

Chapter 2

Urban Transformations of Residential Settlements in Colonial Towns: Case Study of Chandernagore and Serampore



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Abstract Urban transformation is a social, economic and physical and ecological change that shapes a settlement. In this process of transformation, an urban area redefines itself within the existing city structure. Historically, several forces have triggered transformation processes in the world, and colonization was arguably one of the important ones. Settlements were established and developed, and they also flourished, often, as a direct result of the administrative agendas of the colonising powers. Within these settlements, the residential neighbourhoods were unique. Colonial architectural expressions and settlement planning ideals came into contact with the local social, cultural and climatic needs, resulting in a unique neighbourhood character, that yielded building typologies that were derived through this meeting of cultures and worldviews.

Soon after the end of the colonial era, many of these towns became small dormitory towns catering to the nearby metropolises, and they received scant attention till the next international phenomenon, that is, globalisation achieved centre stage in the narrative. Like other parts of the world, in the past few decades, the development pressure due to globalisation, around the adjacent areas to Kolkata, has increased dramatically leading to a real estate explosion in these towns too. As the residential neighbourhoods are privately owned, it is here that the process of transformation occurred rapidly, without any controls exclusively for retention of the unique character of these places.

In this research, an attempt has been initiated to understand the transformation and its implication in urban fabric of the residential areas of selected colonial towns, namely, Chandernagore and Serampore.

Keywords Urban transformation · Residential settlement · Colonial town

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Introduction

Urban transformation is a change of urban pattern which is a major segment of urban development. It has been an ongoing process, shaping cities throughout human history. It therefore can be referred as the evolutionary process of modification or adaptation in urban areas, due to the change in political, economical and social pattern. This in turn generates diverse urban physical forms. The physical change of urban fabric can be termed as urban physical or spatial transformation. Urban physical or spatial transformation can be most exceedingly visible in residential settlements, because here the owner-specific properties can be converted into various building use typologies, according to the changing needs of the surroundings.

Residential settlements are areas where the predominant typology is residential rather than commercial, industrial or institutional. These are usually designated by the development plan of the city administrative authorities, including the amount of units and consequently, the approximate number of people living in that area, following the prescribed density. They are connected in some ways, with the adjacent activities, by their physical or spatial structures, functional attributes and user group preferences. The physical or spatial structures and functional attributes differ from one to another based on several factors like occupancy pattern, built form, adjacent activities, origin of establishment, etc. Thus, settlements formed by indigenous people always differ from that of the foreign people. Consequently, the spatial structures of residential settlements in colonial towns are unique in nature. This type of colonial propagation-based settlement pattern can be observed in Asia, Africa and South America.

Colonial towns are settlements which are resultant of colonial manifestation of production, consumption and sustenance. These settlements grew, survived and sustained on the basic whims of colonial powers and their administrative agendas. They were symbols of power, authority and administration. After independence, these towns became a part of larger administrative regions and started following the development agenda of the nearby metropolises, or they themselves became the metropolises generating development situations. Colonial towns, which remained as small towns within the close vicinity of the major metropolises and functioned as self-sufficient units, have started transforming themselves, due to tremendous development pressure, occurring in the nearby metropolises at present.

In today's world, the colonial towns can be divided into three categories, according to their socioeconomic development patterns, such as colonial towns of developed countries, developing countries and underdeveloped countries.

The developed countries have already formulated development guidelines, for all types of urban systems. The underdeveloped countries are not in a position for formulating guidelines, for their same, as they are not prepared for actual development because of economic constrains. In this scenario, colonial towns of the developing countries are undergoing considerable unhindered transformations due to constant social, economical and political reformations. These colonial towns are grappling with a colonial legacy vis-à-vis the driving forces of modern-day development.

One such country is India where several colonisers have imprinted their inheritance in the form of new settlements. Coastal zones of India such as Kerala, Tamil Nadu, Maharashtra and West Bengal were mostly affected area where colonial towns are found. Gangetic delta was the most promising place during that time apart from other areas where European traders were settling down their business as well as settlements rapidly.

Little Europe is one such stretch in the bank of Hooghly River where European traders and their settlements were flourishing. It describes the rise and fall of European powers beginning with the Portuguese, followed by the Dutch and the French, who were finally overpowered by the British, in the mid-eighteenth century. The colonial powers played out their traditional rivalries and alliances in the colonies along the Hooghly, bringing this stretch of river so far removed from Europe, into the centre stage of attention. All of them left their physical mark among these settlements in terms of sociocultural impact as well as architectural legacy.

The settlements of European countries on the West Bank of Hooghly were some of the first places where European trade started and turned them into the first places of penetration of colonization into South Asia. Colonial modernity generated into the subcontinent as a result of the cultural encounters of the East and West in these regions. As Britain sovereignty was cemented along the West Bank baring Chandernagore, it led to these areas developing as per a British mould. However one can't ignore the deep influence the Portuguese cast in Satgaon, Bandel and Hooghly, that of French in Chandernagore and the Danish in Serampore. Among all these settlements, colonial imprint in settlement structures is most evidently visible, in Chandernagore and Serampore. The lasting influence is evident by the European buildings, monuments and artefacts that survive in these areas. Time has not yet obliterated the legacy left by these European states along the West Bank of Hooghly. A cruise from Calcutta to Bandel will reveal to the eyes the truth of such a statement. Not only was the Bengal vocabulary and literature made fertile and rich, Bengal also prospered in sciences and other arts due to their exposure to a range of western knowledge. These settlements turned into nodal points of culture and politics. The need to preserve and reconstruct these influences should be strong.

Department of Tourism, Government of West Bengal is currently promoting 'Little Europe' – the four towns in west bank of river Hooghly – to establish the need of understanding the spirit of such areas and their history. Resultantly, it will give rise to the development of the fronts of tourism that will benefit the people local to the area economically. River transportation along this area is something that has been long neglected; its potential needs to be explored once more. Government has ambitions to develop the river transportation in this area, which used to be its life-line in history. It will along with establishing better connectivity among the areas also rejuvenate the history of the big trader ships docking at these banks with dreams of making a fortune.

