Bait Al Hujjaj: A Transit Shelter For The Hajj Pilgrims

By

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A thesis submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of
Bachelor of Architecture

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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

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Approval

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Of Summer, 2019 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Bachelor of Architecture on 7th August 2019.

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Ethics Statement

Abstract

Undertaking *Hajj* is making a journey that takes a Muslim/Believer to the heart of Islamic Faith; to the Ka'ba in Makkah, Saudi Arabia, which is also considered as the house of the One God that the Muslims truly worship. The story of such a journey varies geographically, culturally and also economically from one region to another around the world. Imagining the journey to the heart of Islam from Bangladesh, the very first perception that appears is availing the various means of transport ranging from rickshaws, tempos, buses, train and other domestic ways to approach the Airport. Even though, due to the ease of travel the demand for annual *Hajj* pilgrimage has witnessed an overwhelming increase to astonishing figures. Evidently travelling around in Bangladesh to this date, possesses a challenging activity affecting both the physical and mental state of an individual. However, under Islamic ideology, the ritual of *Hajj* is an obligation only for those who are physically capable and economically solvent. Such obligation makes it the nation's inevitable responsibility to ensure that the Pilgrims' are physically fit and mentally stable to travel all the way to the gulf region and participate actively in world's one of the largest religious congregation. This paper focuses on developing a transitional platform comprising of two main components; decent accommodation and efficient training facilities for the pilgrims around Chittagong District. Such development is vital considering the increasing number of pilgrims that are generated every year from Chittagong Division. Also the population of *Hajjis* from this region is the second largest around Bangladesh. Given that, the international airport of Chittagong only caters to the regular flights, it is unable to provide for the basic needs of the pilgrims such as place for resting, worshipping or even preparing for the ritual by means of training. Hence it appears as an immense necessity to establish an integrated accommodation and training program with approaches to relief stress and ensure healthy movement of the Pilgrims from the Chittagong District.

Dedication

My parents' daily phone calls has remained the only source of motivational drive for me to achieve such an accomplishment. I am forever grateful to both of my parents for their prayers that I believe has been the only reason I have come this far. This is for my parents and my brother.

Acknowledgement

I would like to begin with "*Hamdulillah*" which means thanking Allah the Almighty for achieving what I desired and however my accomplishments have been. The completion of this project would have been difficult to imagine without the immense support I have received from my parents, respected faculties, friends and juniors.

I count it as the *greatest blessing* to have been guided by only the most *ethically sound*, frequently humble and the *most resourceful instructors* of the department; Dr. Mohammed Habib Reza, Abul Fazal Mahmudun Nobi and Dr. Fuad H. Mallick. Indeed they are a blessing to the department. I am also thankful to Zillur Rahman Babu for being helpful whenever I needed suggestions. I am thankful to my seniors; Faiyaz Hasnain Khan and Nurul Islam for helping me in the most difficult time.

Lastly, I would like to thank my closest friend, Bibi Mariam, who has been a constant support from the very beginning of my journey in Bangladesh and in the department. And to mention yet more counted blessings, my team force; Abdullah Al Mamun, Fatin Anzum Khan Tusti, Hafsa Tasneem Ali and Mashrica Rahman, my beloved juniors, to whom I will forever be grateful.

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Introduction and General Background

1.1 Background of the Project

Pahartali, in Chittagong, during the Pakistani Regime served as a transit medium for Muslim Pilgrims across the country. The only Hajj Camp for pilgrims in Bangladesh were situated in Pahartali built by the Pakistani Government in 1948 over 9 acres of land. The camp was accessed by all the pilgrims before embarkation on ship that piled between Chittagong and Jeddah Sea Port for the Holy ritual of Hajj. After the Independence, Hajjis were carried through ships from this camp only for two consecutive years since more pilgrims were crossing the borders in plane. The camp was abandoned following the stoppage of sending Hajjis by ships.

1.2 Project Brief

Name of the Project: Restoration of Old Hajj Camp

Client: Islamic Foundation and Ministry of Religious Affairs

Site Location: Pahartali, Trunk Road, Chittagong

Site Area: 8.47 Acres

1.3 Project Rationale

About 20% pilgrims out of the total that perform Hajj every year are from the Chittagong Division. Only a few Hajj flights are operated from Chittagong Airport which does not suffice to the actual flight requirements for the total number of Hajjis in and around Chittagong Division. For most people, the journey of Hajj begins from travelling to Dhaka for immigration purposes. The pilgrims from rural areas of the division are compelled to reach Dhaka either by rail or road which is most difficult for the elderly and illiterate people. Mentionable that these

innocent and mostly uneducated elderly Hajj pilgrims belonging to remote areas have to suffer miseries to reach Dhaka for boarding the Hajj flight. More over maximum pilgrims from Chittagong zone are elderly aged and they have to suffer miseries and are uncomfortable by road journey to Dhaka.

The intended pilgrims from the Chittagong city and the adjoining areas have to wait for an unscheduled period either in airport or in personal arrangements, thus experience countless miseries in the Chittagong airport. The only Hajj Camp of the country, which was built in 1989, is situated in Dhaka. It serves the pilgrims travelling from the capital and the places surrounding the capital. Over the years, the number of pilgrims boarding for Jeddah has almost tripled imposing a demand for a much accessible and facilitated Hajj Camp in areas where pilgrims are in large numbers.

The Hajj camp which is located in Ashkona, near the Dhaka Airport were built to provide services to a nearly 10,000 hajis from within and outside of the Capital. The growing number of pilgrims almost hampered the activities of the camp that only serves the sole purpose of accommodating a large number of people before they can board for Jeddah. Moreover, during the Hajj season, the camp is occupied for about one and half of a month affecting the residences of Ashkona which has a population of around 5,29,500 (BBS 2011) and mostly accommodates citizens working near the airport area.

Like most of Dhaka city, Ashkona suffers from a poor infrastructure and is in dire need of better-planned roads for its economy to function. As the Hajj campers start to check in, the already overburdened road becomes so crowded that everyday life for the residents and commuters become significantly tougher with the small roads around the area getting crammed with half a million people travelling back and forth. During the Hajj period, the local means of transport (rickshaws, auto-rickshaws, tom-toms) are banned from entering the Hajj Camp road. This block affects the daily lives of the commuters for a quarter of the year. Throughout this

three-month period, the local transportation is stationed at the end of the Hajj Camp road which connects to three other roads leading to Ashkona, Dakshin Khan, and Kawla. All the rickshaws and auto-rickshaws gather at this point to pick up passengers. The crossroad gets packed with people and vehicles with constant traffic congestion, leaving easy moving space. (Rabbi, 2018)

Redeveloping the old Hajj Camp in Pahartali will limit immensely the overall burden imposed in Dhaka during the season. All pilgrims around the Chittagong division, especially the elderly and the poor will be much facilitated through the establishment of this camp.

1.4 Problem Statement

From around 1976, the sea transportation for Hajjis from Chittagong remain stopped and the camp properties remained without any care being occupied by drug addicts and miscreants for their illegal activities. This kind of activities interrupt with the normal functioning of the surrounding communities. This problem is likely to occur even if the Hajj Camp was redeveloped. It is because the camp is only active during the Hajj season and remains vacant throughout the year. This requires for an assessment on how the inactive camp can be to put to proper use and maintained.

1.5 Aims and Objective of the Project

Redevelopment of the abandoned Hajj camp of Chittagong following the directives of Ministry of Religious Affairs. This project will:

i. Rejuvenate the old camp site by bringing it to life.

ii. Create an opportunity for the community to learn more about Hajj, the Fifth pillar of Islam.

iii. Create sufficient space for all the pilgrims to practice Islam and prepare for the journey of Hajj.

iv. Allow the pilgrims to gain knowledge about Islam and Culture.

v. End the miseries of travelling of elderly and illiterate Pilgrims from the remote areas

vi. Encourage Muslims around the region to be aware about Islamic practices.

vii. Integrate surrounding community and giving them an opportunity to practice and celebrate religion and culture.

1.6 Given Programs

- Hajj Office Administrative & Academic Building
- Library
- Mosque for 3000 persons.
- Seasonal Banks; minimum 20
- BIMAN Ticket Sales Center
- Customs & Immigration
- Dormitory Building; Gender segregated.
- Medical/Health Care Center
- Canteen with a capacity of 1200 persons.

Chapter 2

Literature Review

2.1 About Hajj

Hajj is an Arabic word usually translated as ‘pilgrimage’ referring to the journey to a Holy place. According to Islam, it is described as the journey that marks the spiritual purification of the believers (pilgrims) who, with exertion of efforts, visits the Holy place of Makkah. Technically, according to Muslim scholars, Hajj means a visit to Makkah to perform certain rituals and rites (Kari, 1987). Hajj is the world’s largest annual pilgrimage to the Holy cities of Mecca and Medina. It is the religious duty that all the believers (Muslims) must undertake at least once in their lifetime, provided that they are capable financially and physically. It is the most spiritually eventful journey that all the Muslims, even from the furthest reaches of the Islamic world experiences the spirit of which begins at home and culminates in Mecca.

There are five pillars in Islam, the Pilgrimage to the Ka’ba in Mecca is the Fifth and the last pillar of Islam, the remaining four being Shahada (the declaration of faith), Salat (ritual prayer), Zakat (obligatory alms) and Sawm (the fast of Ramadan). Although it comes as the last pillar, impact of Hajj has its own significance and are very special. Prophet Mohammed, peace be upon him, stated: "Those who perform the Hajj in the right manner and with full spiritual and emotional involvement shall come down from Arafat pure as the day his mother gave birth to him."

2.2 Religious and Social Importance of Hajj

The act of Hajj comprises of a five-day journey to Mecca and the nearby holy sites of Arafat, Mina, and Muzdalifah, where pilgrims perform a series of rituals to unify themselves with other

believers, absolve themselves of their sins and pay tribute to God (Fetini, 2009). These rites and rituals are obligatory to all Muslims, as demonstrated by the Holy Quran, the Hadith (traditions of the Prophet) and the continued practice of the Prophet Muhammad. Complying with the praying or fasting rituals cannot be put under comparison to that of Hajj. Any believer who performs Hajj acquires the title for embarking on the journey to the heart of Islam. Only pilgrimage to Mecca is solely referred to as Hajj and no other pilgrimage to any place else can be marked the same. All rites of Hajj that has been passed down through ages, remain intact and the pilgrims are required to act accordingly. This way Muslims over the generations connected historically as well as all the Muslim pilgrims dispersed geographically, connect with each other through this Holy platform of Hajj at any particular time. Being the most unifying element, Hajj brings about a change in both spiritual and social life of the pilgrims.

2.3 Origin of Hajj

Most of the Hajj Rituals are inspired by the actual events of Prophet Ibrahim and his family. The origins of the Hajj date back to 2,000 B.C. when Prophet Ibrahim's wife Hajar and their infant son, Ismael were stranded in a desert. Under the scorching heat of sun with Ismael close to dying from thirst, his mother Hajar ran back and forth between the hills of Safa and Marwa seven times looking for water until Jibrail, the angel, touched down to earth and created the Well of Zemzem, a spring of fresh water. Most of the Hajj Rituals are actually inspired by the events of Prophet Ibrahim and his family.

Following the orders of God, Prophet Ibrahim was entrusted by Allah to have built the Ka'ba; House of Allah at the site of the spring. After the building of the Ka'ba, Prophet Ibrahim would visit Makkah to perform Hajj every year, and after his death the rituals were continued by his son Prophet Ismael. With the course of time, the Hajj rites that were originally ordained by

Allah gradually changed with the spread of idolatry as worshipers from all faiths traveled to revel at the site.

2.4 Prophet Muhammad (SA) and the HAJJ

Prophet Muhammad conquered Mecca in 630 CE, His actions were followed by the abolishing of the presence of Idols in the Ka'ba and reinstating the original rites of Hajj ordered by Allah. Thus the building of Allah was restored as the only universal center for all the worshippers who believe in Allah, the one true God. In 631 CE, Abu Bakr (the first Muslim Caliph) was directed by the Prophet to lead 300 Muslim Pilgrims to perform Hajj in Mecca and finally in 632 CE, Prophet Muhammad (PBUH) performed his one and only pilgrimage with huge number of Muslims who were taught about all the rites and manners of performing Hajj by the Prophet (PBUH) himself.

2.5 History of Ancient Hajj Routes and Caravanserais (Medieval to Modern times)

A large number of people had been set to perform hajj travelling to Mecca and Medina from the very earliest period of Islam. Certain existing trade routes, the Silk road for instance were redeveloped with additional routes to ease the spiritual journey of the Muslims and these routes were further facilitated by wealthy rulers and patrons with the development of forts, caravanserais, provision of water

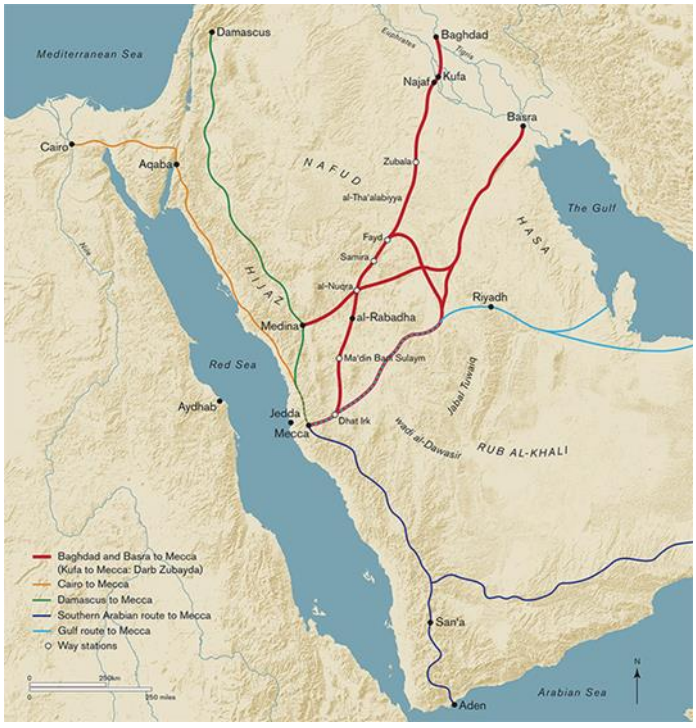


Figure 1: The Arabian Hajj Routes.
Source: Adapted from *The Hajj: Collected Essay*, B. Ulrich, 2013, London, The British Museum.

supply and security throughout routes until Mecca and Medina. The Hajj took on great importance as a social phenomenon, contributing enormously to forging a melded Islamic culture and a worldwide Islamic community whose shared characteristics bridged differences of nationality, ethnicity and custom (UNESCO, 2015).

2.5.1 History of Forts in Syrian Hajj Routes

From as early as eighth century, Darb Zubayda route from Baghdad had been facilitated for pilgrims with well-furnished stopping places and storage facilities. However, the most ancient and significant of all Hajj routes is the Syrian Hajj route running from Damascus, which had been also used by Prophet Muhammad on his journeys from Mecca to Bosra. The systematic development on this route was not seen until the Ottoman period in 16th century. There were traces of a few establishments for the medieval pilgrims dated back in 13th century; a bathhouse and a mosque built in Bosra, whilst forts were built in Zerka and Zizia. These facilities, however, were very poorly defined and lacked security for the pilgrims.

There were also records of Individual forts of the Ottoman imperials; the Fort at Ma'an for instance, were constructed under the orders of Suleyman in 1563. This fort has been used to date other forts developed in the route from Damascus. It is noticeable that the architectural style of the forts falls into two categories; ones built in 16th century and the ones in 18th century.

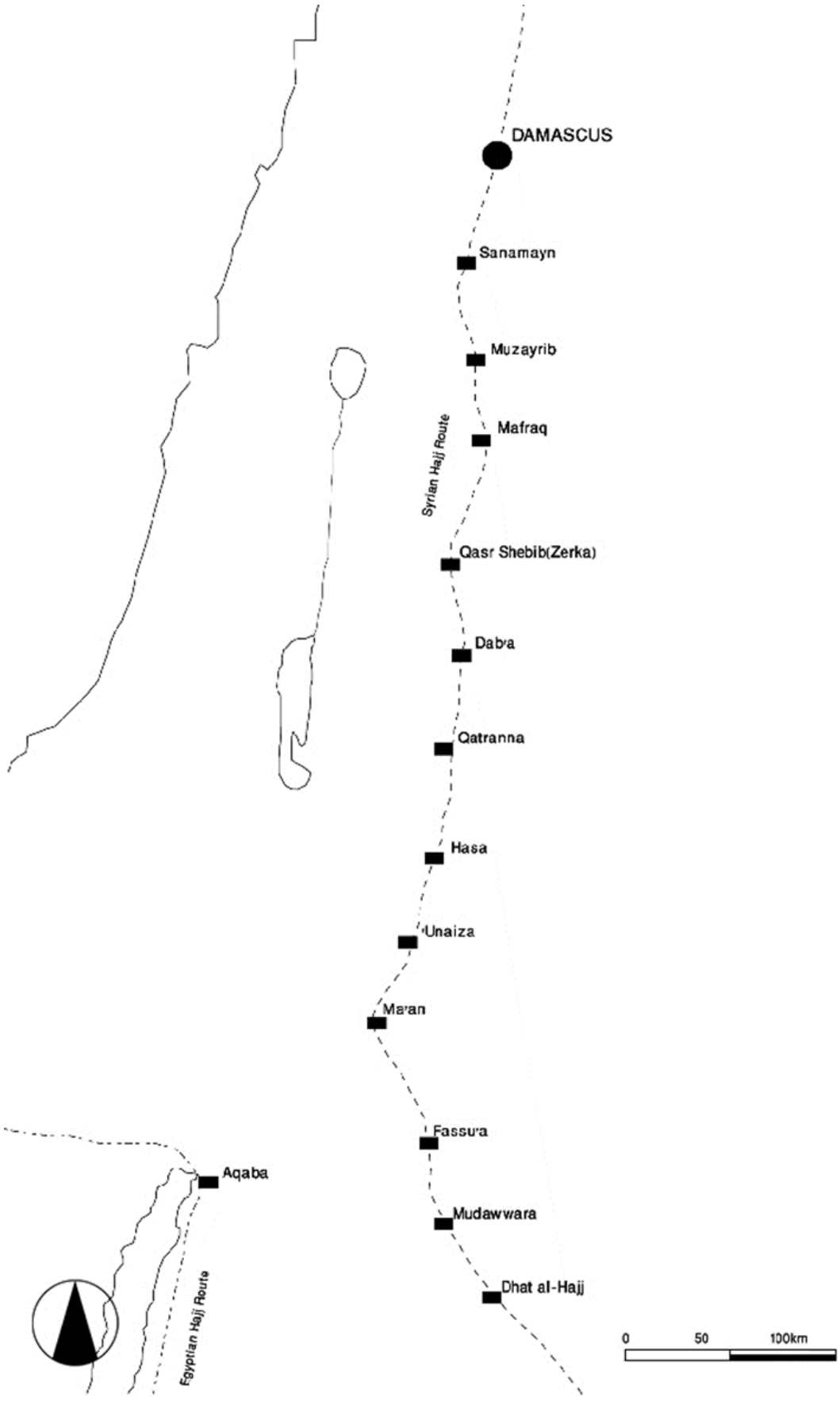


Figure 2: Map of Syrian Hajj showing all the fortresses built between 16th and 18th Century.
Source: Adapted from The Hajj: Collected Essay, A. Peterson, 2013, London, The British Museum.

2.5.2 Early 16th century forts on the Syrian Hajj Route

The first phase in the 16th century is associated with the Ottoman conquest which included the construction of forts at Mafraq, Ma'an, Qatrana, Unayza, Qal'at Daba'a, Sanamayn and Muzayrib. A few buildings were built under the reign of Sultan Selim, those included the forts in Sanamayn, Muzayrib and Mafraq. The fort at Mafraq was a square fort with a single entrance protected by box machicolation.

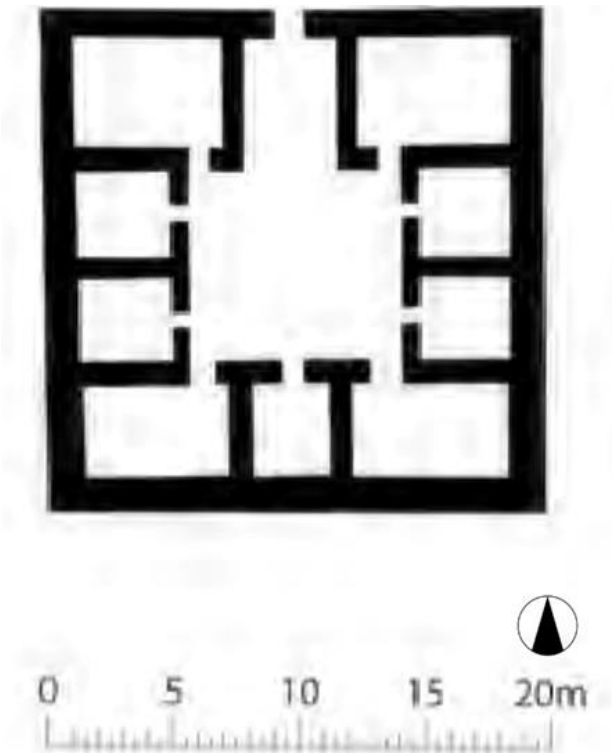
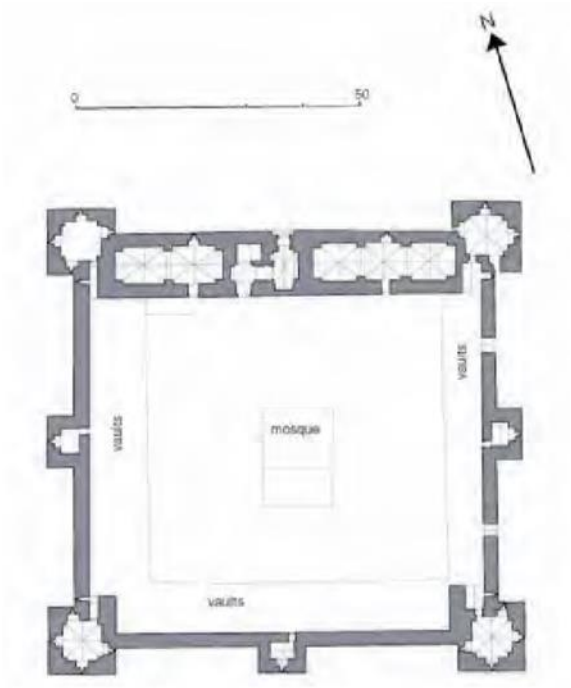


Figure 3: (right) Plan of Mafraq Fort.
Source: Adapted from The Hajj: Collected Essay, A. Peterson, 2013, London, The British Museum.

Previously used by the local Bedouins to house sheep and goats, the fort was redeveloped for the pilgrims. A small garrison based in the fort were used by the pilgrims to store grains. The entire structure measuring 19 m per side, forming exact square. The entrance was set in north side of the building with an inscribed small recess panel above the gateway. The exterior of the facade was plain, entrance led via an Iwan (vaulted room with open arch) into a square courtyard with a square opening into a well or cistern in the center. A series of doorways, three on the south, two each on the west and east sides and two on the north sides led to nine rooms.

The fort at Muzayrib built between 1516 and 1520, was a large rectangular building with a mosque in the middle of a central courtyard. It was defended by corner towers and internal towers as well as a bent entrance. Fortress had a garrison of 51 men and it housed an annual Hajj market which lasted for seven days. Inside the castle there used to be a mosque, a small



hammam (toilet and ablution space) and stores where the treasures of the state as well as the pilgrims were kept.

Figure 4: (left) Reconstructed plan of the Muzayrib fort by Norbert Hagen and Emad Terkawi.
Source: Adapted from The Hajj: Collected Essay, A. Peterson, 2013, London, The British Museum.

2.5.3 The 18th century Syrian Hajj Forts

The forts built during the eighteenth century included Fassua, Mudawara and Hasa. The hajj forts were all small rectangular constructions with average dimensions of 20m x 17m.

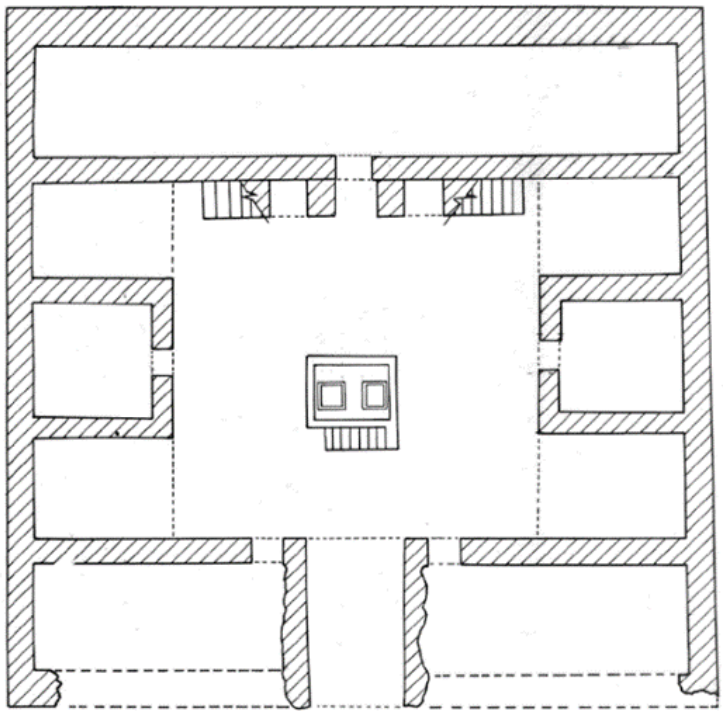


Figure 5: Ground floor Plan of Hasa Fort.
Source: Adapted from The Hajj: Collected Essays, A. Peterson, 2013, London, The British Museum.

2.5.4 Pilgrim Forts in Egyptian Hajj Routes

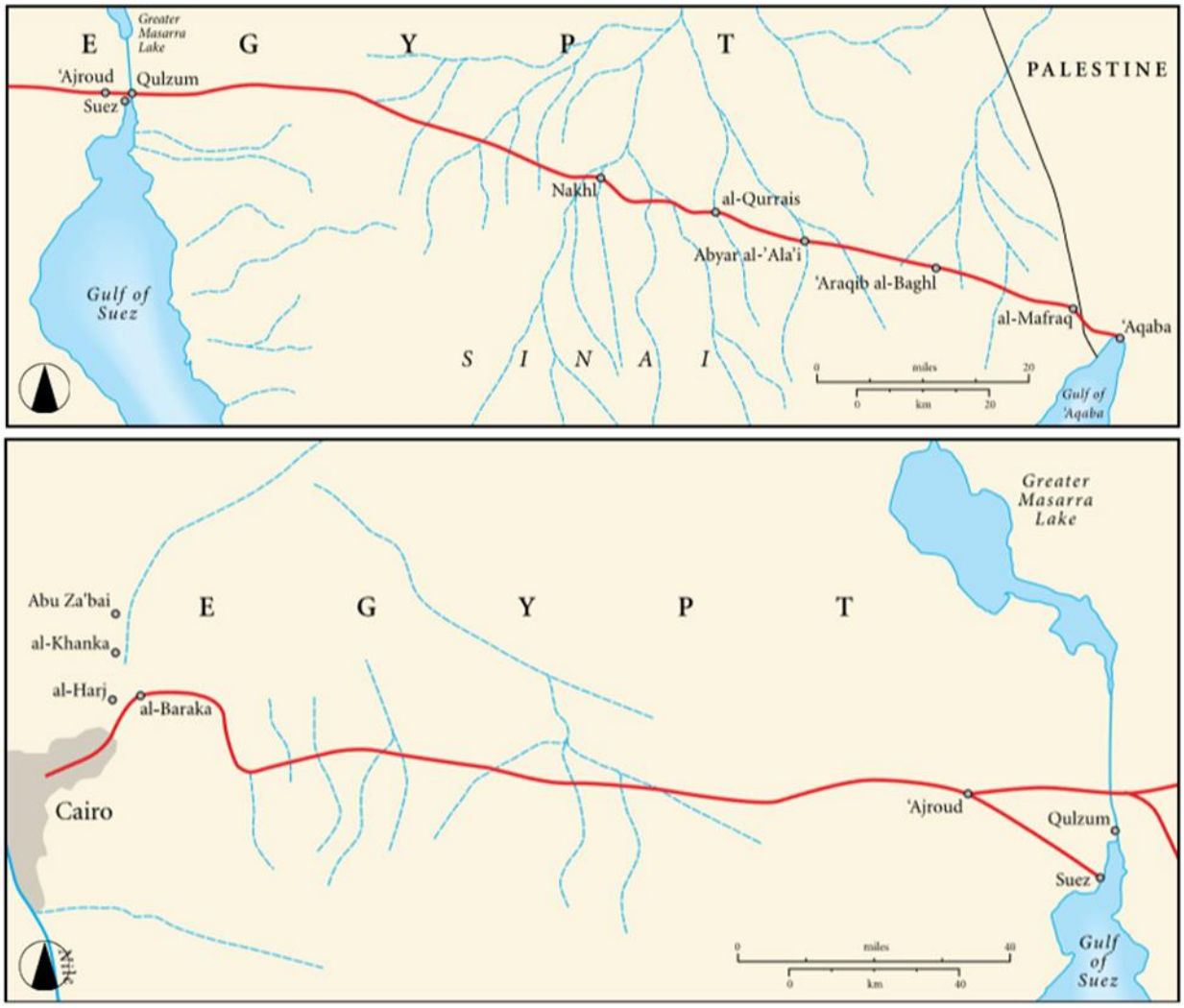


Figure 6: Map of the Egyptian Hajj Route between Birkat Al-Haj and Ajroud Fort (above) and between Ajroud and Aqaba (below).
Source: Adapted from The Hajj: Collected Essay, S. S. Abd-alMalek, 2013, London, The British Museum.

The Egyptian route flourished during the Mamluk period, the Khan and tower of Ajroud, was the largest fort built to keep safe the possession of pilgrims free of charge. It had a square layout of 60m x 60m and cylindrical corner towers, they overlooked a central courtyard surrounded by a mosque with a minaret in addition to series of rooms for travelers and guards, warehouses for the belongings of pilgrims as well as spaces for food preparation.

The tower and Khan at Al-Tur was rectangular (67m x 55m) with four cylindrical corner towers, a mosque was built next to main entrance and an internal courtyard surrounded by rooms, a warehouse and a well.

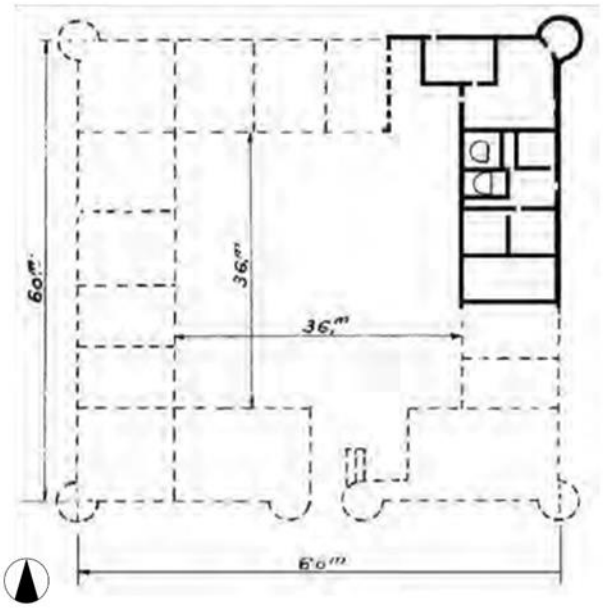


Figure 7: Ground Floor of the remains of the Khan at Ajroud.
Source: Adapted from The Hajj: Collected Essay, S. S. Abdal-Malek, 2013, London, The British Museum.

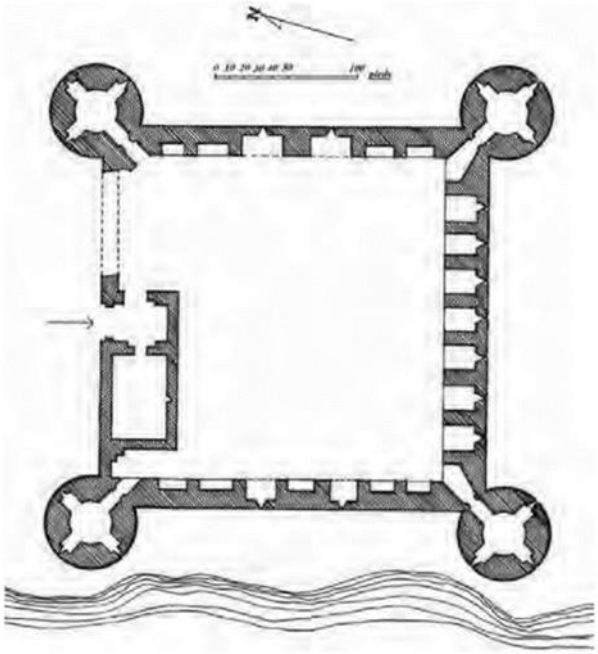


Figure 8: Ground Floor Plan of Fort at Al Tur in the first quarter of 19th century.
Source: Adapted from The Hajj: Collected Essay, S. S. AbdalMalek, 2013, London, The British Museum.

The tower, forts and khans at Aqaba, were the fifteenth stop for Egyptian pilgrims. It had the welcoming features that included towers and fountains anticipating the arrival of pilgrims. There were mosques and warehouses for the pilgrims. The forts were rectangular in plan, with four polygonal towers in the corner. The entrances led into a courtyard surrounded by accommodation and warehouses on two levels.

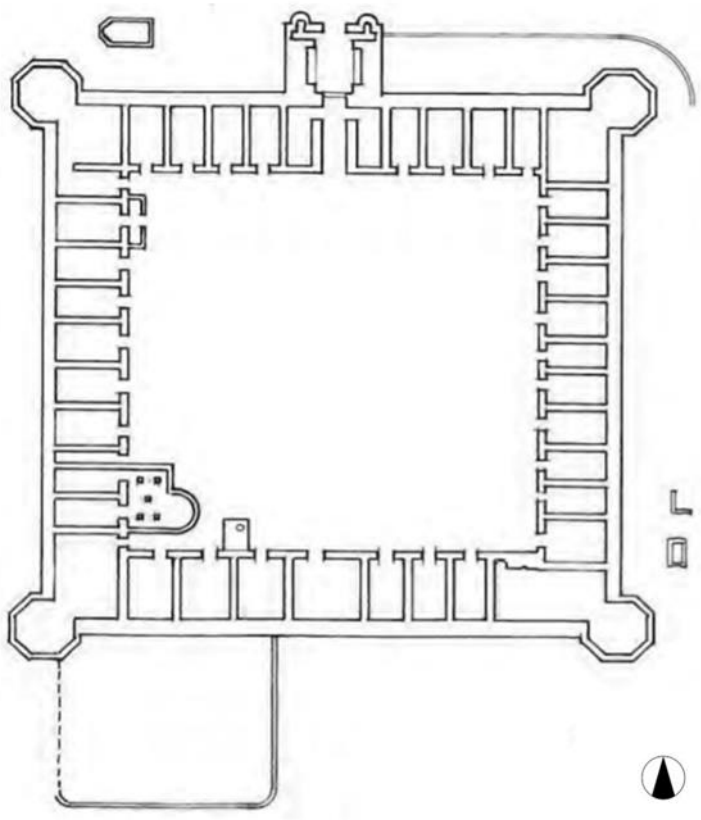


Figure 9: Ground Plan of Tower-Khan at Aqaba at the beginning of 19th century.
Source: Adapted from The Hajj: Collected Essay, S. S. AbdalMalek, 2013, London, The British Museum.

The fort khan at Muwailih is considered one of the most important Ottoman buildings along the route. The Khan was 8300 sqm. with a central entrance on the north next to a minaret that functioned as a light house. It had four round corner towers, a central courtyard around which numerous facilities were provided including a mosque, well and a water reservoir. Two storeys high accommodation for pilgrims and warehouses for their belongings.

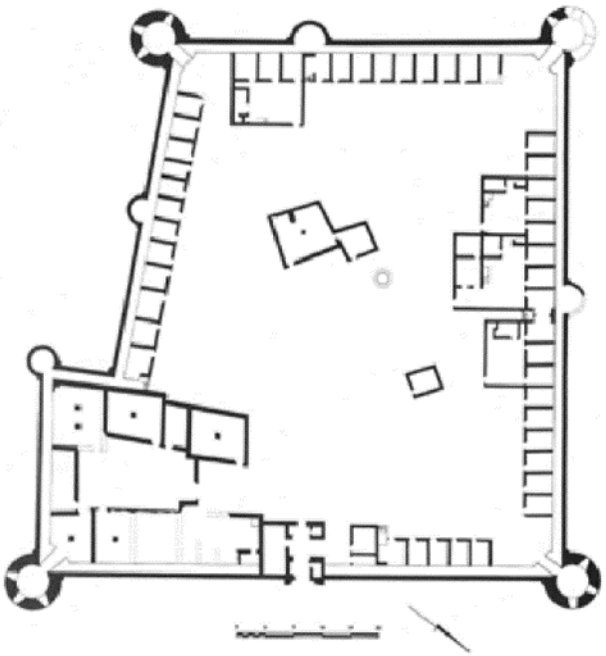


Figure 12: Ground plan of Fort Khan in Al- Muwailih.
Source: Adapted from The Hajj: Collected Essay, S. S. AbdalMalek, 2013, London, The British Museum.

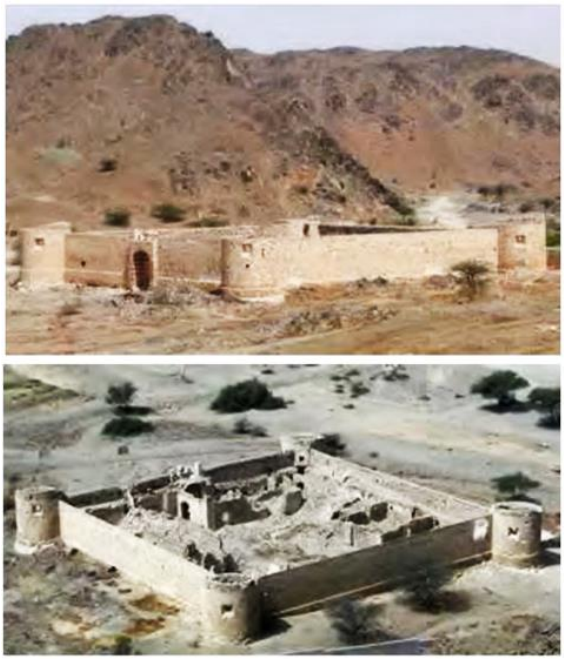
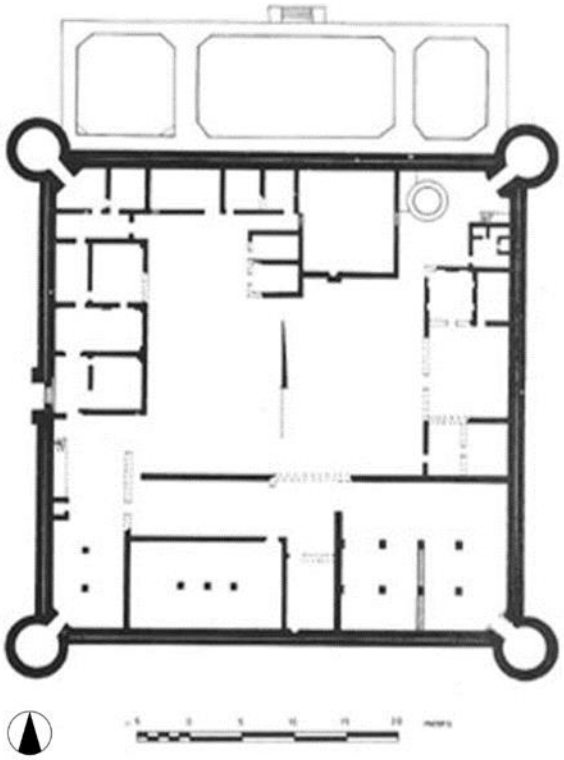


Figure 11: (left) Map of Egyptian Hajj Route between Aqaba, Mecca and Madina.
Source: Adapted from The Hajj: Collected Essay, S. S. AbdalMalek, 2013, London, The British Museum.

