Chapter two: Historical background of Kolkata and its Construction Industry

Introduction:
Kolkata, formerly known as Calcutta, is the capital of West Bengal. This 'City of Palaces' is the gateway to the east. There are many stories behind the name of Kolkata. Some people say that the city has derived its name from the word 'Kalikshetra' meaning land of goddess 'Kali' while others believe that Kolkata owes its name to lime (kali) and burnt shell (kata), a material for whose manufacturing the place was famous. While others think that since the city was situated besides the Canal (khal), it came to be known as Kolkata. It is located in the eastern bank of the river Hooghly. The city has a population of almost 4.5 million, with an extended metropolitan population of over 14 million, making it the third-largest agglomeration and the fourth-largest city in India. Kolkata served as the capital of India during the British Raj until 1911. The major population of Kolkata comprises of Bengalis.

Kolkata witnessed economic stagnation in the years following India’s Independence in 1947. However, since the year 2000 an economic rejuvenation has arrested the morbid decline, leading to a spurt in the city’s growth. Like other large cities, Kolkata continues to struggle with urbanisation problems like poverty, pollution and traffic congestion. Kolkata is noted for its revolutionary history, ranging from the Indian struggle for independence to the leftist and trade union movements.

The 'City of Palaces' is often dotted with colonial buildings. The transport system of Kolkata is a mix of modern mass rapid transport and the old transport modalities like the rickshaws. There are many ways to get in Kolkata. One can choose from different options like airways, trains, buses, taxies, metros etc. Kolkata is connected to the rest of India by the national highways, the extensive network of the Indian Railways, and also by air. The major airport of Kolkata is Netaji Subhas Chandra Bose Airport and two main railway stations are Sealdah and Howrah. The famous stock exchange of the city, Kolkata Stock Exchange is one of the largest stock exchanges of India.

Historical background of Kolkata: Development of Kolkata from Marshes to Metropolis:

The history of Kolkata (the then Kolkata is called as Calcutta) traces back to the 15th century. In Mansa Mangal (1495), it is mentioned that the renowned trader Chand Sadagar

passed by Kalikata to offer prayers to goddess Kali at Kalighat temple.\textsuperscript{54} It is probable that Ghat was transliterated in English as Ghata (just as Ram is written Rama) and thus Kalighat became Kalighata and its transition to Kalikata is easy to follow.\textsuperscript{55}

It is known that between Koila Ghat and Chandpal Ghat was the mouth of a navigable creek which flowed from the Salt Lake at Balighattha through the Modern Creek Row, Wellington Square and the locality called Dingibhanga\textsuperscript{56}. Chandney, the junction of Dhurrumtola and Bentick Street is located at the Government place and along the present Hastings Street to the river Hooghly. According to Roy (1901), “Laibazar”, John Bazar, Bartala Bazar, Sham Bazar, New Bazar were all situated in “Dee Kolkata”.\textsuperscript{57} KaliKhetra was the name of the surrounding land and it is said to have derived its sanctity and its name from the fact that the toes of Sati or Kali, the wife of Shiva had dropped on the site of the present temple. Another name of the Kali is Bhabani and the adjacent village of Bhabanipore is also named after her.\textsuperscript{58}

When the Portuguese first began to frequent Bengal about the year 1530, the two great centres of trade were Chittagaong in the east, and Satgaon in the west. In Garden Reach, therefore was the anchoring place of the Portuguese. Towards the end of the sixteenth century the merchant princes of Porto Piquero were forced to seek another market for their trades.

Rev. Long describes that Hooghly was named by the European as Bhagirathy. It was a fact that the Saraswati Khal which then was a very wide running stream from Katwa and Tribeni down to Satgaon was the mighty Bhagirathy stream and Satagaon was a renowned trading post (Roy: 1982: 85).\textsuperscript{59} Surveyor Rennel wrote at that time that in 1566 the Satagaon river was capable of bearing small vessels along by way of Adampur, Omptah and Tamluk...... the river being called the Old Ganges. The banks of Saraswati and Tribeni formed the ancient boundary of the kingdom of Orissa, later part of which became along with Bihar and part of Assam, became the big province of Bengal.

After the Portuguese came the Dutch, who had in 1625 made their way to Bengal and now, established themselves at Pipili and Chinsurah. The English were still continuing with

\textsuperscript{56} The name Dingibhanga is given to the locality on account of a boat having been wrecked there during a cyclone, just as Utta Dingi derives its name from another accident in which a boat was capsized during a storm.
\textsuperscript{57} Roy, A.K., “Short History of Calcutta”, \textit{Census of India}, Government of India, New Delhi, 1901, p: 4
\textsuperscript{58} Suhrawardy, H., \textit{Calcutta and Environs: All Illustrated Guide to Places of Interest and to Excursions In and around Calcutta}, Bengal, E.E.Railway, 1921, p.5.
trade at Balasore and Hariharpore in Orissa and it was not until the days of the great protector Oliver that they returned up the river to Hooghly.

When the Europeans first started commercial relations in Bengal, Satgaon and Hooghly were the chief ports. With the decline of Satgaon on account of the shifting course of the river, the port of Hooghly rose to great eminence under the Portuguese and the Dutch merchants and the river Bhagirathi came to be called as the river Hooghly after this important town on its west bank. The Dutch had established a factory at Chinsurah in 1625 and the English factory was completed in 1658, at Kassim Bazar.

The Armenian by 1660 made Kolkata a reputed trading centre and had built an Armenian Church but even two decades prior to this the Armenians were with the Dutch traders in Chinsurah, Hooghly.

The Ganges had always been the great commercial waterway of Bengal and as a consequence of the impetus caused by the diversion of trade of Satgaon from other channels into the Bhagirathi, villages sprang up rapidly on either side of its bank in spite of the unhealthiness and the marshy nature of the country. Like many other villages in this part of the country, surrounded by tiger-infested jungles and forests of Sundari trees, were the villages of Sutanutty, Gobindapur and Kalikata. Job Chamock first came to Bengal in 1686. He worked at Kassim bazar, Hooghly, Sutanutty, Uluberia and Hidjli and was associated with an expedition against the Nawab's men in which he had to withdraw, after a reverse, to Fort St. George in Madras in March 1689. He was shortly afterwards superseded by Captain Heath. Chamock remained there till end of July, and after patching up a rapprochement with the Nawab, again sailed for Bengal, being re-appointed as the senior Agent of the East India Company.  

