and references.

History is not 'old and stagnant essays'. It is the ever-changing process of collecting new discovered data; that makes the world history and heritage knowledge always contemporary. So, we might say and believe that- history and historical knowledge is 'kinetic and timeless'. Future of a nation or a civilization is essentially depends on the historical circumstances; of course- a region as well as of the area or for the kingdom.

Saying something about historical empowerment and description is all about to look back on a circumstance. It is admirable, positive and constructive method of building the components of the historical analysis. Lots of solutions come up by referring the historical movement and examples to overcome the current crises of the city as well as for the further development. Essentially, the 'look back' criteria are an authentic stimulation in the process of building the conjectural formulation of the historical development of a nation. Mostly those are important-which are disappearing and fading rapidly out of the sight.

Meanwhile this process helps to establish a fruitful scenario and restored view of the lost and ancient civilization for the common people of the state. It provides an accomplished idea and knowledge to communicate the common masses (fig 144). A short but consistent method to rebuild the historical sequences in the mind of the younger generation as well as for the nation also.



Figure 144: a new vive among the young chap, about the LOOK BACK ideas on the historical studies. A new way to reevaluate the historical phenomenon...!!!
Cartoon by Sajid Bin DOZA

Country like Bangladesh is unfamiliar with preserving the past. As a developing country it is really new skill for us, on the other hand it is very much effective to secure the past and historical evidences. Nevertheless, virtual restoration of ancient civilization and settlement continues with vivid processes. This process however is needed to 'look back' and to collect the historical substances for the country like Bangladesh, where the basic history and heritage studies are not liking events to the common people.



Figure 145: historical literature should be syncretized with the sufficient pictographic information. Cartoon by Sajid Bin DOZA

We never give the blame to the people as well as the new generation of the country, the schooling and the education system is needed to take care of with 'neo-advanced strategies', to focus the interest in the heritage matter along with the historical sites and significances.

Innovative primary schooling are required to give emphasis on the system of the historical study with more pictographic information, yes, obviously research needed to provide attractive and colorful information of the historical substances on the standard books.



Figure 146: Historical studies might not ever entitle with 'Scary' or 'tiresome' discipline anymore. It would be pleasant and timeless discipline for all. In the primary schooling; obviously research needed to provide attractive and colorful information of the historical substances on the standard books. Cartoon by Sajid Bin DOZA

Chapter four is the formulation and one kind of indication of communicating the critical historical information through simple process of arrangement. The objective line of this alignment is to share the common people of the country to let them know the magnificent past of the historical values through the storyline and 'conjectural formulation'. This kind of process of generating short story for the sake of the historical values is often created by the western world and it is eventually popular idea as well. Chapter four, of this research is an output that directly could link to the mass communication.

Stating the title of the chapter four ‘‘A look back’’- what does it mean?

It means to make common people imagine and to think a while about the rich cultural vigor of the delta land. Being a tropical region and venerable to the riverine forces how fascinating and intelligent references used to produce during those days.

It should be mentioned that for the city of the MAHASTHAN, chapter four has dedicated the lifestyle, pattern of living and the cultural legitimacy that evolved during the reign of the PALA kingdom and pronouns as the classical period of Bengal. This situation could be perceived through a short two dimensional animation. This short film has been generated to support the method as the example of the ancient riverine city settlement beside the KOROTOA River. ‘The ancient city of MAHASTHAN’- popularly known as the ruin, a huge ruin that is surrounded by the thick brick walls.

About 65%¹⁰² of the people know about the ancient city of MAHASTHAN-as the only historic place, eventually the common people have no idea regarding the site. The site is now a day is occupied with agricultural and water clogging land (in rainy season). Having said that, people rather visit the other different sites (like as GOKUL steps and the GAVINDAVITA Temple), perhaps those sites still has some remains or elevations.

However, no initiative and actions support were taken to rethink about the huge ancient settlement, at least to promote the visual interaction for the people, only except a signboard (figure 147). Meanwhile we have still possibilities to resume audio visual story to let people know about the dead city of MAHASTHAN, that was alive afore. The site has a museum which is really precious, but those all things needed to be synchronized with the story line to ‘look back’ or for the restoration of a short film.

¹⁰² This statistics based on the random questioners, local people were asked for about the MAHASTHAN, the simulation is based on this process



Figure 147: A civilization never could be expressed within two panels of literary thoughts and elaboration, the world has changed enough...we might think the advanced way of communicating the common people of Bangladesh, to let them know the knowledge around the historical values of his own country, that what it was before once...!!! Image source: Sajid Bin Doza

Especially, chapter four is the simplest output for the people of Bangladesh with some technical orientation, which never could create in the people's mind a "tribute memory" and overall understanding about the ancient city in a 'bold line'. The 2D animation has worked out to make the ambience sketchy and mystic. The research would like to give some understandings which are to be fluid and spontaneous. Nevertheless, the conjectural visuals are done by freehand to promote the cultural heritage alive with sophisticated format.

Another notion of this Chapter Four is for the children education policies, history studies in childhood is an annoying story in the context of Bangladesh. The syllabus for the general historical education is occupied with 'inelastic literature'- to explain the rigid and inelastic literature is something about inadequate correlation among the text and the sequence of the pictorial information. General and historical education for the children would be polite and dramatic. So that - a child could imagine the historical environs while going through the reading. The consequences- study ---



The slogan for the new generation would be
"to look back to their rich cultural heritage...."
Cartoon by Sajid Bin DOZA

becomes lively and efficient to the children, although more deep research is needed to identify the gap with the historical studies.

Nevertheless, identifiable primary reasoning to rethinking the heritage study for the entry level schooling education is required. Pictographic literature in education is must; it develops the childhood creative skills along with study interests. Country like Bangladesh is on the mode to take necessary steps for the primary education as well. This process of education is more likely as chronological development stating from the junior level to senior schooling. (Idea of the proposal to the ministry)

To express again, about the historical knowledge in the country like Bangladesh is unsatisfied. Preserving the past and to secure the heritage value is all about caring the knowledge. Genuinely, sufficient education, awareness, community workshop and broadcast-telecast media are indispensable to know the heritage value, to understand the cultural heritage site and to gather knowledge about the particular site.

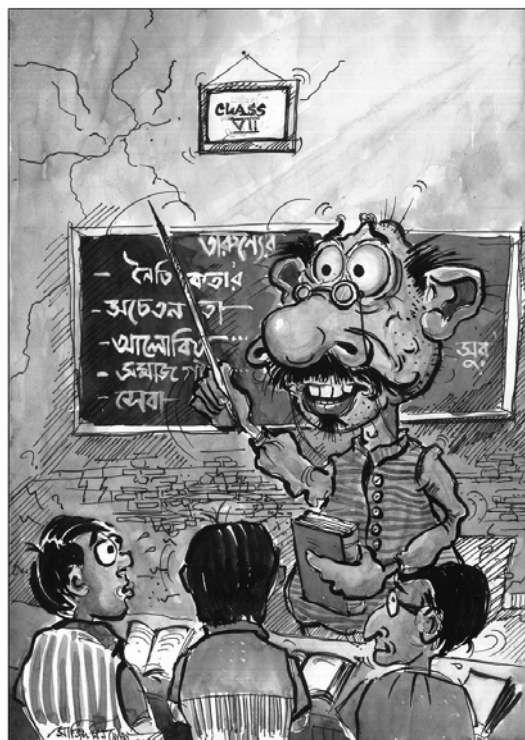


Figure 148: the study of history in the school level needed to be changed and modified as well, it would be infrastructure with audiovisual support and to make them imagine about the ancient ambiance. Cartoon by Sajid Bin DOZA

4.2. Constrains in the Look Back process

Yet again, the research is constrained by concerning early schooling issues. However this process; we hereby mentioned about the progression based learning¹⁰³ (implementation of restoration and visuals) - Bangladesh is developing country, infrastructural facilities are in pace to implement with the association of multinational and in-house supports. Catastrophic situation and other Climatic disasters phenomenon are very acquainted with this tropical region. In the previous chapters¹⁰⁴ it has been discussed as, for this situation most of the cultural heritage had been destroyed by these unprecedented natural and manmade forces.

It is really difficult for the historians and for the researchers to bring back and to build the conjectural model with proper references. Yes, the references would be searched out from the site, with the critical technical supports, by crosschecking the ancient literature reviews, current statements of the scholars-researchers and association. Having being this circumstance, the knowledge and the other resources have not been properly distributed among the common people as well as to the younger generation. Financial viabilities are other parameters in the path of establishing the 'look back' concept (idea of restoration and digitally visualization of the site).

On the other hand the Department of Archaeology of Bangladesh is not formed with adequate skilled workforces and staffs. So the acceleration of the historical studies faces struggle to conduct and to continue information to the general sectors as well as in the public domain.

Results, a huge cavity in-between coordination to formulate the proper setback for the historical background.

This was the vital problems discussed here with practical state, but now the time has come to restart the historical development and studies in all aspects as a whole

¹⁰³ 'Look back'- the research here deserves some technical supports to pictorial visualization, MAHASTHAN the ancient city is such a site, now a day it is difficult to understand the city how it was before. So the research focused on the pictographic analysis to make the common people imagine about the prosperous of the city of MAHASTHAN. A conjectural restoration of the city during the 8th century AD is the part of the look back rethinking or understand in popular appraisal.

¹⁰⁴ Chapter 1, 2 & 3

networking to establish the synchronization in literature and the pictographic information.

Henceforth, from the childhood no one is needed be scared of history studies and it would continue till higher studies.

Historical studies might not ever entitle with `Scary` or `tiresome` discipline anymore. It would be pleasant and timeless discipline for all. (Figure 146)

The Chapter 04 is concerned with above discussed motto, to make proficient history-study with the digital visualization, *a way to look back theory...!*



Figure 149: *to look back to the historical incidence is knowledgeable for the society as well as to keep new generations belonged with the cultural continuity...!!! CARTOON BY Said Bin Doza*

The ancient city of MAHASTHAN is an integral part of cultural heritage site as well as an authentic resource to know the real Delta land traditional-aspects. This riverine delta had been chosen by many foreigners and the native people to grow up with settlement by the riverside. The pattern of the settlement left various clues to discover the rich lifestyle of the ancient people of this tropical land.

In the most ancient riverine fortress settlement pattern that used to exist with inland port, developed network to conduct vibrant commercial center, at the same time the city grew with religious settlement pattern that cast-off coexist with additional lifecycle. Socio-cultural aspects, economic viability, city administration, strategic planning of the city and the fortified advancement used to adopt for the city- left brilliant footprints.

These footprints are the sign of future solution for a contemporary enlightening. It had been discussed before that ancient Bengal and the PALA Emperor contributed huge encouragement for us; the nation today would search for the reference form this hinterland of ancient MAHASTHAN. This effort to 'look back' concept as to rethink about the wonderful past, to amend self-dignity and to believe selves that-we have a long historical relation with our own cultural continuity, that prolong our splendid chronological values and we can move forwards making it as the giant foundation by regenerating the inherent cultural endurance as the proud nation.

Essentially, this research took these opportunities to restore the visual diary for the common people as attractive and dramatic story sequences. The research collected the data, other practical facts and figures through various disciplines and compiled a storyline with digital sequences to project the simple result of the study ground. Digital visual would resolve the confusion and make people rethink about the heritage value of the MAHASHAN, on the other hand as the MAHASTHAN could be the ideal example for the common people to understand the ancient delta line lifestyle through this short movie (look back theory), it might perhaps generate the continuity to the further research into more diverse tracks. However, this short video of restoration of ancient city of MAHASTHAN will possibly change the idea of heritage value.

Research would have some new ideas; it would discover the unknown parameters on the horizon of discipline of heritage studies.

Research should find out the 'study-gap'-on the way to continue the innovative ideas among the scholars,

Research might explore the goodness and the sorrow in the historical exercise. Research would be the part of the country's development and perhaps would align with the betterment of the community.

Research might have the notion to find the simplest outcome; so that the consequences could directly help the common people.

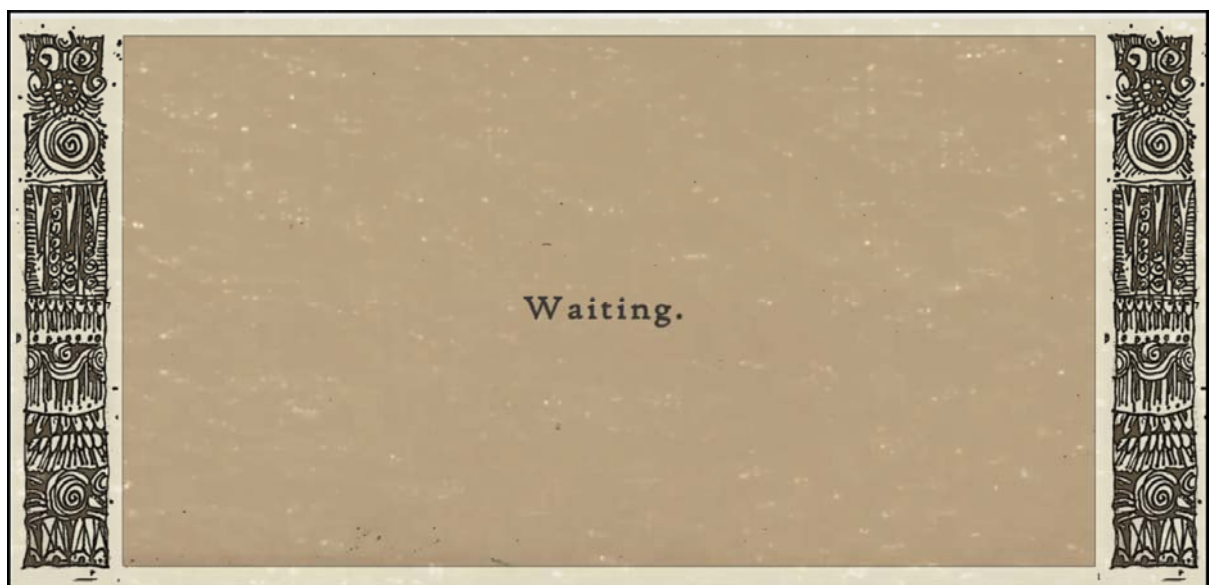
In the end of the restoration visual one interesting obsession mentioned..!

That is:

The city of MAHASTHAN does not EXIST today but the story has not completed yet.....it is evergreen manuscript for all of us and forever...

I am waiting for your response...you will start the other phase of the story of the MAHASTHAN and I will be here to let you know your previous peoples success story.....

Waiting.....



-The storyline-

4.3. 2D Animated short movie 'A look back to MAHASTHAN'

Visual Diary to communicate the common people of BANGLADESH

Notion of the movie:

As it was discussed before- the historical studies are puzzled with numerous obstructions in the context of Bangladesh; the historical exercise did not communicate to the common people as well as the younger generation of the country. Moreover it was mentioned before that the research finds opportunities to contribute a role in the child-education with the digital heritage method, as well as the 'Look Back' theory formulation. This process perhaps uplifts the knowledge of historical values of the new-generation as well as the youth group of the country.

Chapter four is a different initiative from all other chapters, the research demanded a rich and highlighted story to feed the community with dramatic findings.

The storyline is boldly maintained by an imaginative character, this character has a diary, he describe all situation of the ancient city of MAHASTHAN back to the 8th Century AD and draw in his diary with literature writing. Very enthusiastically he narrated the facts and figure of the city both form the outer and inner part, he floats on the river KOROTOA and had the experiences to view the massive thick brick marvel of the MAHASTHAN. This Mr. Character also has the knowledge of scale, harmony and proportion. Very fluently he can analyze the city's morphology and socio cultural scenario of the city.

The research was demanding for the character, meanwhile the character made easy access to understand the ancient socio-cultural situation of the city, possible this process accelerates easier understanding of the story to the common people. The story line has been accomplished with simple sentences for popularly appraisal.

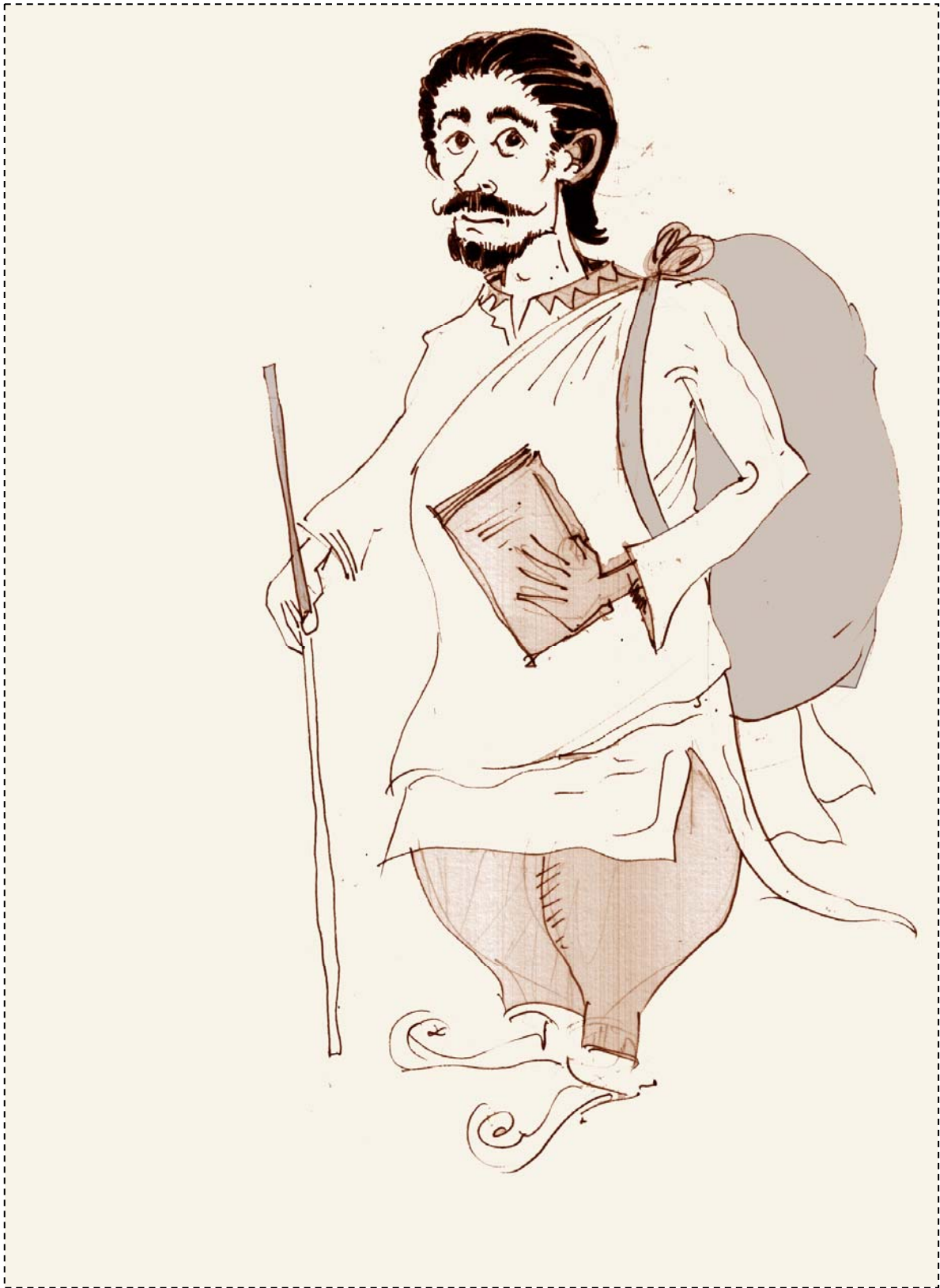


Figure 150: this is the steering character of the short 2D animation movie, where he elaborates the days of MAHASTHAN, and precisely this imaginary character has the sensitive observation. The character is dressed with ancient cotton clothing, call KAMIZ and DHUTI, He is carrying a bag containing his daily needed things, and he is always with a diary, where he sketches and write down the facts and figures of the ancient city. Character by Sajid DOZA



Figure 151: for the animation purpose several postures were drawn in the studio by the author, those practice used to be done to enhance his character in true mode.

By Sajid Bin Doza

Statement of the storyline

A strong statement comes out through the character's narration and observation, that is the 'simplicity of the ancient city of MAHASTHAN', which was existed during the reign of the PALA Empire. The statement conveys the time immemorial relationship with land, people and water of ancient Bengal that still exists some part of the modern Bangladesh. MAHASTHAN- the ancient riverine fortress city eventually was the true reflection of the natural landscape domain Bengal. This ancient city was a combination of nature and the partial manmade contributions.

Reviewing the MAHASTHAN...

