Bangladesh Industrial and Technical Assistance Center, Barisal

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

Department of Architecture BRAC University

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DECLARATION

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APPROVAL

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ABSTRACT

The development of a country's next generation depends heavily on technical education. To deal with the rapid change in the modern world, the number of individuals with technical expertise must be raised. Therefore, technical training facilities can play a significant role in the development of new inventions and supply sufficient numbers of trainees to the relevant field. In the technological areas, the Bangladesh industrial technical help center has played a crucial role in innovation and product quality. This training institute has trained many individuals. To meet the demand for experts in a variety of disciplines in the country, different sorts of training are supplied to different types of people. Utilizing the maximum capacity of the project, the significance of technical assistance training and the upkeep of social duties can be insured at the specified location.

Keywords: innovations, professional, skill, development, technical training

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List of Acronyms

BITAC	Bangladesh Industrial Technical Assistance Centre
PITAC	Pakistan Industrial Technical Assistance Centre
IRDC	Industrial Research & Development Centre
PIPS	Pakistan Industrial Productivity Services

CHAPTER 1: INTRODUCTION

1.1 Introduction of the project

Bangladesh is an over populated country as well as she has so much opportunities. Population can be turned into asset from problem if they are trained well. In Bangladesh, a large number of people fails to acquire proper institutional education. Besides many children are to leave their primary education and get involved in money earning activities due to socio-economic condition of their families. They can have proper technical education from Bangladesh Industrial Technical Assistance Center (BITAC). It replaced Pakistan Industrial Technical Assistance Center (PITAC).

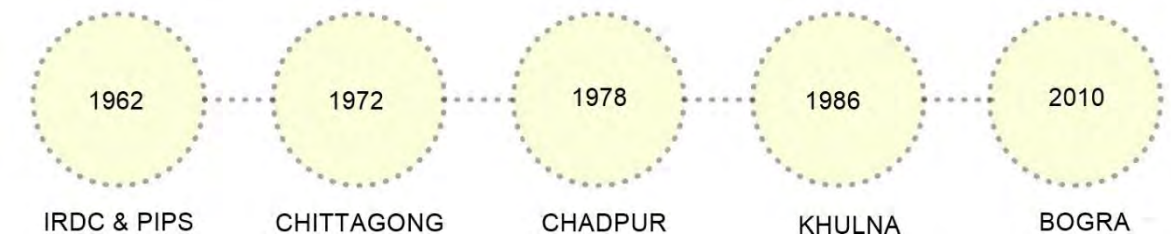


FIGURE 1.1.1 BITAC in Bangladesh, Source: BITAC Bangladesh

The primary objective of BITAC is to develop the Bangladeshi economy through products, processes, and skilled labor. There are currently five BITAC centers in Dhaka, Chittagong, Chandpur, Khulna, and Bogra. Through BITAC, the government provides the essential resources for hands-on technical training, such as food, accommodation, transportation allowance, and literature. In addition to technical training, BITAC is designed on the basis of need, with a strong focus on employment and a direct link to manufacturing demand and the self-employment program. Adaptation, motivation, and physical fitness in addition to the development of technical skills are covered in the package.

1.2 Aim and objective of the project

The objective of the project is to provide training to underprivileged individuals at the lowest possible cost. The regional institution will provide the necessary training facilities for learners to become the best technical skill human resource developers and industrial spares manufacturers in every way. It will also enable employees to assume greater responsibilities, resulting in job enrichment and job satisfaction, by implementing a variety of research and development projects to investigate new and innovative manufacturing techniques and spare part applications.

The aims of the project include: 1. enhancing the technical and light engineering workforce's skill set.

Promoting productivity awareness among the populace through supporting the formation of productivity associations in industrial centers and workplaces, etc.

3. To develop goods, processes, and tools, etc., to assist industries in enhancing quality, increasing production, lowering costs, and utilizing indigenous raw resources, and to expand the scope of indigenous manufacturing. Conduct productivity studies on the plants that can be identified and offer methods of improvement.

1.3 Project summary

Name of the Project: Bangladesh Industrial and Technical Assistance Center, Barisal Implementer of the Project: Ministry of Industries, Government of People's Republic of Bangladesh.

Location: Dhaka-Barisal highway, Barisal.

Site area available for the Project Development: 5.00 acres

Proposed built-up area of the Project: 120800 sft

Proposed Program of the Project: Security facilities 600 sft, driver & guard room 500 sft, Administrative facilities 17000 sft, training building 16000 sft, training workshop 27000 sft, hostel buildings 42000 sft, residential buildings 172000 sft.

CHAPTER 2: LITERATURE REVIEW

2.1 Technical education

2.1.1 Vocational education

Program and course are two elements of modern vocational education which teach important and valuable skills. Vocational education paves the direct path for higher educational students. Traditional higher education only prepares a student for the minimum requirements which are needed by the labor market values. But vocational education creates more skilled students to cope with new created techniques and advance topics.

2.1.2 Vocational technical education

It is possible to achieve sufficient education and training for a person without a bachelor degree by vocational technical education. This education is often referred a system but it doesn't have any uniform students, curriculum or accountability measures. In the beginning of 1900 vocational technical education was incorporated in many traditional secondary schools in United States but the system didn't remain connected with the school curriculum because of the various components of the act attached to the system. (Hayward, Gerald C.; Benson, Charles S., 1993)

2.2 Vocational education in Bangladesh

Developed and developing nations have undertaken the enormous and challenging challenge of reconstructing education and training frameworks to fulfill the development needs of an evolving environment. Frameworks for Technical and Vocational Education and Training (TVET) are required to create a new type of workforce that is competitive, exceeds expectations, and improves the economy of the nation. Currently, TVET is making the highest investment in human capital creation. Examining a nation's TVE framework reveals its level of technological advancement. A well-designed TVE framework, equipped to satisfy national demands while simultaneously being open to global needs, can cause a quantum leap forward and provide its people with a substantial edge over those of other nations. Educational program designers and educator coaches in Bangladesh, Bhutan, Cambodia, Laos, Myanmar, and Nepal, as well as Viet Nam, must employ ICT to enhance the board and delivery of Technical and Vocational Education and Training (TVET). (2016) (Md. Rashedul Huq Shamim* and Md. Abu Raihan).

This sector is multifaceted, serving more than 875270 pupils and involves multiple stakeholders (for example 15 types of providers). Participating institutions included polytechnic, technical school and college, glass and ceramic institutions. Agricultural Training Institute, Marine Technology, SSC Vocational (independent), HSC Vocational (independent), HSC Vocational (attached), Medical Technology, and HSC Business Management (BM). This subsector is expanding: the overall number of institutions was 1137 in 2000, 2314 in 2003, 5790 in 2015, and 5897 in 2016; the total number of students was 116055 in 2000, 188686 in 2003, and 875270 in 2016. 2020 (BANBEIS)

2.3 Bangladesh Industrial technical assistance center

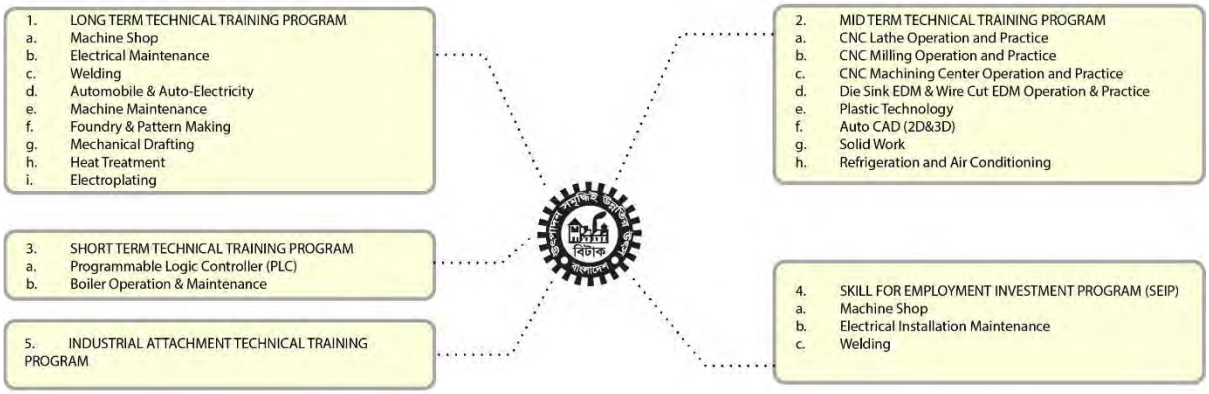
BITAC is an autonomous organization that reports to the Ministry of Industry. It was established in 1962 when the Industrial Research and Development Centre (IRDC) and Pakistan Industrial Productivity Services merged (PIPS). Originally referred to as PITAC. BITAC operates facilities in Dhaka, Chittagong, Chandpur, Khulna, and Bogra.

BITAC is involved in numerous initiatives. It will aid in the modernization of faculty skills in specific fields. It will spawn primarily private sector businesses addressing mechanical efficiency concerns. In addition, it will disseminate current specialized knowledge to

contemporary personnel via courses, group discussions, exhibitions, productions, film screenings, etc., as well as provide consulting services to contemporary organizations and businesses, mostly in the private sector. One of the primary objectives is to collaborate with global and national associations and organizations in exercises to improve mechanical efficiency and advance specialized expertise so that industries can embrace such measures, make such strides, and do everything possible to foster welcoming relations between the inside and individuals inspired by the center's goals.

Consequently, to affirm the interior's recognition in Bangladesh and other distant nations. Regarding the revamping program, and in an effort to make it more effective, the BITAC will: Assist in the design and development of dances and installations checks, form, pass, punches, instruments, and objects (prototype) for ventures and horticulture; Create procedures and devices, for instance, to assist enterprises in improving quality, increasing production, reducing costs, and utilizing indigenous raw materials, as well as expanding the extent of indigenous produce; Lead profitability considerations in such selected plants as may be resolved and recommend available resources for development. Therefore, to engage in all other legal activities 7 that the Department of the Interior deems indistinguishable from or conducive to the accomplishment of any of the center's stated objectives.

BITAC now provides five unique training programs (BITAC, 2020) *Source: BITAC Bangladesh.*



2.4 Instructional Facilities

The education and preparation requirements of an expert do not extend beyond their typical tutoring years. Today, continuing education is more important than ever for maintaining and updating one's skills, especially in light of innovations that touch virtually every field. While the majority of state licensing bodies and professional associations require continuing education credits for competent certification, individuals may seek educational opportunities for other personal and professional objectives.

Building qualities

A venue for professional training should provide engaging and effective learning resources that are safe, sound, pleasant, aesthetically pleasing, and easily accessible. It must be responsive to the actual space and hardware needs of the preparation program and academic environment. Support zones meant for adult needs, such as a business station that allows students to complete

certain business skills during their educational sessions, should also be neatly integrated into the workplace.

A. types of Regions

Any training facility offers a number of space styles to accommodate the needs of adult students, instructors, and staff. Examples include:

Classrooms

• Auditoriums: Large, multifunctional spaces designed for mass instruction and training. It is possible to put partitions in the area to create smaller work zones. Realize auditoriums on the first floor of the structure, close to main parking areas, to facilitate circulation and accessibility.

• Conference Rooms: multipurpose classrooms of medium size By rearranging the seats, these spaces may also be utilized for lectures. Generally, two or three area rooms are joined to create a much larger space by means of moveable walls that slide or fold into slots inside the walls.

• Seminar Rooms: Small, multipurpose training rooms that accommodate a limited number of individuals in close proximity.

• Audio/Visual Rooms: Rooms featuring audio/visual and web-based education capabilities.

• Computer instruction rooms: Rooms with computer workstations and Internet access for every student.

• Dry Laboratories: Predominantly media-based, for example physics and electronics. Equipping fixed workstations with under-desk monitors ensures proper sightlines for trainers and participants.

User Support Locations

Lockers, coat closets, or cubbies where trainees can temporarily store their stuff.

• A secluded room or library with study pods.

• Observation Rooms: locations adjacent to classrooms where instruction is simultaneously translated into a second language.

• Business Stations: This part is equipped with computers with Internet access, telephones, and fax machines so that trainees can quickly contact with their respective employers.

• Convenience stores, vending machines, and kiosks

• Book store

• Lobby: A central location where the building directory, timetables, and basic information are displayed.

• Common Place - An informal, multifunctional leisure and gathering space.

• Dining room or feeding trough

• Infirmary: an on-site medical facility with private workstations for medical personnel.

• Toilets

Administrative Support functions

• Administrative Offices: acoustically and/or visually secluded or semi-private.

• Trainer Offices: shared space and equipment including computers, phones, fax machines, desks, libraries, and supplies.

Areas for Operations and Maintenance

• General Storage: Used for stationery, equipment, and instructional materials.

• Room or location for food preparation

• Cabinets for computers and related technologies (IT).

• Storage Closets (Whole Building design Guide, 2020)

CHAPTER 3: SITE APPRAISAL

The relationship between the construction site and its overall state is known as site evaluation. It also includes the compatibility of the intended usage with its surroundings. This chapter will discuss the site and its potential in relation to the other site variables.

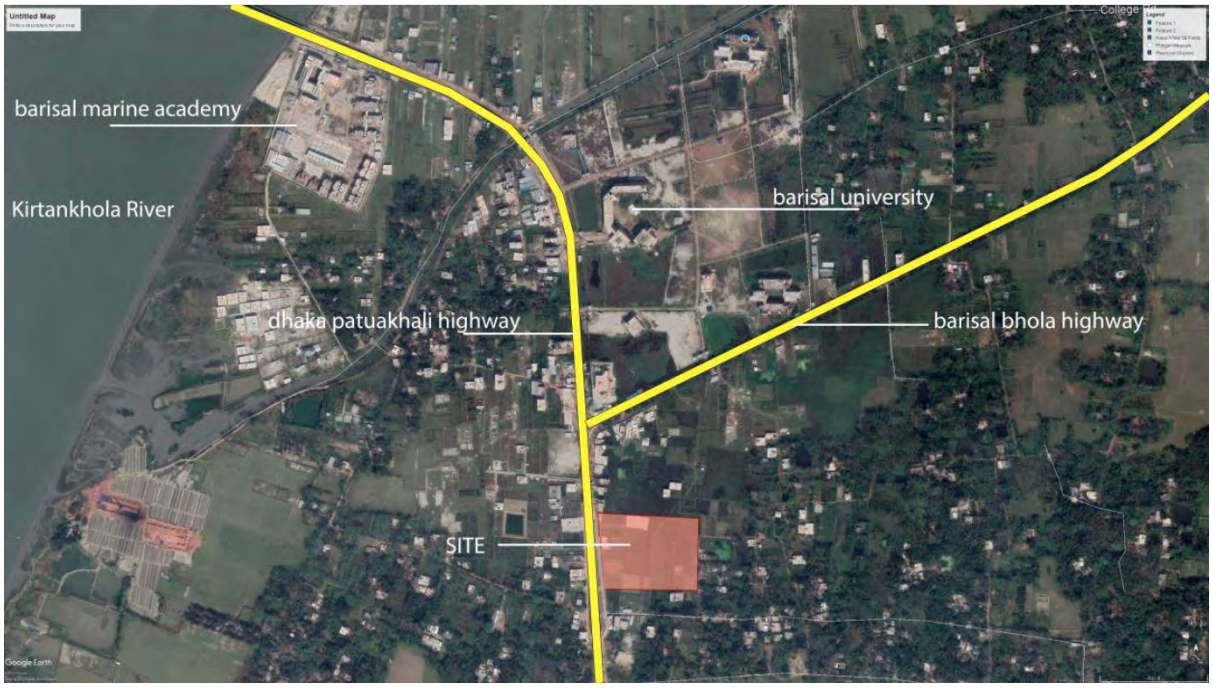
3.1 Site surroundings

Barisal District (BARISAL DIVISION) is located between 22°27' and 22°52' north latitudes and 90°01' and 90°43' east longitudes. It has an area of 2790.51 square kilometers. It is bordered by the districts of Madaripur, Shariatpur, and Chandpur to the north, Patuakhali, Barguna, and Jhalokathi to the south, Bhola and Lakshmipur to the east, and Jhalakathi, Pirojpur, and Gopalganj to the west. Muslim 2054754, Hindu 286642, Buddhist 13217, and Christian 531 out of a total of 823 individuals.

