CHAPTER 4

Town Planning and Structure

Town planning is a multi-faceted study. The urban historian examines the motives and actions of people who founded and extended towns at given periods. The aim of town planners is to create a healthy environment for everyday life, to conserve the physical features that make an environment agreeable and get rid of things that spoil it, to secure that impending works of development or redevelopment are carried out in such a way as to enhance the environment, to devise safe and efficient routes of movement for people on foot or on wheels and to guide the use of land and development resources in the interests of the community.

Town planning is discussed in the Vāstushastras, Nitisahastras and Smritishastras. According to these texts the security of cities, comfort of residents and beautification of settlements were the main principles kept in mind while laying out the urban centres. The development of a town was to be carried out in orderly manner according to the norms laid down in the architectural treatises. The sources mention fortification, internal planning such as construction of houses, palaces, court houses, temples, streets and markets in the cities. But due to largely vertical excavations undertaken in our country we are not been able to get complete layout of any settlement.

This chapter is an attempt to bring out the main principles of town planning adopted in the Gupta and post-Gupta period while the
town was being planned. The literary sources duly supplemented by archaeological evidence inform us about basic norms of town planning. While laying a town or city the top priority was given to the selection of a site. The geographical factors played important role in lay out of an urban centre. The site with fertile hinterland could meet the needs of the urban population thus was preferred most by the town planners. The agriculturally rich areas provided bulk of grains to the towns. Since the import of food grains from distant places might adversely affect the trade balance of the town thus an agricultural hinterland was indispensable for the existence of towns. The towns depend on villages which supply manual workers and fulfill the needs of urban population. The Nidhanpur copper plates of Bhaskarvarman assigned to seventh century AD mentions the potters pit located on the north-west direction and tradesmen were located in the north-eastern direction of the town.³ There is a reference to the colony of gardeners or florists (mālakāra) located on the northern border of Chhēdaka-padraka, in Bhavnagar plates of Dhruvasena I [Valabhi] Samvat 210 (AD 529).⁴ The Raguvança refers to Ayodhya surrounded by wayside villages.⁵ Hiuen-Tsang mentions that Ghazipur town was surrounded by villages from where urban requirements were catered to.

A town was to have invariably a strong natural frontier in the form of water, forest, hill or desert, which could serve as the defence of the town.⁶ In addition to fortified towns durga were also constructed during this period. Kauṭilya mentions mainly four types of forts (durga) i.e. auḍakaa (a water-fortification), pārvata (a mountainous fortification), dhānvana (a desert) and vanadurga (a forest fortification).⁷ In the Agnimāhāpurāṇa there is a reference to six types
of durga i.e. dhanu durga, māhi durga, nara durga, aksha durga, ambu durga and the girī durga. The epigraphic data also throw light on the fortification of cities. The Badami inscription of Chalikya Vallabhesvara, Śaka 465 (AD 543-44),\(^8\) refers to hill of Vātāpi, which was converted into an unconquerable fort from the top as well as from the bottom by the king. The city continued to be an important fortified town even later. The Aihole inscription of Pulikesin II, Śaka -Samvat 556 (AD 634-635),\(^9\) also refers to the fortified city (nagara) of Vātāpi which had waters of the surging sea serving as a moat (parikha) around it, which provided not only security but also made this town impregnable.\(^{10}\)

The encircling walls, moats and towers were different artificial methods of providing defence to the city against external dangers.\(^{11}\) The archaeological excavations have revealed remains of walls (prakāras) and moats (parikha) protecting cities during this period. Sthaneśvara was a fortified town as referred to in the Harṣacarīta. The archaeological excavations have also confirmed the existence of fortification wall of Vardhana period with traces of renovation.\(^{12}\) The Harṣacarīta specify that skandhāvāra of Sthaneśvara occupied a large area and was divided into two main parts. It refers to a royal gate and a market-place within the skandhāvāra of Sthaneśvara.\(^{13}\) The text mentioned that everyone could enter skandhāvāra without any hindrance, but prior permission was essential for entering the royal palace. There is a reference to the palace-officers (rājasthānīya) in the Palitana pates of Simhaditya, the year 255 (AD 574),\(^{14}\) they possibly regulated the entry of people to the palace of the king.
The excavation at Sanghol in Punjab also revealed a defence-complex, which belongs to period IV of the site assigned to second half of the first century to fifth century AD. It consisted of a series of three moats, one outside the rampart and the other two inside it thus providing security to the city of Sanghol. It seems that earth obtained by digging the moats was utilized in building rampart and the berm around Sanghol. The habitational site showing baked brick structures and covered drains belonging to the Gupta period have also come to light from Sanghol. The covered drains throw light on the expertise and efficiency of the drainage system of the period. Many sculptures recovered from the site throw light on the cultural importance of Sanghol during this period. Recent excavation at Purana Quila in Delhi revealed brick structures. Further excavation may reveal that it was an important urban centre during the Gupta period.

The Spurious Gaya copper-plate inscription of Samudragupta, the year 9 (AD 328-29), refers to the skandhavāra of Ayodhaya. It is referred to in the Rāmāyaṇa as having spacious streets, roads and palatial buildings, full of skilled artisans and craftsmen and was surrounded by a deep ditch filled with water which served as a parikha. But archaeological evidence is still awaited. Pātaliputra was another important town. It was the meeting point of the some of the most important trade routes of ancient India. In Allahabad posthumous stone pillar inscription of Samudragupta of fourth Century AD, there is a reference to the city named Pushpapura (Pātaliputra) in line fourteen. Though no specific term is used to denote this settlement but from details it appears that it was the capital town. The Gadhwa stone inscription of Chandragupta II of the year 88 (AD 407-408) also refers
to the city of Pātaliputra in line twelve. The archaeological excavation gives evidence of a continuous habitation at Kumrahar from Sunga to post-Gupta period i.e. *circa* 150 BC to AD 600. The different structural levels of the site fall into four periods: i) *circa* 150 BC-AD 100; ii) *circa* AD 100-300; iii) *circa* AD 300-450; and iv) *circa* AD 450-600.24 However the site was not horizontally excavated to reveal cultural assemblage of the Gupta and post-Gupta period, future excavations can help us to have clear idea of the planning of this important settlement.