On August 24th 1690, Job Chamock landed at the place known as the Mahanta's Ghat near Nimtala Burning Ghat and laid the foundation of Kolkata. In this context a quotation should be mentioned ... "1690, August 24th. The day at Sankrall ordered Captain Brooke to come up with his vessel to Suttanuty, where we arrived about noon, but found the place In a deplorable condition, nothing being left for our present accommodation and the rain falling day and night. We are forced to betake ourselves to boats, which, considering the season of the year, is very unhealthy, Mullick Burcoodar and the country people, at our leaving this place, burning and carrying away what they could."(Blechynden: 1905: 3).

---

In this way Kolkata founded and such was the manner of the arrival of Job Chamock to his last port - the spot where his bones were to lie beneath a stately mausoleum through the centuries, while the settlement he founded amid every circumstances of discouragement and discomfort grew and prospered till it became the capital city of British Empire in India.

Job Chamock, the then Senior Agent of the East India Company, was a very shrewd man. He deliberately selected this site as the midday halting place of European merchants on their travel up the river. The story of the midday halt might have been used as a blind for the Mughal authorities, as the vessels on their way up the river used to halt at Betor, near modern Silpore opposite Kolkata. The chief reason which influenced Charnock to select the site appears to be its commercial and strategic importance.

The site selected by Chamock was peculiarly suitable as a headquarter of the British trade in Bengal, as the Bhagirathi or the Hooghly river tapped most of the agriculturally rich tracts of the Gangetic Valley.

The English came to Bengal about the middle of the 17th century as traders. According to Dr. Roy (1982)\(^2\), the East India Company acquired the land rights of the three villages of Sutanutty, Kolikatta and Gobindapore in the year 1698 from the Roy Chowdhurys. Vidyadhar Roy got only Rs.1194 - 11 annas - 11 pies as price for those 3 villages. A collector was appointed and in due course a map of the entire area was prepared. From this old map one may observe that a canal marked the northern boundary of Sutanutty. It took off from the river Hooghly and made its way to the Salt Lake in the east. The total area of Sutanutty village was 1652 bighas and 12 cottahs and on its southern boundary was the village of Kalikata (Kolkata). The area of this ancient Kolkata was 2206 bighas. South of Kalikata laid Gobindapore with an area of 1178 bighas and 7 cottahs. The village of Bhabanipore likewise lay to the south of Kalikata and still further south was the celebrated Kali Temple of Kalighat. Another creek served as the border between Kalikata and Gobindapore. This creek too flowed into the Salt Lake.

These three little villages served as the nucleus of Calcutta. A short note about three riparian villages may not be out of place. Calcutta meanwhile was growing in stature and in strength. In the Seventeenth Century, Betor\(^3\) disappears from history and its name was changed into the village of Mukwah Tannah and its foreign market transferred to Sutanutty. Sutanutty was the most prosperous of the three villages on which the modern city stands. It

---


\(^3\) Satagaon, not Hooghly, on the right bank of the river, between Tribeni and Bandel, is the great port and not Hooghly. Lower down the river, Betor on the same side was a large market town, where travelers pause to buy provisions and worship the goddess Chandi.
was a cotton mart visited by the European merchants and traders. The name seems to be derived from Suta (thread) and Lutty (bundle). The word Lutty is pronounced as Nutty by many Bengalis as a provincialism. It was in the market place of this thriving cotton mart called Sutanutty “hat” that Job Charnock has said to have sat under a great Peepal tree and while smoking his “Hookah” evolves his plans of a British settlement. This place was the Baitakkana,(the sitting place or a place of assembly) from where merchants departed in bodies to protect each other from robbers, wild beasts and snakes and from where they dispersed on arrival with merchandise for the factories. It was situated near the present terminus station of the Eastern Bengal Railway, the Sealdah Station and the tree stand near the junction of Bow Bazar Street and Lower Circular Road. Only a small Baitakkana bazaar now survives. There is not a board or a tablet to point out where the tree stood. The old landmark was filled in 1820 to make room for the new road, then under construction, and although as a result of an appeal, Lord Hastings interviewed on its behalf, but it was too late. Sealdah was a locality which was not thickly populated and in the jungles near by lived a great many jackals, hence the name Seadah, a corruption of Persian “Shogal Deh”, or a jackal village –Bengali Sheal means a Jackal and “Deh” is Persian for a village.

To the south of Sutanutty on the site of which Fort William is now situated, was the village of Gobindapur. The English capital of India has grown up out of the Union of a group of river- side places. The great majority settled down at Hooghly; but it is said that four families of Basaks (weavers) and Setts(money - lenders) cleared the jungle and erected houses there. They established a hat and a shrine to their patron deity “Visnu” who is called Gobinji whence the name Gobindapur. The well- known Seal families of Kolkata and the present Mullick family of Chorebagan were among the early settlers of this place. To the south of the first two villages there was another village of less importance commercially but more interesting from the religious point of view of the Hindus. In a lonely part of this village near the banks of the Adi-Ganga or the original Ganges, (modern Tolly’s Nulla) was situated a very old temple dedicated to the dreaded goddess Kali to whom human sacrifices were offered. Kalikhetra was the name of the surrounding land.

These villages were also situated at the highest point to where the river was navigable for large sea-going vessels. The site had thus a great advantage over Hooghly, and Chandernagar( now Chandannagar), being near the sea, could provide greater facilities for sea-borne trade and for withdrawal into safety In case of a reverse, which was actually awaited in subsequent years after the capture of the town and fort of Calcutta by Siraj-Ud-Daula. Besides there were no refractory and intriguing factors like the Dutch, Portuguese and the French to contend with, or the Foujdar of the Nawab and his troops, friction with whom it was necessary to avoid. Furthermore the site had the advantage of being near enough the European settlements to keep the English promptly informed of what was going on. Provisions were also plentiful and could be obtained from the flourishing “hats”. The villages themselves and the country to the north, east and south were owned by Hindus from whom it could be obtained on easier terms than the ruling power.
The three villages - Sutanuty, Kolikata and Gobindapore rapidly started to blossom into bustling towns. By 1706, only 16 years after Charnock had settled in Sutanuty and within the brief span of 8 years since the British had purchased the Zamindary rights from Roy Chowdhuris’ as started earlier, about 83 acres of Kolikata proper and 19 acres of Bazar (Burra Bazar) were occupied by people who had built houses and tenements. The remaining area was developed to rice-fields, gardens and plots for the cultivation of vegetables, tobacco and betel leaves.