Figure 3.1.1: Location of the site in the context of Bangladesh

There are numerous notable bodies of water in the district. From them flow the MEGHNA, KIRTANKHOLA, TENTULIA, and other rivers. Bakerganj district was established in 1797 and has been called Barisal district since then. The division Barisal was founded on January 1, 1993. Barisal Paurasabha was founded in 1957 and transformed into a town corporation in the year 2000. The district is divided into ten upazilas, the largest of which is Hizla (515.36 square kilometers) and the smallest is Banaripara (134.86 sq km). (From Banglapedia, 2020)

Figure 3.1.2: The site's location in the context of Barisal.



The proposed project is located in Kornokathi, Barisal, Bangladesh near the University of Barisal and beside the Dhaka-Patuakhali high way. The project site lies within geographical coordinates 22°39'19.1"N 90°21'40.3"E.

3.2 Historical Development of the Site

The location is in a hamlet region that was not linked to the city until 2011. The Kirtonkhola River gives the community an ideal location for a future construction project. In addition, the Dhaka-Patuakhali and Barisal-Bhola motorways link the location to the urban core. In addition to the Barisal Marine Academy, SOS village, etc., the region has more institution plans after the 2012 establishment of Barisal University. By analyzing prior satellite photographs, it is possible to determine that the region was quite lush. The whole region served as a buffer zone for the metropolis. The region once supported the rural population, whose main source of income was the farming that took place here.

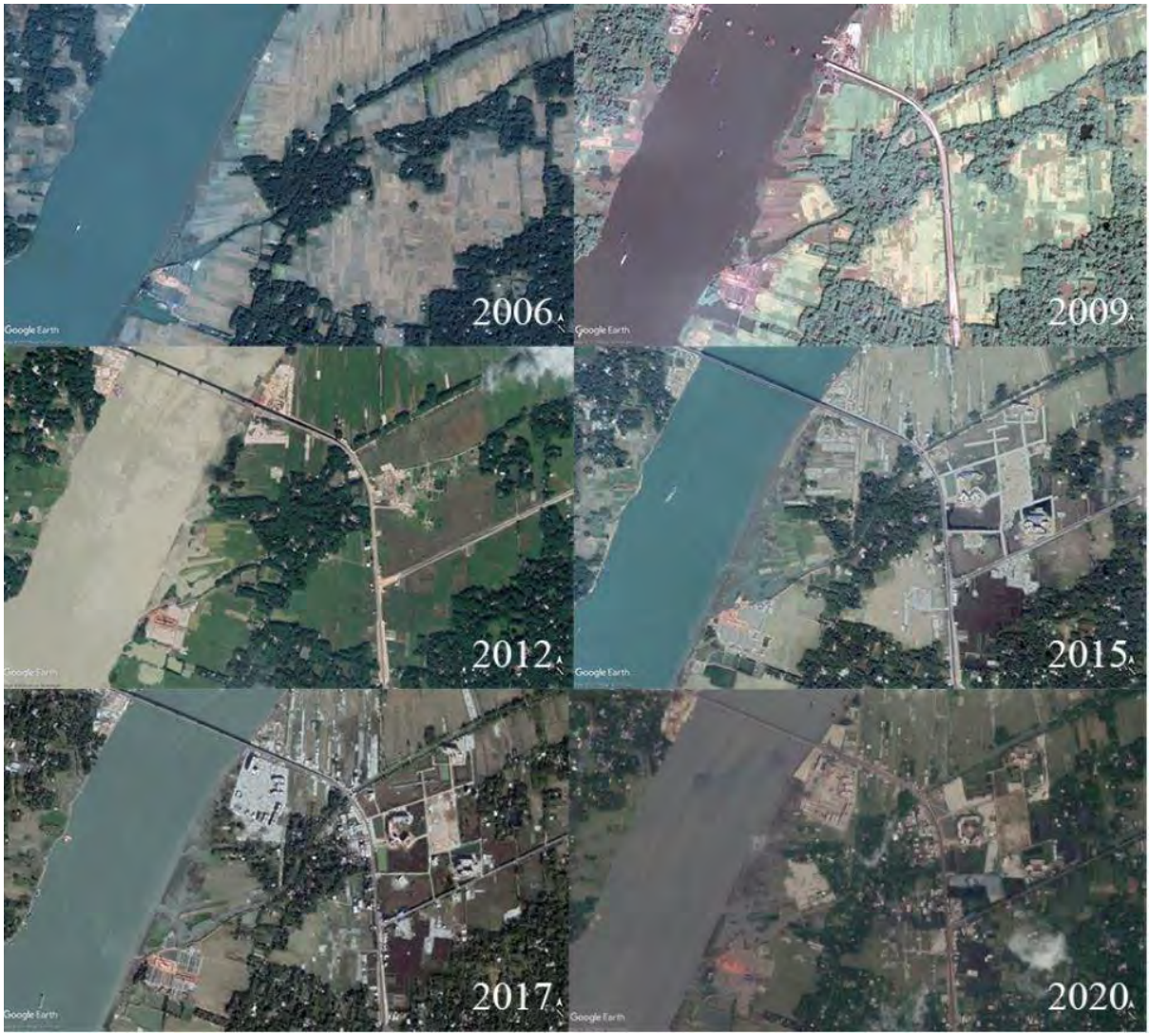


Figure 3.2.1: History of site surroundings

3.3 Geographical Characteristics of the Site

The project location is a 5 acre tract that is rather level. No adequate drainage system has been installed at the site. It is presently utilized for rice cultivation.

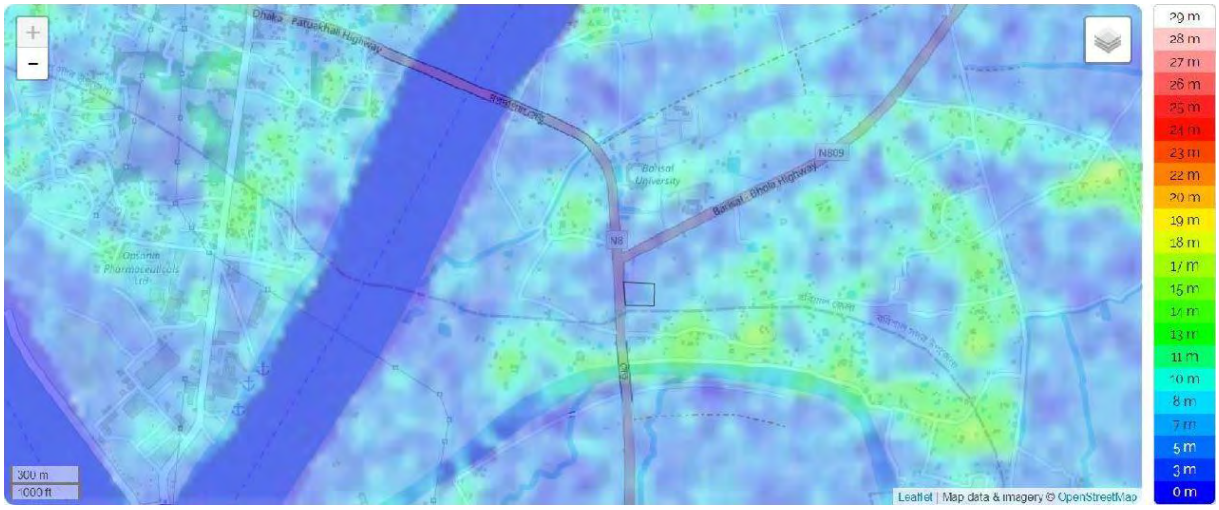


Figure 3.3.1: site Topography

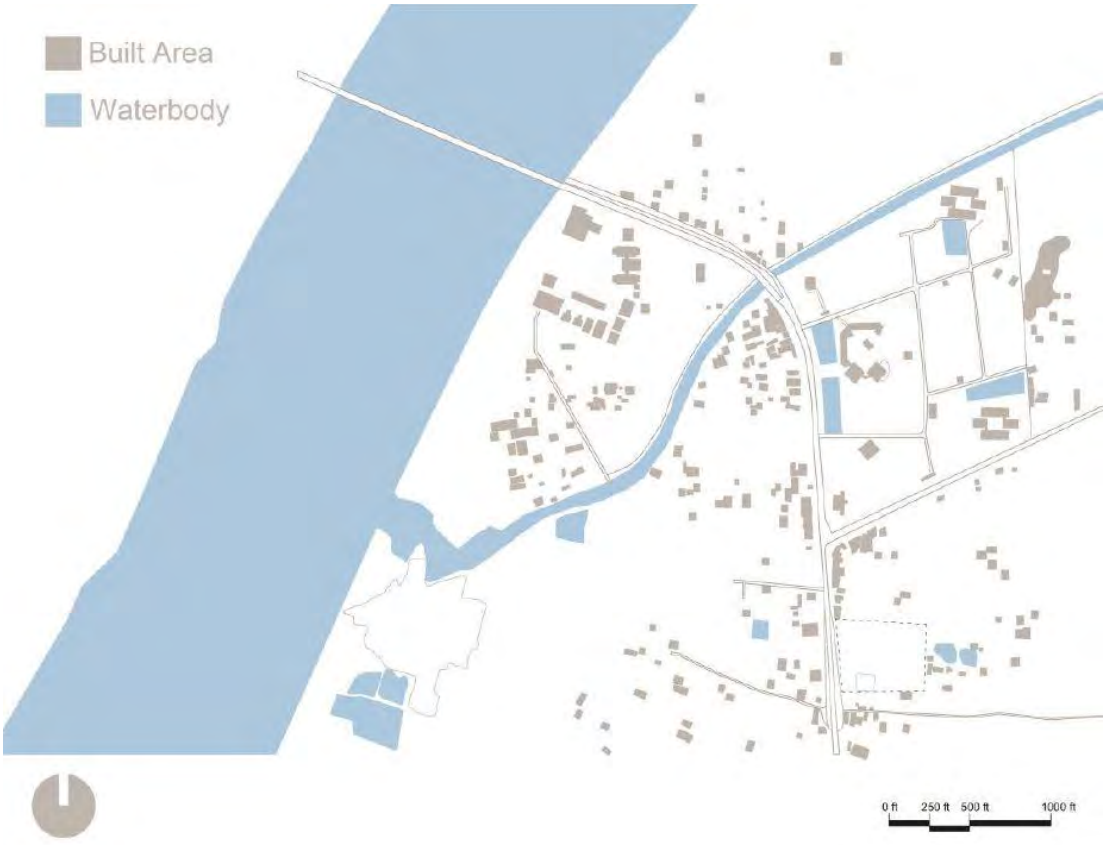


Figure 3.3.2: Figure Ground map of the site surrounding

Figure 3.3.3: Vegetation map

3.4 Land-use Pattern of the Surroundings

The region is densely populated with rural and commercial villages. The last decade has seen the construction of several educational institutions in this region, among which the Barisal University and marine institute are notable. Due to its location along a road, it has a large number of business buildings.

Figure 3.4.2: Land Use map of the site surroundings

Figure 3.3.4: Vegetation map

3.5 Accessibility and Connectivity

The location is next to a U-shaped road placed under a bridge. The route carries the majority of the area's traffic and links the north side to the market on the south side.

Figure 3.5.1: Road map of the site surroundings.

Road: The N8 national highway connects Barisal to the majority of Bangladesh's other regions. Barisal's two bus terminals are Nathullabad Central Bus terminal and Rupatali Bus terminal.

River port: Barisal river port is Bangladesh's second biggest river port. It is the most common mode of transportation between Barisal and the capital, Dhaka. It is also a common mode of transportation between districts such as Bhola, Barguna, and Lakshmipur.

Air: The airport in Barisal is a domestic airport. This airport is used by Biman Bangladesh Airlines, Novair, and US- Bangla. The active aviation route between Barisal and Dhaka is Barisal-Dhaka-Barisal.

3.6 Climatic Conditions

According to the weather data for Barisal, the average lowest daily temperature in January is 12.6°C, while the maximum is 25.7°C in May.

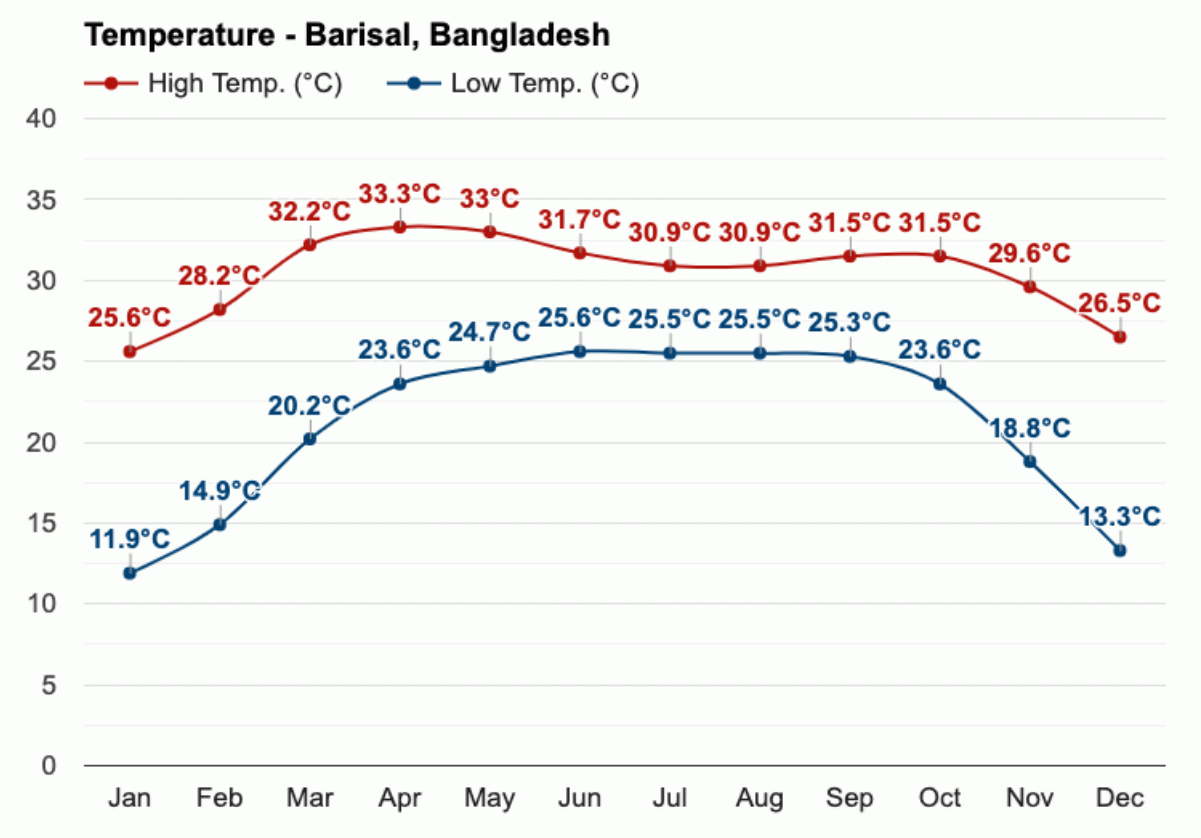


Figure 3.6.1: An overview of temperature in Barisal

(Source: https://www.weather-atlas.com/en/bangladesh/barisal-climate)

January has the lowest average daily maximum temperature of around 25.8°C, while May has the highest at 35.4°C.

Annual precipitation aids in determining the climatic conditions of a region, which is essential from an architectural standpoint; it aids in building orientation, location, material selection, and other technical matters. The annual precipitation average in Barisal is roughly 2184 mm.