This research focuses on the role of residential settlements of colonial towns in urban transformation process and its impact on overall urban structure of these towns in general. Accordingly, an attempt has been made to understand urban trans-

formations considering physical/spatial developments of residential settlements in selected colonial towns in developing countries for establishing a parametric relationship between these aspects. Based on this, an attempt would also be made to examine cases of similar transformations, in selected colonial towns of Little Europe in West Bengal, India, and to give a way forward for such further future transformations, in desired directions. Hence, here an endeavour has been made to understand the impact of the same in Chandernagore and Serampore.

Exploring the Two Towns

Chandernagore is a corporation city and **former French colony** located about 35 km (22 mi) north of Kolkata, in West Bengal, **India**. It is one of the seven **municipal corporations** in West Bengal. Located on the bank **Hooghly River**, the city has been able to maintain a unique identity different from all other cities and abide by its own characteristics. The total area is 19 square kilometres (7.3 sq. mi) and had a population of 166,867 as per 2011 Census. Chandernagore is connected to Kolkata by railway, roadways and Hooghly River, and it takes about an hour to reach there by car. The French created their trading post by amalgamated three noticeable villages, namely, Gondolpara, Boro Kishangang and Khalishani in the year 1673 by obtaining permission from Ibrahim Khan, the then Nawab of Bengal. The first director of French East India Company, Deslandes, got control over these lands in 1688 from Mughal Subahdar. In 1730 Joseph Francois Dupleix came as a governor of the city. During his reign, trade and commerce flourished. Chandernagore became the most prominent business hub of European traders and attracted people from all over India for considerable amount of mercantile activity (Fig. 2.1).

Serampore is a famous and historical city in the **Indian state** of **West Bengal**. It is a precolonial town (city) on the West Bank of the **Hooghly River**. The total area is 11.6 square kilometres (4.48 sq. mi) and had a population of 181,842 as per 2011 Census. Serampore is connected to Kolkata by railway, roadways and Hooghly River, and it takes about an hour to reach there by car. A few private bus services are also available to connect with Kolkata from Serampore. The colonial history of Serampore began in 1755 when the Danish East India Company was authorised by the local prince to set up their trade post along the Hooghly River, almost 25 km north of Kolkata. The settlement was named as Frederiksnagore but was usually called by its Indian name Serampore. It has a multilayered history with Indo-Danish-British built and cultural heritages through different periods of time (Fig. 2.1).

Colonisation had a profound influence on development of urban character around the globe, and most of the colonial towns in developing countries reflect the European influence in their urban pattern till date. The primary intentions of colonisers were trade and commerce, missionary activities and military purpose. The establishment of European enclaves in the colonised territory was planned to build up an urban network, a cultural domination, a social set-up and a physical indentation that would be easily recognisable right through the colony. Areas in and around the colonial core were

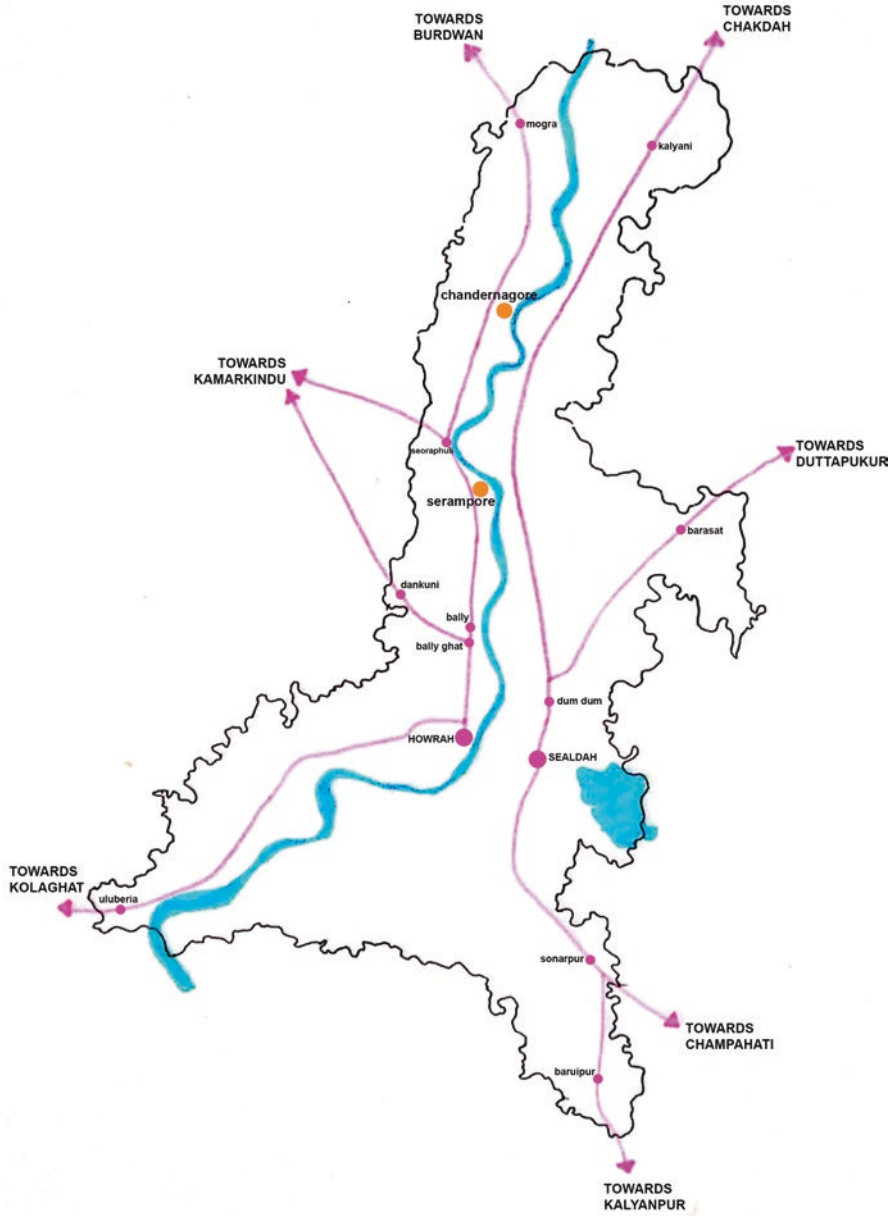


Fig. 2.1 Location of Chandernagore and Serampore within Kolkata Metropolitan Area

highly influenced by the urban pattern of the colonisers creating a unique juxtaposition. Both the towns under discussion in this research fall under the same category.