The prosperity of Kolkata continued unabated till it received a set back on being captured by Nawab Siraj-Ud-Dowla in 1756. The English had not expected the invasion when hostilities commenced and the Nawab knocked at the gates of Kolkata Governor Drake and many others officials fled panic stricken to the ships which soon flowed down the river. The garrison was left to its fate, but put up a stubborn defense under the gallant Irishman Holwell till it was driven to surrender. He and his companions numbering 146 men and women are said to have been forced into a small room, measuring 18 by 14 feet, for the night ventilation was provided by means of only two small grated windows, the heat was intense, the closely packed crowd endured terrible sufferings and when the morning came and the door was opened only 23 were found alive. Holwell is said to have saved his life by resorting to the expediency of sucking his shorts, soaked in perspiration to allay his thirst. This is known as the "Black Hole Tragedy". (Suhrawardy: 1921: 11). The English then withdrew to Madras. Kolkata was recaptured by Clive and Admiral Watson early in 1757. The prosperous Mohammedan town of Hooghly was bombarded in retaliation and the sufferings of the victims of the Black Hole were avenged. The battle of Plassey was fought and Nawab Siraj-Ud-Dowla’s army defeated and dispersed. He was disposed of and Mir Jafar was put on the Masnad of Bengal by the English. Siraj-Ud-Dowla fled from Murshidabad, but was captured in the hills of Rajmahal and brought as a captive to Murshidabad where Miran, the son of Mir Jafar, put him to death. The company was given adequate indemnity. Heavy compensation was also paid to the merchants. A part of the money received from the Nawab utilized to build a new fort. The inhabitants were removed and the jungles cleared and the foundations of the present Fort William were laid. The clearing of the jungle round the fort by Clive led to the formation of the Maidan which is today the pride of Kolkata. The fort was finished in 1778 and since then the town of Kolkata has gone on expanding and flourishing uninterruptedly. The town gave itself up to general rejoicing, and at this happy time says Orme, “Quarrels were forgotten and enemies became friends.” (Blechynden: 1905: 67.)

Warren Hastings obtained permission to build a suspension bridge over the Kaliaghat Nullah in 1763, on the way to his garden-house at Alipore. In the early days in Kolkata there

---

64 Suhrawardy, H., Calcutta and Environs: All Illustrated Guide to Places of Interest and to Excursions in and around Calcutta; Bengal, E.E.Railway, 1921.

were virtually two separate cities—those of the white and colored residents respectively. The former were concentrated in an area measuring about 220 acres known as Christian Kolkata. To the north of this enclave and extending up to the Mahratta Ditch was the so called "Native Town" with its Indian residents.

According to Roy (1982) the Portuguese and Armenian agents of such prominent Bengali merchants as the Setts and Basaks were settled in Murgi-hata and Chinabazar. The Armenian Church is located in this area. By 1770, the southern area of the city Gobindapore and Bhabanipur were occupied almost exclusively by Bengalis. When a large section of Gobindapore was taken over by the Company for the construction of a new fort, many of its Bengali residents had to move out to new areas made available to them in exchange for their original holdings. They then built up the neighbourhoods of Taltola, Shovabazar etc.

After the death of Charnock the settlement started by him continued to progress and develop. A local rebellion was made the excuse for this construction of a fort, the need for which had been felt for many years, to safeguard the commercial and industrial interest of the Company. The old fort occupied the site now covered by the East Indian Railway House in Fairlie Place on the north, the General Post Office and Koilaghat Street on the south, the river which then flowed where the Strand Road is formed the western, and Dalhousie Square as eastern boundary.

With the passage of time many Governor Generals like Lord Clive, Warren Hastings, Lord Wellesley, Lord Dalhousie etc. came over to Kolkata and ruled for 200 years and the present Kolkata developed. It was during the period that the marshes surrounding the city were drained and the government area was laid out along the banks of the Hooghly River. Richard Wellesley, the Governor General between 1797 – 1805, was largely responsible for the growth of the city and its public architecture which led to the description of Kolkata as "The City of Palaces". The city was a centre of the British East India Company's opium trade during the 18th and 19th century; locally produced opium was sold at auction in Kolkata, to be shipped to China.

The city underwent rapid industrial growth from 1850s, especially in the textile and jute sectors; this caused a massive investment in infrastructure projects like rail roads and post & telegraph by British Government. The coalescence of British and Indian culture resulted in the emergence of a new Babu class of urban Indians—, whose members were

---


67 Dr. Roy, Biren, Marshes to Metropolis Calcutta; National Council of Education, New Era Publisher, Calcutta, 1982, p.27
often bureaucrats, professionals, read newspapers, were Anglophiles, and usually belonged to upper-caste Hindu society. The 1905 Partition of Bengal on communal grounds resulted in widespread public agitation and the boycott of British goods (Swadeshi Movement). Kolkata port in 1945, was an important military port during Second World War. These activities, along with the administratively disadvantageous location of Kolkata in the eastern fringes of India, prompted the British to move the capital to New Delhi in 1911. The city’s port was bombed twice by the Japanese during World War II. According to Sen (1973), as food stocks were being diverted to feed allied troops, millions starved to death during the Bengal Famine in 1943. In 1946, demands for the creation of a Muslim state led to large-scale communal violence resulting in the death of over 2,000 people. According to Gandhi (1992), partition in India also created intense violence and a shift in demographics - large numbers of Muslims left for East Pakistan, while hundreds of thousands of Hindus fled into the city.

Over the 1960s and 1970s, severe power shortages, strikes and a violent Marxist-Maoist movement — the Naxalites Movement — damaged much of the city’s infrastructure, leading to an economic stagnation. In 1971, war between India and Pakistan led to the mass influx of thousands of refugees into Kolkata resulting in a massive strain on its infrastructure. In the mid-1980s, Mumbai overtook Kolkata as India’s most populous city.