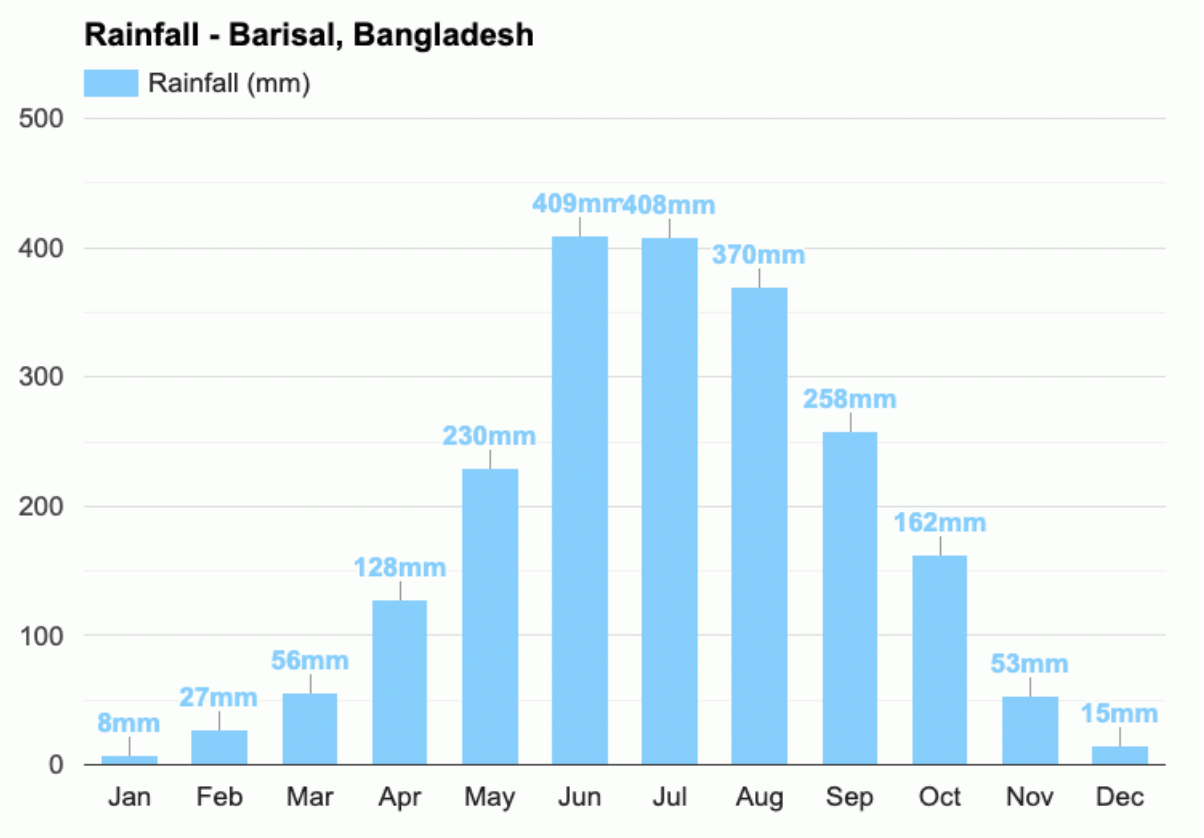


Figure 3.6.2: Illustration of annual rainfall series and graphical monthly rainfall

(Source: https://www.weather-atlas.com/en/bangladesh/barisal-climate)

The rate of precipitation has grown significantly in recent decades. During a given time of the year, the region has seen an upsurge in rainfall. Additionally, the total water level rises throughout this time.

3.7 Socio-Cultural and Economic Contexts

Kornokathi is now one of the most rapidly expanding cities in Barisal, as development projects are expanding toward Kirtonkhola River along the Barisal-Patuakhali interstate corridor. Under Barisal sadar, the city has an established social structure. It asserts that the museum, school, mosque, and church are societal necessities. As well as being used for farming and brushing, the region is also employed from a horticulture standpoint. Therefore, the land has economic importance.

3.8 Images of Existing Site Condition

Chapter 4: Case Study

The case study evaluation covers three distinct investigations from three distinct locations. Barisal Polytechnic Institute from Barisal, Bangladesh, is the first. This one fits the situation wonderfully, considering the location is likewise Barisal. The second institution is the Samundra Institute of Maritime Studies in Pune, India. This project employs a design strategy that is quite comparable to the project context in the case of many blocks and workshops. Therefore, the third one is the Gennevilliers Training Center in Gennevilliers, France.

4.1 Barisal polytechnic Institute, Barisal

In the late 1960s, the government of what was then East Pakistan intended to modernize and expand the technical education system. Five Polytechnic institutions are envisaged in five key regions to teach personnel in jute, cotton, gas, and other technologies. The plan was to construct modular structures on each of the locations. Muzharul Islam recruited his classmate from Yale, Stanley Tigerman of Chicago, to assist in the project. Together, they built building modules that would be contextually, tectonically, climatologically, and environmentally sensitive, and even while prototypes in nature would become site-specific. This endeavor resulted in the creative creation of five distinct master plans. Each was not only site-specific but also reflected the distinctiveness of the location in which it was located.

Figure 4.1: Barisal polytechnic institute. (Source: Author)

4.1.1 Environment and micro-climate

As Barisal is a riverine region of the nation with a history of flooding at a certain time of year, the building blocks' plinths were elevated. In addition, several waterbodies were integrated into the water-reservation plans. These bodies of water provided a microclimate for the whole facility.

4.1.2 User behavior and requirements

4.1.3 Form and Function

All the buildings were planned with repeating parallel walls going north to south and continuous windows covered with wooden louvers on the north and south facades, enabling the much-needed cross ventilation, in order to provide pleasant living at an affordable price. These louvers could be opened and closed in an infinite number of permutations, allowing the residents to manage their own exposure to sunshine and breeze.

4.1.4 Horizontal and vertical circulation

Horizontal circulation consists of elements such as corridors and lobbies. Vertical circulation includes elevators, staircases, ramps etc. Evaluate the usefulness of these services' location.

Source: The daily star

4.1.6 Parking details and standards

In four distinct locations across the master masterplan, open parking spaces suited to the various uses were given.

4.1.7 Utility planning

In the master masterplan, proper drainage and water management were incorporated beside a water tank.

4.1.8 Structural details

Each block was constructed from load-bearing brick walls. In addition, where appropriate, concrete ramps were constructed to assist vertical circulation.

4.1.9 Design detailing

All of the structures were created with identical parallel walls and wooden louvers covering the windows. This pioneering work demonstrates how prototype structures may be produced to be site-specific via a careful awareness of locales and excellent portrayal of context. In addition, the project demonstrates how the seeming rigidity of parallel lines can be broken down into an almost poetic sequence of lines that give distinct places within the same basic principles.

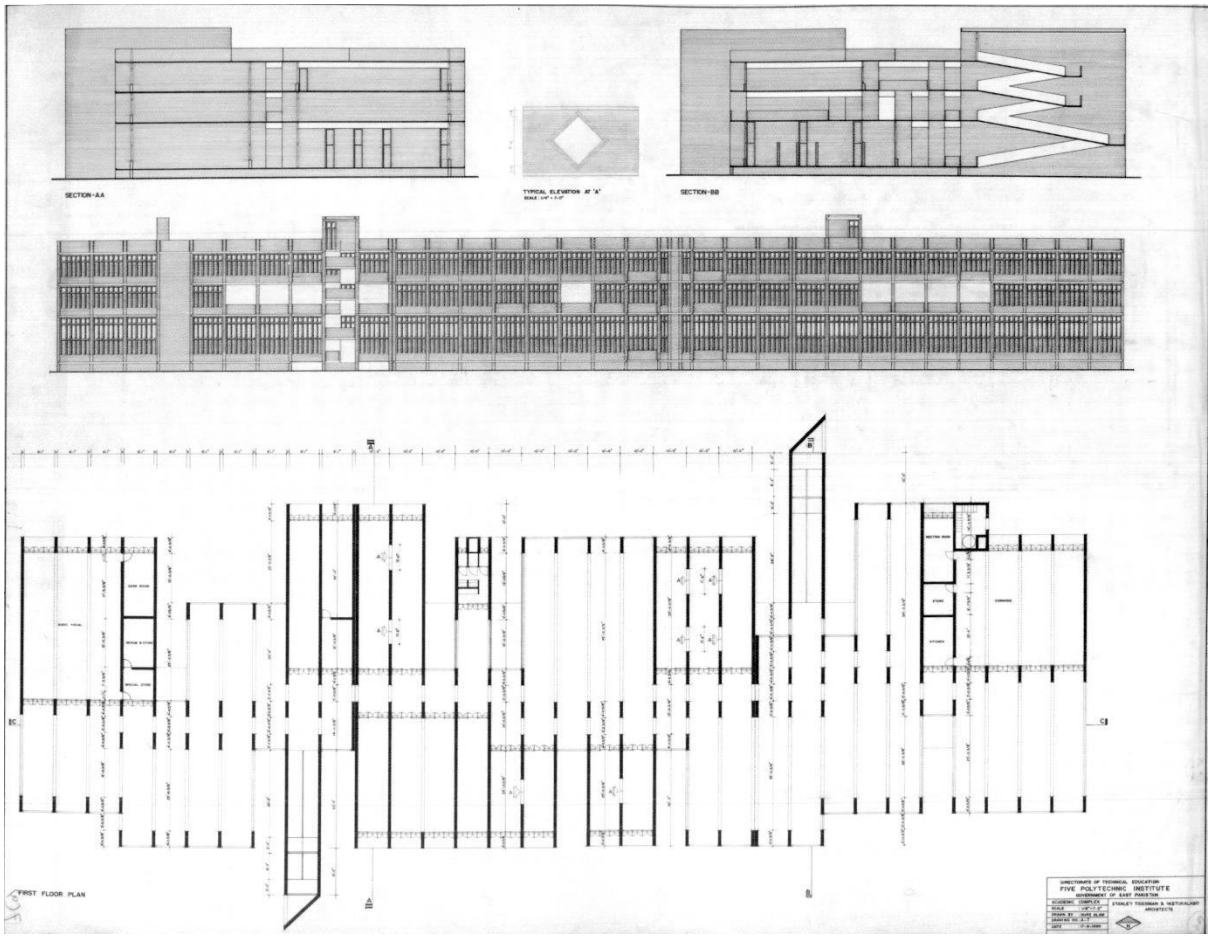


Fig: 4.1.6 Planning and detailing

Source: Muzharul islam selected drawings by Nurur Rahman khan

4.2 Viettel Academy Educational Center, Vietnam

Figure 4.2.1: entry of vietel educational center (Source: Archdaily)

30 kilometers from Hanoi, the Viettel Academy Educational Center is located on a Training Center Campus in the Hoa Lac Hi-Tech Park. It has a cool microclimate since it is surrounded by a beautiful landscape, lakes, and an abundance of plants. Due to its central location, the Educational Center is easily accessible from the residential area and other campus amenities. The objective of the program is to give trainees with a tranquil setting in which to focus on their studies, away from the hustle and bustle of the city. It would provide temporary lodging and training for Viettel Corporation employees, the major mobile network operator in Vietnam.

4.2.1 User behavior and requirements

The Educational Center is comprised of twelve blocks that include classrooms, conference rooms, hallways, and offices. The major blocks are four to five storied tall, but the others are just two to three stories tall. These structures are surrounded by an overflow pool, which not only creates beautiful reflections of the structures and surrounding nature, but also manages the microclimate.

Figure 4.2.2: Source: Archdaily

4.2.2 Form and Function

Multiple-level circulation pathways, such as corridors, ramps, and stairs, link the blocks. This location provides a variety of peaceful study locations as well as a variety of captivating vistas. Due to Hanoi's humid tropical environment, the bulk of semi-outdoor areas will be covered by a lightweight concrete roof that also serves as a skywalk. In addition, the roof serves to decrease direct solar radiation.

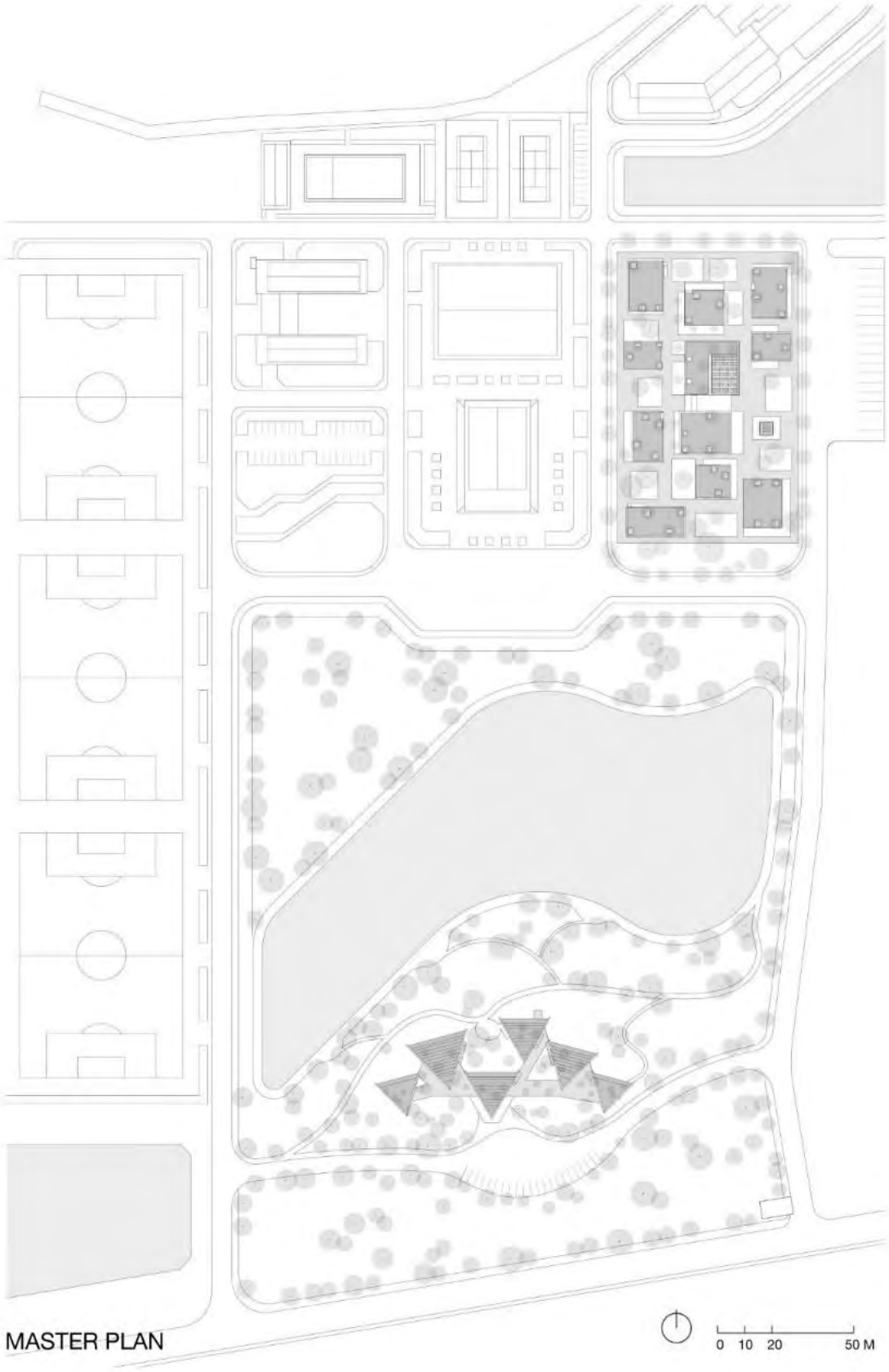


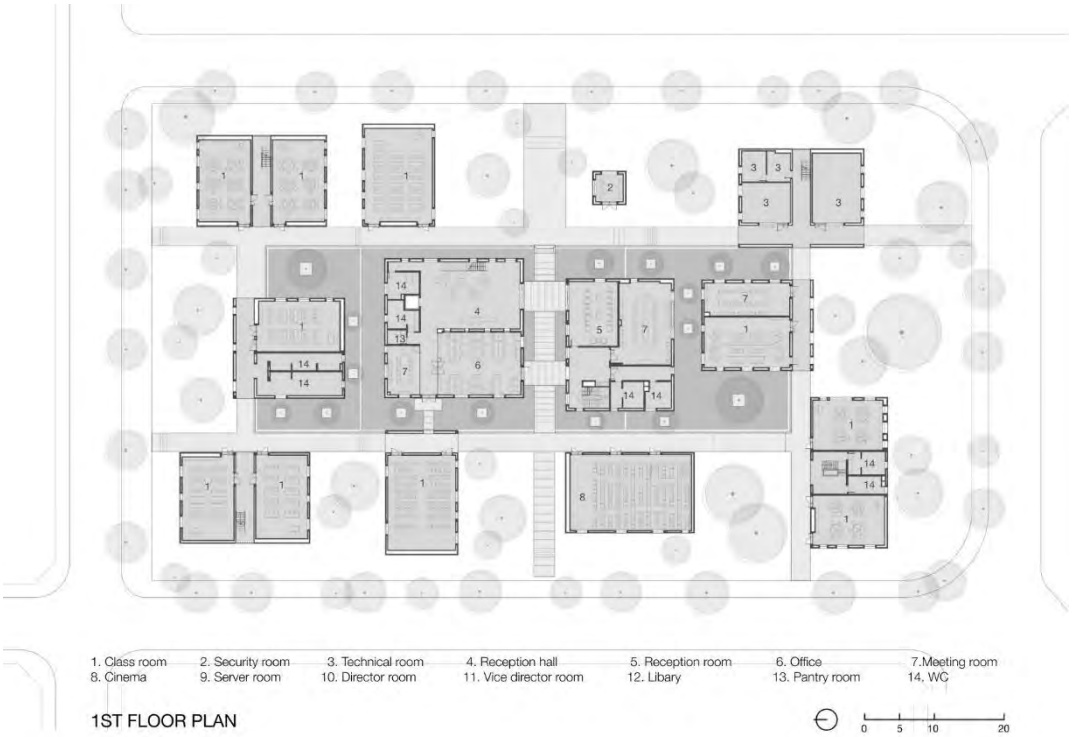
Figure 4.2.3: ground floor plan of the center. (Source: Archdaily)