Further if we dig deeper, few more characteristics of these towns could be identified, such as area in and around the colonial core encompasses most of the colonial

buildings which are designated as colonial heritages nowadays. A few colonial planning features like grid iron arrangement model, provision of Public Square at the city centre, presence of Church as a landmark around the core, formation of views and vistas by erecting important landmarks, etc. are noticeable in these towns. In many cases, a moat or ditch or canal was made, for defence and goods supply purpose. Alienation of colonial core and local settlement is mostly visible in every town which is a cautious attempt of racial segregation between the blacks and the whites.

Even though the towns are getting rapidly transformed and characterized by modern construction, there are still quite a few privately owned structures constructed in between the seventeenth and nineteenth centuries. Traders from nearby places, affluent local merchants, local landlords, wealthy residents, etc. have built many large mansions and villas. Some of them are still inhabited, some are standing as ruins, and some are getting demolished as rebuild. Whatever the state is, these structures tell stories of a bygone era which deserves to be documented thoroughly before they disappear with the moment in time.

These towns across the globe have faced several phases of development in pre-colonial, colonial and postcolonial period. Starting from cluster of flourishing villages to thriving urban centres, they have gone through tremendous transformation process during precolonial and colonial time based on the then socio-economic circumstances. Industrialisation, economic liberalisation and current phase of globalisation are postcolonial phases that these towns are going through. A rapid change in socio-economic condition due to the three mentioned factors, especially globalisation, is shaping the future of the settlement pattern of these towns.

The study areas are selected on the basis of the above-mentioned characteristics and also keeping in mind the fact that areas developed after postcolonial time are too new to face transformation yet, in the case of these towns.

Chandernagore and Serampore: An Overview of the Past and Present

As discussed previously, it can be easily acknowledged that Chandernagore and Serampore are the two towns where physical and spatial impact of French and Danish Colonial pattern, respectively, is still on the edge with its present developmental scenario.

Chandernagore was a settlement of few flourishing hamlets, namely, Gondolpara, Boro and Khalishani which were mentioned in Manasa Mangal by Bipradas around 1495 and Kabikankan Chandi of Mukundaram around 1533–1600. After the French took over the town, it has grown as remarkable urban centre of trade and commerce recognised during the late seventeenth century when the foundation of Kolkata was just getting laid. The town was fortified, an urban grid was laid, and many houses were established. During the war between British and French, the town was taken over by the British, and they demolished it extensively. The city was returned to the

Frenchmen in 1812, but by the time its commercial importance was gone, and it remained as a calm dormitory town of Kolkata. But it was always prominent for its clean wide thoroughfares with many elegant dwellings along the river bank. Chandernagore remained French establishment, and it got independence from French colonial rule on June 1952. Thus, this town had a better blend of French and local mix in terms of both tangible and intangible aspects of urbanism.

Serampore was a cluster of small villages which developed after the Danes took over the place. The Danish trade post was a fortified area consisting administrative and residential structures. Other migrant European communities were also there other than Danes who built villas along the main street and the riverfront. Indian merchants also were attracted and got settled in the Serampore, and palaces were built alongside with European houses. In 1845 Serampore was sold to the British East India Company by Danes. It is the town where Danish administration allowed the English Missionaries to work freely which had a great impact on the educational revolution, and thus their physical manifestations were the esteemed educational precinct and the residential settlement around the colonial core.

Despite tremendous development pressure, the towns are able to maintain its street network and urban structure. A large part of population comes to these towns from neighbouring areas for job opportunities. The riverside settlements also attract students from places for educational opportunities which generate economical vitality to localities in a large scale.

In this context, this two is considered for further investigation and chosen as case study sites for this research. The area under scrutiny has been zoned in and around the colonial core of the town, where the predominant building use is residential and a remarkable number of heritage buildings are available as shown in Figs. 2.2 and 2.3 of Chandernagore and Serampore, respectively.

Defining the Study Area

For the purpose of this research, a few factors were selected based upon the colonial influence and its long-term effect in a settlement's urban character, such as location of the river which was the main transport mode for mercantile purpose during colonial time, position of the current colonial core and its functional extent and street configuration which was laid by the colonial power for ease of access control. Based on the stated consideration, in both the cities, study area is defined as shown in Figs. 2.2 and 2.3. It is clearly visible from the figures that river being the most important spine of that time, the settlements flourished linearly along the course of the river. In the case of Chandernagore, the town has grown along the river and the Grand Trunk Road (G. T. Road) mostly. The area under noticeable transformation is also found in this segment largely (refer to Fig. 2.2). The proximity of the railway station is a bit more than that of Serampore (refer to Figs. 2.2 and 2.3) in this case which has triggered a linear development pattern along the transport spines in the rest of the town of Chandernagore. Whereas if we see the case of Serampore,