Metropolitan Kolkata which includes not only the city of Kolkata, but the corporation of Howrah and 32 more municipalities like Naihati, Bhatpara, Uttarpurge, Barrackpore, Garden reach, South Suburban (Behala), Serampore e.t.c and covers an area of 1450 sq Kms. Actual city i.e., the portion within the Kolkata Corporation is a mere 104 sq Kms. The Metropolitan area of Kolkata with the surrounding municipalities had a population of 9.5 million by the end of 1982.

Kolkata has been a strong base of Indian communism as West Bengal has been ruled by the CPI (M) dominated Left Front for three decades now — the world’s longest-running democratically-elected Communist Government. The city’s economic recovery gathered momentum after economic reforms in India introduced by the Central Government in

---

the mid-1990s. Since 2000, Information Technology (IT) services revitalised the city's stagnant economy. The city is also experiencing growth in the manufacturing sector recently.

Kolkata Today:

Location:

Kolkata is situated in eastern India at 22°30'N and 88°30'E in the Ganges Delta at an elevation ranging between 1.5 to 9 metres. It is 120 Km (80 miles) from the Bay of Bengal and stands on the Eastern Bank of the river Hooghly. Total area of Kolkata is 5341 sq Km. It is very a flat terrain which spreads linearly along the banks of the River Hooghly in a north-south direction. Much of the city was originally a vast wetland, reclaimed over the decade accommodating the city's burgeoning population. The Sundarbans National Park separates the city from the Bay of Bengal. Kolkata has a local time of its own which is 24 minutes in advance of the standard time.

Soil & Geology:

It is admitted that in remote ages the whole of Lower Bengal was a hilly area which by recession due to earthquakes became a tidal swamp. This area was referred to by the early Hindu writers as "Samatata" which literally means level of the sea. The area has since gradually risen by a process of alluvial deposits forming a comparative high land for human habitation. Digging operation in connection with the foundation of buildings and excavations of tanks have not only shown the characteristics of the soil described above, but stumps of Sundari trees have been found standing upright embedded at short intervals at Sundarbans. These prove that the land was in the same condition in recent past as the Sundarbans are at present and that subsidence of land must have taken place as the result of earthquakes.

Like most of the Indo-Gangetic plains, the predominant soil type is alluvial. Quaternary sediments of clay, silt, various grades of sand and gravel underlie the city. These sediments are sandwiched between the two clay beds, the lower one at depths between 250 and 650m and the upper one ranging between 10 and 40 m in thickness.

74. NASA Image 34.


According to Bureau of Indian Standards, the town falls under seismic zone -III, in a scale of 1 to V (in order of increasing proneness to earthquakes). While the wind and cyclone zoning is "very high damage risk", according to the UNDP report.77

Climate:

It has got an essentially tropical climate. Kolkata has three seasons. From November to the end of February is the cold season. The hot months are from March till the third week of June, when the rain breaks. The wet season continues till September or the beginning of autumn. The coldest month of the year is December and May is the hottest month. The annual mean temperature is 26.8°C (80°F); monthly mean temperature ranges from 19°C to 30°C (67°F to 86°F), the maximum being 38.6°C and minimum 7.8°C.76 The annual mean temperature is 26.8°C.77 Often during early summer, dusty squalls followed by spell of thunderstorm and heavy rains lash the city, bringing relief from the humid heat. These thunderstorms are convective in nature, and are locally known as Kal baisakh (Norwesters).80 Rain brought by the Bay of Bengal Branch of South-West monsoon lash the city between June and September and supplies the city with most of its annual rainfall of 1582 mm. The highest rainfall occurs during themonsoon in August (306 mm).81 The city receives 2528 hours of sunshine per annum, with the maximum sunlight occurring in March.82

Pollution is a major concern in Kolkata, and the Suspended Particulate Matter (SPM) level is high when compared to other major cities of India83, leading to regular smog and haze. Severe air pollution in the city has caused rise in pollution-related respiratory ailments such as lung cancer.84

77. Hazard Profiles of Indian district, National Capacity Building Project in Disaster Management; UNDP, achieved from the original on 19th May 2006, retrieved on 2006-08-23.
78. http://murshidabad.gov.in/location.htm

49
Sewerage & sanitation:

From the earliest time the insanitary condition of the town attracted the notice of the authorities. The first effort at efficient drainage was laid by the celebrated Lord Wellesley. The main branch sewers drained the area of the city bounded by Circular Road and the river Hooghly.

By gradual development and expenditure of another 68 lakh of rupees the town was supplied with a complete system of covered drains and sewers and Kolkata has now efficient water borne systems for the disposal of sewerage.

In olden times Kolkata depended for its water supply on the river and on big tanks called Dighis of which the most famous was the Lal Dighi in Dalhousie Square. Much of the inhabitants of Kolkata suffered in its earlier days due to defective water supply & bad drainage. Lord Dalhousie was quick to recognise that one of the chief needs of Kolkata was pure water. He also considered the introduction of a proper system of drainage and sewerage. About the year 1820 a system of open raised cut vents from which people could obtain water and which also served for feeding the larger tanks in the town was introduced. The first attempt to supply filtered water to town commenced in 1867 and took 3 years to complete. A supply was 6 million gallons of filtered water per day at 15 gallons per head was estimated and the project cost was 67 lakhs of rupees.

In order to meet the demand for the purpose of watering the road and for flushing sewers, a supply of unfiltered water was also introduced and the supply was of 20 million gallons per day. There are two complete distinct systems of water pipes for filtered and unfiltered water laid through the town.

According to Suhrawardy (1921), this confusion of palaces and hovels and of cleanliness and dirtiness are as most appropriate description of Kolkata both ancient and modern.

Area & demography:

The area of modern Kolkata with suburbs is 187.33 Sq. Km. Residents of Kolkata are called Kolkatans. As 2001, Kolkata city had a population of 4580,544, while the urban agglomeration had a population of 13,216,546. The sex ratio is 828 females per 1000 males.