The *Kādambari* a text of seventh century refers to Ujjaini as a well-planned city, fortified with deep moat. The text mentions that the city was divided into blocks by royal roads (*rājmārga*) and also throws light on the royal-palaces (*māhābhavno*), temples (*deva-mandir*) and gardens (*baharodhāna*) existing with in the vicinity of the city of Ujjaini.25 The archaeological excavations can help us to have clear picture of this important town. No doubt some excavations were conducted but these were mainly confined to the Chalcolithic sites at Kayatha in district Ujjaini.

The excavation at Pauni district Bhandara in Maharashtra ascertains the nature and various phases of construction of the rampart raised around the habitational site.26 In the previous records, the rampart was assigned to the medieval times. However, with the discovery of the Vakataka copper plates within the rampart in 1968 helped scholars to conclude that possibly the rampart was built during the Vakataka rule. The U-shaped rampart encloses the habitational area from three sides while on the northern side the perennial river Wainganga served as a natural barrier. In the process of construction and renovation carried out from time to time the rampart reached a maximum height of about
twenty three meters at the top of the medieval battlement towards south-west corner. However, on an average, the height of the rampart was about ten meter. The traces of a moat outside the rampart are also noticed on all the three sides. The details suggest that Pauni was definitely an important urban centre under the Vakatakas. Excavation at Chandraketugarh also revealed remains of a fortified township showing five successive periods, ranging from pre-Mauryan to Gupta period.27 Earlier the fortification was of mud, bamboos and timber but in the Gupta period (Period-V) fortification wall was constructed with the burnt bricks.28 The use of burnt bricks rendered the fortification solid and made it impregnable. The period V and VI dated circa third to sixth century was possibly the most flourishing period of the site.29 The excavation at Taradih district Bodh-Gaya, Bihar period III was marked by the appearance of the Gupta and post-Gupta remains comprising of rampart and burnt-brick structure.30 The archaeological evidence suggests that safety and security of the residents was the foremost priority. A citadel area was also revealed from the excavated site of Hulaskhera district Lucknow, Uttar Pradesh which suggests that the town possibly had mainly two parts a citadel and a common habitation area.31

The beautification of city was given equal importance after ensuring security to the settlement. The Vāstushastras and the Purānas give fairly good information regarding internal planning of the town. The Brhatasmhītā mentions that, the houses of brāhmaṇas and other classes should be located in the northern, eastern, southern and western parts of the villages and towns respectively.32 It is not known if the details given in the text were adhered to or not. The horizontal
excavations can definitely unfold the actual planning of these settlements. In the Agnipurāṇa there is a reference to various varṇas and professional groups located in different cardinal points of the city.33 There is a reference to dancers and courtesans inhabiting the southern part of the city. While the actors, potters and fishermen occupied the south-western part of the city. The war-chariots, swords and weapons in general were to be located in the western part of a city. The brewers and public officials occupied the north-western quarter of the town. The houses of the brāhmaṇas, monks and other holy personages were located in the northern quarter of the town. The merchants and dealers in fruits resided in the south-eastern division of the northern quarter of the town.34

The generals and commanders of forces occupied the eastern direction. While different regiments forming the military force of the state were stationed in the south-east. The goldsmiths and smithy shops were established in the south-eastern quarter of a city. The officers, who attended upon the ladies of the court, had their residence in the southern quarter of a city. The royal camps were pitched in the south western part of the same. The prime minister, architects and the principal treasures were lodged in the western part of a city. While the judicial and magisterial officers had their dwellings in the northern part of the city.35

The brāhmaṇas had their dwellings in the northern part of the town whereas the kshatryas in the eastern part of the city. The vaiśyas occupied the southern part. The āśuras inhabited the western quarter. The physicians had their respective dwellings all around the city and likewise the elephants and the forces were quartered in a way so as to
defend all directions. The cremation ground was to be located in the southern part of the town.

The cattle sheds were to be raised in the western part of the town. The farmers or the actual tillers of the soil were lodged in the north of the city. The mlecchas and other low castes people had their dwellings at the angular quarters of a city and similar rule was to be observed even in the small villages.\textsuperscript{36}

The image of Lakshmi and Vishnu was to be established at each side of the eastern gate; and the temple of gods should be established on the western side of a city, facing the east. In the east and the south, the divine edifices were to be established facing the west and the north respectively.

The town was divided into blocks by big and small roads.\textsuperscript{37} Kauṭilya demarcated chariot roads, royal roads and roads leading to droṇamukha, sthāniya, country parts and pasture grounds each should be of four daṇḍas (twenty four feet) in width.\textsuperscript{38} Kauṭilya further mentions that road leading to sayoniya (?), military stations (vyūha), burial or cremation grounds and to villages shall be eight daṇḍas in width. The roads to gardens, groves and forests shall be four daṇḍas. The roads leading to elephants forests shall be two daṇḍas and for chariots shall be five aratnis (7 \(\frac{1}{2}\) feet). The roads for cattle shall measure four aratnis and roads for minor quadrupeds and men are two aratnis.\textsuperscript{39} The archaeological sources also testify to the existence of big and small roads. The Gangdhar stone inscription of Viśvavarman, the year 480 (AD 423-24),\textsuperscript{40} refers to the wide highway (rājamārga) used by the people in the city. The Kādambari refers to royal roads
(rājmārga) of Ujjaini. These roads were guarded by the patrolling team (nāgrika-bal) for the safety of both pedestrian and people using means of communication.\textsuperscript{41} The Jaunpur stone inscription of Isvaravarman (undated),\textsuperscript{42} refers to the road (mārga) in the city of Dhārā. There is a reference to the roads (patha) leading to Koṇḍav[ē]rupūr and Virparū in Kopparam Plates of Pulakesin II (AD 632).\textsuperscript{43} One of the roads of the Gupta period was unearthed from Hulaskhera district Lucknow, Uttar Pradesh which is five meter in width overlying the earlier road.\textsuperscript{44} The outer faces of this road are built of brick-bats in footing pattern, while the inside is filled with brick-bats and earth, to make it smooth for the convenience of the people.