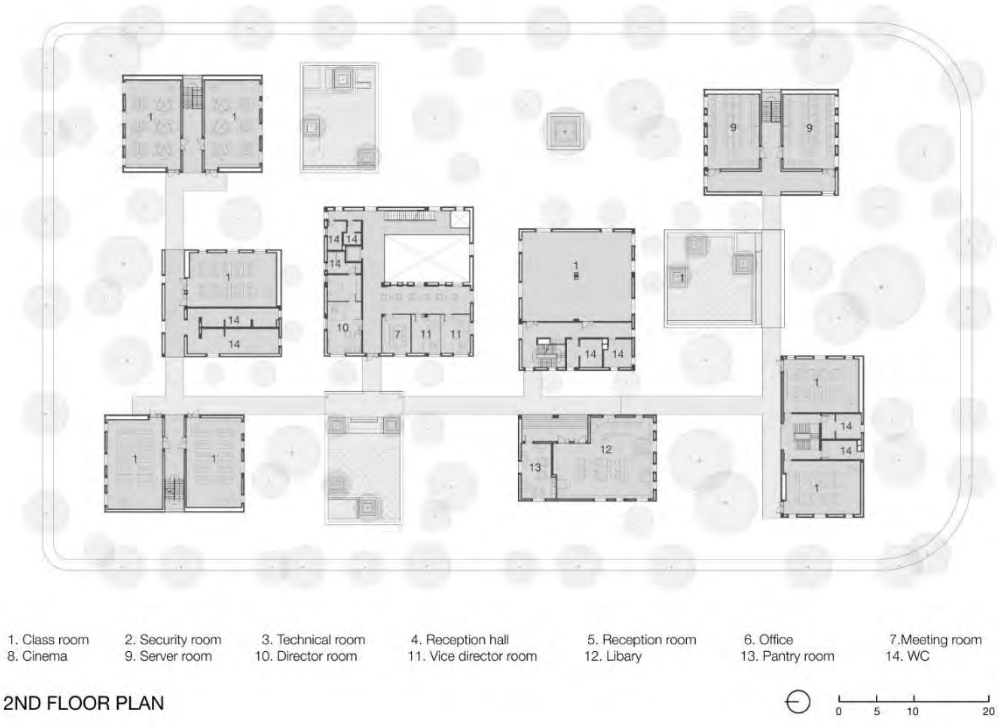
4.2.3 Horizontal and vertical circulation

Figure 4.2.4: Section and perspective view (Source: Archdaily)

4.2.4 Site Planning and Landscape detailing

The garden system on the first floor is alternately distributed throughout the blocks, offering a comfortable atmosphere for trainees and bringing them closer to nature. Roof gardens on varying levels comprise a series of hanging gardens that offer students a pleasant place to spend their breaks..





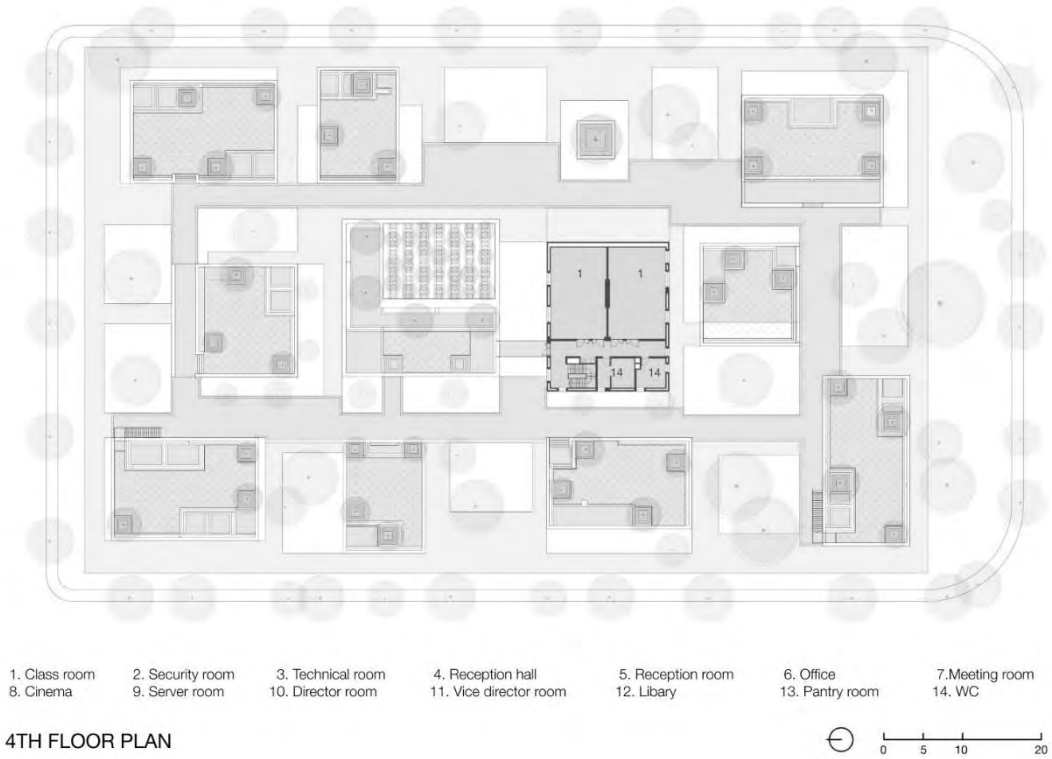


Figure 4.2.5: upper floor plans (Source: Archdaily)

4.2.5 Parking details and standards

Open parking spaces were given on three sides of the building.

4.2.6 Utility planning

The garden system on the first floor is distributed alternately between the blocks, providing a welcoming environment for trainees and bringing them closer to nature. Roof gardens on various levels comprise a series of hanging gardens that give a tranquil location for students to engage during breaks.

Figure 4.2.6 (Source: Archdaily)

4.2.7 Structural details

As building nears completion, local bricks are used to create an exceptional red-brick façade for the entire project. The massive façade exudes a rugged and rustic air. The 300-400mm thick facade consists of two tiers of brick wall with insulation and energy saving spaces in between. During the training session, the brick facades serve as the backdrop for the activities taking place around the blocks, leaving participants with a lasting image. The combination of red bricks and vegetation will produce an environment that is harmonious with nature.

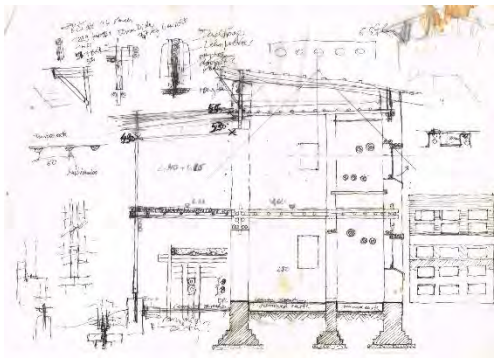
Figure 4.2.7: elevation and concrete pathway (Source: Archdaily)

4.3 Desi Training Center

Figure 4.3.1: Desi Training Center / Studio Anna Heringer

Generally speaking, the living conditions of poor families, especially in developing nations, are sustainable. The shift from poverty to the middle class is typically accompanied by a significant change in direction. With a rise in income, self-sufficiency and productivity as ideals and lifestyles give way to consumption. The uncommon, one-of-a-kind, and exotic are more enticing than the locally existent; the invigorating dream and orientation is the western way of life, not indigenous custom.

4.3.1 User behavior and requirements



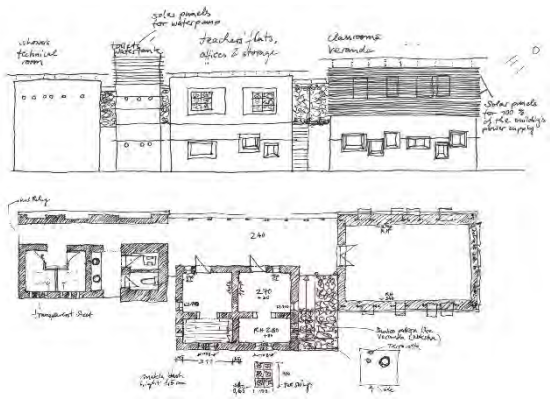


Figure 4.3.2

The DESI building addresses this challenge by serving as a model for a new and acceptable way of life in the rural areas of Bangladesh: a higher standard of living (for the middle class – in this case teachers) while retaining the traditional level of sustainability. It is not money that makes the biggest difference, but rather attention to detail, careful planning, and thoughtful design. This design emphasizes the technological advancement of traditional building techniques, regardless of socioeconomic status, as opposed to promoting the consumption of expensive and imported materials. As a sign of prestige, a bamboo wall replaces a cement-plastered brick wall. Consequently, a distinct local identity emerges very naturally.

4.3.2 Form and Function

DESI (Dipshikha Electrical Skill Improvement) is an institution for electrical training. There are two classrooms, two offices, and two instructor residences at DESI. Teachers use a separate bathroom with two showers and two toilets, while students share a bathroom with toilets and sinks on the main level.

Figure 4.3.3

Solar panels provide all of the electricity for the building. Solar thermal water heating provides warm water. Additionally, solar panels directly power a motor that pumps water from a well into a storage tank. Each bathroom has its own two-chamber septic tank. This is the first time in Bangladesh that sanitary units have been installed into earth houses, demonstrating the adaptability of mud and bamboo to fit modern lifestyle requirements.

Figure 4.3.4: Installation of solar panel

Source: Archdaily

4.3.3 Horizontal and vertical circulation

Rarely does the middle class strive to develop their own culturally and regionally appropriate practices. In lieu of the conventional business model of optimizing existing resources, import and consumption of external commodities are gaining importance. The result is the transfer of economic power to external markets. This tendency is most evident in architecture and the construction industry due to the changing use of building materials. Instead of continuing to construct with mud, bricks and cement are obtained, and the earthen walls are replaced with air conditioning.

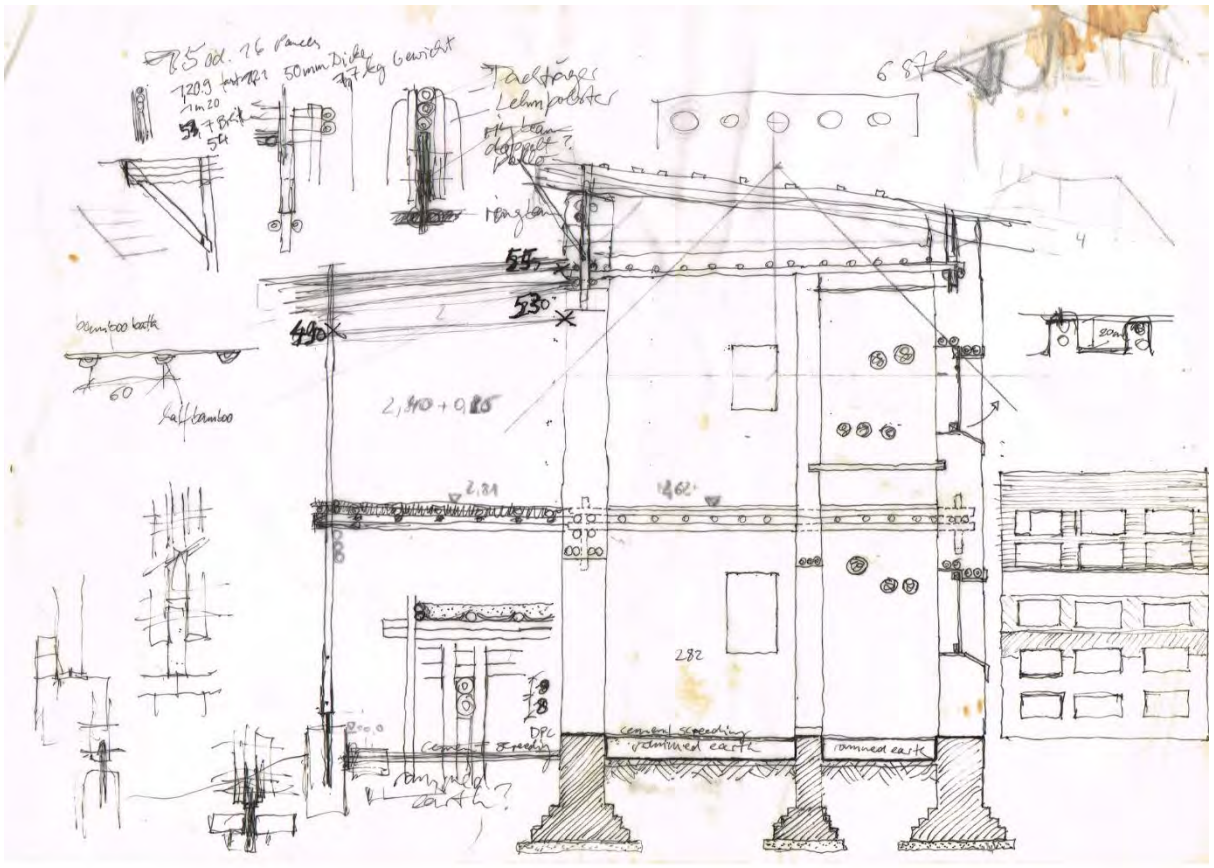


Figure 4.3.5:

Source: Archdaily

4.3.4 Site Planning and Landscape detailing

Figure 4.3.6: Masterplan

Source: Archdaily

4.3.5 Utility details and standards

The DESI facility contains two classrooms, two offices, and two instructor homes. Teachers have a separate restroom with two showers and two toilets, while students use a bathroom on the main floor with toilets and sinks.

Figure 4.3.7

Source: Archdaily

4.3.7 Structural details

Figure 4.3.8 Source: Archdaily

Chapter 5: Program Analysis

Program development is the basis of a precise progression of functions that may lead the whole task work or configuration phases. It is a system or framework that provides guidance for the effective use of space, assets, and users. Program development is derived from client needs and is sometimes governed by the premise of requirements.