Figure 10: (Above) Al-Wajh Fort.
Source: Adapted from The Hajj: Collected Essay, S. S. AbdalMalek, 2013, London, The British Museum.



The fort of Al-Wajh is located in Wadi al-Zuraib, north-west of Saudi Arabia. This is one of the last forts towards the end of the Egyptian Hajj Route. It was built for protecting the Hajj caravans and also for storing the belongings of the pilgrims. The plan was rectangular, measuring (5.530m x 5.130m) with four cylindrical towers in the corners.

Figure 13: Ground Plan of the Khan in Al-Wajh.

Source: Adapted from The Hajj: Collected Essay, S. S. AbdalMalek, 2013, London, The British Museum.

Gates of the minaret that stood on the western side, opened to a courtyard around which were a mosque, a prayer hall, a well, accommodation and warehouses for storing traveler's belongings and grain supplies. It also contained three water reservoirs attached to the northern wall. A number of wells were found near the fort and the valley that facilitated pilgrims with water supply during their journey.

The forts that were built at the major centers of Egyptian Hajj route functioned as a transit home providing free services to the pilgrims. The enthusiasm reflected from the effort and richness of the forts and towers indicates that the development of such facilities for the pilgrims were very important to the Ottoman sultans. Facilitation of an arduous but spiritual endeavor central to the religion of Islam and its followers throughout the Islamic world. (Abdal-Malek, 2013).

2.6 History of Hajj in Indian Subcontinent

The history onf Hajj in Indian subcontinent can be traced back to the time of Delhi Sultanate period. Boats were arranged by the government under the Sultanate dynasty to send people to middle east for Hajj. This section begins with discussing about pilgrimage in Mughal era.

2.6.1 The Precollonial Period

The Mughal rulers had patronized Hajj and sent several ships to undertake the voyages providing free passage and provisions for the pilgrims. They sponsored pilgrimage to stand out as defenders of Islam (Slight, 2013). It was first initiated by Emperor Akbar when he conquered Surat in 1573. The ancient port of Surat in Gujarat, described variously as 'Bab-ul-Mecca' or the 'Bandar-e-Mubarak' ('blessed port'), was one of the leading ports of embarkation for the Indian pilgrims during the Mughal times. Rulers of the Bengal, Bijapur and Golconda also used various other Deccan ports on the east and the west coasts for Hajj sailings (Pearson, 1994).

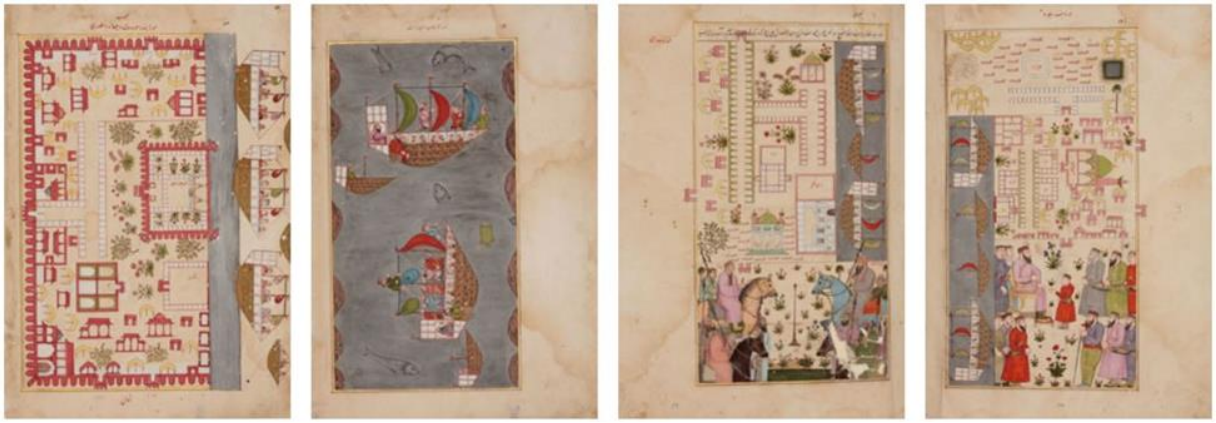


Figure 14: Across the Indian Ocean.

Source: Retrieved from

https://www.britishmuseum.org/explore/themes/hajj/the_journey/routes/across_the_indian_ocean/from_the_indian_subcontinent.aspx

Akbar was the first ruler to initiate Hajj pilgrimage and had ordered for a caravan to leave for Hajj every year. The Mughal Hajj caravan with royal family member left from Surat for Hijaz in 1577. Figure 2.13 starts on the left with the port of Surat north of Bombay which was the

main point of embarkation for the pilgrims. It is orientated to the south and the ships are about to depart. Having crossed the Indian Ocean, they enter the Arabian Sea. After entering the Red Sea, the first port is that of Mocha in Yemen which is then followed by their final stop in the Jeddah port. Akbar's people and the family members were welcomed by the high officials of the Ottoman Empire.

The ships that sailed across the seas carryin the pilgrims, had accomodation and storage facilities. Similar to the functions of caravanserai we have discussed in the pervious section. Hence establishment of accomodation facilities across from the sea route is not very prominent. It is infact evident by the capture of the mughal ship 'Rahimi' by the Portuguese. It belonged to the mother of Mughal emperor Jahangir. The Europeans described 'Rahimi' as "the great pilgrimage ship". It was believed to be the largest vessel of any kind sailing in the Indian seas with an estimated capacity of carrying 1500 tonnes alongside room for 1500 pilgrims.

Among the Mughal emperors, Aurangzeb was especially lavish about sponsoring for Hajj. Every year, Aurangzeb sent two of his royal ships towards the Red sea for Hajj. The ships carried lords and ladies of Hindustan, fakirs, and pilgrims and were free of charge. This trend was later adapted by his daughter who accompanied the pilgrims in the patronise of Hajj. There were a number of ports where the ships stopped until finally reaching the ports in Jeddah.

2.6.2 Sea Transport in Medieval Islam

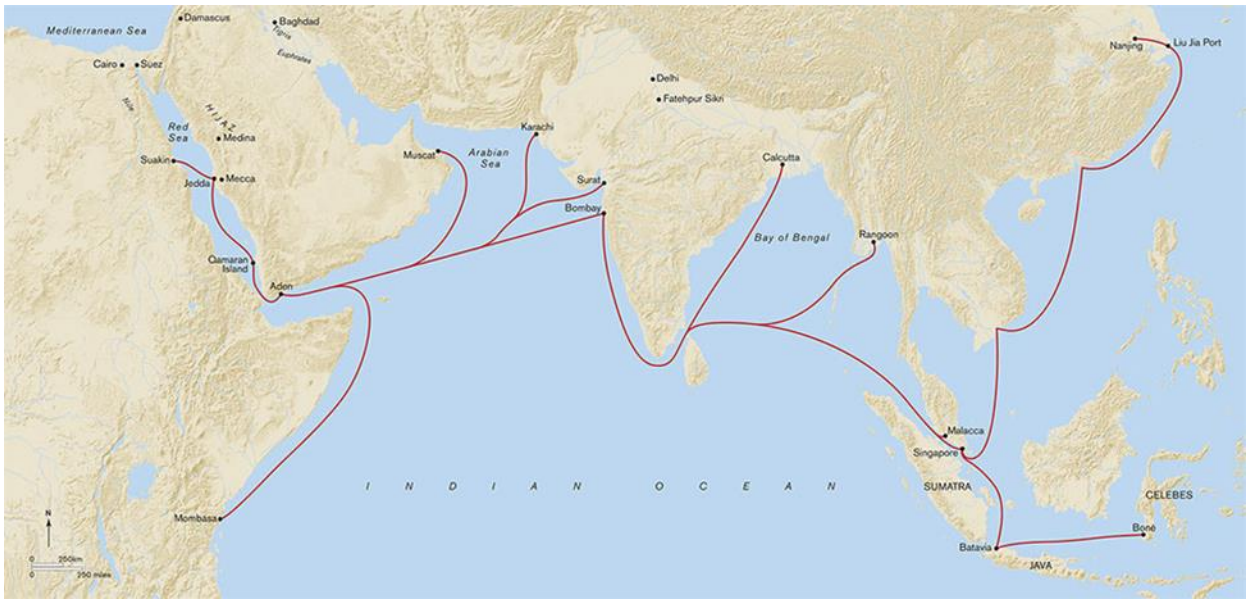


Figure 15: Routes across the Indian Ocean.
Source: Retrieved from https://www.britishmuseum.org/explore/themes/hajj/the_journey/routes/across_the_indian_ocean.aspx

The history of Hajj is deeply rooted to the geopolitics and economics of the Red Sea region. For many centuries the Red Sea remained an important commercial corridor that linked the western Indian ocean with the Medditerenean. With the emergence of Islam Jeddah became the most important Islamic port for merchants and pilgrims from India and Southeast Asia. However Jeddah was only serving as the gateway to Makkah, the ports changed location depending on the demands of the trade. By the end of 17th century many Indian ships that carried merchants were also transporting pilgrims during the Hajj season.

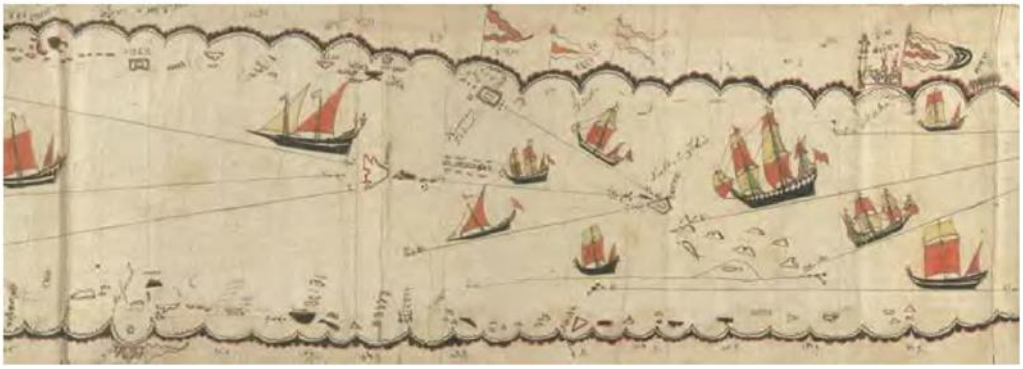


Figure 16: A native Indian chart of the Arabian and African coasts and the red sea drawn by a Gujrati inhabitant.
Source: Adapted from The Hajj: Collected Essay, D. A. Agius, 2013, London, The British Museum.

2.6.3 The Colonial Period

Through the intervention of global network of rail and steamship routes during early 20th Century, that were located in relatively new port cities of Bombay, Mombasa, Hong Kong and etc, Muslims of all classes and from all the peripheries started travelling by the steamships. Both the new form of transport and the new kind of travelers transformed Hajj in many ways. During the colonial period, Bombay was the main port of departure for the pilgrims across India and Central Asia. The involvement of the British government and the Muslim citizen lead to the establishment of several pilgrim hostels. Three were owned by the government whereas the rest were private. The pilgrims were to stay free of cost for 15 days. However, the British imposed certain constraints on the Muslims, who had played a very crucial role in facilitating the Hajj experience for their fellow believers. Followed by the maritime port in Bombay, Karachi proposed to open its first port in 1911 to ease journey of the large number of pilgrims who passed from Bombay.

Figure 17: Dhows and steamships in the Red Sea near Jeddah.
Source: Adapted The Abbas Hilmi album, 1909. Durham University Library.

2.7 History of Hajj in Bangladesh

The geographical location of Chittagong plays a very important role in the pilgrimage history of present day Bangladesh. Large boats with huge capacity to fuel sea voyage made trips from the Chittagong port since the Sultanate period. The sultans from the Turkish empire purchased ships at the Chittagong port and took it back to Egypt which was then under their reign. The old port of Chittagong had sufficient trade and shipbuilding industry during the 18th and 19th

centuries and was important enough to attract fleets from the Middle East Ports. With thousand years of rich history and heritage, geographical and travel accounts testify that Chittagong was commercial centre of high repute. During the colonial period however, the British did not allow the pilgrims from present day Dhaka and Kolkata to go through the Chittagong port. They were later compelled to grant the permission for Hajj pilgrimage of the people of India's eastern region through Chittagong Port in 1937.

2.7.1 Establishment of Hajj Camp in Chittagong

Acknowledging the urgency of Hajj Pilgrimage through sea routes, the Pakistan government came forward to build a Permanent Hajji Camp in Bangladesh (East Pakistan). The site of the proposed Hajj camp was in Pahartali, Chittagong. The construction of the camp began in 1948 and was finished within the scheduled timeframe. It was established across the Dhaka-Chittagong Highway. Also Pahartali is a major railway station in the Chittagong-Dhaka route through each people enters Chittagong. Pakistan government selected the site of Hajj camp on the basis of facilitating the Hajj pilgrims from across the country either by train or by bus easily.

The Hajji Camp was built across a huge area of 9.5 acres of land. The two storied administration building along the north-south had a spacious courtyard with a giant gate in front. During the time 14 to 15 government employees including a Hajj officer, an assistant hajj officer and other officers were working in the building during the hajj season. There was also a giant one storied Mosque adjacent to the camp to North beside the highway. A Muslim graveyard existed on the west of Mosque on an area of 8-10 decimal. There are total seven two storied buildings which served as accommodation for the pilgrims. Bangladesh's entire Hajj related activities were operated from this camp in Pahartali. Two ships with capacity of carrying 1300 pilgrims in each would take two trips to Jeddah. Another ship with a capacity of 700 people would start from Karachi to Chittagong port. Safina-e-Huzzaz, another ship carrying 4000 pilgrims from Karachi, that included 300 people from east Pakistan and the rest were from west Pakistan.

Chittagong would turn into a place for festival as pilgrims arrived from different regions of present day Bangladesh to embark on the journey of Hajj.

The camp also hosted an Ijtema of Tabligue Jamaat in 1958. After the independence of Bangladesh, the Hajj activities were carried out in the camp for another 14-15 years. During the Hajj seasons temporary shops and restaurants would be opened alongside the administration building. All necessary hajj related commodities including clothes, bags and sandals, consumer goods for cooking and Tasbih and perfumers were sold in the temporary shops.

Figure 18: Pahartali Hajj Camp in abandoned state.
Source: Author, 2019

The Pakistan International Airlines was launched in 1950. With Dhaka expanding rapidly, the Pakistani government commissioned for the enhancement of the facilities in the existing airport in Tejgaon, Dhaka. Only a small group of pilgrims flew by air at first but majority went to Jeddah by ships. Later it became easier to send more pilgrims through the airport.

After the independence in 1971, Chittagong Airport was turned into a fully international terminal as Chittagong by then became the center of different import and export industries. Chittagong being the prime seaport of the country became important to foreigners who frequently visited Chittagong. So more regular flights were needed to be operated especially between Chittagong and the Arabian gulf region. Hence it became easier to transport Hajj pilgrims from the Division to Jeddah through the full-fledged international airport of Chittagong.

Chittagong port had become unsafe for anchorage of ships as there were many mines in the port and many ships sank there during the liberation war. Many ships that carried hajj pilgrims were declared scrap and dismantled. As the hajj flights were operated from Dhaka, there were temporary hajj camps built in Shahbagh, Tejgaon and Agargaon. The activities were still being operated from the Pahartali camp. More than thousands of Hajj pilgrims would stay in the Pahartali camp with their friends and relatives visiting from across the country. They also had a chance to experience the natural scenery of Chittagong.

2.7.2 Establishment of Hajj Camp in Dhaka

The activities were shifted to Dhaka in 1989 at the end of Ershad regime. At that time the permanent Hajj camp was built in Ashkona, Dhaka opposite to the Hazrat Shahjalal International Airport. The details of the Hajj camp have been included in the case study section. Till now the Pahartali hajj camp remains abandoned as the country's Hajj activities were introduced at the camp in Dhaka. The government proposed the redevelopment of the Hajj camp due to increasing number of Hajjis emerging from the Chittagong division.

Figure 19: Hajj Camp in Ashkona.
Source: Author, 2019

As we have seen, through the advancement of communication methods, various establishments took place to facilitate the pilgrims around the world. These establishments, whether forts in the Ottoman period or ships from the Mughal era or the contemporary Hajj camps, rather signifies the importance of Hajj. Even though the communication were developed primarily for trade, it facilitated the pilgrims from all around the world to travel for Hajj by new means more easily. The periods also reflected the evolution of accommodation facilities for the pilgrims at different intervals of Hajj routes. All these establishments solely focused on benefitting the pilgrims on their way to the spiritual journey of Hajj.

Chapter 3

Site Appraisal and Contextual Analysis

This chapter attempts to analyze the demographic and physical features of the site as well as the influences of the natural and manmade environment encompassing it. It also reflects on the historical significance of the site on the basis of past activities that took place and are relatable to the Hajj Camp. The site is located in Pahartali and currently comprises of the old Hajj camp buildings. The main focus is to understand various aspects of the site including communication and connectivity, land-use pattern, climate and other relevant characteristics.

3.1 Location of the Site

The site is located in Pahartali Thana in Chittagong. The significance of the redevelopment of Haji Camp in Chittagong has been justified by its historical and social background in the following sections.

3.1.1 Historical Background

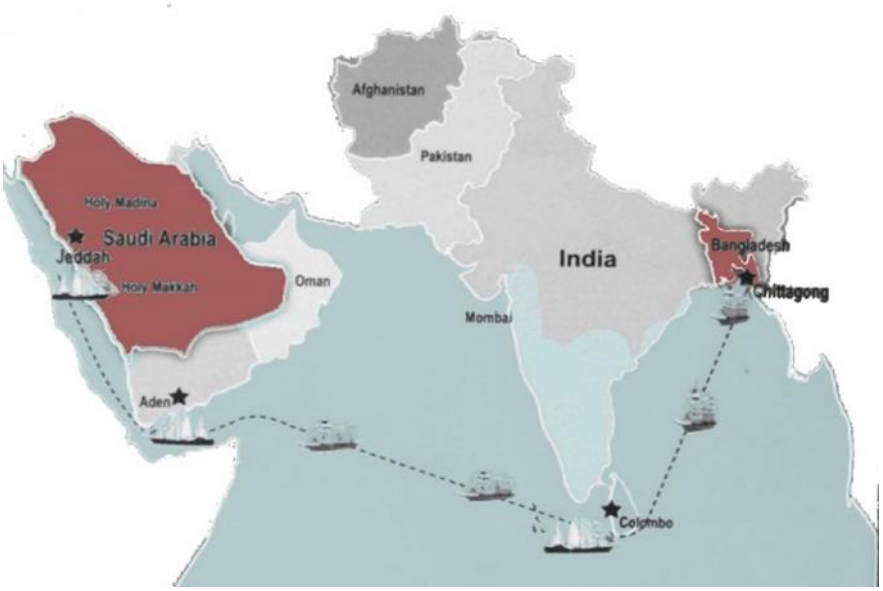


Figure 20: Historical Ship Routes from Chittagong to Jeddah Port.
Source: Author; Adapted from the book 'A history of Hajj Pilgrimage Via Chittagong Port'.

Chittagong Port, also the Prime sea port of Bangladesh has witnessed the history of communication across the Arabian Gulf which dates back to the advent period of Islam.

The old Port of Chittagong city had sufficient trade and well facilitated shipbuilding industry which attracted many of the fleets from the Middle Eastern Ports. Through the port, the people of Chittagong region communicated with the Arab world and the other parts of the world by sea routes. Chittagong possesses thousand years of rich history and heritage, geographical treatises and travel accounts which clearly testifies that region, with the Karnaphuli river flowing through it, was a highly reputed commercial center. Through the establishment of trade between Chittagong and the Arabian countries, facilities of transporting the Hajj pilgrims were introduced. The pilgrims used to travel from the Chittagong Port via ships from the age of Delhi Sultans.

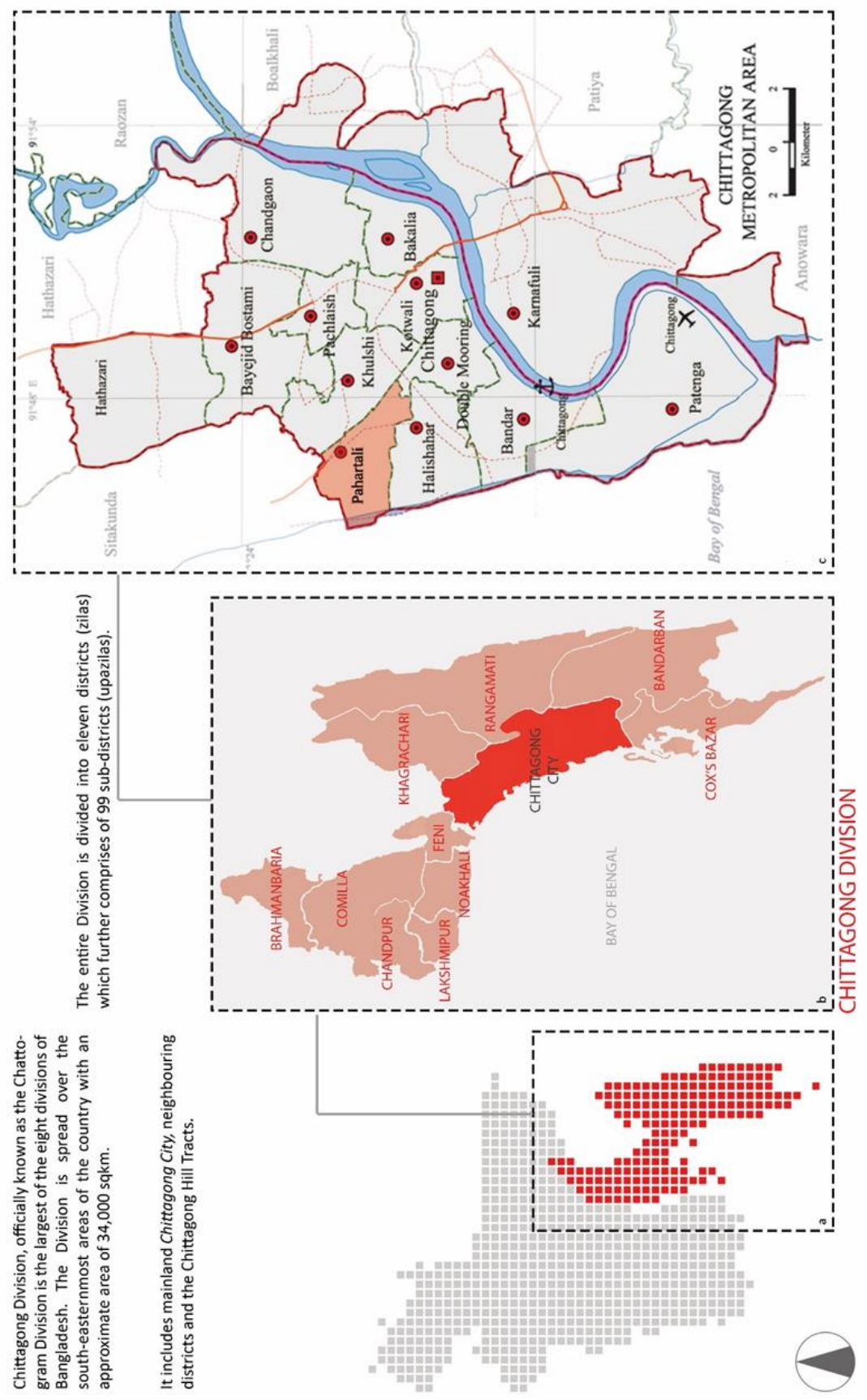


Figure 21: Chittagong Division in Bangladesh Map showing the Eleven Districts of the Division and Pahartali Thana's position in Chittagong City.
Source: Author. Chittagong City Map adapted from Banglapedia.

Chittagong Division, officially known as the Chattogram Division is the largest of the eight divisions of Bangladesh. The Division is spread over the south-easternmost areas of the country with an approximate area of 34,000 sqkm. The entire Division is divided into eleven districts (zilas) which further comprises of 99 sub-districts (upazilas). It includes mainland Chittagong City, the neighboring districts; Brahmanbaria, Feni, Noakhali, Comilla, Chandpur and the Chittagong Hill Tracts.

Figure 21 (above) begins with illustration of the geographical location of Chittagong in Bangladesh. Next, it shows where Chittagong city is located along with the other districts around it. The site where the Hajj Camp Project to be redeveloped; Pahartali Thana is also shown in the Chittagong map to the right.

3.1.2 Pilgrims of Chittagong Division

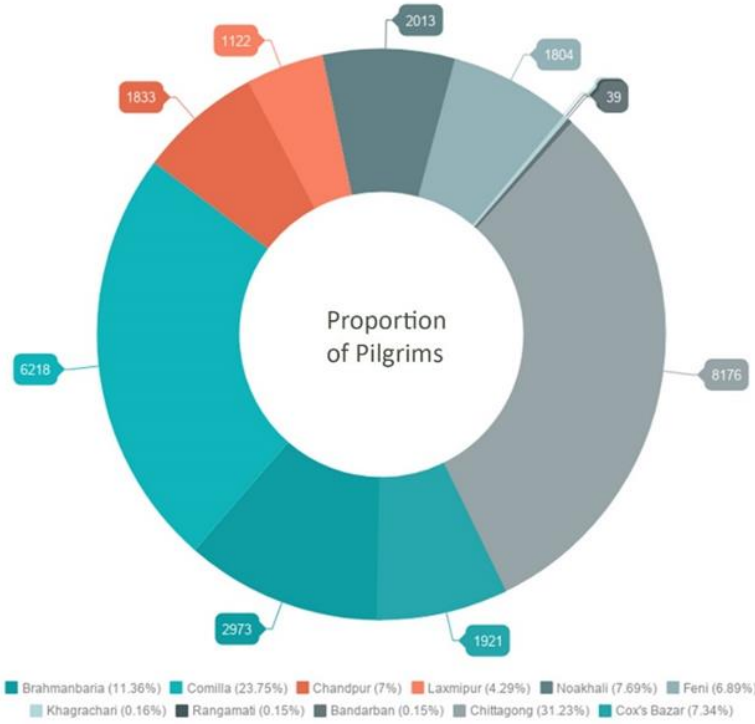


Figure 22: Number of Pilgrims travelled from Chittagong Division in 2017. Source: Author. Adapted from Map of District wise Pilgrim; http://www.hajj.gov.bd/

According to the Hajj Management Portal, the proportion of pilgrims travelling from Chittagong Division is the second highest around Bangladesh. Figure 3.3 in the left shows the number and percentage of pilgrims travelling from their respective districts within Chittagong Division.

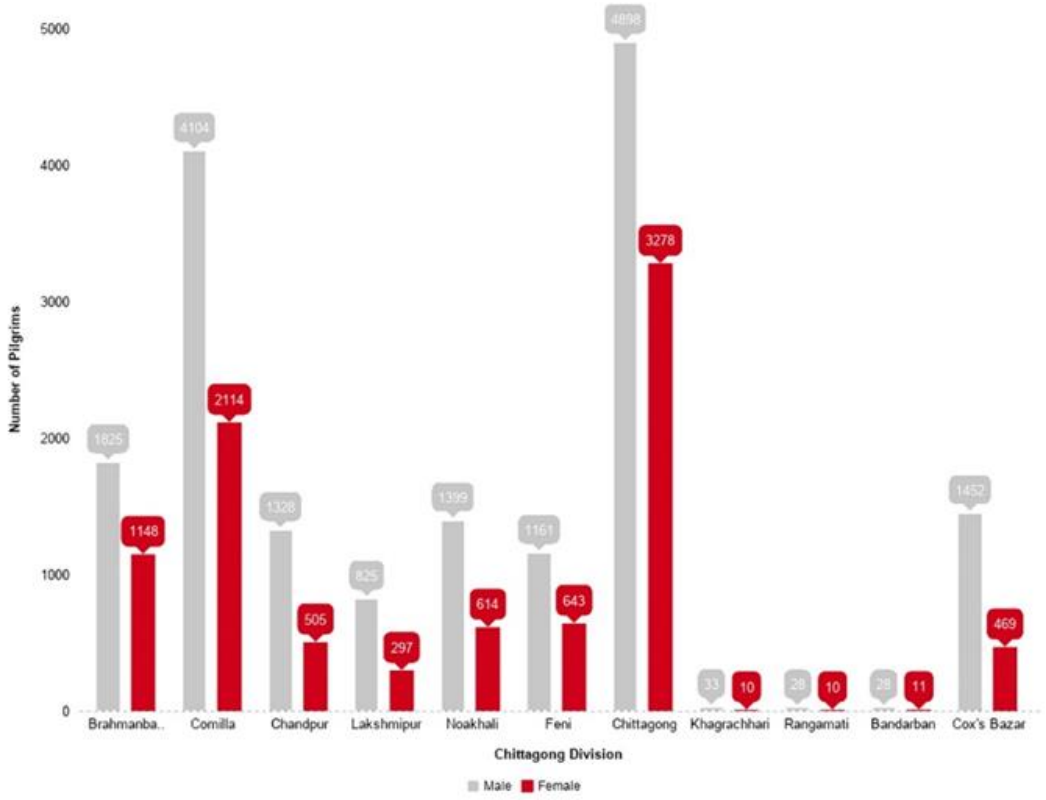


Figure 24: Number of male and female pilgrims travelled from Chittagong Division in 2017
Source: Author; Adapted from Pilgrim Statistics in Hajj Management Portal.

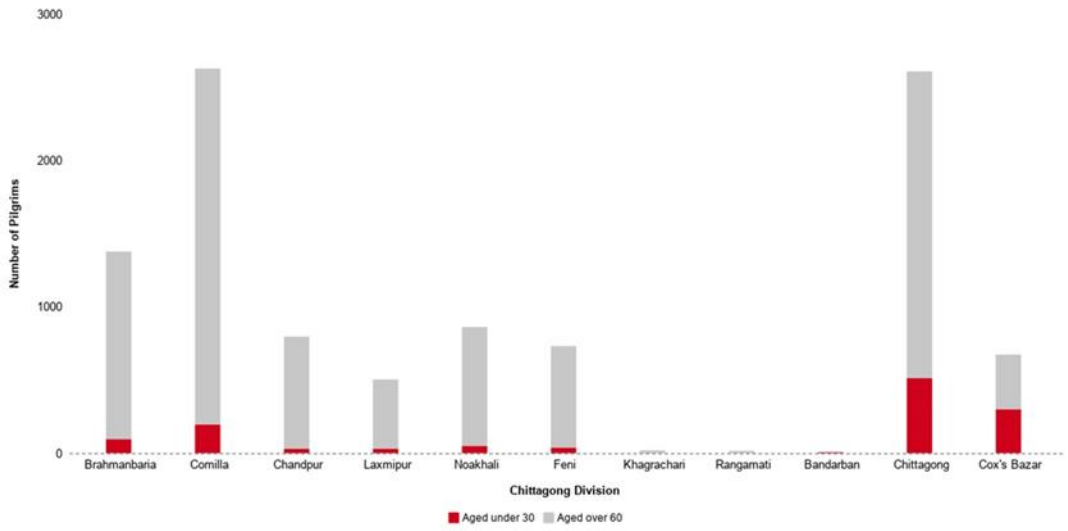


Figure 23: Proportion of pilgrims aged under 30 and above 60 who travelled from Chittagong Division in 2017.
Source: Author; Adapted from Pilgrim Statistics in Hajj Management Portal.

3.1.3 About Pahartali

The first Hajji Camp which is the transit camp for the pilgrims was established in Pahartali Thana of Chittagong to facilitate the Hajj travelers during the East Pakistan era. Pahartali is home to the major railway station in the Dhaka-Chittagong railway section through which

people enter Chittagong. Pahartali was selected for the Hajji Camp not only because of its proximity to the railway station but also to avoid being interrupted by the bustling city. Its location could easily avail the pilgrims from the Hajj Camp to the port for deportation.

Besides past establishments, the site is also only about 2.75 km away from the core of the town; BRTC bus stand and is also near to other major bus stands. Hence, the potential of the site to be redeveloped as Hajj Camp once again can be justified by the benefits of its location.

3.2 Demographic Data

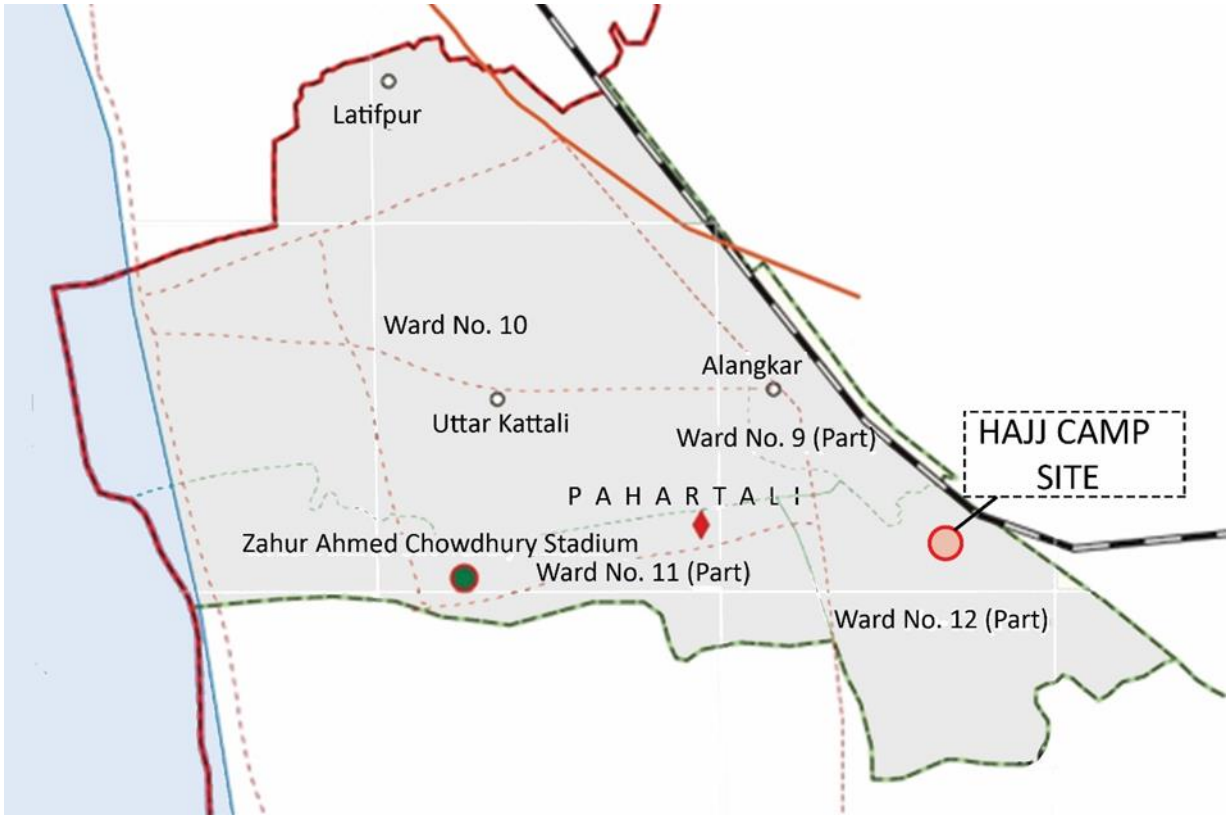


Figure 25: Map of Pahartali Thana with the site location identified.
Source: Author, Adapted from Google Maps and Banglapedia.

Pahartali is a metropolitan thana within Chittagong City Corporation, was established in 1978. It is the third smallest thana within the Chittagong metropolitan area in respect of population. The thana was named Pahartali because it was bounded by hills on its three sides (Pahar is the Bengali term for hills). Occupying an area of 13.31 sq.km, the thana is bounded on the north

by Sitakunda Upazila, east by Khulshi Thana, south by Halishahar and Double Mooring Thanas and west by the Bay of Bengal. The Thana consists of 2 full and 1 part city wards and 14 city mahallas.

3.2.1 Population Distribution

In 2016, the total population of Pahartali was 1 45 127, of which the total number of female were 69,738 and the number of male were 75,389 (Hossen, 2017).

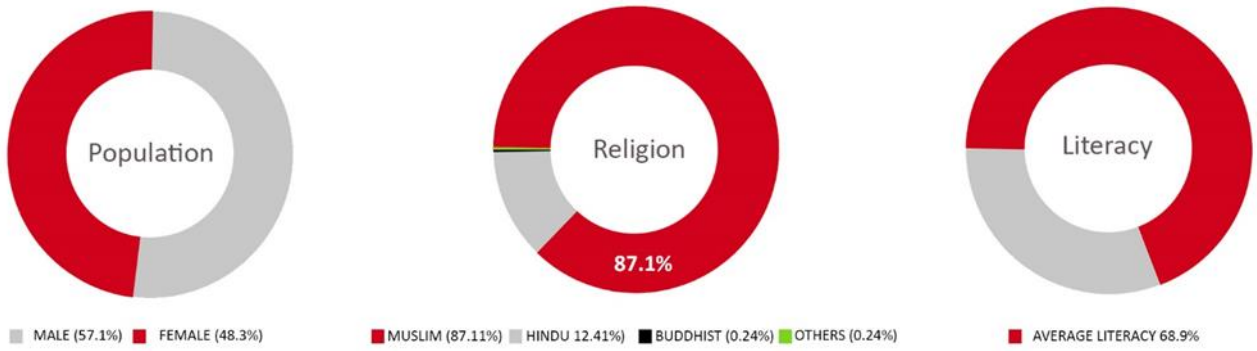


Figure 26: Demographic Data of Pahartali (Population, Religion and Average Literacy Rate).
Source: Author. Adapted from BBS, 2011

3.2.2 Housing and Household Characteristics

In the thana, there are 42,024 households. Distribution of household by type shows that there are 98.01% general unit, 0.08% institutional and 1.91% other unit. (BBS, 2011). In the thana, 31.7% general households live in pucca house , 39.4% in semi-pucca house, 25.0% in kutcha house and the remaining 3.9% live in *jhupri* (BBS, 2011).

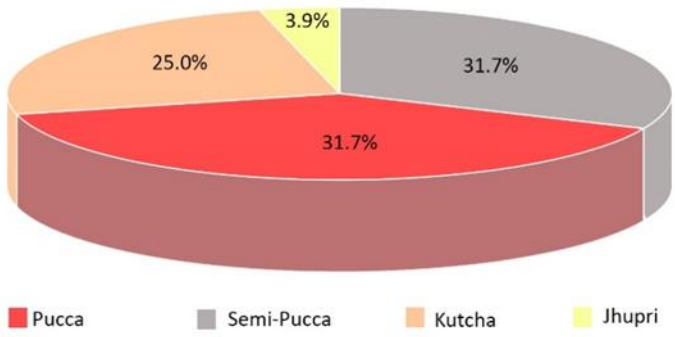


Figure 27: Types of Construction in Pahartali Area.
Source: Author.