The markets existed on the either side of the roads. There is a reference to the market-place of Śrāvasti in the Daśkumāracarita, located on the road side.\textsuperscript{45} The archaeological remains do not reveal plan of market possibly due to large scale vertical diggings. But the literary and epigraphic sources refer to shops of various craftsmen and merchants located within the city. In the charter of Vishṇushena, Samvat 649 (AD 592), there is a reference to guilds. The inscription mentions that member of different guilds were not allowed to flock to the same market as this could result in chaos. They were encouraged to occupy different markets or different quarter of the same market to avoid chaos.\textsuperscript{46} This suggests existence of specialized market areas in the towns.

The five main type of structures i.e. sarvatobhadra, nandyāvarta, vardhamāna, svāstika and rucaka were considered auspicious for the various classes of the society, while a few other structures were considered inauspicious also. The Br̥hatasamhitā refers to nandyāvarta
and *vardhamāna* type of houses best for the people of all classes: *svāstika* and *rucaka* were moderate for living and *sarvatobhadra* was beneficial for all including kings and ministers.\textsuperscript{47} How far the stipulations given in the *Vāstuśastraś* were actually adhered too is yet not confirmed.

The shrines built of brick and dressed stone masonry have been exposed from the whole of north India.\textsuperscript{48} These included temple as a sanctum, called the *garbha-griha* which was a small chamber, normally square in plan; interior walls of temple were perfectly plain, without any other opening except the doorway and was at the initial stage flat-roofed.\textsuperscript{49} The principal example of this type include a temple at Tigowa in the Jabalpur district, the Narsimha and other shrines at Eran in north-east of Bhilsa, temple number seventeen at Sanchi, a temple at Bhumara in Nagod state, a temple at Nachna in Ajaigarh district and a group of rock cut sanctuaries at Udaigiri near Bhopal.\textsuperscript{50} The walls of these temples were made up of bricks laid in mud mortar and the floor was paved with bricks and plastered with concrete lime.\textsuperscript{51} The excavation at Apsad district Nawadah, Bihar revealed the similar brick structure, a Vishnu temple of the Gupta period assigned to period II by the excavator.\textsuperscript{52} The temple structure consisted of a rectangular room having a drain through southern wall. The finished bricks of different shapes and sizes were used in the construction and the dominant size of bricks was 46x23x6 centimeters.

The excavation at Sravasti also revealed a brick temple of *panchayatana* type enclosed within a rectangular enclosure wall in Period I ascribed to the Gupta Period.\textsuperscript{53} The enclosure wall measures 18.50 meter in east-west direction and 11.30 meter in north-south
direction. The entrance was provided on the east. The typical Gupta bricks were found in-situ in this enclosure wall. The sanctum found in the centre of the enclosure in the form of a brick platform which measures 4.40 x 4.40 meters and a height of 1.65 meter. The main deity might have been placed on this platform. A flight of eight steps was provided from the east of the platform. But the super structures were found completely damaged. The most remarkable feature of this temple is the evidence, of four small brick platforms at the four corners, inside the temple premises, attached with the enclosure wall. The shape of these platforms is square measuring 2.75 x 2.75 meters with height varying from 75 centimeter to 1.25 meter.

Just about four meters north of this temple, outside the enclosure wall, remains of another temple were discovered in Trench YL-22. The architectural pattern of this temple is very much similar to those mentioned earlier but the temple is smaller in size and devoid of any corner shrine for the consort of the main deity. This temple consisted of a brick platform, measuring 3.20 x 3 meters for placing the image of consort of the main deity. The 93 centimeter high platform has a 2.60 meter long projection towards east having a flight of steps to climb upon the platform. This temple has a separate enclosure wall measuring 10.85 x 7.50 meters. The brick-well was exposed near the north-western corner but outside the enclosure wall. This well was possibly used by the devotees. There are some other remains showing partly exposed structures perhaps used as a temple kitchen and a tank used for storage of water. The existence of the kitchen and storage tank suggests that the temple catered to the large number of pilgrims coming to the temple.
Chandraketugarh is an archaeological site located beside the Bidyadhari river, about 35 km north-east of Kolkata, in the district of North 24 Parganas, near the township of Berachampa and the Haroa Road railhead. It covers the localities like Berachampa, Deulia (Debalaya), Singer Ati, Shanpukur, Hadipur, Jhikra, Ranakhola, Ghorapota, Dhanpota, Chuprijhara, Mathbari and Ghaziatala. A seven mile long and one mile wide stretch south of Berachampa is archaeologically the most significant. An excavation at Chandraketugarh in West Bengal revealed remains of massive temple of Period V assigned to the Gupta period. The temple faced north. It had a large square sanctum with projections on three sides and a covered ambulatory passage. The bigger square was preceded by a rectangular covered vestibule with a rectangular open porch in front having a flight of steps. Around the large square, the vestibule and the porch, was a rectangular structure with projections on three sides, corresponding to those of the inner square. Rising from the same level as that of the main temple, its façade and the two sides up to the vestibule were decorated with shallow niches, possibly plastered with stucco and embellished with rounded offsets and string course of dentils made of molded bricks. The period VI assigned to circa third to sixth century was perhaps the most flourishing period of the site. The remains of pre-Gupta levels indicated that the structures were mainly built of mud, bamboos and timber while period V assigned to Gupta period saw the use of burnt bricks in construction, which were sturdier. The horizontal excavation of the site can help us to have more information in this regard.
Samar Ghosal of the Calcutta Circle of the Survey discovered the following ancient temples and sites having archaeological importance during the course of village-to-village survey in district 24 Parganas. From the village Chhota Rakshas Khali (under police station Patharpratima) he found potsherds, brick-bats and terracotta figurine belonging to the Gupta period.\(^{58}\)