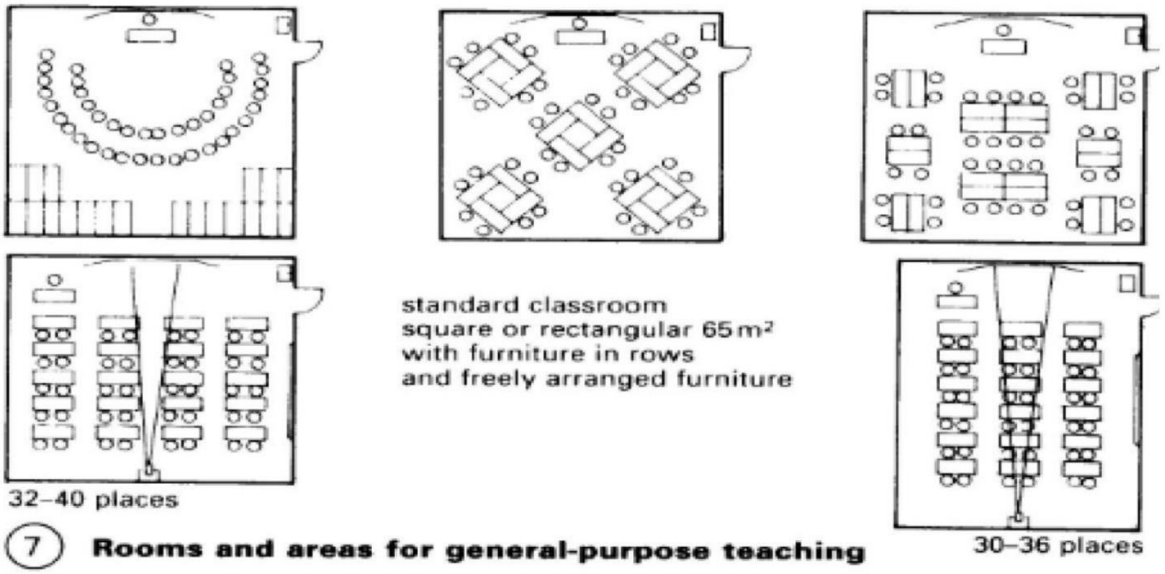
5.1 Program Derivation

Technical training institutes are meant to accommodate a variety of individuals from various backgrounds. As a training facility, BITAC has a far larger number of participants than the national average. In addition to offering seminars for trainees, it will include the appropriate dormitory and housing amenities. It will also offer office space for other departments.

5.2 Standard Analysis

For designing an architectural design, it is mandatory to assess the standard ergonomics and planning measurements. Besides that the project consists different kind of programs such as Administrative, Workshop, Hostels, Residential blocks etc. For finalizing the program details proper standards and ratios can be used by the designer to find the maximum coverage of the blocks. After that, the design decisions can re organize those blocks as per design intervention. Furthermore, standard analysis will help the designer to derive spatial analysis along with proper space requirement for the project.

CLASSROOMS



(7) **Rooms and areas for general-purpose teaching**

Source: Timesaver standards for building types

spaces/floor area	inner-city	suburbs and rural
distribution	(m^2)	(m^2)
heavy goods vehicles	1/1000	1/500
light commercial vehicles	1/1000	1/500
cars	1/400	1/1000
light industry		
heavy goods vehicles	1/4000	1/2000
light commercial vehicles	1/1000	1/500
cars	1/200	1/50
office space		
light commercial vehicles	1/1000	1/500
cars	1/150	1/30

Workshop circulation

- *Parking outside building*: standards depend on location as well as on type of use (**58**).
- *Lifts inside building*: related to external parking and to tenancies (**59**,**60**).
- *Circulation within workshop*: derived from the technology used as well as type of tenancy (**61**–**64**).

WORKSHOP

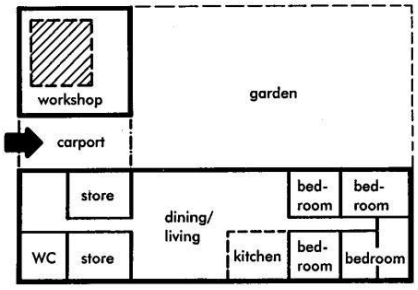
WORKSHOPS

There is great variety in the shape and size of workshops; here, they are classified by location, circulation requirements, tenancy types, and the technology they can accommodate (see below). Most of the detailed standards and examples given in the following pages are those required for a typical inner-city flatted factory (rental unit).

Location

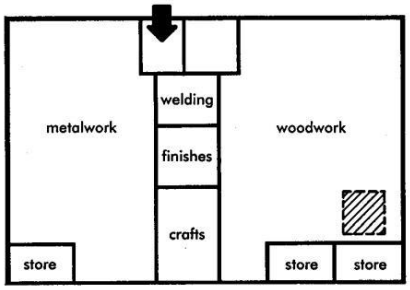
For most common locations, see ***53–57***.

domestic



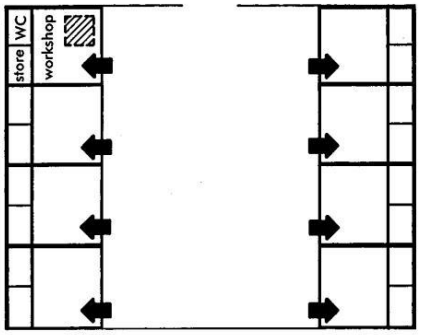
53 One or two people carrying on hobby or part-time occupation in home extension

educational institution



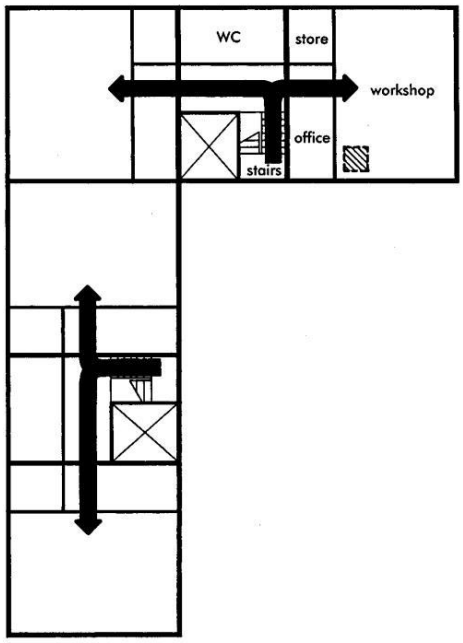
54 Repetitive provision for class or group of 20–40 people

small industrial estates



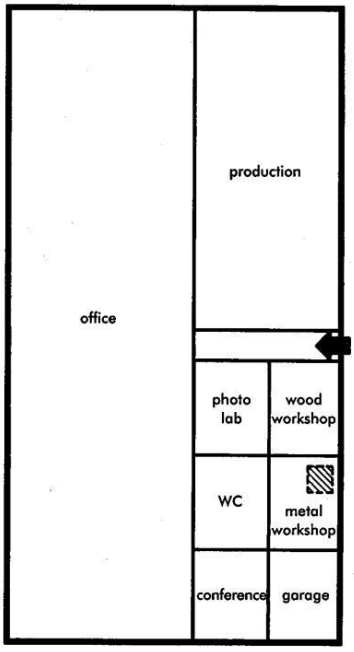
55 Group of non-specific units for range of very small businesses

rental unit



56 Standard units with shared access in a multi-storey building

ancillary to large factory



57 Specialist workshops for use by staff maintaining company's plant or building itself

Source: Architects' Handbook

5.2.3: Standard for workshops

OFFICES

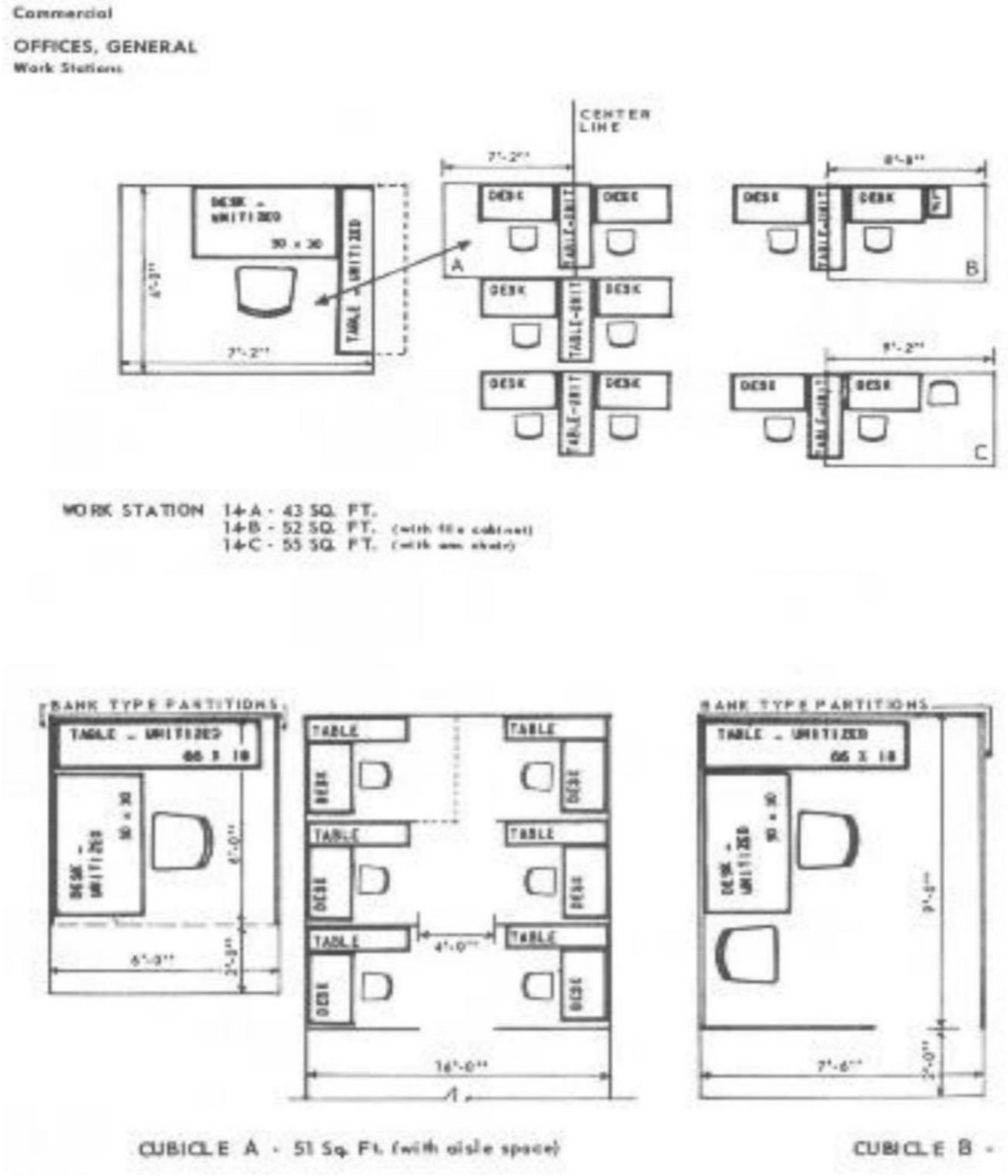
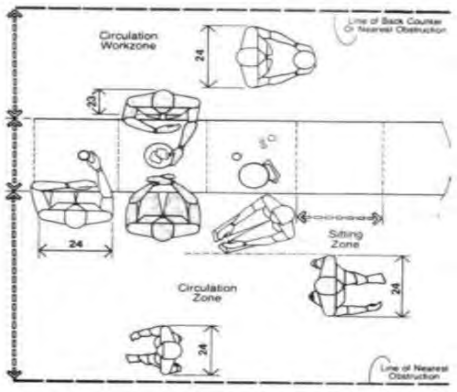


Figure 5.2.4: Standard for General office.

Source: Timesaver standards for building types

MULTIPURPOSE & CAFETERIA

•OVER FLOW SEATING CAN BE ARRANGED IN THE CORRIDOR.
THERE IS A STAGE IN THE ROOM.
SEATING ARRNGEMENTS SHOULD BE 10' FAR ATLEAST FROM THE STAGE.
THERE CAN BE A KITCHEN, A STORE AND A LOBBY FOR THE HALL.

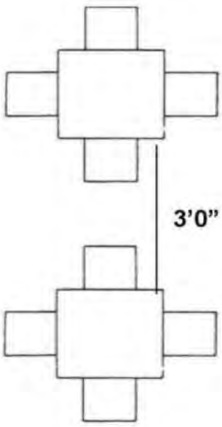


CIRCULATION

Estimated Production Space for Food Facilities

Type of facility	Space per seat ft²	Space per seat m²
Table service	8–12	0.74–1.11
Counter service	4–6	0.37–0.56
Booth service	6–10	0.56–0.93
Cafeteria service	8–12	0.74–1.11

Functional areas	Space allowed (%)
Receiving	5
Food storage	20
Preparation	14
Cooking	8
Baking	10
Warewashing	5
Traffic aisles	16
Trash storage	5
Employee facilities	15
Miscellaneous	2



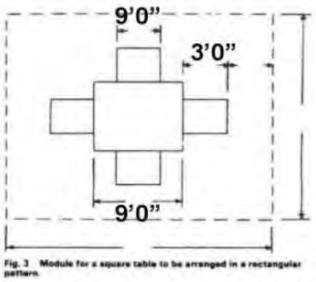


Fig. 3 Module for a square table to be arranged in a rectangular pattern.

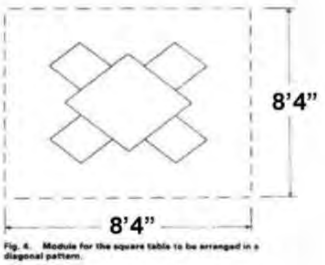
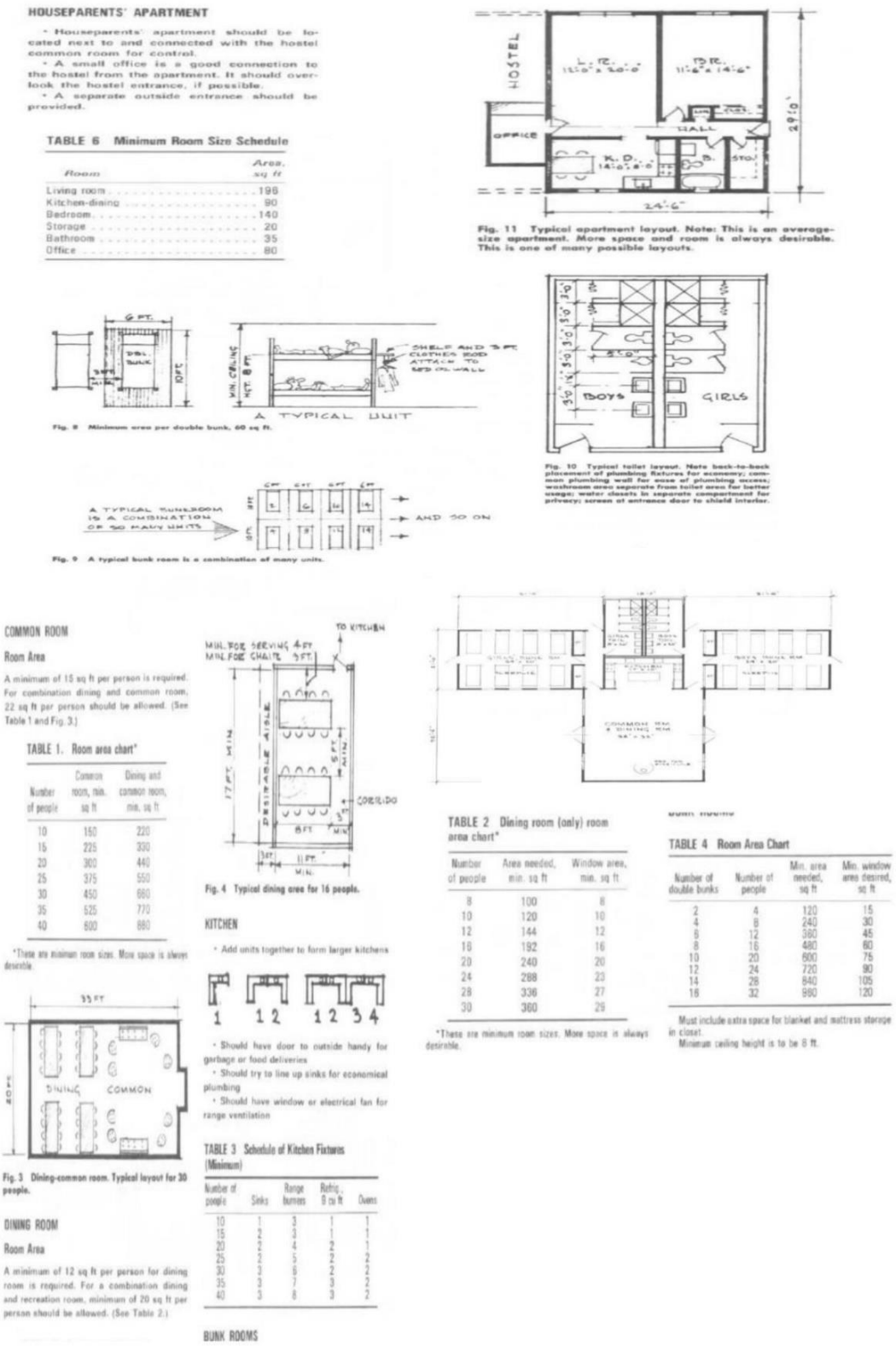


Fig. 4 Module for the square table to be arranged in a diagonal pattern.