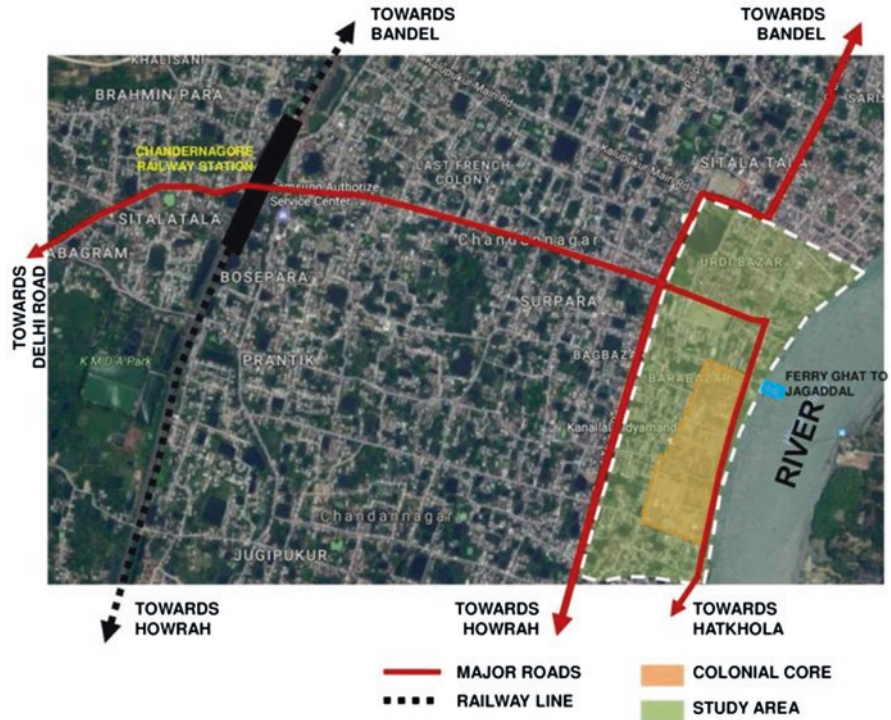


Fig. 2.2 Selected zone: Chandernagore

railway station and the river are very close by, so the development pattern here is sandwiched between the railway line and the river.

For appraisal purpose, Chandernagore has been subdivided into three subzones namely:

Zone I – Residential Area The main residential area surrounding the administrative hub is called as Padri Para. The word Padri means Priest, and Para is a neighbourhood; it can be collectively called a ‘neighbourhood of Priests’. Residential building present here dates back to the colonial era, but a blend of local and colonial architecture is highly visible in the old residential buildings of this zone still now.

Zone II – Administrative Hub The administrative hub of Chandernagore falls under Burrabazar area. It also has the iconic Jora Ghat along the banks of Ganges which was the port during French rule. The Strand Road acts as the grand avenue of public place of the town, and the Burrabazar Main Road acted as the connector between the administrative centres to the other parts of the town where the bungalows of the French officials can be found.

Zone III – Mercantile Zone The French came in Chandernagore in 1696 and fortified it (calling it ‘Fort d’Orleans’) by 1701, which was later destroyed by the

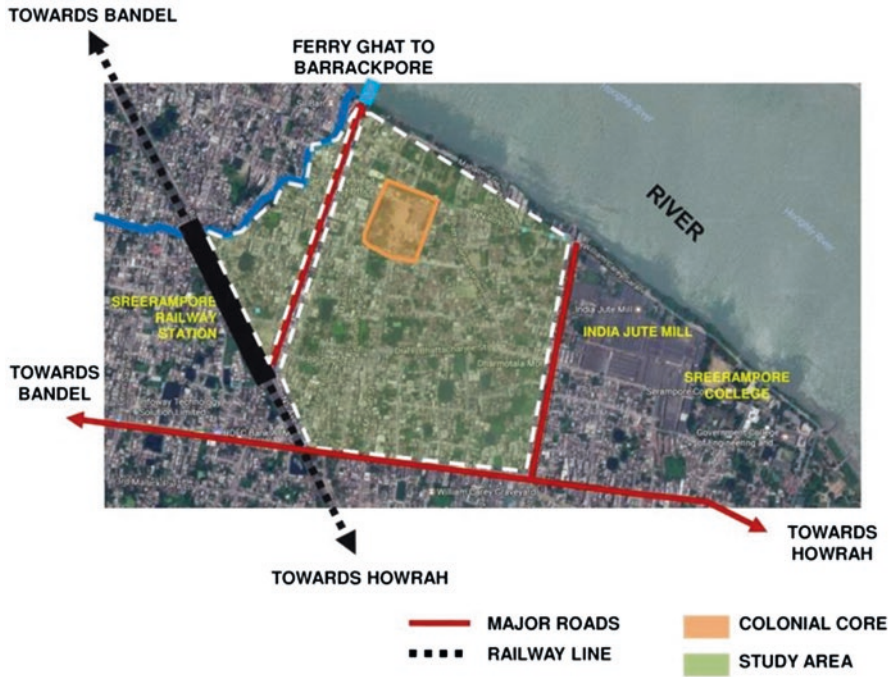


Fig. 2.3 Selected zone: Serampore

Britishers. The fort existed in the area which is now known as Urdi Bazar. Today, Urdi Bazar acts as major commercial hub (Fig. 2.4).

Similarly, Serampore has been subdivided into four subzones, namely:

Zone I – Riverside Area The two most oldest residential settlements of Serampore – Roy Ghat and Shill Para – are part of this area. The building typology and architectural expression in this area reflect the colonial heritage of the town.

Zone II – Administrative Area The most prominent colonial heritage area consisting old colonial institutional and religious structures is present here along with very few but architecturally rich residential buildings which make this area important for study.

Zone III – Sociocultural Zone This area is located western side of the Serampore Court. The major old and famous institutions of the town are present in this zone. Some of them are constructed in the mid-nineteenth century during Bengal's educational revolution and still functioning as anchors of knowledge. Residential buildings present in this area are also of equal important as heritage.