From further excavations the traces of the rampart wall around the settlement could be seen in the south of Berer Bil and in the village Berachampa (Debalaya). Exploration revealed that the ancient settlement of Chandraketugarh was roughly rectangular in plan and the villages Nandipara, Kuchemora, Iajpur, Kaukepara and Biramnagar were situated along the elevated rampart wall. The river Padma flowing on the north of Chandraketugarh is now almost dried up. Other than these, outside the fortification, the antiquarian remains were also extended towards south in the village Berachampa (Ambikanagar), Glllobaria, Hadipur, Singher Ati, Chupri jhara, Diwanati, Gobila, Sanpukur, Jhikra and Mirjianagar. Excavation in limited scale was carried out from 1956-67 for some years in selected spots by the Ashutosh Museum, of the University of Kolkata. Further, archaeological finds also proved that the area around Chandraketugarh was the centre of a highly developed and economically advanced society right from the fourth-fifth century BC to the medieval period. As the excavations carried out by the above institution were in small scale, very little is known about the city planning and architecture. There is a need for taking up the excavation beside rampart area also so that area is properly exposed.
The excavation at Mansar in district Nagpur, Madhya Pradesh also revealed a magnificent temple with a plinth of dressed sandstone blocks and superstructure of bricks built on the top of the hill, by the Vakatakas. A monastery was also built adjacent to the temple. No other structure has been noticed thus it is difficult to comment on the nature of this settlement.

Chhoti Sādri in the district Udaipur became famous for the temple of Bhramara-mata constructed in the fifth-sixth century AD. The first Chhoti Sādri inscription of the year 547 (AD 491), refers to the Māhārāja Gauri, desirous of the grace of the goddess, built the palatial temple of Bhramara-mata. The inscription was also recovered from the temple complex of Bhramara-mata near Chhoti Sadri, district Udaipur. The constant intrusion of pilgrims to this temple possibly helped it to grow into an important area and led to the extension of this settlement but we have no information in this regard. Semthan situated in district Anantnag of Jammu and Kashmir also emerged as an important religious centre in the Gupta and post-Gupta period. The excavation of the area revealed that period V assigned to the Gupta and post-Gupta period had major evidence of temple building.

The Deogarh shrine in the Jhansi district of Madhya Pradesh is the most important śikhara type temple built in north India during the Gupta period. It provides a glorious record of Gupta genius and is a landmark in the evolution of Gupta temple architecture. The short Brahmi inscription assigned this temple belongs to the last quarter of the fifth century or the first quarter of the sixth century AD. It records that the monument was the gift of Bhāgvata Govinda, son of Chandragupta II from his wife Mahadevi, at the holy feet of the lord of
Keśavapura. The archaeological reports show that this site show continuous occupation from the Gupta to ninth century AD. The site was possibly developed by the Gupta king named Govindagupta as a temple settlement initially and later it continued to flourish as an important settlement.

The temple at Bhitarigaon is another important temple built during the Gupta period. The excavated remains of the main temple revealed that entire plinth area was divided in small cells of squares and rectangles. This grid divisional pattern was acquired by constructing brick-walls. Each of the divided block or cell was then filled with compact clay to make it durable and strong. The Bhitari stone pillar inscription of Skandagupta refers to the installment of the image of Śāṅgīn and also a grant of village to the deity enshrined in the temple.

The excavation at Suryapahar in district Goalpara of Assam was confined to the southern area of the mound which has brought to light several ancient brick walls, brick paved pathways and southern enclosure wall of the temple-complex. The walls were made of burnt bricks with mud-mortar. The enclosure walls of the complex run in cardinal directions and connected with each other at right angles. The excavation has brought to light the remains of rectangular brick compound walls on the east-west and southern sides respectively. The southern side wall measures 45-30 meters in length and the exposed western wall measures 18 meters. In the centre of this wall doorsill is exposed which indicates that it was a gateway. The two main objectives for continuing the excavation were (a) to trace the complete plan of the structure buried under the mound and (b) to establish complete cultural sequence of the site. The trenches were laid out in horizontal pattern
and attempts were made to trace the extension of the partly exposed structures. In the course of excavation, the remains of a brick temple having a sanctum (garbha griha) and a porch (mandapa) enclosed within an enclosure wall constructed directly over natural soil were unearthed. In front of the garbha griha, the remains of a rectangular mandapa were exposed, which was large enough to accommodate several pilgrims, who used to come to pay homage to the deity enshrined in the temple. From mandapa to the main entrance, the evidence of a five meter wide pathway was found, which is badly damaged by construction of a few brick structures later. The entrance to the temple is provided from the north-east direction. One small room measuring 4.35 x 2.65 meters was exposed near the entrance inside the enclosure wall. Another room of 5.40 x 3.60 meters was noticed at the entrance but outside the enclosure wall. Most probably these two rooms were perhaps open from all sides but having a roof over them. These rooms were meant for the temple use. A few other structures have also been noticed within the enclosure wall, the contour of these is yet not known. The excavation throws light on the expansion of the main temple complex by adding another small shrine, in the north-west direction adjacent to the same, but outside the enclosure wall. The size of the sanctum of this temple is 3.10 x 3.10 meters and entrance is 2.15 x 2.15 meters. The remains of this small shrine were found at the height of fifty centimeter with seven courses of bricks. Some in situ terracotta plaques were also found in this small temple. This temple might have been constructed for the consort of the main deity. Perhaps the whole complex was within a second enclosure wall because the remains of another seventy centimeter wide wall were traced in the southern side of the site up to a length of 36 m. The bricks used for the construction
of all these structures are 41 x 21 x 7 centimeters and 42 x 22 x 7 centimeters in size. The second enclosure ensures the popularity of the main temple and extension of temple complex to accommodate more pilgrims thronging the temple complex from far flung areas.\textsuperscript{73}