---

50

---

exceed the all-India average of 64.8%.86 Kolkata municipal corporation area has registered a growth rate of 4.1%, which is the lowest among the million – plus cities in India.87

Bengalis comprise the majority of Kolkata's population, with Sikhs, Madrasis, Biharis, Malayalis and Nepalis communities forming a large portion of the minorities. Some of Kolkata's notable communities include Chinese, Tamils, Marwaris, Gujratis, Anglo-Indians, Armenians, Tibetans, Maharashtrians and Parsis. Major languages and dialects spoken in Kolkata are Bengali, Hindi, Urdu, English, Maithili, and Bhojpuri.

According to the 2001 Census, 77.68% of the population in Kolkata are Hindus, 20.27% are Muslims, 0.88% are Christians and 0.75% are Jains. Other minorities such as Sikhs, Buddhists, Jews and Zoroastrians constitute the rest of the city's population.88 1.5 million people, who constitute about a third of the city's population, live in 2011 registered and 3,500 unregistered (occupied by squatter) slums.89

Kolkata reported 67.6% of total special and local law (SLL) crimes registered in 35 Indian mega cities.90 Kolkata police district registered 10,757 IPC cases in 2004, which was the 10th highest in the country.91 The crime rate in the city was 81.4 per 1000 against the national rate of 168.8 in 2004.92 Kolkata's Sonaghachi area, with more than 10,000 sex workers,93 is one of the India's largest red-light areas.

The main tourists attraction of Kolkata are Victoria Memorial, Maidan, Writers' Building, Fort Williams, Shaid Minar, Birla Planetarium, Rabindra Sadan, Jorashanko Thakurbari, Asiatic Society, Indian Museum, Marble Palace, National Library, Vidyasagar Setu etc. Kolkata does not let down even religious people. There are Kalighat temple, Belur Math,
Dakhshineser Kali Temple, Birla Mandir, Armenian Church, ST. Paul's Cathedral, Nakhoda Mosque etc.  

**Urban Structure:**

Kolkata city, under the jurisdiction of the Kolkata Municipal Corporation (KMC) has an area of 185 km². The Kolkata urban agglomeration however, has continuously expanded and in 2006, it (Kolkata Municipal Area) spreads over 1750 km² and comprises 157 postal areas. The urban agglomeration is formerly administrated by several local governments including 38 local municipalities. It comprises 72 cities and 527 towns and villages. The suburban areas of Kolkata Metropolitan District incorporates parts of the districts of North 24 Parganas, South 24 Parganas, Howrah, Hooghly and Nadia.

The east-to-west dimension of the proper city is narrow, stretching from the Hooghly River in the west to roughly the Eastern Metropolitan Bypass in the east, a span of barely 5–6 km. The north-south expansion is roughly divided into north, central and south Kolkata. North Kolkata is the oldest part of the city, with 19th century architecture and narrow alleyways. The ambience in this area is reminiscent of the old Kolkata. South Kolkata grew mostly after independence and consists of elite localities. The Salt Lake City (Bidhan Nagar) area to the northeast of the city is a planned area near Kolkata. Rajarhat, also called New Town, is a planned township being developed on the north-eastern fringes of the city. Central Kolkata houses represent the Central Business District found around the B. B. D. Bagh area. The Maidan is a large open field in the heart of the city where several sporting events and public meetings are held. Several companies have set up their offices around the area south of Park Street which has become a secondary Central Business District.

The city also has an apolitical titular post, that of the Sheriff of Kolkata. The Sheriff presides over various city-related functions and conferences. Another ancilliary civic body is the Kolkata Metropolitan Development Authority (KMDA) responsible for the statutory planning and development of the Kolkata Metropolitan Area (KMA). The KMA includes a large suburban hinterland around the urban centers of Kolkata. As the capital of the state and the seat of the Government of West Bengal, Kolkata houses the West Bengal Legislative Council.

---

94. [http://www.mapsofindia.com](http://www.mapsofindia.com)


96. 007 Kolkata (India) (PDF Format), World Association of the Major Metropolises, retrieved on 2007-08-31

97. deduced from the satellite map of the city, from NASA 34

98. [About Kolkata Metropolitan Development Authority, Kolkata Metropolitan Development Authority, retrieved on 2007-09-01.](http://www.kmda.gov.in)

Assembly, the Secretariat (Writers' Building) and the Kolkata High Court. Kolkata also has lower courts, the Small Causes Court for civil matters and the Sessions Court for criminal cases. The Kolkata Police, headed by the Police Commissioner, comes under the West Bengal Home Ministry. The city is administratively divided into five police-zones subdivided into 48 local police stations. The city elects 3 representatives to the Lok Sabha (India's lower house) and 21 representatives to the state Legislative Assembly.

Utility services and management:

The KMC supplies potable water to the city, sourced from the River Hooghly. The water is purified and treated at Palta water pumping station located in North 24 Parganas. Kolkata's daily garbage of 2500 tonnes is transported to the dumping grounds in Dhapa to the east of the town. Agriculture on this dumping ground is encouraged for natural recycling of garbage and sewer water. Parts of the city still lack sewerage facilities leading to insanitary methods of waste disposal. Electricity is supplied by the privately operated Kolkata Electric Supply Corporation (CESC) to the city region and by the West Bengal State Electricity Board in the suburbs. The city has 20 fire stations (under West Bengal Fire Service) that attend to an average of 7,500 fire and rescue calls per year. Four Bengali language newspapers and four regional and national English newspapers are widely circulated.

Transport:

Public transport is provided by the Kolkata Suburban Railway and the Kolkata Metro as well as by Trams and Buses. The suburban network is extensive and extends into the distant suburbs. The Kolkata Metro, run by the Indian Railways, is the oldest underground system in India. It runs parallel to the Hooghly and spans the north-south length of the city covering a distance of 22.3 km. Buses are the preferred mode of transport and are run by both Government agencies and private operators. Kolkata is India's only remaining city to have a tram network, operated by Kolkata Tramway Company.

References:
100. Service of Kolkata Police, Kolkata Police, retrieved on 2007-09-01
104. About Kolkata Metro, retrieved on 2007-09-01
105. en.wikipedia.org
106. Intra-city train travel, reaching India, Times Internet Limited, retrieved on 2007.08.31
Hired forms of mechanised transport include metered taxis, while auto rickshaws ply in specific routes. In some areas of the city, cycle rickshaws and hand-pulled rickshaws are also patronised by the public for short distances. Private owned vehicles are less in number and usage compared to other major cities due to the abundance in both variety and number of public vehicles. However, the city witnessed a steady increase in the number of registered vehicles; 2002 data showed an increase of 44% over a period of seven years. The road space (matched with population density) in the city is only 6%, compared to 23% in Delhi and 17% in Mumbai, creating major traffic problems. Kolkata Metro Railway and a number of new roads and flyovers have decongested the traffic to some extent.