Most of the buildings are constructed with locally available materials such as brick, concrete, steel and wood. Figure 3.9 below shows the type of structures that are most prominent within the site:

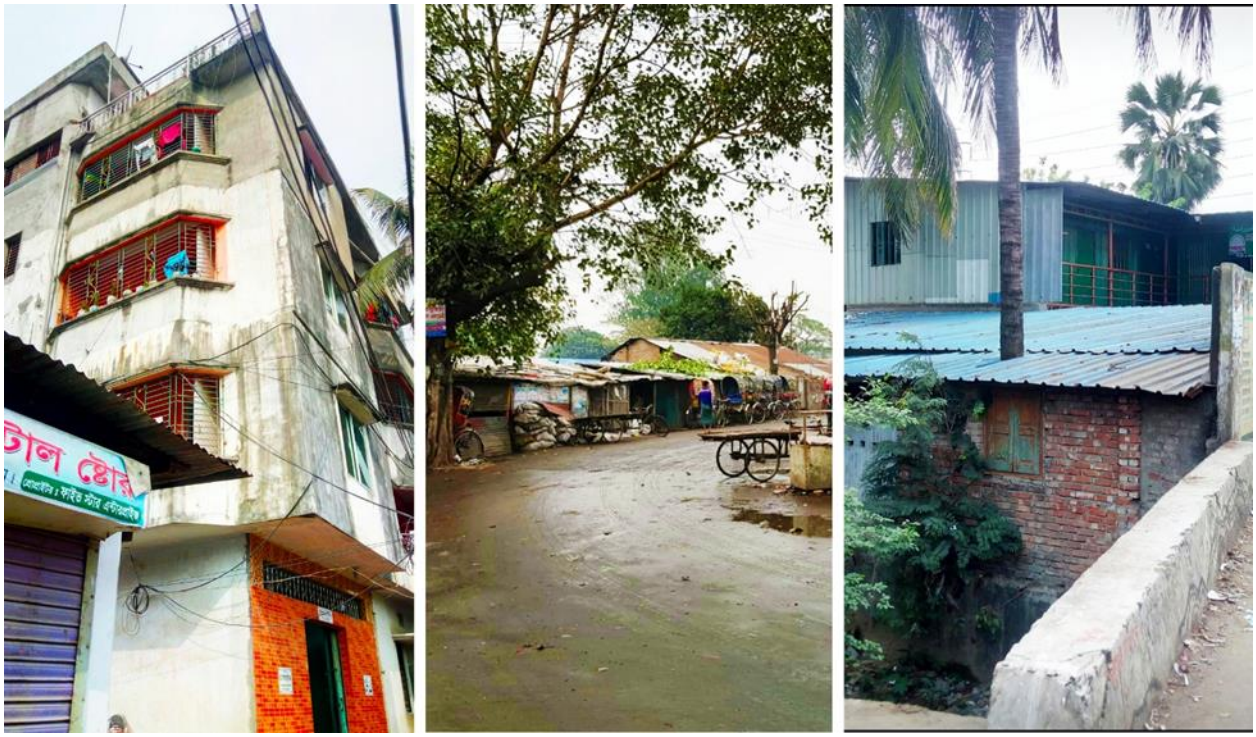


Figure 28: Type of structures around the site.
Source: Author

3.2.3 Religious Establishments in Site

There are total nine mosques and two madrasas around the site that serve the surrounding communities.

Most of the mosques in Pahartali are surrounded by shops and workshops. They feature defined entrances that act as a marker leading to the mosques. The construction majorly follows local brickwork and the use of Islamic geometry is not very frequent and is almost rare. The mosques in the main road, surrounded by shops or warehouses are rather an extension of the surrounding land uses, it does not appear different in terms of architecture. However, the emphasis has been given on providing sufficient prayer spaces. It is to be noted that these mosques do not have open spaces to host events during religious occasions.

Figure 29 below shows the location of the mosques within Pahartali Thana. There are two madrasas (Islamic Schools) in the site's vicinity; Yunusia Hifza Academy and Darogabari

Furqunia Madrasa. It can be concluded that surrounding communities are more or less engaged to various religious activities.

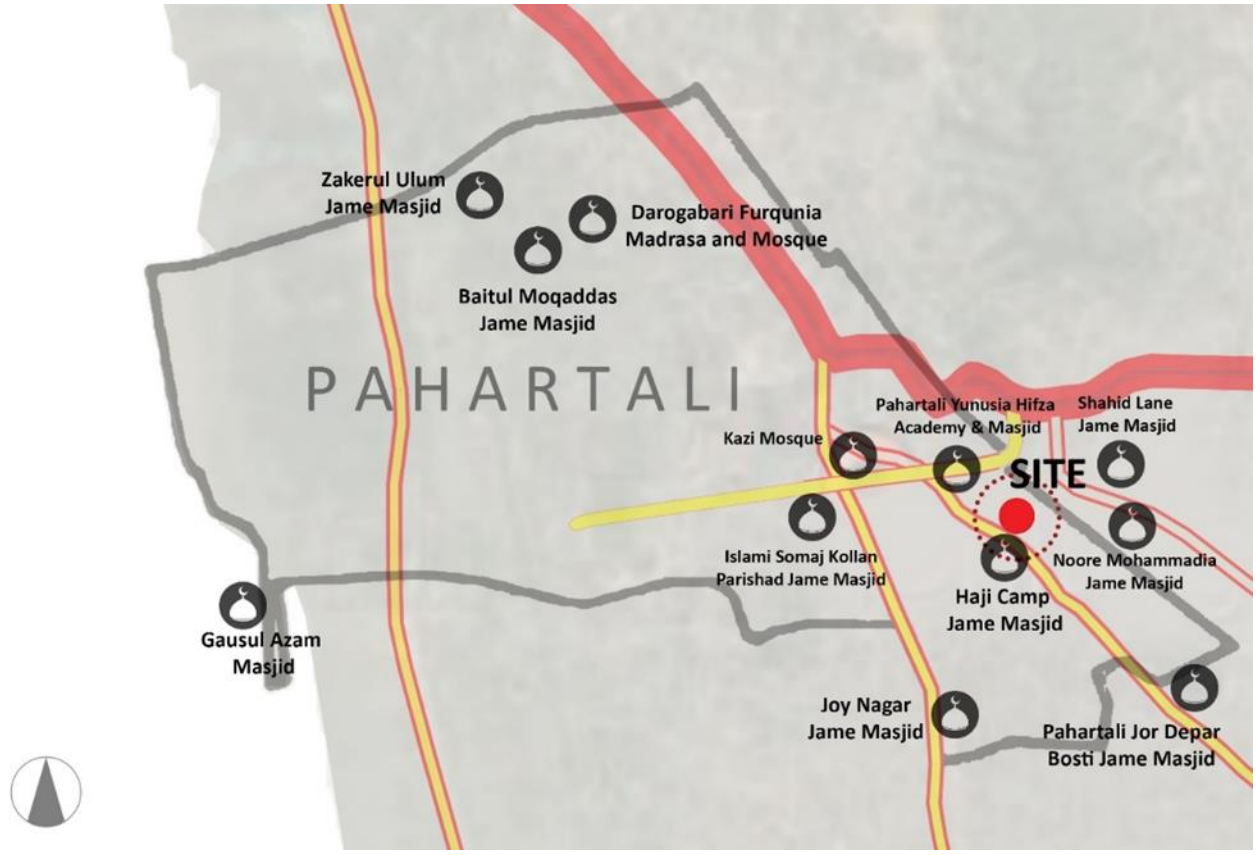


Figure 29: Occurrence of Mosques and Madrasas in the site.
Source: Author

Figure 30: Kazi Mosque (left) and Noore Mohammadia Jame Masjid (right).
Source: Google Earth.

3.3 Sectorial Data

3.3.1 Roads and Connectivity

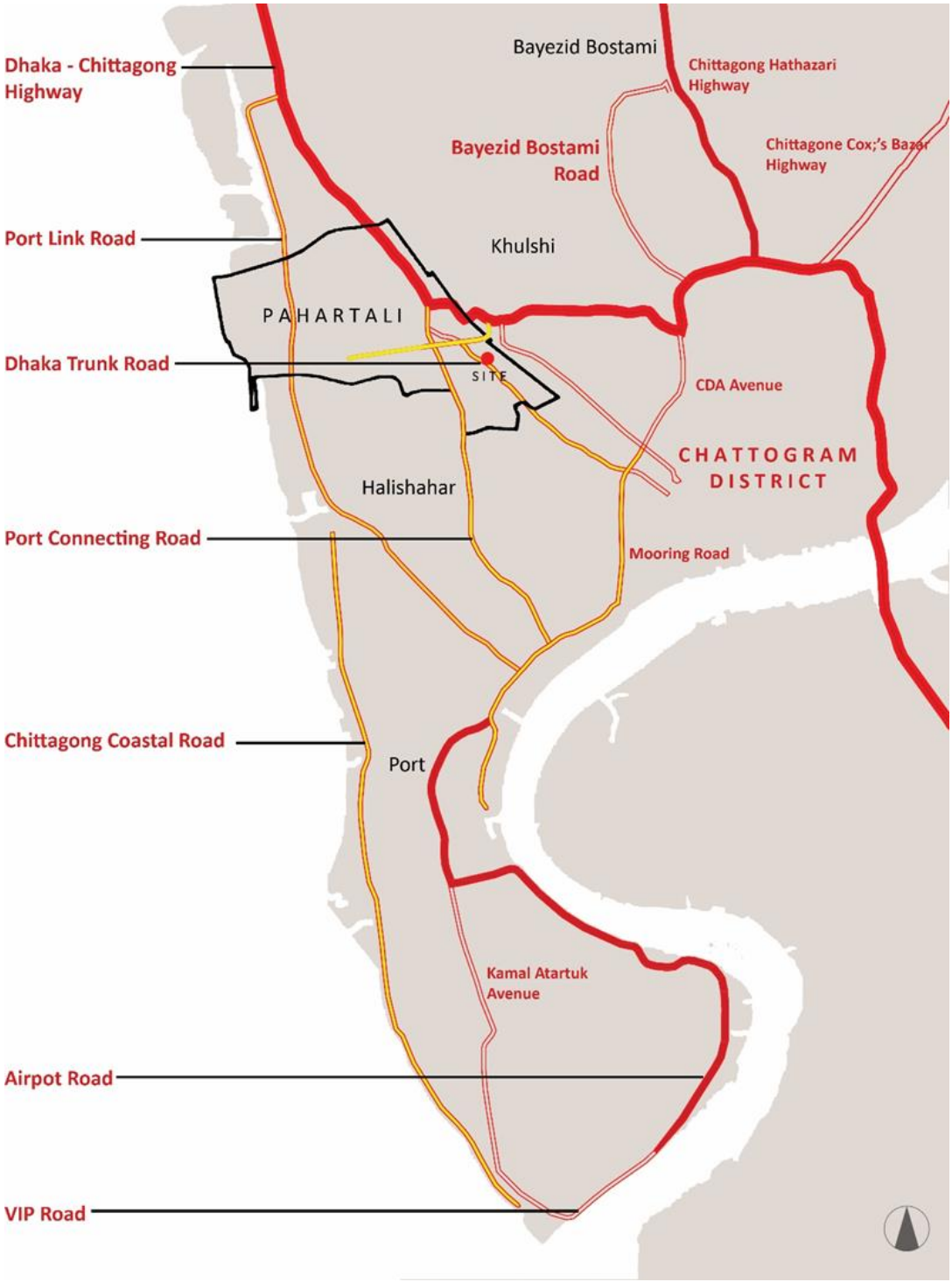


Figure 31: Pahartali Accessible Routes.
Source: Author.

Pahartali is accessed by the Dhaka-Chittagong Highway and the Port Link Road. The Dhaka-Chittagong Highway is connected to Dhaka Trunk Road which leads to the site.

3.3.2 Distances from Transport Terminals

Airport: The Chittagong Airport is 21.3 kilometers away from the site and it is accessed via Port Connecting Road which is linked to the Airport Road.

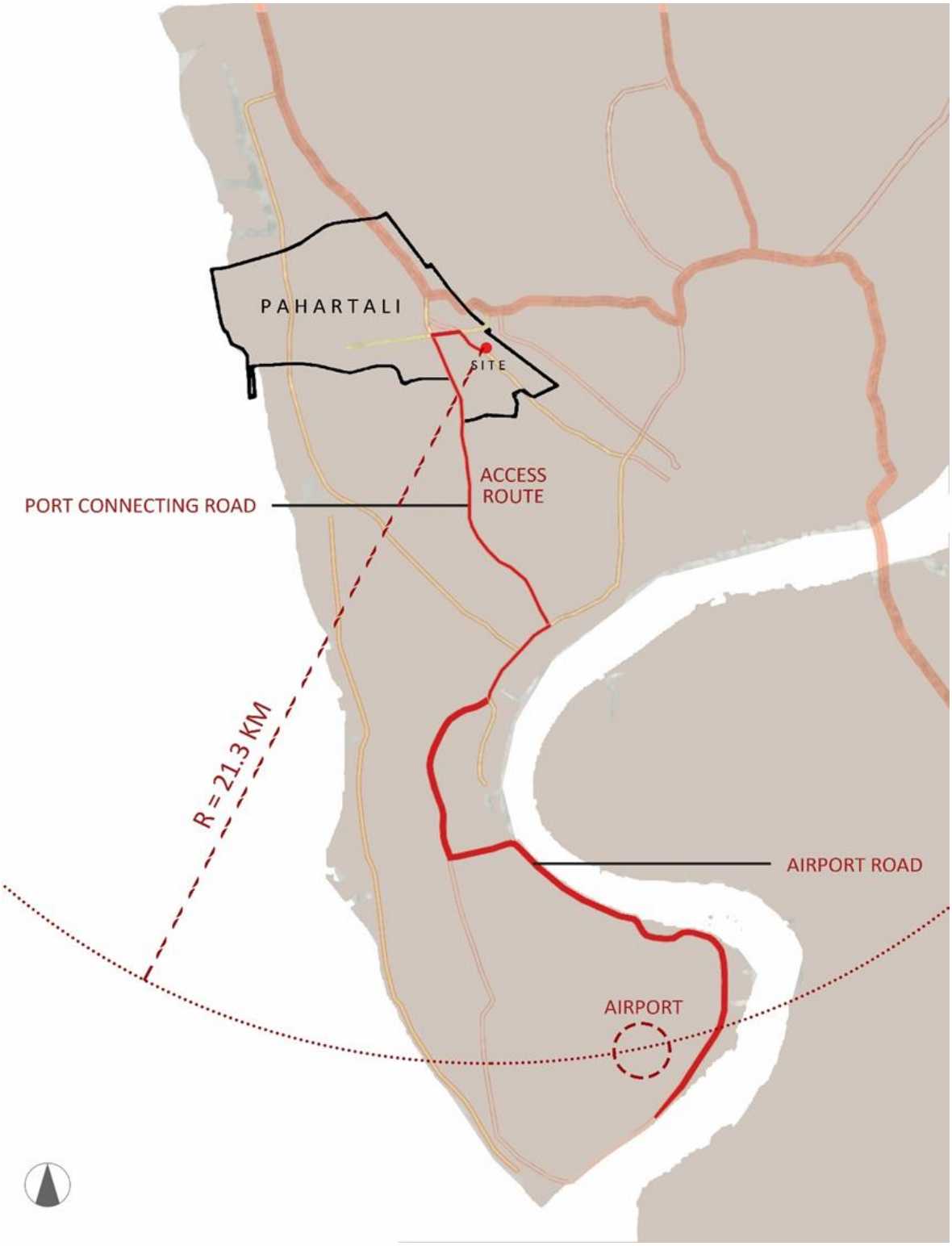


Figure 32: Distance of Shah Amanat International Airport from the Site.
Source: Author.

Railway Stations: There are two railway stations in Chittagong. Chittagong is entered through the Pahartali Station, which is in very close proximity to the site, only 0.75 kilometers away.

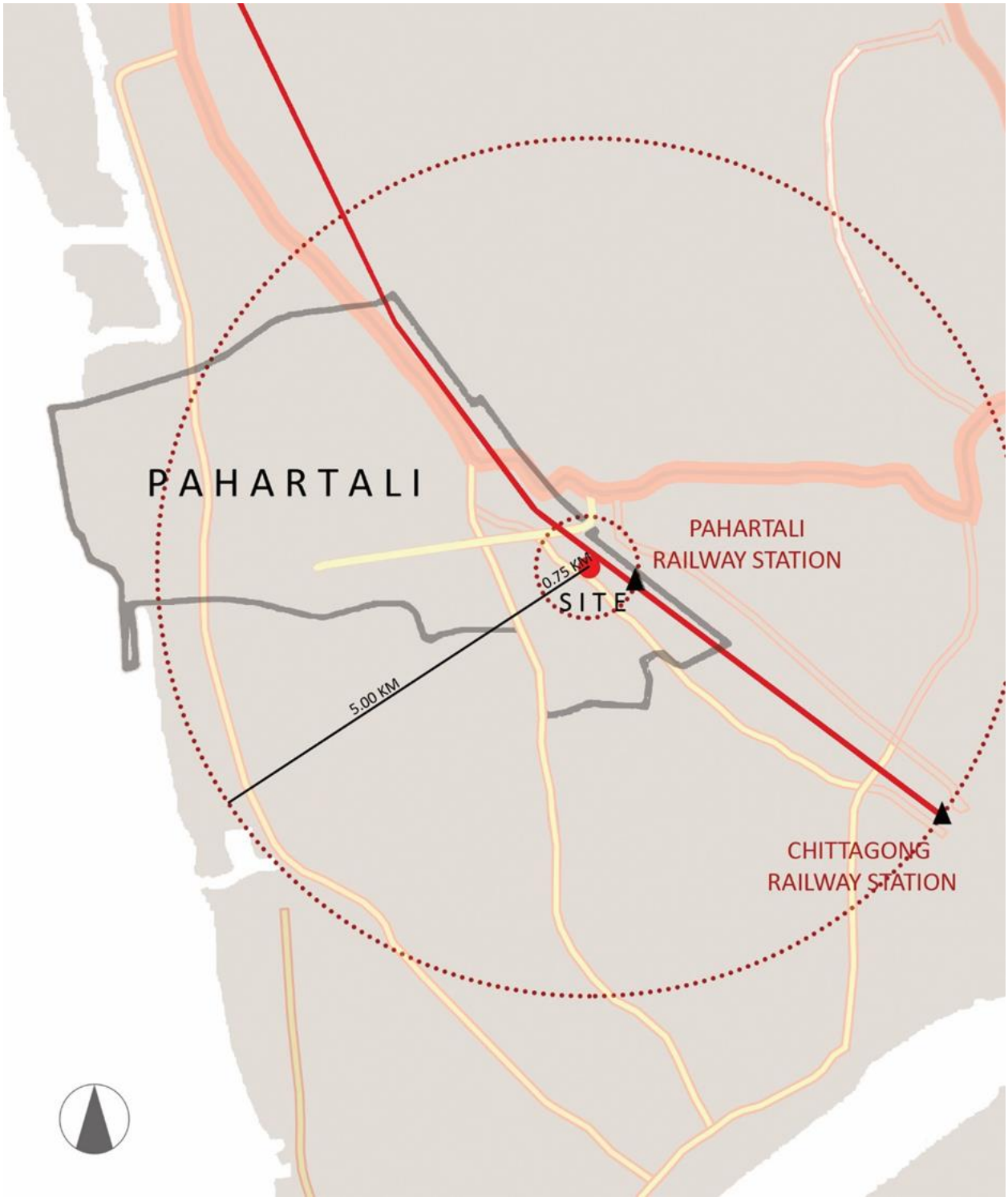


Figure 33: Distance of Railway Stations from the Site.
Source: Author.

Bus Terminals: There are number of Bus Terminals in Chittagong City that serves the passengers from the surrounding districts. Following diagram shows its proximity range from the site:

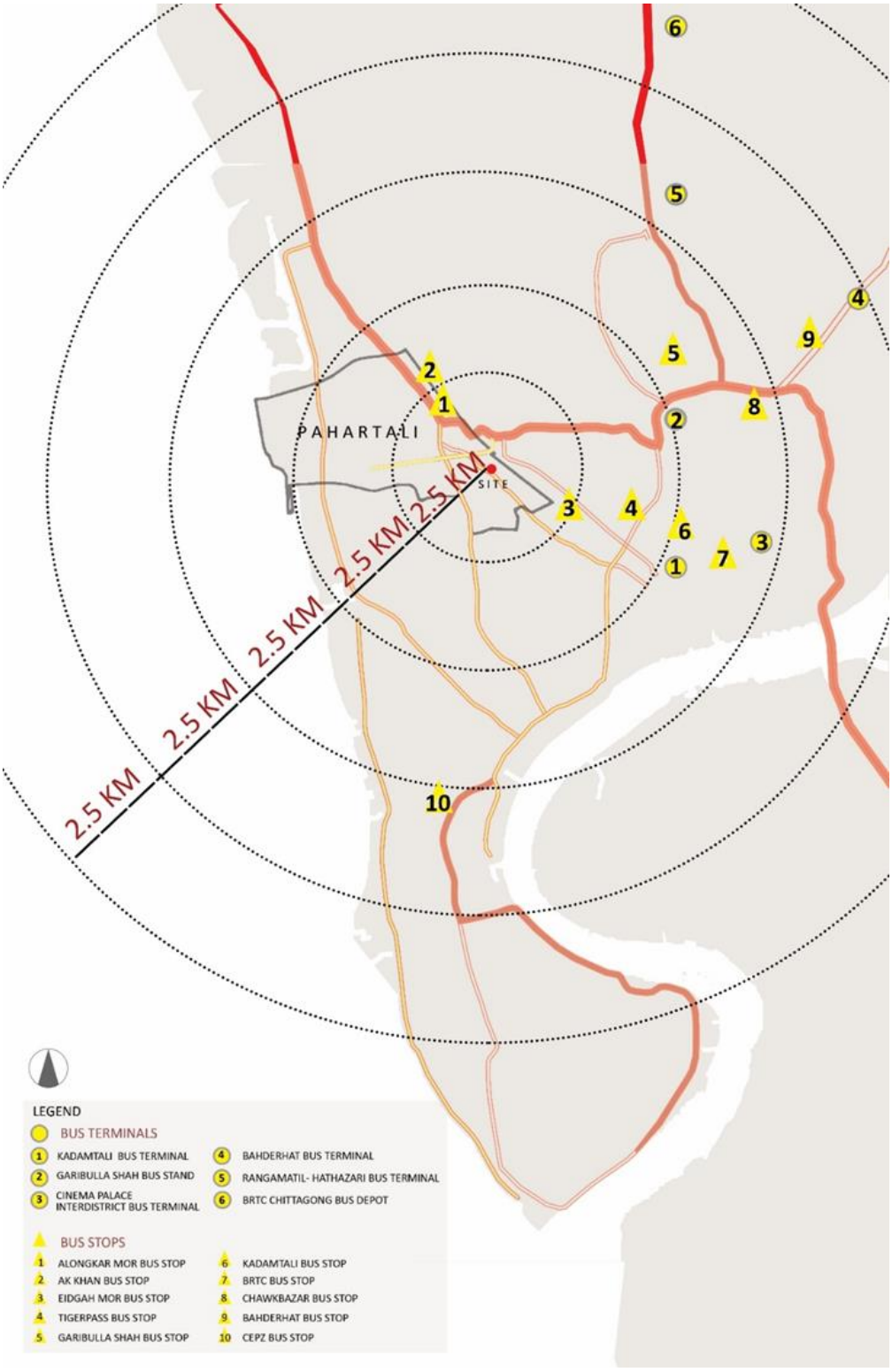


Figure 34: Bus terminals in the proximity and around Chittagong City.
Source: Author

3.4 Physical Data

3.4.1 Existing Land Use Pattern

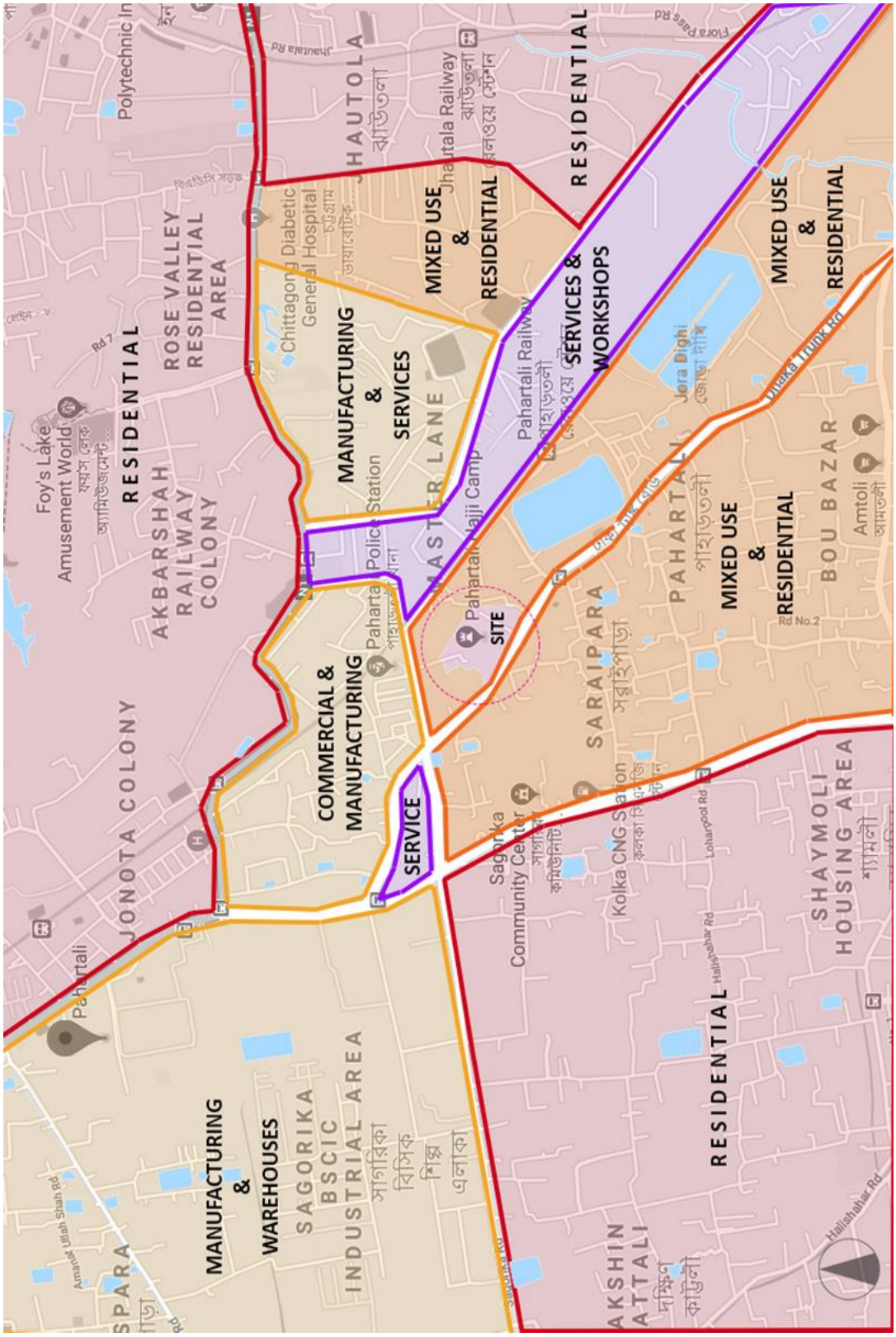


Figure 35: Existing Land Use Pattern of Pahartali Thana.
Source: Author

Existing land use pattern in Pahartali Thana is shaped by the natural character of the city as a whole. Appropriate and systematic land use approach has been largely absent in urban expansion. One fourth of the available land is used for residential purposes which is around 27.65 percent. Out of the three remaining quarters, vacant area, agriculture and water bodies, manufacturing and processing activities occupies 50 percent. The remaining percentages of land hosts restricted areas, hills, transportation, commercial activity, open/community space, education and research, service facilities, office use and miscellaneous purposes.

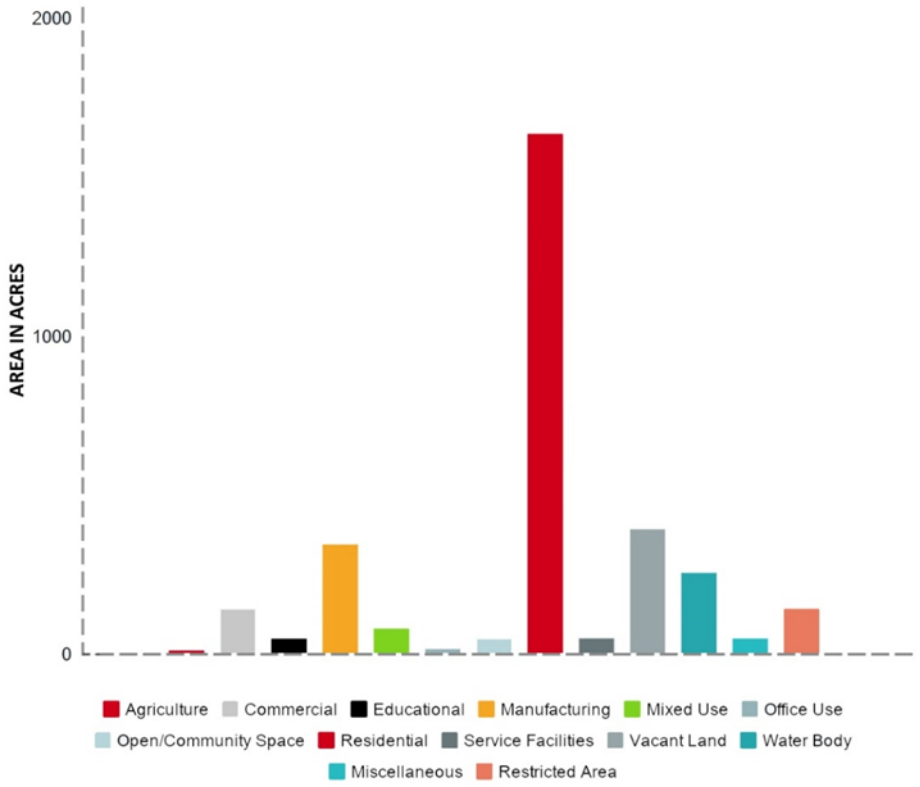


Figure 36: Proportion of Land Uses in Pahartali Thana.
Source: Land Use Survey, 2007

3.4.2 Climate

Temperature: With an average of 28.5 °C, May is the warmest month. At 19.9 °C on average, January is the coldest month of the year.

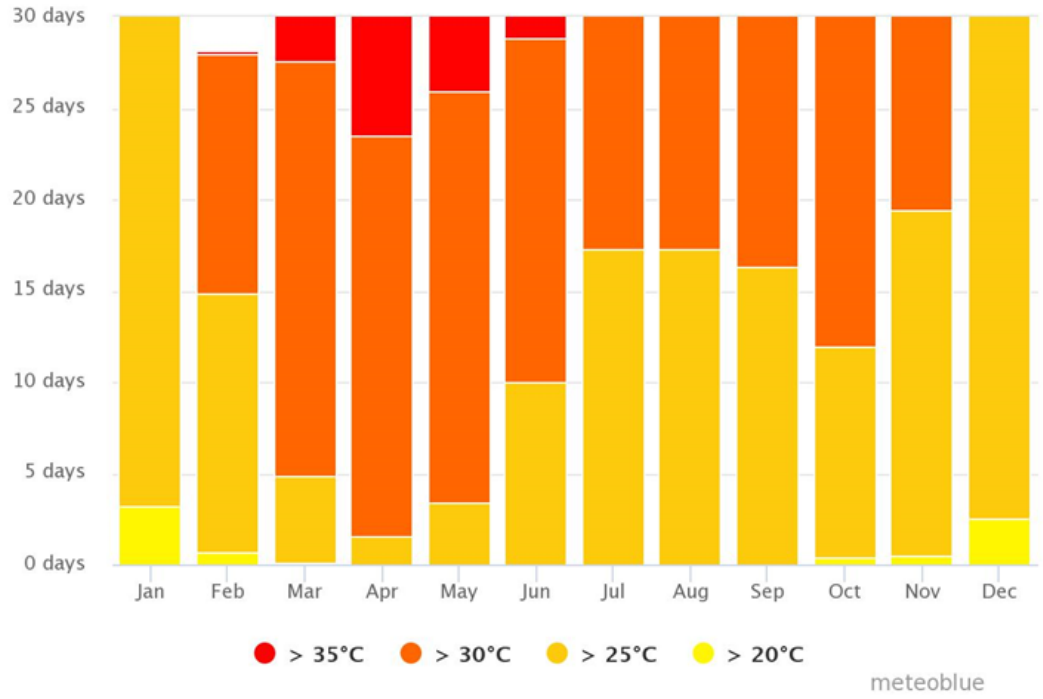


Figure 37: Temperature graph.
Source: Retrieved from https://www.meteoblue.com/en/weather/forecast/modelclimate/chittagong

Humidity: On average, August is the most humid and February is the least humid month. The average annual percentage of humidity is: 78.0%

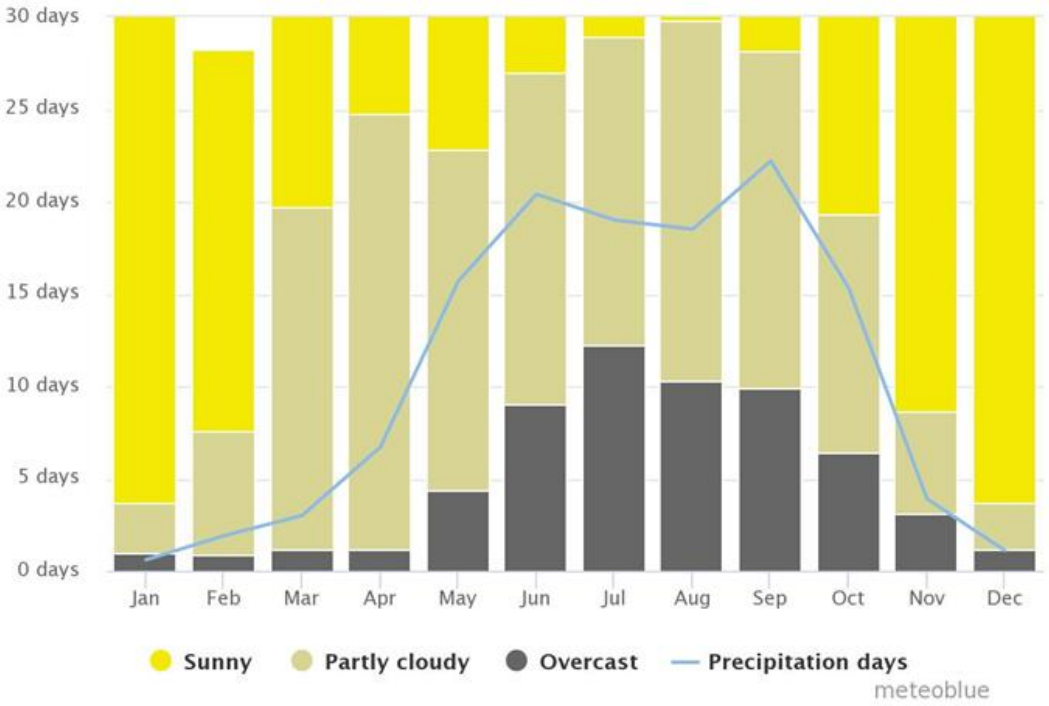


Figure 38: Humidity graph.
Source: Retrieved from https://www.meteoblue.com/en/weather/forecast/modelclimate/chittagong

Wind Flow: On average, the most wind is seen in March and the least wind is seen in July. The long-term wind flow is oriented in the south-south eastern (SSE) direction.

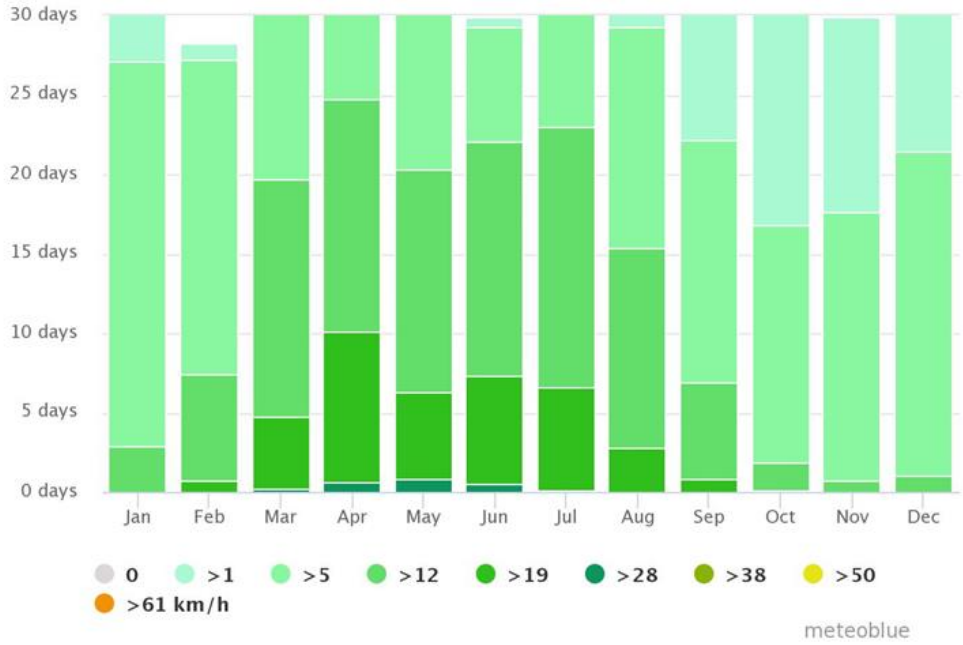


Figure 40: Wind speed graph.
Source: Retrieved from https://www.meteoblue.com/en/weather/forecast/modelclimate/chittagong

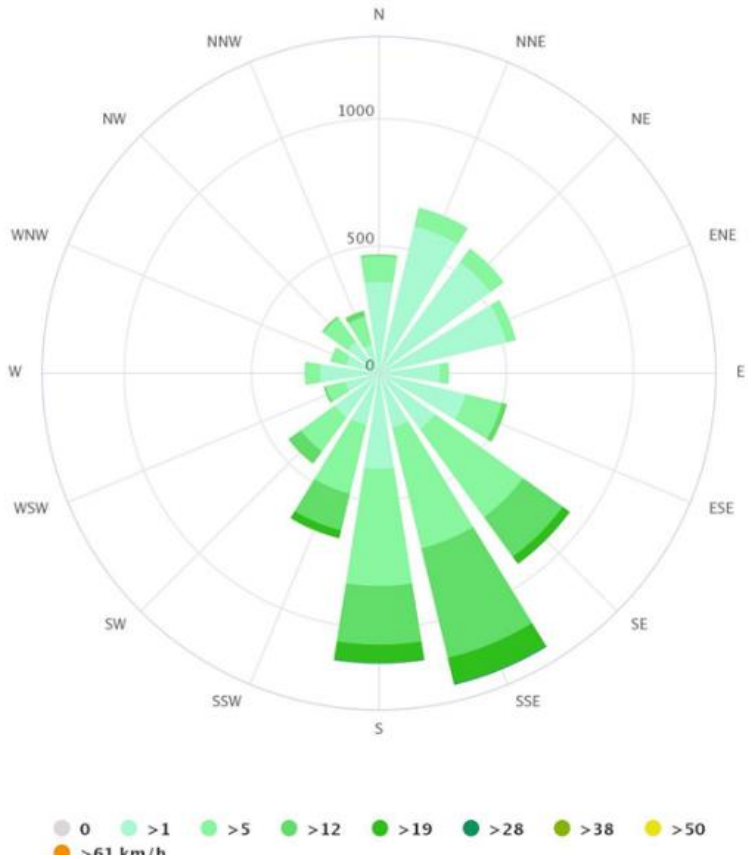


Figure 39: Direction of maximum windflow.
Source: Retrieved from https://www.meteoblue.com/en/weather/forecast/modelclimate/chittagong

Rainfall: The driest month is January. There is 6 mm of precipitation in January. In July, the precipitation reaches its peak, with an average of 743 mm.