In the latter half of the seventh century, the temple structure, in its medieval aspect, was beginning to assume a prescribed form.\textsuperscript{74} Indragadh inscription of Nannappa, V.S. 767 (AD 710-11) refers to the construction of stone temple of Śiva by his disciple Dānarāṣi at Indragadh.\textsuperscript{75} The temple was maintained by the council of the elders operating at Indragadh. The excavation revealed the remains of Śiva temple, built by the Rashtrakuta ruler Nannappa who ruled from AD 693 to 712. The temple has been partly excavated, which shows a four feet brick-structure, square in plan which appeared to be as sacrificial pit \textit{(homa-kunda)}.\textsuperscript{76} The excavation at Rajbadidanga in district Murshidabad, West Bengal revealed \textit{panchayatana} temple of the seventh-eighth century belonging to phase III. It consisted of a rectangular enclosure-wall having four square shrines at the four corners, temple is \textit{triratha} in plan. It has a rectangular \textit{mandapa} on the north with a \textit{surkhi} rammed platform.\textsuperscript{77} The compound-wall, measuring 20.87 meter in length on its western side has several offsets at the plinth level on its southern face. It contained beautiful niches, decorated and moulded cornices on its exposed southern and northern faces. The exterior face of the walls was plastered with lime, traces of which are still seen in certain parts. The four-shrines, each measuring 2.5 meter square, were exposed at each angle of the compound-wall. The rectangular main temple, measuring 7.84 x 7 meters, had projections on three sides, leaving northern sides open for the entrance, thereby giving
it a *tri-ratha* shape. The inner area of the main shrine, measuring 4.41 x 3.4 meter, it was *surkhi*-rammed and over it was laid bricks to build a platform. The rectangular *mandapa*, measures 6.09 x 4.57 meter was built subsequently on the northern side of the main shrine. At a little later stage, an additional wall was built in an east-west direction, perhaps for reducing *mandapa* area and for accommodating more and more pilgrims. Recently a number of Gupta gold coins have been unearthed from Ahiran in Murshidabad where some construction work was in progress. The discovery of large number of coins suggests that it was an important commercial centre as well during the Gupta period.\(^{78}\)

The Buddhist architectural activity also showed a marked productivity in the Gupta period.\(^{79}\) D. B. Spooner found an interesting lay out, of the monastery, of the Gupta period while excavating Kumrahar ancient Pataliputra in addition to Mauryan palace.\(^{80}\) There were three corridors running north to south and west to east with three flight of steps at irregular intervals.\(^{81}\) The plan of the monastery was approved by the *bhikshusangha* residing there. This monastic site was excavated by A.S. Altekar and V.K. Mishra which was built in the Gupta period called as Arogya-*vihāra*.\(^{82}\)

The excavation at Kausambi in district Allahabad also revealed Ghoshitarama monastery, built in second century AD which continued to exist till the third quarter of sixth century AD.\(^{83}\) The excavation revealed a massive *stupa*, roughly square on plan with doubly-recessed corners, surrounded by chapels for monks. Inside the courtyards, a number of smaller *stupas* were exposed and a small shrine of Hariti was also built nearby. The monastery had the defence wall which was 15
feet in height, 181 feet in length and the width varied from 13 feet 6 inches to 9 feet 6 inches.

The excavation at Devnimori in district Sabarkantha, Gujrat revealed that in the second century AD structural activity started at this settlement. There are three main phases of the construction of the buildings and vihāra. The earliest phase is dated to AD 200, the second one is dated to AD 300-400 and the third and the last phase dated from AD 400-700. The excavation revealed the stupa and monastery of post-Gupta period. The stupa was a massive structure with two square platforms, on which rose the cupola and pradakshina-path. In 1961-62 a quadrant drum of the stupa was completely excavated. During the second phase the walls of the vihāra were strengthened and the plinth was raised to save the structure from the frequent floods at the site.

The excavation at Mansar in district Nagpur, Madhya Pradesh also revealed stupa named Hidamba Tikdi. It had twenty-four brick-built boxes with a central box, all filled with rubble and stone. It had a diameter of eighteen meters and had steps on the eastern side. This large stupa was built at the top of the hill and remained in existence till the end of the seventh century AD. A large number of people settled down around this stupa which is confirmed by the excavation of the site. The site shows continuous habitation from circa 200 BC to AD 700.