Kolkata has two major long distance railway terminuses at Howrah Station and Sealdah. A third station named Kolkata started in early 2006. The city is the headquarters of two divisions of the Indian Railways – Eastern Railway and South Eastern Railway. The city's sole airport, the Netaji Subhash Chandra Bose International Airport at Dum Dum to the north of the city, operates both domestic and international flights. Kolkata is also a major river port in eastern India. The Kolkata Port Trust manages both the Kolkata docks and the Haldia docks. There are passenger services to Port Blair in the Andaman and Nicobar Islands and cargo ship service to various ports in India and abroad, operated by the Shipping Corporation of India. Also there are ferry services, connecting Kolkata with its twin city of Howrah.

Economy:

Kolkata is home to many industrial units, of large Indian corporations, whose product range is varied and includes - engineering products, electronics, electrical equipments, cables, steel, leather, textiles, jewellery, automobiles, railway coach wagons, tea, paper, pharmaceuticals, chemicals, tobacco, food products, jute products etc. Most of the slum dwellers participate in the informal economy and work in laundering, housecleaning, sweeping, plastic salvaging, plumbing, furniture making, electrical wiring, TV repair, masonry, messaging, hawking, rickshaw pulling, hair design, folk medicine, music and art, tailoring, leather work, shoe making, and food selling. Until recently, flexible production had always been the norm in Kolkata, and the informal sector has comprised more than forty percent of
the labour force. Kolkata witnessed an economic decline from the sixties till the late nineties. The partition, along with the massive influx of refugees, the predominance of the trade-unions, lack of capital, the Bangladesh war, the Naxalite liberation movement, frequent strikes, the collapse of the jute industry, and the breakdown of infrastructure and management served to nearly destroy the economy of Kolkata. In the 1980s the city’s fortunes have improved, coinciding with the liberalisation of the Indian economy.

Several industrial estates like Taratolla, Kalyani, Uluberia, Dankuni, Kasba, and Howrah spread throughout the urban agglomeration. A huge leather complex has come up at Bantolla. An export processing zone has been set up in Falta. Specialised setups like the country’s first Toy Park, and a Gem and Jewellery Park have also been established. The state of West Bengal has promoted foreign direct investment, which has mostly come in the software and electronics field. Kolkata is also becoming a major hub for the IT (Information Technology) industry. With construction underway of New Town at Rajarhat and extension of Salt Lake’s Sector-V, Kolkata is rapidly turning into a preferred IT/BPO destination.

Culture:

Another name of Kolkata is “City of Joy”. Kolkata has long been known for its literary, artistic and revolutionary heritage. As the former capital of India, Kolkata was the birthplace of modern Indian literary and artistic thought. A characteristic feature of Kolkata is the para or neighbourhoods having a strong sense of community. The city has a tradition of dramas in the form of jatra (a kind of folk-theatre), professional theatres and Group Theatres. Kolkata is known for its Bengali cinema industry and for its art films. The city is also noted for its appreciation of Indian classical music, the rich literary tradition, the Bengal school of Art etc.

Kolkata has many buildings adorned with Gothic, Baroque, Roman, Oriental and Indo-Islamic (including Mughal) motifs. The “City of Palaces”, as Kolkata is often called, is dotted with colonial buildings. Some of the major buildings of this period are well maintained and several buildings have been declared “heritage structures”, while others are in various stages of decay.

Durga Puja is the most notable of the religious and social festival in Kolkata. Other notable festivals include Diwali, Eid, Holi, Christmas, Poila Boishakh (New Year), Saraswati Puja, Ratha Yatra and Poush Parbon (harvest festival). Some of the cultural festivals are Kolkata Book Fair, Dover Lane music festival, Kolkata Film Festival and National Theatre Festival.

Diseases:

Malaria, Dysentery and Diarrhoea are most the prevalent diseases of Kolkata. There are 72 hospitals, 26 medical colleges and 5 nursing colleges in Kolkata.\(^{116}\)

Education:

Kolkata's schools are either run by the State Government or by private (many of which are religious) organisations. Schools mainly use English or Bengali as the medium of instruction, though Hindi and Urdu are also used. Kolkata has nine universities,\(^{117}\) numerous colleges are affiliated to these nine or to other universities located outside of Kolkata.\(^{118}\) The University of Kolkata (founded in 1857) has more than 200 affiliated colleges.\(^{119}\)

Sports:

Football is the most popular sport in the city and the city is one of the major centres of football activity in India.\(^{120}\) Kolkata is home to top national clubs such as Mohan Bagan, Mohammedan Sporting Club and East Bengal. Like the rest of India, cricket is popular and is played throughout the city in its grounds and streets. Kolkata is known for its large stadiums and clubs e.g. Eden Gardens, Netaji Indoor Stadium.

Changing land use pattern due to urbanisation in Kolkata:

Construction industry is dynamic in nature as it is continuously changing land surfaces with the pace of urbanisation and with the development of transport (over bridge), railways, building complex, shopping malls and multiplexes. Urbanisation is arguably the most dramatic form of highly irreversible land transformation. Urbanisation is a worldwide phenomenon; it is exceptionally dynamic in India, where unprecedented urban growth rates have occurred over the last 30 years. The process of urbanisation with a changing land use pattern is most evident in Kolkata. This would lead to conversion of non-urban land into urban land with consequent alteration of drainage systems at micro-level.

The main concern of my study is to identify the urban built-up areas to measure the changes of the urban extension through construction over the time interval. Urbanisation of

\(^{116}\) Calcuttaweb.com

\(^{117}\) Education In Kolkata, Indiaedu.com, retrieved on 2007-08-30.