Zone IV – K.M. Shah Street Area Between K.M. Shah Street, G.T. Road and Rishi Bankim Sarani, the entire area is native residential area of the old town. Major

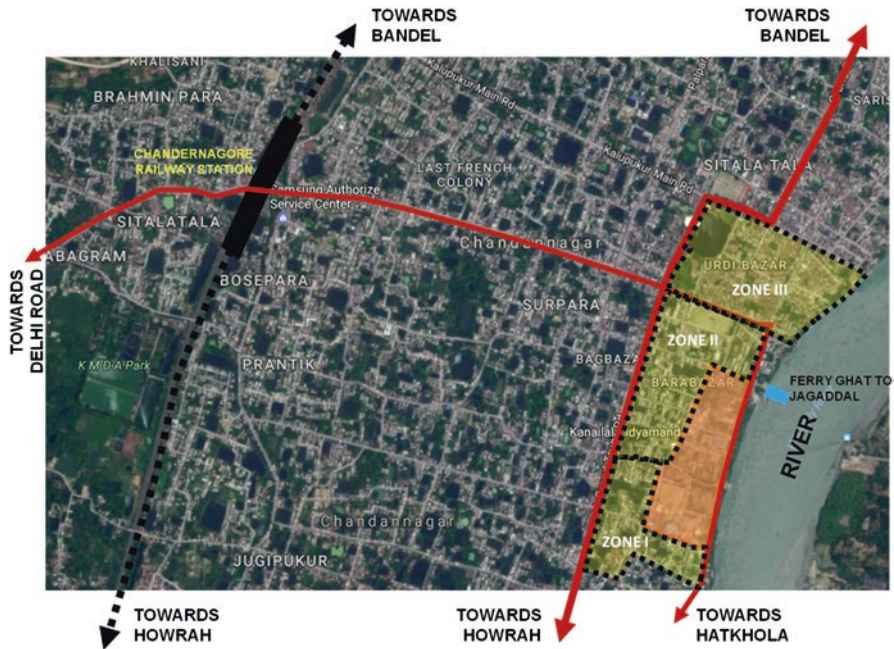


Fig. 2.4 Zonal subdivisions – Chandernagore

old Indo-Danish or Indo-British lavish residential precincts are present in this zone. From historical background, it could be found that this area was majorly developed by the traders of old days, and their villas were present in this area (Fig. 2.5).

Appraisal of the Current Scenario

Based on several literature explorations and reconnaissance surveys of the places, a threefold assessment method has been formed to evaluate the current conditions of the selected areas of the two towns, namely, accessibility analysis, character appraisal and legibility analysis. Accessibility analysis deals with identification of street network system, identification of mode of transport and availability of public transport system. It is done for both vehicular and pedestrian systems to understand the conflicts or successful nature of overlapping of both.

Character appraisal here is defined by deriving the built–open ratio, understanding the built form typology and identifying its architectural character. It is done majorly for residential buildings but in a residential cluster if any mixed-use or other functions are present that were also taken into consideration for an understanding of functional mix in dedicated residential areas.

Legibility analysis comprises of identification of the basic urban design way finding parameters, i.e. Lynch's five elements, namely, path, edge, node, district and

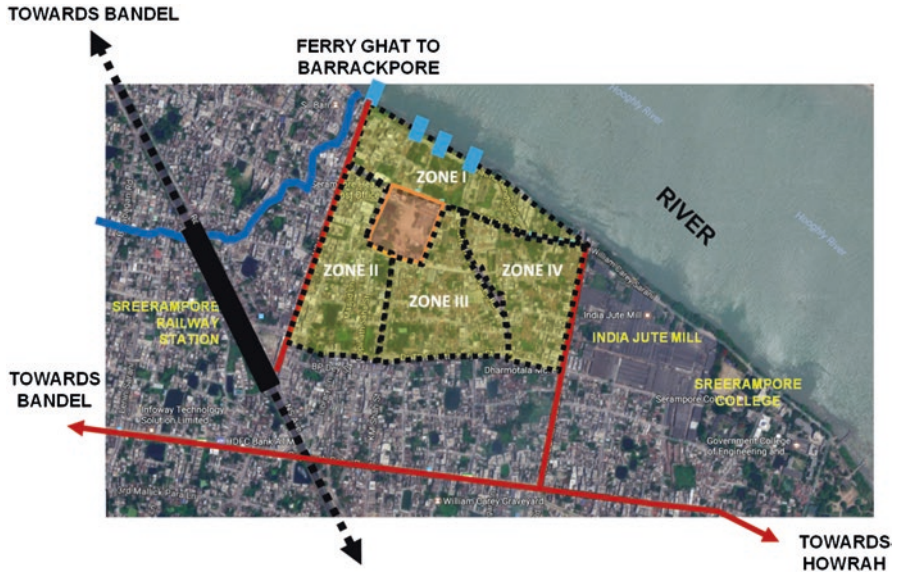


Fig. 2.5 Zonal subdivision: Serampore

landmark. Out of which path, edge and district were eliminated later as the selected zones were majorly residential districts subdivided into smaller parts depending upon their current functionality. Edge and path were eliminated as the major roads were considered in this pilot survey purpose.

Accessibility Analysis (Figs. 2.6 and 2.7 and Tables 2.1 and 2.2)

Being a small town, there is only one major spine that connects the neighbouring towns with Chandernagore, that is, the G.T. Road with four types of public transportation system: bus, auto, toto and rickshaw. In case of other two roads, Toto is the only mode of shared public transport available. Majorly people travel by their own vehicles like bicycle and motorcycle. Use of four wheeler is comparatively quite less. Pedestrian-vehicular conflict is extensively visible in G.T. Road and Burrabazar Main Road, whereas Strand Road has a wide walkway cum promenade which cuts down the conflict (Fig. 2.6 and Table 2.1).

A few private bus services from Serampore are available which connect the town with Kolkata. Frequency of bus service is more in this case. But this is also a fact that the buses are used for intercity connectivity. For intracity connectivity, this town is also dependent on shared Auto, Toto and cycle rickshaw as visible from the table above. Conflict of pedestrian and vehicular movement is extensively visible in all the roads. No proper pedestrian facility is available in the mentioned road though an enormous number of people travel as many places are within walkable radius (Fig. 2.7 and Table 2.2).