The excavation at Kolhua district Muzaffarpur, Bihar revealed svastika shaped monastery, the tank and connecting pathway between the two is made of rammed floor of brick jelly in lime-surkhi mortar. The steps of the entrance gate of the monastery were made of bricks, which were exposed during the excavation. The excavation also revealed the remains of number of votive stupas and a rammed
plastered floor, made of brick jelly, lime and surkhi, with a slope towards the tank. The tank was used for rituals and for various other purposes by the pilgrims. The excavation yielded some decorative bricks, terracotta beads and sling balls, finial portion of miniature stupas and red ware potsherds all datable to Gupta and late Gupta period. The Sanchi stone inscription of Chandragupta II of the year 93 (AD 412-13),\(^9\) refers to the community of faithful, who lived in the holy vihāra of Kākanādabōța. The members came together from the four quarters of the world to this vihāra. The Sanchi stone inscription of the year 131 (AD 450-451),\(^9\) refers to the holy vihāra of Kākanādabōța and records the gift made by Upāsikā Harisvamini who donated twelve dināras, to the community of faithful which she had collected from the four quarters of the world. These monastic centres and temples gave fillip to trade and commerce. The pilgrims visiting these monastic settlements helped these centres to develop into prominent cultural centres.\(^9\)

By the seventh century, the art of building by means of dressed stone masonry had considerably advanced in different parts of the country.\(^9\) Udaygiri became famous because of a group of rock cut sanctuaries. The excavation conducted at Udaygiri in district Jajpur, Orissa partly laid bare an impressive brick-built monastic-complex datable to the eighth century AD.\(^9\) The excavated remains suggest that it was square on plan measuring 30 x 30 meters. The outer face of the southern side wall has been cut into projections giving an impression like pancha-ratha; the first projection at nine meters, the second at three meters and the length of the third is 3.6 meters. The monastery was located on the hill having slope from west to east. The surface was cut on the west, north-west and southern sides while on the eastern side;
the outer wall was made high to maintain the required level inside the monastery. The outer wall on the east had sixteen small offsets at the base in order to protect outward thrust of the inner filling. The application of offsets increased the thickness of the base by 0.5 meter. The shrine chamber was located in the centre on the southern side measuring 3.75 x 2.75 meters which had colossal seated image of Buddha in *bhumisparsa-mudra* measuring 2.60 meters in height with pedestal. The monasteries built during the period were spectacular specimens of art and exquisite examples of surpassing beauty. The excavation further revealed two door jambs standing *in-situ* at the entrance of the sanctum of the shrine chamber. The walls of the sanctum are 1.5 m thick. One of the most outstanding features is the provision of an ambulatory path (*pradakshina-patha*) measuring 1.4 meter in width around the sanctum. The walls separating *pradakshina-patha* and the cells are 2.15 meter thick. The southern back side wall is projected southward to accommodate the upper sanctum. The upper sanctum is directly erected on the southern outer wall, forming a shrine chamber of 2 x 2 meter and is also provided with stone pedestal. Originally, the floor of the chamber was paved with stones but later on, it was coated with brick jelly. The patches of lime-plaster were also noticed over the brick jelly. A small drain is provided in the south-eastern corner of the chamber, which opens outside the outer wall. A votive stupa was found lying over the debris at the entrance of the upper sanctum.

The large numbers of architectural members of the entrance of the upper sanctum were removed from the debris inside the *pradakshina-patha*. The surface finds suggest that the monastery had
cells on all the four sides. One cell lying on the right side of the sanctum was completely exposed up to its floor level. The cell measures 2.90 x 2.75 meters and has partly survived brick flooring. The cell has an arched entrance and also an arched window. The entrances of the other three cells lying on the left side of the sanctum were also completely exposed.95

On the basis of the structure exposed so far, it is clear that the stupa was constructed in five terraces with bricks laid in mud-mortar. The bricks are broadly of two sizes having minor variations, approximately 36 x 21 x 6 centimeters and 32 x 16 x 5 centimeters representing two different phases: the Sunga-Kushana and late Gupta period respectively. A third size of bricks measuring 20 x 10 x 5 centimeters possibly represents the phase of repairs carried out during the later period.

The excavation at Udayagiri in district Cuttak, Orissa also revealed remains of a huge monastic complex, having cells all around approachable verandah on all the four sides with a vast open courtyard in the centre, of the seventh-eighth century.96 On eastern side of the courtyard traces of main entrance leading to the monastic complex was unearthed. A shrine chamber was unearthed opposite to the main entrance. The door-jambs of the cella are beautifully carved having the scroll and floral designs, yakshas, kinnars and the Buddha on the central part of the lintel. About nine beautiful sculptures of Buddha and Buddhist divinities were found kept in a row on both sides of the door jambs. Simultaneously, when the interior of the cella was exposed, a colossal image of Buddha made out of a few blocks of stones having
fine joints was noticed. A courtyard measuring 12 x 12 m with twenty one cells was also exposed.

The excavation at the habitation-mound at Sirpur in district Raipur, Madhya Pradesh witnessed a large-scale structural activity, attested to by several brick and stone structures in Period II which is assigned to the seventh century. A large svāstika shaped monastery of seventh-eighth century was exposed to the south of the cluster of monastic complex at Sirpur. The seated figure of Buddha measuring eight feet six inches high having an oval nimbus in bhumisparsa-mudra was enshrined in the central room of the wing facing the main entrance. An exquisite image of Padmapani on the pedestal enhanced the beauty of the shrine. The south-west corner of the courtyard had a red sandstone sculpture of Hariti. In monastic area two more vihāras IV and V were also exposed. Architecturally each vihāra had a spacious verandah in front, a hall in the middle and rows of cell at the back. The central hall contained a brick-built stepped pedestal for a large statue of Buddha and other images of deities. The excavation also revealed gold coin from the habitation mound of the king Prasannamatra of the Sarabhapura dynasty, assigned to the last quarter of the fifth century. This shows that Sirpur developed into important urban centre in the Gupta and post-Gupta period.

The construction of alms-house within the temples and monastic complex suggests that number of pilgrims, traders and other people used to stay in temples and were served food and offered other facilities from the alms.-houses built near monastic complex. The Bilsad stone pillar inscription of Kumaragupta dated AD 415-416 mentions that Dhruvaśarman got constructed the alms-house for the pilgrims and
priests. There is also a reference to a grant being made to the sattra, alms-house in Gadhwa inscription date is entirely lost.¹⁰¹ Such grants helped almshouses to cater to the needs of pilgrims thronging these centres.