\(^{118}\) List of affiliated Colleges, netGuruIndia.com, retrieved on 2006-10-26.


land is apt to transform agricultural land and wetland in spite of the fact that there is a general understanding that the agricultural land as well as the wetland and large water bodies should be preserved as such and no change of use of such land should be permitted.\textsuperscript{121}

The process of urbanisation has shown an increasing trend during post independence period between 1961 (24.45\%) to 1991 (27.39\%).\textsuperscript{122} The pressure on CMA would continue to increase. It is obvious that the proposed development would call for conversion of land for urban functions. The industries would attract employment. Hence housing would be needed with all infrastructural demand and output of solid waste, domestic waste water and impact on pollution.

<table>
<thead>
<tr>
<th>Table 2.1: Land use pattern of Kolkata 1981 to 2015 (as percentage of total land)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years</strong></td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>2015</td>
</tr>
<tr>
<td>1981</td>
</tr>
</tbody>
</table>


Map No 2.1: Growth of Kolkata

Map No 2.2: Recent Kolkata

Source: Atlas of Kolkata, Dr. P. Nag, National Atlas & Thematic Mapping Organisation, Kolkata, 2006, p. 15

Source: Ghtas of Greater Kolkata, KMC, Kolkata, 2008, p. 3

Note: Latitude & Longitude of Kolkata: 22°30'N and 88°30'E

\textsuperscript{121} http://enviswb.gov.in

\textsuperscript{122} http://www.wbgov.com
Projecting future land use, CMDA (1990) presented the following profile for Kolkata Standard Urban Area (CMSUA), a term adopted in census of India. Residential area will increase about 13% between 2015 and 1981 whereas major industrial land will increase 1.27%. In fact, the highest percentage of vacant land (about 19.48%) will drastically decrease between 2015 and 1981. By 1990, open vacant land in CMSUA had already decreased from 52% to 43%. The CMDA document (1990) identified a total of 9 future development zones, of which 4 are located on the northern part of CMSUA and 5 on the west. However, “The Land Use and Development Control Plan for Eastern Fringe of Calcutta” prepared by CMDA has permitted the local designated authority to exercise discretionary powers to allow urban development in the fringe areas of the East Calcutta Wetland. Many shopping malls, multiplexes, housing complexes, private hospitals have already been set up over the east Calcutta wetland. Recent development proposal for setting up of a satellite township at Rajarhat (by Housing Board), Central leather complex at Karaidanga and the Sonarpur Satellite Township, all within the designated wetland of East Calcutta call for critical appraisal and year round impact assessment study. These are some of the examples of contingent responses made to a very complex problem of land conversion for urbanisation through construction and consequent degradation of environment.

**Construction Industry with special reference to Kolkata:**

Building and construction industry is the second largest economic activity in India, next only to agriculture. The construction industry is one of the most fundamental industrial activities. It is a major national industry regarding the number of workers employed and the value of goods produced. Its crucial importance lies in the fact that it is a most important avenue for private and public investments. In fact, construction is a booming industry in India and it has a great impact on our country’s economy as well as creating a lot of job opportunities. Capital invested and manpower employed in this industry is much larger than any other industry. The importance of this industry can be judged from the fact that the capital outlay on construction in the successive Five-Year Plans ranged from 36 to 50 percent.\(^{123}\) According to the 1961 Census of India, over 20 lakh workers were then employed in the major sections of construction and maintenance, out of which over 2.4 lakh were women. In fact, an estimated number of 1.46 crore persons were employed in the construction industry in 1995-96. The average annual increase in employment in the construction industry was 7.3% during 1981-90 and 10.16% during 1999-2005 respectively. (Source: Labour Year book 2002.) The number of unskilled workers is higher than skilled workers in India.

During 2004-05 the proportion of skilled workers is 44.92% and the unskilled workers is 55.08%. It is estimated that the total construction workers in Kolkata are about 1 lakh. Among them 80% construction workers are considered as unskilled workers and 20% are high or semi-skilled workers. According to 1991 Census of India 59,132 and 25,662 male and

---

female construction workers are found respectively all over India. But in Kolkata male and female construction workers are 47653 and 1378 respectively according to 1991 Census.¹²⁴

Fig 2.1: Construction industry at a glance

---

**Subsidiary Industries of construction:**

With an annual turnover of Rs.700 billion construction industry is one of the most dynamic sectors. It engages 2,00000 contractors, who in turn provide employment to 15 million workers. It provides tangible support to the building materials industry through possible linkages. It is the launching pad for all sectoral activities: agriculture, industry, energy, transportation, health and education. In fact, construction distinguishes itself as the most powerful instrument of social and economic change. Transport sector showed tremendous growth due to heavy investment in construction of transport facilities. On the other hand, the Planning Commission has established the positive nexus between irrigation and higher agricultural productivity since, irrigation facility is a function of construction and an assessment of the contribution of irrigation to agriculture is estimated based on the expansion in the irrigation facilities. Similarly the expansion of health services is due, to a large measure, to the growth in the construction facilities like hospitals, dispensaries and primary health Centres.

It is needed to mention that when construction activities in a country goes in a big way then many other related industries also increase their activities by supplying the different raw materials required for. More construction means more production of raw materials like steel, cement, glass, wood, paints, pipes, electrical goods, bricks and tiles, sanitary fittings, heavy vehicles, plant and machineries for big project construction work. The most perceptible linkage effect of growing construction activity is reflected in the phenomenal growth of cement industry. Construction brings boom in a country’s economy and fall in construction work leads to slam in economy.

The raw materials in fact constitute 60% to 70% of the cost of construction in any project. The investment in the building materials industry is believed to be around Rs.22, 000 crores. In fact construction industry is the stimulus of the nation’s economy.

**Construction & its role in the development of Kolkata:**

Kolkata was the capital of British India till 1912 and still has a Victorian imprint on its structures and streets. A walk along the streets will take one on a journey through time. The stem old buildings in the midst of new and more colourful ones, tell about the generations gone by and more to come.

The early history of construction industry in Kolkata is largely based on construction of ports, harbours, roads, railways, tramlines, bridges etc.

It was a town, where transport was mainly by palanquins carried on the shoulder by men, phaetons pulled by horses etc. In 1867, the Kolkata Corporation with financial assistance from the Government of Bengal developed mass transport. The first tramcar rolled
out in 1873 on the streets of Kolkata with horse down coaches running on steel rails between Sealdah and Armenian Ghat via Bowbazar and Dalhousie Square.