Fig. 2.6 Movement system present in three chosen roads, Chandernagore



G.T. ROAD



STRAND ROAD



BURRABAZAR MAIN ROAD

Fig. 2.7 Movement system present in four chosen roads, Serampore



M. G. ROAD



N. S. AVENUE



K. M. SHA STREET



RISHI BANKIM SARANI

Table 2.1 Survey information, Chandernagore

Accessibility analysis	Chandernagore					
	Vehicular				Pedestrian	
	Motorized transport		Non-motorized transport			
	Volume	Direction	Volume	Direction	Volume	Direction
G.T. Road	Bus – 1/20 min	Towards Chinsurah or Bhadreswar	Rickshaw – 20/5 min	Towards Bagbazar or Jyotir more or convent road	10/min	Towards Strand Rd
	Auto – 25/5 min				8/min	Towards Bagbazar
	Toto – 30/5 min				10/min	Towards Jyotir more
Strand Road	Toto – 25/2 min	Towards convent Rd. junction or Hatkhola	Rickshaw – 25/2 min	Towards convent Rd. junction or Hatkhola	20/min	Towards Urdi Bazar
					15/min	Towards Hatkhola
Burrabazar Main Road	Toto – 10/5 min	Towards Vivekananda road or Church road	Rickshaw – 10–12/5 min	Towards GT Rd. or Strand Rd	6–7/min	Towards Church road
					10–12/min	Towards Bhudeb Mukherjee road

Table 2.2 Survey information, Serampore

Accessibility analysis	Serampore					
	Vehicular				Pedestrian	
	Motorized transport		Non-motorized transport			
	Volume	Direction	Volume	Direction	Volume	Direction
M. G. Road	Nil	Nil	Nil	Nil	5/min	Shill Para–Roy Ghat (both)
N. S. Avenue	3 bus – 1/30 min	Serampore station – Bag bazar (both)	Auto 6–7/min	Serampore Ferry Ghat– Serampore Station/super market (both)	50–60/min	Station/super market– T.C. Goswami Street (both)
			Toto 10–12/min			
			Rickshaw-5/min			
K. M. Shah Street	Auto – 2/min	Serampore Court-G.T. Road (both)	Rickshaw-5/min	Serampore Court–G.T. Road (both)	20–30/min	Serampore Ferry Ghat– T.C. GOSWAMI RD
	Toto – 3/min					
Rishi Bankim Sarani	3 bus – 1/10 min	Serampore Station– Bag bazar (both)	Toto 4–5/min	Serampore Ferry Ghat–G.T Rd./ Walsh hospital	30–40/min	Serampore Ferry Ghat–G.T Rd/ Walsh Hospital
			Rickshaw-5/min			

Character Appraisal (Figs. 2.8 and 2.9 and Tables 2.3 and 2.4)

Fig. 2.8 Character appraisal details in three chosen roads, Chandernagore



G.T. ROAD



STRAND ROAD



BURRABAZAR MAIN ROAD

Fig. 2.9 Character appraisal details in four chosen roads, Serampore



M. G. ROAD



N. S. AVENUE



K. M. SHA STREET



RISHI BANKIM SARANI

Table 2.3 Survey information, Chandernagore

Character appraisal	Chandernagore							
	Building details				Open space details			
	Number	Height	Ground coverage	Arch feature	Land value	Area	Pattern	Orientation
G.T. Road	Number and height:				Land value: 28–30 lakh per kottah			
	Bungalow – 39, old/new, active, 2–3 storey, aligned to the road				Area: Very less area is dedicated public open space			
	Apartment – 11, new, active, 3–5 storey aligned to the road				Pattern: Linear			
	Ground coverage: 60%				Orientation: North-South with respect to street alignment			
	Architectural features: Majority of the old buildings are demolished, and new apartment typology has come up with modern features							
	Existing old residences are villa type, build during the early twentieth century with front garden and balconies							
Strand Road	Number and height:				Land value: 35–40 lakh per kottah			
	Bungalow – 5, aligned to the road, 2–3 storey				Area: The entire street along with river front act as a dedicated public space			
	Apartment – nil				Pattern: Linear			
	Ground coverage: 60%				Orientation: East-West with respect to street alignment			
	Architectural features: Majority of the buildings are colonial structures with arches and colonnade							
Burrabazar Main Road	Number and height:				Land value: 25–30 lakh per kottah			
	Bungalow – 8, old, active, 1–2 storey, aligned to the road				Area: Street does not have dedicated open space			
	Apartment – 15, new, active, 4–6 storey, aligned to the road				Pattern: Linear			
	Ground coverage: 50–60%				Orientation: North-South with respect to street alignment			
	Architectural features: Old buildings are mansions with large gardens, carrying colonial architectural styles							
	New buildings are apartments with modern style							

Table 2.4 Survey information, Serampore

Character appraisal	Serampore							
	Building details				Open space details			
	Number	Height	Ground coverage	Arch feature	Land value	Area	Pattern	Orientation
M. G. Road	Number and height:				Land value: 10–12 lakh per kottah			
	Bungalow – 14–15, 2–3 floor, good condition				Area: Open space is available but unused			
	Apartment – 3, 4–6 floor, good condition				Pattern: Linear			
	Ground coverage: residential or public semi-public zone 60–80% and 20–40% coverage, respectively				Orientation: North-South with alignment			
	Architectural features: Indo-Danish architectural style is predominant in this stretch with remarkable buildings like Danish tavern, SDO residence, Roman Catholic Church, etc.							
N. S. Avenue	Number and height:				Land value: 15–20 lakh per kottah			
	Bungalow – 6–7, 2–3 floor, aligned to the road				Area: No open space available			
	Apartment – 4, 5 floor, aligned to the road				Pattern: Linear			
	Ground coverage:				Orientation: East-west with respect to street alignment			
	Architectural features: Old buildings are situated without front setback, whereas new buildings are having road facing balcony and set back as per rules							
K. M. Shah Street	Number and height:				Land value: 10–12 lakh per kottah			
	Bungalow – 10–12, 2–3 floor, good condition				Area: No open space available			
	Ground coverage:				Pattern: Linear			
	Architectural features: The main architectural feature of this stretch is the magnificent house of K M Sha with traditional Indian and European style of architecture				Orientation: East-west with respect to street alignment			
Rishi Bankim Sarani	Number and height:				Land value: 12–15 lakh per kottah			
	Bungalow – 20–22, 2–3 floor, good condition				Area: No open space available			
	Apartment – 1, 5 floor, good				Pattern: Linear			
					Orientation: North-south with respect to street alignment			