A massive brick-building of substantial size was exposed at Thanesvara in district Kurukshetra, Haryana, up to ninety-nine courses, without reaching to the bottommost course.¹⁰² The structure is assigned to the Vardhana period. The building was evidently of substantial size.¹⁰³ Possibly it was used as an important place where political discussions were carried on. There is a reference to the similar type of council building or hall of audience in the Kahaum stone pillar inscription of Skandagupta of the year 141 (AD 460-61).¹⁰⁴ Such buildings were important where kings and officials carried on political discussions. However the houses of common people were of varying dimensions. In Mandasor stone inscription of Kumaragupta and Bandhuvarman, the Malava year 493 and 529 (AD 437-38 and 473-74),¹⁰⁵ there is a reference to the city of Daśapura having multi-storied buildings.¹⁰⁶ The excavation at Shri Suryapahar in district Goalpara, Assam revealed brick structure of sixth-seventh century and eighth-ninth century AD respectively,¹⁰⁷ along with surkhi rammed floor, brick platform, big and small walls, pathways, partition walls and staircases.¹⁰⁸ The excavation at Sravasti¹⁰⁹ and Sringaverapura in district Allahabad, Uttar Pradesh¹¹⁰ shows the construction of three room house structures with brickbat floors during the Gupta and post-Gupta period. One of the house complex exposed from Sravasti in trench YE-11 is a five room structure¹¹¹ possibly belonging to some rich person. Houses normally consisted of a room, toilet, store room and open courtyard.¹¹²
The excavation at Sugh district Ambala in Haryana revealed pre-Gupta houses built of mud brick whereas baked bricks were mainly used for house construction in the Gupta period. The excavation at Sanghol also revealed habitation site in which baked bricks were used mainly for construction. The evidence of covered drain assigned to the Gupta period, has also been exposed from Sanghol. The evidence of covered drains suggests that these were preferred by people and every care was taken to make them water tight. The excavation at Sravasti in Uttar Pradesh also revealed a good number of brick structures belonging to period III, assigned to the Gupta and post-Gupta period. Most of the structures are secular in nature and possibly were used for habitation purpose. The bricks and brickbats were exclusively used in the structure for edges and the core areas. Another house-complex in trench numbers YD-17, YD-16 and YC-17 has exposed a brick-paved courtyard of 4.20 x 8.10 meters dimensions. Except northern portion all three sides of this courtyard are flanked by a series of rooms. The remains of a broken storage-jar were also found kept on the brick-paved courtyard. There are some other stray brick walls found in trench numbers YA-17, YB-17 and YB-16, the portions of which have been either robbed off or damaged. The remains of a rectangular courtyard covering an area of 8.40 meter in north-south direction were also exposed in trench numbers YC-15 and YC-16. A 2.50 meters long brick drain was exposed from trench YB-15 adjoining the courtyard to facilitate the waste water to flow out. The burnt bricks were mainly used for the construction of houses at Ahichchhatra. According to excavators, burnt bricks and in mud-mortar were freely employed in the construction of the houses. The rooms however were not very large, measuring on an average 3 x 2.50 meters. The excavation at Maner in district Patna,
Bihar revealed antiquities along with the remains of burnt brick structures in period II.\textsuperscript{118} The excavation at Paunar in district Wardha, Madhya Pradesh, believed to be the capital of the Vakatakas, revealed brick structures with well-made foundations, ring-wells for soakage purposes and floorings made of rammed clay.\textsuperscript{119} The houses had tiled roofs. The tile in one of the house bore impressions of rice and wheat husk, possibly this house was used as a store room. The excavation at Tumain in district Guna, Madhya Pradesh also exposed houses built of baked-bricks assigned to sixth to twelfth century AD.\textsuperscript{120} The baked brick structures have also been revealed from Bharatpur in district Burdwan, West Bengal during the period of our study.\textsuperscript{121}

The different sizes of bricks were used by the builders. The excavation at Goraj in district Vadodara, Gujarat exposed bricks of different size used for the construction of various buildings. These measured 44 x 25 x 37 centimeters, 41 x 26 x 17 centimeters, 41 x 27 x 36 centimeters and 43 x 26 x 37 centimeters.\textsuperscript{122} The bricks measuring 43.7 x 26.67 x 5.08 centimeters, 41.6 x 22.67 x 5.71 centimeters, 44.97 x 25.4 x 6.35 centimeters and 25.4 x 25.4 x 6.35 centimeters respectively were mainly used in the construction of houses at Ahichchhatra.\textsuperscript{123} Towards the end of the period brick-bats were mainly used for building purpose. A wall running in north-south direction found at a depth of 4.05 meter consists of six courses of bricks at Maner. The bricks used in the wall measured 0.25 x 0.14 x 0.6 meters.\textsuperscript{124}

Other important vāstu-sthāna in a planned city included kūpa, propā, setu and jalghāṭi.\textsuperscript{125} The construction of tanks and wells such as vāpi, taḍāga, ōdupāna and dirghikā with in the city and peripheral
regions was also carried out by the authorities because providing clean water was the primary duty of the town-planners.\textsuperscript{126} The wells were brick lined and had lime plastered surface to check seepage of water. The efforts were also directed to make arrangements of water for the fields. The excavations carried out at Sanghol district Ludhiana in Punjab,\textsuperscript{127} Eran district Sagar in Madhya Pradesh\textsuperscript{128} and Rajghat district Varanasi in Uttar Pradesh\textsuperscript{129} revealed massive circular structures possibly for storing water. There is a reference to the construction of two reservoirs (prapās) in Tusam rock inscription dated fifth century AD for the people.\textsuperscript{130} The Mandasor inscription of Malava-Samvat 524, (AD 467-468), \textsuperscript{131} refers to the king Prabhākara who was in favour of well as deep as ocean. So that adequate water could be made accessible to the people.