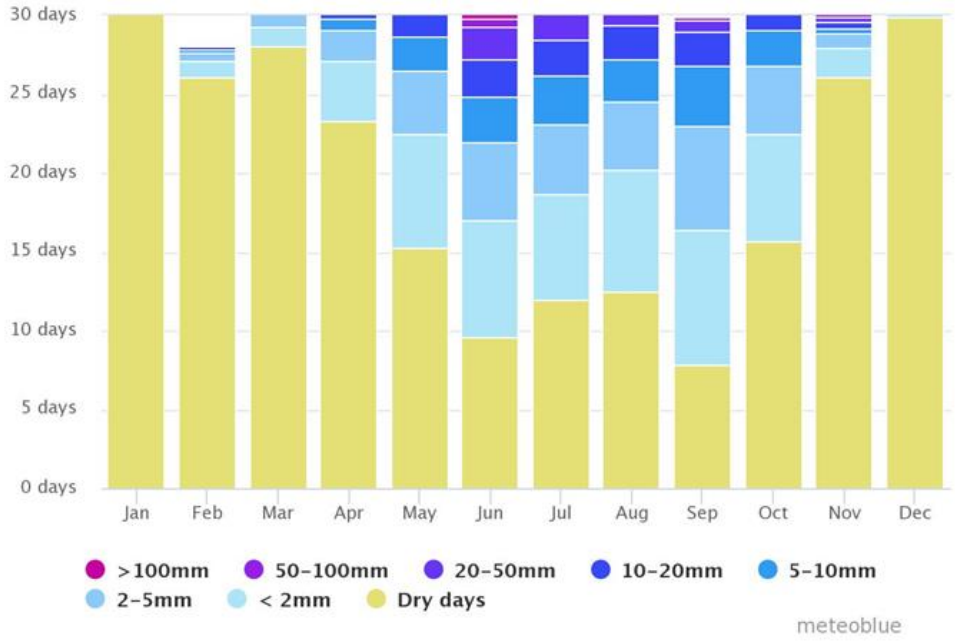


Figure 41: Precipitation graph.
Source: Retrieved from https://www.meteoblue.com/en/weather/forecast/modelclimate/chittagong

Climatic Hazards: Following map shows the flood affected areas in Chittagong. The surrounding areas are of Pahartali are flood prone, whereas Pahartali is least affected by flood.

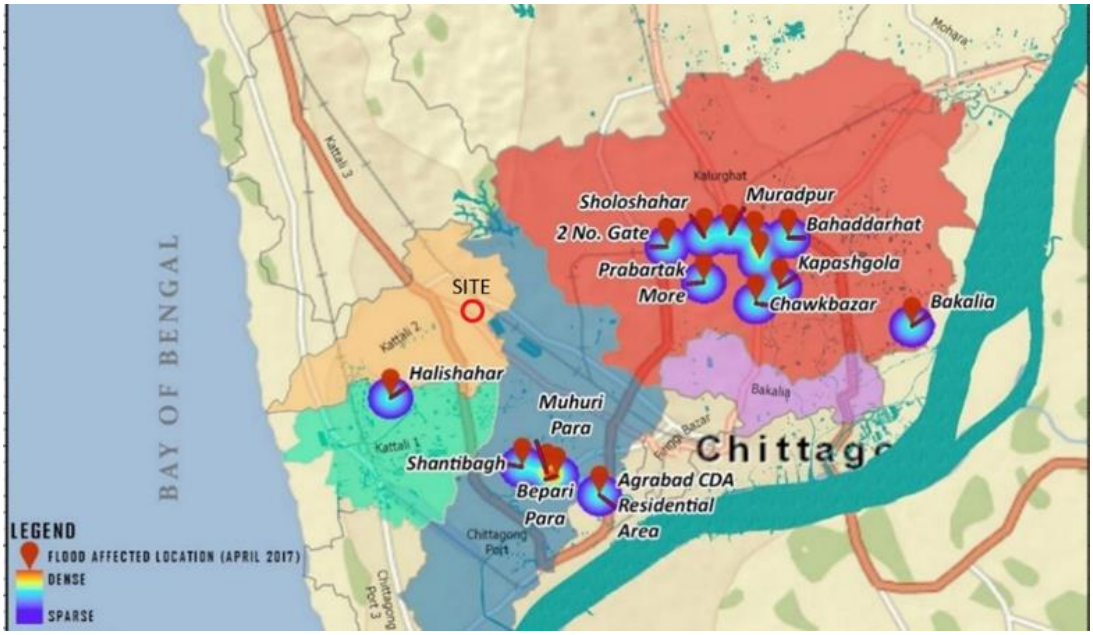


Figure 42: Chittagong map showing Flood affected areas.
. Source: Hossen, 2017

3.5 Micro Site Data

3.5.1 Adjacent Land Uses

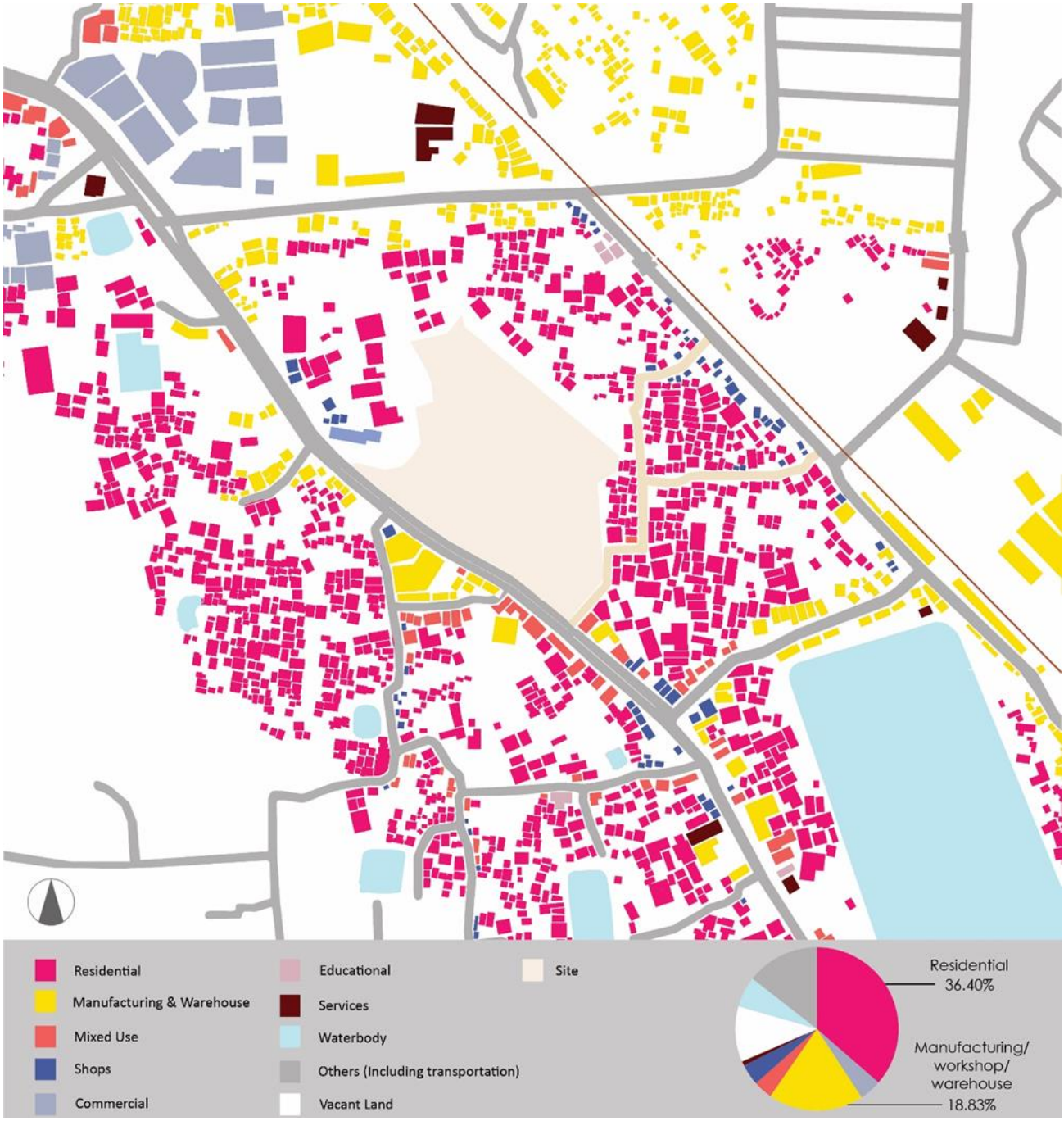


Figure 43: Map of existing land use pattern around the site.
Source: Author

Around 36.40% of the surrounding lands, forming majority, are utilized for residential purposes. Manufacturing workshops and warehouses are close next, which is 18.83%.

3.5.2 Surrounding Building Height

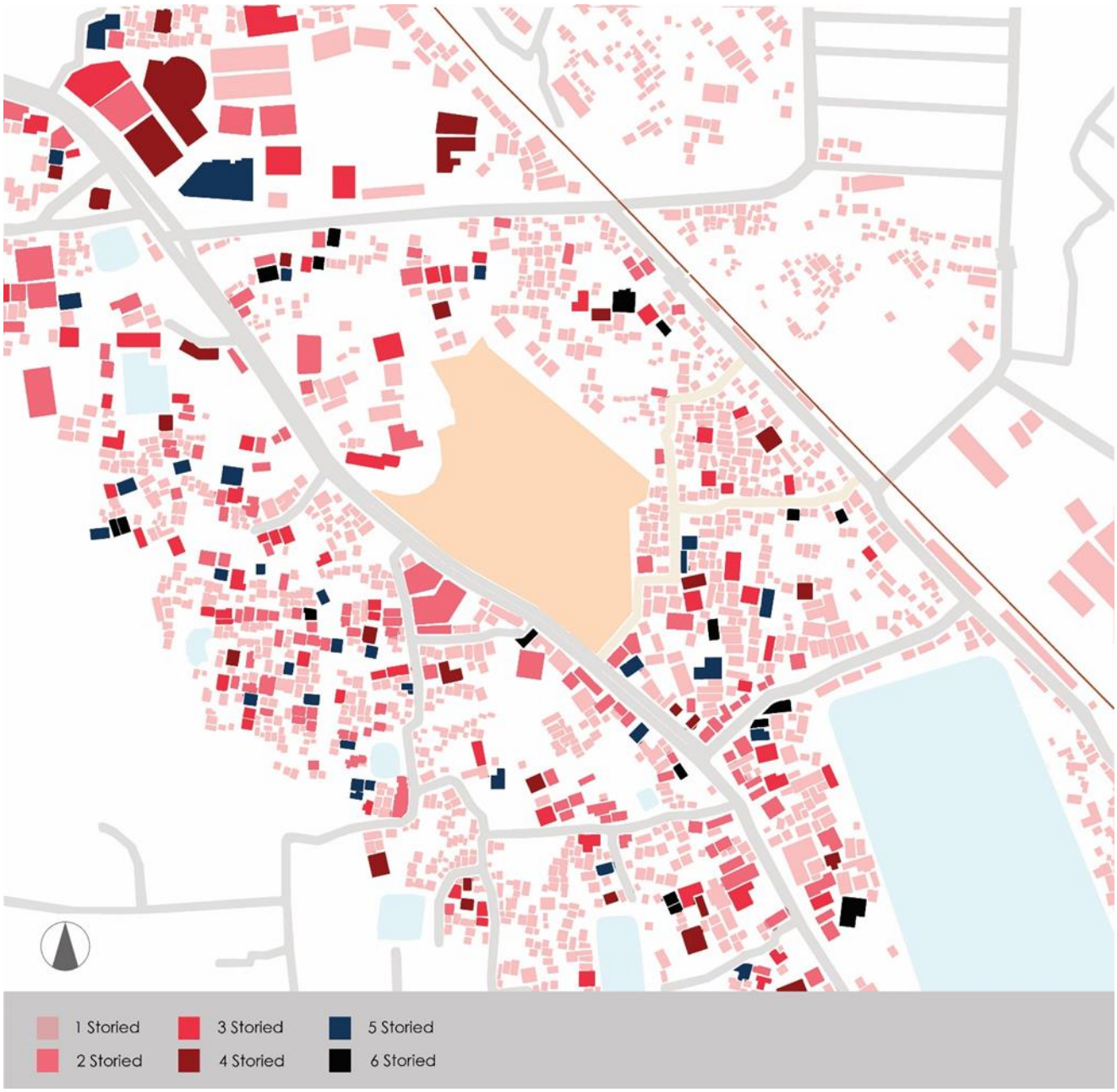


Figure 44: Surrounding building heights of the site.
Source: Author.

There are no massive structures in close proximity to the site. The site is surrounded dominantly by one and two storied buildings. There are a few above two storied buildings that occur les frequently around the site.

3.5.3 Vegetation

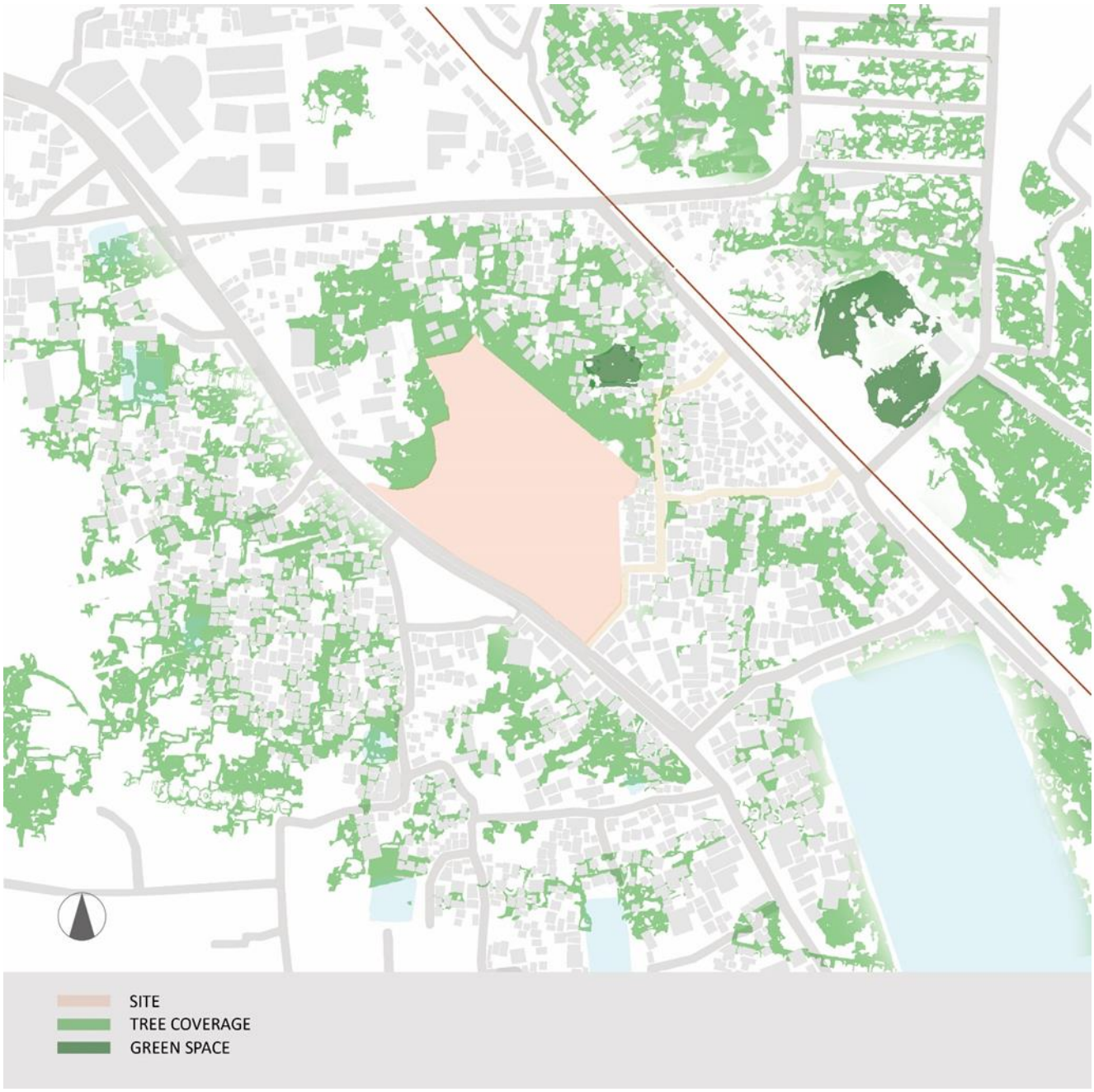


Figure 45: Vegetation Map.
Source: Author.

The site is rich with tree coverage all around. Different kind of trees have been observed within and around the site.

3.5.4 Accessibility

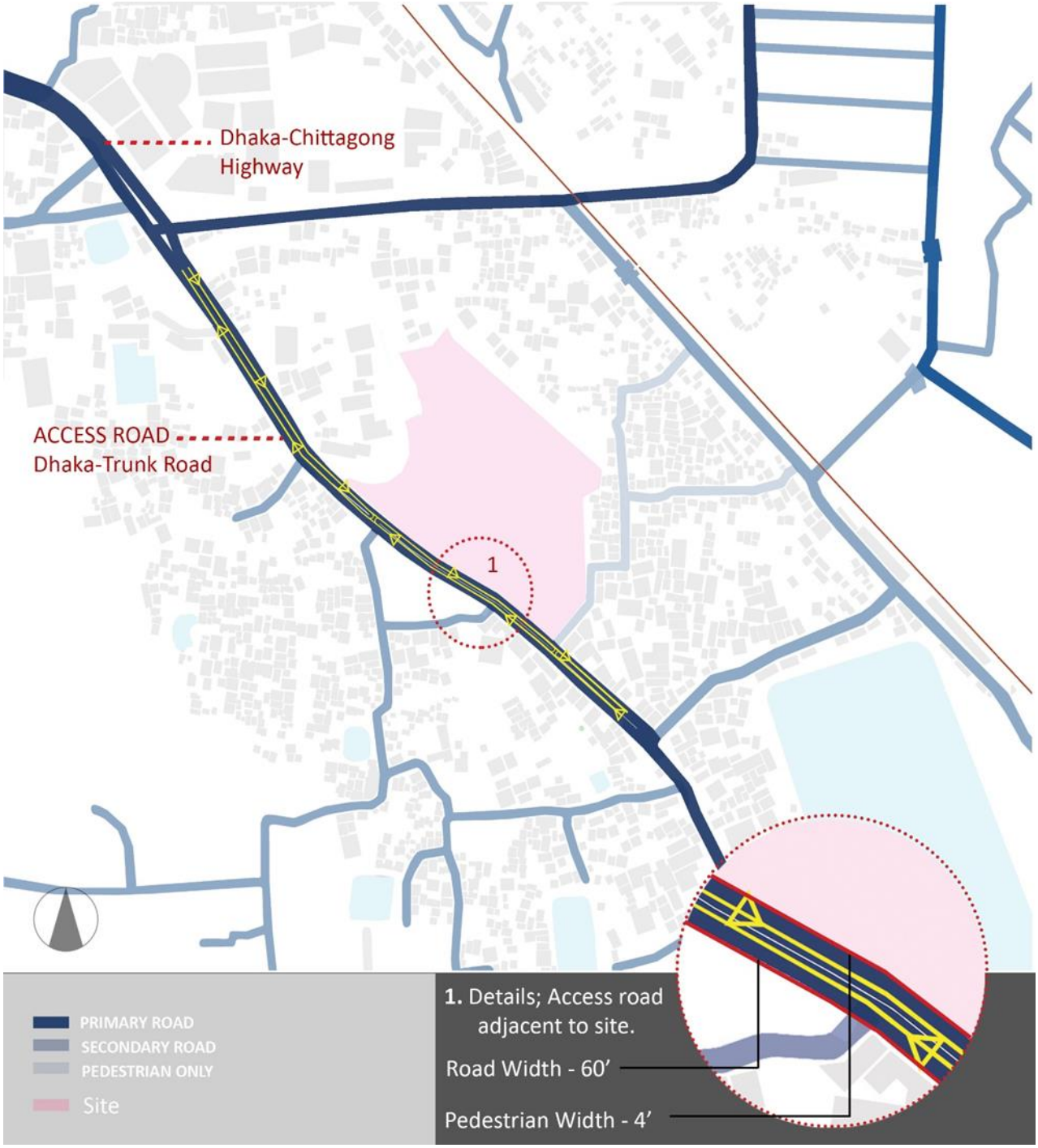


Figure 46: Access ways to site with road detail blow-up.
Source: Author.

Traffic Flow: The traffic flow of Dhaka-Trunk Road during afternoon was observed by the author. Different modes of transport that passed by on an interval of one minute were:

Truck (10), CNG (11), Rickshaw (6), Motorbikes (4), Bus (1) and others (2).

No traffic congestions were noted in the Dhaka-Trunk Road. However the movement of trucks and lorries contributes to noise pollution.

3.5.5 Site Dimensions and Area

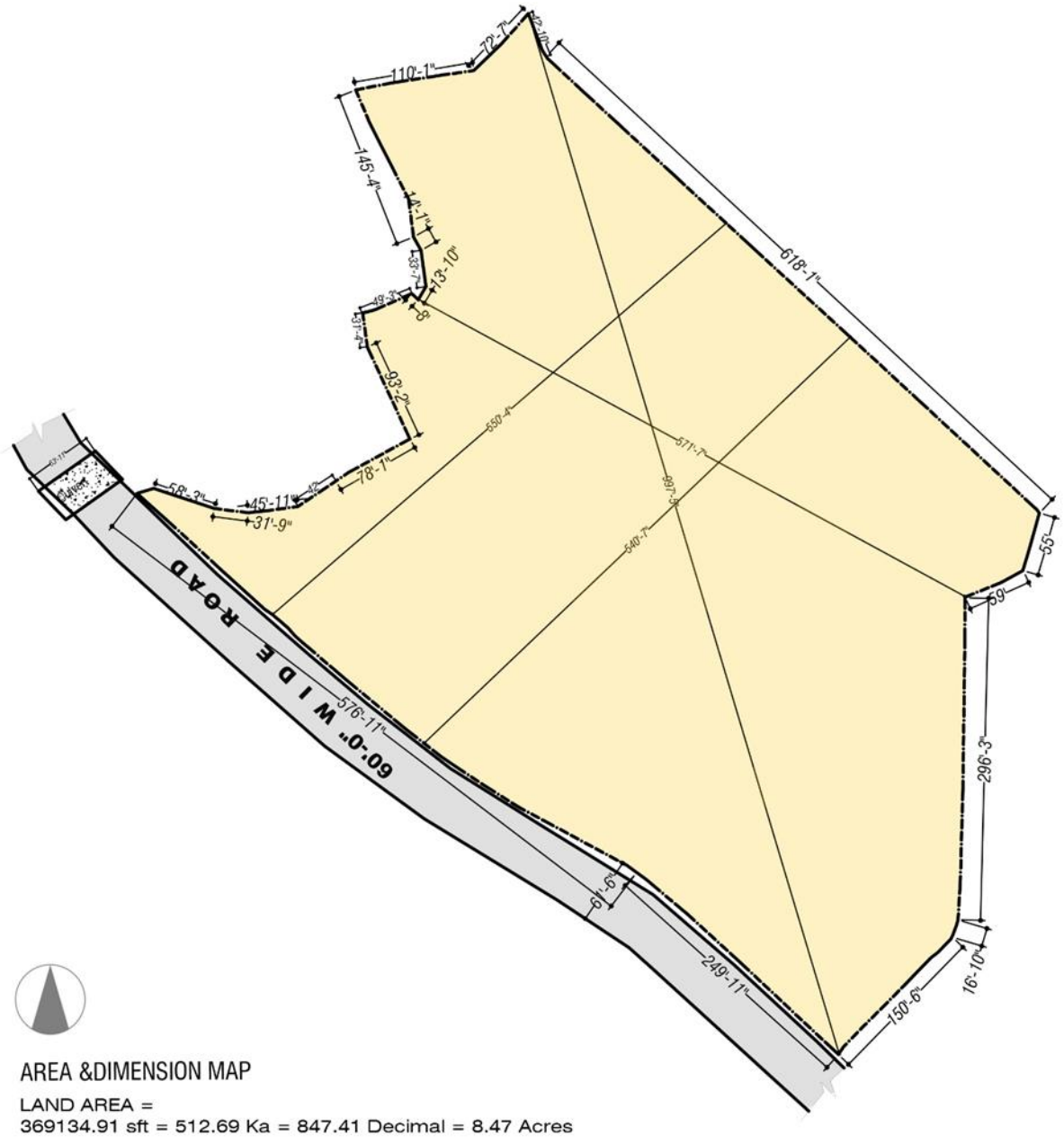


Figure 47: Area and Dimension of the Site.
Source: Author

3.6 Existing Site Condition

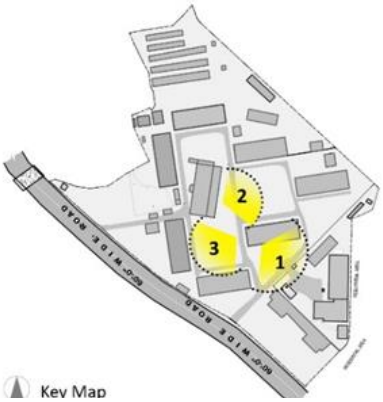
Figure 48: Existing site condition in terms of land use.

Source: Author.

The old built structures of the Hajj complex are mostly disused and abandoned because of its instability. The structures that sustained has been utilized as IT training center for youth, residence for local people with low income, poultry and office space.

3.7 Site Images

Figure 49: Islamic Foundation Office (2) Abandoned Dormitories and (3) abandoned dormitory and IT Training Center.
Source: Author.



Open spaces are currently used for hosting outdoor events such as religious functions arranged by Islamic Foundation, sports and other activities organized by the surrounding communities. Besides occasional events, these open spaces also serve as play fields for the local children and as potential recreational green space for the Pahartali neighborhood.

3.8 SWOT Analysis

Strength

- Proximity to transport terminals such as airport, railway station and bus terminals.
- 60 feet wide primary road which is also the only road bounding the site on western part.
- Away from tall and massive structures.
- Site can be perceived vividly from any point of the road and is permeable and easily accessible.
- Existing rich vegetative cover not only offer a peaceful and refreshing environment but also defending the natural calamities at the same time.
- Residential and commercial developments enrich the community existence around the site.

Weakness

- Improper and narrow pedestrian network.
- Pedestrians encroached and blocked by vendors and temporary stalls serving the community.
- Frequency of loaded trucks and lorries are predominant in the adjacent primary road hence contributing to noise.
- Construction materials such as brick, sand and aggregates are dumped across the boundary walls.

Opportunities

- An initiative to a functional intervention in the area that may increase employment opportunities.
- Possible spaces for designing landscape.
- Establishment of the complex with defined landscape and open spaces will enhance the community involvements and events that take place in the site.
- Presence of the Islamic Foundation Divisional Office in the site would also act as positive force for the complex.
- Site location will attract a lot of people from areas around who are deprived from public facilities.
- Regular involvement of the community and the seasonal activities of the pilgrims will keep the area alive, thus safer neighborhood.

Threats

- Possibility of turning into the busiest point during Hajj season disrupting the daily commute.
- Might influence rapid development of infrastructure which will contribute to the unplanned growth.

Chapter 4

Case Studies

4.1 Local Case Study

4.1.1 Ashkona Hajj Camp

Figure 50: Ashkona Hajj Camp and its immediate surroundings.
Source: Retrieved from www.google.com

Background

Location: Ashkona, Near Airport, Dhaka

Client: Ministry of Religious Affairs

Total Land Area: 5 Acres

Completed: 1989

Introduction: Ashkona Hajj Camp was established opposite to the Shah Jalal International Airport during the reign of Ershad in 1989. It was built to provide residence facilities to all the pilgrims travelling from all around the country to Dhaka. Besides accommodation, the Hajj camp complex includes the Hajj administration office, immigration center, banks (one active and 20 seasonal), bookstores and seminar rooms for training the Pilgrims. The complex also consists of a mosque, gender separate dormitories, canteen and green courtyard.

Site Context:

Figure 51: Map showing distance of Airport from Ashkona Hajj Camp.
Source: Author.

The site for Hajj Camp was chosen on the basis of its proximity to the Airport which is about 2.0 kms. As it is near the airport, it facilitates easier transfer of pilgrims from the camp to the airport terminal. The only road that leads to the site which has come to be referred to as the Hajj Camp Road, connects to the airport via the main road i.e. the Airport Road. The site is surrounded by Ansar Camp and Residential Area on the North, RAB Headquarter on the west

and green plot on the south and east. The dormitories and other accommodation facilities has been located on the quieter part of the site overlooking the green area.

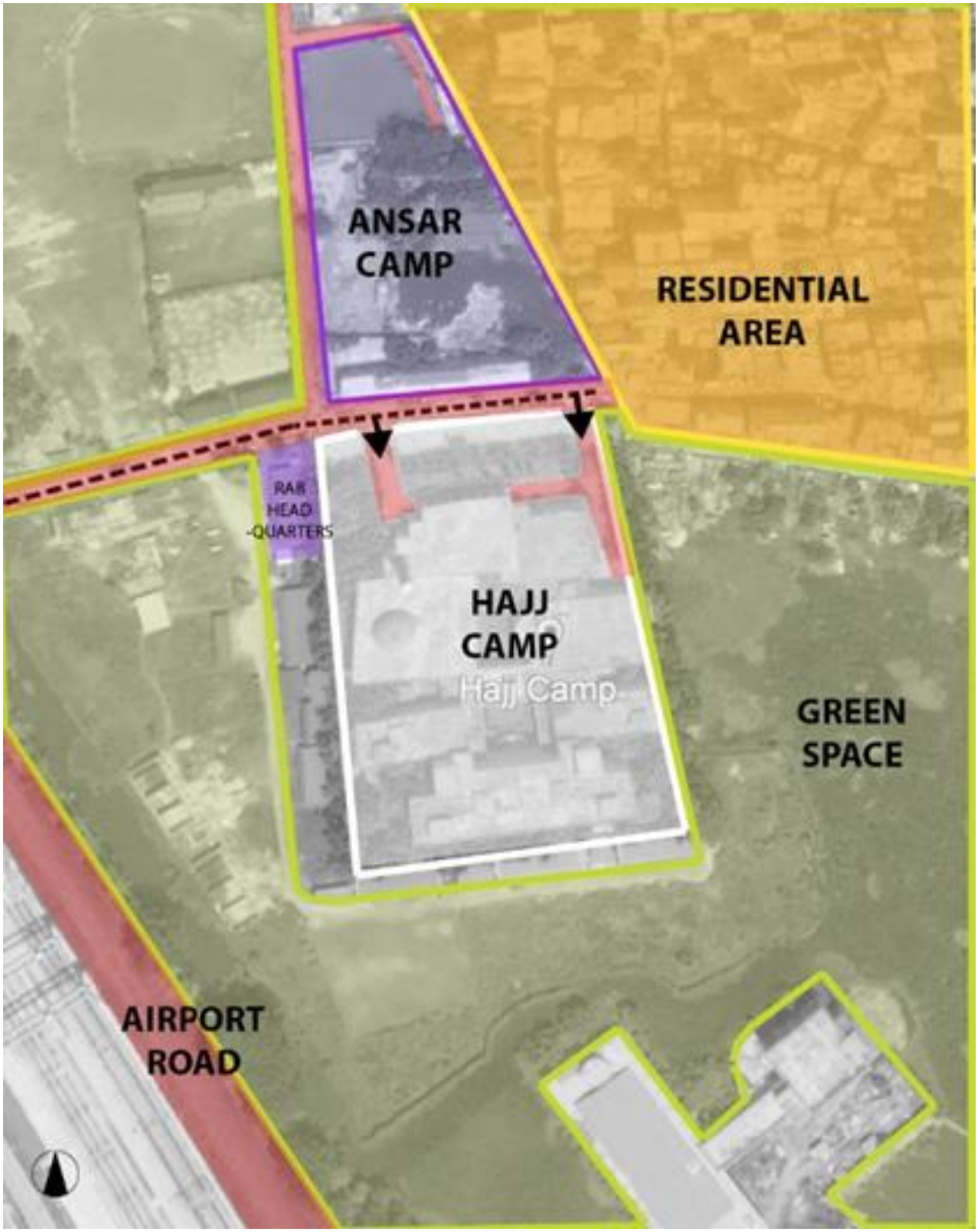


Figure 52: Immediate Surroundings of the Site.
Source: Author.

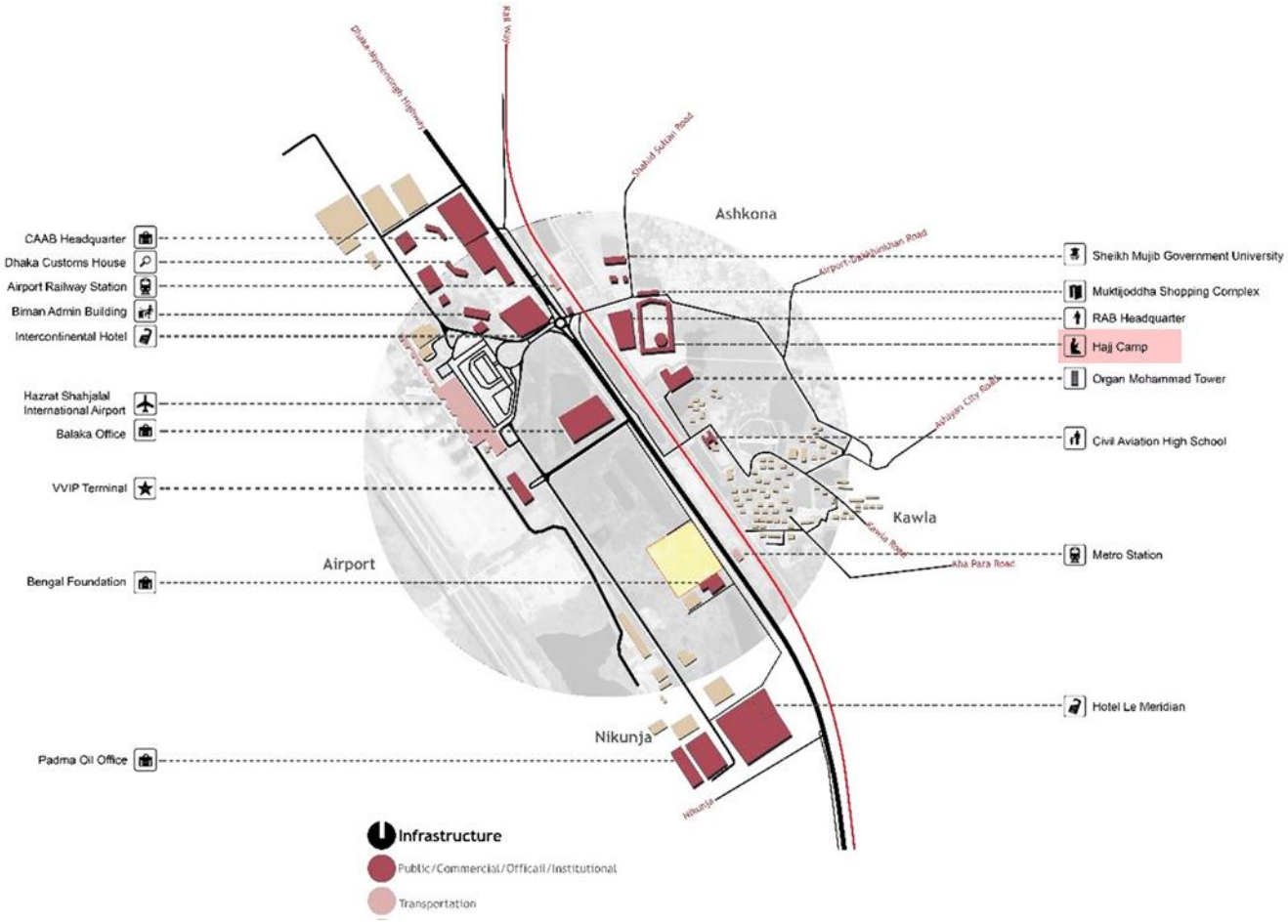


Figure 53: Important infrastructural establishments around the site.
Source: Ahmed, 2015

Climate: The site location rather has a tropical climate. In winter, there is much less rainfall in Dhaka than in summer. The average temperature in Dhaka is 25.8 °C. About 1983 mm of precipitation falls annually.

Access to the site: The site is adjacent to a 60 feet wide road. It is the only road running along the northern perimeter of the site. The entry roads are as wide as 26 feet each enabling smooth vehicular circulation. There is only one vehicular entrance which is also used as the pedestrian entry. The exit is near the immigration center, the proximity was designed to facilitate the airport buses to carry the pilgrims from the immigration point and exit the site immediately.

Figure 54: Map and images showing vehicular entrance, exit and immigration point pick-up.
Source: Author.

Landscaping:

Figure 55: Landscape within the complex; green court (left) *and at the entrance* (right).
Source: Author.

The Hajj Camp complex is surrounded by different kind of trees around its borders. Amongst which neem trees are the most prominent. Within the camp, there are two green courtyards, one slightly larger and bounded by the administrative block and the mosque, the other bounded by all the dormitories and pilgrim activity areas around it. It is mainly covered with grass and there are a few flowering plants. The green courtyard serves as a refreshing sight for the pilgrims arriving at the lobby.

Structure, Material and Technology: Structural composition mainly features the post lintel system. Reinforced concrete columns are used to withstand the structural loads. All infill materials are brick and have been has plaster finish. Waffle roof featuring covered drop off. Locally available materials such as bricks, concrete, steel and wood were used in the building.

Functional Zoning of the Complex:

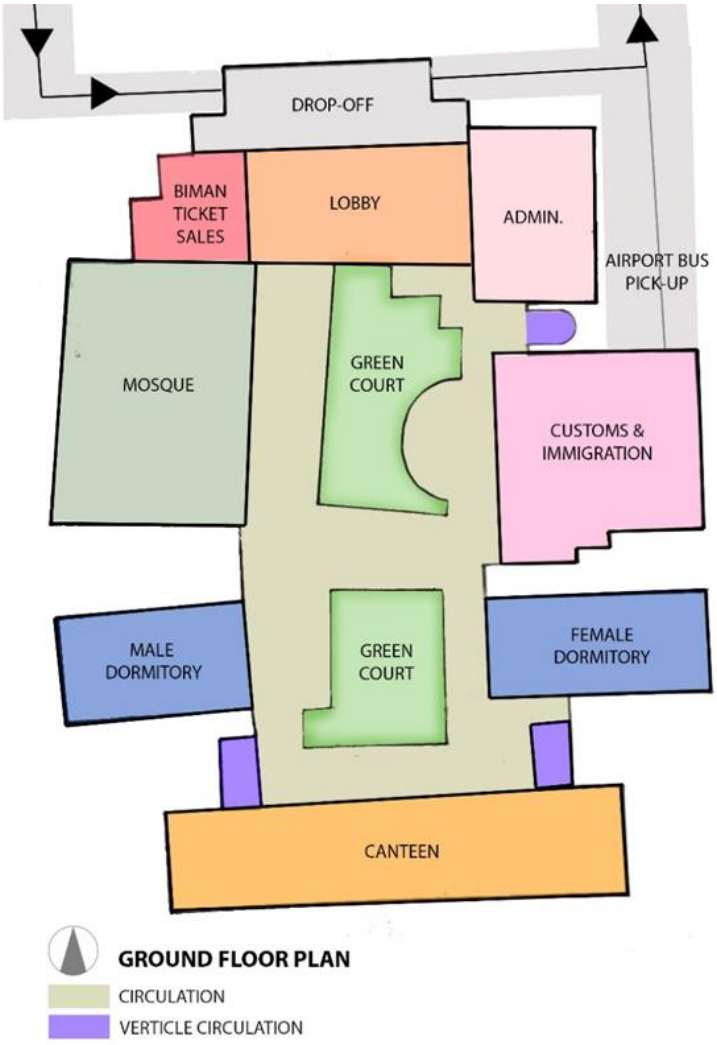


Figure 56: Zoning of Ground floor.
Source: Author.