Table 2.5 Survey information, Chandernagore

Chandernagore					
	Path	Node	Edge	Landmark	District
Legibility analysis	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity
G.T. Road	Main arterial road	Node 1	Residential towards the southern part mixed use on the middle part	All the following landmarks are different in character and expression	Being the main spine of the town the road acts as a linear continuous commercial district
	Public transportation facility available in a large scale	Focal point: Padri Para more	Commercial edge towards the northern edge	HDFC Bank – placed on a ground floor of building with signage	
	Clear directional quality	Generator: Transportation activity		Sweets Corner – placed on a ground floor of building, no predominant signage or character is present	

(continued)

Table 2.5 (continued)

Chandernagore					
	Path	Node	Edge	Landmark	District
Legibility analysis	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity
		Node 2 Focal point: Chobi ghar more Generator: Transportation and commercial activity Node 3 Focal point: Bagbazar more Generator: Transportation and commercial activity Node 4 Focal point Hospital more Generator Transport, school, hospital Node 5 Focal point Laxmigunj bazar Chowmatha Generator Commercial activity		Vidyasagar Abasan – a government housing with signage Petrol Pump – almost an open space with signage	

(continued)

Table 2.5 (continued)

Chandernagore					
	Path	Node	Edge	Landmark	District
Legibility analysis	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity
Strand Road	Main arterial road	Node 1	Public semipublic facility on western side of the edge	Entire standard is full of French colonial structures like church, museum, court, schools, etc. along with new educational facilities like Chandernagore College, new complex, Rabindra Bhaban, etc. All of them act as city-level landmark	Complete public semipublic zone along the entire stretch with homogeneous uses but nonhomogeneous architectural expressions
	A pedestrian friendly spine with recreational and public, semipublic facility	Focal point:	River on the eastern side of the edge with public recreational facility		
	Clear directional quality	Jora Ghat			
		Generator:			
		Recreational facility			
		Node 2			
		Focal point:			
		Rani Ghat			
		Generator:			
		Public, semipublic and transportation activity			

(continued)

Table 2.5 (continued)

Chandernagore					
	Path	Node	Edge	Landmark	District
Legibility analysis	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity
Burrabazar Main Road	Subarterial road with commercial and educational facility	Node 1	Mixed use on the northern part institutional edge towards the southern part	Kanailal Vidya Mandir – One of the major institutes of the town consisting colonial heritage structure	It is the most heterogeneous spine of the town with mix of different activities starting from religious to educational to commercial to administrative and residential
	Clear directional quality	Focal point:		Old Post Office Building – Its colonial-built expression makes it identifiable	
		Old post office junction		Church – colonial-built expression makes it identifiable	
		Generator:			
		Commercial activity			
		Focal point:			
		Church junction			
		Generator:			
		Transportation activity			

Legibility Analysis (Tables 2.5 and 2.6)

The three selected roads are acting as main spines of the town and are very well-defined. In each case almost all the five legibility elements are present. Being the main path of the entire town, these roads are acting as guiding factor for the whole town. Majority of the buildings present in Strand Road or G.T. Road act as city-level nodes or landmarks, whereas presence of city-level landmark is very less, and local landmarks, are also not found in abundance. But wayfinding is not a problem in all the three cases. For the selected study area, the river is acting as one edge and G.T. Road as another which are very distinct in nature. View and vista created by the street network allow the nodes and landmarks to be prominent from a distance also (Table 2.6).

Unplanned commercialization has led into congestion in some of the major spines like N.S. Road. But overall it can be concluded that legibility is moreover achieved with the presence of defined elements.

Table 2.6 Survey information, Serampore

Serampore					
	Path	Node	Edge	Landmark	District
Legibility analysis	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity
M. G. Road	Subarterial road with unclear directional quality		Edge:	SDO Bungalow – colonial-built expression makes it identifiable	Non continuous character
			North-eastern edge of the road is the river		
			South eastern edge of the road is a combination of residential and public semipublic buildings		
			Extent	Danish Tavern – colonial-built expression makes it identifiable	
			River is a natural barrier, and it runs through the entire length of the road		
N. S. Avenue	Main arterial road	Node 1	Edge:	SBI old building – old colonial 2 storey building with associational value	Continuous commercial stretch with non homogenous character
			Commercial building and river		
	Public transportation facility available in a large scale	Focal point: Ferry Ghat	Extent: Commercial - throughout the street	Satsang Society – old building with religious value Serampore high school – Old colonial structure with institutional and associational value	
	Clear directional quality	Generator: Transportation activity	River	Golakdham – old Indo-European style private villa with traditional architectural value	
			At the extreme edge		

(continued)

Table 2.6 (continued)

Legibility analysis	Serampore				
	Path	Node	Edge	Landmark	District
	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity
		Node 2 Focal point: Junction of Roy MC Lahiri street and NS Avenue Generator: Transportation and commercial activity			
K. M. Shah Street	Subarterial road	Node 1		K. M. Sha’s Residence – the complex is a landmark, and its architectural value makes it unique	Continuous residential stretch with homogenous character
	Residential edge	Focal point:			
	Unclear directional quality	Junction of Panchu Gopal Bhaduri Sarani and K. M. Shah street			
		Generator: Serampore DIB office, Police Station Node 2 Focal point: Junction of GT Rd. and K. M. Shah street Generator: Transportation and commercial activity			

(continued)

Table 2.6 (continued)