The archaeological data on the complete layout of city of this period is not available.\textsuperscript{132} However various artefacts unearthed suggest that cities flourished during this period. The evidence of vihāras, shrines, houses and sculpture indicate flourishing urban life. The scattered references suggest that burnt brick structures were commonly built in the towns. The temples and monastic settlements were common both to the urban and rural areas. Providing fresh water, security and clean environment to the urban residents was first and foremost priority of the Gupta and post-Gupta rulers.
Notes and References

6 Kameshwar Prasad, *Cities, Crafts and Commerce under the Kushanas*, Delhi, 1984, p. 66.
7 Kautiṭyā in his third chapter mentions four types of forts in the *Arthaśāstra*.
10 King Harṣa in the *Priyadārsīka* mentions about the fortified city *durga* of Kalinga in G.K. Nariman, A.V. Williams Jackson and
Charles J. Ogden, tr. in English, *Priyadarsīka A Sanskrit Drama by Harṣa*, p. 79.


12 *IAR*, 1989-90, p. 29.


B. C. Law, *Historical Geography of Ancient India*, p. 68.


*IAR*, 1953-54, pp. 9-10.

V. S. Agrawal, *Kādambari-Ek Sanskritī Adhāyāna*, p. 60.

*IAR*, 1993-94, p. 73.


36 Fa-Hian mentions that ‘when chandāla enter a town or a market-place, he strikes a piece of wood, in order to keep himself separate’.

Samuel Beal, *Travels of Fa-Hian and Sung-Yun, Buddhist Pilgrims, from China to India (400 A.D. and 518 A.D.),* p. 54.

37 Bāṇa in the *Kādambari* mentions that the city of Ujjaini is divided into blocks through royal roads (*rājmārga*).

38 R. Shamasstry, *Kauṭilya’s Arthaśāstra*, p. 53.


40 J. F. Fleet, *CII*, No. 17, pp. 72-78.

41 In *Mrichchhkaṭika* of Śūdraka, there is a reference to the city *rājmārga* guarded by the patrolling team, M. R. Kāle, *op. cit.*, pp. 64-65. Similarly in *Daskaṁarcarita* there is a reference to the city-watchman (*nāgrika-bal*) equipped with torches, sticks and swords, M. R. Kāle, *op. cit.*, p. 55.


44 *IAR*, 1981-82, p. 72.


51 There is a reference to the flat-roof temple in Gadhwa stone inscription of the year 148 (AD 467-68) in J. F. Fleet, *CII*, No. 66, pp. 267-68.

52 *IAR*, 1973-74, p. 11.


59 Ibid., 1997-98, p. 129.

60 K. C. Jain, Ancient Cities and Towns of Rajasthan A Study of Culture and Civilization, Delhi, 1972, p. 76.


63 See R. Chamapakalakshami, Trade, Ideology and Urbanization South India 300 BC to AD 1300, pp. 56-57 and 67-68; James Heitzman, Gifts of Power (Lordship in an Early Indian State), New Delhi, 2001, pp. 82-120.

64 IAR, 1980-81, pp. 21-23.

65 P. K. Agrawala, op. cit., p. 38.

66 Ibid., p. 34.


68 Vidula, Jayaswal, Royal Temples of Gupta Period (Excavations at Bhitari), New Delhi, 2001, p. 2.

69 J. F. Fleet, CII, No. 13, pp. 52-56.


72 The sanctum (*garbhagriha*) of this temple is roughly 8 x 8 m square. The wall of the sanctum is 2 m wide.

73 *IAR*, 1992-93, p. 4.


76 *IAR*, 1958-59, p. 28.


80 *IAR*, 1953-54, pp. 9-10.

81 *Ibid*.

82 Dilip K. Chakrabarti, *op. cit.*, p. 211.


This stupa was also associated with an oval chaitya on the southeastern side which was built over an earlier chaitya. On the eastern side a large impressive staircase has been exposed for approaching structures built in different periods with its length and height increased through the centuries. Thus the Hidamba Tikdi at Mansar gives the succession of cultures from circa 200 BC to AD 700, *Ibid.*, 1997-98, p. 129.


91 There is a reference to the construction of ārāmagrha by the king Prabhākara, in Lōkottara monastery (vihāra) referred to in the Mandasor inscription of Malava-Samvat 524, (AD 467-468), *EI*, Vol. XXVII, No. 4, pp. 12-18.

It had an open courtyard at the centre flanked on the side by four wings, each containing three rooms and a verandah facing the courtyard. *Ibid.*, 1955-56, p. 26.


*Ibid.*, Dhamnār (in Rajasthan) was a great Buddhist centre in the 7th century see K. C. Jain, *op. cit.*, pp. 76-77.


*IAR.*, 1987-88, p. 29.


The size of the bricks varies from 22 x 24 x 6 cm to 34 x 16 x 6 cm, 21 x 10 x 6 cm, 21 x 6 and 42 x 22 x 6 cm, *Ibid.*

The sizes of these rooms are 2.10 x 2.10 m, 1.60 x 1.80 m, 1.60 x 2.25 m. Two of these rooms are separated by a passage. The remaining part of this complex is under the unexposed area. *Ibid.*, 2000-2001, p. 143

Size of the room on the eastern side of the courtyard is 2.35 m x 3.30 m and 2.35m x 2.35 m whereas the room on western side is 1.70 m x 2.45 m and 1.70 m x 2.80 m. The rooms on the southern
side measure 1.60 m x 2.80 m, 2.50 m x 2.80 m and, 3.60 m x 2.80 m., *Ibid.*


123 *Ibid.*, 1963-64, p. 44.


127 Excavation at Ludhiana revealed a circular well like structure of 6.35 meter diameter and 92 centimeter width of period III, assigned to first to sixth centuries AD *IAR*, 1977-78, p. 44.

128 The ring wells were noticed at Eran. *Ibid.*, 1987-88, p. 78.