After the end of colonial rule, the need for a better infrastructure was felt and development was initiated for the construction of new roads and bridges. Howrah Bridge over the Ganges links Kolkata with Howrah since 1943. The Second Hooghly Bridge or Vidyasagar Setu is a cable-stayed bridge, with a main span of a little over 457 metres, and a deck 35 metres wide. Construction started in 1978 and the bridge was finally inaugurated on the 10th of October, 1992. Kolkata's Metro rail construction is one of the examples of construction work to be mentioned.

Buildings with architectural significance and heritage values are considered for their preservation and conservation. These buildings play an important role in the history of the city of Kolkata in particular and maintained properly. Under the provisions of Section 2 (42A) of the K.M.C. Act 1980 the definition of heritage buildings is "heritage building means any building of one or more premises, or any part thereof, which requires preservation and conservation for historical, architectural, environmental or ecological purpose and includes such portions of the land adjoining such building or any part thereof as may be required for fencing or covering or otherwise preserving such building and also includes the areas and buildings requiring preservation and conservation for the purpose as aforesaid under sub-clause (ii) of clause (a) of subsection (4) of the section 31 of the West Bengal Town and Country (Planning and Development) Act, 1979 (West Bengal. Act XIII of 1979)." 126


List of some major heritage buildings, ghats, docks, markets, educational institutions, libraries, temples, churches, mosques etc

<table>
<thead>
<tr>
<th>Name of buildings/ heritage buildings</th>
<th>Year of construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporation building</td>
<td>1737</td>
</tr>
<tr>
<td>Fort William</td>
<td>1773</td>
</tr>
<tr>
<td>Asiatic society</td>
<td>1784</td>
</tr>
<tr>
<td>Raj Bhavan</td>
<td>1799</td>
</tr>
<tr>
<td>Town Hall</td>
<td>1813</td>
</tr>
<tr>
<td>Marble palace</td>
<td>1830</td>
</tr>
<tr>
<td>High Court</td>
<td>1872</td>
</tr>
<tr>
<td>Indian Museum</td>
<td>1875</td>
</tr>
<tr>
<td>Small Cause Court</td>
<td>1882</td>
</tr>
<tr>
<td>Writers' Building</td>
<td>1921</td>
</tr>
<tr>
<td>Victoria memorial</td>
<td>1921</td>
</tr>
<tr>
<td>Well known ghats</td>
<td></td>
</tr>
<tr>
<td>Kashi Mitter Ghat</td>
<td>1774</td>
</tr>
<tr>
<td>Chandpal Ghat</td>
<td>1774</td>
</tr>
<tr>
<td>Kalighat</td>
<td>1825</td>
</tr>
<tr>
<td>Nimtolla Ghat</td>
<td>1828</td>
</tr>
<tr>
<td>Prinsep's Ghat</td>
<td>1875</td>
</tr>
<tr>
<td>Docks</td>
<td></td>
</tr>
<tr>
<td>Kidderpore dock</td>
<td>1795</td>
</tr>
<tr>
<td>Market</td>
<td>1874</td>
</tr>
<tr>
<td>New Market</td>
<td>1874</td>
</tr>
<tr>
<td>The first Hooghly Bridge</td>
<td>1874</td>
</tr>
<tr>
<td>The second Hooghly Bridge</td>
<td>1978</td>
</tr>
<tr>
<td>Station</td>
<td></td>
</tr>
<tr>
<td>Howrah station</td>
<td>1854</td>
</tr>
<tr>
<td>Monuments</td>
<td></td>
</tr>
<tr>
<td>1 Shahid Minars 1828</td>
<td>1828</td>
</tr>
<tr>
<td>The Gwallor monument:</td>
<td>1847</td>
</tr>
<tr>
<td>Holwell monument:</td>
<td>1902</td>
</tr>
<tr>
<td>Communication buildings</td>
<td></td>
</tr>
<tr>
<td>General Post office</td>
<td>1868</td>
</tr>
<tr>
<td>The Central Telegraph office</td>
<td>1873</td>
</tr>
<tr>
<td>Library</td>
<td></td>
</tr>
<tr>
<td>National Library</td>
<td>1826</td>
</tr>
<tr>
<td>Metcalfe hall and imperial library</td>
<td>1844, 1902</td>
</tr>
<tr>
<td>Educational Institutions</td>
<td></td>
</tr>
<tr>
<td>Scottish Church College</td>
<td>1820</td>
</tr>
<tr>
<td>The Bengal Engineering College</td>
<td>1820</td>
</tr>
<tr>
<td>Medical College</td>
<td>1822</td>
</tr>
<tr>
<td>The Presidency College</td>
<td>1855</td>
</tr>
<tr>
<td>Calcutta University</td>
<td>1857</td>
</tr>
<tr>
<td>St. Xavier's College</td>
<td>1860</td>
</tr>
<tr>
<td>The Indian Association for the Cultivation of science</td>
<td>1869</td>
</tr>
<tr>
<td>Temples</td>
<td></td>
</tr>
<tr>
<td>Kali temple</td>
<td>1809</td>
</tr>
<tr>
<td>Jain temple</td>
<td>1867</td>
</tr>
<tr>
<td>The Parsee Fire temple</td>
<td>1912</td>
</tr>
<tr>
<td>Churches</td>
<td></td>
</tr>
<tr>
<td>Old Mission Church</td>
<td>1772</td>
</tr>
<tr>
<td>St John' Church</td>
<td>1778</td>
</tr>
<tr>
<td>The Church of our Lady of Happy Voyage</td>
<td>1834</td>
</tr>
<tr>
<td>St. Paul's Church</td>
<td>1839</td>
</tr>
<tr>
<td>St. Stephen's Church</td>
<td>1846</td>
</tr>
<tr>
<td>St. Andrew's Church</td>
<td>1857</td>
</tr>
<tr>
<td>St. James Church 1852</td>
<td>1862</td>
</tr>
<tr>
<td>The church of St. Teresa</td>
<td>1893</td>
</tr>
<tr>
<td>Mosques</td>
<td></td>
</tr>
<tr>
<td>Tipu Sultan's Mosque,</td>
<td>1842</td>
</tr>
</tbody>
</table>

Source: Suhrawardy, H., Calcutta and Environs, All Illustrated Guide to Places of Interest and to Excursions in and around Calcutta, Bengal, E.E.Railway, 1921.