		Serampore				
		Path	Node	Edge	Landmark	District
Legibility analysis	Type and directional quality	Focal point and generator	Type and extent	Volume and meaning	Continuity and homogeneity	
Rishi Bankim Sarani	Main arterial road	Node 1	Edge:	India Jute Mill – Colonial industrial structure, but the presence of the entire precinct makes the district different from the rest of the town for its activity and allied facility	Mixed stretch with several activities with heterogeneous character	
	Public transportation facility available	Focal point:	Residential, mixed use and industrial	Serampore Jail – Colonial architectural structure with an high security expression		
	Clear directional quality	Bor Tala crossing	Extent:			
		Generator: Transportation activity	Northern part of the road is mostly industrial along with industrial residents quarter, and southern part of the stretch is mostly residential along with a few mixed use activity			
		Node 2				
		Focal point: Dharmatala crossing				
		Generator: Transportation activity				

Ascertaining the Current Condition

Chandernagore was under French rule till the town got independence. Thus, the French colonial imprint is still visible to a large extent. Whereas Serampore was seized by the British from the Danes which has resulted into a mixed colonial expression for the town.

A brief discussion of the current scenario of the two towns based on the observation of the study has been done in subsequent sections.

Chandernagore: The French Sole

The entire colonial zone falls under the Burrabazar area comprising of the city administration, judicial sector, educational centres and cultural establishments. Thus, this area can be termed as the heart of the town. It can be alleged that the colonial town planning system of distinctive administrative core and residential area is still vividly present in this case which encompasses the essence of the colonial past.

The public areas along Strand Road, i.e. the promenade along with its commercial and recreational facilities, are still functioning in full swing and well maintained by the town administration which is a very prominent example of successful public realm. Unlike many colonial cities like Kolkata, New Delhi, etc., this city core doesn't become deserted after working hours but becomes a commercially successful public space.

The commercial values of areas close to G. T. Road are increasing day by day. Thus, the real estate sector is taking over the old buildings, and subsequently new developments are coming up, disregarding the inherent settlement character. Large commercial developments are taking place in this area, resulting in a homogenous urban environment not conducive to the celebrated image of the town. This is the generic and most obvious transformation process that majority of the Asian small towns are undergoing.

Serampore: The Danish-British Duo

The colonial core consisting of current judicial section of the town is still present in its old place keeping along with some residential and commercial area which makes the situation a little chaotic due to presence of conflicting activities together in an unintended approach.

Being a commercial centre of nearby places, large unplanned commercial development along major roads has squeezed the 'right of way', and therefore conflict between pedestrian and vehicular is increasing day by day in these roads. Moreover, uncontrolled introduction of battery-operated vehicles has degraded the condition in current days.

Serampore has a legacy of being an industrial town, and a few of the old industries are still functioning. The old areas are taken over by industrial workers in most of the cases. The living conditions in these areas have been blighted mainly due to huge illegal encroachment.

Conclusion

Serampore and Chandernagore are different from each other in the method of city development. Serampore has witnessed the rise and fall of feudal system, arrival and settlement of the Danes and a cultural renaissance brought about by the English by constructing the railway, leading to industrial developments. Chandernagore, on the other hand, experienced development under mostly one rule.

At present, both places have settled in a coherent development process that is driven by the market and has been spontaneous and chaotic. Both these towns are part of the larger development of the metropolis Kolkata and are part of the Kolkata Metropolitan Region (KMR). Their regional planning is now thus tied along with that of Kolkata.

The towns are now in a transitional mode either from planning type that is top down to something more organic or from one mode that is spontaneous and driven by market to a more stable one. New approaches should be made towards governance and development to strike a balance between the top-down and bottom-up schemes and the planned and unplanned urban components.

Robust guidelines to be developed by the concerned authorities to channelise the development in a desired direction and to enable multiple stakeholder participation. The guideline, that is to be developed, should consider the factors like – accessible street network, optimum population density, maintained public space, streetscape allowing social interaction, development of building typology to encourage mixed use functions – to maintain the identity and image of these towns.

As the existing environments in some areas are stable and not conducive for regeneration or new development, this research concludes that small-scale changes in Serampore will enhance the urban vitality. The aim is to bring some diversity to the existing environment and the lifestyle. In areas like Chandernagore or Pondicherry in Tamil Nadu, four- to five-level apartments' density is conducive to building up a sense of the urban. These places also serve to show that conventional street layouts consisting of open blocks and neighbourhood boundary help small businesses to prosper and develop; street life also flourishes under this compared to the tree-like system with isolated neighbourhoods.

Developmental authorities should from this realize the fact that the responsibility of building a sustainable and vital society shouldn't be the responsibility of the market. The duties of planning and administration should be promptly taken by the authorities. The small businesses that spring up and give birth to the street life can only partially develop a slice of urban space. A society of high quality also requires properly planned facilities, city centres and services and administration that benefit the public.

New towns that are coming up face both the challenge of development and testing if the planning is effective as well as approach of the government, to strike a balance between top-down and bottom-up strategies to develop new areas that are successful in the years to come.

Factors relating to social processes have been the strongest impact in the urban transformation period of the two towns. Illegal construction was a direct reflection of the fact that legal systems can't keep track of the social relations during the transition period. Urban form has been transformed during the transition period which led to the development of building as per private capital needs and construction land denationalised; and it is being evaluated as per market requirement, leading to change in the approach to urban space planning. The involvement of the owners and users of space with the process of the planning of urban space has become an important aspect of it.

Architectural design has a direct impact on urban space through the shape and the materialisation of which, depending on the degree of integration of the contextual

conditions, considers the architectural creativity directly related to the degree of economic development of society. If the urban space has to be designed in a holistic method, one needs to take into consideration all factors in mind.

The present research work has focused on analysis of these two towns of the Little Europe only. The other adjoining similar towns also need to be considered and scrutinised upon, in order to get an overall dimension of these transformations. In the long run, it would be worthwhile to investigate further on this issue, so as to make these towns livable and meaningful in the near future.

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