Figure 5.2.5: Standard for multipurpose & cafeteria.

Source: Timesaver standards for building types

HOSTELS



HOUSEPARENTS' APARTMENT

• Houseparents' apartment should be located next to and connected with the hostel common room for control.
• A small office is a good connection to the hostel from the apartment. It should overlook the hostel entrance, if possible.
• A separate outside entrance should be provided.

TABLE 6 Minimum Room Size Schedule

Room	Area, sq ft
Living room	198
Kitchen-dining	90
Bedroom	140
Storage	20
Bathroom	35
Office	80

Fig. 11 Typical apartment layout. Note: This is an average-size apartment. More space and room is always desirable. This is one of many possible layouts.

Fig. 10 Typical toilet layout. Note back-to-back placement of plumbing fixtures for economy; common plumbing wall for ease of plumbing access; washroom area separate from toilet area for better usage; water closets in separate compartment for privacy; screen at entrance door to shield interior.

Fig. 9 A typical bunk room is a combination of many units.

COMMON ROOM

Room Area

A minimum of 15 sq ft per person is required. For combination dining and common room, 22 sq ft per person should be allowed. (See Table 1 and Fig. 3.)

TABLE 1. Room area chart*

Number of people	Common room, min. sq ft	Dining and common room, min. sq ft
10	150	220
15	225	330
20	300	440
25	375	550
30	450	660
35	525	770
40	600	880

*These are minimum room sizes. More space is always desirable.

Fig. 3 Dining-common room. Typical layout for 30 people.

DINING ROOM

Room Area

A minimum of 12 sq ft per person for dining room is required. For a combination dining and recreation room, minimum of 20 sq ft per person should be allowed. (See Table 2.)

Fig. 4 Typical dining area for 16 people.

KITCHEN

• Add units together to form larger kitchens

1 1 2 1 2 3 4

• Should have door to outside handy for garbage or food deliveries
• Should try to line up sinks for economical plumbing
• Should have window or electrical fan for range ventilation

TABLE 3 Schedule of Kitchen Fixtures (Minimum)

Number of people	Sinks	Range burners	Refrig., 8 cu ft	Ovens
10	1	3	1	1
15	2	4	1	1
20	2	4	2	1
25	2	5	2	2
30	2	6	2	2
35	3	7	3	2
40	3	8	3	2

BUNK ROOMS

TABLE 2 Dining room (only) room area chart*

Number of people	Area needed, min. sq ft	Window area, min. sq ft
8	100	8
10	120	10
12	144	12
16	192	16
20	240	20
24	288	23
28	336	27
30	360	29

*These are minimum room sizes. More space is always desirable.

TABLE 4 Room Area Chart

Number of double bunks	Number of people	Min. area needed, sq ft	Min. window area desired, sq ft
2	4	120	15
4	8	240	30
6	12	360	45
8	16	480	60
10	20	600	75
12	24	720	90
14	28	840	105
16	32	960	120

Must include extra space for blanket and mattress storage in closet.
Minimum ceiling height is to be 8 ft.

Figure 5.2.6: Standard for hostel blocks.

Source: Timesaver standards for building types

PROGRAM ANALYSIS

ZONE	FUNTIONAL ACTIVITY IN BLOCK	TOTAL AREA SQ-FT
Office block	Reception Director's room Chief Of Operation's room Assistant's room Driver	1400 sqft
Multipurpose Hall	Main hall Toilet block Preparation room	3300 sqft
Officers Residence	Bedrooms Living Dining Kitchen Toilets Balcony	950 sqft
Director's Residence	Bedrooms Living Dining Kitchen Toilets Balcony	1250 sqft

Table 5.1: Program analysis (client's overview)

PROGRAM REQUIREMENTS

DRIVER AND GUARDROOM

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	GUARD ROOM	3	2	100	300
2	TOILET AND KITCHEN	1		150	150
3	DRIVER ROOM	1	10	200	200
				Subtotal	650

SECURITY FACILITIES

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	WAITING ROOM	1	20	800	800
2	LOBBBY	1		200	200
				Subtotal	1000

ADMINISTRATIVE FACILITIES

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	ADMIN OFFICER	1	1	300	300
2	OFFICE ROOM	16	16	200	3200
3	OFFICE ROOM	8	24	300	2400
4	CONFERENCE ROOM	2	50	900	1800
5	TOIET (MALE)	2	25	600	300
6	TOILET (FEMALE)	2	25	600	300
7	STORE ROOM	2		600	1200
				Subtotal	1000

MULTIPURPOSE

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	MAIN HALL	1	250		5000
2	MECHANICAL ROOM	3		100	300
3	STORE	1		150	400
				Subtotal	5700

TRAINING FACILITIES

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	OFFICE ROOM	4	12	200	800
2	ASSISTANT EMPLOYEES	1	12	450	450
3	TOILET (MALE)	3	25	300	900
4	TOILET (FEMALE)	3	25	300	900
5	CLASSROOMS	6	30	720	6250
6	CANTEEN	1	50	2500	2500
7	COMMON ROOM	1	30	1000	1000
8	SEMINAR ROOM	1	30	1400	1000
				SUBTOTAL	13800

TRAINING WORKSHOP

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	WORKSHOP (1-7)	1			27000
2	TOILET	2		600	1200
3	OFFICE ROOMS	4	2	200	800
4	MINI STORE	2		400	1600
				SUBTOTAL	30600

HOSTEL BUILDING (MEN)

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	TYPE A	32	3	220	7040
2	COMMON ROOM	1	50		400
3	MINI STORE	1			400
4	PRAYER SPACE	1	30		400
5	TOILET	4		300	1200
6	TV/GAME ROOM	1	50		400
				SUBTOTAL	9840

HOSTEL BUILDING (WOMEN)

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	TYPE A	32	3	220	7040
2	COMMON ROOM	1	50		400
3	MINI STORE	1			400
4	PRAYER SPACE	1	30		400
5	TOILET	4		300	1200
6	TV/GAME ROOM	1	50		400
				SUBTOTAL	9840

DINING BUILDING

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	DINING	1	90		3200
2	KITCHEN	1			1200
				SUBTOTAL	4400

RESIDENTIAL BUILDING

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	TYPE A	8	4	1250	10000
2	CIRCULATION			350	3500
				SUBTOTAL	10350

PARKING FACILITY

	FUNCTIONAL SPACE	NUMBER OF UNITS	NUMBER OF USERS	AREA PER UNIT (in sft)	TOTAL AREA (in sft)
1	CAR (SURFACE PARKING)	14		128	1024
				SUBTOTAL	1024
				TOTAL	193408

Table 5.2: Program requirements

TOTAL BUILT AREA 193408 SFT

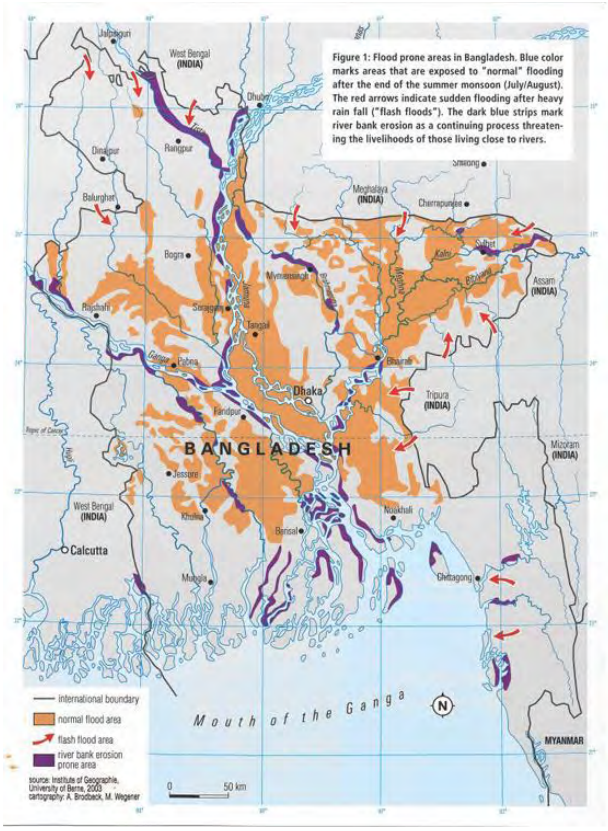
TOTAL AREA 5 acres or 217800 sqft

Chapter 6: Design Consideration

In this chapter, the choices will be taken that will allow the project to meet the needs of the intended customers while adhering to the client's specifications. The technical support center will aid the residents of Barisal in receiving suitable instruction on industrial machinery and product development skills.

6.1 Flood-Resistant Zone

The location is next to the Dhaka-Barisal highway, which links Barisal to another district. As a result of the construction of the highway, the area was developed and filled in to link it to the nearby bridge. The Bangladesh flood map reveals that this area has a decreased probability of experiencing flash flood or typical flood.



In addition, a comparison of the flood maps from 1988 and 1998 reveals that this area was flooded. After the bridge was built in 2009, it connected the city of Barisal to the rest of the country, thereby strengthening its socioeconomic structure. Based on these findings, it will be suggested that the project's proposed plan should include some considerations about water conservation and drainage management. In addition, the project's plinths might be raised as a design proposal to address future flooding issues.

6.2 Qualities of a Contextual Homestead

Every context has its own approach to environment sensitivity. Based on that, the constructed environment of that region is developed. By examining the surrounding residences, it has been shown that the majority of them contain distinctive characteristics that respect the climate and social structure of the neighboring community. This existing infrastructure can be used into the design of the project to make it 54 more connected to the surrounding surroundings. The local pathways are lined with tiny trees, which provide summertime shade. In addition, the residents of Barisal frequently use traditional macha, which creates an enclosed, shaded route with enough light filtration. As our project encompasses numerous distinct zones, this contextual information can be utilized when creating the interconnected pathways between functional blocks.

Figure 6.2.1: Local pathway and macha.

The rural homesteads in the region also incorporate design elements that reduce the cost of construction and maintenance. This element consists of a pitched roof, an elevated plinth, modular windows, and a front veranda. This standard strategy helps dwellings withstand natural disasters and provides a standard living solution. Most of the homesteads also feature ponds which assists the paddy field during the irrigation period. This pond also serves as the region's water storage facility.

Figure 6.2.2: Local houses around the site

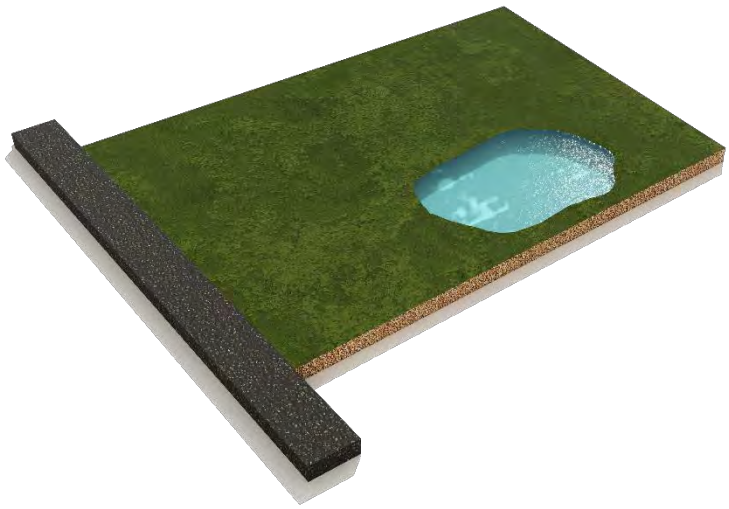
6.3 Building Materials

In contrast to other regions of the country, the yearly precipitation in Barisal is average. This specifies that the building must be constructed using durable materials that can withstand heavy rainfall. A brick wall devoid of plaster would be an appropriate solution in this situation. Plaster can increase the overall expense of maintaining the center. In addition, the exposed brick wall offers a sense of continuity that reflects a millennium of house construction in the subcontinent region. In addition, because the complex includes a workshop building for technical training, the building itself should reflect its technological nature. The façade may be expressive while meeting all functional criteria.

6.4 Form Development

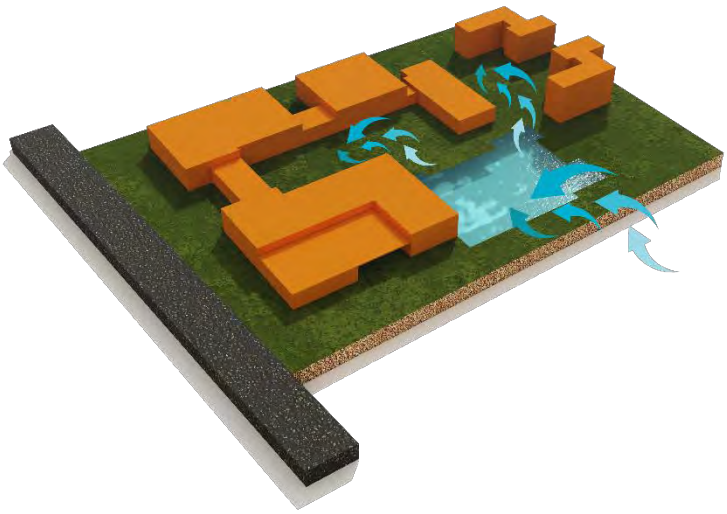
The project site is surrounded by low lands. During rainy season the surrounding area is filled with water. Dry seasons are for rice cultivation. Moreover, gradually the Kirtankhola river and The Barishal river runs through the west and south side of the site. The site is also surrounded by paddy fields. As a result the weather around the site is mostly warm, humid and full of monsoon breeze. So to incorporate these issues some design decisions are taken.