The complex was mainly designed for a capacity of 10, 000 pilgrims. Over the years total number of pilgrims travelling increased by more than 15 times. Around 1, 27,000 pilgrims were checked in the camp for immigration in 2017. The mosque is built with a capacity to hold about 6000 people at a time. There are separate dormitories for male and female pilgrims that can hold up to 1700 people. Each dormitory rooms are designed to accommodate 100 people at a time.

There's a large canteen on the west which has been divided into three segments, one of which is dedicated for female only dining. The Hajj office, BIMAN ticket sales and the Immigration

are all placed in close proximity to each other and are connected by the main lobby at the entrance.

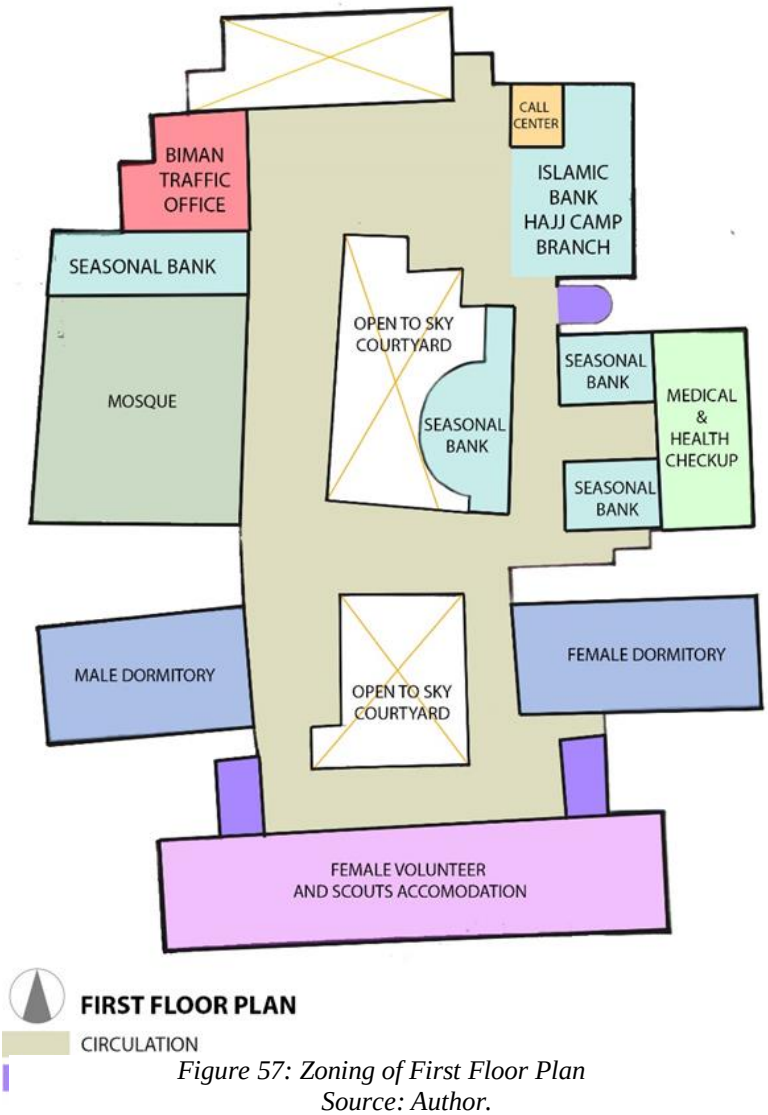


Figure 57: Zoning of First Floor Plan
Source: Author.

On the first floor, the BIMAN office, Mosque and the dormitories are continued.

There are 20 bank stalls that are only active during the Hajj season and an all year active Bank branch that serves the Hajj Office during the season and are also open for general purposes to public.

A medical check-up unit with 11 rooms, 7 for male and 4 for female doctors. It also includes a cabin for vaccination and general health checkup.

Accommodation for the female volunteers and scouts are situated on the southern side.

On the third floor, the circulation areas are restricted for the pilgrims. The north eastern part of the complex consists of the Islamic Foundation Divisional office, a library that is open for general public and a utility maintenance room. The divisional office is not involved with any Hajj related activities and it runs actively throughout the year and also during Hajj.

Figure 58 below shows the circulation of pilgrims and the office space circulation. Both the circulations are restricted and do not overlap. Hence the pilgrim activity areas are separated from the office space.

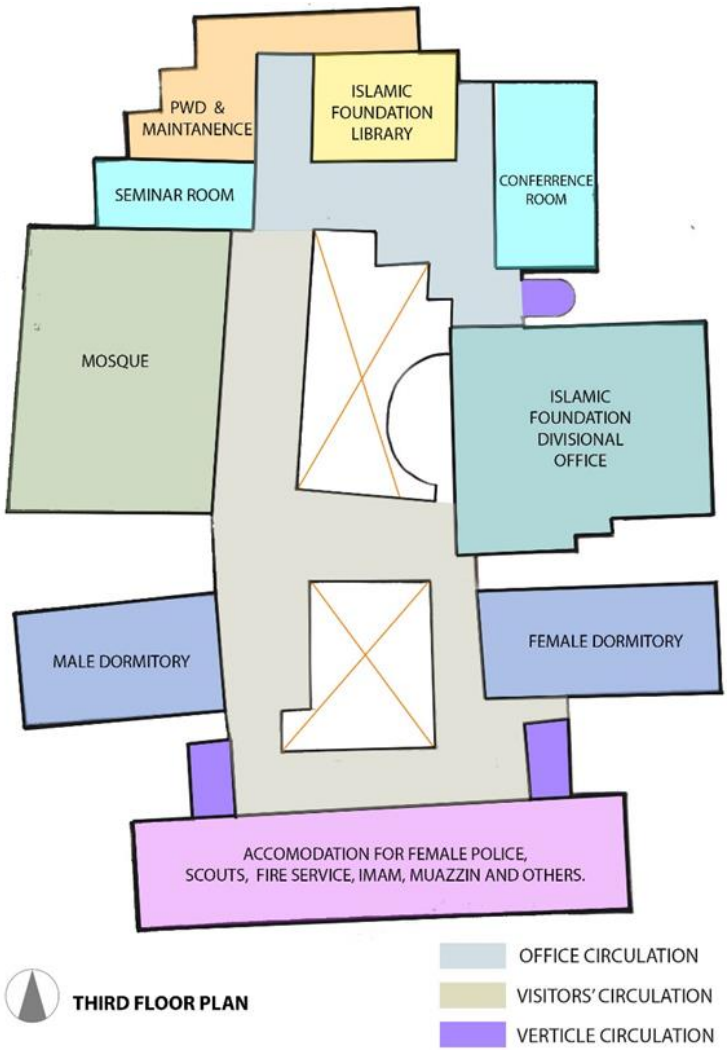


Figure 58: (left) Zoning of Third Floor Plan.
Source: Author.

The green courtyard is overlooked from this level. Accommodation for female police, scouts, firemen, Imam, Muazzin and others are located on the south.

Functional Linkage:

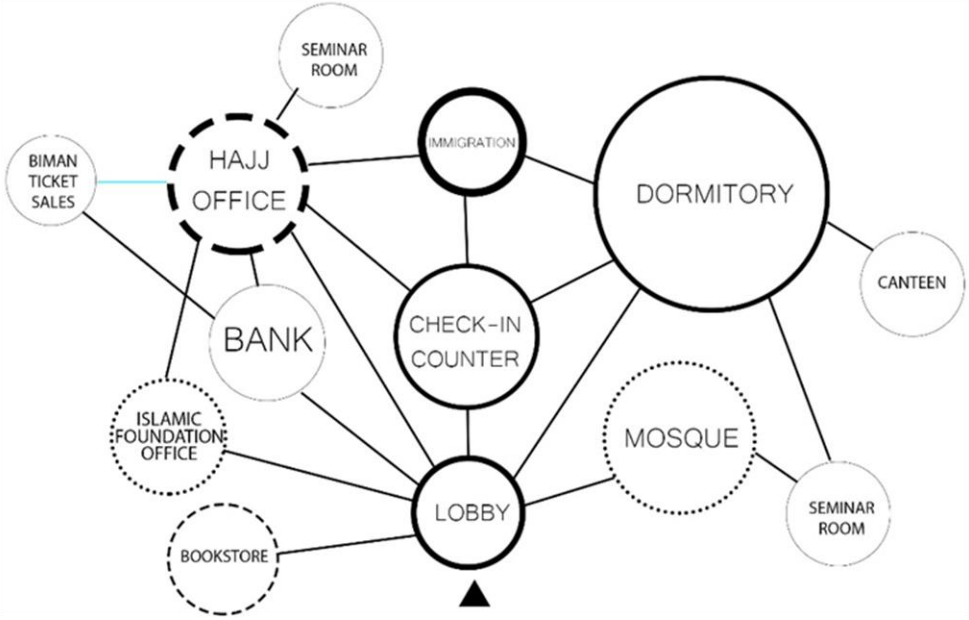


Figure 59: Diagram showing linkage between the functions.
Source: Author.

Pilgrim's Movement:

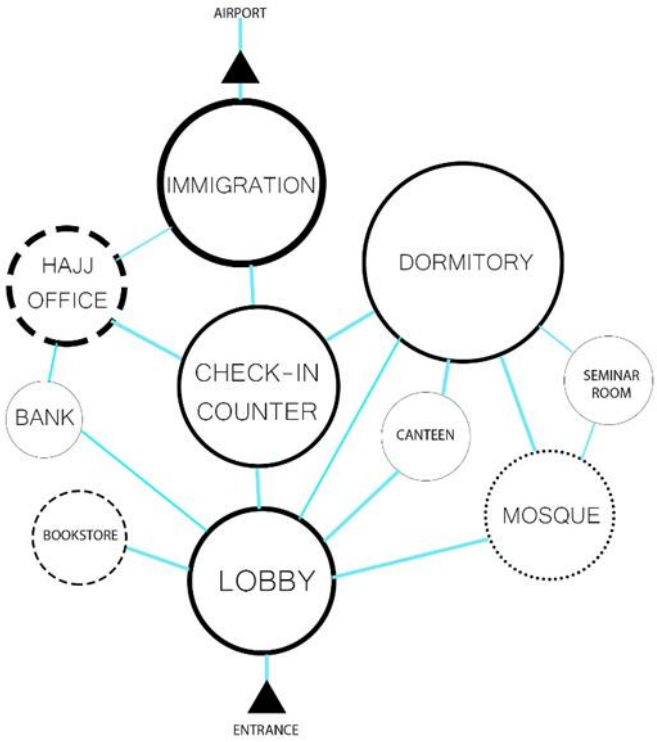


Figure 60: Pilgrims' movement in the complex.
Source: Author.

The diagram above demonstrates the basic movements of pilgrims. Arriving at the entrance lobby from outside, all pilgrims stand in queue to check in the camp. After reporting to the check in counter, the pilgrims are directed to their respective dormitories or to the immigration center for completing the departure processes.

Climatic Performance:

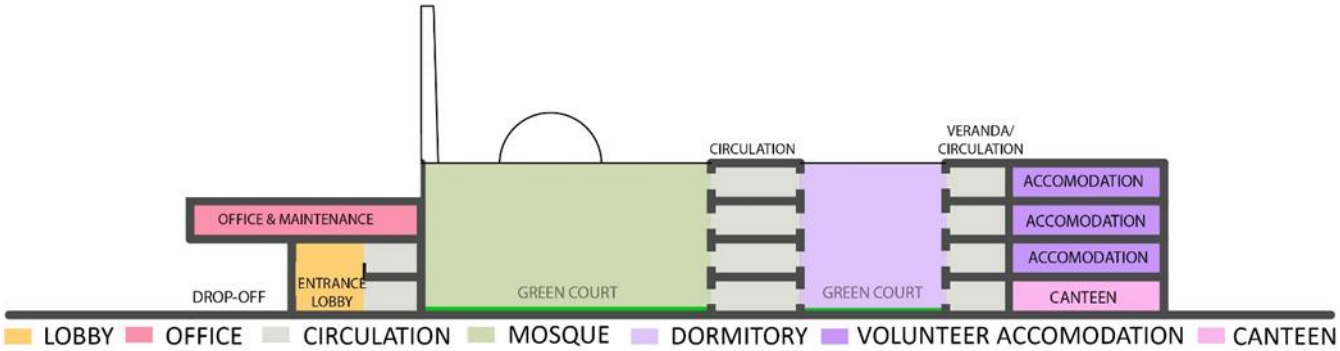


Figure 61: Section through the green courtyards.
Source: Author.

The two courtyards are surrounded by deep verandas provides shadow and brings air to the circulatory pathways across the courtyard. These courtyards are not user accessible and are covered with grasses and shrubs. Both the dormitories and the mosque are surrounded by 16 feet wide walkways overlooking the green courts. One of the courts are visible from the main entrance lobby. During Hajj the lobby space is occupied with not only the pilgrims but also the visitors accompanying them. Hence the provision of a courtyards ensures well ventilation in the lobby and the circulation spaces around it.

Functional Assessments:

- Central courtyard encompassing two dormitories on the eastern and western side, administration and immigration block on the north and mosque on the west.
- Entrance lobby leads to the green courtyard offering pleasant sight.

- The courtyard is designed as such that it doesn't allow user access even though it has the potential of becoming a small recreational zone for the pilgrims
- All the circulatory passages are about 12 feet wide that ensures smooth flow of pilgrims and also avoid congestions.
- These passages are bound by different functions on one side and is connected to the courtyard on the other side. Hence there is ample amount of light during the day and is also well ventilated.
- Wide staircases near the administration block leading to upper level which houses more facilities such as banks and medical health care.
- The entrance lobby is not sufficiently large to hold a large number of pilgrims and the visitors at a time. Also it doesn't receive adequate amount of light during the day.
- There is no defined waiting area for the pilgrims, as a result gathering leads to chaos.

4.2 Subcontinental Case Studies

This section attempts to analyze two Hajj camps located in distinct parts of India. The studies that have been shown under these projects were articulated from very limited information that were available online. Hence the outcomes of the analysis are brief in nature. However, there is an additional case study of a training institute in India whose programs are very similar. Since the project can be related to the Hajj Camp project, an extended analysis has been shown under it.

4.2.1 Lucknow Hajj House

Location: Sarojini Nagar, Lucknow, Uttar Pradesh, India

Client: India Hajj Committee

Area: 2, 01, 940 sq. feet approx.

Completed: 2007

Figure 62: Front facing exterior details of the Hajj House.
Source: Alam, 2017.

Introduction: Haj House is a complex in Lucknow in the Indian state of Uttar Pradesh. It provides accommodation to the Haj bound Muslims. Being the largest state of India, Uttar Pradesh has the maximum quota for haj pilgrims in India. The Uttar Pradesh Haj Committee is situated within the Haj house complex.

Site:

The Hajj House of Lucknow is situated within a radius of 6.9 km from Charan Singh International Airport. There are educational and other religious institutes around the site.

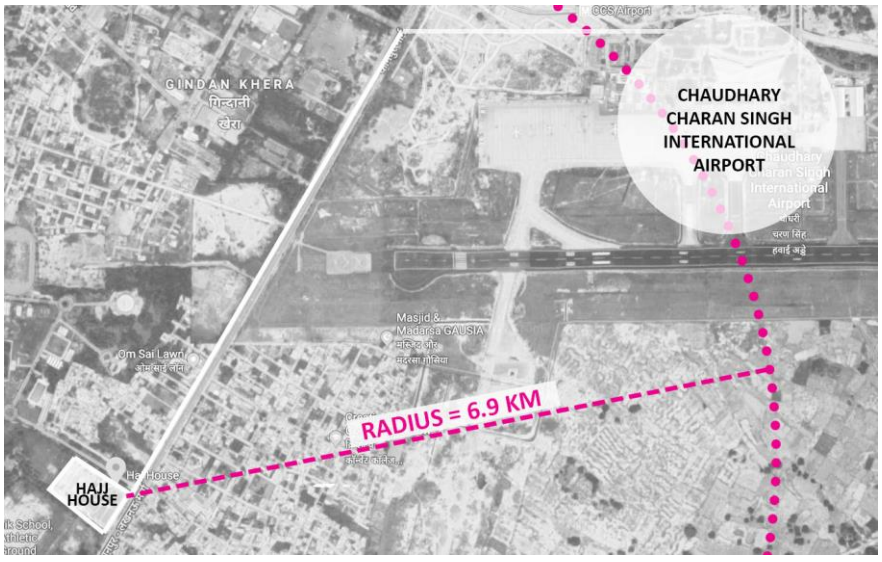


Figure 63:(right) Map showing Lucknow Airport distance from Hajj House.
Source: Author.

Accessibility:

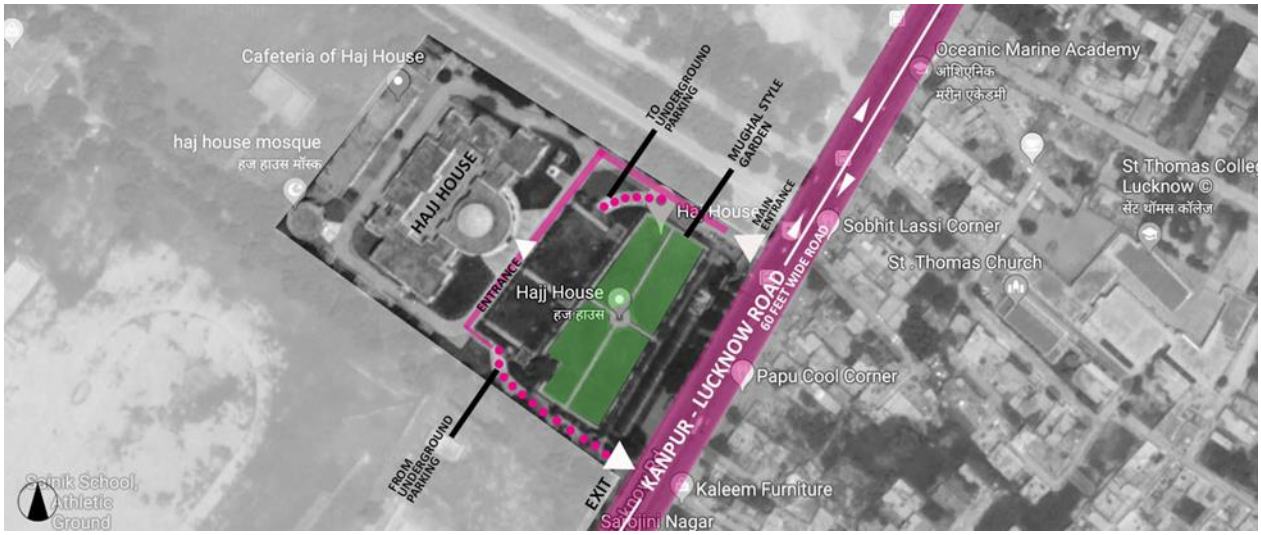


Figure 64: Access to the site and other details.
Source: Author.

The site is bound by a 60 feet wide road on its eastern side. It is also the only road that passes the site. In Figure 5.11, the main entrance to the site, underground parking and the entrance to Hajj House has been shown.

Structure and Materials: Concrete frame and precast concrete ribbed roof has been used throughout the construction. Exterior facades have a painted finish. Metal Jalis constructed through Islamic geometrical patterns have been installed in the front façade against the windows.

Landscaping: There is a garden that serves as a buffer between the Hajj complex and the main road. The garden layout reflects Mughal style; a quadrilateral shaped garden divided by walkways into four parts with a fountain in the center.

Zoning: The hajj house complex consists of the similar functions as seen in the past case studies. Its administrative block is at the entrance itself. The entire complex encloses an open to sky courtyard which features a water pool. The courtyard, as usual connects the spaces functionally and also contributes to the ventilation of the building. The dining hall and the mosque are on the north western part of the complex. This hajj camp features basement parking which has an entry and an exit ramp.

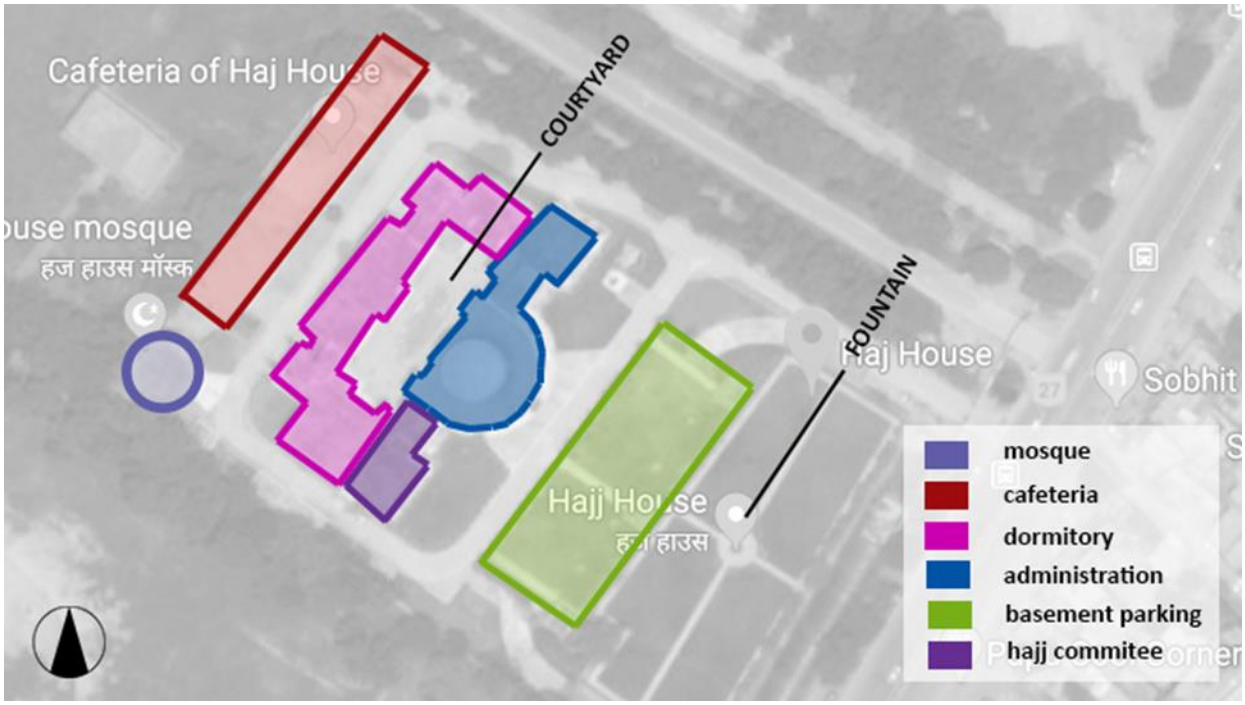


Figure 65: Functional zoning of the Hajj House.
Source: Author.

Figure 66: Dorm rooms across the garden (left) and the courtyard with water pool (right).
Source: Verma, 2016

Observations:

- The mosque and the dining area is separated from the dormitory complex.
- It also features verandas around the courtyard.
- Water pool in the courtyard instead of vegetation. Vegetation is prominent towards the perimeter of the complex's exterior sides.
- Mughal style influenced garden at the entrance, creating a buffer between the buildings and the main road, thus reducing noise generated from the highway.

- Entrance to the complex leading to the double height lobby, domed roof covering on top. Thus creating a grand platform for the pilgrims arriving in large number.
- Mosque situated in the north western corner, circular in plan, cylindrical form building.
- Frequent use of metal jalis of Islamic geometry ornamentation on exterior facade to protect from glare.
- One side of the door rooms opens/overlooks the courtyard whereas the other side is exposed to the gardens.
- Rooms that open to the gardens, have brick walkways across from the garden, ideal space for spiritual contemplations.

4.2.2 Madinatul Hujjaj, Kolkata

Background:

Location: Rajarhat, New Town, Kolkata.

Consultant: Gherzi Eastern Ltd.

Area: 5 Acres

Figure 67: Hajj Tower at Madinatul Hujjaj Complex.
Source: Retrievel from http://ualind.com/projects/

Introduction:

The Minority Affairs and Madrasah Education Department, Government of West Bengal & West Bengal State Haj Committee established the Haj Tower Complex at New Town, Rajarhat to facilitate the Hajjis going to Makkah every year during Hajj. In a land area of 5.0 acres, the complex comprises of a multistoried Haj Tower building, an auditorium with capacity of 1200

people and a prayer hall along with space for ablution area. It also has its own internal road network and bus parking area, along with other amenities.

Figure 68: Madinatul Hujjaj Complex.
Source: Retrievel from https://www.google.com/maps/place/Hajj+House+Auditorium/

Site:

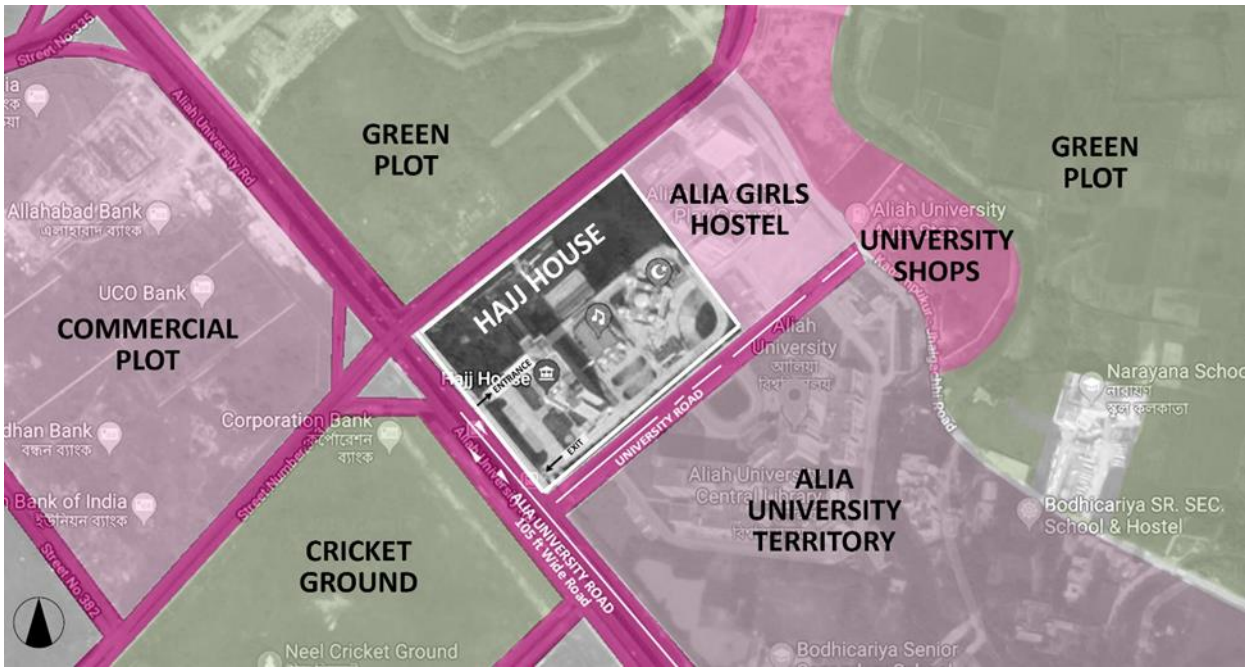


Figure 69: Immediate surroundings of Madinatul Hujjaj.
Source: Author.

The nearest railway station is Kolkata and Hawroh Railway Station; within 30 km range. The terrain of the project site & its surrounding area is plain.

Design Concept: The fundamental design of the Haj Tower Building has been carried out as a multistoried tower block (Basement + Ground + 10 floors) along with an auditorium of 1200 capacity and a prayer Hall of Ground + 3 storied.

Structural System: The structural composition of the building is analyzed as special Reinforce Concrete moment resisting space frame with horizontal diaphragms at each floor levels for various loads and load combinations.

Zoning:

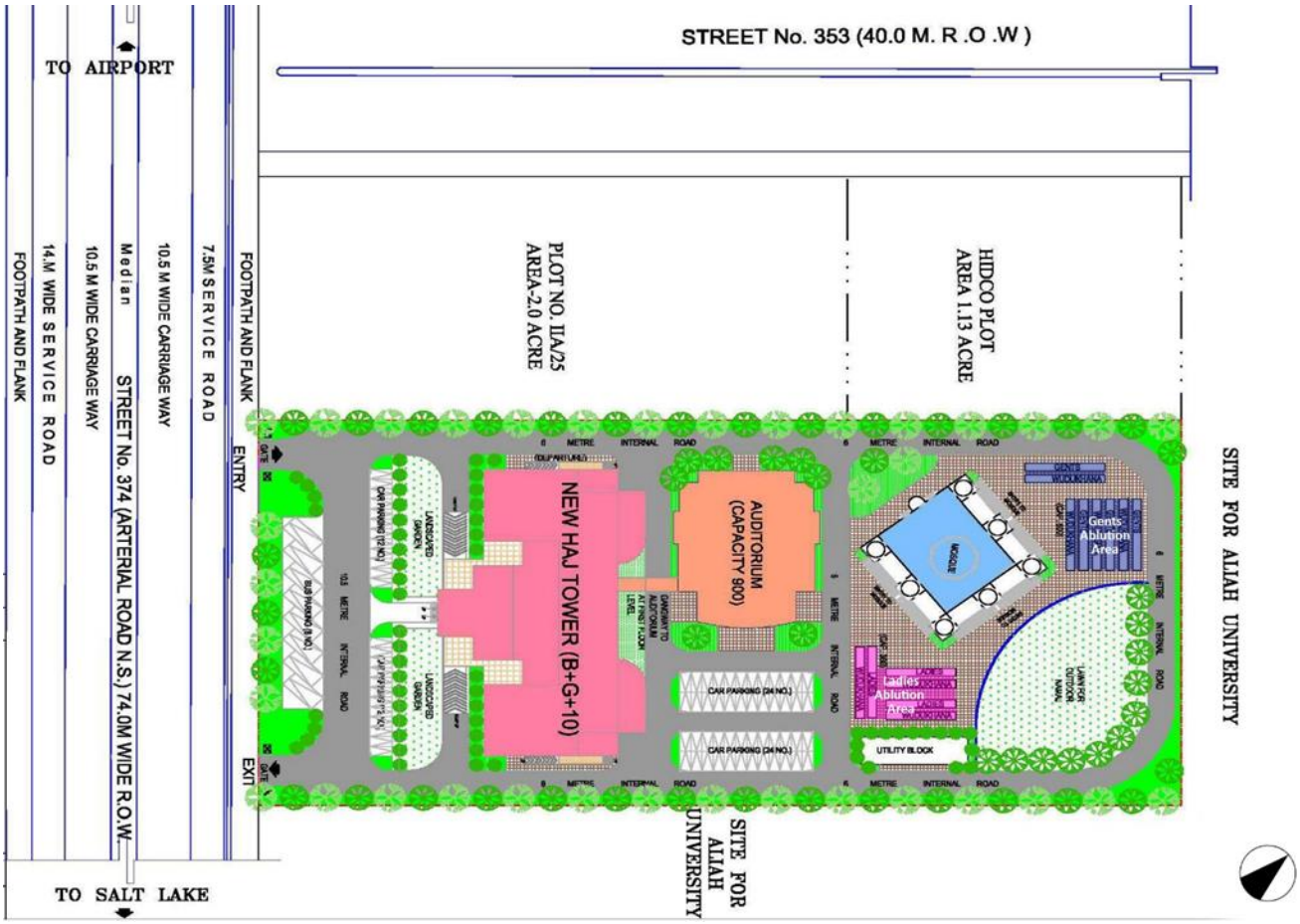


Figure 70: Masterplan of Madinatul Hujjaj.
Source: Adapted from New Haj Tower Complex Detailed Report, 2013, Kolkata, Gherzi Eastern Limited.

Main Haj Tower Building

- Basement: Exclusively for Car Parking and utilities

- Ground Floor

• Dining Hall

• Kitchen, pantry & store

• Washing area

• Separate Toilets for Ladies & Gents

• Documents issue counters—14 nos.

• Entrance Lobby & lounge with reception

• Departure Lounge

• Information & Enquiry

• Separate Lift Lobbies for Ladies & Gents

- First Floor

• Executive Chambers – 6 Nos. and staff area

• Chairman's Chamber with visitor lounge, PA's office, chairman's office

• Conference Hall for 50 persons

• Document issue counters – 14 nos.

- Second to Tenth Floor

• Ladies Dormitories for 110 persons per floor

• Gents' Dormitories for 190 persons per floor

• Toilet for Gents & Ladies

• Ablution Space

- Store Rooms – 2 nos. per Floor

The total accommodation works out to (110 x 8 floors) 880 Ladies and (190 x 8 floors) 1520 Gents i.e. total 2400.

The facilities considered within the Prayer Hall area are:

- Separate prayer areas for Gents & Ladies
- Separate Toilet & Wudukhana for Gents & Ladies

Auditorium: having capacity of 900 at ground floor and 300 at balcony area

Additional special features include the following:

- Parking facility for 10 buses
- Surface Car parking facility

Figure 71: Auditorium and Mosque.
Source: Retrieved from https://www.google.com/maps/place/Hajj+House+Auditorium/

Observations:

- Contextually, Muslims are the minority in this region, influence of Islamic architecture is not very widespread. Amongst all, Madinatul Hujjaj has been

designed with an attempt of incorporating Islamic architectural identifications to a certain extent, blending with the modern trend.

- The main tower comprises of all the major functions such as dormitory and associated facilities, administration, dining area and others. The auditorium building and the mosque are separate entities.
- The auditorium is connected to the main tower by a covered bridge in the first level. Enabling the pilgrims to easily attend seminars and other training activities held in the auditorium.
- The mosque is separated by internal roads from the rest of the buildings, within the mosque territory, there are ablution areas for both male and female, detached from the mosque, and are placed diagonally from each other.
- Precise internal road linkage, allowing smooth vehicular circulation even during the peak time of the season.

4.2.3 Entrepreneurship Development Institute of India, Ahmedabad

Background

Architect: Bimal Patel, H.C. Patel Architects

Location: Ahmedabad, India

Built-up Area: 98,167 sq. feet

Completed: 1987

Recognition: The AGA Khan Award in 1992

Introduction

The Entrepreneurship Development Institute of India (EDII) was established in 1983 with its main objective to contribute to the increasing number of entrepreneurs through education and training. Architect Bimal Patel designed the campus after winning the national competition that was held by the EDII to design their own campus.

Figure 72: Entrance Pavilion (Left) and Admin Block showing facade covered with galleries (right). Source: Retrieved from https://architexturez.net/doc/az-cf-166247

Architect's Aspiration

Since Ahmedabad was founded by Muslims in 1411, the whole city endowed a reflection of Islamic architecture through augmentation of mosques, mausoleums, courtyard houses, labyrinths of public thoroughfares and alleys, private cul-de-sacs and gates. Patel's design for the campus shows that he was strongly influenced by the elements of the Indo-Islamic

architectural heritage which aspired him to establish a connection between his design and India's past. The architect claims his design of this campus was shaped by three factors: first, his Master's thesis at California, where he studied formal patterns in Indian Islamic architecture. Secondly, an awareness of the fact he was heading a design firm that had for long been practicing of 'Modem' architecture in western India, and finally, the client's insistence on making a campus that was in harmony with the landscape - one that was not dependent on artificial energy.

Site Context

Climatic Conditions: The climate is hot and arid. Temperatures vary from 27-41C in summer and from 14-29C in winter. The monsoon season is from June to September when precipitation averages 600mm. Winter is from November to February. Since the city is located on the Tropic of Cancer, sun is high overhead, and the light is strong and harsh.

Immediate Surroundings of the Site: A 90 m wide highway connecting Ahmedabad with the new capital Gandhinagar passes by its eastern side adjacent to the campus site. The site is dominantly surrounded by undeveloped land with sparse vegetation.

Topography: Ahmedabad is generally based on flat terrain with sparse vegetation. The soil is clay loam. However it is adjacent to a dry river hence the land has a gentle slope towards the river side.

Design Concept: The major physical constraint was the uneven site topography. The three main activities i.e. research, training and administration were placed on the higher area of the site to make it visible from the main point of access. The hostel accommodations were chosen to be placed in a more secluded and quieter area away from the institutional facilities with the aid of large area of green buffer.

Figure 73: EDII Master Plan.
Source: Retrieved from https://architexturez.net/doc/az-cf-166247

Through skillful positioning and connectivity of spaces encompassing buildings of various activities, the architect was able to achieve a well responsive environment for the users. This included formation of buildings each around courtyards with distinct characteristics. Also since extensive land was available, the architect attempted to create and define inside and outside spaces through spreading the functions horizontally across the site.

Landscaping

Due to the extensiveness of site, large number of Neem and Ambli trees were planted on a grid iron pattern of 18 x 20 feet. Courtyards and any small spaces that generated in between buildings were treated with paved stones and grasses. These spaces were designed with inviting features and are very much accessible by the users.

Figure 74: Landscaping in the hostel block (left) and the entrance pavilion (right).
Source: Retrieved from https://architexturez.net/doc/az-cf-166247

Structure, Materials and Technology: Structural composition mainly features load bearing brick walls with reinforced concrete columns occurring in some places where large spans are needed such as lecture halls. Locally available materials were used such as bricks, reinforced concrete columns. All infill materials are brick and are finished with plaster. Other than painted finish on wooden doors and windows, no finishing materials were used on the facades. Different colored stones with mosaic tiles were used for floor finishes.

Climatic Performance:

- The area of the courtyards is larger in proportion to the building heights which allows circulation of cool air within the buildings.
- The rooms around the courtyard have opening on two opposite sides, one facing the courtyards whilst the other faces the surrounding gardens ensuring flow of cool breeze of air.
- Galleries surrounding the courtyard creates buffer against the harsh light and provides shade to the rooms.
- All windows are recessed towards inside and not flush with the façade thus providing shade to the rooms that are not guarded by the galleries of the courtyards. This treatment also secures protection during the monsoon season.

Zoning

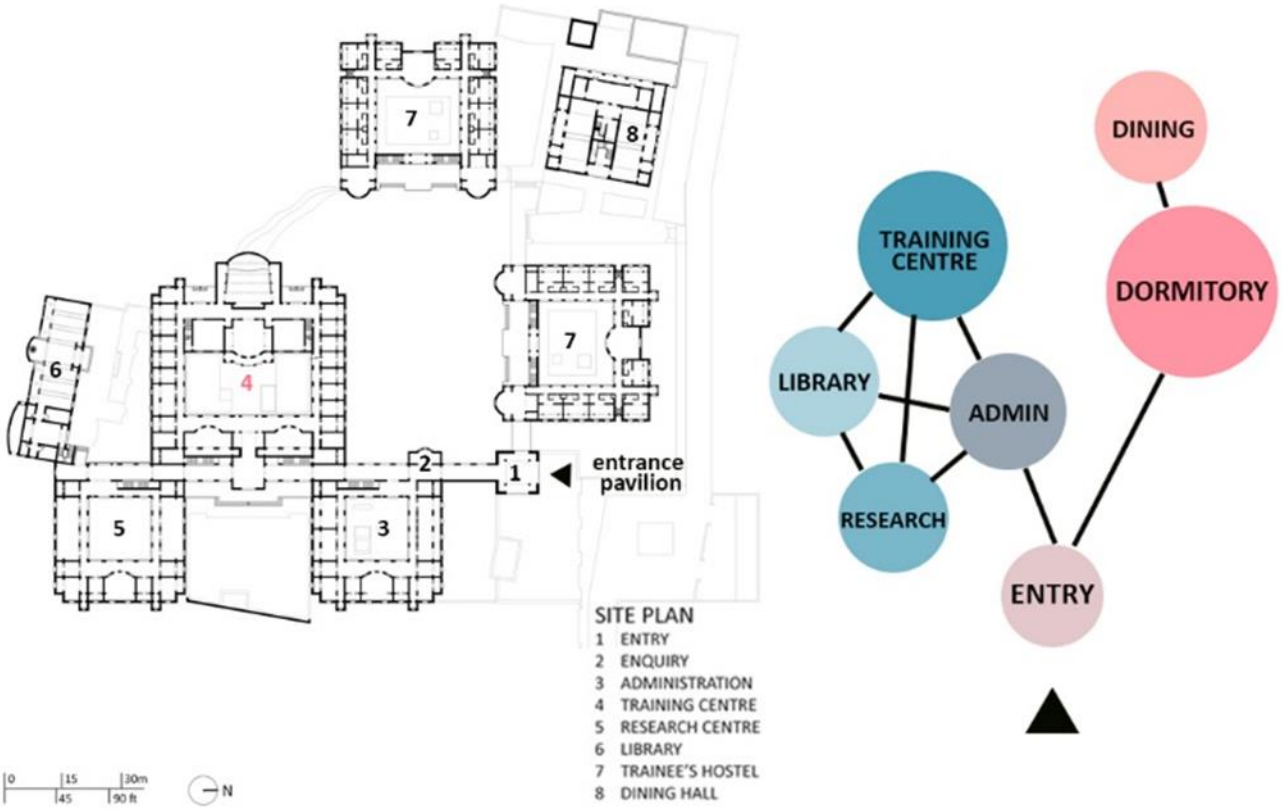


Figure 75: EDII Ground Floor Plan (left) and analysis of functional flow.
Source: Author (Functional Flow). Retrieved from https://architexturez.net/doc/az-cf-166247

The academic facilities include 4 classrooms, 4 seminar rooms, a 250-seat auditorium, a library (meant to accommodate 30,000 books), administrative facilities and a board room. Additional facilities provided are a café, hostels with 90 rooms for 2 students each and 10 dormitories, and faculty housing with 6 row houses and 6 flats.

Functional Assessments

- Sequence of spaces guided by courtyards and corridors.
- Complex consists of five veranda type buildings; three for academic facilities, two for dormitories whose rooms are across an open courtyard.

-

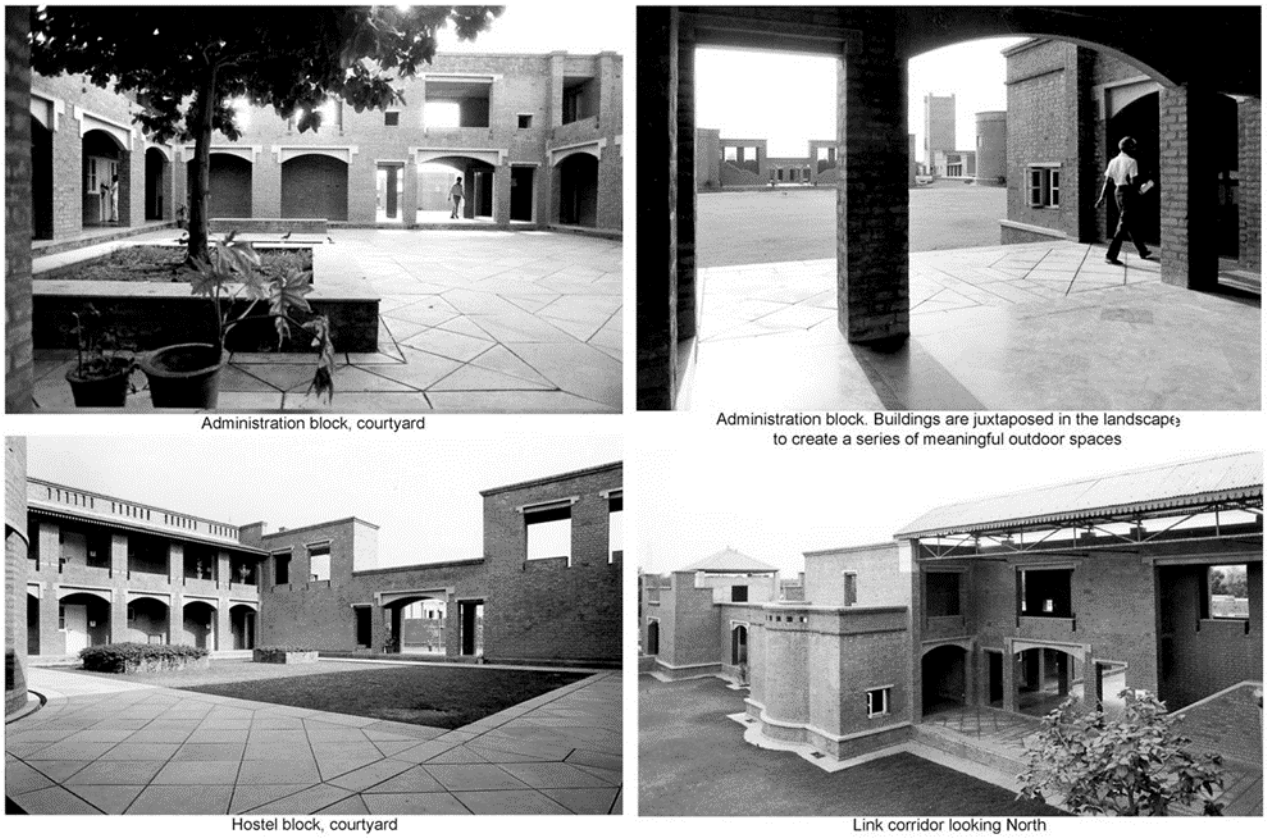


Figure 76: Images of administration block and hostel block, courtyards and corridors.
Source: Retrieved from https://architexturez.net/doc/az-cf-166247

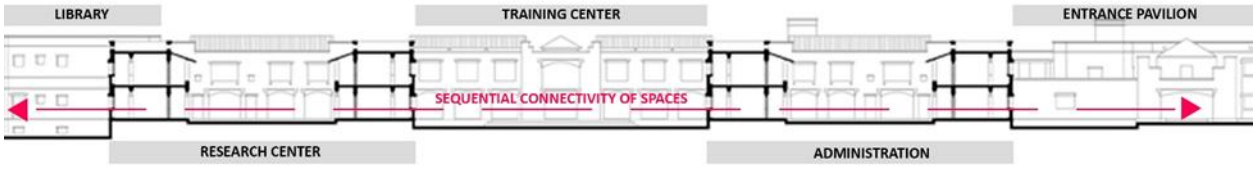


Figure 77: Section showing connectivity between different functional zones.
Source: Author

- Connecting corridor expanding both sideways and upward resulting in an exciting space.
- Wide staircases at intervals leading to upper level which houses more academic facilities
- Natural light from above and below creating varieties of visual interest within the corridors.
- Interesting spatial transition from the rooms to the courtyards through galleries or verandahs.

- Well-proportioned columns, sufficient width of the galleries protecting the rooms from sunlight.

4.3 Western Case Studies

Most accommodation facilities for western Hajj pilgrims are transit based hotels, hence the following case study features a Transit hotel located in Denver.

4.3.1 Denver International Airport Hotel and Transit Center

Background:

Architect: Gensler

Location: Denver, United States

Completed: 2015

Figure 78: Denver Internation Airport Hotel and Transit Center.
Source: Retrieved from http://www.gensleron.com/cities/2015/designing-the-den-westin-hotel-transit-center.html

Introduction: Denver International Airport (DIA) has the largest airfield of any U.S. airport, encompassing fifty-three square miles located approximately twenty-four miles northeast of Denver's central business district. It is also the 15th-busiest airport in the world and the fifth-

busiest airport in the United States. It had remained uninterrupted during the construction of this high budget transit center.

Design Concept: The main idea was to create a hotel that offered an urban experience at the airport which through seamless integration, would be easy for travelers to navigate, and to link to distinct nature of culture and landscape.

Structural System: The structural composition is primarily cast in place concrete elements. It contains a variety of several innovative structural implications. It also uses various framing techniques. Canopies are constructed with diagrid technology that covers the transitional space between the train and the hotel. The canopies are solely supported by the diagrid steel.

Key Elements: The project includes three key elements: a 519-key Westin hotel and a conference center, an 82,000 square foot plaza; and a public transit center that connects the new RTD commuter rail line to the airport.

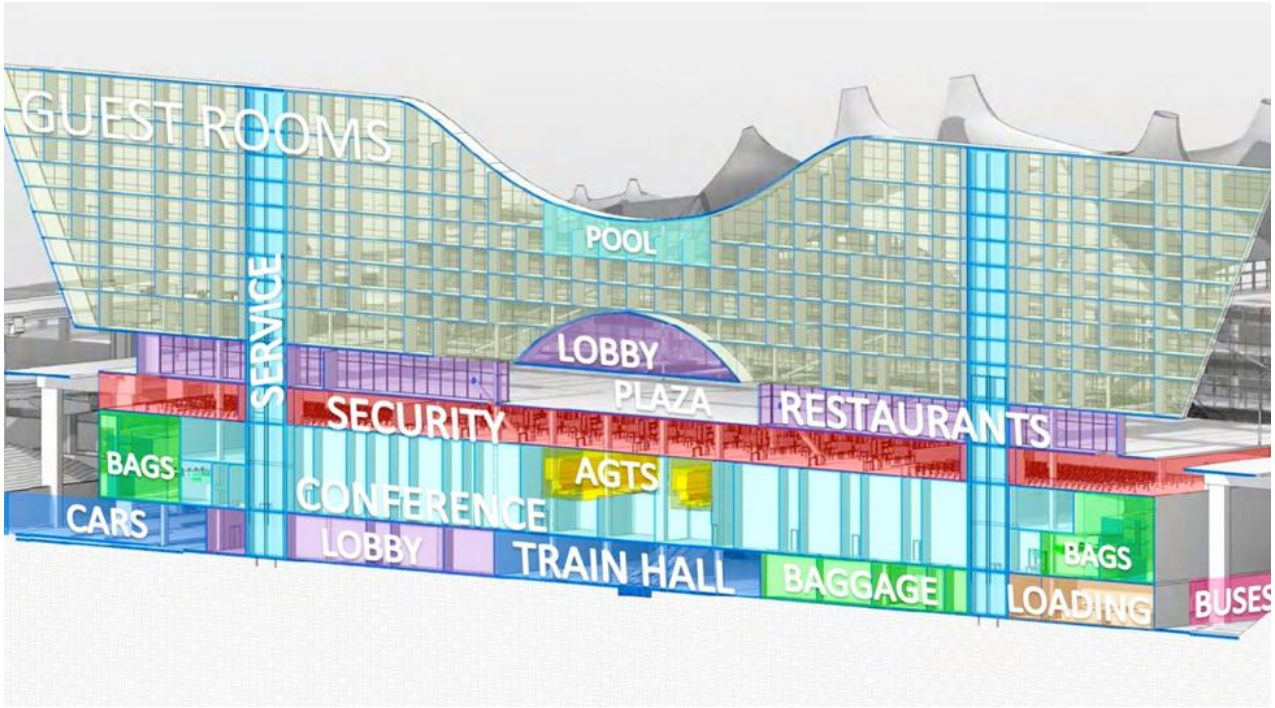


Figure 79: Section of the hotel and the transit center demonstrating the complex nature of project and the programs.
Source: Best Building Project GC over $70M, 2015, Mortenson Hunt Saunders.

Public Transit Center – The rail station serves trains connecting DIA with downtown Denver's Union Station as part of the Regional Transportation District's (RTD's) East Rail Line.

Hotel and Conference Center – The 519-room Westin hotel features conference center space for meetings, banquets, conventions, and trade shows, as well as a restaurant, fitness center, and indoor pool.

Public Plaza – An open-air plaza linking the transit center and hotel to the existing Jeppesen Terminal.

Figure 80: Free standing canopy covering partially the transitioning space between the train and the plane. Source: Retrieved from http://www.gensleron.com/cities/2015/designing-the-den-westin-hotel-transit-center.html

It features a large open area partially covered by a glass canopy. The plaza serves as a venue for programs and events like entertainment, art, relaxations and restaurants for the passengers.

The program also includes an extension of the Automated Ground Transportation System (AGTS), which is the train that currently serves the concourses, as well as an expansion of the existing baggage system.

Observations:

- Provision of environment through space and aperture that induces emotions in users of feeling connected to the environment, by offering fantastic views of both the city, mountains, and historic original architecture.
- Location and orientation of the building is in such manner that it enables people to navigate the hotel and the transit center easily. Both the functions contributing to the process of parallel navigation by acting as markers/indicators for each other.
- Train Hall and upper diagrid canopy create a better passenger experience.
- Copious amount of daylight filtering through the glass and steel composition, thus creating a very welcoming sense of arrival.
- Predominant use of glass all around the building mass enhancing transparency thus generating a feeling of connectedness from many vantage points.

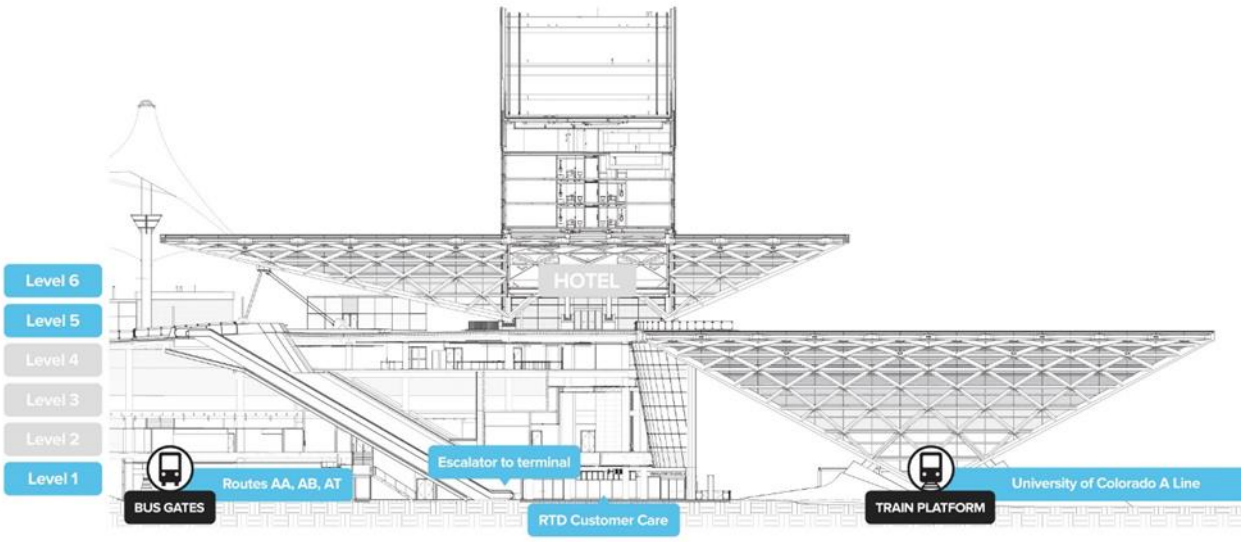


Figure 81: Section showing Denver Airport Train Station.
Source: Retrieved from http://www.rtd-denver.com/airport.shtml

- The functions are separated vertically in a complex manner. However, the distinction of the functionalities is clearly defined with use of range of spatial compositions.

4.3.2 Penzberg Islamic Forum; A Mosque and A Islamic Center

Location: Penzberg, Germany

Architect: Jasarevic Architects

Site: 2.3 acres

Built Area: 39, 204 sft.

Introduction: This project was an initiative taken by a small community of Muslims in Bavaria. It was approached with contemporary architecture integrated with elements that symbolize Islam. Islamic traditions are preserved and maintained through the use of 99 Names of God in decorations featuring the prayer hall. This center is open for all, which includes the non-Muslims as well, and it also provides German classes for the foreign Muslims.

Figure 82: Penzberg Islamic Forum.
Source: Adapted from ARCHITECT'S RECORD 2010 AWARD CYCLE, 2010, 3521. GER

Concept:

The architect was familiar with the Islamic religion, culture, customs and the mentality, and such prior knowledge led to the development of modern religious architecture. The design follows integration of modern architectural features that are distinctive and also not overpowering at the same time.

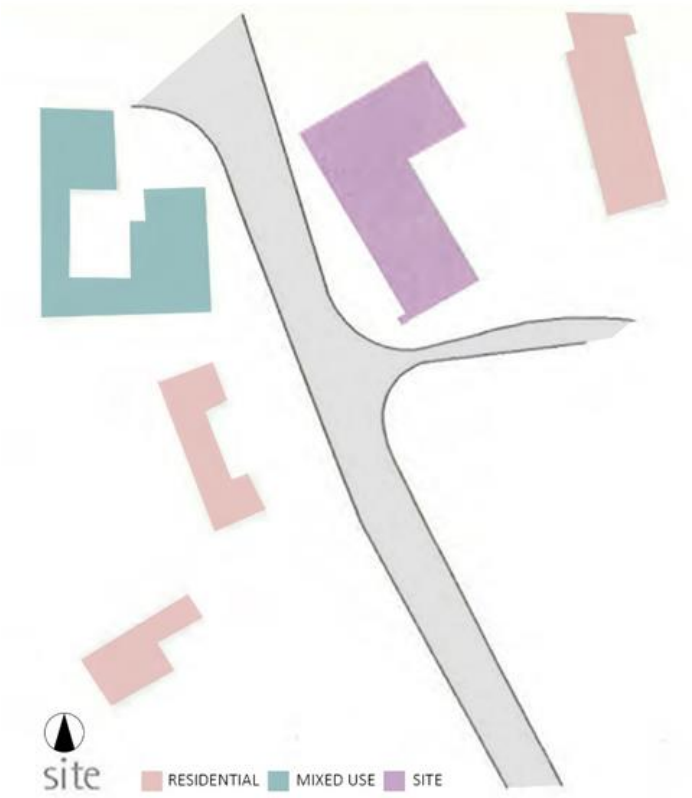


Figure 83: (right) Site Map of Islamic Forum.
Source: Author

Site:

Located in the South of Munich, where the Alps overlook the Starnberg Lake; Bavaria, a region known for its conservative Catholicism. The site is in a well-groomed periphery, with residential area on one side of the street and a store on the other.

Zoning:

Figure 84: Ground floor plan and first floor plan.
Source: Author (labelling); Plans adapted from ARCHITECT'S RECORD 2010 AWARD CYCLE, 2010, 3521. GER

The prayer room, the communal and administrative rooms, and an apartment were all arranged under a single roof on an L-shaped ground plan. The forum's other rooms can be compared with a community center: they offer German lessons, discussion and prayer meetings, the usual. The first floor plan features a multifunction room, accommodations, administration and of course the continuation of the mosque.

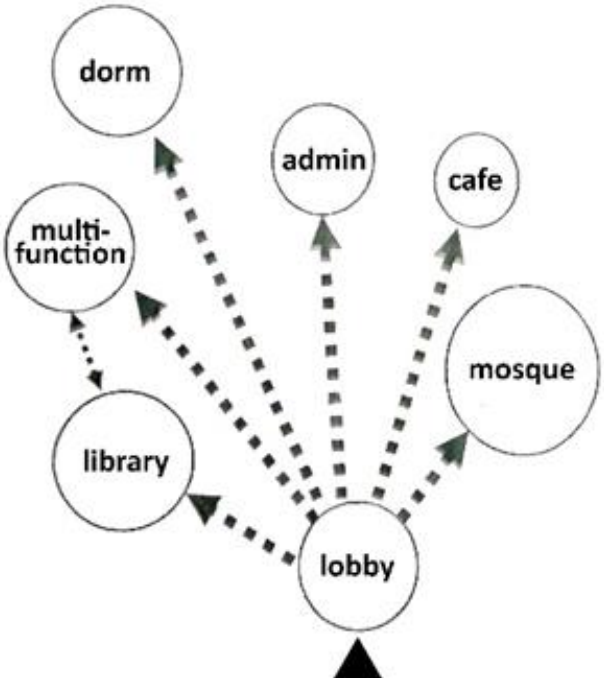


Figure 85: Functional Connectivity
Source: Author

Details:

Figure 86: From left; Prayer Hall, Inscribed Quranic Verses on decorations and the Minaret.
Source: Ozlukart, 2006

Observations:

- Extensive use of glass in the exterior to promote high degree of transparency. As a result, it attracts passers of any religion or ethnic background to be curious and feel invited towards the mosque
- Transparent façade imposes on expressiveness of religious notion, culture and social experiences.
- The mosque façade, particularly at the entrance is decorated by inscriptions of Quranic verses alongside German translation. This engages the passers who appreciate the beauty of Calligraphy.

Chapter 5

Program Analysis

The enlisted programs that have been provided by the client is not comprehensive but provides a holistic insights of the functional activities and their arrangements in space. The detailed programming was needed to be done for complete assessment of the project. Most of the functions in the project resemble to that of the existing Hajj camp in Dhaka and were discussed in the case studies section. Analysis of the functional flow and how programs are relatively arranged is the focus of this section.

5.1 Program Rationale

The Hajj Camp Project in Pahartali is a redevelopment project, hence it implies that all the programs that have been listed, either newly proposed or modified from the previous establishments sought to reflect on advancements and improvements of the pilgrim facilities. The core prospect of the redeveloped transit camp is to facilitate the pilgrims to prepare efficiently for the journey. Thus providing facilities for the welfare of the pilgrims' visiting and also improving their quality by advanced means.

The entire camp is a complex that can be viewed as an amalgam of necessity amenities such as a mosque, gender segregated dormitories, seminar halls, dining halls, medical care, a library and other facilities required to enhance the stay of the pilgrims. The programs outline provided by the client has been assessed and developed with details after studying the components and functional flow of the existing camp in Dhaka. Following are the programs given by the client, laid out with descriptions:

- **Dormitory Building:** For providing shelter and accommodating the Hajj bound Muslims. The dormitories will follow gender segregation and will include all the facilities required by both male and female pilgrims.
- **Hajj Office Administration and Academic Building:** The functions hosted by this block is responsible for carrying out all the official works related to the pilgrims registered for Hajj, their tickets, financial issues and for regulation of their organization. Apart from the office rooms, there will be multiple seminar and conference rooms for practical training so that the Muslims can prepare for the pilgrimage.
- **Mosque:** The symbolic entity of the complex, providing quality space for the pilgrims to regenerate their spirituality, strengthen their belief for the Creator and renew their sense of belonging through offering prayer five times a day. It can act as a community center for people gathering on religious occasions, as a place for education and of course as a place for worshipping.
- **Dining Hall:** To cater the pilgrims with all the required dining facilities. It will feature seasonal restaurants and spaces for stalls to provide varieties of eating options for the pilgrims.
- **Medical Center:** This block is responsible for ensuring the health and fitness of the pilgrims and provide with necessary treatments and preventive measures.
- **BIMAN Ticket Sales Center:** The hajj office administration deals with the BIMAN office for booking flights and ticket processing.
- **Immigration & Customs:** For those pilgrims who are travelling by BIMAN Airlines, will complete the immigration processes here and board the airplane for the particular flights.
- **Seasonal Banks:** There are about twenty different bank branches,that operate in individual rooms offering services such as withdrawing or depositing money and money exchanges to the pilgrims.

5.2 Area of Proposed Programs

Program Development			
	Quantity	SQFT/Program	Total SQFT
Hajj Office Administrative & Academic Block			
Entrance Lobby			5000
Pilgrims Reporting Counter	8 Counters		1000
Waiting Area (For 8 Counters)	1		2500
BIMAN Ticket Sales Center			2000
Meeting Room			600
Customs & Immigration			
Lobby	1		600
Check-In Counter	1		600
Waiting Area	1		6000
Total			18,300
Total with 30% Circulation			**23,790**
Administrative Block (Hajj Office)	Quantity	SQFT/Program	Total SQFT
Director	1	15 x 20	300
Director's PA	1	10 x 10	100
Assistant Hajj Officer	1	12 x 10	120
Upper Division Assistant	1	12 x 10	120
IT Operators Room (4 Operators)	1		250
Common Room (4 Office Assistants)	1	15 x 10	150
Accounts Office (Cashier & Accountant)	1	12 x 10	120
Hajj Information Center	4 Offices	10 x 10	400
Call Center (4 Operators)	4 Cubicles	17 x 15	255
Dining (40 person)			600
Store	1		800
Toilet	4	35	140
Training Block			
Seminar Room (500 Persons)	3	6.5 sqft/prerson	9750
Library (1sqft/book)			8000
Librarian Room	1	10 x 10	100
Store	1	8 x 10	80
Toilet	60	35	2100
Total			23,385
Total with 30% Circulation			**30,400**

Islamic Bank Bangladesh Limited	Quantity	SQFT/Program	Total SQFT
Manager	1	15 x 20	300
General Banking			
In-Charge Room	1	12 x 10	120
Account Opening Office	1	12 x 10	120
Check Issue Desk	1	8 x 8	64
Clearing Section Desk	1	8 x 8	64
Cash Desk	1	8 x 8	64
Investment			
In-Charge Room	1	12 x 10	120
Principal Officer	1	12 x 10	120
Senior Officer	1	8 x 8	64
Officer	1	8 x 8	
Foreign Exchange			
Import Section	1	12 x 10	120
Remittance Section	1	12 x 10	120
Store		5 x 8	40
Toilet	2	7 x 5	70
Total			1386
Total with 30% Circulation			**1800**
PWD Office	Quantity	SQFT/Program	Total SQFT
Maintenance Unit	1	12 x 10	120
Electric Unit	1	10 x 10	100
Office Room	1	12 x 10	120
Store	1	15 x 12	300
Toilet	1	35	35
Total			675
Total with 30% Circulation			**880**
Seasonal Banks (20)	20	10 x 10	2000

Mosque for 5000 people (8sqft/person)	Quantity	SQFT/Program	Total SQFT
Male Prayer Space (90%= 4500 persons)	1	8 x 4500	36000
Female Prayer Space (10%=500)	1	8 x 500	4000
Ablution Space (4sqft/person)	250	4 x 250	1000
Toilet	50	20	1000
Total			42000
Total with 30% Circulation			**54,600**

Book Stores (Proposed) x 20	20	8 x 5	800
Total			800
Total with 30% Circulation			**1040**
Dormitory For 3000 Pilgrims (18sqft/person)	Quantity	SQFT/Program	Total SQFT
(100 persons per room)			
Male Dorm (60%=1800)	18	18 x 100	32400
Female Dorm (40%=1200)	12	18 x 100	21600
Scouts Dorm Room (50 Persons/Room)	2	18 x 50	1800
Superintendent			500
Toilet	280	20	5600
Shower	400	9	3600
Total			65500
Total including Circulation (30%)			**85,150**
Canteen Building For 1000 people	Quantity	SQFT/Program	Total SQFT
Dining (15sqft/person)	2	7500	15000
Stalls + Wash (40%)			6000
Total			31000
Total with 30% Circulation			**40,300**
Medical/HealthCare Center	Quantity	SQFT/Program	Total SQFT
Health Check Up (Male Doctor)	7	15 x 10	1050
Health Check Up (Female Doctor)	7	15 x 10	1050
Vaccination Corner			500
General Health Check Up Desk			1400
Toilet	4	35	140
Total			4140
Total with 30% Circulation			**5400**
Others	Quantity	SQFT/Program	Total SQFT
Substation Generator & Pump House	1		1500
TOTAL AREA (ALL PROGRAMS)			**1,87,966**
TOTAL AREA (ALL PROGRAMS with 30% Circulation)			**244,860**
Parking (General)	60		
Parking (Bus)	6		

5.3 Functional Connectivity and Program Analysis

A functional connectivity diagram between the main features of the Hajj Camp as stated has been shown below:

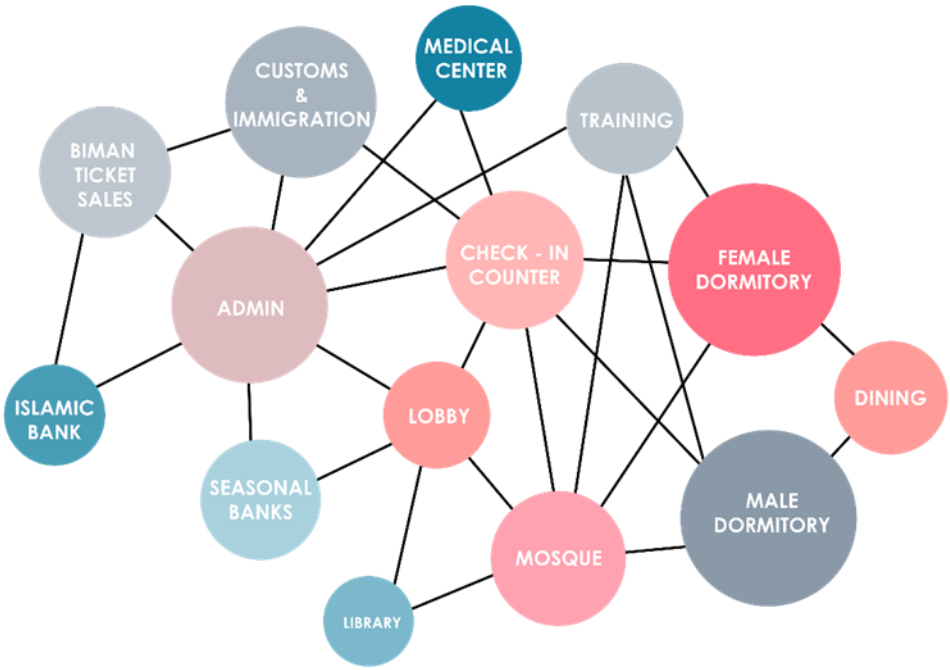


Figure 87: Functional Flow in Broader Zones.
Source: Author

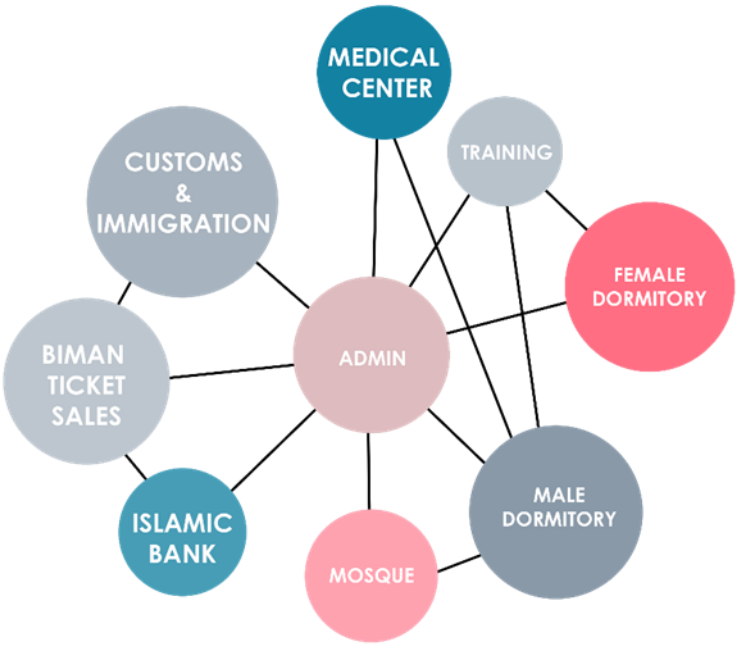


Figure 88: Functional connectivity of the Administration Block.
Source: Author

All pilgrims have to report to the check-in counter after arriving at the entrance lobby. From the Check-In counter the pilgrims are directed to their respective zones; *Customs & Immigration* for those who are boarding the flight on the same day, the *dormitories* for those who arrived three days ahead of their flight schedule and the *medical center*. Dining halls are accessible from the dormitories.

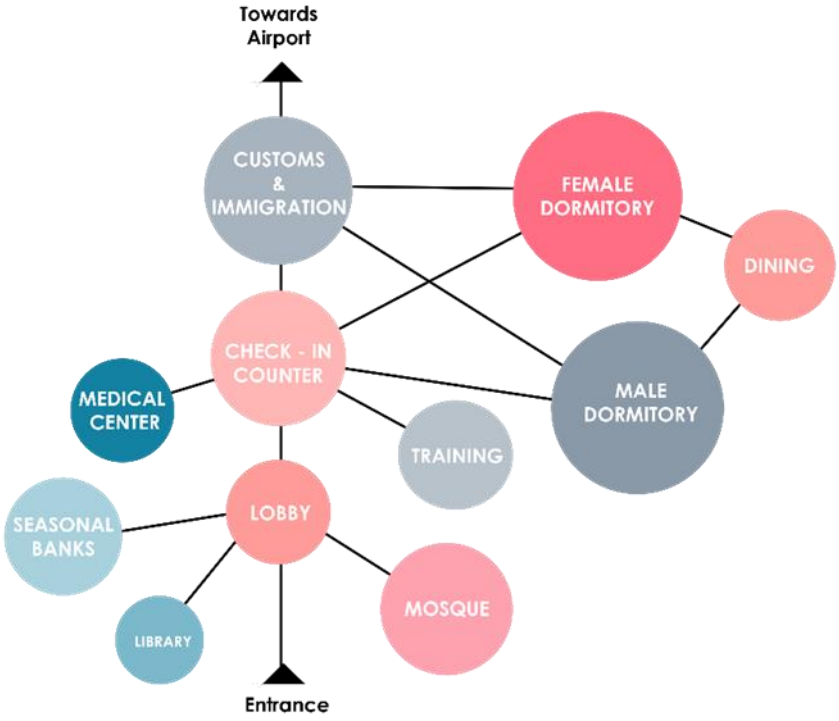


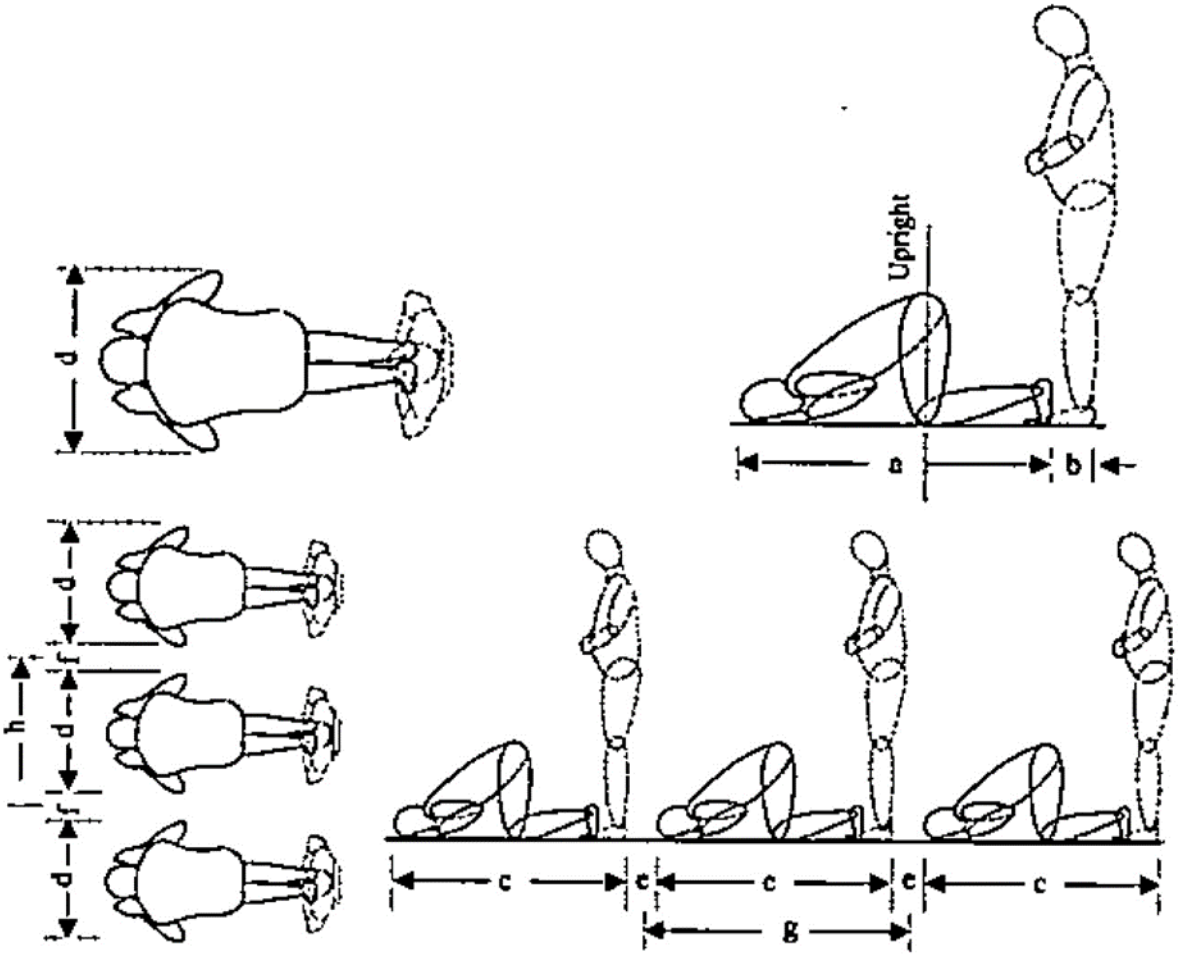
Figure 89: Pilgrims Flow.
Source: Author

ACTIVE	SEASONALLY ACTIVE	PROPOSED ALTERNATIVE USE
Hajj Office Administration	Customs & Immigration	Post-Eid Functions
Islamic Bank	Ticket Sales Center	Islamic Functions
Mosque	Check In Counter	Educational
Library	Bank Booths	Weddings
	Seasonal Bookstores	
	Dormitory	
	Canteen	
	Training Block	

Figure 90: Active and seasonally active Programs.
Source: Author

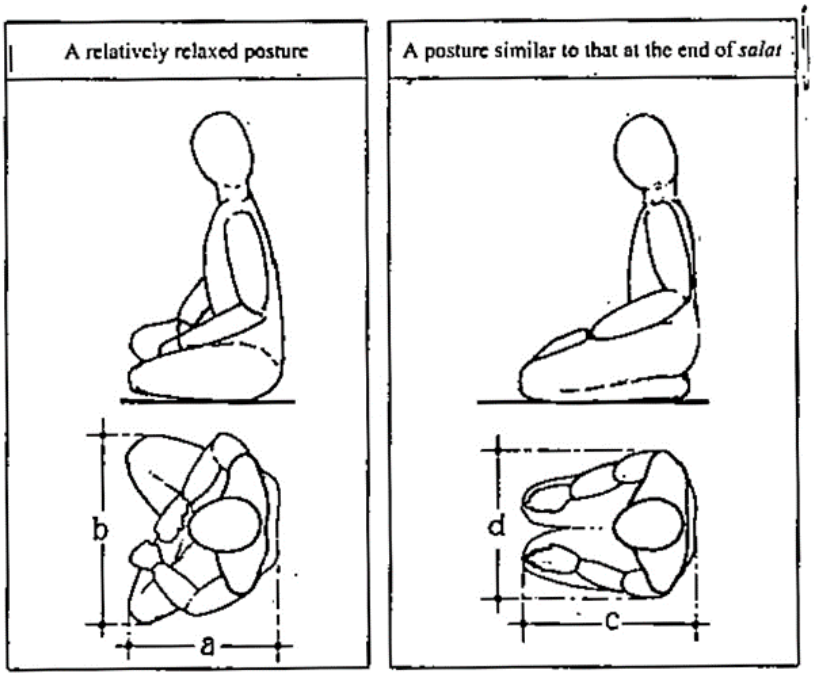
5.4 Design Standard Studies for Project Related Spaces

5.4.1 Mosque



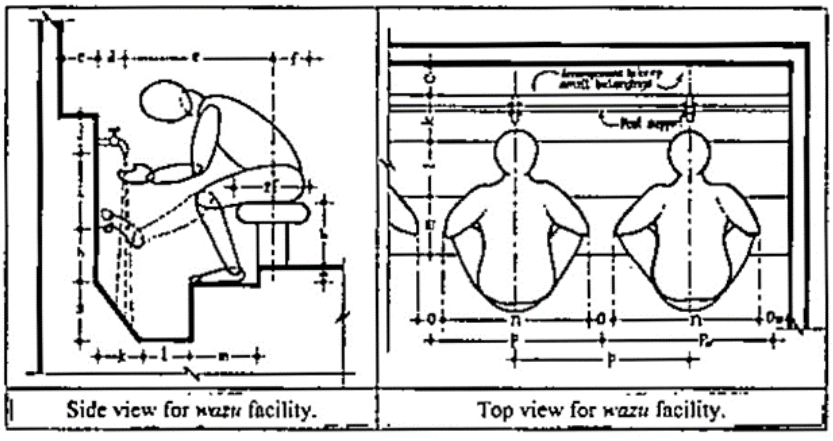
	Net Dimension (m)				Clearance (m)		Gross dimension (m)		Gross area (m^2)
	a	b	c	d	e	f	g	h	(g x h)
Minimum	1.13	0.15	1.28	0.60	0.23	0.02	1.51	0.62	0.94
Good	1.17	0.16	1.33	0.63	0.24	0.02	1.57	0.64	1.01
Excellent	1.20	0.16	1.35	0.64	0.25	0.02	1.60	0.66	1.06

Figure 91: Male Prayer Space.
Source: Imam, 2000



	Net dimension (cm)				Clearance (cm)	Gross dimension (cm)				Gross area (m^2)	
	a	b	c	d	e	a'	b'	c'	d'	(a' x b')	(c' x d')
Minimum	56	70	62	48	8	64	78	70	56	0.45	0.39
Good	58	73	65	50	10	68	83	75	60	0.56	0.45
Excellent	59	74	66	51	12	71	86	78	63	0.61	0.49

Figure 92: Space for sitting in different posture in mosque.
Source: Imam, 2000



	Net Dimension (cm)														Clearance (cm)		Gross Dimension (cm)		Wazu Area (m^2)	Circulation Area (m^2)	Gross Area (m^2)
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	o_w	p	p_w	A_w	A_c	A_g
Minimum	5	25	12	13	48	12	18	20	16	6	18	12	20	70	6	10	76	78	0.56	0.22	0.78
Good	7	23	16	14	52	15	25	22	18	8	21	15	22	74	8	14	82	85	0.66	0.33	1.00
Excellent	10	20	20	15	55	18	30	25	19	10	23	20	25	80	12	18	92	95	0.81	0.49	1.30

Figure 93: Space for Ablution Facility.
Source: Imam, 2000

***<u>Ablution Space</u>**

For 100 Persons = 5 Ablution Facility

Area 1 Ablution Facility = 4 sqft

***<u>Toilet</u>**

For 100 Persons = 1 WC Required.

Area required for 1 WC = 5 x 4 = 20 sqft.

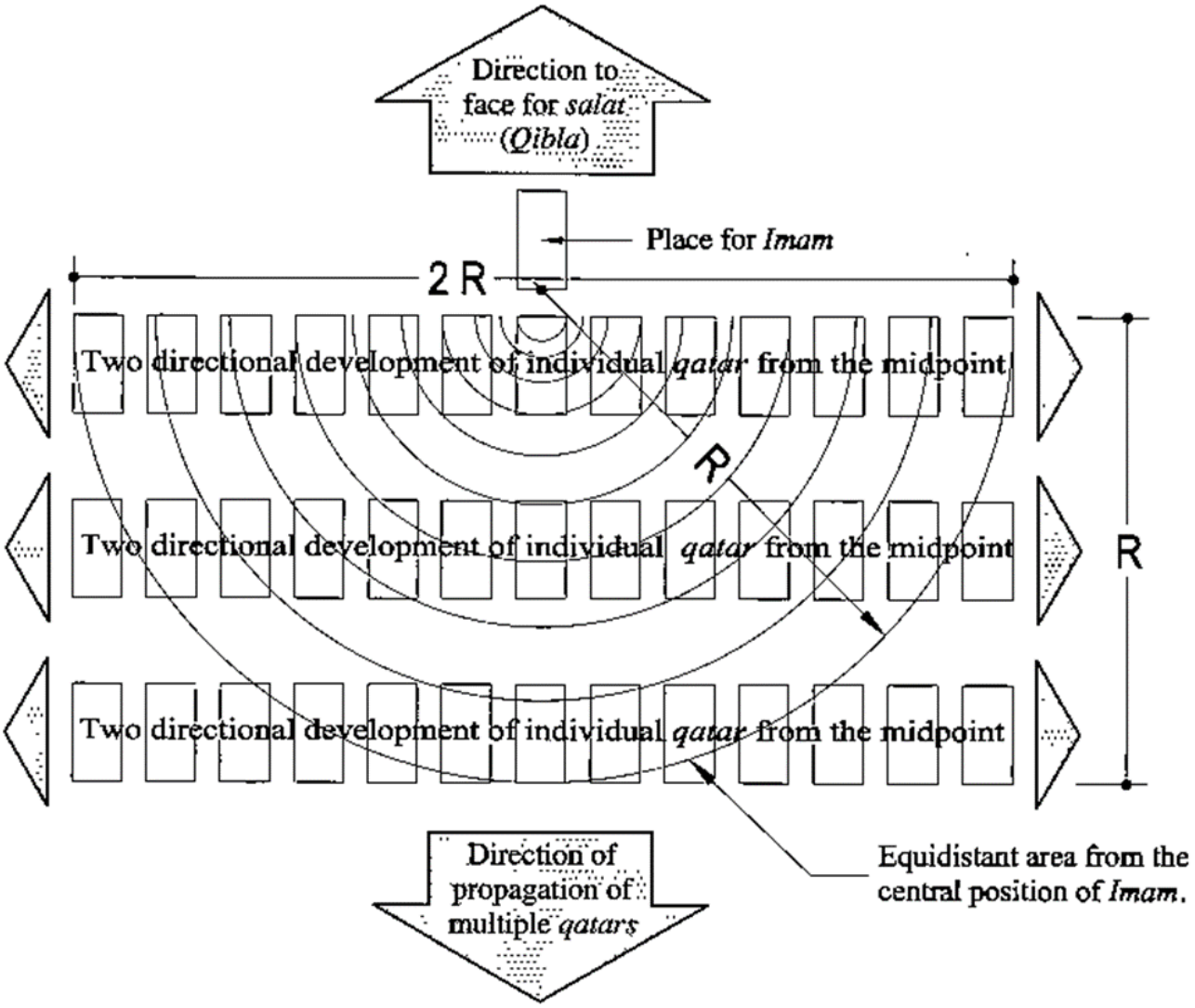


Figure 94: Determinant of space configuration. Range of audible acuity.
Source: Imam, 2000

5.4.2 Dormitory

Standards of Ashkona Hajj Camp:

The rooms are not equipped with any furniture.

Area required for sleeping on floor = 6 x 3 = 18 sqft/Person

30% of circulation space has to be provided.

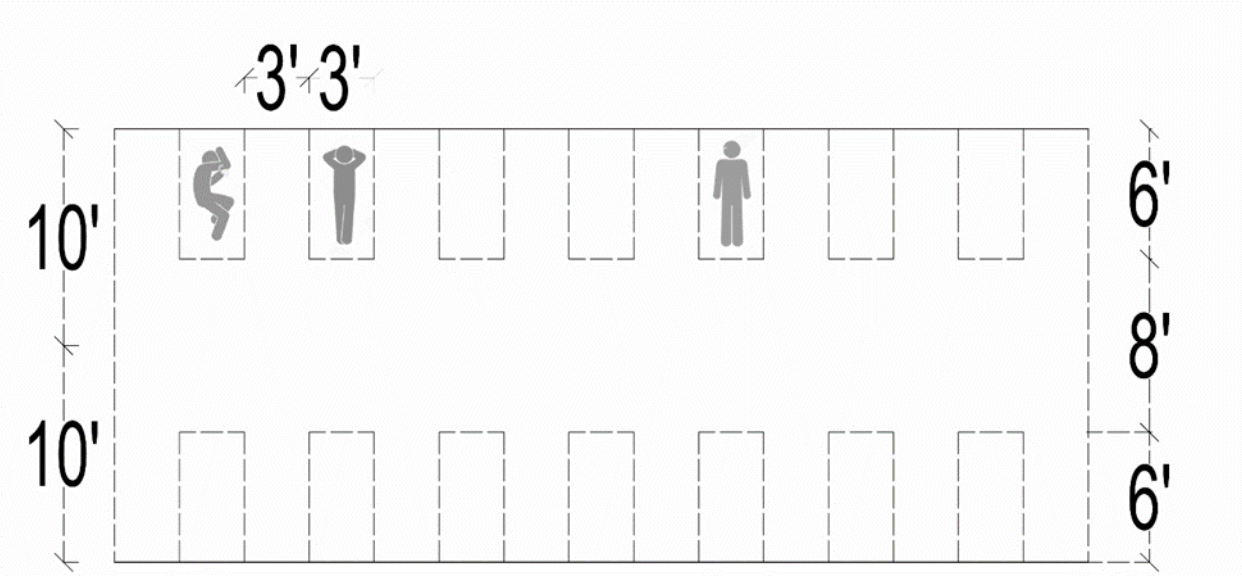


Figure 95: Space required for sleeping. (Floor Area) without bed.
Source: Author

Chapter 6

Conceptual Stage and Design Development

6.1 Initial Consideration Phase

The main focus was to create a comfortable living environment to a possible extent for the arriving pilgrims. Primarily, zoning of different programs were arranged within the site taking into account the impacts of immediate surroundings.

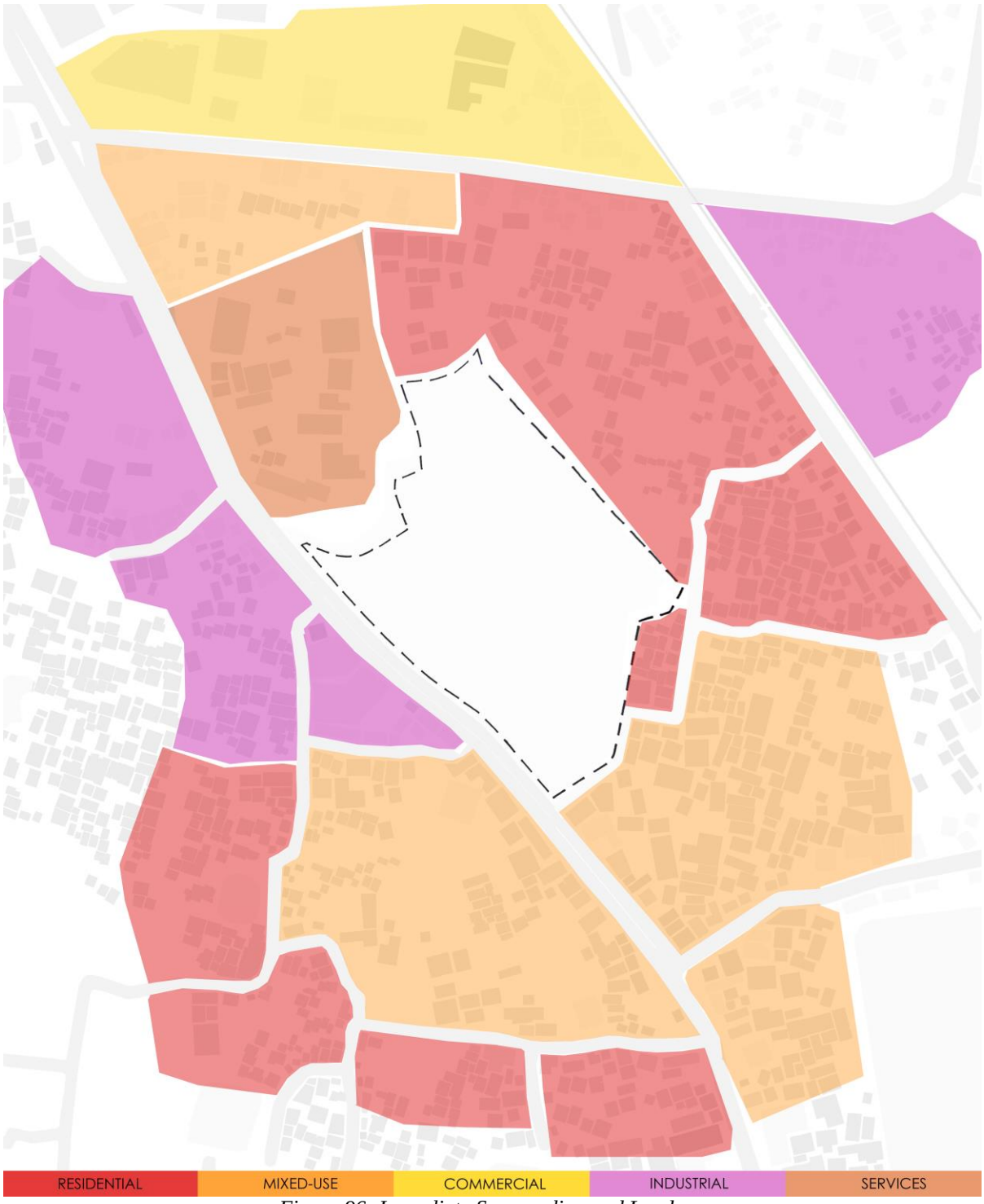


Figure 96: Immediate Surrounding and Landuse.
Source: Author

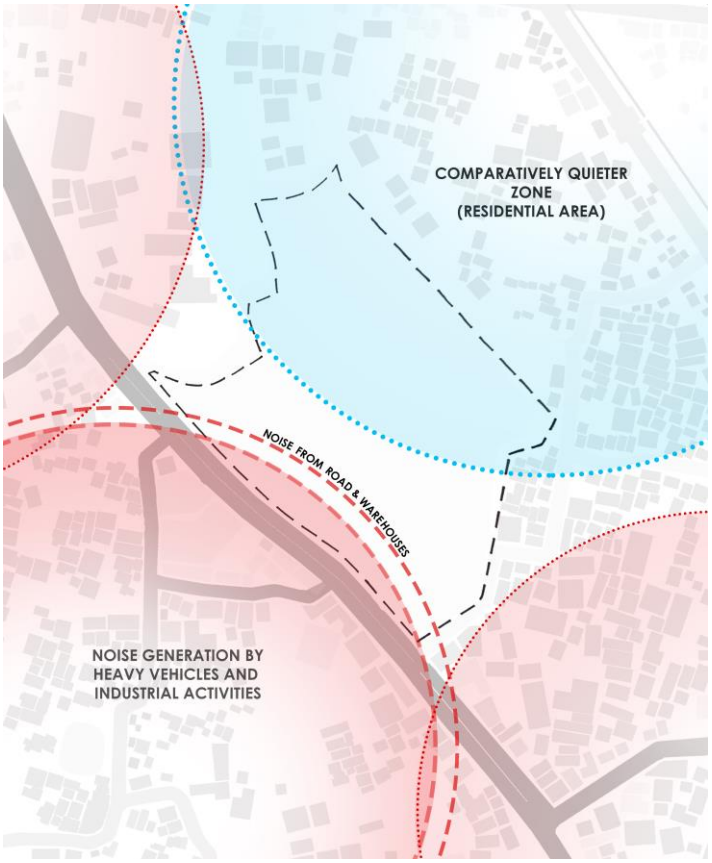


Figure 97: Noise generation in different points from the site.
Source: Author

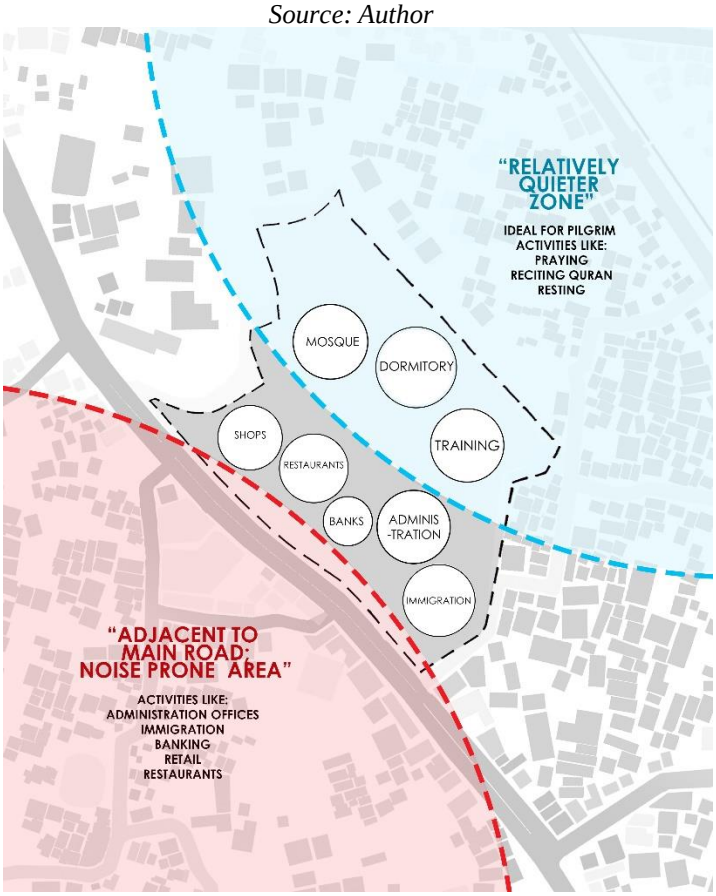


Figure 98: Initital Zoning.
Source: Author

6.2 Concept Development Phase

Understanding the nature of the project i.e. the functions serving the pilgrims are only active during the Hajj season which only extends to a month every year whereas there are no activities all year round.

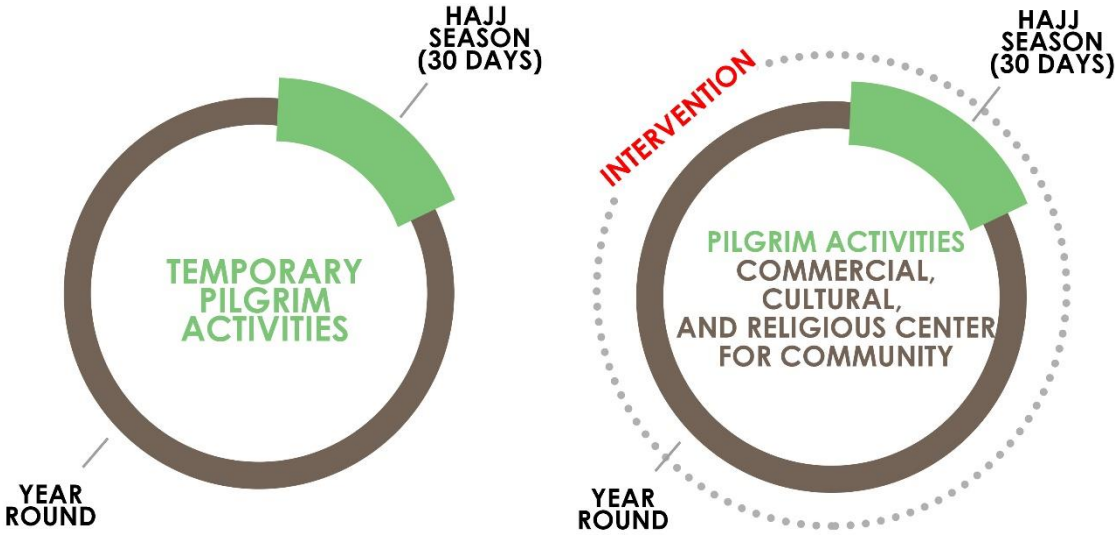


Figure 99: Nature of the Project and Concept Intervention
Source: Author

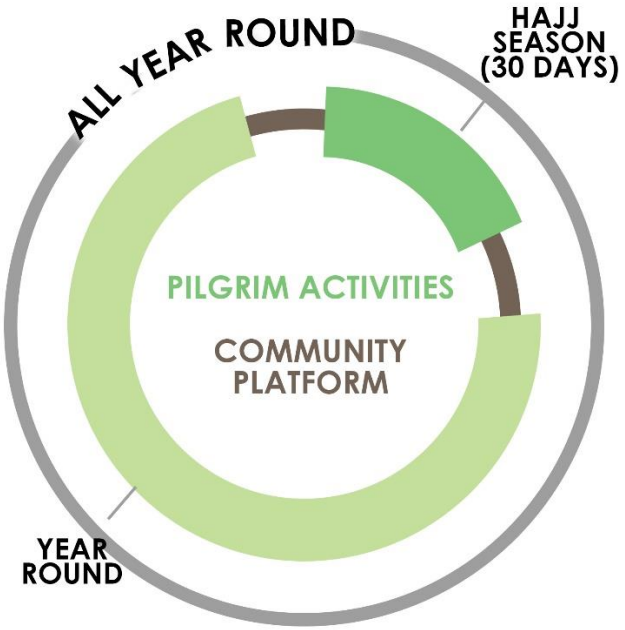


Figure 100: Concept Development
Source: Author

6.3 Design Intervention Phase I

The challenge was to come up with a solution for avoiding the issue of year round abandonment of the complex. Even though temporarily used, it welcomes a huge number of people to the site which creates different obstructive challenges for the surrounding community. It is necessary to create a balance for the locals to cope with the drastic changes occurring to the site. Also year round abandonment might lead to deterioration of the Camp buildings. To avoid such problems, an intervention; to bring in the surrounding community within the complex to create a more lively and active public space. Further design development phases are solely based on infiltrating the community people within the intervention area.

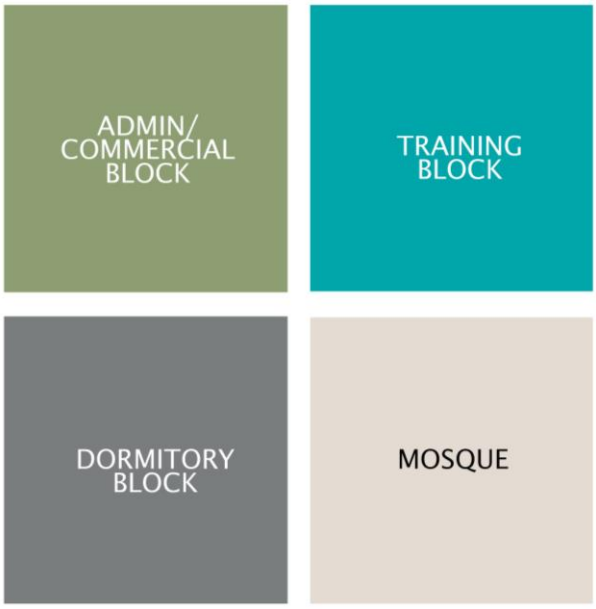


Figure 101: All programs compacted to four main blocks.
Source: Author

All the given and proposed programs were compiled to form four component blocks; Commercial, Mosque, Training and Dormitory Block. Figure 102 below shows the programs that were assigned to each respective blocks.

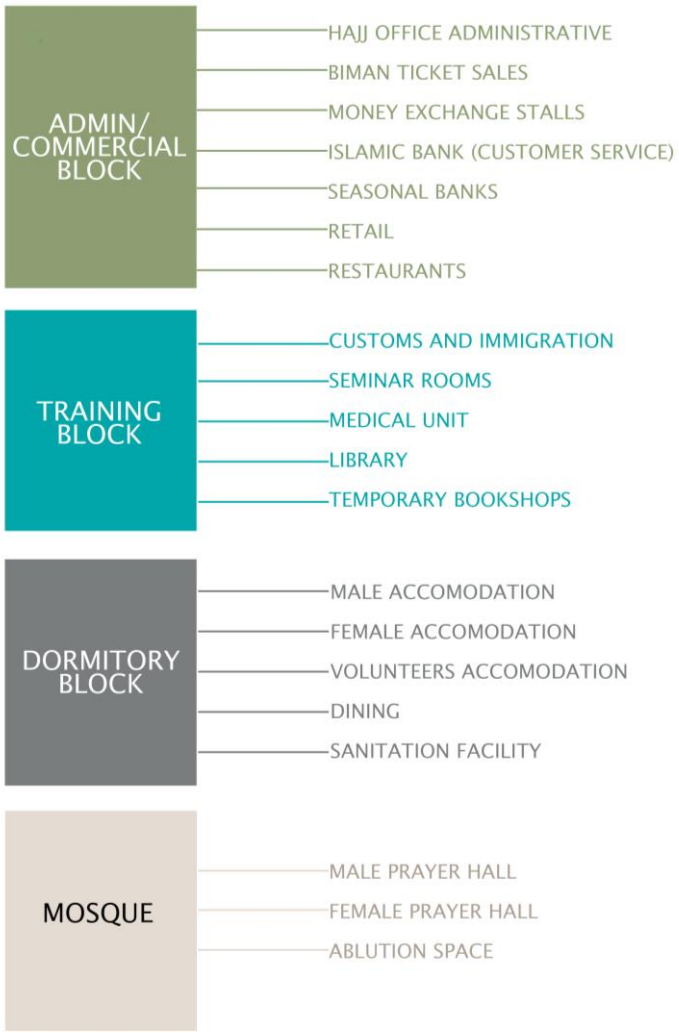


Figure 102: Program Datum.
Source: Author

6.4 Design Intervention Phase II

In order to bring public to the site, all the surrounding pedestrian networks were observed and were brought into the site creating interlinking connections which contemplated potential gathering spaces for the public.

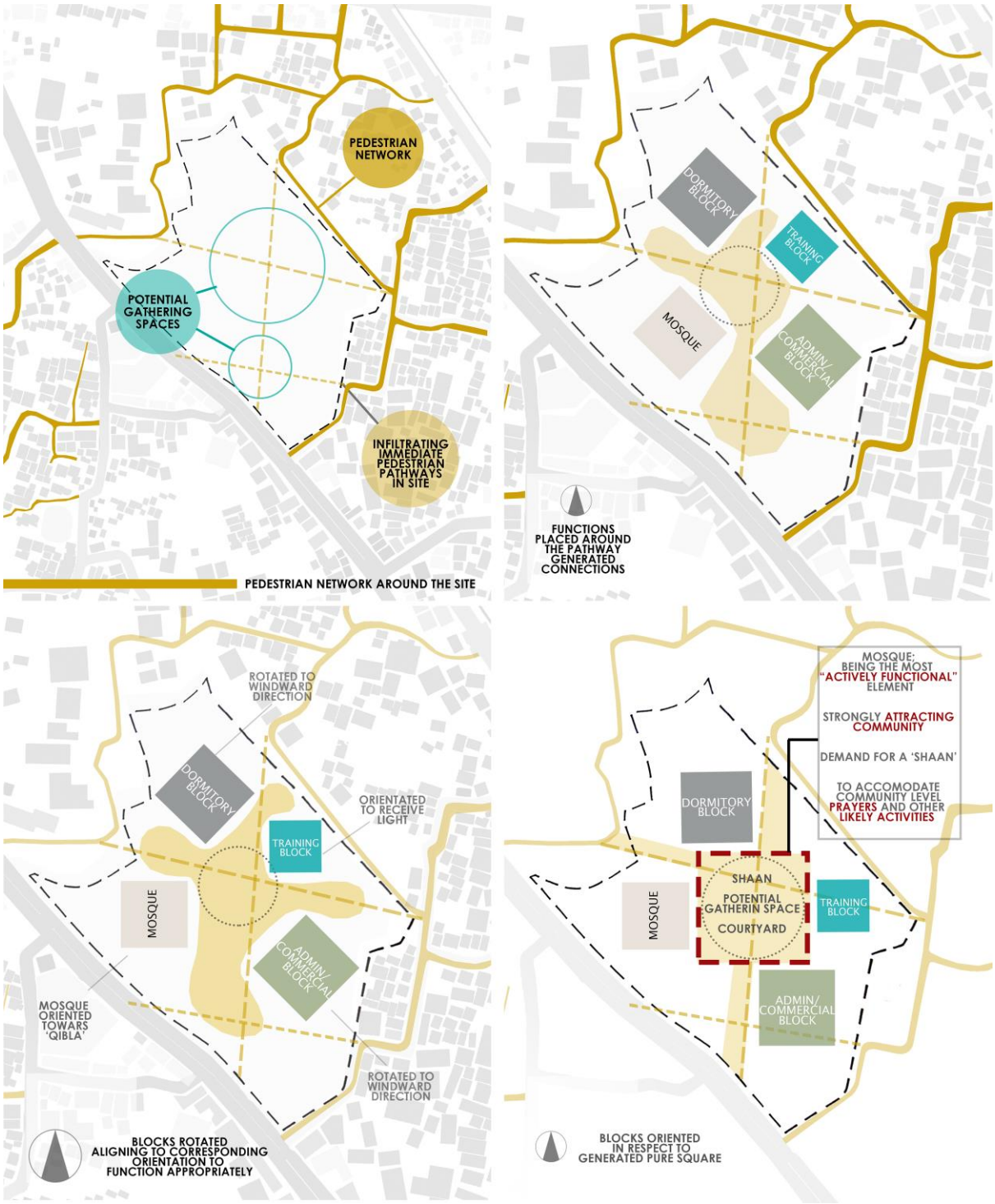


Figure 103: Pedestrian linking within the site and positioning of the component blocks around it.
Source: Author

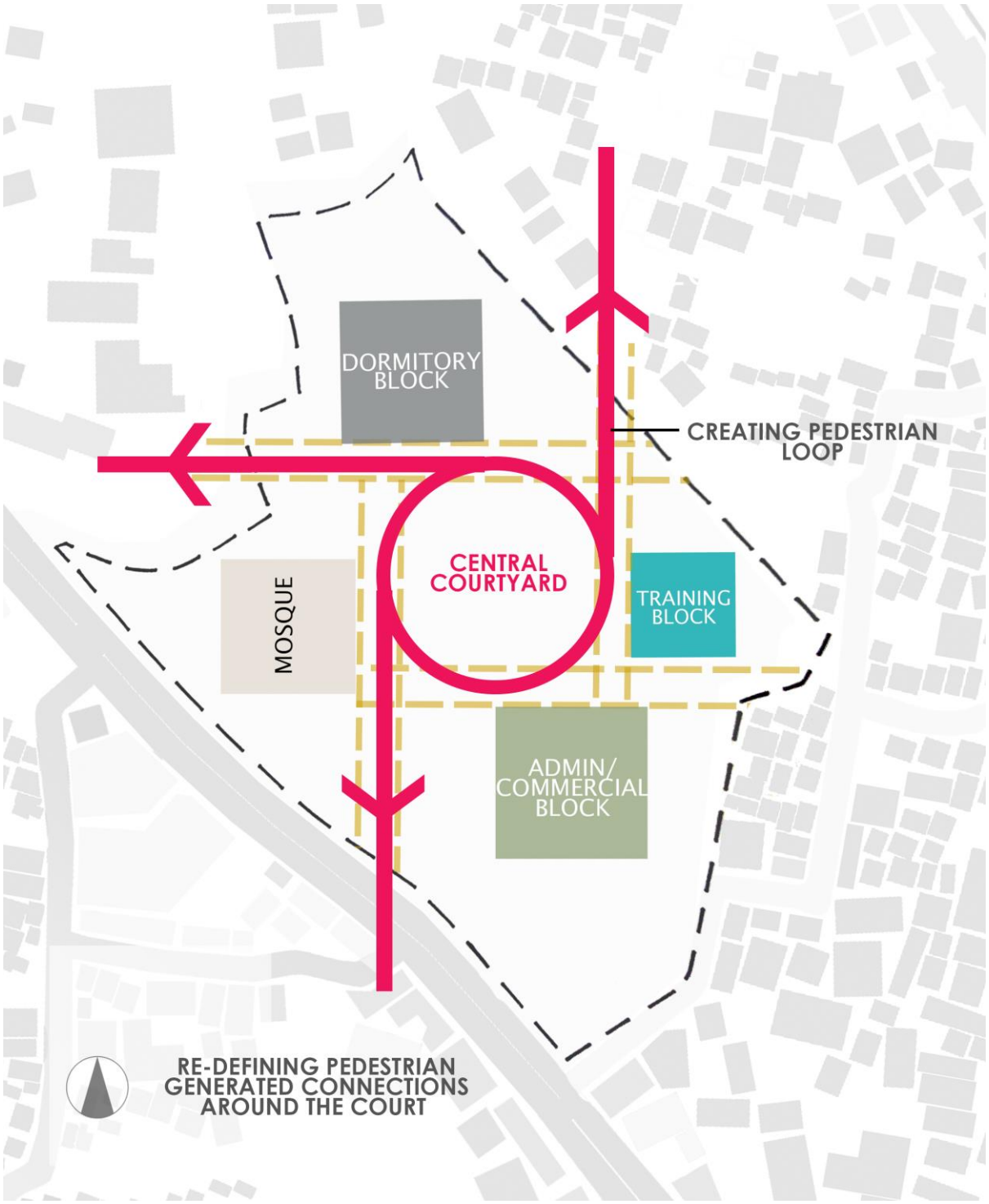


Figure 104: Conformed pedestrian loop and arrangement of component blocks
Source: Author

6.5 Form Generation and Development

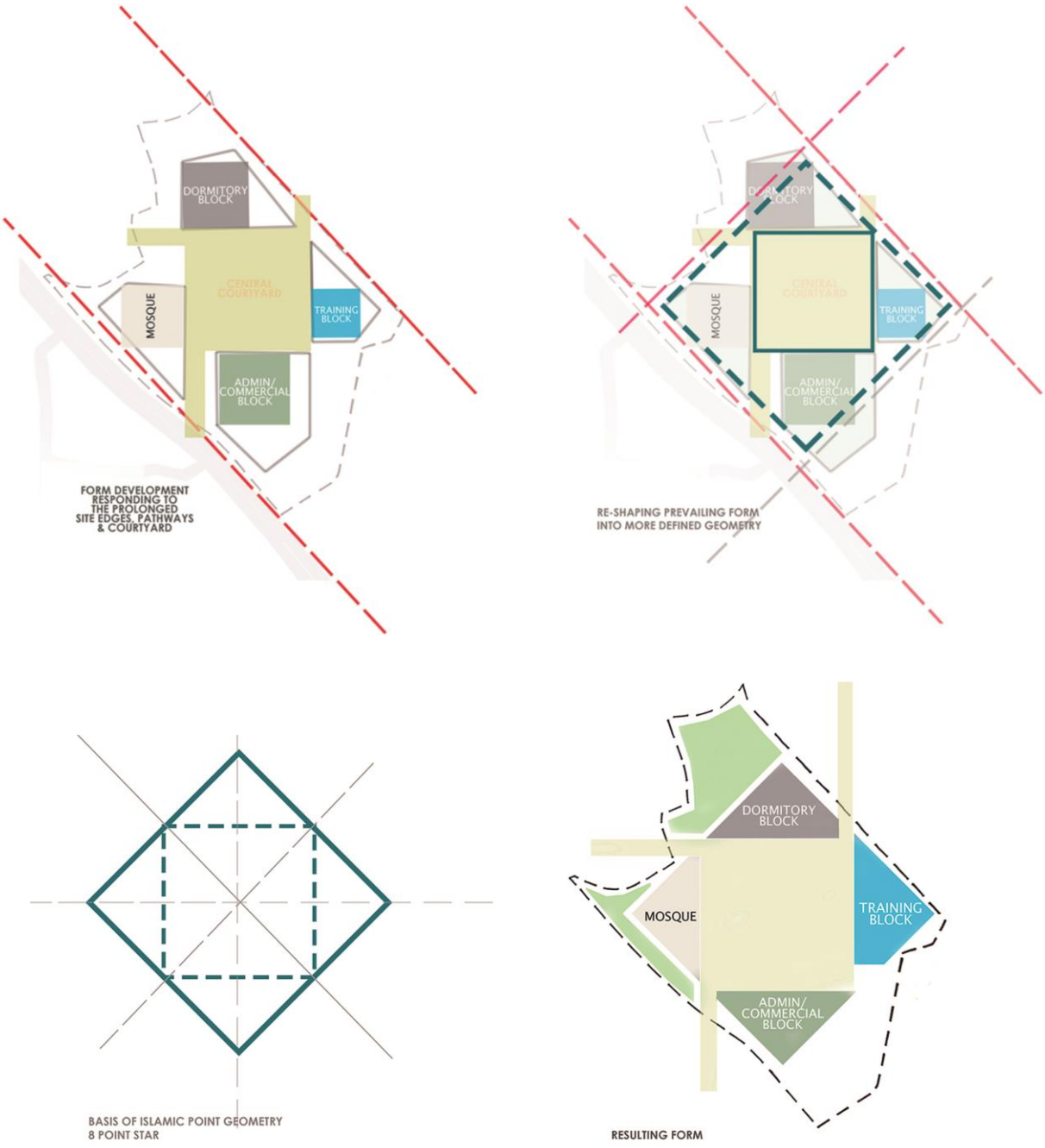


Figure 105: Form Generation.
Source: Author

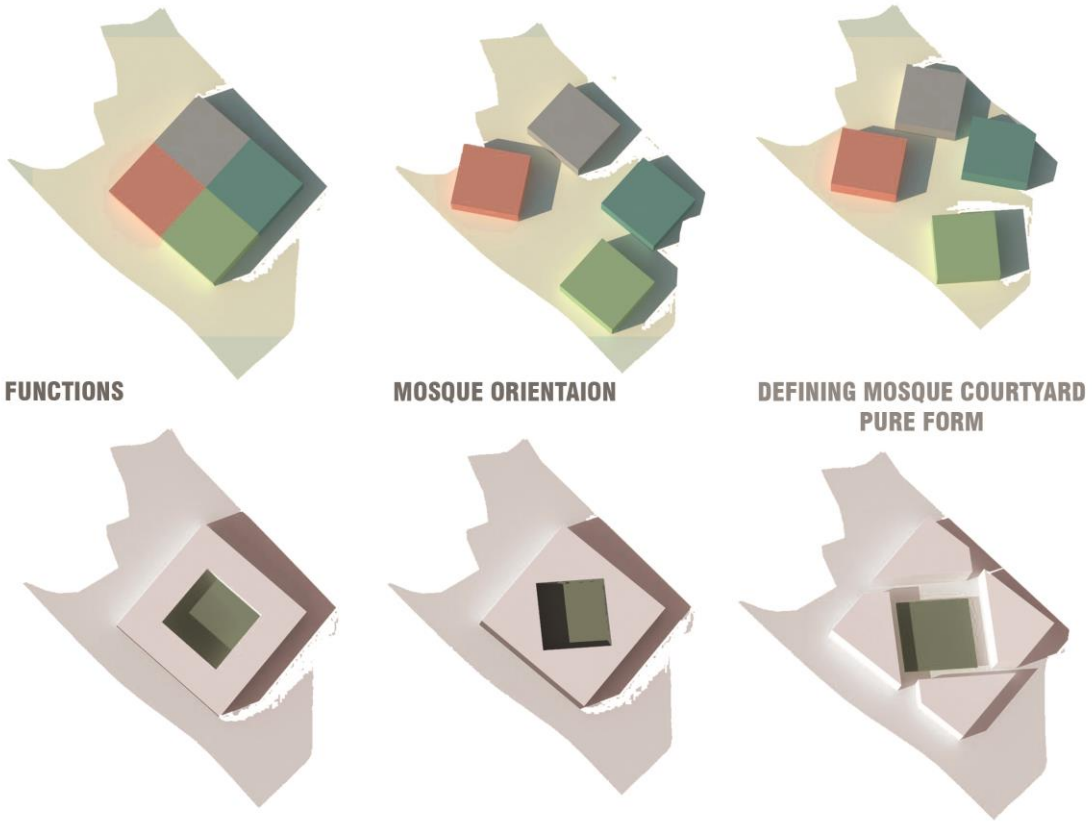


Figure 106: Form Development
Source: Author

6.6 Structural Interventions

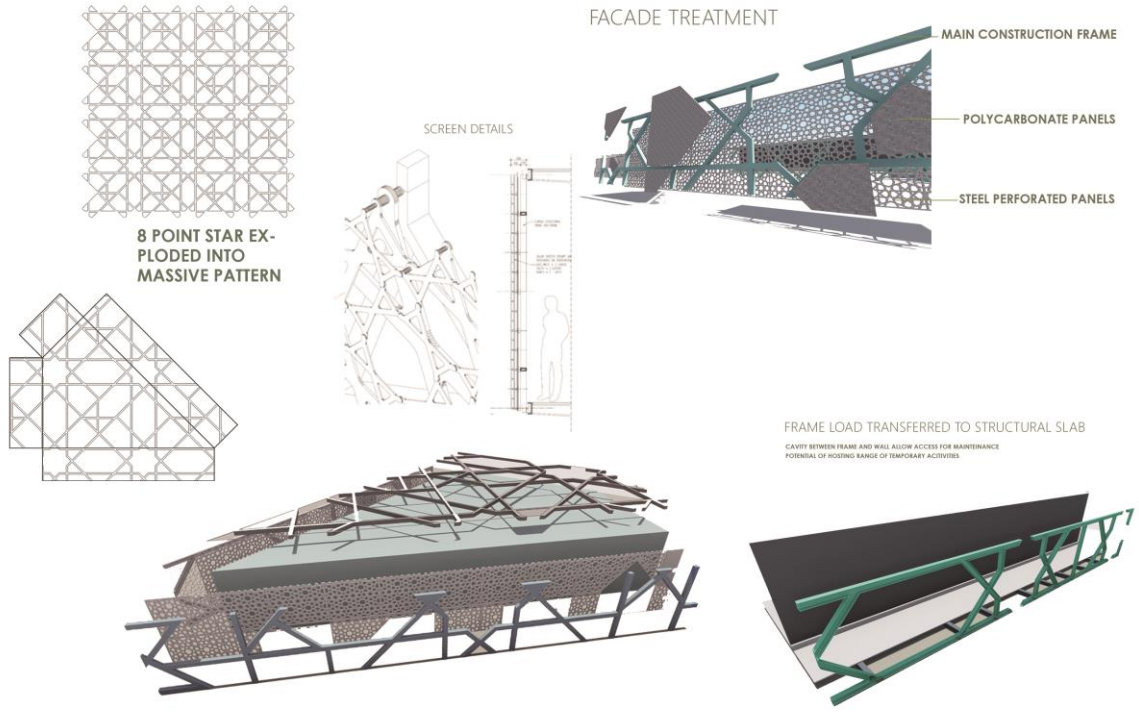


Figure 107: Structure Details.

6.7 Master Plan

Figure 108: Master Plan

6.8 Floor Plans

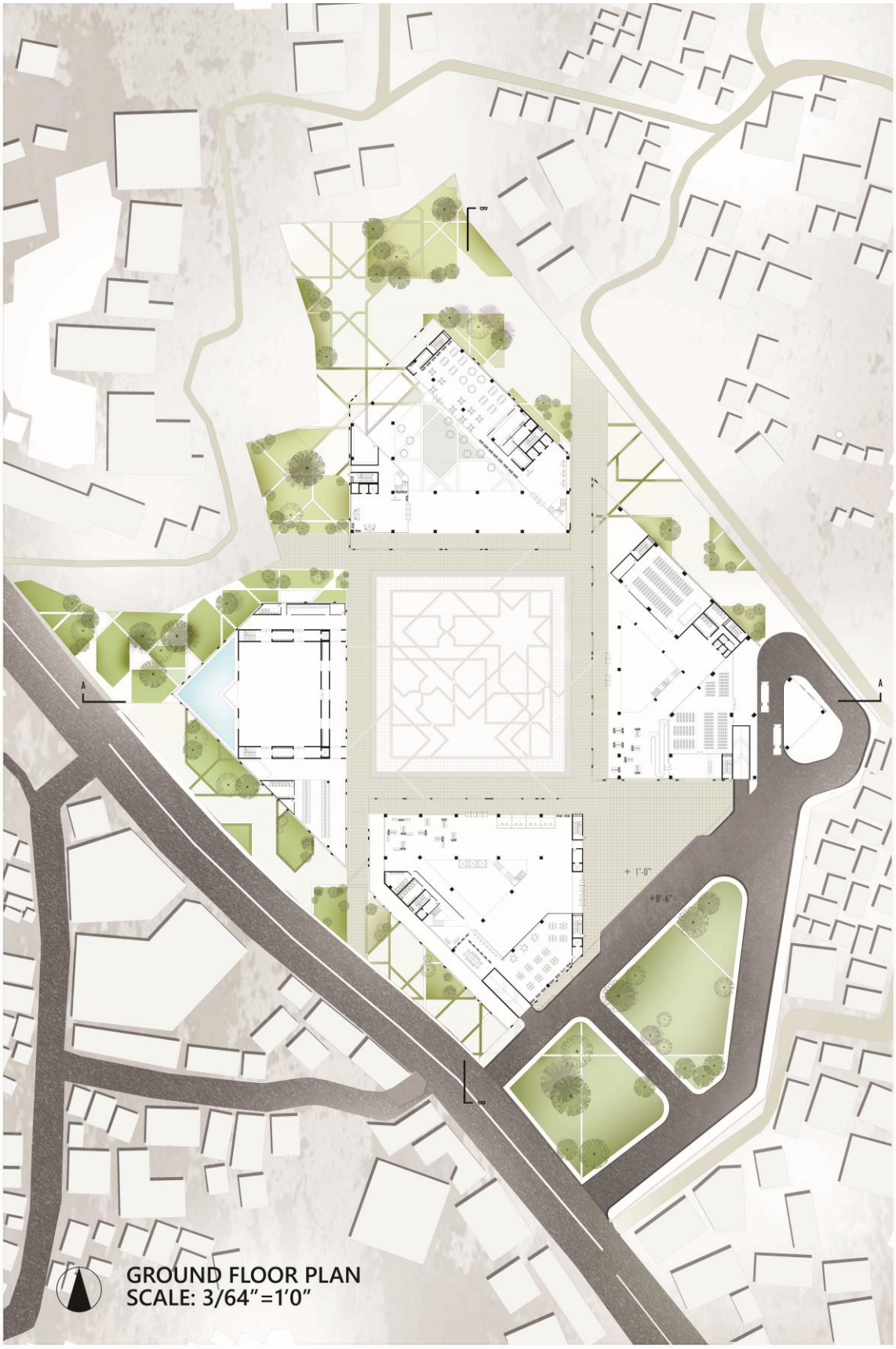
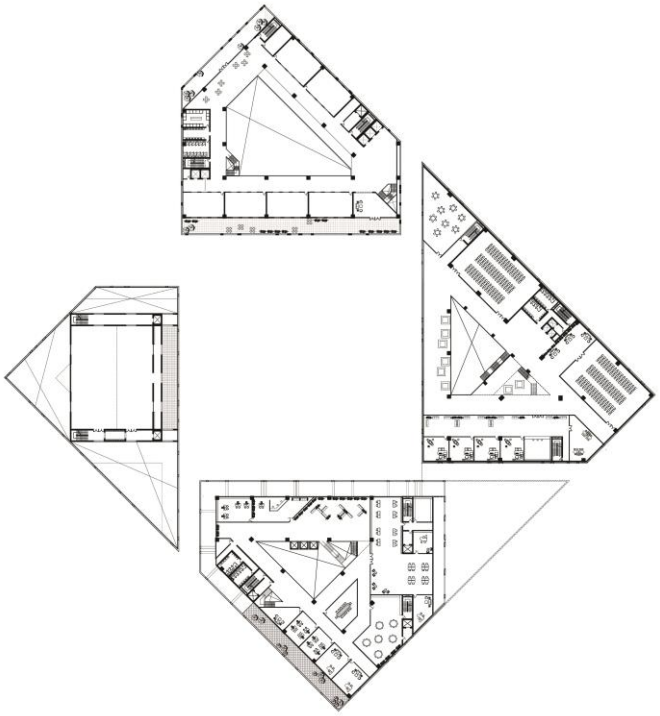
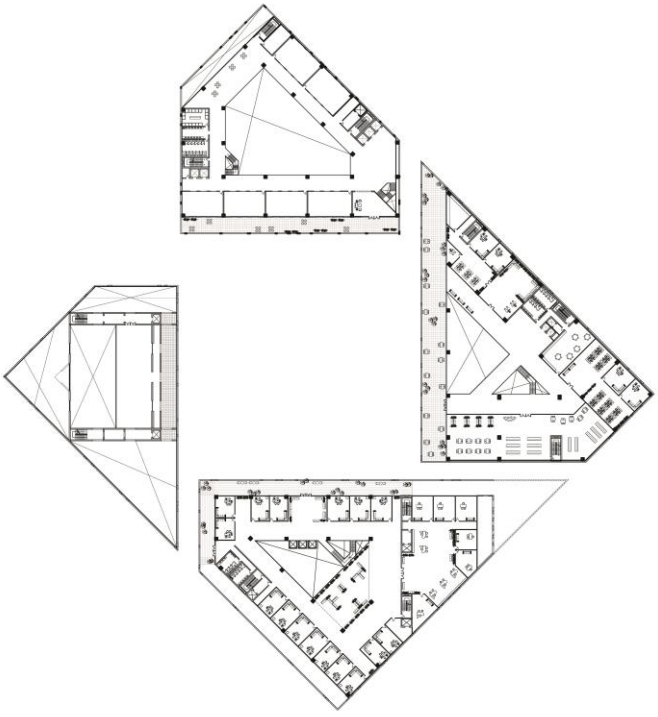


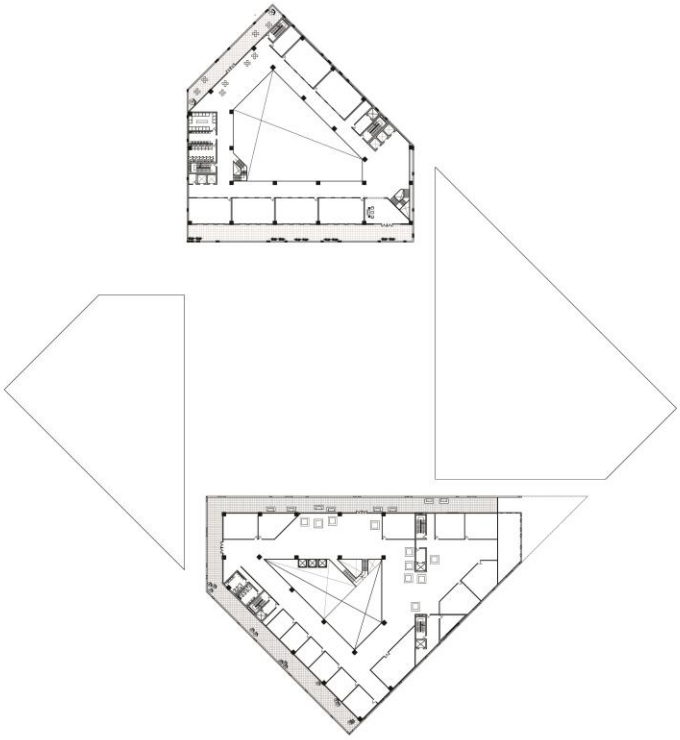
Figure 109: Ground Floor Plan



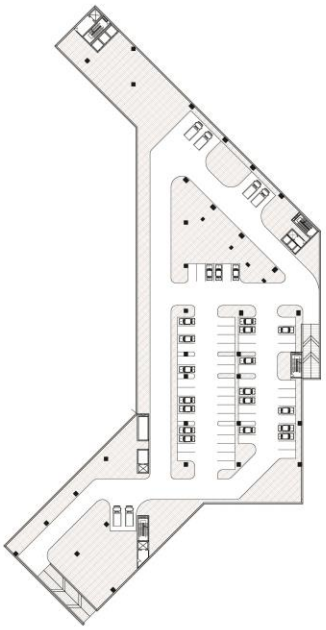
FIRST FLOOR PLAN
SCALE: 1/32″= 1′-0″



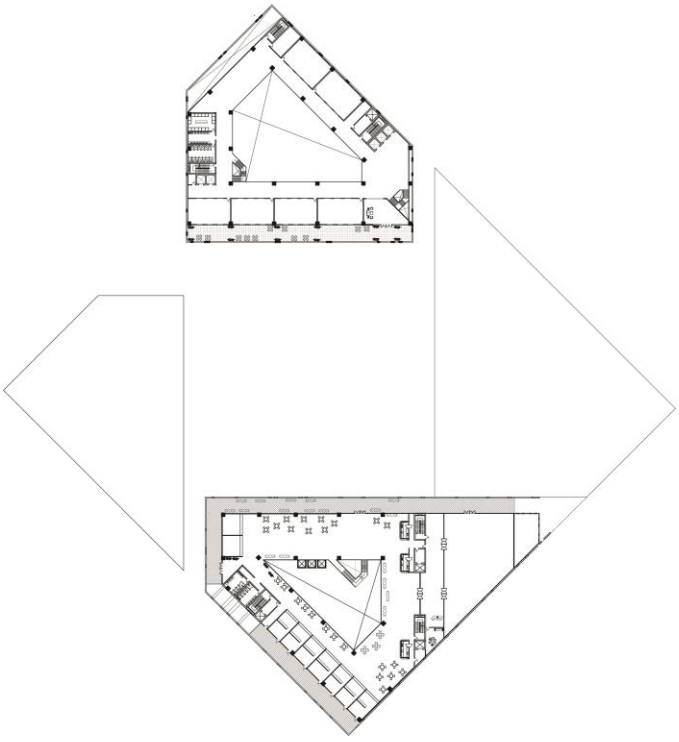
SECOND FLOOR PLAN
SCALE: 1/32″= 1′-0″



THIRD FLOOR PLAN
SCALE: 1/32″= 1′-0″

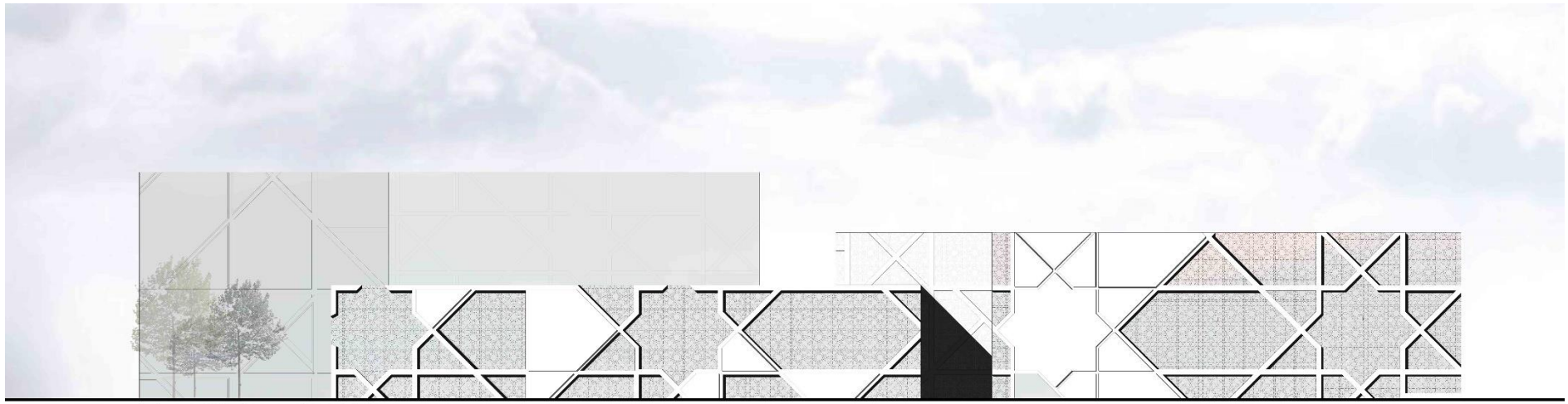


BASEMENT PLAN
SCALE: 1/32″= 1′-0″

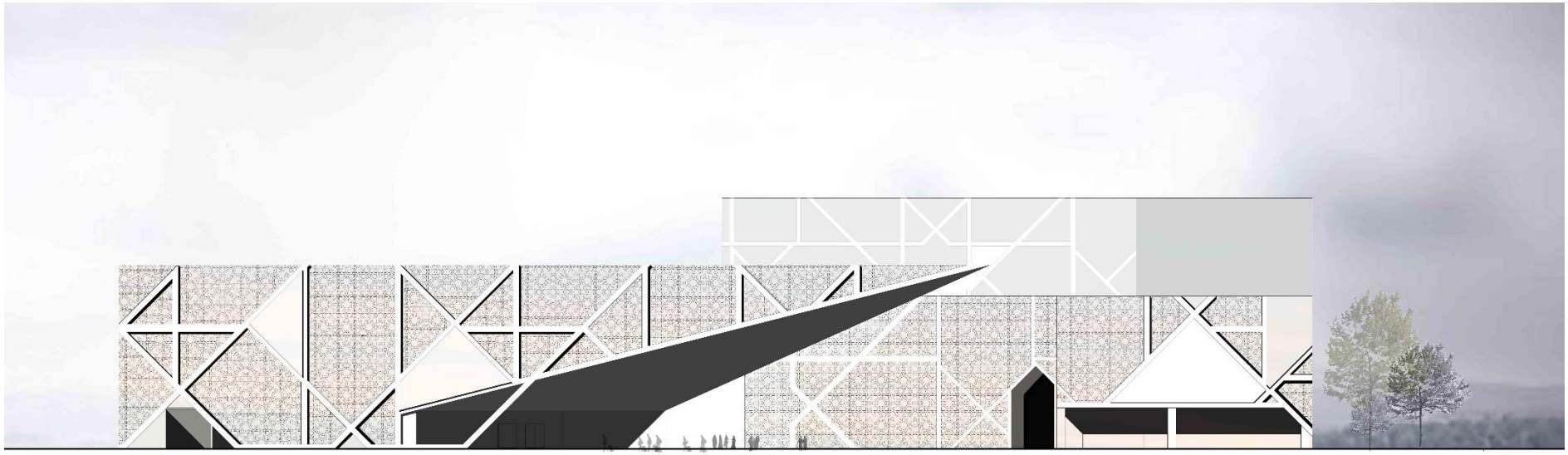


FOURTH FLOOR PLAN
SCALE: 1/32″= 1′-0″

6.9 Sections and Elevations



SOUTH WEST ELEVATION



SOUTH EAST ELEVATION

6.10 Perspectives

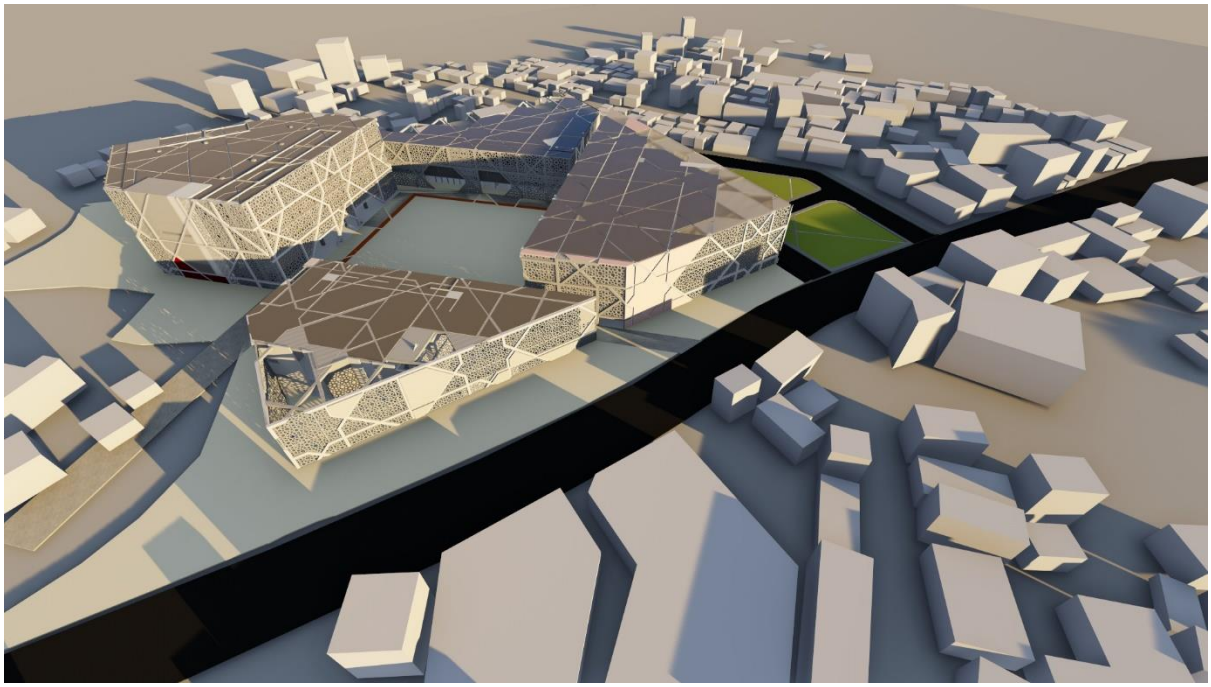


Figure 110: View of top from North corner.

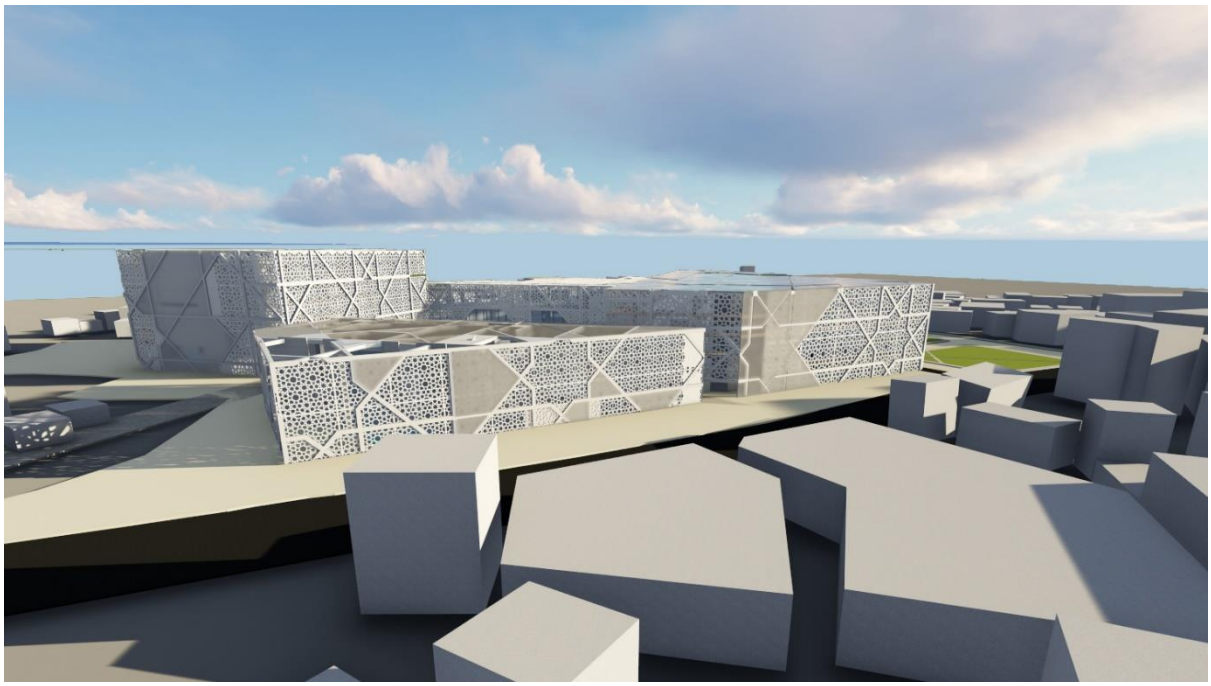


Figure 111: View from the Road.

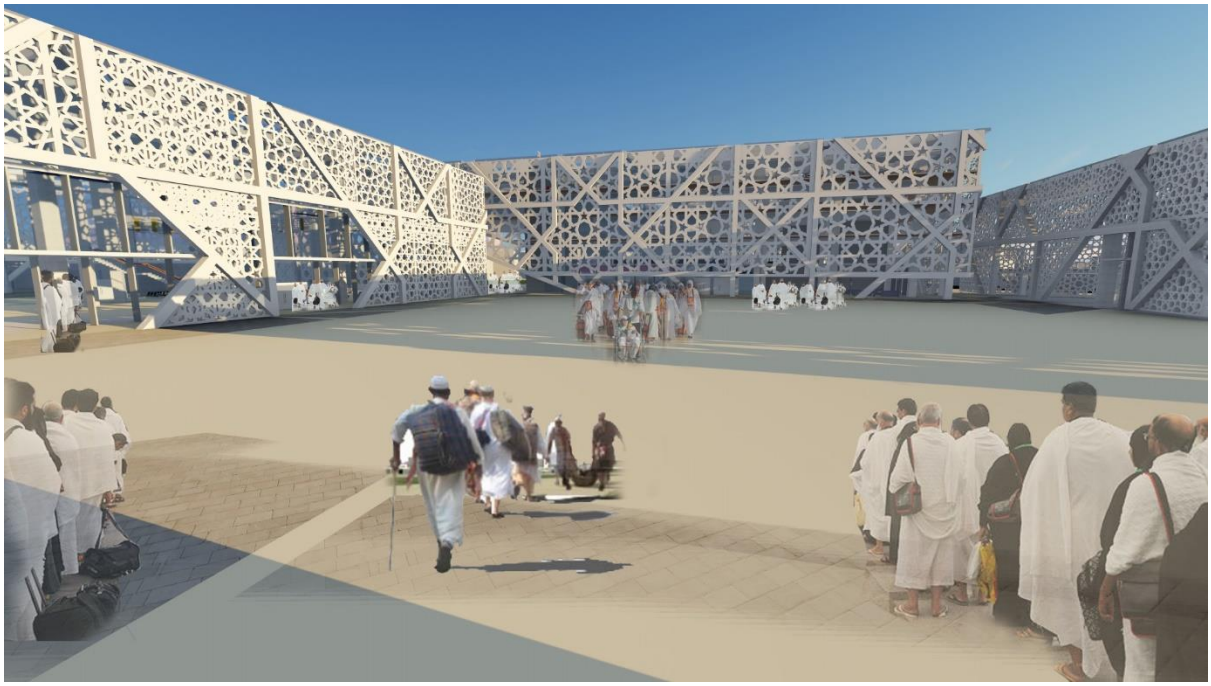


Figure 112: View of the courtyard from Dormitory Block.

Figure 113: Mosque Entrance Corridor.

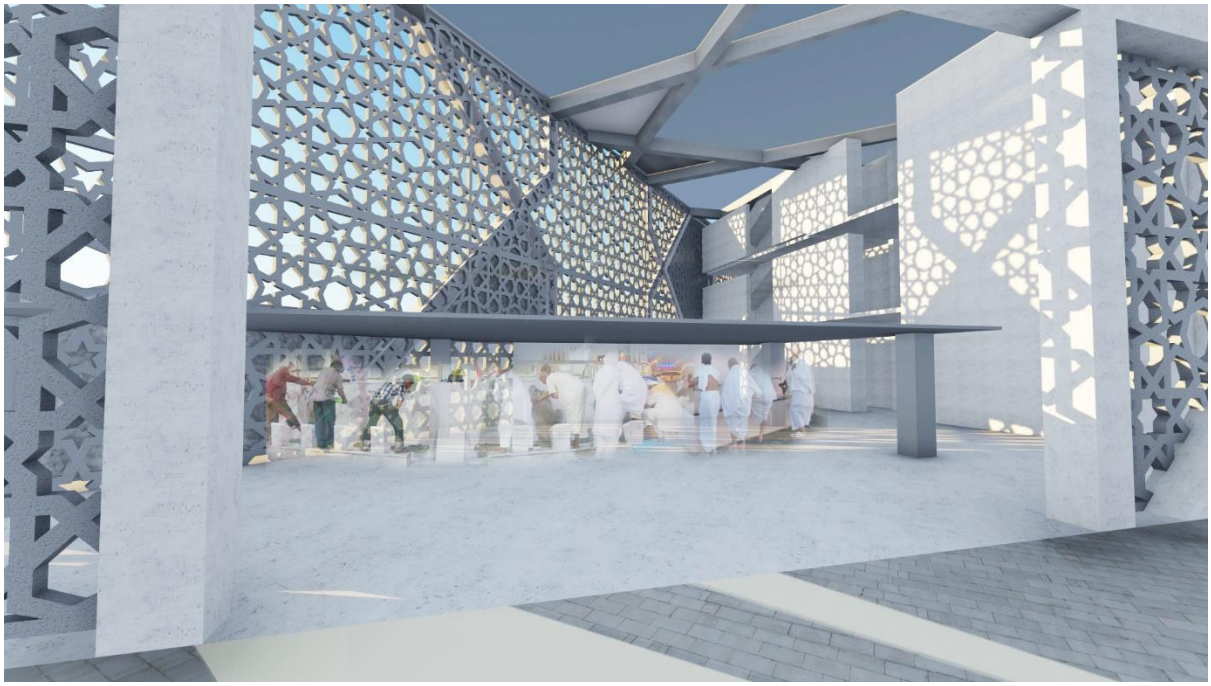
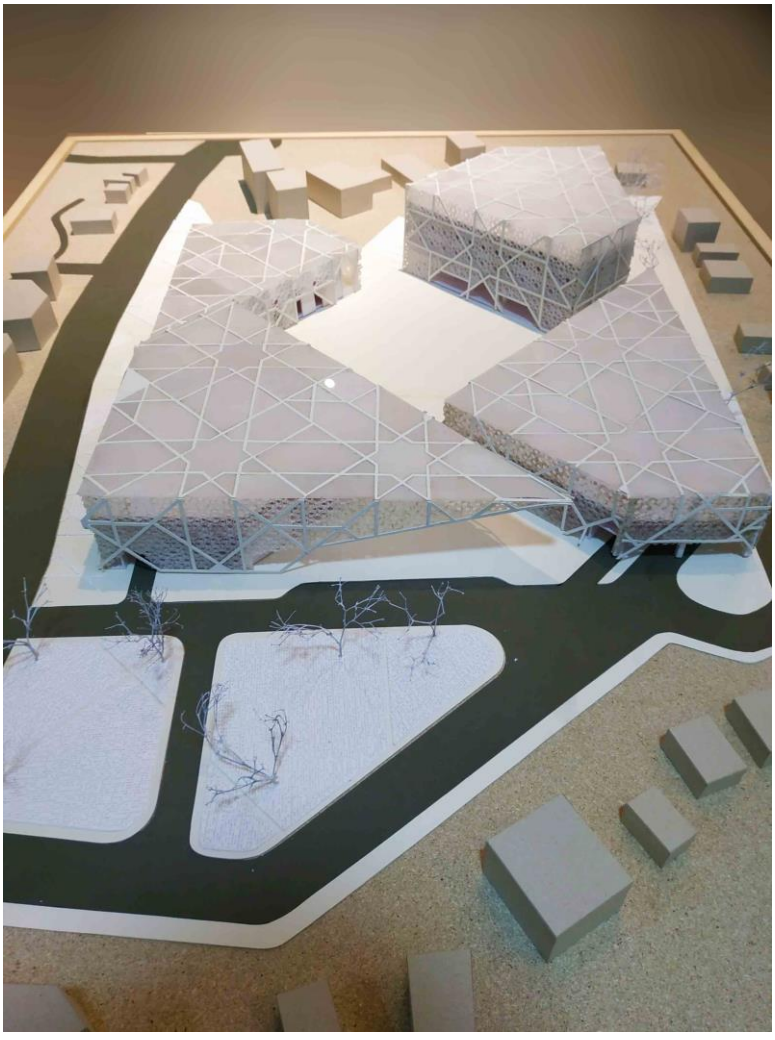
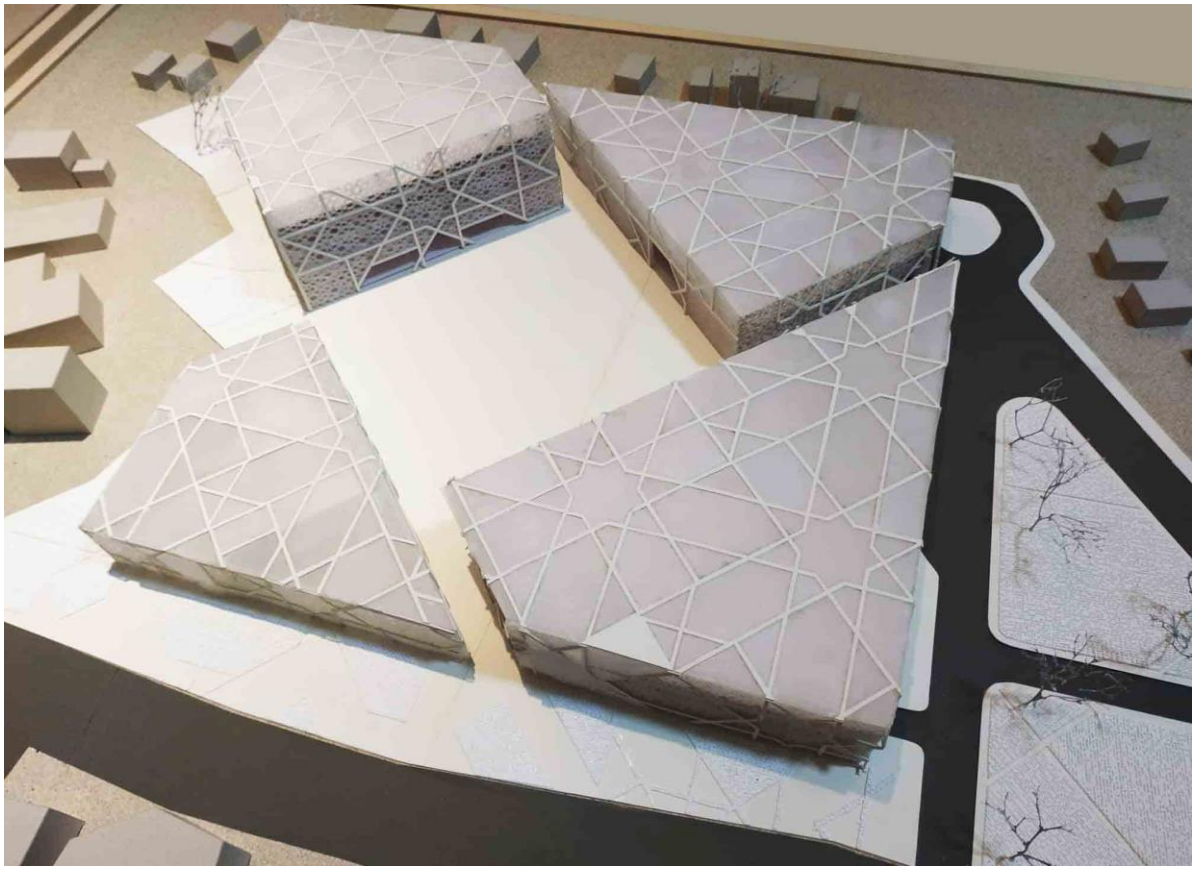
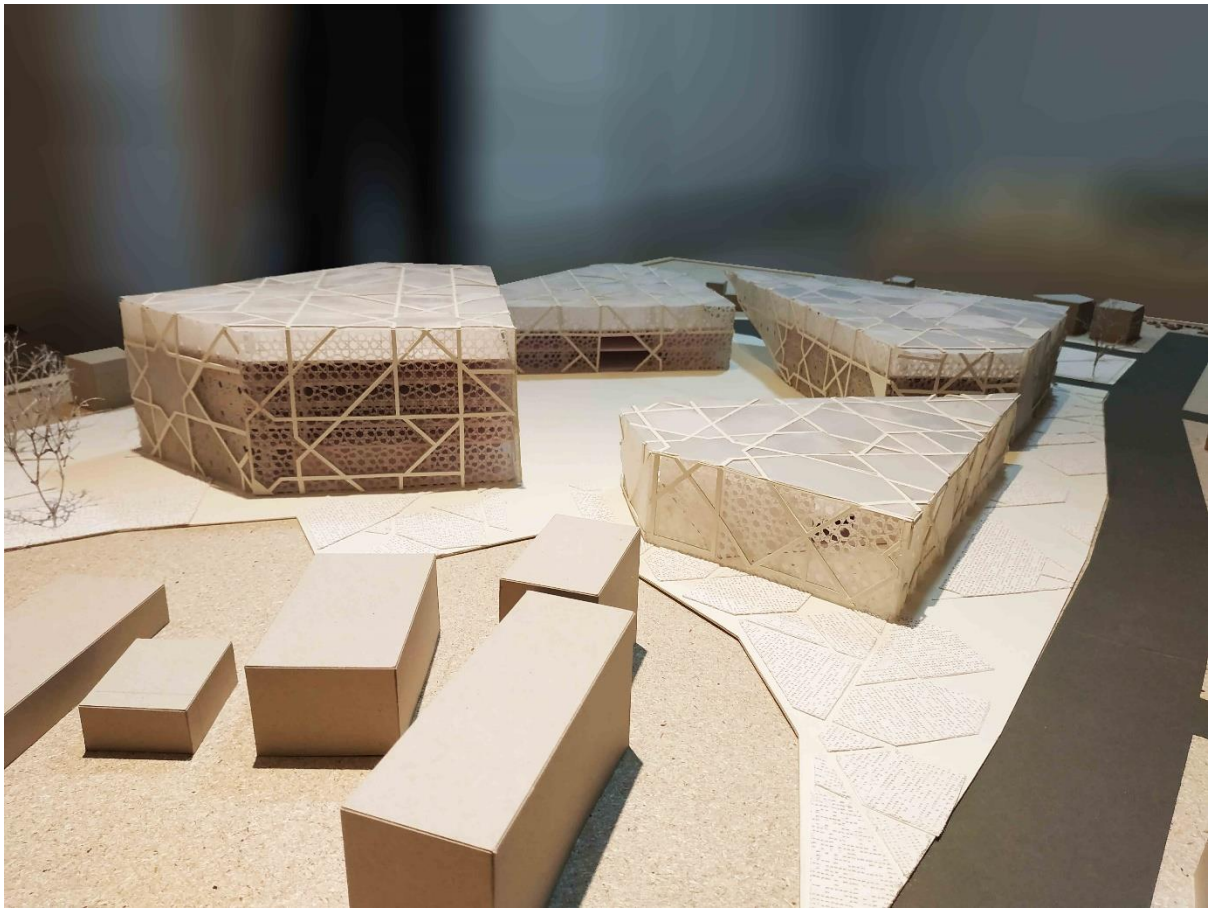


Figure 114: Mosque Ablution Area.

6.11 Model







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