History and historical moments are nostalgic, magical, and inimitable. Mankind is profound with their glory and gratitude in the manuscript with golden letterings. The historical essence shows us the experiential path to find the light of freedom and success. However, sometime situation perhaps don't support with the blowing of breeze of fortune. It comes into sight sometime against the wind, historical incidents and sequences used to perform sometime dramatic induce or pathetic ending.

But the character starts with a notion; is to revisit a powerful settlement that used to develop at the western bank of the affluent river KOROTOA, during the PALA kingdom (8th-11th century AD) - in this greatest delta land of the planet. Here-he starts with his diary and story with the support of observation and deep realization of a 'successful and peaceful riverine city....

Bengal had been passing through various political incidents in the critical platform of the opinionated climaxes. Nevertheless, the 'classical period'- of Bengal had been gifted to this delta people by the Great PALA Emperor during 8th century AD. Basically the entire subcontinent blessed with this intelligent administration. Among these vast kingdom, Bengal became the important landmark and PUNDRANAGAR became the capital of the PALA kings.



Figure 152: the other figures were drawn to support the environs of the ancient city.

Generated by Sajid Bin DOZA

MAHASTHAN as well as Pundranagar, derived 3rd century BC. And this vast settlement did exist and continued flourishing civilization till 13th century AD. Foremost- this riverine fortress city came into bud during the PALA KINGDOM AROUND 8th century AD and this rich vigor of cultural practice and ethics continued till the end of the 13th century.

The character found MAHASTHAN, basically a trade city which linked the other inland port city as for the commercial and trading facilities. On the other hand the city also flourished as the religious one. The primary trade route for the communication used to serve by the riverine routes. To elaborate MAHASTHAN, The city was fortified and huge walls bracketed the entire settlement. Essentially, the ancient city of MAHASTHAN was generated outside of the walls as well with innovative monastic settlement. The economic life of the city used to have the balanced or equilibrium urban core or structures.

Particularly, the land-use plan of the ancient city was commendable. Two basic zoning could perhaps seen within the fortified settlement, one is the trading and commercial hub and other is the huge residential cum religious area. Organic thoroughfare pattern besides the hierarchy used to merge with the city fabric.

Beautiful and picturesque riverine landscape used to attract the passersby and the travelers. Especially the fortress city is the combination of the religious vive and billions of bricks magnificence, used to stand on the shoreline of the river KOROTOA.

The character became astonishing seeing the sparkling beauty of the shiny pick of the temples with golden finials and the red ting terracotta brick infrastructures aligned with the ancient topography. The ancient city of MAHASTHAN had several permeability from the river although the intact city was fortified with deep moat or canals on the three sides.

Meanwhile the ancient city was vibrant with various loading and unloading of goods and further trading and commercial substances. The north gate of the city was channelized by the moat or the aqua route, eventually the fortress city of MAHASTHAN used to have a huge water body on the north western side of the

settlement pattern. To outfit the PALA navy troops inside the basin, as the backup force for the invaders.

As mentioned the fortified city had the prominent zoning, on the frontal part of the fortress city used to serve for the bazaar or as for the commerce streets. Busy, crowded and vivacious activities used to make the place happening...

The character saw in this settlement pattern- glorious brick built temples and stupas. The high towered terracotta temples were crowded with vivid ritual activities and the small scaled monasteries inside the fortified walls were the emblem of the Buddhist dictum.

A perfect riverine fortified city by means of the contextual setting in the tropical land became the splendor of the region. As the city grew by authentic guidance of the heroes of the kingdom and infrastructures with local attribution were superb. The bazaar and the other mixed use phenomenon were harmoniously coexisted with the religious structures and trading hubs were preciously and directly connected with the river.

While walking through the dwelling or the residential area, innovative construction of the dwelling strikes his mind; he had been fascinated seeing the magnificence in the course of action in the residential area.

The visitor (character) mentioned one example of making creative construction that is the roof tiles of the dwelling-Terracotta huge roof tiles in rectangular shape with two holes for the anchoring the modules on the rafter and joists.

Carefully, the dwelling addressed the climatic response with semi open shades in format of the house, this sequence of the spatial environs were needed for this climate.

The character brings into being- beautifully open space was surrounded with single storied dwellings. The religious monuments became the gem of the neighborhood. Courtyards were vibrant and cooperative with participatory existence. He was astonished viewing the combine construction with monolithic stone. The temples and other public structures used to build with stone to come out the project with valued

correspondence. 'Stone' is unfamiliar construction unit in delta land. However stone was carried to the main land from RAJMAHAL, Bihar, India.

Technically, in and around the fortified wall of the city remarkable structures were built through contextual-ideology. The logical transformation in the mainland was contributed by means of the PALA STYLE.

And he assumed, the society of the PUNDRANAGAR has reached at the pick of the 'Art and architecture', where the religious monuments are astonishingly built with local influences. Several of religious structures justify the contextual pattern of the local ideology and innovative tropical essence.

The character here, is not elaborating the today's millennium century's city, to build with the sophisticated conditions; that might be considering the eco-mode, sustainability, self-dependent and the morphology that addresses the natural phenomenon of strategic planning; But once he reveals an ancient city, that one had the deep connection and dependency with the river, people had the link with healthy trading and commercial continuity, the ancient riverine fortress city that used to maintain the economic life zone for the urban core with the various form of settlement pattern, the territory, that was defined with different occupational masses, gold smith, potter, sculptor, farmer, black smith, rich merchant, combatant, and the administrator of the city were the primary inhabitants. The city existed with the tuning of the tropical responses and the settlement pattern used to govern the climatic consideration, while passing through the city, one can realize the scale and the proportional spatial quality that are such intimate and democratic along with the religious connotation. The lowlight structures that are covered with deep lush green foliage and creating the interactive communication with the built and natural environment.

It was felt like that- the art of the city was sincerely crafted by the authority or by the heroes of the city.



Figure 153: the contact lenses print has been provided to have a glimpse about the movie.



Figure 154: the contact lenses print has been provided to have a glimpse about the movie. The sequential storylines are elaborating the scene.

MAHASTHAN the ancient settlement pattern as well as the fortified city- is the solution of future city guideline, which perhaps show the light to find the solution for the millennium urban strategic planning, eventually allows or consider all issues.

Nevertheless, the ancient city of MAHASTHAN left nothing for us today except the vacant earth in the present site, but he knows what true lays beneath the earth, What a cheerful life buried in the ruins of the billions of bricks..!

The precious and religious happenings that secure the place with lots of public activities, the bazaar streets and the places used to alive with variety of people from different part of the region and states.

Those story of MAHSATHAN -all are like a wonderful and very adventurous to the visitor (the character), the city is no more today, it is dead & disappeared, but left for us lots of clues to study, research and to promote our own cultural legitimate and heritage matters.

Lastly the Stranger narrated:

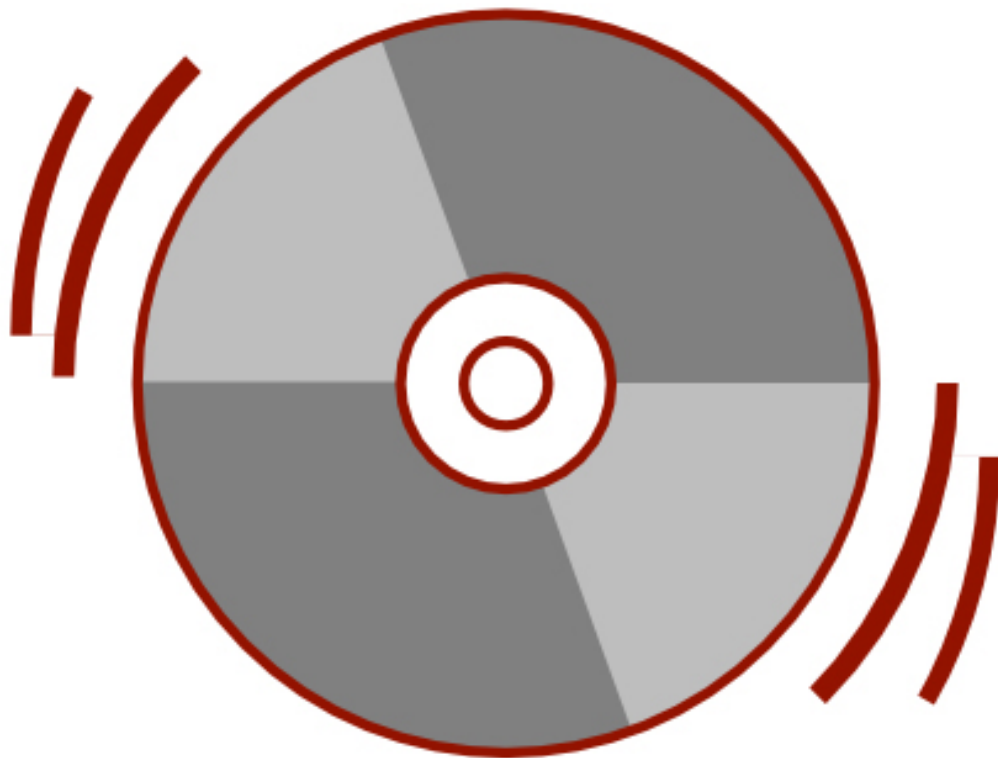
“You may not know yourself, your ancestors, how stronger and mighty they were, you may not know how affluent and active was your socio-cultural pattern, even for the settlement. You need to know your past..! You need to learn, you need to discover the brilliance of your art and architectural values of MAHASTHAN...!!!

What I have seen in the ancient city of MAHASTHAN- is silent beauty, the beauty that opens my mind and I feel like I am in the authentic environ, settlement pattern, the birth of the city , glamour of the city and the dies of the city is the common and ever changing process. These are the process of continuing cultural practice and enrich the successors’ story. The city of MAHASTHAN does not exists today but to me the story has not completed yet.....it is evergreen manuscript for you and forever...

I am waiting for your response...you will start the other phase of the story of the MAHASTHAN and I will be here to let you know your previous peoples success story.....

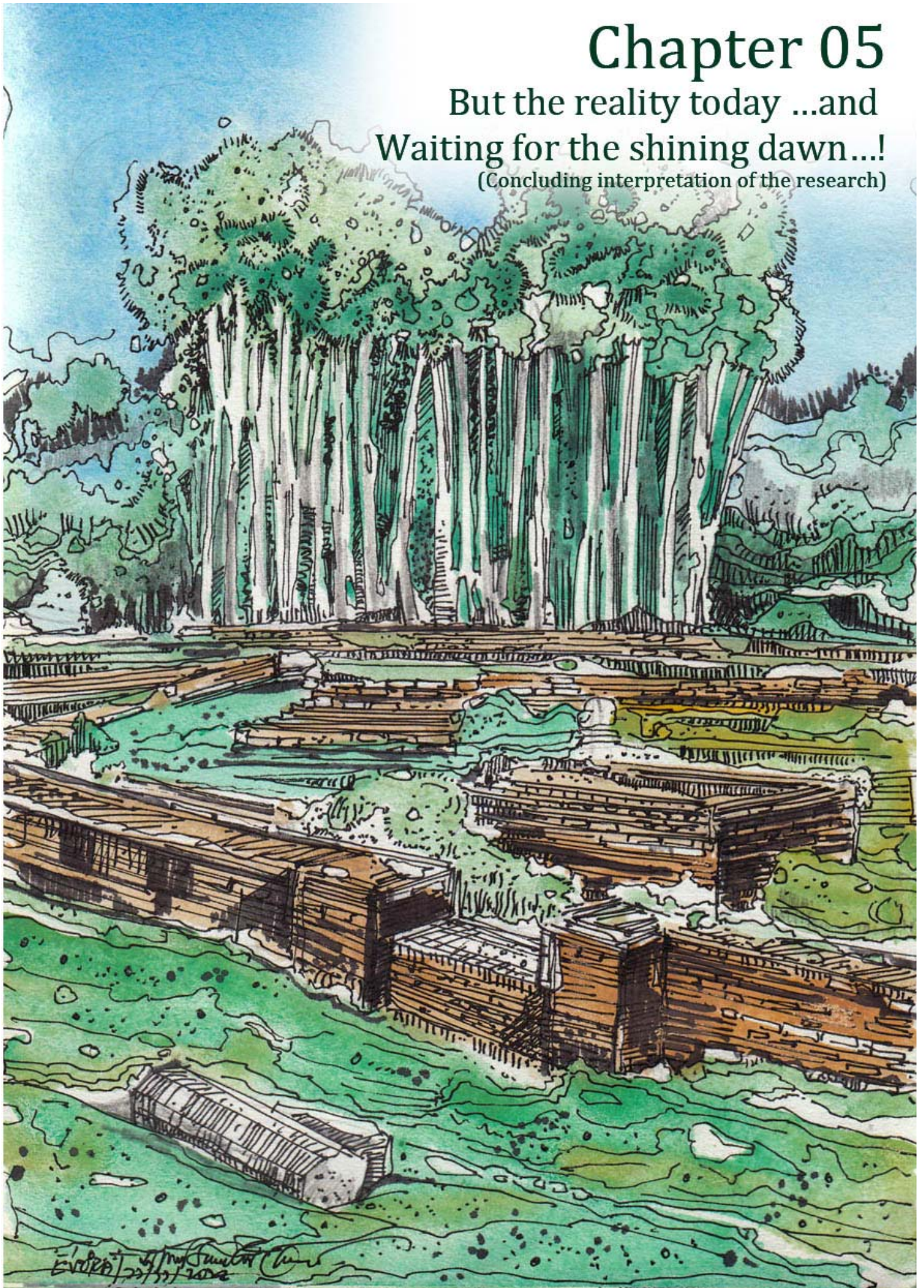
Waiting.....!’’

4.4. The chapter four is end with a souvenir CD. To look back...!



Chapter 05

But the reality today ...and
Waiting for the shining dawn...!
(Concluding interpretation of the research)



Chapter Comprises

5.1. But the reality today ...and Waiting for the shining dawn...!

(Concluding interpretation of the research)

*5.2. Focus on the “void” in the literature and historical studies in the context
of Bangladesh*

5.3. When the historical remains come across with Land, people and
water...!

*5.4. Problem and prospects in the tropical terrain
(in the context of delta)*

5.5. Reviewing the birth of the settlement patterns in the delta-line

5.6. ‘Kingpost of placement’
(Riverine fortress city)

5.7. Spotlight on watery MAHASTHAN diary

5.8. Silence in the historic urban core...! An essay

Conclusion and a way forward...

5.1. But the reality today....and Waiting for the shining dawn...!

(Concluding interpretation of the research)

The final Chapter is the concluding interpretation along with accumulating together of all episodes. This part of the writing is very much aligned with stating the authentication and rethinking about the settlement pattern in the delta land, where the typeset of civilization grew during the particular (8th Century AD) age.

An ancient city about 2500 years of age, a preceding glory of Buddhism in the delta, stand still in morning mist, once was the lived riverine trading and religious urban core; the capital of ancient Bengal, then nothing more left without the silence and emptiness. Struggle, calamities, toughness of life and the riverine based situations are mutual possessions to lead up the common people's actives at the delta land since time immemorial! However, possibly this difficulties and constrains of the land cheered up with the bygone values in distinguished summit. Particularly, while we look back at the historical analysis, this fertile delta had been entitled with enormous wonderful eras and experienced various political ups and downs with creating the huge civilizations. This magnificent, identical and historical exercise used to take place perhaps for this 'fertility and venerability' of the natural means. New and innovative solutions evolved in creating the dwellings, temples, monasteries and even for the mega urban core.

Nevertheless, simplifying the urban core to be balanced and fluidity of the city characters developed during the 8th century of the PALA dynasty in the MAHASTHAN ancient fortified city. Although the flat land supported to build the huge monasteries in the southern foot of the Himalayan belt. Rivers and its networks governed the ancient civilizations to groom up as the model of the riverine valley, on the greater aspect 'Ganges-Brahmaputra river valley civilizations model'¹⁰⁵ adopted by the delta line people by means of having the ancient chronological essence. But

¹⁰⁵ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. Print.

the process of generation- the city format was particularly different, it was not like the PATAIPUTRA (Patna, India) or the INDUS Valley (Pakistan as India).

But it was Humble and organic form of topography followed a township was developed just about thousand years back in the northern part of ancient VARIND highland. MAHASTHAN used to develop with the natural hold-ups resources with strong vicinity and a bold religious linked urban core.

Today the ancient city of MAHASTHAN is no more; we can see only few mounds and couture on the abandoned landscape, agricultural fields and land-living for the cattle. But these inexistent ancient riverine cities used to associate with more about several settlements, on the west the *PALASHBRINDAK* and on the south *SKANDANAGAR* or *GOPAGRIHA* were renowned. However, the main part of the city of the MAHASTHAN and the other suburbs are still deprived and needed to unfold, many new resources and information could be pursued for those particular sites. Still lots of information are missing and to continue the farther research and knowledge for the nation, those sites have to be discovered and extensive archaeological excavation could show the new way of rethinking the history and heritage exercise of Bangladesh.

This chapter is named as the 'waiting for the shining dawn'- let us discuss shortly about the titling of the episode;

The land of Bengal existed with many notable settlement patterns, it started form the dated back of the gorgeous ruler of Chandra Gupta Mauryan (340 BCE) and the Great Ashoka (304-232 BCE). Civilizations took position most often by the bank of the main stream of the mighty rivers. Among them many settlement patterns had gone by various disasters. Many of them left some clues, lays beneath the earth with meticulous remains and information. The information and clues that found till date are very micro part of the site, the site is required to explore again properly and need more investigation a way forward to gather more knowledge. Although the French Excavation team and Archaeological Survey of Bangladesh execute routine excavation rounds the year¹⁰⁶. Having said that the ancient site is missing to thrive among the commoner's memories. Depriving and negligence stuffed up on the

¹⁰⁶ During the winter time excavation take place

shining story of the ancient city. This research contains vital states for the historical horizon in the country like Bangladesh.

Study and intense works are required to build up the imaginative restoration for the historical MAHASTHAN. Linking to the common people with the popular idea, this attempt could serve rapid and fastest impact about the lost images of the ancient city. People need to have some image of the city in their memories to recall and to look back to the past with interests.

Since this is the concluding chapter, it is crucially important to justify and to discuss about the other supportive situations. This research is not only concern and valid with the derivation of the restoration of visuals but also a strong connection is linked to modify the historical studies in the elementary and primary schools. Besides to conduct historical and heritage awareness among the common people in a simpler approach. So, those two issues to the society as well as for the nation to act as the contribution from the research point of views, with this vision and aim possible outcome for the nation could find the bright shining dawn...! For now, it is so expected.



Buddha (11th Century), Paharpur
Sketch: Sajid Bin DOZA

As the research work commence to be the unique one and that should be executed with new concept; a broad analysis is required to validate. Being an architect and academician the doctoral research works would have the nature of oneness attitude, following this ideology the research contributes some unique phenomenon that are to be elaborated here for study goal. As the study is in the final phase, it demands to explain these issues as follows:

5.2. Focus on the ‘void’ in the literature and historical studies in the context of Bangladesh

The research was demand of compiling the bibliographic and other references, several disintegration were found in the literature reviews, we may call them as the ‘‘void’’ in the study. The void in the historical studies remains with the religious based infrastructural explanation, in the literature and other parts of the documentation idealism of the religion have been discussed with the cultural and ritual elaboration, whenever the settlement and the other physical substance were commonly missing part in the Bengal historic literature. This is definite that the political change governs alignment of the religious potential and the social structure would shape or adjust the city or ancient urban core formation. However with the change of the political as well as the religious dominancy the urban core take perhaps other form of shapes and that is- we may call the art of the urban core, eventually that is prioritize by the religious motivation as well. Historian and scholars describes mostly the political and excavation based follow-up. Due to the research investigation, study was wondering about the physical situation of the ancient city, meanwhile there were no somatic description and orientation about the city was collected. The morphology of the ancient city of MAHASTHAN, distinguished functional characteristics of the city and the settlement pattern, these criteria were not found in writings. Moreover-history and historical studies usually states for the kings and their prosperities in the kingdom, the lavish procession from the royal seat, the success and the throne of the king and lastly the autobiography of the kings are notably mentioned in the millions pages of the historical documents. So, the results, a big void remains on the corporeal aspect of the territory, a different dimension to look at the historical analysis with scientific process for the readers is missed out. Most of the historical documents are contained with the observed scenario.

However, 'on the other side of the coin'- is essentially needed to know the face, to learn the common people's situations. When the research identifies this 'void' in-between the two aspects; the study took the opportunity and decide to focus on that 'VOID'- the lifestyle, people, and socio-cultural pattern of the common inhabitants of the ancient city of MAHASTHAN. History and historical values would be justified with evaluating the association of the social structures and the people live in the society. This historical evaluation sustain by analyzing the vicinity of the state. The research area used to dominate by both the Hindu and the Buddhist kings through several epochs. But then again in all aspects the city and the settlement pattern in the stating manner of manuscript-evidence was frequently missing. Here is the focus of the research-it could be called as the void of the research. In the chapter 01 the state of arts; the writing this phenomenon have been critically identified. For the moment drawing the concluding remarks; it might have the important issues to analyses about the religious oriented urban core, how it used to look like and the order of the art of the city was really appeared followed by the religious principles. It would be mentioned that the ancient urban core of MAHASTHAN was also the trading inner-city core, as the prominent inland city core.

To understand and to reinterpret the 'void' of the literature-was to hold up with the morphology of the Buddhist motivation and idealism that create impact on the urban core. The city that explore with several occupation, as earlier elaborated as the farmers, fishermen, goldsmith, blacksmith, merchant and other high official¹⁰⁷. City used to influence by the occupation as well. In Bengal the other ancient riverine urban core used to occupy with several different occupation. This research deals with the settlement pattern of the ancient urban core. While elaborating these the study mentioned about the origin of the city in the chapter 01. Followed by that focus highlighted on the research void- the chapter 02 was particularized with case studies, mentioning inherent cartographic images and versatile pattern of the settlement. So it might be an achievement for the research that it passes through the struggle to develop a new language instead of void by connecting the linguistic and pictographic synchronization in the history of art and architecture of Bengal.

¹⁰⁷ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. Print.

5.3. When the historical remains come across with Land, people and water...!

The research is tending of climate and the topographical peculiarities. A land with six seasons diverse with versatile colors and characters. Especially Monsoon rain is the nature of the tropical land. On the other hand the riverine networks dominated land comprises unique formation for the settlement as well as for the other occupational favorability. The delta land flashes with the rivers and canals; the landscape of this region is combine with water, land-dwelling and vast clear hemisphere. Bengal delta is blessed with fertile terrestrial, as this mother land is sediment by the river carried siltation. Agriculture is the main source of revenue to support society from time immemorial. The flatland nature is dominated and the mud and thatched material became the construction ingredients. On the whole for the PALA king- this land became the integral place to promote the light of the Buddhism and to establish the peaceful settlements everywhere by the aqua based routing. Foremost the flat land tendency quickens them to build structures on gigantic mode. Bricks had been formally used by the PALA Emperors; Bengal qualified first use of brick both for the public and private use in the hinterland of MAHASTHAN around the watery landscape.¹⁰⁸

Nature is power, it was well-known to the PALA Kings, considering the topographical shallows and moisture in the wind within the watery mainland they develop expertise by building the tropical structures, temples, monasteries and the city of MAHASTHAN. Redeveloped and re-infrastructure during the reign of the PALA kings¹⁰⁹. Vitally, the Bengal mainland was in gripped by the intelligent Buddhist rulers having been difficulties and obstructions came from the nature. This challenges helped to build unique art and architecture in this watery land and came across to create historical valued exercise association with the people of this land; still enduring nowadays with the breathing spirits.

¹⁰⁸ Blochmann, H. "Contribution to the Geography and History of Bengal. *Journal of the Asiatic Society of Bengal (JASB)*. Calcutta XLII.I (1873): 211. Print.

¹⁰⁹ The situation of the restructuring had been executed by the French-Bangla Archaeological team in 1993 till 1999

Bricks fundamentally become the main construction module, and the Buddhist builders used exposed bricks as the respecting tradition or local course of action. Stupas, temples and the dwelling used to build with the bricks, later to distinguish the ritual structures colors were added on the brick surface.¹¹⁰

And far along on this marsh land bricks became the magical module for the construction, it was taken shapes as desired to create the magnificent and innovative form of art and architecture; consequently overnight established a unique statement of classical period of ancient Bengal subsidized to the riverine people of delta. Even the humble people of the Bengal region accepted the friendly amalgamation with the local technique and some imported process to build the structure by the Buddhist king. Spontaneous development around the fortified walls with intimate scale and foliage act as the lush green background. The dwelling in MAHASTHAN perhaps was single storied and humdrum with the nature.¹¹¹ Seems like land, water and people had been turns up with melodious tune. This research is based on the hypothetical analysis of the ancient riverine city of MAHASTHAN, these concept of imaginations derived with logical clues and meanings, extensive archaeological excavation and ancient literature are the references to build up the pictographic knowledge besides the writings.

the inhabitant of the city of MAHASTHAN had the opportunity - possibly, this society became interactive without different hierarchy levels, and their socio- cultural exchange used to take in the community space, bazaar and in front the religious structures, consequently open place and congregational area filled the accommodation of huge masses, ancient city and settlements used to combine with urban open space that also functioned by the religious committee. A bonded and familiar attitude with 'happiness vicinity' remained blooming in the hinterland of MAHASTHAN,

Yes, Happiness of the people is the happiness of the rulers...!!!

¹¹⁰ Jacqueminet, Christine, Jean-François Salles, Rémi Dalongeville, Bernard Dupuis, and Kévin Pédoja. "Archéologie ET Télédétection: Cartographie Des Paysages Du Site De Mahasthan (Bangladesh) D'après Des Données SPOT." *Cybergeo Cybergeo* (1996): 21. Print.

¹¹¹ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 126-128. Print.

5.4. Problem and prospects in the tropical terrain (figure 155)

It has been often observed that missing or disappearing substance for historic reference is vital issues to secure the justification of the historical sites. The historical site had been washed away, or no more remains, these all complains and obligation are very common, besides these all instances happens and belong to this marshland. The monsoon rain is the major climatic character in the region, this caused overflowing of rivers and flood inundate the entire area of the mainland. More often, burnt brick and sundried brick are the main course of construction executed in the land of river. Having been temporary- bricks is seriously affected by the saline and organic factors, this module most- repeatedly washed away by tidal surge and heavy current of riverine flood. We don't have stone as the building materials, so it is natural that bricks has few resistance to possess remain during those disasters. Considering this kind of heavily calamities, some structures are often climatic responsive, particularly in the hills and elevated area. The material and the structures are used lightweight for instance, wood, bamboo and thatch. Even though are temporary.

It is needed to know that Bengal art history and architecture has a great role during the Late Gupta period, 6th Century AD, magnificent temple and other structures were built during the time, and those temples were built with bricks and terracotta laying. It is unfortunate that no existence of those astonishing temples or ruins found. It happened due to the course of action and the bricks only, heavy rainfall, moisture in the wind with humidity, saline factors, water clogging and overflowing riverine flood take away all those marvelous phased structures.¹¹²

Eventually, though tropical-having been watery climate this hinterland could preserve just about 500 years old back cultural heritage and civilization. We have better fortune because, still we have the evidence and tress of Buddhist monuments all around the country, and however they are in a dilapidated conditions. Those particular Buddhist historical sites are still struggling in the marshland only because of the `ancient technical solution`.

¹¹² McCutchion, David, and George Michell. *Brick Temples of Bengal: From the Archives of David McCutchion*. Princeton, NJ: Princeton UP, 1983.16. Print.

The PALA builders took the strategic sites for the structures, especially on the more elevated land form- free from flood level even some time to build structures used to dump earth for artificial elevation of the land and continued making monasteries and structures further. The brilliant and time context solution were taken and conceived by the people before establishing monuments and structures in the watery landscape of Bengal (see figure 155).

Settlements development was a greatly strategic decision for the PALA kings. The Mother Nature had the main source to utilize in creating the fort and the cities, fortification, aqua maintenance, permeability through the watery route and the channeling the moat over the natural mans of interpretation.

Respecting the ancient VARIND land formation, the city MAHASTHAN grew on the natural topography. As to protect from the river flood, resistance and also to allow river as the resource for welfare. The figure 155 elaborates the contextual course of action, which is an authentic solution for making mega structures with the repetitive and diminishing retaining walls; it could be called as the foundation to formulate an elevated structure on the flat plane. In the illustration the ancient Buddhist structure called GOKUL MEDH (stepped or terraced based stupa)

While adopting those critical formula to erect innovative structures in the challenging piece of land, terracotta cladding and ornamentation founded by the Buddhist builders, eventually this plaque of terracotta was cladded over the burnt brick to protect outer wall as the insulator and kept it free form saline factors, on the other hand this plaque of terracotta used to act as the thermal insulator. And this is obvious while it was executed on the outer façade of the structure enrich the value of the monument in the bright daylight.



Climate

Monsoon Rain

Humidity

Hot Humid

Saline Factor



Natural rampart or
Raised ground (artificially)

Average Original Earth Form
(Effective Ground Level)

Inundation of water or watery clogging»»»

«««Flood Plain

Marsh landform

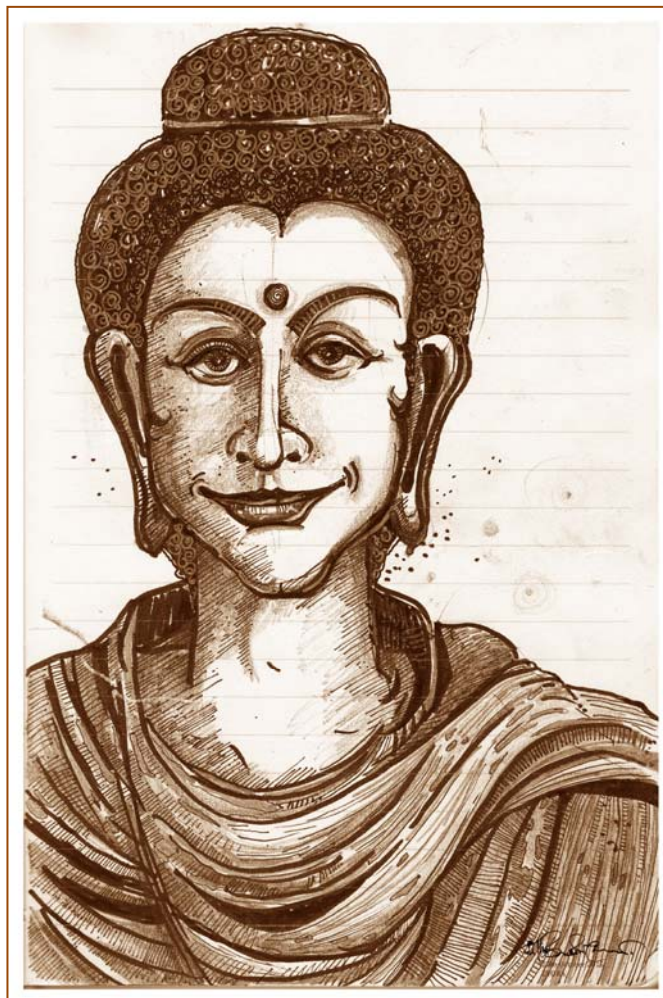
The region, where the most significant architecture developed with the achievement of a unique style, disappeared by the course of time. Many structures were designed by the Buddhist Empire-considering the climate and the contextual harmony. Nothing remains, due to the climate, Moisture, watery flood and heavy monsoon rainfall washed away those splendid marvels.

Bricks is our main and major source of module construction materials. And every bricks was used to build the mega and important structures, bricks was transformed in to the ornamental one, sometime shaped round or perhaps sometime as the brilliant terracotta with holly lotus on the pedestal and on the dado level of the structures. Bricks built the ancient people's desire in to the reality. However this bricks has shortcoming as well. Less durable, threaten to the moisture, grasped by the saline factors, water and humidity are the enemy of bricks in this hinterland.

Sajid Bin Doza
22/10/2015

Figure 155: the plate shows the ruins in the delta land. The tropical climate and monsoon rainfall causes the short-lasting of the structures. While to prevent the structures the ancient method of construction used to appear like the process. Generated by Sajid Bin Doza

Indeed, constraints and overcome are the coherent interpretation in creating the Masterworks, Buddhist rulers did not only arrive to spread religion over the community and vicinity in the riverine Bengal, but also to establish splendid continuity of settlements, art and architecture over the long period of time in this marshland. Mother Nature was the resource of establishing settlement patterns besides the riverbank. The Buddhist kings in the lush green landscape grew into and noticed as the sustainable & humane seats ever in the hinterland of Bengal. Seems like following the ideology of the GAUTAMA BUDDHA, whose idealism* inspired the hinterland people to be modest and to remain mundane. ¹¹³



Most historians agree that Buddhism originated in northern **India in the 5th century B.C.E. The tradition traces its origin to Siddhartha Gautama (or Gotama), who is typically referred to as the Buddha (literally the "Awakened" or "Enlightened One")*

¹¹³ Chattopadhyay, Bhaskar. *Gauṛa-Baṅgera Itihāsa O Saṃskṛti*. Vol. 1. Kalakātā: Pragresibha Pābaliśārsa, 2003. 17. Print.

5.5. Reviewing the birth of settlement patterns (figure 156)

Settlement and civilization is like unsolidified nature of development, somewhere it creates with cheerful longing again on the contrary it becomes dumped with critical circumstances due to socio-political chaos. Human settlement on the earth basically continued respecting major conditions. Those conditions are symbol of balance, if any unique substance of them runs squat or unmatched the other collapses gradually.

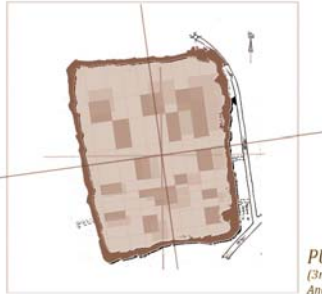
In this research- the settlement pattern and the city growth has been discussed elaborately in the chapter two and in the introduction as well, through the process of the discussion was identified through the human settlement authentically used to borne by the side of the watery way, by the stream of the river. The main motto of this research is passing through to analyze and to identify the ancient settlement pattern in the light of the primeval urban core of MAHASTHAN. The focus in this research was to line up spotlight on the particular historic city. Eventually the research was demanding to identify also the other riverine fortress urban cores to compare or to draw a connection among them with the MAHASTHAN.

Summing up the concluding episode it is necessary to glimpse up with the illustration of the historic sites altogether in the figure no 156. This illustration is one sort of the demonstration regarding the riverine birth of the settlement. Where the studied cases are placed in the one plate to compare and to understand watery connection and the scale of the city. Including the act of the rivers in fortification. Stating from the Wari-Bateshwar till the colonial settlement, everywhere arteries of the river stream or aqua sources were common, this illustration (figure 156) qualifying the signatures of each ancient riverine fortress city of the marsh land of ancient Bengal. Various political situations led by Bengal's sociocultural and economic power, is not consequently predictable path, the path for the development and to go further with success was difficult for the sovereignty. Anarchy and lawlessness were the sequences in the political ground. Such disintegration certainly had impact on the settlement pattern and disappeared form the golden history.

The Birth of the Riverine Settlement in ancient BENGAL



WARI-BATESWAR (450 BCE),
Fortress-trade city, Worshingdhi,
Bangladesh



PUNDRANAGAR /MAHASTHAN
(3rd BCE-13th Century A.D.),
Ancient capital of PUNDRĀ Bengal, Bogura, Bangladesh



Urban core of MAHASTHAN during 8th Century AD



KOTALIPARA fortress trade city
(c. 380 A.D.-467 A.D.),
Gopalganj, Bangladesh



BHITORGARH
(6th Century AD) Fortified City,
Panchagarh, Bangladesh

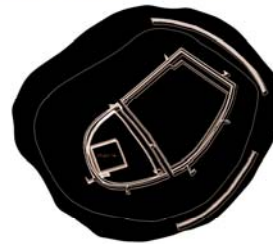


KHALIFATABAD
(15th Century A.D.), Bagerhat, Khulna, Bangladesh

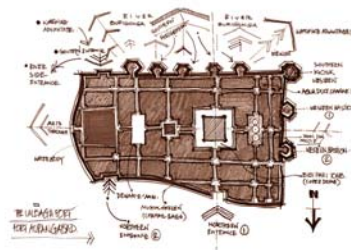


GAUR (11th-16th A.D.), West Bengal, India & Rajshahi, Bangladesh

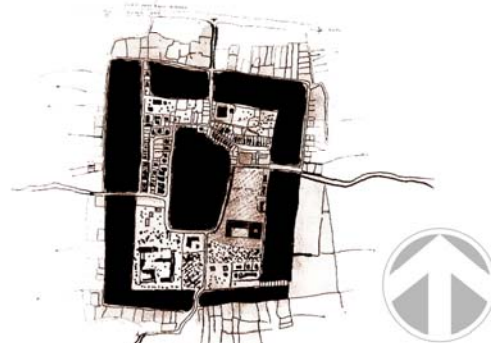
- 1- Rice field and cultivation land
- 2- Expanding city (15th Century)
- 3- Sub urban area
- 4- The medieval city of Gaur



DARION mud fortress (14th Century A.D.),
Rangpur, Rajshahi, Bangladesh



MUGHAL river fort and adjacent neighbor settlement, Bangladesh



HINDU Jamindar king and the fortified palace
(19th Century AD)
Pathia, Rajshahi, Bangladesh

Scale: 1 0 1
Kilometer

Figure 156: this plate identifies the riverine connections in versatile way of process. The watery route became the potential maritime trade way since the ancient epoch and followed till the colonial time. Cartographic images are generated by. SAJID BIN DOZA.

Scale: as shown

In the illustration MAHASTHAN also used to identify with vast area of the territory, and being the Buddhist dominant city it was balanced with economic life of urban core¹¹⁴. The city was expand outside the walls with the radius about five k.m. on the other side in the illustrative figure shows KOTALIPARA geometric square fortified city was remarked with associated suburb, we may call the footprint of the city. And this settlement pattern was on the southern part to protect the watery way for the invaders. Respectively the other ancient cities like BHITORGORH, KHALIFATABAD, GAUR, and the MUGHALS followed the same strategies to secure and to settle the inhabitation along the areas.

Nature was another power that caused quitting the settlement from one place to another. Frequent calamities cost a lot and sometime the civilization had fallen down. Moreover the riverine Bengal had to deal with various measures to establish settlement.¹¹⁵ The rulers needed to find lots of strategic decisions to enroll the settlement by the side of the affluent Rivers. Very often the kings used to build their seat on the mouth of the river, at the junction of several rivers meet and comparatively on the elevated landform (Figure 157). These were the discussions regarding the critical positioning to resolve the pattern of the settlement by the aqua route.

Now let us come to the discussion about the city, settlement and their birth on this hinterland; The Bengal ancient land was vitally important for the riverine route as well as for the inland navigation, at the same time various opportunities laid down on the flatland with agricultural potential and maritime commerce. Although this land primarily act as the resistance triggered by the nature and climate. Since the time immemorial, this marshland's people are well of with the agriculture and fishing¹¹⁶. After the arrival of the MAURYAN kingdom (322-185 BCE) the land came under the territorial boundaries and act as the formal administrative settlement.

¹¹⁴ Jacqueminet, Christine, Jean-François Salles, Rémi Dalongeville, Bernard Dupuis, and Kévin Pédoja. "Archéologie ET Télédétection: Cartographie Des Paysages Du Site De Mahasthan (Bangladesh) D'après Des Données SPOT." *Cybergeo Cybergeo* (1996): 70. Print.

¹¹⁵ Jacqueminet, Christine, Jean-François Salles, Rémi Dalongeville, Bernard Dupuis, and Kévin Pédoja. "Archéologie ET Télédétection: Cartographie Des Paysages Du Site De Mahasthan (Bangladesh) D'après Des Données SPOT." *Cybergeo Cybergeo* (1996): 36. Print.

¹¹⁶ Chattopadhyay, Bhaskar. *Gauṛa-Baṅgera Itihāsa O Saṃskṛti*. Vol. 1. Kalakātā: Pragresibha Pābaliśārsa, 2003.12-15. Print.

Having said that, the Bengal land was preoccupied by the native people¹¹⁷, scattered into small hamlets with rich origin of vernacular settlement pattern by the riverside. It must mention that-to grow a city or settlement pattern resources are essential. And during conquest by the MAURYAN king, this land came up with numerous potentials. In this subcontinent, settlement generated with resources and religious continuity¹¹⁸.

“The wealth turns out to be the power and further the power as ruling territories” - With this formula the process of growing urban core accelerated in the Bengal’s bountiful land. The birth of the settlement in the delta land is a contentious and sequential story. The rulers of the Bengal firstly satisfied the granary storage for the country-people. Fortunately-the season’s surplus granary used to place for the trading by the riverside¹¹⁹. And the trading becomes the larger aspect for the rulers and stated overseas merchandizing with wealth. This connections and networks grew as the larger hub for the mainland and inland port concept networking, the merchants arrives to the mainland and wealthy transaction continues over the year. By the course of the time the density of population increased, rest on the commercial upholds. People from different region visit and start settling in the desired land. While the wealthy rulers continued overseas commerce, desired to conquer the new territory beside the riverine routes. More wealth and more power became as the advent of conquer.

So, more wealth in the region needs more security and resistance. The resistance in terms of to get rid of from the invaders. So, gradually the city and the settlement started getting mellowed with the mechanism of the infrastructures. The settlement is now bracketed with huge fortification. To make the inhabitants safer living, the hub and the other commercial area developed within the walls. The light of the religious phenomenon arrived to show the peaceful mind and society. People became calm and passionate, continue believing in the God and religion. The terms of the social

¹¹⁷ Chattopadhyay, Bhaskar. *Gaura-Baṅgera Itihāsa O Saṃskṛti*. Vol. 1. Kalakātā: Pragresibha Pābaliśārsa, 2003. 39. Print.

¹¹⁸ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 40. Print.

¹¹⁹ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 40. Print.

aspects changed with alternate phenomenon. Religious matter became the integral part of the lifestyle. Socio cultural scenario was added with public gathering and the house of God as well as the temple and stupas established for the community service¹²⁰.

The progression of the light of the religion formed the society with various bonding, it means a vital clue to generate the birth of the settlement as well. The inhabitants focused their lifestyle on worship, this consequences; a combine settlement patterns with monasteries evolved during the ruling of the PALA king. For the city like the MAHASTHAN, the main monasteries used to grow outskirts of the fortified city.¹²¹ Eventually, residential area remains with small Buddhist monasteries, to create the ambience of religious activities. And it became the unique amalgamation for the delta line settlement example. Nonetheless, riverine settlements in the hinterland brought for the people huge encouragement since the ancient period, trading generated huge financial investment, migration increased, socio-cultural interaction occurred among the inhabitants, territorial power advancement achieved, new challenge to build strengthen infrastructural substances in and outpost of the ancient city, fortification both from the aqua route and the surface were measured properly and lastly the emblem of a religious urban core became the landmark of the ancient cities. River is life for the vicinity of ancient Bengal, it justifies when the river KOROTOA changed its courses and gradually the primeval city of MAHASTAN fallen in to ruins. It happened with the most of the riverine oriented civilizations.¹²²

Furthermore this arrangement belongs to the scattered orientation, courtyard centric formulation with small water body to keep micro climate tendency, this arrangement further placed with little modification after the arrival of the religious motivation in the society. However, we may call this is the actual or the original pattern of the

¹²⁰ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 112. Print.

¹²¹ Das, Gopal Krishna, and Kumkum Jennera Kumu. *Oitihashik MAHASTHAN (ঐতিহাসিক মহাস্থান)*. Ed. Md. Mosharaf Hossain. 2001 ed. Dhaka (ঢাকা): Dhakeswari Library (ঢাকেশ্বরী), 34-35. Print.

¹²² Jacqueminet, Christine. "Environment and Present Environment of MAHASTHAN, Bangladesh." *French-Bangladesh Joint Venture Excavations at MAHASTHANGARH*. Dhaka: Department of Archaeology Bangladesh, 2001. 19-60. Print. 1st Interim Report 1993-1999

settlement of delta land of Bengal. (See the figure 156 and the precisely the chapter two- in the pattern of settlement). The Buddhist rulers came up with the concept of decentralization urban core, the symbolic distance with the contemplative life of the purity of a religious domain¹²³. The brightest example we may perhaps look back at the MAHASTHAN, the city flourished beyond the main urban core and excelled with monasteries. These monasteries were the 'fiscal life zone' for the suburban core. The localities were self-sustain with Buddhist domain. Around the monastic settlement, few dense pattern of vicinity developed to support each other. Devolution conception works better-while the main urban core is needed to depend on the other suburban nucleus. The main land is self-sustain with its infrastructures, but agriculture, food and other necessary desired requirements used to supplied form the other supportive localities, later perhaps known and still these sites are unexcavated. The divinity, land character, climate and the religious matter enrolled a huge impact to raise the settlement pattern in the north eastern and western part of Bengal. As discussed; river took the vital incitation settling mass together in most of the watery area. For the instance, MAHASTHA- the city is line with the river KOROTOA once was the major navigation route used to busy with heavy marine trafficking directly connected with China and in south the Bay of Bengal.¹²⁴

Settlements were prevailing opportunities in the delta line with the support of religious domain. This hinterland used to known to the strangers as the land of spirituality. The place for God and Goddess.¹²⁵ This annotation boosted up the mass migration form different part of the subcontinent. Because of the believe, The grand-widen rivers, alluvial soil, foliage, vegetation beyond the horizon and clear hemisphere with bright sunshine attracted and motivated the missionaries and the pilgrims. They became enthusiastic to establish and to conduct the religious motto among the simple people of the watery land. A new way of corresponding the traditional value and the adopted idea merged down and riverine settlement turned in

¹²³ SMITH, Monica L. The Archaeological Hinterland of MAHASTHAN Observation and Potential for the Future Research, *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 70. Print.

¹²⁴ CHATTERJEE, Vaskor. *GOUR-BONGER ITTIHASH O SANSKRITI (The History & Culture of GAUR BENGAL)*. 2nd ed. Kolkata, WB, India: GRONTHOMITRO, 2005. 58. Print

¹²⁵ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009.115-118. Print.

to another unique pattern of settlement we perhaps call the Buddhist settlement pattern in delta.

5.6. 'Kingpost of placement'

Riverine fortress city (*Figure 157*)

Since the ancient days the basic three need are desire for the human being, of them the shelter and only next to the food is fundamental, truly it is valid in various aspect; the rise of the civilization, settlement and the same time the embellishment of the art and architecture are very intimately associated with the chronological enrichment of the human settlement. And it is vibrantly connected with the individual and the communal to find measures of protection form the invader and enemies. Eventually, could be manmade or natural.¹²⁶

Before start with the settlement pattern and their kingpost of positioning on the delta land, let us flashback to the prehistoric situation, human being used to live alone and secured self defence form any out risks. Since the dawn of the living on the planate human started living around the comfortable positioning. Subsequently with the more maturity in living hood human gripped a settled condition of life. Through the continuation of the impact sense of effective self-protection grew up. With the advancement of the lifestyle through many directions the stable path of life replaced the nomadic situation. Consequently the domestic life was taken place at the comprehensive position with the availability of the natural resources. With the succession of the shelter and other infrastructures, human being underway to protect the group or the vicinity by building in terms of resistive membrane in the periphery of the locality to keep safe form attacks, may call the fortification that had been instantly crucial. With the passage of time the fortification mechanism furnished with socio-political establishment and with the emblem of the power, the power that shows the mightiness and brutal face of the giant façade. New kingdom and emporium developed with population and wealth. Military mechanism and artistic way of war continued in the battle field.

¹²⁶ ERZEN, Iale. "Nature, Its Aesthetic Knowledge and Art." *NATURE AS SPACE: (re)Understanding Nature and Natural Environment*. Ed. Guven Arif Sargin. Ankara: METU Faculty of Architecture, 2000. 83-102. Print.

The ancient rules of Bengal executed 'arts of fortress city'- tendency with spontaneous datum. Locational privilege worth the primary aspect of establishing the walled city in Bengal. It used to be the challenge for the new comer to settle down with huge elaboration of settlement as being of topographical situation. Only the fortress feature would not be wright and appropriate terminology by considering walled urban core in the hinterland, where thousands of rivers are crossing and flashing the land since millions of epoch existence. The river and the channeling networks used to have the watery advantage; took as the opportunity by the Buddhist king, struggle turned into the intelligence of establishing the fortress town, might be called as the riverine fortress city. So topographical characteristics allowed naming the settlement with added feathers.

In the introduction of this research it has been discussed about the different strategies used to approach by the heroes to settle riverine fortress during those days. Since the beginning of the city and urban core rising up in the north east part of subcontinent as well as in Bengal, along the track of Ganges huge settlement pattern developed and it named as the GANGARIDHI. The urban hub with fortification by the side of the river grew with particular conditions. And they might call Ganges Valley civilization model¹²⁷. Establishing urban core with the association of the fortification was not usual in delta cost. The application of the fortification and the other fortress infrastructures used to build with the advantage of the natural forces. It is not approximating the huge manmade high walls executed for the protection or not any other mechanism to triumph the invaders. But it was the advantages of the natural resources that used to conceive by the ancient heroes in the hinterland of delta, to understand the facts, figure 157 explains the positioning of the fort mechanism with the intellectual site understand. In the figure 157- the riverine networks were consciously observed by the heroes of the ancient Bengal and emplaned the settlements along the river side. Placement of the locality used to accomplish by the hierarchical process. Several settlements used to cover-ups the main urban core. The diagram actually elaborates the kingpost of placement of the settlements with the contextual topographical order.

¹²⁷ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. Print.

Hierarchies and the characteristics of the river beds in Delta:

Suitable position to settle ancient outpost and encampment
 A conceptual diagram to understand the strategic locations of Ancient Fortress Cities

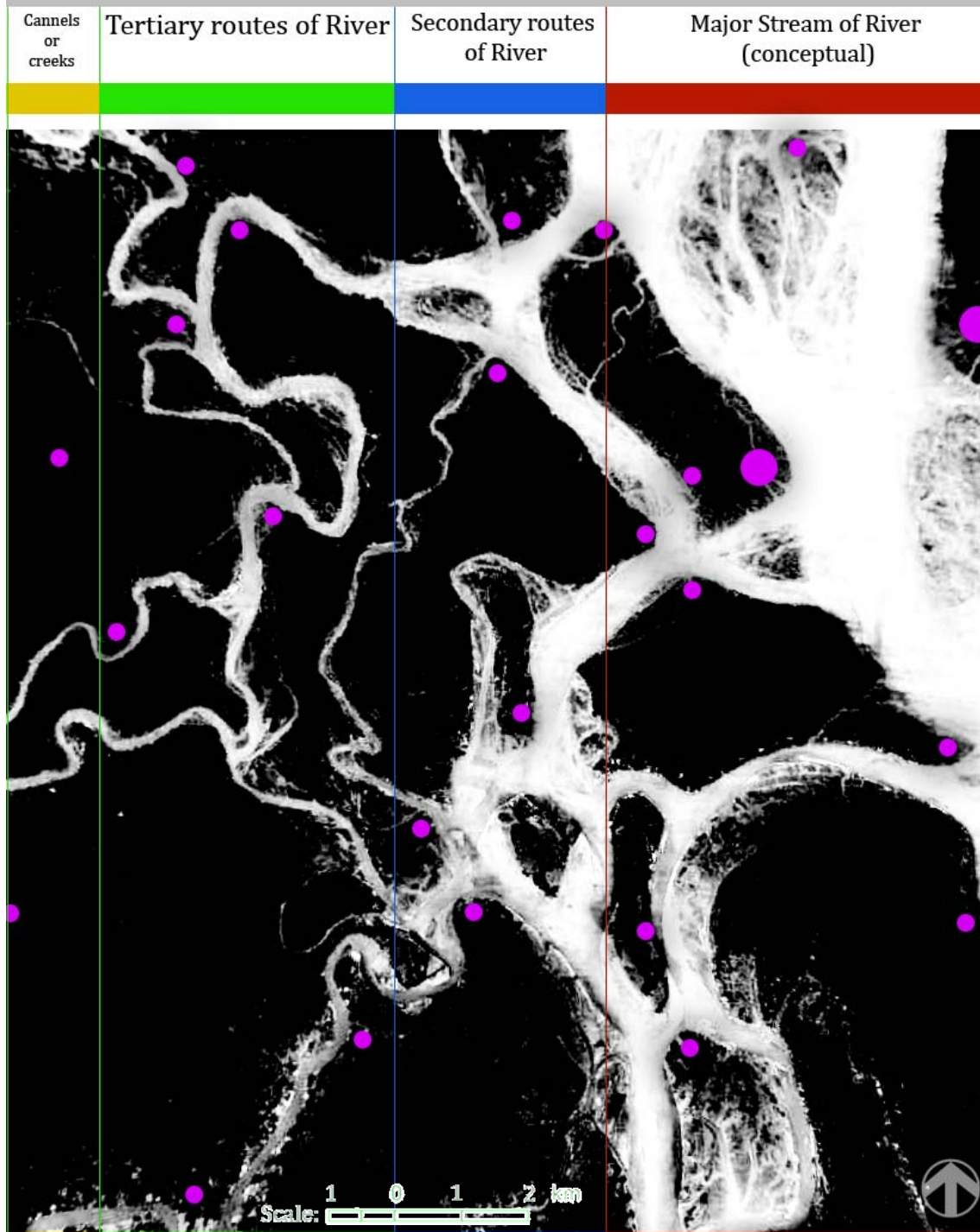


Figure 157: this plate is expressing the possible positioning of the location for outpost along with the main urban core of the watery civilization. The conceptual imaging represents the rivers and its different branches, which is shown as the figure ground pattern and dotted with possible trading and riverine cities. Cartographic image is generated by. SAJID BIN DOZA

The figure 157 also expresses the different scale and level of the navigation routes/networks. It was observed during the research that the river courses used to control and establishing several kingpost placement by the Heroes of the delta. In the figure 157; just on the right side marked with **red level** comprises the main stream of the rivers. This span of the terrains was occupied with major fortress combine, the encampment attitude. While viewing the other scale of the figure 157, **blue level** shows the territory of the second source of hierarchy. At where the comparatively small scales rivers and streams were dominant. These parts of the areas used to act as the settlements added with fortification. The third level as well as the **green level** placement as the tertiary settlement pattern with inland trading port. And finally the forth span **yellow level** complies the vast land are to establish the contextual pattern of settlements as well. The figure 157; is contemplating the king-posting the placement the riverine fortress in the watery fragile land. Riverine fortress development is not a set-process. It grew, it urbanized and it became the settlement pattern basis on the demand of the site location, in the often cases, the city in the delta region emerged taking the potential of the river and set to remain free from the water clogging and flash flood. However what truth lays beneath; is the frequent and popular navigation route was preferred to make the locality vibrant and functional (Figure 157 expresses the situation).

The thought of the fortification came after settling the urban context. With the continuation of the inland port concept the wealth and the power increased, foremost then the fortification indeed needed. As the city or the urban core settled by the riverside, the rulers were valid to choice elevated land without obstruction¹²⁸, at the same time natural rampart of the ancient land formation was desire during the execution of the fortified fencing and walls (Ref: figure 155). The land and the topographical condition were intelligently chosen; especially by the Buddhist builders and rulers to settle down with the urban heart in the junction of rivers and network based riverine fragmentation land. Because the heroes managed by designing the aqua fortification with the natural courses of the river streaming¹²⁹, often for the case

¹²⁸ Das, Gopal Krishna, and Kumkum Jennera Kummu. *Oitihashik MAHASTHAN (ঐতিহাসিক মহাস্থান)*. Ed. Md. Mosharaf Hossain. 2001 ed. Dhaka (ঢাকা): Dhakeswari Library (ঢাকেশ্বরী), 65. Print.

¹²⁹ DOZA, Sajid Bin. "Mughal Forts in Delta: An Essay on Fort Planning on the Rivers of Bengal." *JLAS Journal of Literature and Art Studies* 5.3 (2015): 222-30. Print.

of channeling land formation followed by the crisscross outline of the city. Only to find the security as the island and consequences is natural moats used to generate along the periphery of the urban core. As for example, the ancient city of MAHASTHAN, WARI-BATESWAR, the sultanate city GAUR and KHALIFATABAD¹³⁰ and many more. These all urban core utilized the advantage of the riverine course and network to fix the First stage of fortification in the respective characters. Elevation of land always desired and intended for the fortresses in riverine delta. Altitude secured long distance to observe without obstructions. As riverine track was the main permeability for invaders in Bengal, the rulers took active censoring with the natural rampart and controlling the river outpost. Riverine city could perhaps have several outposts towards the mainland. The nature of the outpost could be positioning on the critical junction, on the mouth of the rivers and sometime strategic point of the high land. As Bengal has the natural basin of the Bay of Bengal on the south, many settlement derived on the critical piece of fragile land also to control routing the nautical vessel. Coastal area was dotted with outposts used to establish during the late Gupta and early PALA time. Figure 157 also states the image on the extreme north Bengal has an intelligent example; the BHITORGARH fortress city was brilliantly positioning the southern pediment of old Himalayan foot. And the two rivers used to be the fortified natural advantages to control the circulation of riverine traffic arrives from the north Himalayan region.

So, through the concluding interpretation discussion, one subjective matter is came out on the broad daylight- Bengal rather adopted natural means of fortification and respected the characteristics of the landscape pattern intelligently, even to create the mega settlements around the edge line of the mighty rivers. Being very struggled and critical terrain situation, the ancient riverine cities in this watery landscape sign the magnificent footprint as the timeless pattern of statement.

¹³⁰ AHMED, NAZIMUDDIN. *THE BUILDINGS OF KHAN JAHAN: In and Around Bagerhat*. Dhaka: U Limited, 1989. Print.

5.7. Spotlight on 'Watery MAHASTHAN'

(Figure 158 is generated based on the writing)

MAHASTHAN- is the land for many civilizations has gone through by the course of time: untimely beginning of the dawn of the settlement was started as the urban center under the early MAURYAN rule. Significant emerging traders-inland port along with cultural transaction-hub promisingly generated in the Lower GANGES plains in the chalcolithic- iron phase of culture. The research addressed focus on the phenomenon regarding both by the definition of the ancient site beside the components of the structural features, and the historical information in the nature of inscription and literary references. This hinterland is especially relating the history through the evidence of the notable inscription and with the association of the 'settlement archaeology' to revalue the continuity of the land use and the material development through the early eras. The result of the excavation of MAHASTHAN tremendously justifies the prior continuity of the cultural legacy of the land and people. The richness of the land before the MAURYAN dynasty.¹³¹Used to exist with their inherent cohesive pattern of settlement. Unfortunately those sign of evidence has no remains today, just through the arrival of Alexander¹³²; partially the literature reflects the vastness of the settlement pattern. One thing should be noticed; the remains today we found through the excavation, more precisely the PALA settlement-express an unparalleled signature of an 'aqua architectural system' or we could call aqua programme.

Throughout the historical path in the riverine Bengal, the term 'costal fortification' used to engage strengthen the defence system in keeping the harmonious consistency with the geography and topography of the seasonal flooding made the defence system of Bengal impregnable. In the figure 158, it could be visible that the entire landform is occupied with 'arteries of rivers'. The hierarchy and brunches of

¹³¹ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR (মহাস্থান, ময়নামতি, পাহাড়পুর)*. 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. Print.

Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. Print.

CHATTERJEE, VASKOR. *GOUR-BONGER ITTIHASH O SANSKRITI (The History & Culture of GAUR BENGAL)*. Vol. 2. Kolkata, WB, India: GRONTHOMITRO, 2005. Print.

¹³² Elaborately described in the Appendix, page no .343-345.

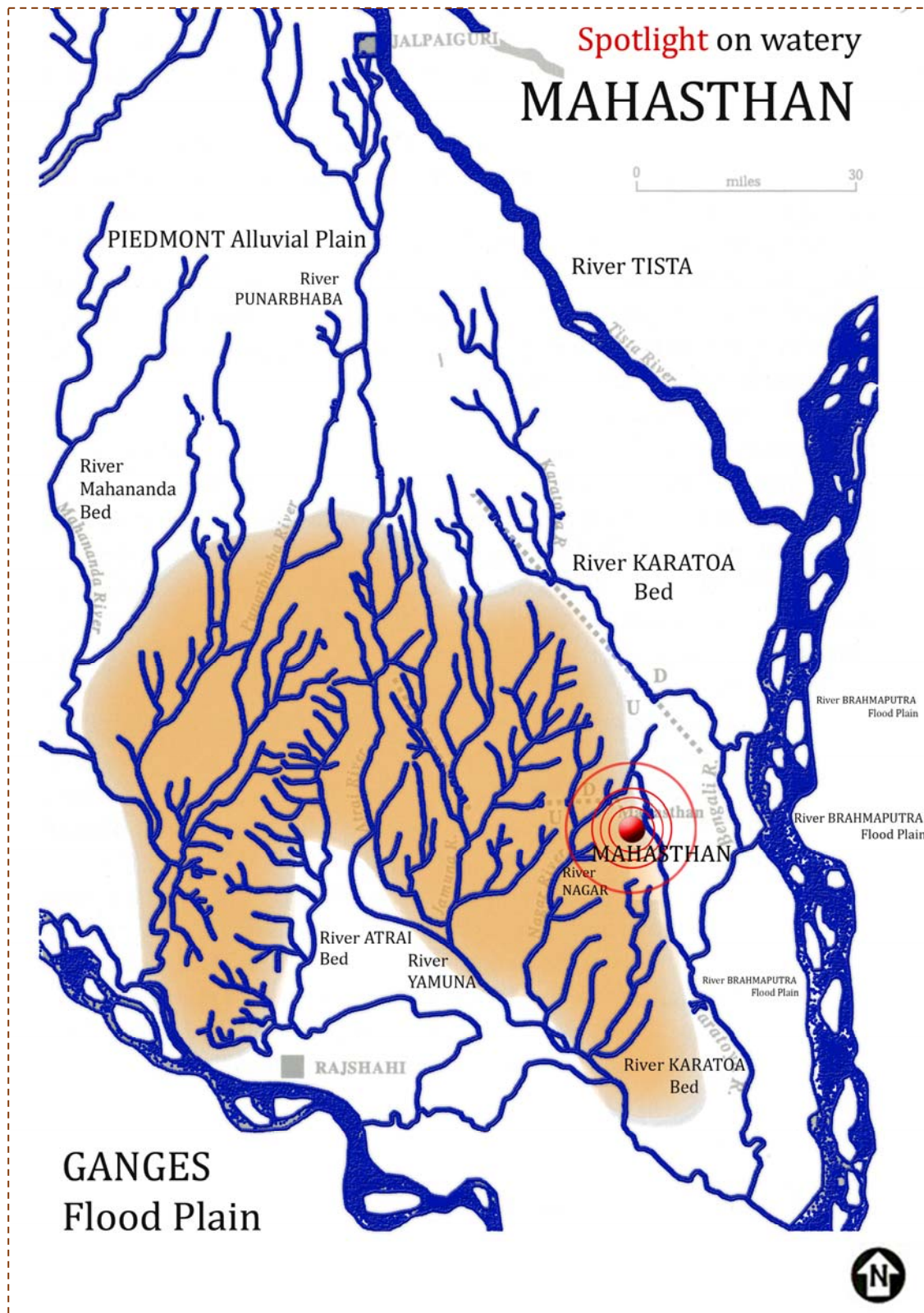


Figure 158: this plate explains the watery area and the positioning of the BENGAL'S most ancient city. The crisscross river and channel networks are the dominant pattern in this plate, watery civilization used to have the opportunities by the maritime tracking. Water is as barrier, water is like the strength, and water causes ruin. For the riverine settlement pattern in the Bengal land it is authentic, and obvious also the settlement pattern coexists with the harmonious tunes. The great civilization of MAHASTHAN had been passed through those observable facts and lost in the deep lap of time.
Cartographic image is generated by. SAJID BIN DOZA

different rivers are flowing on the ancient settlement of the MAHASTHAN. This image has been generated to show the 8th century land formation, and eventually the whole landscape was very different and fragmented by the pieces of small areas. One positive issue was the VARIND highland¹³³ was passing by the entire dense network of the watery domain. Precisely the settlement developed followed by the ancient rampart and the ancient city took the natural recourse as the potential and opportunity to use as the protection and blessings.

The figure 158 also explains the bonding with the river and the functionalities or aqua advantages used to engage by the innate dam, embankment and the fortification were naturally developed by executing rainy season's overflowing water flash out from the low-lying land and rivers, indeed the mainland then act as the island perhaps detached from the other pieces of land. In consideration of the fact it is not so difficult to guesstimate that in the field of the defence system riverine network played the primary role and the question of construction fort come later¹³⁴. Circulation and commuting through navigation enrich various settlements form time memorial.

In another way this image 158- demands largely responsible for shaping up aqua flow in the military art and the fortification function of Bengal. Still those rivers and their banks are witnessing to their origin, blooming and the death of the civilizations. To search for the civilization, to look back to the primitive lifestyle of the ancient localities and to realize the vastness of the urban core; the researchers would depends on the particular rivers, where the civilizations grew with full pace and died with silence. But the course still left the footprint of those marvelous ancient patterns of belonging. Water became the certain elementary distribution and on the other hand destructive force, sometime which is offended by the semi-aqua people of Bengal. This relationship with the aqua and the defensive formula is a unique method of resistance the urban core on the delta land. BENGAL is blessed with Monsoon climate; it is fortunate and brings prosperity for the people and land. Alternately, it comes up with devastating circumstances. Bengal's Monsoon, its cyclic rotation of seasons in association with the impulses of the Mother Nature that also

¹³³ Appendix, short notes

¹³⁴ Begum, Ayesha. *Forts and Fortifications in Medieval Bengal*. Dhaka (ঢাকা): U Grant Commission of Bangladesh, May, 2013. 302. Print.

contribute to the riverine fortress. Bengal's Monsoon climate was frightening and threat for many foreign heroes and kings. However among them, especially the Buddhist kings took as the challenges and mitigate the climatic solution more of naturally rather the initiation of manmade infrastructures. Water is as barrier, water is like the strength, and water causes ruin. For the riverine settlement pattern in the Bengal land it is authentic, and obvious also the settlement pattern coexists with the harmonious tunes. The great civilization of MAHASTHAN had been passed through those observable facts and lost in the deep lap of time.

So the spotlight on the riverine territory of MAHASTHAN had reached the zenith of hydrological layout network (Figure158), the layout- that is sensitive to the contextual circumstance, climate responsive and a statement of timeless prescription for the eco-city or we call today the green city movement. MAHASTHAN is the city where the passive climate and Mother Nature was the intense support to keep safer and to generate healthy livelihoods.



Colossal bronze Buddha (11th Century), Paharpur
Sketch: Sajid Bin DOZA

5.8. Silence in the historic urban core: Now a day...

All belongings clogged down, no people, no activities, no sign of setting up, not at all possibilities to listen to the religious tune around the vicinity. Except only the vastness of open and covered mounded land. The fortified thick brick wall is no more for fortification and to resist the heavy current of mighty river KARATOA, now acts as the pedestrian for the local people...!, the farmers are cultivating the lands. Digging the pit layer of the soil, for them it is difficult to find the subsoil for cultivation, they say-`the land is full of rubbish...! They say that the entire land is covered with bricks...! Nothing but millions of bricks. So, unfortunate for us! They (farmers) don't even know those bricks belongs the breath and souls of many primeval attachments and the story of a civilization. In fact the ruin of MAHASTHAN today is although an open field for playing and cultivation, since the entire land is laid with bricks. Who knows how many strongholds and settlements went under through the corridor of time...!

Standing on the empty land under the clear shiny hemisphere; it feels like so remorseful, as a researcher of the particular site. Sometime History is like an imaginary story, remains in between exists and nonexistence...! However, Still people cherish the historical phenomenon, the history is like the part of the life of the human being, obviously it contains sorrow or pleasant.

The glimpses of river KOROTOA really hearts, as it is known the river KOROTOA was the mightiest one beside the PUNDRANAGAR, and the city was vibrant and generated full bloom with the support of this riverine track, which was full of current and unprecedented tidal forces, she is almost dead now...! Usually MAHASTHAN (Pundranagar) was born during the 3rd Century BC. And since the ancient stream of KOROTOA was passing by, and from the literature review it was known as full of current and widen apart. JAHJGHATA is the area where most of the ships and the boats were taking place for load and to unload the goods and other materials. This watery city was fully a commercial and the fortification was carried out to resist from the enemy as well as the huge current of the course of current. The outpost was associated with numerous infrastructures, like the tracking retaining, channeling and landing terrace. Only the remains of the few bricks retaining are existed today.

Walking around the area I found some identical and important zoning profile. Such as on the northern eastern part was involved with commercial structures, large temples, public gathering space, at the same time if we try to analyses that; as the city was by the riverside and having the potential and we have the reference to say or to establish as the trade city, we may have lots of reference. Another observation took the attention of me of having sunken quality if the central area of the city. I started again waking over the walls, the massive walls, sometime 8ft. to 12 ft. or sometime 16ft. the wall today is as the pedestrian, a path for the neighborhood. I see the wall... as the civilization, monarchy, the political smartness; sometime it is duality and epic dramatization.

I was walking by the wall, the ruin of massive brick wall, tried to find the scale how high was it..??? Eventually it was scientific and well protected. Double course system of curtaining defense was seen and I was really amazed watching these acts of military art of creating fortress vertical massive structure. Actually we were walking on the high and elevated land form, where the fortified walls plays basic or major statements like form. Such as embanking and to control river course. Same time we also found the evidence of moat and the main course of the river. Still exists closely following the massive walls offsets. Walking over the ruins wall we reached at the point of the eastern gate way, dilapidated and became as one thing is always knocking in my mind; the present cultural landscape and the land use pattern, at the same time I have to relate another situation of fabric of the city about thousands of years back, what really it was....??? We reached at the point of the French excavation area of dwelling units (residential area), the central temple base of the neighborhood along with some street networks and evidence of roof tiles.....this excavation has the great importance in this site. Because most of the clues and the references we found from this excavation. Again I have to mention one structure that was PORSURAM VITA/BARI. Twin courtyards, with boundary walls and buildings with coordinate orientation. This structure was a temple of Buddhist period and later used and adopted by g the several dynasties.

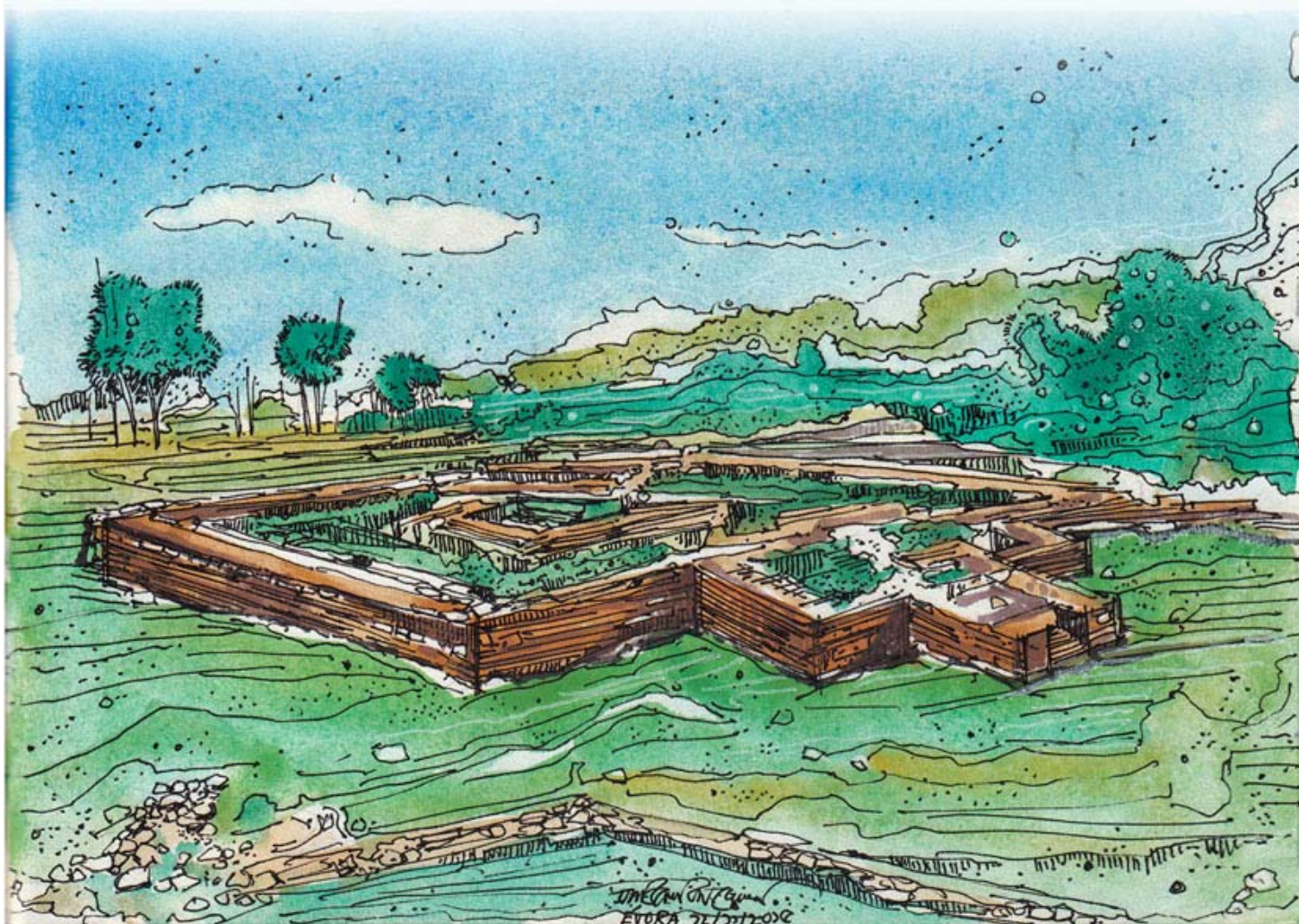
'The well of life'- the local myth believes once the water of this well used to give rebirth of the dead person. I was amazed with the beautiful well construction and the system of the maintenance of the water supply through big chunk of the stones.

We are walking inside the wall and approaching towards the southern western rampart. Walking through the present landscape we have experienced with various activities, people involved in agricultural works, farmers are cultivating lands, commercial use of the area, and sometime encroachment of land, illegal structures.

MAHASTHAN, city of the PUNDRA was the ``land of spiritual and deities``. Believe and faith is the foundation of having all religious congregations in this mainland, this tune is continuing since thousands of years. So you cannot regret the spiritual-emotional part of the people of this delta land. This faith makes people to live, to rebuild, to love nature and to recreate wonders for ancestors. And what I feel and see today in the ruin site of MAHASTHAN is all about faith and believes of bonding of bricks, millions of bricks, that still stands on the hinterland of the MAHASTHAN, stating the glory of the rich Bengal's heritage and cultural identity. We identify the permeability to the city with fortified attitude; this particular area is amalgamated with several dynasties. Among them some are found in layers in these mounds.

We reached at the end part of the ancient fortress city of MAHASTHAN, and observed the area is crowded with people and mass activities, heavy vehicle are parking over there, nobody knows nothing about the area; beneath how precious and brilliant lifestyle have been smashed by our unprecedented ignorance. Really we are so reluctant to preserving the past, our predecessors signatures...!!!

'The Conclusion'



‘The Conclusion’

The research is the process that comes to the conclusion after multiple-permutation and combination. The struggle of the research is to seek and to identify the goal; the goal might be acceptable to the popular forum. And the consequences; perhaps contains a simple straight solution, by going through the long passage of justifying the problems and examination based on the archaeological exercise, literature reviews and ancient site study. Like this way, the study was passing during this kind of breakthrough. For the research sake; it was essential to pinpoint the settlement pattern along with all the case studies relating a harmonious documentation, which might be valuable resources for the scholars and researchers, obviously for the nation also. The research conclusion would be like the elastic phenomenon that would create the scopes to carry on further for multiple dimensional areas of studies. Having said that, this research on the ancient city and the settlement in the delta would contribute huge information to outreach the knowledge according to the study outputs. There are respectively seven civilizations laid down beneath the earth. This is one kind of historical chaos in the field of the architectural and archaeological discipline. A civilization started on 3rd Century BC and continued till 13th Century AD. Among them the Buddhist period was ruling almost four hundred years.¹³⁵

The facts and the figure about the settlement pattern of the ancient city of MAHASTHAN are not so striving. A humble religious and trading hub generated since the 3rd BCE. We might know the political chronology about the city repetitive civilizations used to conquest over the land. Ups and downs are the common process in the political arena of the kingdom, after the massive breakdown dynasty¹³⁶ subsequent to the GUPTA period (5th and 6th AD) the throne was grabbed by the Gopal the head of the PALA kingdom. Apparently, the economic situation of the city was collapsed; the clumsiness was spread over the city. The PALA kings redeveloped the city like the humble and mundane profile. The entire city was reoriented with the gentle and the local interpreted method.

¹³⁵ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 112. Print.

¹³⁶ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 22. Print.

The Buddhist missionaries reformed the devastating Bengal after the political ruins (after 7th century). The detrimental socio-political structures and the entire Bengal kingdom further reformed by the support and backup of this Buddhist kings. Planning, organization and the official Excellency were the motivating virtue of the Buddhist team. That was clearly obtainable during those days while disasters faced the Bengal's land. People were set apart with the faith and trusted by their spirit of reformation the state and the nation¹³⁷. So, such leadership while took the throne of MAHASTHAN, the riverine city started to glow by its own illumination and the city did not look back, flourish and became strengthen further. The success and the glory also go to the administrator of the political territory, the Buddhist kings used to hold their strategies by controlling the state with the versatile approaches and outlook. South Asian largest Buddhist monastery of Paharpur, Rajshahi- mirrors the administrative governance and the acts of the state. The socio-cultural structures shaped with the new leadership.

In MAHASTHAN, repetitive excavations carried out since 1924 and still randomly continuing, the remarkable excavation that is significant and lining with this research was done in during 90s the French-Bengal archaeological team (1993-99), the eastern rampart and some other area of present MAHASTHAN was excavated; that complies sort of vicinity footprints and neighborhood pattern came out into the broad day light.¹³⁸ Temples with surrounding dwellings and semi open shades discovered. Pedestrian passed through the dense locality and the later examined the dwelling was single intimate storied. That was an intense clues to start journey of rethinking and to bring up with the study with referential hypothetical image of the city. There are few types pattern found, and those are discussed on the chapter three and in the concluding interpretation of the research. To justify the authentic settlement pattern of MAHASTHAN, it was intended documentation in the Chapter two. The origin of

¹³⁷ Das, Gopal Krishna, and Kumkum Jennera Kumu. *Oitihashik MAHASTHAN (ঐতিহাসিক মহাস্থান)*. Ed. Md. Mosharaf Hossain. 2001 ed. Dhaka (ঢাকা): Dhakeswari Library (ঢাকেশ্বরী), 69-70. Print.

¹³⁸ Bangladesh, France. Department of Archaeology, Bangladesh and National Museum, Bangladesh. Ministry of Cultural Affairs, Bangladesh. *MAHASTHAN*. By 1999, Department of Archaeology, Bangladesh and Institut F.-Courby, Maison De L' Orient Mediterranee, France. 1993-1999 ed. Vol. Published on the Occasion of the Exhibition on the MAHASTHAN Excavations Carried out by the Bangladesh-French Joint Excavation Team. Dhaka (ঢাকা): Department of Archaeology, Government of the People's Republic of Bangladesh, 1999. Print.

the settlement pattern of the riverine region, its growth and decline as well. There the research contains and have accumulated case studies of the ancient and medieval riverine fortress cities of the contemporary age-line. Most of them are near and parallel to the Buddhist period timeline. Furthermore the topographical and cartographical representation of the case study has been generated in a new state of version. So that; for the future research work it could be an important documents to go onward by the resources and references. Most of the case study settlement patterns were appeared frequently same strategic layouts of settlements profiles. As the end, the research was intended to crosschecked and found the pattern of the settlements of delta had archetypical one.

The pattern still exists in the rural Bengal, it was mentioned before. Likely the vernacular organization, but perhaps in huge density. In the settlement pattern population is one of the vital issue enduring the situation of the density outline. What was the population sensuous in the ancient city of MAHASTHAN? The answer was facing meticulous struggle. No references was found in the literature, to figure out the population, however, HUEN TSANG (7th Century AD) while visiting MAHASTHAN- he state one comment and it was the entire urban core used to occupy with almost twenty monasteries and three thousand monks¹³⁹. And especially in the VASU Vihar contained 700 monks form the eastern part the India. It was a reference. On the other hand the excavation in 1993-1999, remains of the vicinities were found in small dwellings in different pattern of housing. Those dwelling used to house 5 people. Accordingly in MAHASTHAN each neighborhood had a standardize inhabitants, around 60 to 100 person per unite vicinity, possibly if the vicinity would larger in scale and near about more than the certain figures with the religious surrounding.

The research emphasis on the strong two terminologies; one is the `settlement` and another is the `pattern`. Settlement is a complex system. However it shows spontaneity, behind this a huge order of system has drawn inn. A settlement is a development; it needs infrastructures, the infrastructures are needed to support investment and strategic situation is important run a settlement. Involvement of many

¹³⁹ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. Print.

people and good leadership is also the virtue to run and to make survive a settlement. Settlement- the term literary is vast, wide and historical reference of traditional and cultural profile of a region or group that is continuing the cultural legacy and practice since long time. Broadly saying the settlement is all about the vicinity that are lived by with certain occupation, a particular area or region that is seat with specialties, major geographical position and lastly the junction of the mass communication, popularly known as the inland port of Bengal, meanwhile the inland port concept is a riverine trading networks which was authentic for the topographical potential for the delta land.

While, Pattern is a texture, density, form of the vicinity and lastly the layout of living. On the other hand the pattern is grammar, order, orientation of the urban core and the hierarchies of spatial relationship in the city. The term `pattern´ is related with the characters formation of the city and settlement. The pattern of the territory is more about the nature of the solid and void relationship. Pattern could be defined as the legends of the vicinity and the age of the locality. This pattern of the settlement could be natural/organic or perhaps geometric. Especially for the case of MAHASTHAN the pattern of the settlement was spontaneous or the organic one (natural). To project over other case studies done in the chapter two; there it may be found- the ancient and pre-Muslim periods settlements were mostly based on the natural or organic one. Correlation of traditional ingredient along with the rational-bonding of the urban texture is the statement of settlement pattern.

Precisely, the ancient city and its structures are fluid or elastic (that justify the figure 159), all over the world the art of the city remain a common ideology. Simply- for the ancient city of Indian subcontinent grew with religious motivation¹⁴⁰ and cluster of dwelling with individual courtyard. River shaped the ancient cities of Bengal with the natural pattern of profile. No urban plaza or the huge gathering space was scene. Spirituality and the religious consideration chiseled the urban core to mould up a unique pattern or may call sense of organic orders. And obviously; a supportive facilitating township used to develop around it. The pattern of the secondary city had followed the mainland as usual.

¹⁴⁰ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 116. Print.

In the figure 159, settlement pattern were decentralized with the certain radius of miles in MAHASTHAN. This image and illustration shows the ancient land use of MAHASTHAN that took the opportunity to grow the city on the high land of Varind. It is also focused in the cartographic illustration (Figure 159), the religious center point used to dominant the settlement. And the pattern or the orders of the settlement perhaps were variable. The ending notes for the settlement and pattern; both these terminologies are well equipped with functional and rational manners. So city and settlement is like a fluid element and concern to keep balance among them, which was the fact that would remain in past, today and future.



Figure 159: this plate elaborates the Buddhist urban morphology and the distribution of the economic life of the urban core as well as the symbolic distance
Cartographic image is generated by. SAJID BIN DOZA

Historically, we can even trace back how certain cultures and conditioned led by the definite religious attitude, which creates impact on the city and settlement fabric. Bengal riverine fortress city developed or evolved ways rooted in that religious and spiritual outlook of knowing in the art or the local technologies. Let's go through another example, the Buddhist rulers' belief in incarnation¹⁴¹, in the other words, the spirit has to have matter to be realized, that provide the empirical essences and enough common spaces as the republican inhabitancy.

Indeed, settlement of the riverine fortress city, and the patterns, derived with the human perception and the natural forces; no matter how comprising and profound or intense, is equipped to perceive all the aspects or the qualities of the nature, while remains valid.

Organization of the settlement pattern in Bengal observed since thousands of years and it was discussed several time about this matter. The riverine settlement used to connect with the watery approaches. This set pattern still we see in the rural area, the river and the wetland. MAHASTHAN the ancient riverine city was the model of the cluster of house in the natural and rampart settings, the city grew with the local and Buddhist ruler's friendly process of perceptions.

Small houses, density masses, exposed brick masonry and local handmade roof tiles residential area keeps everyone reminds about the modesty of the locality of the ancient city. Simplicity is authentic; and became the bold 'signature' in the territory of MAHASTHAN¹⁴². Deep tree canopies used to provide pleasing natural shades on the single storied dwellings. Just on the other part the religious structures had been illuminating the Buddhist idioms and ideology. Moderate structures with ornamental *Chaita* entry distinguished the concept of the function. Introvert and inner meaning of the 'religious slogan' used to bring the monasteries within the mixed used area of MAHASTHAN. The city was sacred with those residential institutions and pilgrims

¹⁴¹ Shahnewaz, A.K.M. *BANGLADESHER SHANSKRETIK OITHIRJHO (The Cultural Heritage of Bangladesh)*. 1st ed. Dhaka: Novel House, 2009. 87. Print.

¹⁴² Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 120-128. Print.

used to have the coexistence along with the other inhabitants happily. Temples in the vicinity became like the ornate of the skyline of MAHASTHAN, the city had an image while strangers used to arrive in the hinterland surprised seeing the beauty of the monumental and spiritual towers beyond the massive brick walls. Some reference help to recall and to make us imagine about the shining city of MAHASTHAN, by the ancient author *Pandit* PORSURAM author of KARATOA MAHATMA (12th- 13th Century AD) and SHONDHAKAR NANDI author of RAMCHARIT (11th AD) described the vivid glorious scenario of Pundranagar (MAHASTHAN).¹⁴³ The morning used to surprise with the religious songs, acoustical instruments used to play by the pilgrims with the tune dedicated to God and Goddess.

The above description at least in the open, the settlement pattern of the riverine delta of MAHASTHAN was accepting and comprehensive model of the perception that could be characterized by the aesthetic value. Nature is all, moreover being interacted by the nature the settlement pattern of MAHASTHAN became or remained the immemorial cultural center point and the combination of manmade and natural elements. Or perhaps the nature becomes a new acquisition for cultural community. In this regards, since the thousands of years mankind struggled and established their sign of living on the different part of the critical land form. Among them Bengal was unusual and humanity had created in order to possess and to live with the powerful natural system and stepped aside with the mighty rivers in elaborating the magnificent civilization named the Ganges-Brahmaputra river valley civilization¹⁴⁴. Despite the fact that, more and more intensely tangled into the typeset of the Indo-Gangetic culture, or perhaps developed at the same time as the strong Bengali culture. Like the shining brilliant historical notification. MAHASTHAN, still enlightening with its innermost values.

¹⁴³ Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. 2-3. Print.

¹⁴⁴ Alam, Md Shafiqul., and Jean-François Salles. *France-Bangladesh Joint Venture Excavations at Mahasthangarh: First Interim Report, 1993-1999*. Dhaka: Dept. of Archaeology, Ministry of Cultural Affairs, Govt. of the People's Republic of Bangladesh, 2001. 102, 114, 124. Print.

Interpretation of the figure 160

Settlement in the hinterland was typologically in the three groups, the first one was the house hold pattern in macro scale, secondly the religious pattern that used to govern by the stupas and the temples along with the residential amalgamation, and lastly the commercial and trading hubs near by the river or within the city. This figure 169; is the figure-ground pattern; is interpreting the mass or built form (black ink) and the pink arrows are the circulation along with the settlement pattern and the surrounding.

The plate 01 is representing the residential household, followed by the functional arrangement, it could be termed as the random pattern. The courtyard is the prime element in the residential unite, in the MAHASTHAN it was evident. The dwelling units are almost adjacent together and containing a water body at the south. It was meant to have the microclimate situation in the premises.

So, as the remarks it could be said that the residential pattern of this ancient city was scattered or dispersed, however the courtyard was the common area for passing the daily lifestyle.

The plate 02 explains the religious macro settlement pattern which is seat on the center and having a central axis followed by the religious ambulatory circulation. And the mixed use masses (black ink) used to arrange respect to the stupa or the monument.

So as the remarks being the stupa as the ritual object it was settled as the pattern of the central dominating phenomenon, or may call the radial pattern.

The plate 03 is contemplating the temple within the residential area or perhaps within the mixed-use zoning. Here the temple act as the landmark of the neighborhood and the circulation is passing by the temple. So, the arrangement of the temple is usually situated by the side of the pathway or by the different hierarchy of the streets. Ambulatory circulation was also prominent part for the religious ritual.

So, as the remarks it could be praised that temple form used to settle by the neighbor for everyday religious congregation.

For the case of the monastic settlement the figure-ground pattern is precious one. In the plate 04 complies the monastery is placed in the axial ordination and usually it is used to in square shape with internal courtyard. The other vicinity used to live by the area. As it has been the economic life of the urban core it was sometime erected outside of the city walls. The monastery used to contribute to the main urban core as the sub city format. The vicinity used to share the regime with the monastery align with the entire settlement pattern.

So, as the remarks monasteries used to have the detached neighborhood outside the wall. However inside the wall the arrangement would as it is.

The plate 05 and 06 explains the linear settlement pattern with the straight-line circulation along or without the river. For the sake of the functional arrangement the commercial hubs used to pattern with the linear arrangement. Of course river used to have the direct connection with the bazaar and in the plate 06 it could be clarified that clear spine of circulation used to go through the bazaar.

Indeed the settlement and the pattern always fix together. Settlement is distinguished by the arrangement, or it could be termed as the pattern of the settlement. In Bengal the traditional ancient city settlement patterns used to appear by the drawn process.

This illustration states and expresses the average and the prevalent settlement segment patterns of the ancient cities of Bengal. It could perhaps been appropriate for the lost city of the MAHASTHAN also.

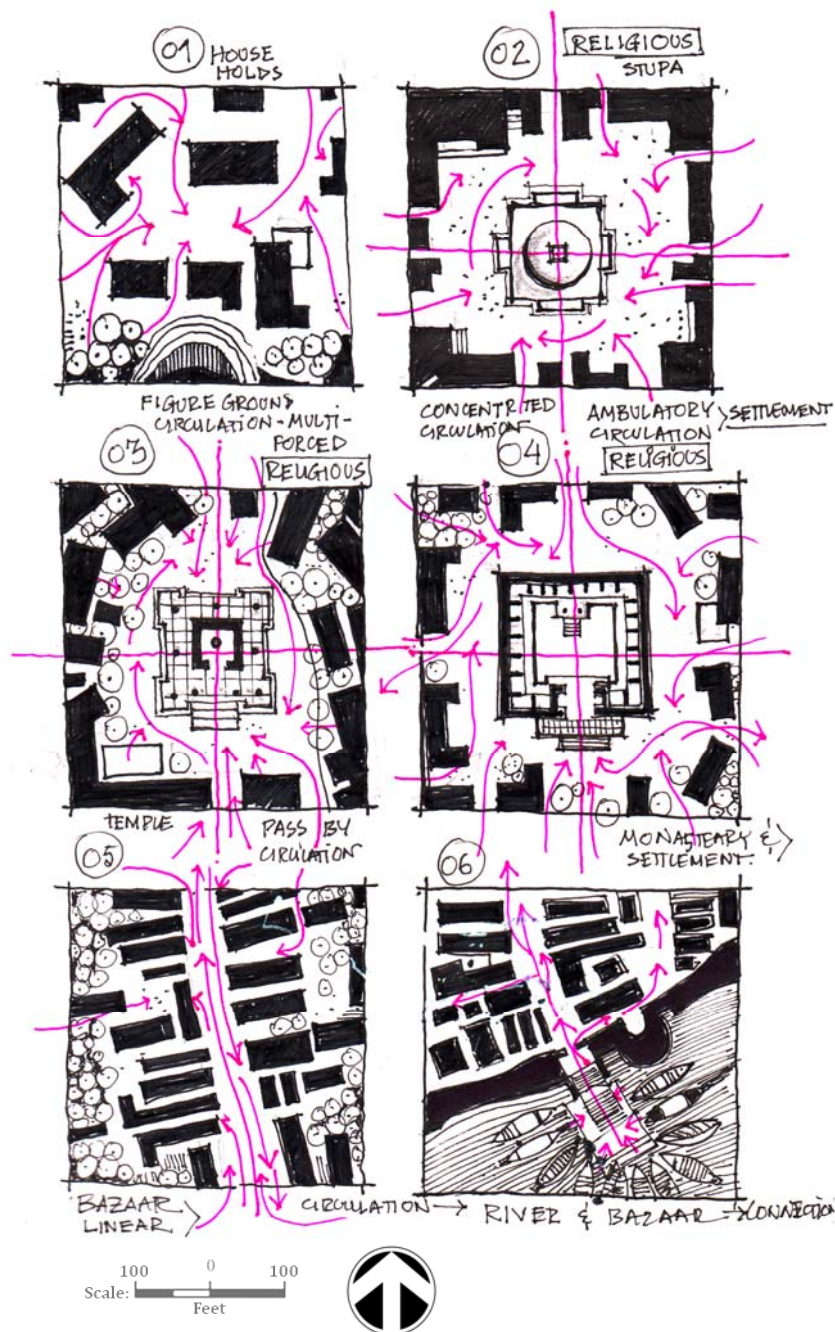


Figure 160: the traditional settlement pattern of the ancient cities of Bengal would perhaps conceived this six different and distinguished pattern in the macro scale arrangement. The plates have been allocated according to the private realm to the public and religious domain. Among them the commercial and trading hubs are important pattern to justify, meanwhile the different organizational pattern had particular characteristics. Scattered but containing the central yard was special for the household pattern. The religious pattern used to dominate with the surrounding structures and could be justify as the radial organization. Monasteries had the adjunct or separated settlement pattern depending on the inside or outside the walls. And lastly the commercial hubs used to pattern with linear arrangement whether it is connected with river or not. Generated by. SAJID BIN DOZA

Interpretation of the figure 161

The plate 161 explains the settlement patterns and their various domains in the ancient city of MAHASTHAN (8th Century AD), this plate is signing on the along with the different realm and the patterns used to exist in the ancient city. This illustration has been segmented with five columns. Each column is entitling the particular sector unite of the historical site. Eventually the segments are elaborating the several typesets, however obviously is focusing on the broader area of the sites, basis on the main research of the ancient master plan (chapter three).

It is needed to mention that the previous illustration figure no 160 interprets the epitome and unique pattern of the ancient cities of the riverine Bengal as the summery of the settlement pattern. In the light of this investigation on the illustrative materials and examination from the previous records the probable settlements have been elaborated in the conclusion phase of the research. The research demands to 'zoom-in' the several domains based area to identify the pattern of the arrangements. Concerning the issues of the each column of the segment, the illustration has been arranged stating from the household realm »» the neighborhood realm »» religious domain (stupas and temples) »» commercial and trading hubs. Local area of the ancient city has been 'zoomed-in' to justify the characteristics of the settlement patterns.

The segment 01 from the 'private realm'- contains various types of the courtyard house, organized, clustered edge to edge and in scattered form. However, the observable fact is that most of the residential units remain with a frontal spatial quality, whither it is enclosed or extroverted. Various types of dwellings used to allocate in the residential area at the historic MAHASTHAN.

For the segment 02, named as the 'neighborhood' - there are five types of areas have been selected where the common characters of the area could be seen, along with the organic street patterns and other public gathering spaces, monasteries at the residential-mixed use area, water bodies for the public-uses along with the microclimate generation and the lanes and huge foliage have been existed. So in the

observation it could be identified those five areas have been examined with the figure ground analysis; the common elements of the vicinities used to remain as well.

For the religious domain, during the Buddhist time the stupas were popular and the temples were within the community or within vicinity. In this segment 03 religious domains is clearly allocated with two distinct lines. One is the stupas -temples and the other is the monasteries. Eventually; stupa and its functions are related with rational orientation, perhaps for the reason the stupa and the other infrastructural arrangements are distinct. According to the slate of the area the stupas are oriented cardinal axis and the land use pattern used to be the segmental form. Most often cases it happened while there was the stupa monuments.

For the temple it was friendly with the vicinity. Used to stand beside the streets or by the side of the lanes. The community and the neighborhood were bracketed around it. Indeed it perhaps means that the temple was a cultural and daily lifestyle living part for the vicinities of the hinterland within the wall.

In the segment 03 the other column is dedicated for the monasteries. As the monastic settlement is a vital part of this reach and has been discussed in the chapter two and partially in the chapter three; in the conclusion statement monastery upholds the important emblem in the balancing the urban core as well as we may term as the city fluidity. So, the illustration shows the monasteries in and outside of the walls are balancing the economic life of the urban core of the ancient city of MAHASTHAN. And most of the pattern of the monasteries are aside or by the other side of the settlement pattern, here it is existential situation however, the footprint of the city could be divided from the monasteries and the common settlement pattern of the area. As the monasteries is formed with distinct architectural programme, in the figure-ground pattern it is prominent than of the neighborhood patterns.

Last segment is occupied with the column of commercial hubs, as usual the commercial district is having the row of shops and enterprises, and the major street passes through the infrastructures. The trading hub or the bazaar used to directly link with the riverine connection. All those four slate of area have the single dominant axis to carry out the functionality and the practical phenomenon.

Settlement patterns and their various domains in the ancient city of MAHASTHAN (8th Century AD)
 Microscopic analysis with
 FIGURE-GROUND Pattern

Concluding remarks

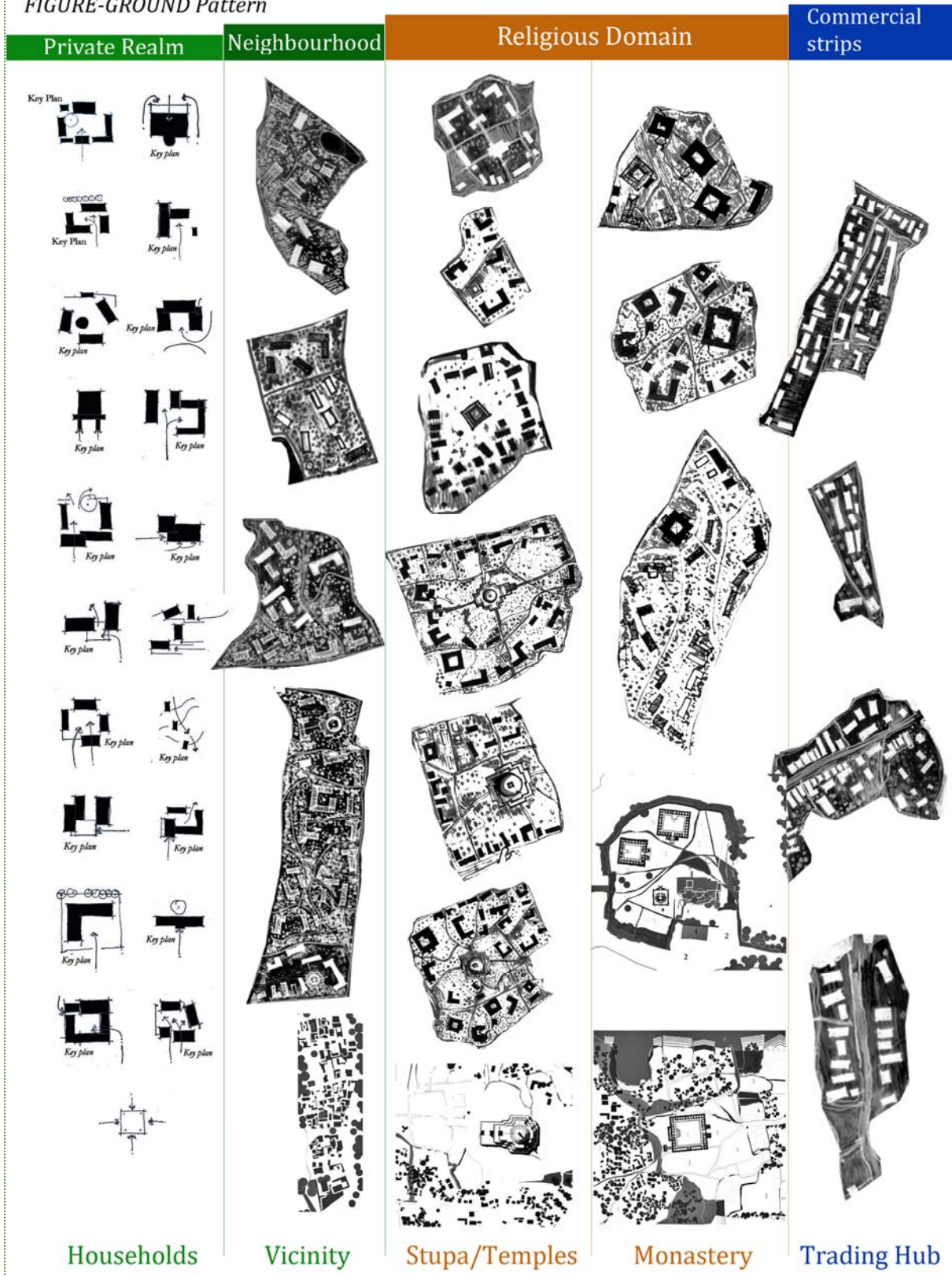


Figure 161: this plate separately illustrates the different domains of the settlement patterns, stating from the household till the public realm and the columns are showing the different pattern of the land use. This illustration is based on the ancient city of MAHASTHAN. The figure-ground pattern is the authentic language to understand and to communicate in the conclusion to fulfil the research quarries properly- generated by. SAJID BIN DOZA

Using the analysis of these two illustration or the figure 160 and 161; the research might come into the decision that the typological overviews of the ancient cities of Bengal could probably have the Archetypal pattern of settlement and by the critical illustrative format 161, which represent the case of the ancient city of MAHASTHAN does merge and satisfy the situation of the arrangement of the patterns.

The research tries to hold up all the necessary and unfolded issues that were faded behind since ages. MAHASTNAN is an asset for the nation like us, the nation we fought for the freedom since time immemorial. We intend to preserve the city for the need of the next successors. And the process of the preservation or to hold up among the common people is a vital issue. There are some policies and concepts could be synchronized with the public sector as well as along with the Department of Archaeology of Bangladesh. Perhaps the policies or the proposal could be as followed:

- a). An audiovisual infrastructural implementation could be incorporated with the site museum of the ancient site of the MAHASTHAN. Addressing the timeline of the Civilizations.
- b). Reconstruction of the ancient city could be the authentic approach to communicate the cultural pattern of the predecessors. Where the ancient city morphology and the lifestyle pattern could be represent as the historical cultural continuity.
- c). A hypothetical modeling of the ancient city could be display in the premises of the site museum. That might help to precede further research for the scholars, who would be interested in this kind of investigation.
- d). unit wise modeling (zoom in) of the settlement pattern could be displayed in the museum arena. To relate the historic settlement patterns of the deltaic Bengal.
- e). Fortification mechanism and the art of the aqua fortification could be explained with the help of the digital media. (Hologram or Holography installation)¹⁴⁵

¹⁴⁵ A hologram is a physical structure that diffracts light into an image. The term 'hologram' can refer to both the encoded material and the resulting image. A holographic image can be seen by looking into an illuminated holographic print or by shining a laser through a hologram and projecting the image onto a screen.

f). settlement patterns of the delta would be prioritize in the historical interpretation as the research and development division under the umbrella of the concern ministry.

This is the humble desire for MAHASTHAN; we always look forward new research comes out with new information, the archaeological sites would take necessary action to tune the workforce with the tide of contemporary approaches, and to the nation especially take care and cherish in people's mind the historic significant.

The climate, art and architecture of the Bengal were unique, at the same time unique was our city planning. With the previous and ancient reference; we still could interpret our valuable solution in the contemporary strategy of planning an urban core, we still can change the history study in primary schooling education; we still can raise our hand because we and only we contain the richest and splendor cultural continuity ever in the world...!

Civilization born, flourish to full extend and dies, these are the quality of the settlements. And our ancient city MAHASTHAN is no exception forms it. She is in a deep sleep now, tired of carrying immensity of civilizations on her shoulder. She needs rest, a deep rest...!

Source: http://holocenter.org/what-is-holography/?gclid=Cj0KEQiAj8uyBRDawI3XhYqOy4gBEiQA18BJbRZvF1QptgHDjmHIFvCgXC7g6KTC1pi1JoriA_DuISkaAjLP8P8HAQ

Every researcher has unique interest about his or her research interpretation. That could be bred to belong with it such for the long time, as research work is periodical and encompassing. The subject matter becomes longing part for the researcher. It is natural, and it happens with the historical, archaeological and cultural heritage also. As the researcher of the particular ancient site of MAHASTHAN; I have some few sentences to express, and this expression comes from being attached with the site, intense study and knowing-ness and perhaps for my motherland's primitive substantial phenomenon. And that is as followed;

MAHASTHAN is dead today, silent and serene...!

Vanished away by the course of time, however the ancient city was a beautiful picture...

A pictographic memory; we might not be able to see the silhouette of the city, perhaps it is in our mind as the 'jewel of history'.

Nevertheless- memory and image are not forgettable,

But move around here and there in the arena of our beautiful mind.

MAHASTHAN; could perhaps alike our inner sprite within every Bengali's souls. Which would be still enlightening and lead us to move further, in the depth of our compassion- it illuminate to enlighten others.

MAHASTHAN is a reflection, which would never been lost, never been burnt out form the album of memories and remembrance.

The ancient city of MAHASTHAN is a timeless true story...

Never gets old and scrabbles'.

The place is unvoiced nowadays,

But it might perchance remind you...

Knocking to keep her glory ever unforgettable,

It remains as the 'shining down' for us...!

Like a breathing civilization remains alive in each Bengali people forever..!

Notes

Annexure



EVORA 156/2005

History of Bengal (political and geographical)

In the political vicinity, Bengal had experienced ruling by the Buddhist, Hindu, Sultanate, Mughal and lastly the Colonial monarch. Moreover this region was also the precious hub of cultural congregation, so the monarchy of the Bengal in different time embedded with mixture of ritual and cultural diversity. To be particular, the art and the architecture of Bengal was started blooming in full extend since the Ashaka Great¹⁴⁶ (269 BCE to 232 BCE) ruling. Numerous schools for art and architecture flourished during the days, and had the authentic schooling of Dhiman and Bit-Pal¹⁴⁷ in this delta region. Stone was not the inherent construction materials for us, but it was carried through from the Rajmahal, Bihar, and West Bengal of India. So stone is precious for us, though we used it in various structure extensively.

The early history of Bengal is at best legendary. The Vadic literature, beyond mentioning some ethnic groups, such as the Pundras, Vangas, and Suhmas. They were inhabiting Bengal. In a few independent principalities outside the scope of the Aryan civilization. Which does not provide any clear idea regarding the political conditions. Theses legendary account together with a few vague reference by the Greek and the classical latin writers such as the Greek and the Latin writers such as Curtuus, Pluterch, Ptolemy and the unknown author of the 'Periplus of the Erythrean Sea'- are the poor substitute of the history . it is therefore a great a relief to be follow the history of Bengal through recorded events since the 4th Century B.C., after the rich confusion of the so-called 'Heroic age' or 'Legendary Period'. (Ahmed, 1984)

When Alexander the Great Burst upon the fertile plains of the Panjab after leading his unbeatable Macedonian army through Persia in the early spring of 326 B.C. a mighty empire in the Ganges delta, known to the Greeks as Ganaridae was probably

¹⁴⁶ Ashoka Maurya, commonly known as Ashoka and also as Ashoka the Great, was an Indian emperor of the Maurya Dynasty who ruled almost all of the Indian subcontinent from ca. 269 BCE to 232 BCE.
Source: Wikipedia web: en.wikipedia.org/wiki/Ashoka

¹⁴⁷ DHIMAN,BITPAL & TATHAGATASARA were famous sculptor of stone crafting on the black basalt stone, during the Pala Dynasty(7th Century)



Figure 162: "Asia in 323BC, the Nanda Empire of Ancient India in relation to Alexander's Empire and neighbors. Source: Wikipedia



Figure 163: A painting by Charles Le Brun depicting Alexander and Porus (Puru) during the Battle of the Hydaspes. Source: http://en.wikipedia.org/wiki/Indian_campaign_of_Alexander_the_Great

A confederate kingdom ruled by king of the famous Nanda dynasty. Strongly mentioned by the Greek Chroniclers as 'Agrammes' and 'Xandrames'. This disquieting report deterred Alexander and his exhausted and reluctant warriors from undertaking such an uncertain campaign in this remote eastern land. On his withdrawal from the bank of the Beas to Babylon in Persia. Alexander's Greek garrison was immediately routed from India by the great Mauryan Empire, Chandra Gupta.¹⁴⁸

In the 3rd century B.C. Bengal formed a part of the vast empire of the Mauryan kingdom. However the region became the PUNDRAVARDHAN Bhukti. This fact had been established during the excavation of the remains of the Pundranagar and some of them from the literature and other epigraphic records. For more than six centuries, between the fall of the Mauryans and the rise of the great Gupta rulers of India, the history of the Bengal is difficult to interpret other than for a few names of the local kings and the knowledge that their small kingdom were continually at war with each other. Around 300 A.D. Chandra Gupta laid the foundation of the great Gupta dynasty in Magadha (presently South Bihar, India) as well as the greater part of the northern India, and obviously including Bengal. This kingdom ruled up to the middle of the 7th Century. Eventually with the establishment of the great Gupta Empire, the independent existence of various principalities in Bengal came to an end. Except the kingdom of the Samatata in trans-Meghna region, the rest of the Bengal was undoubtedly incorporated in the expanding the Gupta Empire during the reign of its second empire named Samudra Gupta, at the dawn of the 4th Century A.D., at the beginning of the 6th century the great fabric of the Gupta Empire began to disintegrate and a section of a family, found reference from the epigraphic records as Vainya Gupta (507-8 A.D.), virtually carved out for himself as an independent eastern Bengal and bringing the kingdom of SAMATATA under his rules. Gupta supremacy had collapsed by the middle of the 6th Century. Over its ruins in north India, arose a number of independent kingdoms including the VANGA and GAUDA in Bengal.

¹⁴⁸ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 20. Print

During the 6th Century it became clear from the number of epigraphic and numismatic records that three independent kings, ruled over in the Vanga kingdom. But these three rulers were followed by the number of kings of the same house, whose gold coin have been discovered in fairly large number in various parts of eastern Bengal, particularly at the Savar, near Dhaka, Kotalipara in Faridpur District. It seems that the hold of the Imperial Gupta over Gauda was far than that over Vanga or Samatata,

The first independent Gauda king who came into the limelight in the early 7th Century and began his career as the subordinate vassal 'MAHASAMATAT' under Mahasena, which called later Gupta king. With the passage if the time the empire began to fall and most important thing is this Gupta Empire shifting the location one side to another.

Later on in the 7th Century, Sasanka (606-637), whom called the first independent king of the Bengal, who derived from a very humble position, and took the full advantage of the dismemberment of the later Gupta Empire and series of foreign attack in Bengal. This attack or invasion includes the Tibetan hill tribe that created emptiness in the political arena. Here northern and western part of Bengal formed part of his kingdom with the KARNASUVARNA (present Murshidabad, W.B. India) as the capital. His expansionist foreign policy soon brought him into a serious clash with the powerful Thanesvar King, Harsavardhana, in northern India and the king of KAMARUPA (Assam) in the east. Anyway he successfully maintained his fairly extensive dominance undiminished until his death shortly before 637 A.D. After a few years of Sasanka's death, his far-flung empire passed into the hands of Bhaskaravarmana, the king of Kamarupa. At about this time the famous time the famous Chinese pilgrim, HIUEN TSANG, who was visiting Bengal, mentioned the name of the Pundravardhan, Karnasuvarna, Samatata and Tomralipti as the four kingdom in Bengal, but he did not but did not mentioned the names of the reigning monarchs. This is taken to indicate that all the kingdoms had been annexed into the empire of Harshavardhana and Bhaskaravarmana, immediately after the Sashanka's death. It was again once more the history of Bengal fall into the extremely obscure for well over a Century. It was marked as the political chaos in the eastern India. Essentially precipitate by the sudden death of Harsha (646-7 AD), the usurpation of

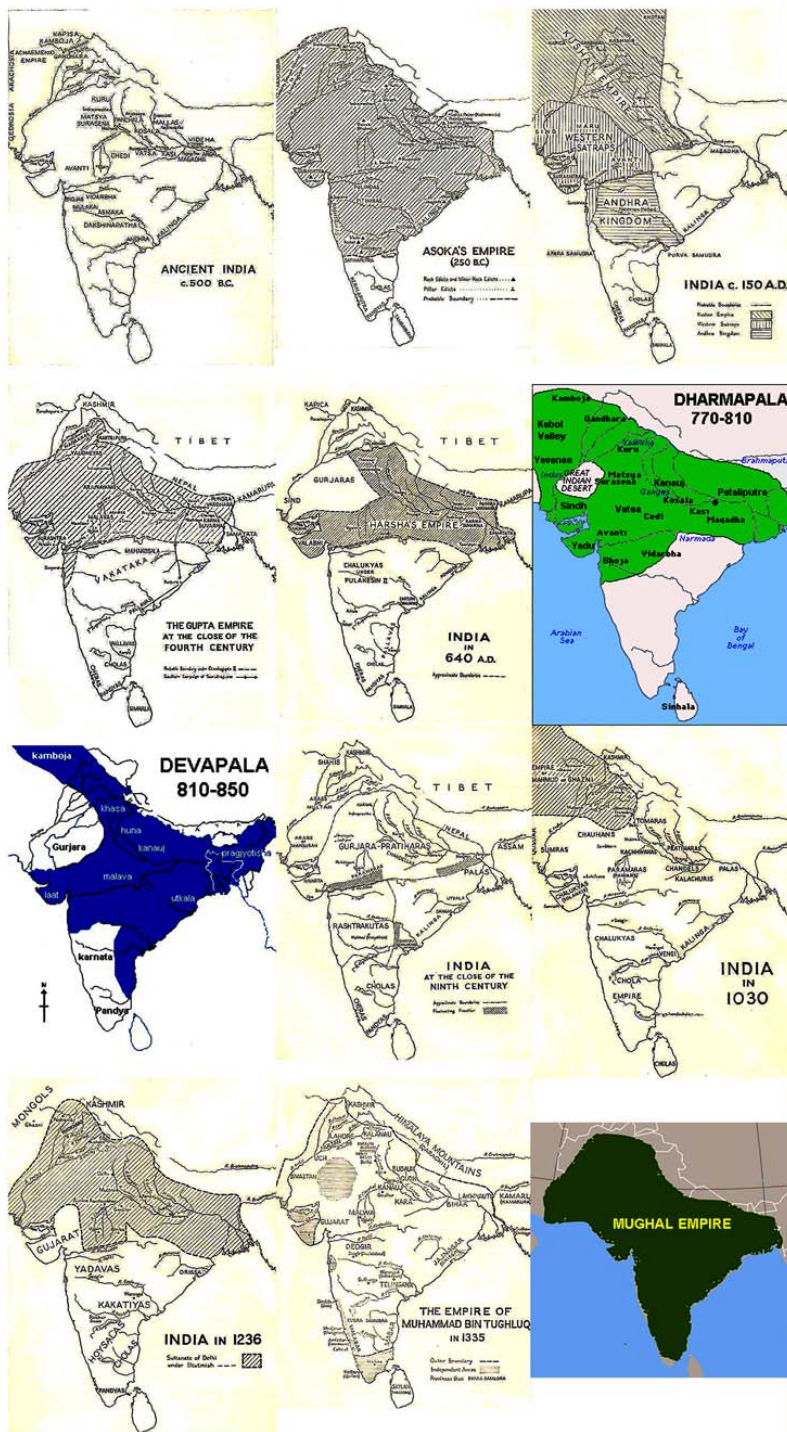
his throne by his minister, and the invasion started with the Chinese envoy. A Chinese soldier named Wang-Hiuen-tse (647). He overran north Bihar in retaliation for the king's treacherous pillage of the Chinese mission to Harsha. This was followed by a series of invasions of Bengal from the west, notably by Ana, the king of Kanauj (724-735), and by Lalitaditya, the king of Kashmir (736)¹⁴⁹

Pala dynasty: the Tibetan Historian Lama Taranath, while writing his 'History of Buddhism in India' in the early 17th century, he was describing prevailing political situation of Bengal, approximately in the middle of the 8th century. It was chaotic condition, and no one is to control the whole authority, disrupting elements within realm. Contemporary epigraphic record also portray similar anarchical situation in the history of Bengal named as Matsaya-nyaya or the 'practice of fish'. The chaotic political and social conditions in which the people suffered untold misery. Consequences became so intolerable that they seem eventually to have developed a unique sense of political wisdom and the spirit of self-sacrifice. In about 750 A.D., in order to introduce a settled government/kingdom, the people elected the Kshatria chief of Varendra as king. Whose name was Gopala, was the son of Bapayata of the 'race of the sea'. Gopala began the famous Pala dynasty of Bengal which lasted for over four centuries. During which time a period of prosperity and stable government was enjoyed.

Dharmapala, (770-810) who succeeded his father Gopala, was however the real founder of the greatness of this house. By conquest he made himself the master of most of northern India. Like all other members of his family he was devout of Buddhists. And with his patronized many Buddhist educational centers and institutes established within his vast Empire. He is also the founder of the famous VIKRAMSILA monastery in Bihar and the gigantic Sompura vihara in Varendra. Later to be known as the Paharpur and established diplomatic relationship with the Indonesian kingdom of Sri-vijaya, this then controlled the greater part of the Archipelago.

¹⁴⁹ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 22. Print

The Sub-Continent from 500 B.C. - 1757 A.D.



Bengal in Different phases

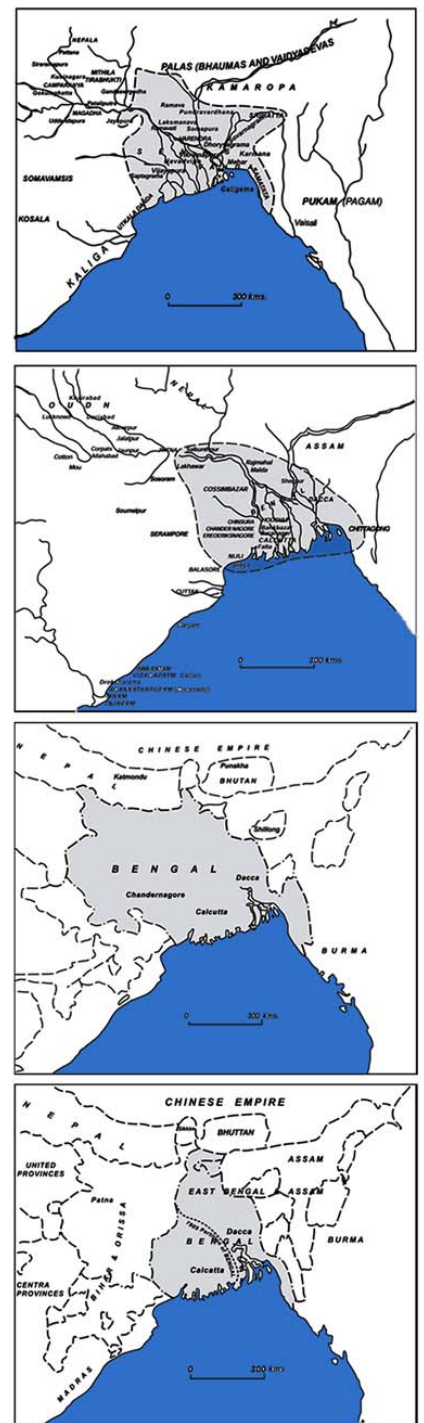


Figure 164: political situation and territorial boundary of sub-continent. Source: compiled and generated by Sajid Bin DOZA

And then, his son and successor Deva Pala, was an equally gifted sovereign who, not only maintained the intact the extensive empire inherited from his father but also greatly extended his territory by fresh conquests. His empire embraced the whole northern India from Assam to the confines of Kashmir, and from the Himalayans to the Vindhya Mountains.

Deva Pala was succeeded by the line of imbecile kings which results in the rapid decline of Pala power in North India. Northern Bengal was invaded and annexed by the Pratihara king Mahendrapala before 898 and a little later, northern and western Bengal were annexed by the Kambojas, a powerful hill tribe from the north or the east. The Pala also lost hold over east and south Bengal. During the second half of the 10th Century, under the Buddhist king named Kantideva, the kingdom of Harikela (present Sylhet District) broke off from the Pala support where the more eminent Chandra rules carved out an independent kingdom in Samatata. The Pala territory suffered further dismemberment when the Sura king of the south–west established a separate dynasty. The most notable among them was the famous Adisura, a legendary king of Gauda who is credited with having revived the Brahmanical religion in Bengal which had suffered from Buddhist predominance.

The Tamil King of the far from south, Rajendra Chola, invaded Bengal in about 1023 A.D., During Mahipal, the 9th Pala king, was reigning over his Shrunken territory. The invader seems to have overrun and devastated the country right up to the bank of the Ganges. Taking advantage of the steady decline of the Pala as a result of foreign invasions, fragmentation of territories, and a succession of feeble rulers.

Divvoka, a local Kaivarta chief spearheaded a revolution with the help of some disgruntled feudal lords, killed Mahipala and occupied Varendra. For a brief period the kaivarta chief and his nephew, Bhima, held sway over Varendra until the latter was overthrown by the Rampala, the fourteenth king of the Pala dynasty.

This short interregnum in Bengal is associated with an interesting, long and irregular earthen rampart in Bogura and Rangpur districts, popularly known as Bhimer Jangal, probably but by the Bhima to guard his newly usurped territory and also to serve as a highway.

Rampala organized and led a formidable force against Bhima, ultimately defeated and killed the usurper and recovered his ancestral kingdom. This great and gifted Pala monarch not only succeeded in speedily consolidating his power in Varendra but also restored, to a great extent, the lost splendor of his house.

However, it was like the hectic flash of a dying man. His weak successors could not stop the disintegration of the shrunken empire. Which was precipitated notably by the eastern Ganges Kings, The later Chalukyans and the Gahad valas. All these factors facilitated the rise of a new power in Bengal politics. Consequences, the Senas from south India.

The four Centuries of Pala rule may rightly be regarded as the most prosperous epoch in the history of Bengal as it brought peace and promoted versatile artistic activities. Sculptural art in both metal and stone attained remarkably high standards of excellence, especially under the two eminent master artists known as Dhiman and Vitapala (see annexure). The period is also memorable for the activities of such celebrated missionaries as Pandit Dharmapala and Atisa Dipamkara¹⁵⁰, and scholar like Chakrapani¹⁵¹ and Sandhyakara Nandi¹⁵²

¹⁵⁰ **Atisa Dipamkara** (980–1054 CE) was a Buddhist teacher from the Pala Empire in Bengal. He was one of the major figures in the spread of 11th-century Mahayana Buddhism in Asia and inspired Buddhist thought from Tibet to Sumatra. Revered as one of the great figures of classical Buddhism, Atisa was a key figure in the establishment of the Sarma schools of Tibetan Buddhism.

¹⁵¹ **Chakrapani Datta** (11th century) Ayurveda physician and SANSKRIT scholar, was born in the village of Mayureshwar in the VARENDRA region, son of Narayan Datta, the head of the kitchen of Nayapala, the king of Gauda. Naradatta, a courtier of the king, was Chakrapani's spiritual guide. Chakrapani's best known books on ancient medical science are *Chikitsasanggraha* (Collection of medical practices and procedures), *Dravyaguna* (Properties of plants), and *Sarvasarasanggraha* (Collection of the essence of things). *Chikitsasanggraha*, better known as *Chakradatta*, incorporates sections from two rare Ayurvedic books: *Charakanyasa* and *Vrdhasushruta*. Chakrapani was awarded the titles 'Charakachaturanana' and 'Sushrutasahasranayana' for *Charakatattvapradipika* and *Bhanumati*, which were annotations on *Charakasanghita* and *Sushruta* respectively. Chakrapani also made significant contributions to Sanskrit grammar and NYAYA PHILOSOPHY. One of his famous books is *Vyakaranatattvachandrika* (Treatise on theories on grammar). It is believed that he also annotated Gautam's *Nyayasutra* and compiled the dictionary *Shabdachandrika*. Source: http://www.bpedia.org/C_0093.php

¹⁵² **Sandhyakar Nandi** (c 1084-1155 AD) Sanskrit poet, was born in a KAYASTHA family at Brihadbatu, a village close to Pundravardhana city in Varendrabhumi in North Bengal. His father, Prajapati Nandi was a minister (truce-maker) of Rampal (c 1082-1124), the king of the Pala dynasty. Sandhyakar himself was patronised by Madanpala (c 1143-1162). Sandhyakar is considered to be the greatest poet of the Pala dynasty. He became famous for his RAMACHARITAM, a biographical history in verse; written in SANSKRIT the book has two different themes. Laid out in four chapters, the first part of the book describes the biography of RAMACHANDRA, son of Dasharatha, and the second part narrates the life of Rampala, the king of Gauda. At the end of the book, the poet describes himself in twenty couplets where he condemns malicious people, praises good ones and narrate the high points of his book. *Ramacharitam* is recognised by historians as an important source for reconstructing the ancient history of Bengal. Source: http://www.banglapedia.org/HT/S_0080.htm

The Sena Dynasty: Very little is known about the Senas except that they migrated to Bengal from the Kanarese country in the Deccan and that they were orthodox Brahmans. Hemanta Sena gained some eminence in the 11th Century as a petty feudal chief in the Radha territory of West Bengal during a time when the Pala kingdom was disrupted by the revolt of the Koivarta chief, Divvoka.

His gifted son, Vijaya Sena (1095-1158), appears to have reigned for an unusually long period of over 60 years and although he began his career as a petty feudal chief he eventually succeeded in extending his territory virtually over the whole of the Bengal Delta and established the real greatness of his family. His dominion comprised Kamarupa, Kalingo, Milhila, Kausambhi and Gauda. Vikrampur near Dhaka was one of his important 'Camps of Victory' from where he issued all his land grants.

Vallala Sena succeeded his father, Vijaya Sena, in 1158 and ruled until 1179. He is credited by tradition as having introduced the practice of 'Kulinism' (a system of nobility) among the Brahmanas, Vaidyas and Kayasthas. He abdicated his throne in favour of his ill-fated son, Lakshmana Sena.

Lakshmana Sena was a great patron of learning. Under his benevolent patronage famous poets like Jaydeva, the author of Gita Govinda, Dhoyi, the author of the Pavana duta, Sarana and probably also Govardhana, flourished in Bengal. The celebrated scholar, Halayudha, graced his court and also served under the monarch as Chief Minister and Chief Judge. However, he failed to stem the tide of the Muslim invasion in Bengal and had to flee from his temporary capital at Nudia, at present unidentified, in 1204 to Vikrampur near Dhaka before the unbelievably small band of Malik Ikhtiyaruddin Muhammad bin Bakhtiyar Khalji's invading cavalry. His sons, Visvarupa Sena and Kesava Sena, however, seem to have continued their precarious rule over eastern Bengal, unmolested by the Muslims, until the later part of the 13th Century

The Kingdom of Samatata: We have already seen that in the early 6th Century, during the declining days of the Gupta rule, three independent kings had carved out an independent kingdom at Samatata. It appears from the accounts of the famous Chinese pilgrim, Hiuen-Tsang' that they were overthrown by a family of Brahman kings who, in their turn, were supplanted by a line of Buddhist kings, commonly known as the Khadgas. The Khadgas, who ruled Somatata between approximately 650 and 700 A.D., were overthrown by the Devas, a new Buddhist dynasty who were identified for the first time from a number of royal copper-plate grants discovered in the 1950's and 1960's during regular excavation at Mainamati. From these epigraphic records the names of four kings of the Deva dynasty were established: Sri Shanti Deva' his son Vira Deva and Sri Ananda Deva and the latter's son Sri Bhava Deva. They adopted from the preceding Khadga kings the royal title of Sri Bhangala Mrigonkasya engraved on the seal of their royal plates below the dharmachakra emblem. They seem to have ruled over Vanga during the latter part of the 7th or early 8th Century A.D.

Chandra Dynasty: The next ruling dynasty of the region, known for the first time from a number of their recently discovered royal copper-plate grants at Sylhet and Comilla, is the Chandra dynasty. These royal land grants furnish a correct and possibly complete genealogy of the dynasty with details of their military exploits as well as the prevailing political and economic conditions of south-east Bengal at that time. It is clear from these records that there was an unbroken succession of independent kings for about a century and half between approximately 900 and 1050 A.D. The order of succession was as follows:¹⁵³

1. Purna Chandra
2. Suvarna Chandra
3. Trailokya Chandra
4. Sri Chandra
5. Kalyan Chandra
6. Ladaha Chandra
7. Govinda Chandra

¹⁵³ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 24. Print

Vikrampur, near Dhaka, was their capital. It appears that they were originally ruling a small principality known as Rohitagiri, located probably somewhere in the Lalmai Mainamati hill range of Comilla. Later they extended their rule over the kingdom of Samatata. Apparently they had deep-rooted social and political links with the Chandra kings of Arakan. Their third king, Trailokya Chandra extended his territory by conquering Harikela (Sylhet) and Chandradvipa (modern Bakerganj district) and virtually established his undisputed suzerainty over the whole of Vanga and Samatata.

The Chandra kings were succeeded by a new orthodox Brahmanical dynasty known as the Varmanas. Their original homeland was probably in Kalinga (Orissa). Jatavarman was the first independent ruler of the house, and he defeated Divvoka, the Kaivarta usurper of the Pala throne, wrested Anga (Bhagalpur) from the Palas and established an independent kingdom in eastern Bengal with his capital at Vikrampur. He and his successors were orthodox Hindus who replaced the Buddhist rule of the Chandras in eastern Bengal in much the same way as the Senas supplanted the Buddhist Pala rule in Varendra a fact of strange historical coincidence. The Varmanas ruled in eastern Bengal until the second half of the 11th Century when they were driven away by the expanding Sena rulers.

The Kingdom of Pattikera: Burmese and Arakanese sources of the 11th Century make frequent mention of a small principality in eastern Bengal, named, 'Pattikera'. It is clear from these references that in the 11th and 12th Centuries there was an intimate relationship between the kingdoms of Burma and 'Pattikera.' Its political existence in the early 13th century is definitely proven by a copperplate grant discovered in the neighborhood of Comilla town. It records a land grant to a Buddhist monastery in the city of Pattikera in 1220 A.D. by King Rana Vankamalla Sri Harikeladeva. It seems fairly certain that 'Pattikera' mentioned in the inscription was the capital of the kingdom so often described in the Burmese Chronicle. Although its exact identification has not been possible as yet, there is hardly any doubt that it was located somewhere in the district of Comilla, as an important locality close to the outskirts of the

Mainamati hills is still known as Patikera or 'Pattikara" Ranavankamalla Harikela Deva came to the throne in 1204 and ruled certainly until 1220. However, it is uncertain what his exact relationship and status was with the powerful Pala, Chandra and Sena rulers of Bengal. It is interesting to note here that a large number of silver coins, bearing the Pattikera legend and the bull and triratna symbols, have been found in regular excavations at Mainamati which shows a close resemblance to the similar Burmese series After King Rana Vankamalla nothing further was heard of the kingdom.

In the early centuries of the Christian era the ancient culture and civilization of eastern India and Bangladesh began to make a significant impression on the civilization of South East Asia. Indian thought, customs and religion became increasingly popular in the Archipelago. The increased volume of oceanic trade stimulated by missionary enterprises and colonizing activities contributed to the ever-growing contact with these Far Eastern lands' From the 8th Century onwards, Mahayana Buddhism, under the patronage of the Palas of Bengal, became a dynamic international force which exercised a profound influence on countries as far away as Tibet in the north and the Malayan Archipelago in the south. Chinese Buddhist pilgrims of the 5th and 7th Centuries, notably Fa-Hien and Hiuen Tsang, furnished us with the first comprehensive accounts of Bengal by outside observers' The founder of the great Paharpur Mahavihara, Emperor Dharma Pala, established diplomatic relations with the Indonesian kingdom of Sri Vijay, centered at Palembang in Sumatra, which then dominated the greater part of the Archipelago. Silendra, the Buddhist king of Indonesia, possibly drawing his inspiration from the magnificent architecture of Paharpur, erected the 400 feet square terraces of Borobudur, one of the largest and grandest monuments of the world, which bears a close affinity with the Pala art. An imaginative writer has aptly observed that "on the terraces of Borobudur the carved ships of Sri Vijay still sail immobile and endless over their seas of stone"¹⁵⁴

¹⁵⁴ Ahmed, Nazimuddin. *Discover the Monuments of Bangladesh*. Dhaka: U Limited, 1984. 225-28. Print

Short note

Varendra¹⁵⁵

Varendra or Varendri, an ancient geographical unit co-extensive with the ancient janapada of Pundra or Pundravardhana in the northern districts of Bangladesh, situated in the old Pleistocene land formation, the barind tract. The ancient lexicon called Trikandaxesa refers to Varendri as an integral part of Pundravardhana, and several epigraphical evidences have corroborated this. In a south Indian inscription (967 AD) there is a mention of a Brahmin as Varendradyutikarina. Varendra figures prominently in the inscriptions of the Sena rulers and on their basis scholars are unanimous in holding that the greater districts of Bogra, Dinajpur, Rajshahi and Pabna formed the Varendra area. Cunningham fixed the boundary of Varendra with the Ganges and the Mahananda on the west, the Karatoya on the east, the Padma on the south and the tract of land between Koochbihar and the Terai on the north. Sandhyakar Nandi, the 12th century composer of the ramacharitam, belonged to Vrhadvatu, which was the crest-jewel of Varendri mandala (varendri-mandala-chudamani) close to the city of Pundravardhana (MAHASTHAN). In the third canto of his kavya, Nandi gives a graphic description of the topography, flora and fauna of Varendra, the janakabhu of the Palas, and mentions its location with the streams of Ganga and Karatoya flowing on either side. ramapala is said to have crossed the Ganga in order to enter Varendri. In the Vallalacharita, one sacred place (Mahasthana) having a temple of Siva is mentioned as belonging to the eastern part of Varendri. In the Sena period Varendra formed an administrative unit under the political division of Pundravardhana bhukti.

¹⁵⁵ (Source: <http://en.banglapedia.org/index.php?title=Varendra>)

MAHASTHAN and the valuable relics of the site: A pictographic essay and selected catalogues

The sources and the references of images courtesy:

1. Ahmed, Nazimuddin. *MAHASTHAN, MAINAMATI, PAHARPUR* (মহাস্থান, ময়নামতি, পাহাড়পুর). 3rd ed. Dhaka: Department of Archaeology Bangladesh, 1997. Print.
2. Dr. A. Majeed Khan. *AN ALBUM OF ARCHAEOLOGICAL RELICS IN BANGLADESH*. Dhaka: Dr. A. Majeed Khan, 1984. Print.
3. Bangladesh, France. Department of Archaeology and National Museum, Bangladesh. Ministry of Cultural Affairs, Bangladesh. *MAHASTHAN*. By Bangladesh Department of Archaeology. Ministry of Cultural Affairs. Alliance Française De Dhaka. Cultural Section, Embassy of France, Dhaka. Dhaka (ঢাকা): Department of Archaeology, Government of the People's Republic of Bangladesh, 1999. Print.
4. The site Museum of the MAHAATHAN.



Ornamaental Deer

Terracotta plaque from the Vasu Vihar (Po-Shi-Po). Mahasthan
10th Century AD



Mighty elephant

Terracotta plaque from the Vasu Vihar (Po-Shi-Po). Mahasthan
10th Century AD



A terracotta plaque representing a 'raja-rani' scene, from *Vasu Bihar* Bogra.



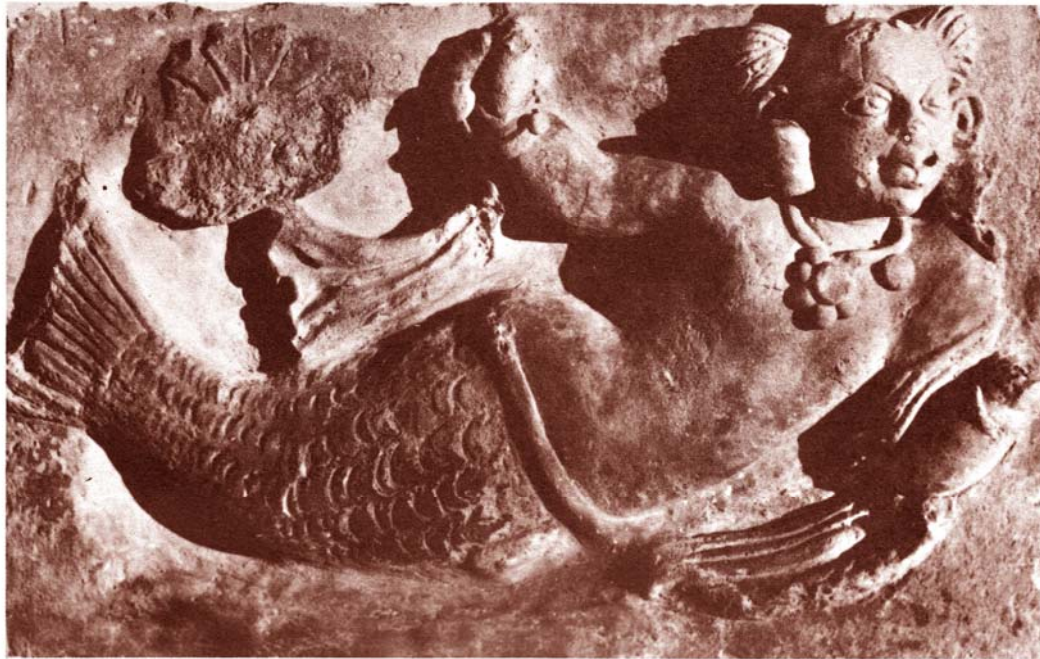
A sculptured terracotta plaque from *Vasu-Bihar* depicting two seated male figures and a seated female in between. *Vasu-Bihar* Bogra.



A terracotta panel depicting a *Hamsa* holding a pearl necklace in its bill, from *Vasu-Bihar* Bogra.



A terracotta plaque representing a so-called 'raja-rani' scene, recovered from *Vasu-Bihar* Bogra.



A terracotta plaque representing a half-man and half-fish figure from *Vasu-Bihar* Bogra.



A series of 6 Terracotta plaques *in situ* decorating the base of a Buddhist shrine, excavated at *Vasu-Bihar* Bogra.



Sunga terracotta plaques, Mahasthan.





Terracotta Surya image, Mahasthan.



Terracotta head, Mahasthan.



A nicely decorated ringstone, Mahasthan.



A broken toilet tray of stone, relieved with figures of elephant and a pair of deers alternating with pitchers issuing festooned scrolls, above a band of lotus petals, Mahasthan, Bogra.



Seven sculptured bronze images (4 heads and 3 full figures) from *Vasu-Bihar* representing Buddha and Buddhist deities. Bogra.



Four clay tablets, stamped with Sanskrit inscriptions, *Vasu-Bihar* Bogra.



A terracotta medallion depicting an amorous couple, Mahasthan.



Goldsmith's stone moulds for ornaments, Mahasthan.



A standing Buddha image in stone, (6th century) from *Vasu-Bihar* near Mahasthan.

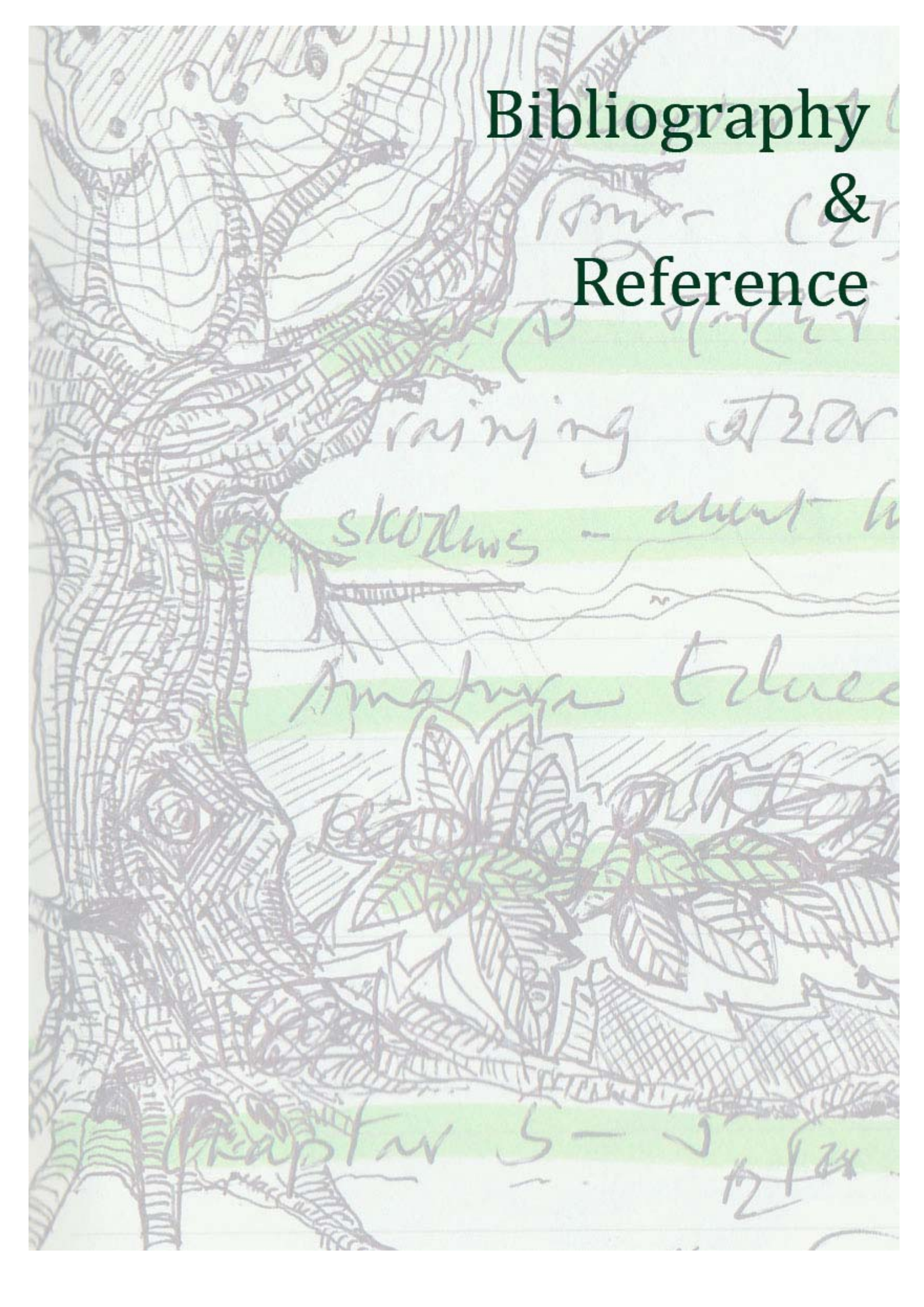


দভায়মান ব্রোঞ্জ নির্মিত বুদ্ধ মূর্তি, ভাসুবিহার, বগুড়া।

Standing Buddha. 6th Century AD
MAHASTHAN



Ringstone
3rd Century B.C.
MAHASTHAN



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raining at 2500

skottms - about 10

Amateur Educ

Chapter 5 - 2/24

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