1. Existing condition of site



2. Mass placement around the low land

3. Mass distribution and formation of courtyard



4. Reshaping the mass and the low land as a water reservoir

5. Circulation

6. Final form

Figure 6.4.1: Form generation

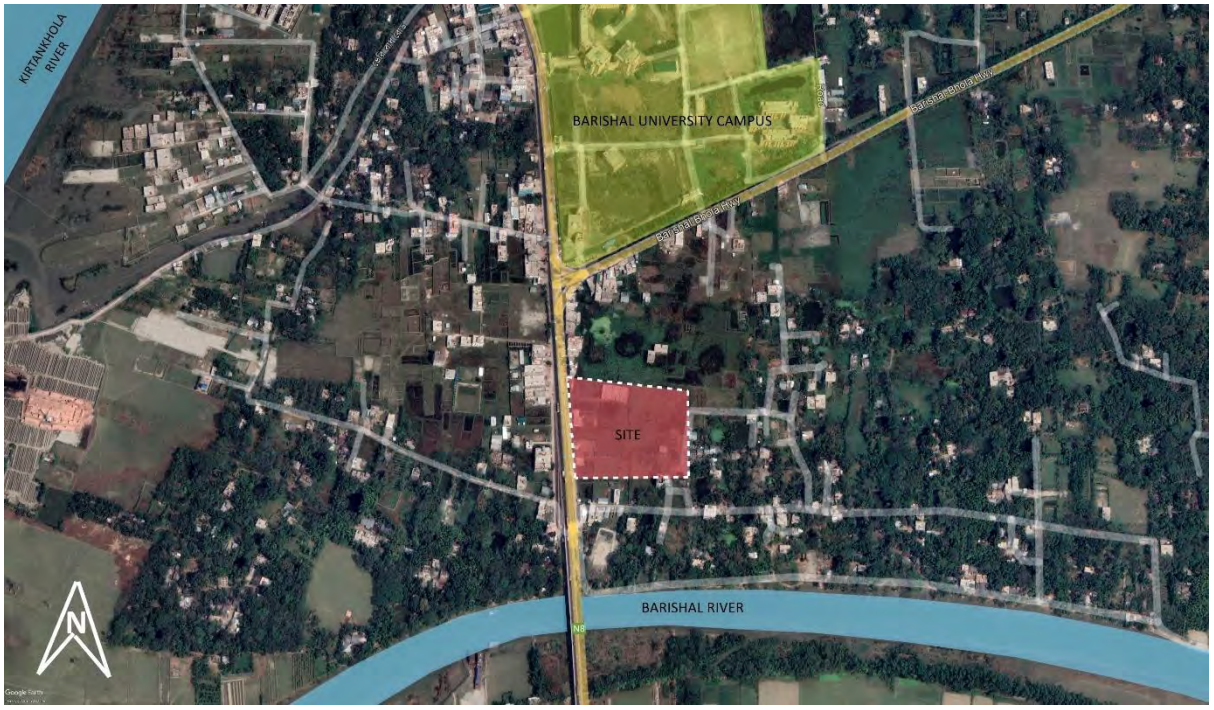


Figure 6.4.2: Site location in satellite

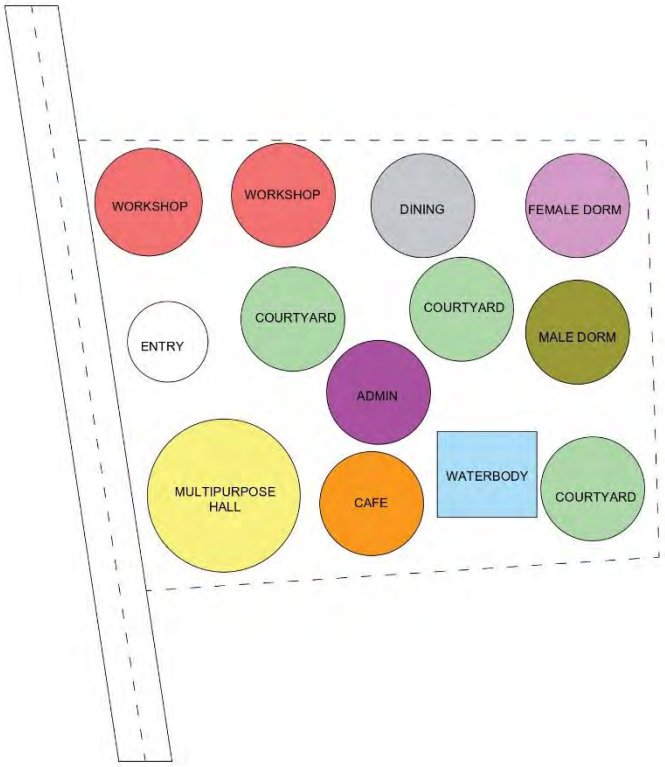


Figure 6.4.3: Bubble diagram

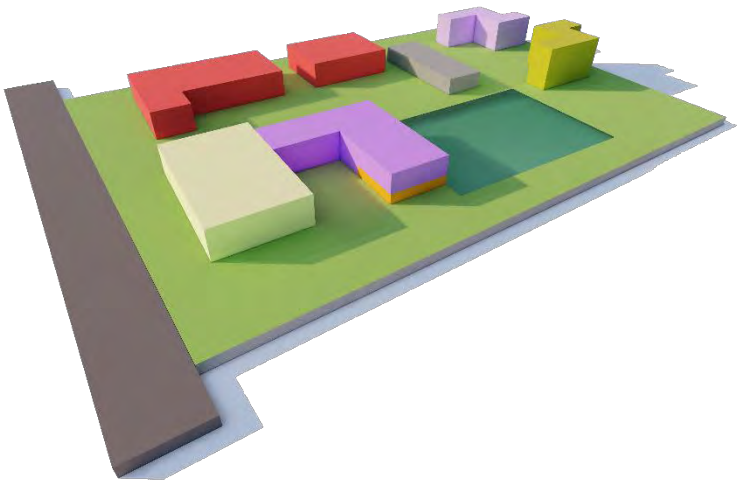


Figure 6.4.4: Schematic 3D

The forms are allocated in such a way so that every facility can have adequate circulation and ventilation as well as minimum solar radiation and heat gain.

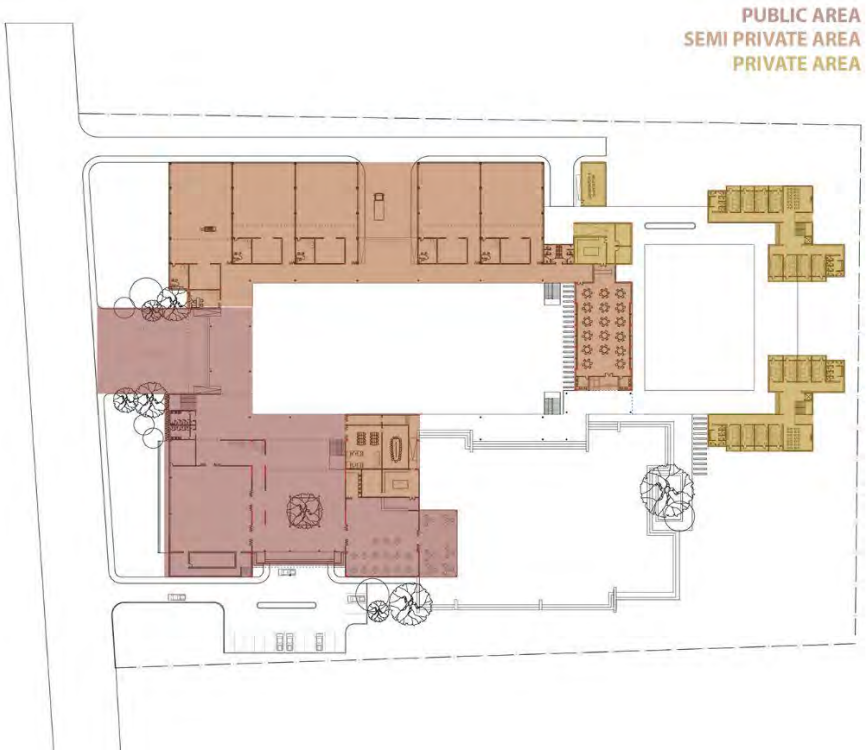


Figure 6.4.5: Space allocation according to privacy.

In addition, the functional zonings were designed so that a water body could be produced within the project. In addition, this body of water will serve as a water reservoir at the time of year when rainfall is abundant.

Chapter 7: Design Suggestions

After reviewing the site research, it was determined that a contextual understanding may be of great use to the site, as it was a rural landscape. This should be incorporated into the design of the project using appropriate architectural solutions.

7.1 PLANS

In the first step of planning, imagined spaces and proper planned spaces were created. The suggested blocks were positioned on the site with consideration for the surrounding environment. The design recommendations were developed contextually, bearing in mind that the project displays innovation that supports its actual essence.

Figure 7.1.1: Ground floor plan

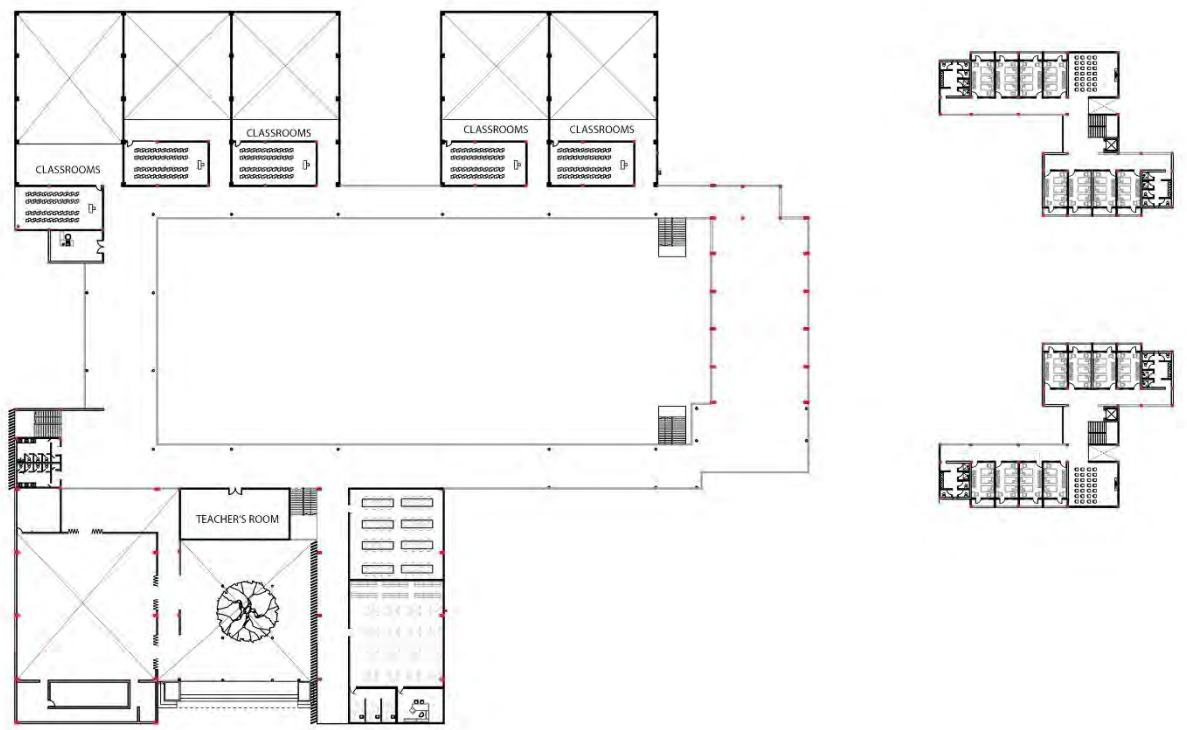


Figure 7.1.2: First floor plan

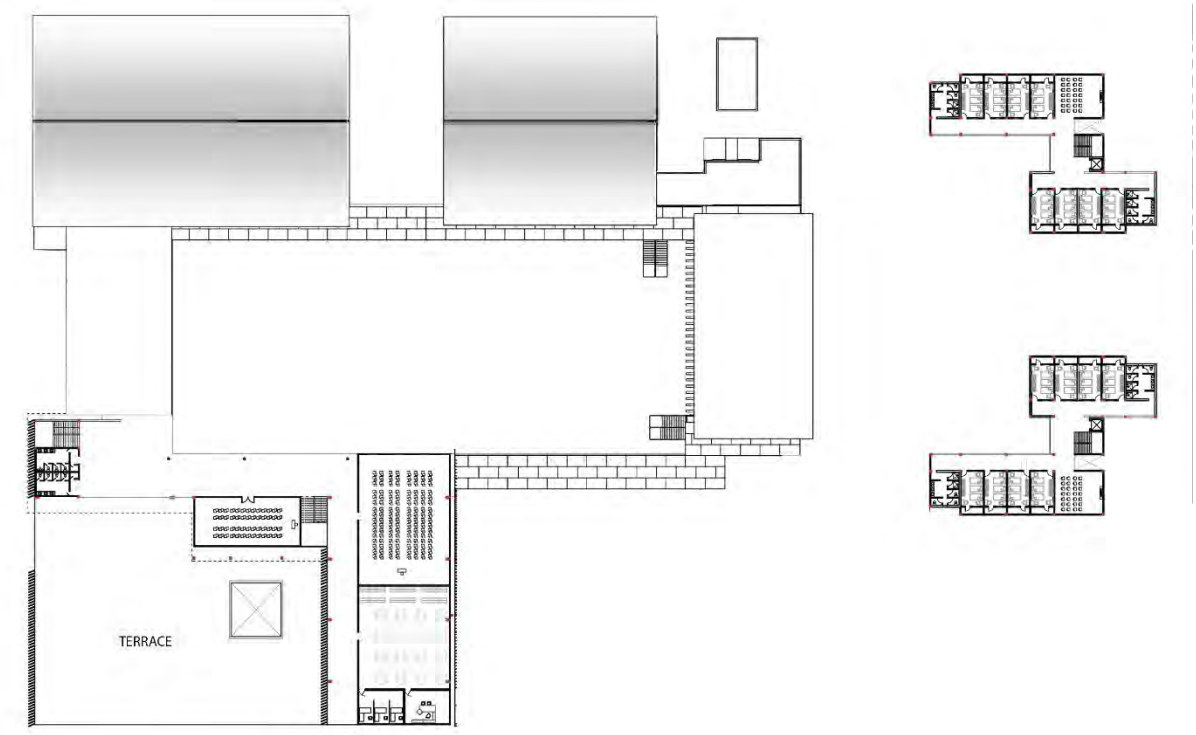


Figure 7.1.3: Second floor plan

7.2 Sections & elevations

Figure 7.3.1: Sections

Figure 7.3.2: Elevations

7.3 Details & Perspectives

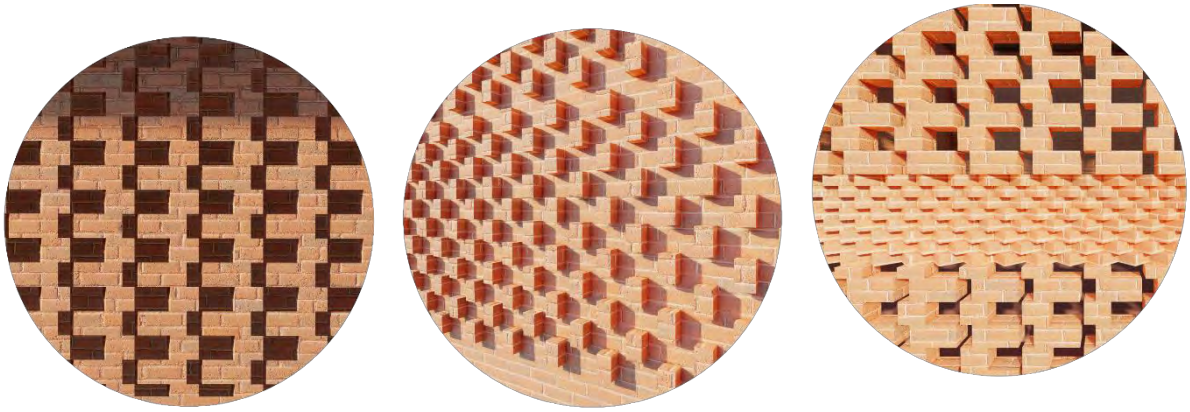


Figure 7.4.1: Fenestration details

Figure 7.4.2: Perspectives

7.4 Physical Model

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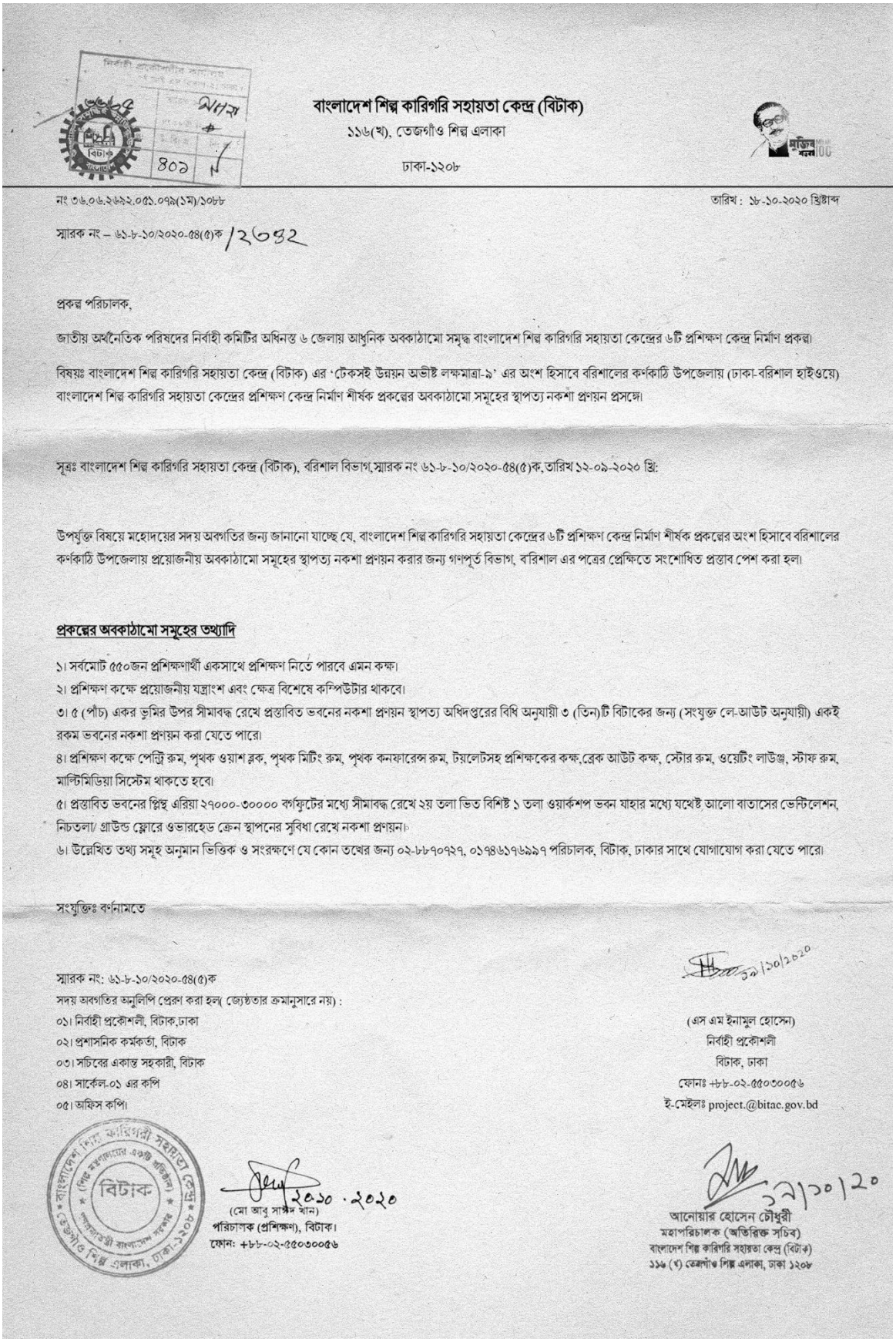
Appendix



বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক)
১১৬(খ), তেজগাঁও শিল্প এলাকা
ঢাকা-১২০৮

নং ৩৬.০৬.২৬৯২.০৫১.০৭৯(১ম)/১০৮৮ তারিখ : ১৮-১০-২০২০ খ্রিষ্টাব্দ

স্মারক নং – ৬১-৮-১০/২০২০-৫৪(৫)ক /২৩৪২

প্রকল্প পরিচালক,

জাতীয় অর্থনৈতিক পরিষদের নির্বাহী কমিটির অধিনস্ত ৬ জেলায় আধুনিক অবকাঠামো সমৃদ্ধ বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্রের ৬টি প্রশিক্ষণ কেন্দ্র নির্মাণ প্রকল্প।

বিষয়ঃ বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক) এর 'টেকসই উন্নয়ন অভীষ্ট লক্ষমাত্রা-৯' এর অংশ হিসাবে বরিশালের কর্ণকাঠি উপজেলায় (ঢাকা-বরিশাল হাইওয়ে) বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্রের প্রশিক্ষণ কেন্দ্র নির্মাণ শীর্ষক প্রকল্পের অবকাঠামো সমূহের স্থাপত্য নকশা প্রণয়ন প্রসঙ্গে।

সূত্রঃ বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক), বরিশাল বিভাগ,স্মারক নং ৬১-৮-১০/২০২০-৫৪(৫)ক,তারিখ ১২-০৯-২০২০ খ্রি:

উপর্যুক্ত বিষয়ে মহোদয়ের সদয় অবগতির জন্য জানানো যাচ্ছে যে, বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্রের ৬টি প্রশিক্ষণ কেন্দ্র নির্মাণ শীর্ষক প্রকল্পের অংশ হিসাবে বরিশালের কর্ণকাঠি উপজেলায় প্রয়োজনীয় অবকাঠামো সমূহের স্থাপত্য নকশা প্রণয়ন করার জন্য গণপূর্ত বিভাগ, বরিশাল এর পত্রের প্রেক্ষিতে সংশোধিত প্রস্তাব পেশ করা হল।

প্রকল্পের অবকাঠামো সমূহের তথ্যাদি

১। সর্বমোট ৫৫০জন প্রশিক্ষণার্থী একসাথে প্রশিক্ষণ নিতে পারবে এমন কক্ষ।
২। প্রশিক্ষণ কক্ষে প্রয়োজনীয় যন্ত্রাংশ এবং ক্ষেত্র বিশেষে কম্পিউটার থাকবে।
৩। ৫ (পাঁচ) একর ভূমির উপর সীমাবদ্ধ রেখে প্রস্তাবিত ভবনের নকশা প্রণয়ন স্থাপত্য অধিদপ্তরের বিধি অনুযায়ী ৩ (তিন)টি বিটাকের জন্য (সংযুক্ত লে-আউট অনুযায়ী) একই রকম ভবনের নকশা প্রণয়ন করা যেতে পারে।
৪। প্রশিক্ষণ কক্ষে পেন্ট্রি রুম, পৃথক ওয়াশ ব্লক, পৃথক মিটিং রুম, পৃথক কনফারেন্স রুম, টয়লেটসহ প্রশিক্ষকের কক্ষ,ব্রেক আউট কক্ষ, স্টোর রুম, ওয়েটিং লাউঞ্জ, স্টাফ রুম, মাল্টিমিডিয়া সিস্টেম থাকতে হবে।
৫। প্রস্তাবিত ভবনের প্লিন্থ এরিয়া ২৭০০০-৩০০০০ বর্গফুটের মধ্যে সীমাবদ্ধ রেখে ২য় তলা ভিত বিশিষ্ট ১ তলা ওয়ার্কশপ ভবন যাহার মধ্যে যথেষ্ট আলো বাতাসের ভেন্টিলেশন, নিচতলা/ গ্রাউন্ড ফ্লোরে ওভারহেড ক্রেন স্থাপনের সুবিধা রেখে নকশা প্রণয়ন।
৬। উল্লেখিত তথ্য সমূহ অনুমান ভিত্তিক ও সংরক্ষণে যে কোন তথের জন্য ০২-৮৮৭০৭২৭, ০১৭৪৬১৭৬৯৯৭ পরিচালক, বিটাক, ঢাকার সাথে যোগাযোগ করা যেতে পারে।

সংযুক্তিঃ বর্ণনামতে

১৮/১০/২০২০
(এস এম ইনামুল হোসেন)
নির্বাহী প্রকৌশলী
বিটাক, ঢাকা
ফোনঃ +৮৮-০২-৫৫০৩০০৫৬
ই-মেইলঃ project.@bitac.gov.bd

স্মারক নং: ৬১-৮-১০/২০২০-৫৪(৫)ক
সদয় অবগতির অনুলিপি প্রেরণ করা হল(জ্যেষ্ঠতার ক্রমানুসারে নয়) :
০১। নির্বাহী প্রকৌশলী, বিটাক,ঢাকা
০২। প্রশাসনিক কর্মকর্তা, বিটাক
০৩। সচিবের একান্ত সহকারী, বিটাক
০৪। সার্কেল-০১ এর কপি
০৫। অফিস কপি।

১৮.১০.২০২০
(মো আবু সাঈদ খান)
পরিচালক (প্রশিক্ষণ), বিটাক।
ফোন: +৮৮-০২-৫৫০৩০০৫৬

১৯/১০/২০
আনোয়ার হোসেন চৌধুরী
মহাপরিচালক (অতিরিক্ত সচিব)
বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক)
১১৬ (খ) তেজগাঁও শিল্প এলাকা, ঢাকা ১২০৮

বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক)

তেজগাঁও শিল্প এলাকা

ঢাকা ১২০৮।

২০/১২/১৯

বিষয়ঃ- বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক) এর তিনটি বিভাগীয় শহর রংপুর, বরিশাল ও সিলেট জেলায় কারিগরি প্রশিক্ষণ কেন্দ্র সহ অন্যান্য ভবনের নক্সা প্রণয়ন জন্য প্রয়োজনীয় তথ্য।

নিরাপত্তা ভবনঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া আনুমানিক ২০ ফুটx৩০ফুট= ৬০০ বর্গফুট ১ তলা বিশিষ্ট ভবন । যার সাথে আগত অতিথি বসার জন্য ১টি ওয়েটিং রুম সহ মোট ২টি কক্ষ ও সামনে একটি পোর্চ সেড সুবিধা থাকতে পারে।

ড্রাইভার ও গার্ডরুমঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া আনুমানিক ৩০ফুটx১৫ফুট= ৪৫০ বর্গফুট বা ৫০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৩য় তলা ভিত বিশিষ্ট ১ তলা ভবন যাহার মধ্যে ৩ জন করে মোট ৬ জন নিরাপত্তা প্রহরী ও ১ জন গাড়ীচালক থাকার জন্য ২টি কক্ষ ও ১টি কক্ষ ছোট আকারে যাহার মধ্যে রান্না ঘর সহ ১টি কমন বাথরুম ও টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

প্রশাসনিক ভবনঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া ৪০০০ হতে ৬০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৪ তলা ভিত বিশিষ্ট গ্রাউন্ড বা দ্বিতীয় তলা একটি ভবন । যাহার মধ্যে দ্বিতীয় তলা অফিস প্রধানের ১টি কক্ষ (এট্যাচ টয়লেট সহ) , প্রশাসন অফিসার, হিসাব রক্ষক, ক্রয় কর্মকর্তার, ষ্টোর রুম, এর সুবিধা রেখে এবং নিচতলা ২ জন নির্বাহী প্রকৌশলী, ২ জন সহকারী প্রকৌশলী, ১টি ৩০ সদস্য বিশিষ্ট সভাকক্ষ (এট্যাচ টয়লেট সহ)এবং মেয়েদের জন্য আলাদা টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

প্রশিক্ষণ ভবনঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া ১০০ফুটx৪০ফুট= ৪০০০বর্গফুট হতে ৬০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৪ তলা ভিত বিশিষ্ট গ্রাউন্ড বা দ্বিতীয় তলা বিশিষ্ট একটি ভবন । যাহার মধ্যে ১ম তলায় প্রধান প্রশিক্ষণ প্রকৌশলীর ১টি রুম (এট্যাচ টয়লেট সহ), কর্মচারীদের জন্য একটি ৩০ফুটx১৫ফুট=৪৫০ বর্গফুট ১টি কক্ষ, সকল প্রশিক্ষকের জন্য ১টি কমনরুম / ওয়েটিংরুমের সুবিধা রেখে এবং দ্বিতীয় তলায় তাত্ত্বিক প্রশিক্ষনের জন্য ৬টি ক্লাশরুম ও ১টি ওরিয়েন্টেশন রুম । মেয়েদের জন্য আলাদা টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

প্রশিক্ষণ ওয়ার্কসপঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া ২৭০০০ - ৩০০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ২য় তলা ভিত বিশিষ্ট ১ তলা ওয়ার্কসপভবন । যাহার মধ্যে যথেষ্ট আলো , বাতাসের ভেন্টিলেশন , নিচতলা/গ্রাউন্ড ফ্লোরে ওভারহেড ক্রেন স্থাপনের এর সুবিধা, ১ জন নির্বাহী ও ১ জন সহকারী প্রকৌশলীদের বসার কক্ষ (এট্যাচ টয়লেট)। ১ টি টুলস ও যন্ত্রপাতি রাখার জন্য মিনি ষ্টোর, কর্মচারীদের টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

হোস্টেল ভবন (মহিলা) ঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া আনুমানিক ১০০ফুটx৬০ফুট= ৬০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৫ তলা ভিত বিশিষ্ট ৩য় তলা হোস্টেল ভবন । প্রতি রুমে ৪ জন করে থাকার সুবিধা রেখে কক্ষ তৈরী করা যেতে পারে। প্রতি ফ্লোরে গোসলখানা টয়লেট থাকবে নিচ তলায় ডাইনিং রুম, রান্নাঘর, টিভি রুম ও অডিটোরিয়াম । উল্লেখ্য যে,ইতোপূর্বে বিটাক চট্টগ্রাম,খুলনা ও বগুড়া কেন্দ্রের জন্য প্রণীত মহিলা হোস্টেলের নক্সা অনুসারে।

হোস্টেল ভবন (পুরুষ) ঃ-

প্রস্তাবিত ভবনের শিষ্ট এরিয়া আনুমানিক ১০০ফুটx৬০ফুট= ৬০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৬য় তলা ভিত বিশিষ্ট ৪র্থ তলা হোস্টেল ভবন । যাহার মধ্যে প্রতি রুমে ৪ জন করে থাকার সুবিধা রেখে কক্ষ তৈরী করা যেতে পারে। প্রতি ফ্লোরে গোসলখানা টয়লেট থাকবে। নিচ তলায় ডাইনিং রুম, রান্নাঘর, টিভি রুম ও অডিটোরিয়াম ।

কর্মকর্তা/কর্মচারীদের জন্য আবাসিক ভবনঃ

কর্মকর্তার জন্য ১ টি আবাসিক ভবন নির্মান যার শিষ্ট এরিয়া আনুমানিক ৩০০০ হাজার বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ২ ইউনিটের ৩ তলা ভবন নির্মান (৪ তলা ফাউন্ডেশন) এর নক্সা প্রণয়ন।

পাঠাগারঃ

আবাসিক ছাত্র/ছাত্রীদের ও কর্মকর্তা কর্মচারীদের নামাজ পড়ার জন্য একটি ছোট আকারের পাঠাগার (অজু করার সুবিধাসহ) ভবন নির্মান এর নক্সা প্রণয়ন ।

বিঃদ্রঃ ৩ (তিন) একর ভূমির উপর সীমাবদ্ধ রেখে প্রস্তাবিত ভবনের নক্সা প্রণয়ন স্থাপত্য অধিদপ্তরের বিধি অনুযায়ী ৩ (তিন)টি বিভাগের জন্য (সংযুক্ত লে-আউট অনুযায়ী) একই রকম ভবনের নক্সা প্রণয়ন করা যেতে পারে। উল্লেখিত তথ্য সমূহ অনুমান ভিত্তিক। এ সংক্রান্ত যে কোন তথ্যের জন্য ০২-৮৮৭০৭২৭, ০১৭৪৬১৭৬৯৯৭ পরিচালক বিটাক,ঢাকার সাথে যোগাযোগ করা যেতে

বিটাক

২৭/১২/১৯

আনোয়ার হোসেন চৌধুরী
মহাপরিচালক (অতিরিক্ত সচিব)
বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক)