

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

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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.
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Approval

The project titled “Bangladesh Industrial and Technical Assistance Center, Barisal” submitted by [Nymus Salam Reshad (15308013)] Of Fall, 2020 has been accepted as satisfactory in partial fulfillment of the requirement for the Bachelor of Architecture degree on [30 December, 2020].

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Abstract

Technical training plays a key role in the development of a generation of the country. In a world where everything is updated on a daily basis, the number of personals with technical knowledge should be increased. The technical assistance center can bring some new innovations and provide enough numbers of trainees to the related fields. Bangladesh industrial technical assistance center has played a great role in the innovation and product quality in the technical sectors. The center has offered training for different types of people. From university graduates to local technicians and rural people. It has always provided different sets of course for addressing all different types of people in our society. This project was developed in a way so that, the importance of technical assistance training along with the maintenance of social responsibilities can be ensured in the given site by using the full potential of the project.

Keywords: Technical training; Technical assistance; local; social; innovations.

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List of Acronyms

BITAC Bangladesh Industrial Technical Assistance Centre

PITAC Pakistan Industrial Technical Assistance Centre

IRDC Industrial Research & Development Centre

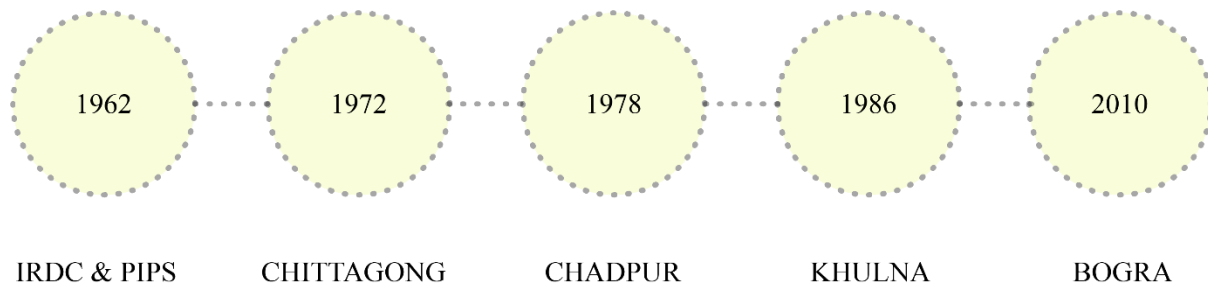
PIPS Pakistan Industrial Productivity Services

Chapter 1: Introduction

1.1 Introduction to the Project

Bangladesh is a country with so much opportunities. It also has a huge number of population. For an over populated country, the use of population for the betterment of the country is necessary. In Bangladesh, a large number of population fails to complete quality education from the school and college based higher education system. Besides that many people also forced to end their education before college education for many socio-cultural reasons. Therefore, for these people the government has Bangladesh Industrial Technical Assistance Centre (BITAC). BITAC is that the successor to Pakistan Industrial Technical Centre (PITAC).

Figure 1.1.1: BITAC in Bangladesh



Source: BITAC Bangladesh.

The main focus of BITAC is to improve national economy by creating product, process and trained people. Furthermore, BITAC currently has Five Centers in Bangladesh at Dhaka, Chittagong, Chandpur, Khulna and Bogra. Through BITAC govt. provides the necessary facilities for hands on technical training including food, lodging, transport allowance, books etc. Moreover, this is not only a technical training program. Besides technical training the package is designed on the basis of demand, firmly targeted towards the goal of employment, directly linked with the demand of the factory and self-employment program.

The package includes adaptation, motivation and physical fitness along with technical skill development.

1.2 Aim and Objectives of the Project

The main target of this project is to provide support and learning facilities for under privileged people in a very minimum expense so that they can use that skill in their future. The regional institution will provide essential training facilities for trainees to become the best among all technical skill human resource developers & industrial spares manufactures in all aspects. It will also empower employees for shouldering higher responsibilities resulting in job enrichment and job satisfaction by undertaking various research and development programs to explore the new and innovative manufactures and use of spares parts.

The objectives of the project are:

1. To improve the skills of the industrial personnel in technical and light engineering sector.
2. Promoting productivity consciousness in the people by encouraging them to form productivity associations in industrial Centers & offices etc.
3. To develop products, processes and tools, etc. to help industries in improving the quality, increase production and reduce cost and utilizing indigenous raw materials and to increase the scope of indigenous manufacture and Conduct productivity studies in such selected plants as may be determined and recommend ways and means for 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 .

Figure 1.3.1 : BITAC proposals



Source: BITAC Bangladesh.

Chapter 2: Literature Review

2.1 Technical Education

2.1.2 Vocational education

Modern Vocational education consist of programs & courses which teach important and valuable skills to a very high standard. This type of education creates a direct path for someone into higher education system. The traditional higher education system is contained overly highlighted apprenticeships and subscriptions. Besides that this type of education only prepares the students for the minimum requirements which are needed by the labor market values. On the other hand vocational education can make the students more skilled in different kinds of newly created techniques and advanced topics. (Alison Wolf, Baroness Wolf of Dulwich, 2011)

2.1.2 Vocational technical education

Vocational technical education helps the individual to acquire sufficient education and training for an occupation without having a bachelor degree. Vocational technical education is sometimes referred a system but unlike any other education system 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 & developing nations are embraced the significant and complex undertaking of rebuilding the instruction and preparing frameworks to meet the improvement prerequisites with regards to evolving condition. Technical and Vocational Education and Preparing (TVET) frameworks are required to deliver a new type of equipped workforce who can contend furthermore, exceed expectations in a quickly changing condition and improve the nation's economy. TVET makes the single biggest commitment in creating human assets right now innovation. One can measure the technical improvement of a country by taking a look at its TVE framework. A well-sew TVE framework, equipped to the national needs and receptive to the worldwide needs, can cause a quantum jump towards improvement and give its population the serious edge over other countries. Educator coaches and educational program makers in Bangladesh, Bhutan, Cambodia, Lao, Myanmar, and Nepal furthermore, Viet Nam needs to improve the board and conveyance of Technical and Vocational Education and Preparing (TVET) using ICT. (Md. Rashedul Huq Shamim* and Md. Abu Raihan, 2016)

This sector is diverse, serving more than 875270 students, involving many stakeholders (for example 15 types of providers).Types of institutions involved were: Polytechnic, Technical school and college, Glass and ceramic. Graphic Arts, Survey Institutes, TTC Textile institutes, Textile occupation, Agricultural training institute, Marine Technology, SSC Vocational (independent) HSC Vocational (independent), Medical Technology, HSC Vocational (attached) & HSC business management (BM). This is additional and additional growing sub-sector: total institutions were 1137 in 2000 which becomes 2314 in 2003, 5790 in 2015 and after that 5897 in 2016; total number of students were 116055 in 2000 after that 188686 in 2003 and furthermore 875270 in 2016. (BANBEIS, 2020)

2.3 Bangladesh Industrial technical assistance center

BITAC is an autonomous organization under the ministry of Industries. In 1962 it was created by combining two different organizations Industrial Research & Development Centre (IRDC) and Pakistan Industrial Productivity Services (PIPS). It was previously named PITAC. Right now, BITAC has five different centers throughout Bangladesh at Dhaka, Chittagong, Chandpur, Khulna and Bogra .

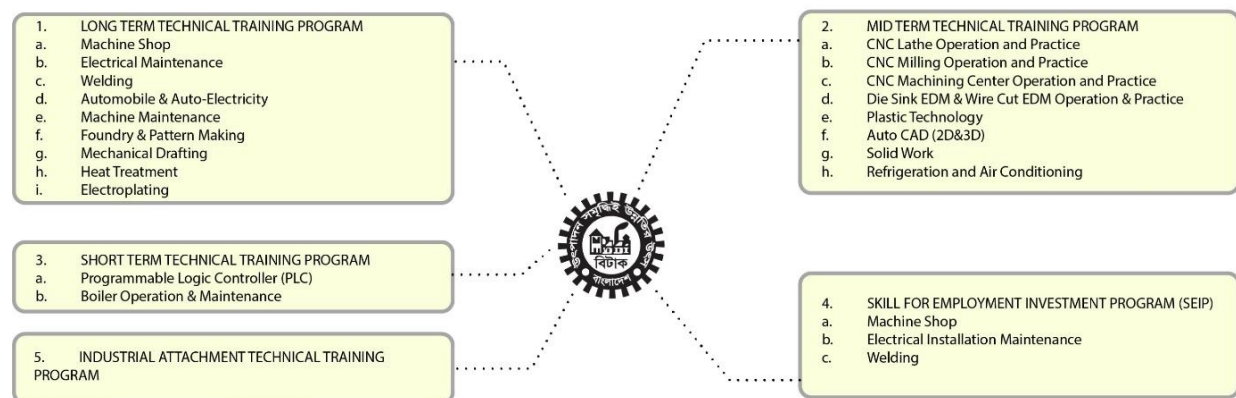
BITAC has different types of activities. It will help to update the ability of the modern faculty in specialized fields. It will generate ventures fundamentally in the private area on issues relating to mechanical efficiency. Besides that, it will spread current specialized ability among modern staff through classes, bunch conversations, exhibits, productions, film show and so on and also stretch out counseling administrations to modern association and ventures mostly in the private part. It's one of the major focus is to co-work with worldwide and national associations and organizations in exercises for expanding mechanical efficiency and advance specialized expertise so that the industries can embrace such measures and make such strides and do every single such thing as might be helpful for the advancement of welcoming relations between the inside and individual inspired by the targets of the center.

Therefore, to verify the acknowledgment of the inside in Bangladesh and other remote nations. Related to the redesigning program and to make it progressively powerful, the BITAC will: Aid the structure and advancement of dances and installations checks, shape, pass on, punches, instruments and products(proto-type) for ventures and horticulture; Create procedures and devices and so on, to help enterprises in improving the quality, expanding generation, lessening cost and using indigenous crude materials and to build the extent of indigenous create; Lead profitability considers in such chose plants as might be resolved and suggest available resources for development. Therefore, to do all such other legitimate things

as the inside may think indistinguishable or helpful for the achievement of any or all the destinations of the center referenced previously.

Currently BITAC has five different training programs (BITAC, 2020)

Figure 2.3.1: BITAC courses



Source: BITAC Bangladesh.

2.4 Training Facilities

An expert's demand for instruction and getting ready does not endless offer of their standard tutoring years. Today, like never before, continuing with instruction is principal to maintaining and upgrading one's skills, significantly in light-weight of changes in innovation that sway basically each vocation. Whereas most state authorizing offices and skilled affiliations need continuing with instruction credits for skillful affirmation, individuals might hunt for instructive possibilities to accomplish alternative individual and vocation destinations.

Figure 2.4.1: Florida Community College classroom at Jacksonville's Advanced Technology Center.



Source: KBJ Architects Inc.

Building attributes

A training workplace for specialists should have productive and edible learning things that is secure, sound, snug, aesthetically-pleasing, and obtainable. It should have the choice to suit the actual area and hardware wants of the preparation program and academic set up. Bolster areas designed for grown-up wants, as an example, a business station that allows understudies to complete some business capacities throughout their tutorial conferences, should be cleanly coordinated into the workplace too.

A. forms of Areas

Any training facility incorporates sort of space varieties to satisfy the needs of adult trainees, trainers, and staff. These may include:

CLASSROOMS

- Auditoriums: Big rooms designed for large scale instruction and training. Space might even be equipped with partitions to create smaller work venues. To facilitate circulation and

straightforward access, realize auditoriums on the first floor of the building near to major parking facilities.

- Conference Rooms: Multiple purpose medium-size instruction rooms. By changing the seating configuration, these rooms may also provide lecture-style teaching. usually a pair of or three area rooms is also combined to create a much bigger room by gap movable partitions that slide or fold into pockets inside the walls.
- Seminar Rooms: Multiple-purpose, small-size instruction rooms, sometimes accustomed accommodate a little variety of individuals inside shut proximity.
- Audio/Visual-Equipped Rooms: Rooms equipped for audio/visual and web-based instruction.
- Computer coaching Rooms: Rooms equipped with pc workstations and web access for every student.
- Dry Laboratories: Media based mostly, like physics, electronics.

Equipping fixed desks with under-top monitors ensures adequate sightlines between trainers and participants.

USER SUPPORT areas

- Trainee Storage Spaces: Lockers, coat closets, or cubbies for trainees to briefly store their possessions.
- Library or quiet room with study cubicles.
- Observation Rooms: areas adjacent to lecture rooms for coinciding translation of instruction into a second language.
- Business Stations: area equipped with computers with web access, phones, and fax machines for trainees to quickly connect with their organizations.

- Convenience Store, Kiosk, or peddling Machines
- Bookstore
- Lobby: A middle location for building directory, schedules, and general data
- Common Space: Informal, multi-purpose recreation and gathering area
- Cafeteria or feeding Hall
- Infirmary: on-the-scene health care facility with a non-public workplace for health care supplier
- Restrooms

ADMINISTRATIVE SUPPORT areas

- Administrative Offices: is also non-public or semi-private acoustically and/or visually.
- Trainer Offices: is also shared area and instrumentality, together with computers, phones, fax machines, desks, libraries, and provides.

OPERATION AND MAINTENANCE areas

- General Storage: For things like letter paper, equipment, and tutorial materials.
- Food Preparation space or room
- Computer/Information Technology (IT) Closets.
- Maintenance Closets

(Whole Building design Guide, 2020)

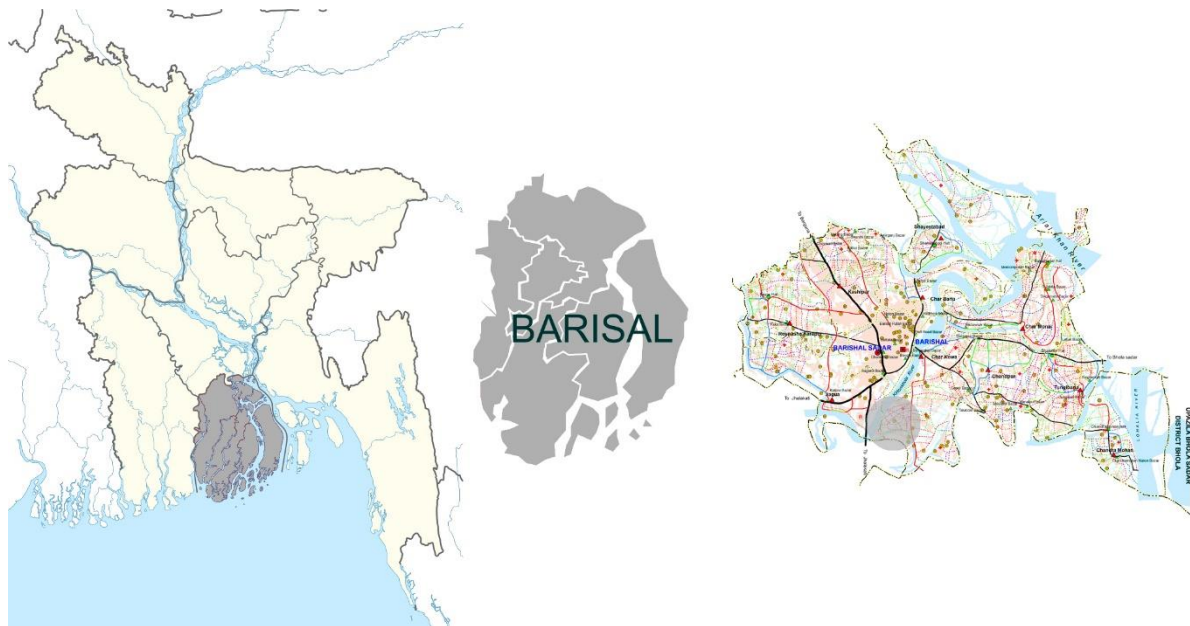
Chapter 3: Site Appraisal

Site appraisal manages the connection between the building site and its general condition. It additionally incorporates the Compatibility of the proposed use with its encompassing. In this chapter, the site and its potentiality will be explained in comparison to the other site factors.

3.1 Site surroundings

Barisal District (BARISAL DIVISION) space 2790.51 sq. km, settled in between 22°27' and 22°52' north latitudes and in between 90°01' and 90°43' east longitudes. it's delimited by Madaripur, Shariatpur and Chandpur districts on the north, Patuakhali, Barguna and Jhalokathi districts on the south, Bhola and Lakshmipur districts on the east, Jhalakathi, Pirojpur and Gopalganj districts on the west. Population Total 2355967; male 1197722, feminine 1158245; Muslim 2054754, Hindu 286642, Buddhist 13217, Christian 531 et al 823.

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



(Source: Author from google)

There are multiple prominent Water bodies in the district. From them, Main Rivers are MEGHNA, KIRTANKHOLA, TENTULIA etc. Bakerganj district was established in 1797; presently it had been renamed as Barisal district. Barisal was declared as a division on one January 1993. Barisal Paurasabha was fashioned in 1957 and it had been become a town corporation in 2000. The district has ten upazilas of which Hizla is that the largest (515.36 sq km) and Banaripara is the smallest (134.86 sq km). (Source: Banglapedia, 2020)

Figure 3.1.2: Location of the site in the context of Barisal.



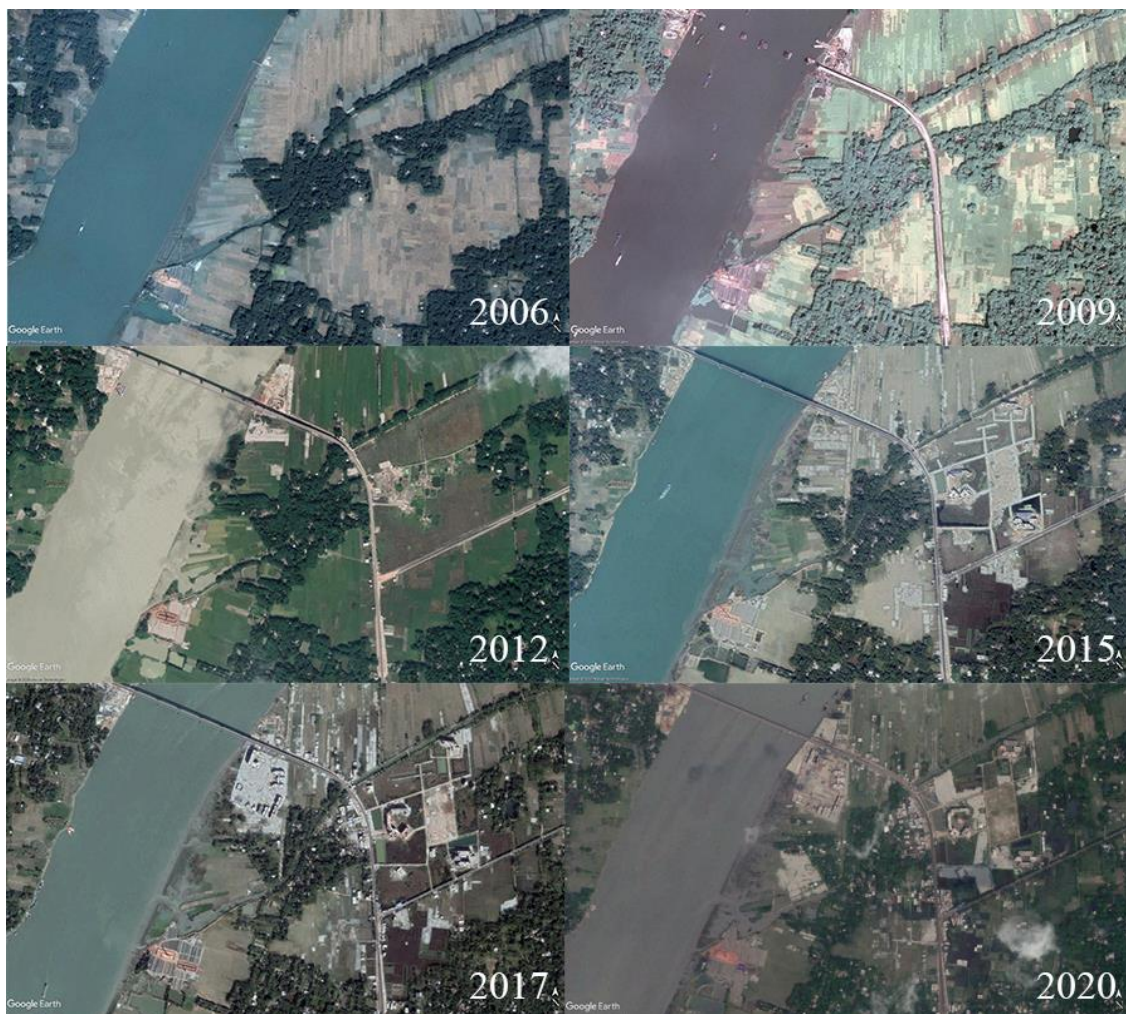
(Source: Author from google earth)

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 site is situated in a village area which wasn't connected to the city before 2011. The Kirtonkhola River makes the village very suitable for the future development project site. Besides that, Dhaka-Patuakhali & Barisal-Bhola highways also connects the site to the main city area. After the development of the Barisal university in 2012 the area also has some other proposals for institutions like Barisal Marine Academy, SOS village etc. by going through the previous satellite images it can be decided that the area was highly green in nature. The whole area worked as a green buffer zone for the city. The area used to serve the livelihood of the rural people who mostly lived on the farming which used to happen here.

Figure 3.2.1: History of site surroundings

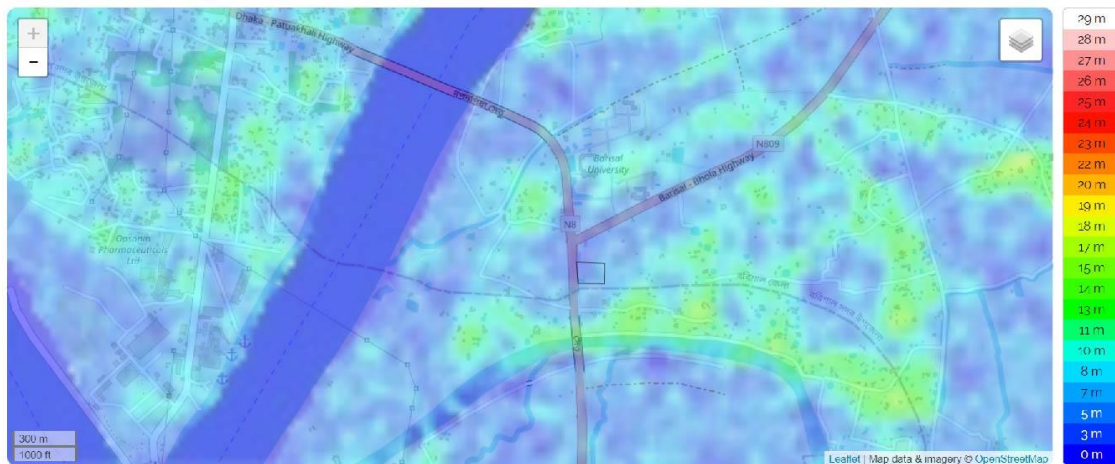


Source: Author after google earth

3.3 Geographical Characteristics of the Site

The project site is a comparably flat area of 5 acres. No proper drainage system has been established in the site area. It is currently used as paddy field.

Figure 3.3.1: site Topography

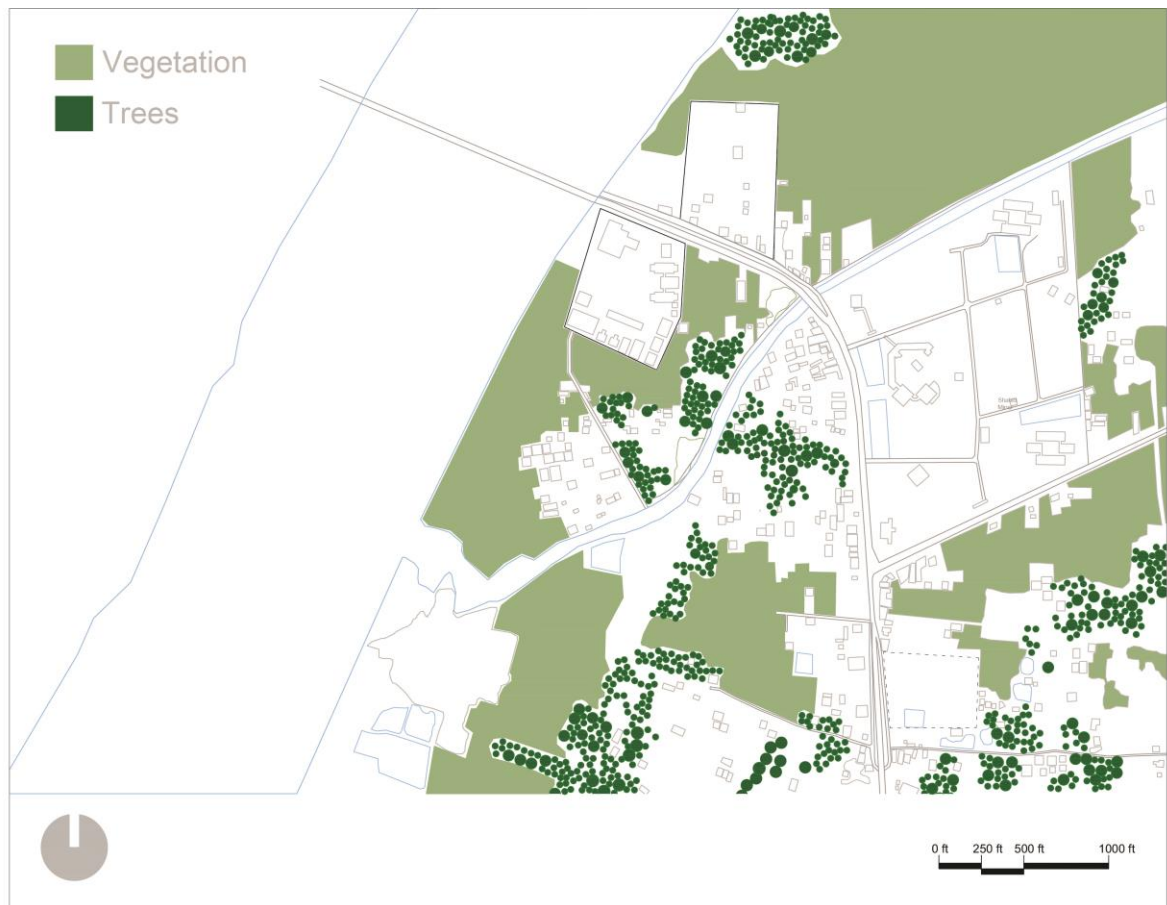


Source: Author after google earth

Figure 3.3.2: Figure Ground map of the site surrounding



Figure 3.3.3: Vegetaion map

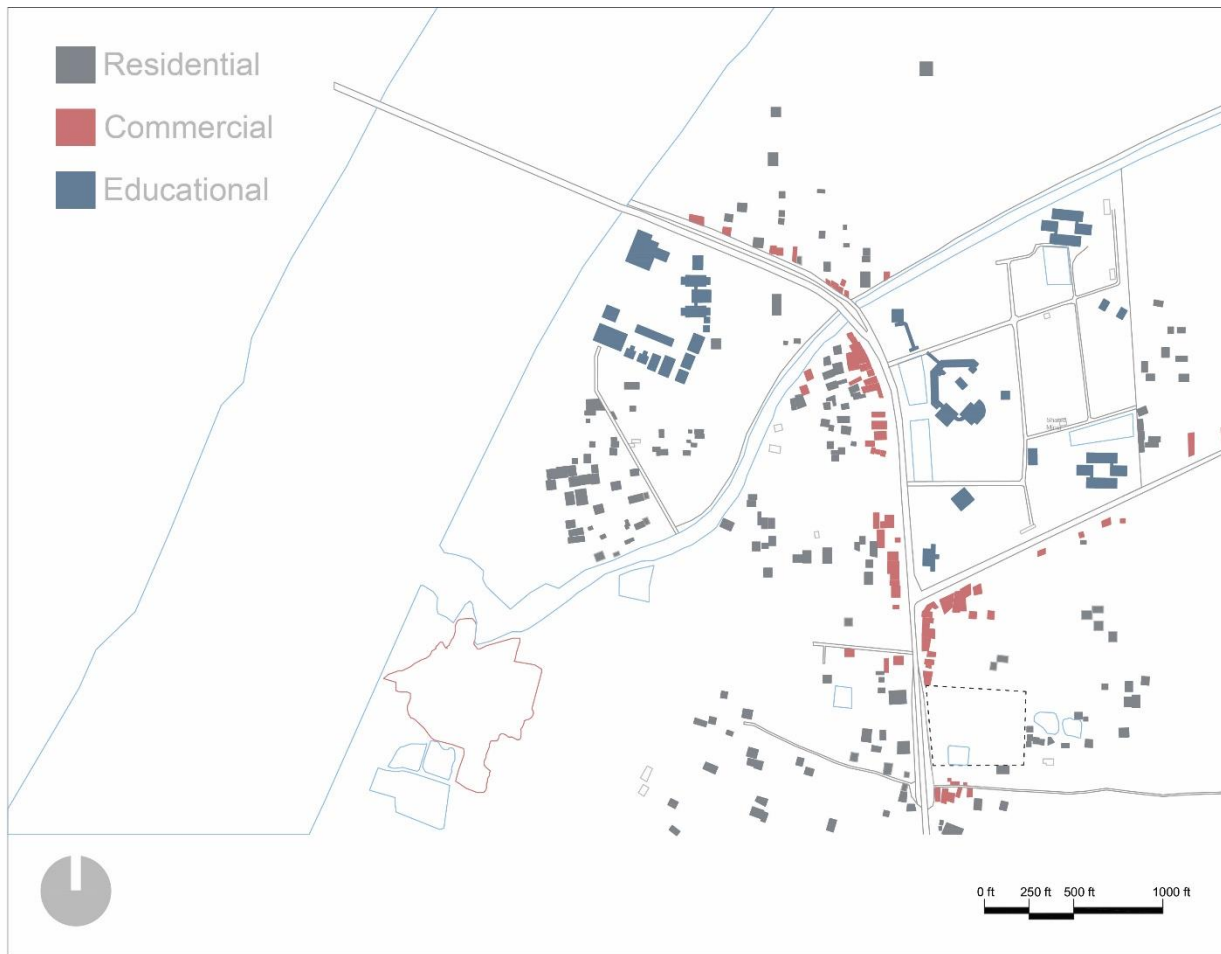


Source: Author

3.4 Land-use Pattern of the Surroundings

The area is highly filled with rural homestead and commercial settlements. Recently in the previous decade many educational institutes are being built in this area, among them Barisal university and marine institute is important. Because of being situated in the roadside it has high numbers of commercial blocks.

Figure 3.4.2: Land Use map of the site surroundings.



(Source: Author)

3.5 Accessibility and Connectivity

The site resides to a U shape road which is situated under a bridge. The road contains the main traffic of the area which connects the north side of it with the south side market of the area.

.Figure 3.5.1: Road map of the site surroundings.



(Source: Author)

Road: Barisal is connected to most other region of the country via the N8 national highway. There are two bus terminals in Barisal, Nathullabad Central Bus terminal & Rupatali Bus terminal.

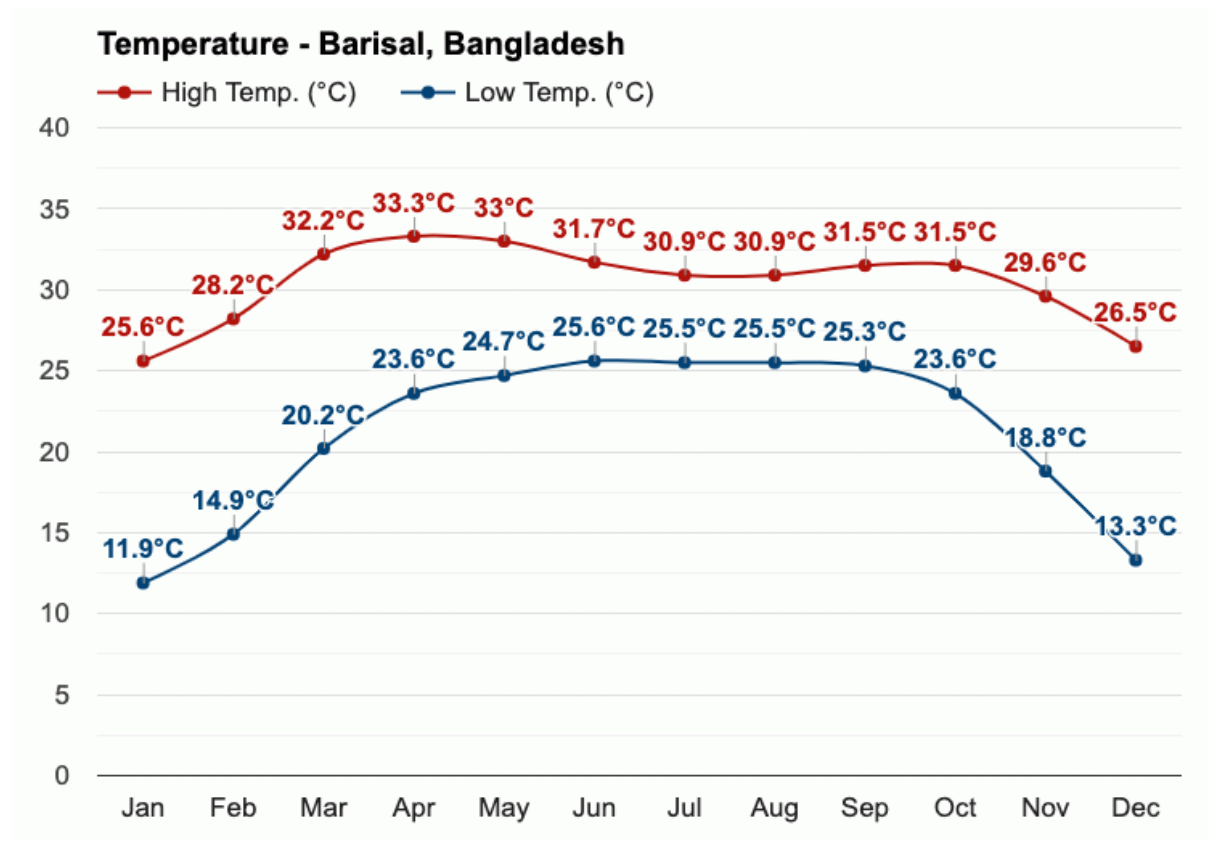
River port: Barisal river port is the second largest river port in Bangladesh. It is the most popular way of communication for people of Barisal to Dhaka, the capital city. It is also a popular transport system with other districts like Bhola, Barguna, Lakshmipur.

Air: Barisal airport is a domestic airport. Biman Bangladesh Airlines, Novoair and US-Bangla use this port. Active air-route is Barisal-Dhaka-Barisal.

3.6 Climatic Conditions

From the weather information of Barisal, the average lowest daily temperature in January and is about 12.6°C, whereas the highest in May when it turn into 25.7°C.

Figure 3.6.1: An overview of temperature in Barisal.



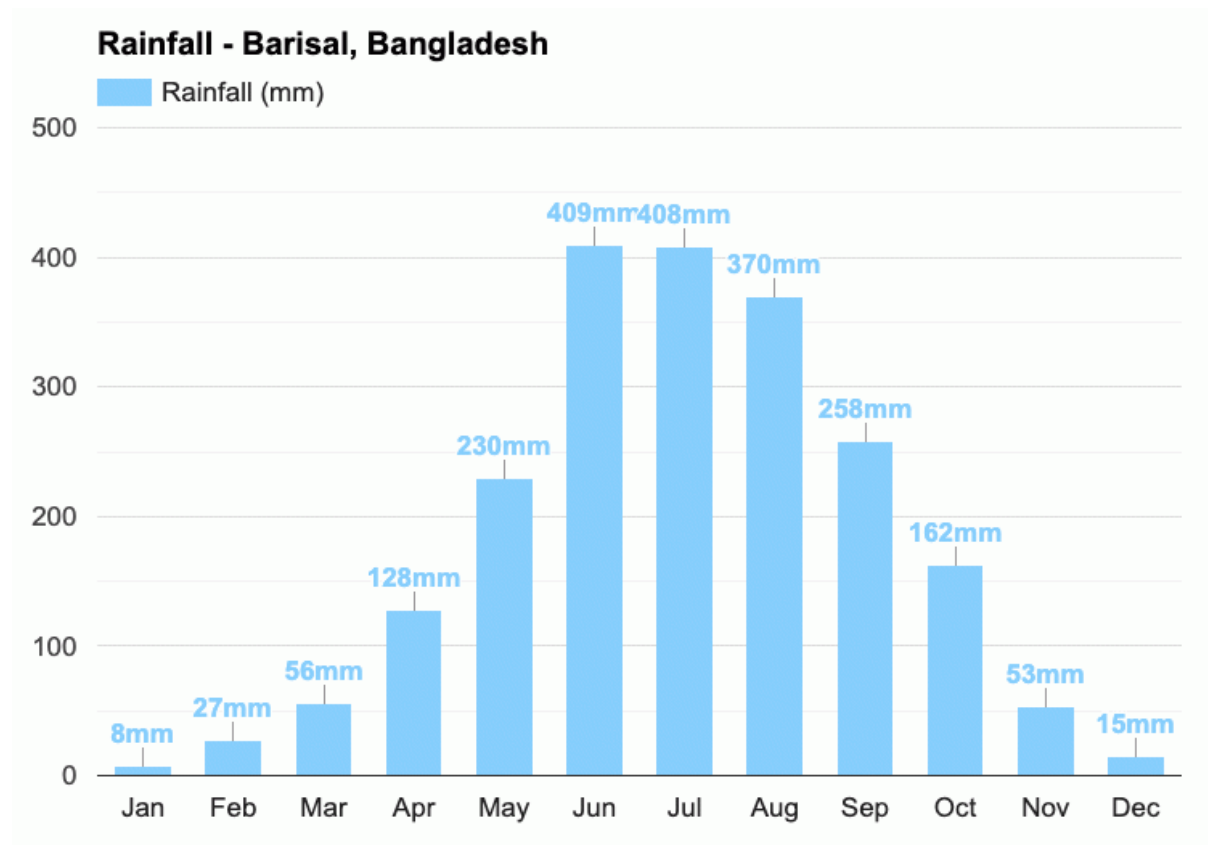
(Source: <https://www.weather-atlas.com/en/bangladesh/barisal-climate>)

The average maximum daily temperature is lowest in January and is about 25.8°C and the highest in May 35.4°C.

Annual rainfall helps to assume the climatic condition of the certain area, most necessarily, from architectural point of view; it helps the orientation of building, placement, choosing

materials and different technical issues. The average annual rainfall in Barisal is about 2184 mm.

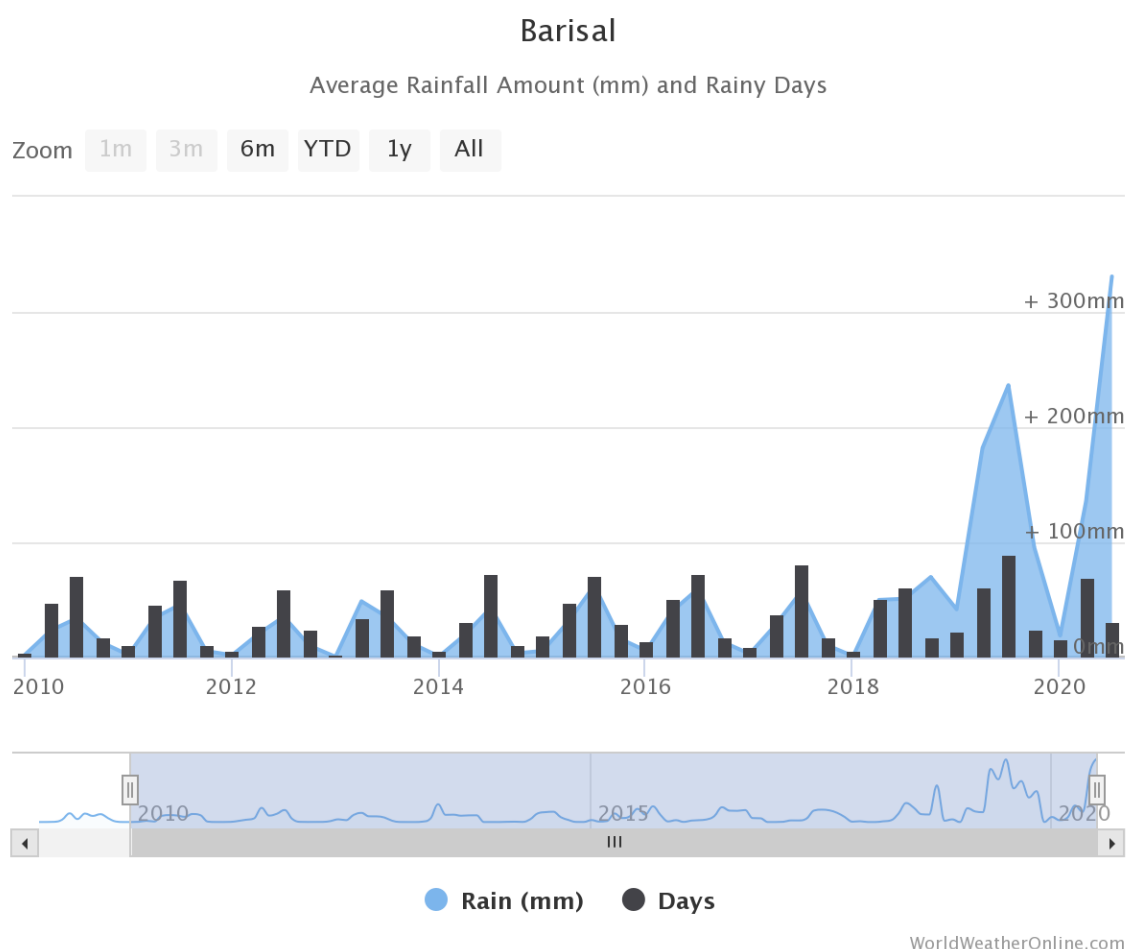
Figure 3.6.2: Illustration of annual rainfall series and graphical monthly rainfall.



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

The rate of rainfall has increased prominently in recent years. The area has seen an increase of rainwater in during a certain period of the year. The overall water level also increases in that period.

Figure 3.6.3: comparison of annual rainfall.



Source: worldweatheronline.

3.7 Socio-Cultural and Economic Contexts

Kornokathi is right now one of the quickest developing towns in Barisal, as the improvement ventures are growing toward Kirtonkhola River along the Barisal-Patuakhali interstate passage. The town has an entrenched social framework under Barisal sadar. It has a claim showcase, school, mosque, sanctuary, church as the social necessity. The area is utilized as a farming viewpoint and brushing land and as the land is utilized as a horticultural point of view. So the land has financial significance.

3.8 Images of Existing Site Condition

Image 3.8.1:site with adjacent road.



Source: Author after google.

Image 3.8.2:site with waterbody in it.



Source: Author after google.

Chapter 4: Case Study Appraisal

Case study appraisal contains three different studies from three different places. First one is Barisal Polytechnical Institute from Barisal, Bangladesh. This one matches the context perfectly as the site is also situated at Barisal. After that, the second one is Samundra Institute of Maritime Studies from Pune, India. This project features the design approach, which is quite similar to the project context in case of multiple blocks and workshops. Therefore, the third one is from Gennevilliers, France named Gennevilliers Training Center.

4.1 Barisal polytechnic Institute, Barisal

The government of then East Pakistan planned to modernize and expand the technical education system in late sixties. Five Polytechnic institutes were proposed in five major districts to produce trained personals to perform in jute, cotton, gas and other technologies. The idea was to create module buildings that would be built on all the sites. Muzharul Islam invited Stanley Tigerman from Chicago who was a classmate from his student days at Yale, to come and participate with him on the project. They together designed building modules that would be responsive contextually, tectonically, climatologically, ecologically and even though in nature prototypes, would somehow become site-specific. This project produced in masterful planning of five different master plans. Each one of them were not only site specific but also represented the uniqueness of the area it was situated.



Figure 4.1:

Barisal polytechnic institute. (Source: Author)

4.1.1 Environment and micro-climate

As Barisal is a riverine area of the country it has a record of being flooded at a particular time of the year, the plinths of the building blocks were raised. Besides that multiple waterbodies were incorporated into the planning for water reserving purpose. These waterbodies created microclimate for the whole institution area.

4.1.2 User behavior and requirements



Source: Maruf Raihan

4.1.3 Form and Function

For providing comfortable living at reasonable costs, all the buildings were designed with repetitive parallel walls running North- South and continuous windows covered with wooden louvers on the North and South facades, allowing the much needed cross ventilation. These louvers had the ability to be opened and shut at will in many varied combinations that allowed the inhabitants to control their own need of sunlight and wind.

4.1.4 Horizontal and vertical circulation

Horizontal circulation consists of elements such as the corridors and lobbies. Vertical circulation includes elevators, staircases, ramps etc. The efficiency of the placement of these services should be analyzed.



Source: The daily star

Fig: 4.1.5 Site Planning and Landscape detailing



Source: Muzharul islam selected drawings by Nurur Rahman khan

4.1.6 Parking details and standards

Suitable open parking areas were provided in four different places of the masterplan for the different types of functions.

4.1.7 Utility planning

Proper drainage and water management were designed along with water tank in the masterplan.

4.1.8 Structural details

Every blocks were made based on load bearing brick walls. Besides that when necessary ramps were made by concrete to support the vertical circulation.

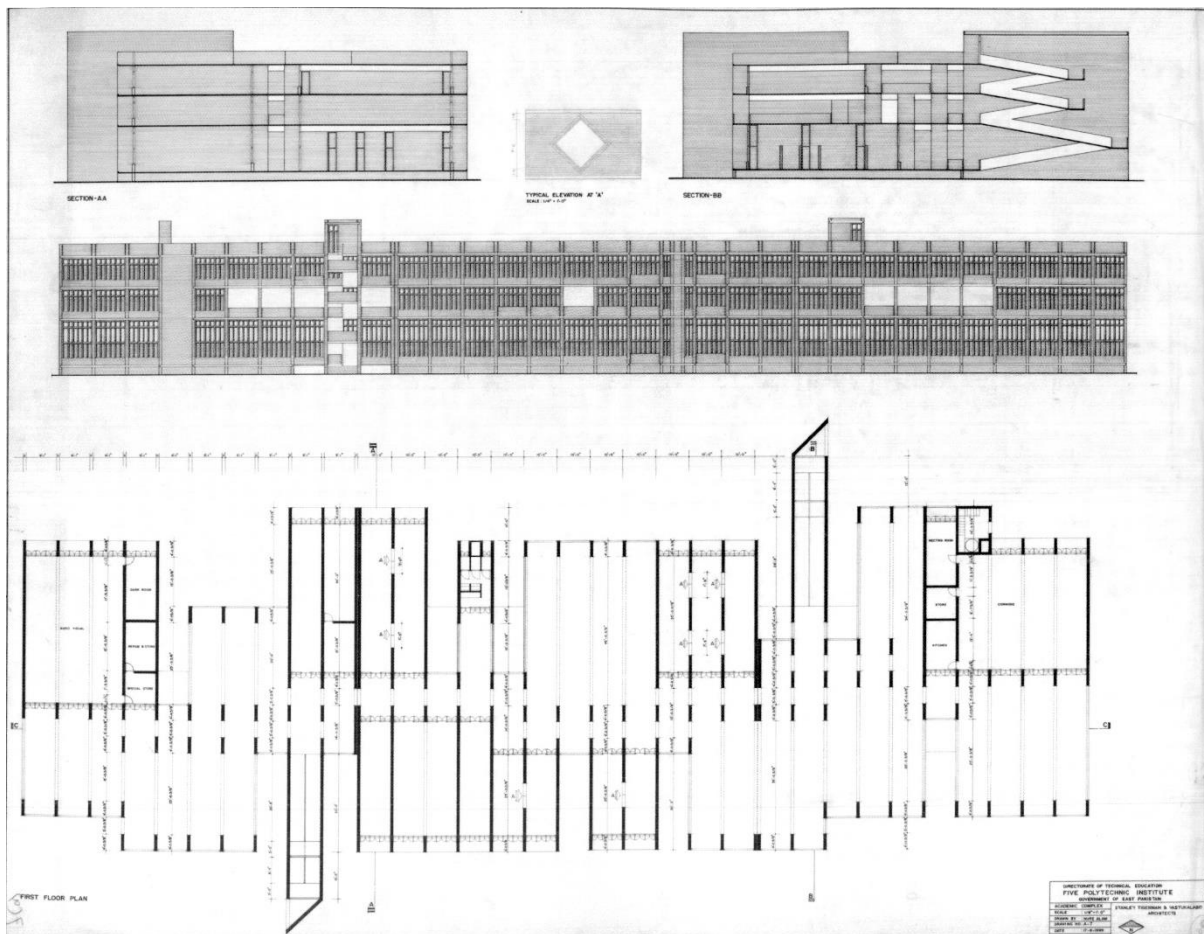


Source: Maruf Raihan

4.1.9 Design detailing

All the buildings were designed in these same characteristics of parallel walls and wooden louvers covering the windows. This remarkable achievement of how prototype buildings can still be made to become site specific by sensitive understanding of places and masterful representation of context, remains a seminal work. The project also shows how the apparent rigidity of parallel lines can be broken down into an almost poetic progression of lines that provide different spaces within the same structural principles.

Fig: 4.1.6 Planning and detailing



Source: Muzharul islam selected drawings by Nurur Rahman khan

4.2 Samundra Institute of Maritime Studies, Pune, India

The Samundra Institute of Maritime Studies (SIMS) close to urban center was created to meet its new vision of Associate in nursing trade driven by environmental protection, safety and potency. Realizing that it should drive this mission through human resources it launched into the creation of a complicated state of the art, world category inexperienced field wherever the total vary of pre-sea and post-sea studies is imparted.

The project was completed in 2007 which houses 480 cadets. It was designed by Christopher Charles Benninger Architects. Total area of the project is 5.2 acres.

4.2.1 Environment and micro-climate

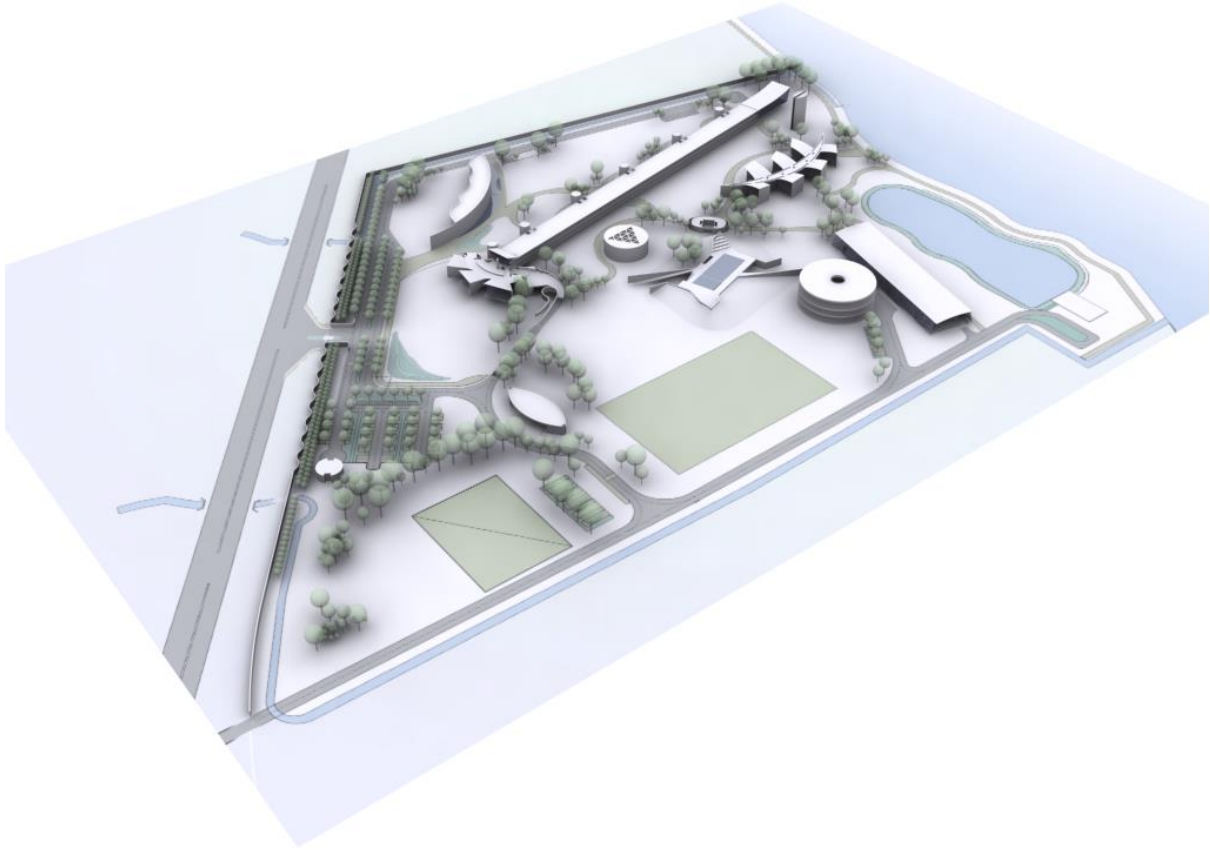


Figure 4.2.1: overall view of the project (Source: Archdaily)

The site is being used for creating a small microclimate by designing proper landscaping with plantation. Besides that, the practice lake situated near the river is also working as a natural water reservoir.

4.2.2 User behavior and requirements

The 300 feet long photovoltaic solar wall which is situated in the Maritime Workshop produces sixty kW of electricity. North façade provides natural lightweight with Clear glass, giving the testing instrumentation and machinery well-rounded, energy free illumination and ventilation.

4.2.3 Form and Function

The Administration Building smartly exploits northern lightweight through its wavy glass atrium wall, whereas generating electricity through the grand electrical phenomenon south-facing façade that produces thirty kW of electricity. All buildings have natural illumination, cutting consumption of non-renewable energy. The forms are created by keeping a reference to the out of doors. All the school rooms and workshops are deliberately baby-faced towards inexperienced is maintained throughout the positioning.

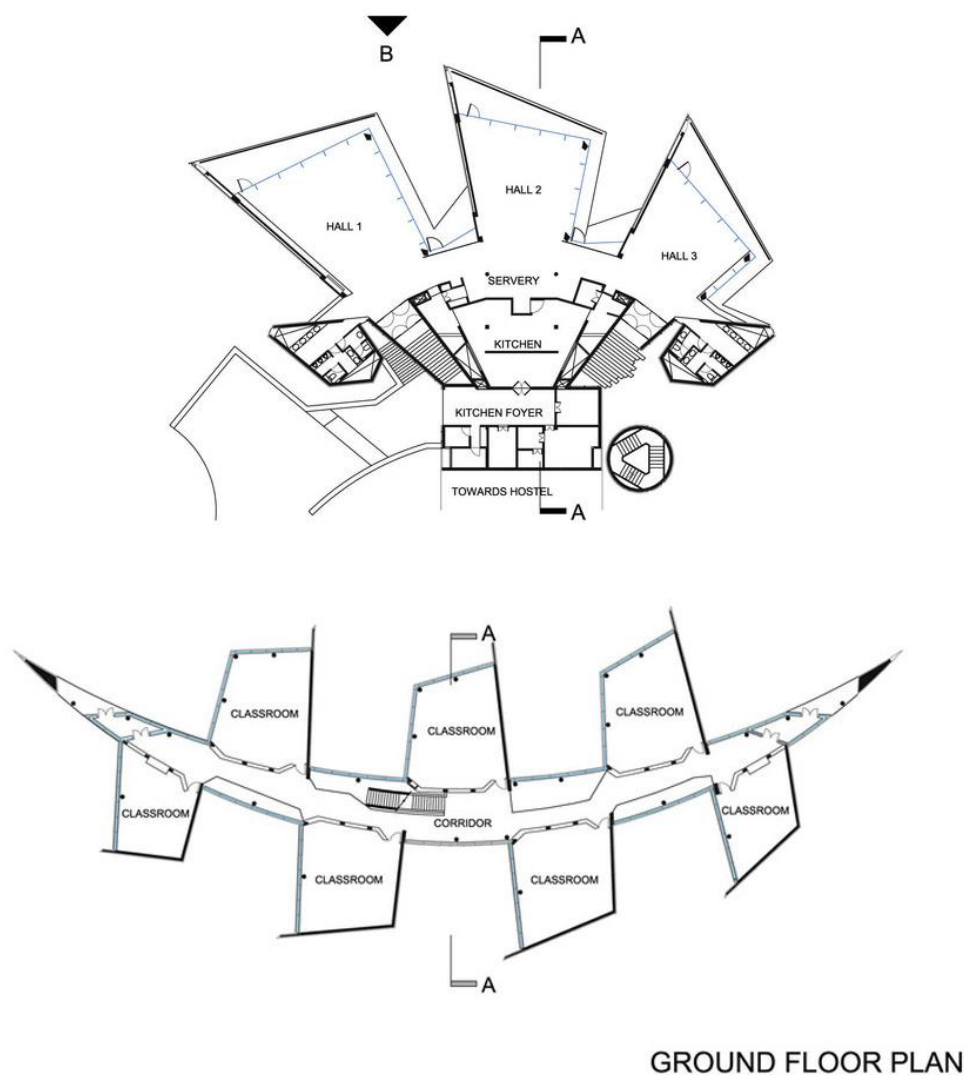


Figure 4.2.3: plan of the project (Source: Archdaily)

4.2.4 Horizontal and vertical circulation

Circulations are created in the middle by placing served functions in two sides. Whether most of the vertical circulations are provided in the private space which connects the services with other functions.

4.2.5 Site Planning and Landscape detailing

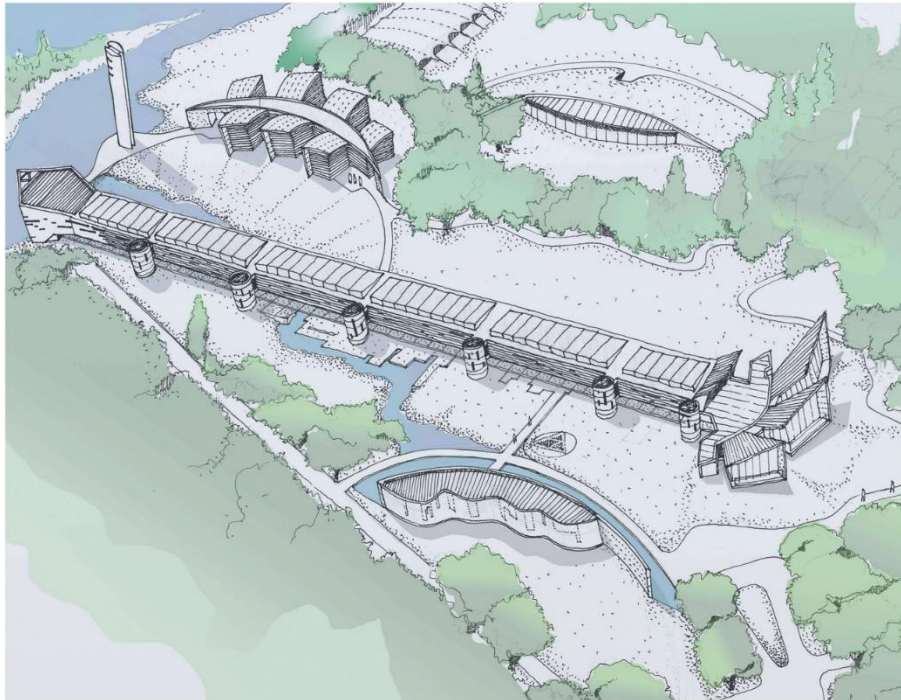


Figure 4.2.5: site with landscape (Source: Archdaily)

4.2.6 Parking details and standards

Necessary parkings are provided on the front side.

4.2.7 Utility planning

Solar panels give the complete heated water demand, exploitation predicament tanks command higher than the hostel roofs from water tanks higher than the circular stairs. These on the face of it frivolous shapes are integrated at intervals a practical system of water management. The twenty eight meter tall central tank is vertically divided into four stages,

with the raw bore spring water increasingly sublime because it reaches the upmost tank, from wherever its gravity distributed to the complete field. 2 bio-sewerage treatment plants recycle gray water to the gardens. Aluminium louvers within the long Hostel and recurved tutorial Building enable natural ventilation and day lightweight, whereas obstruction India's fierce sun, thereby acting as a passive air con system.

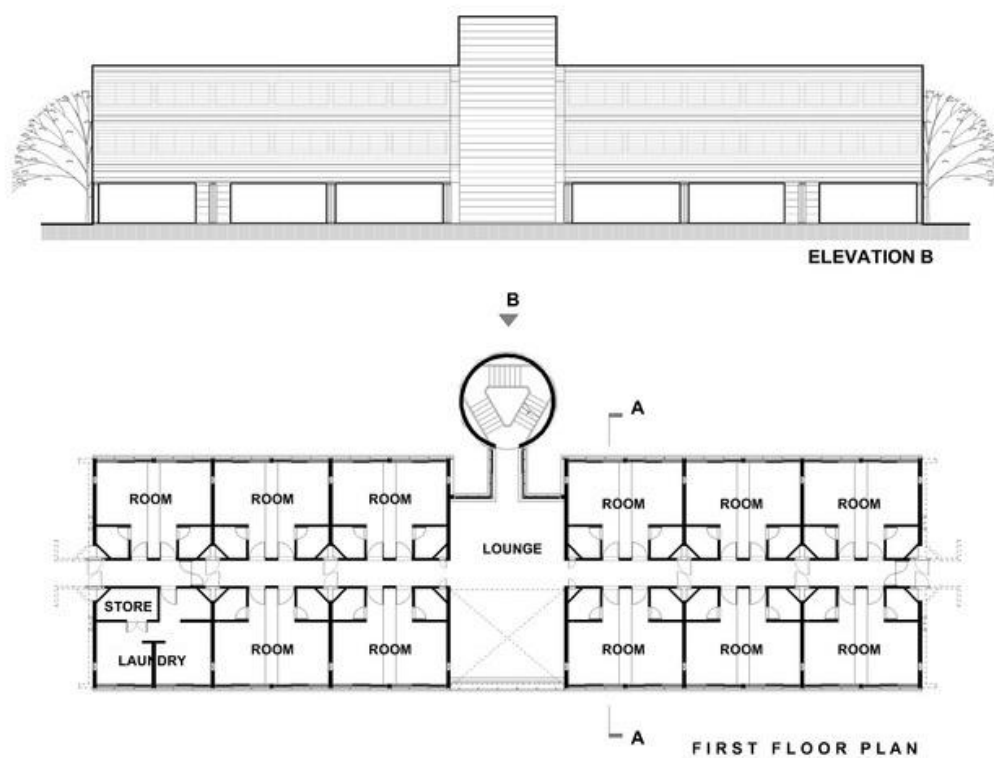


Figure 4.2.7: Detail plan (Source: Archdaily)

4.2.8 Structural details

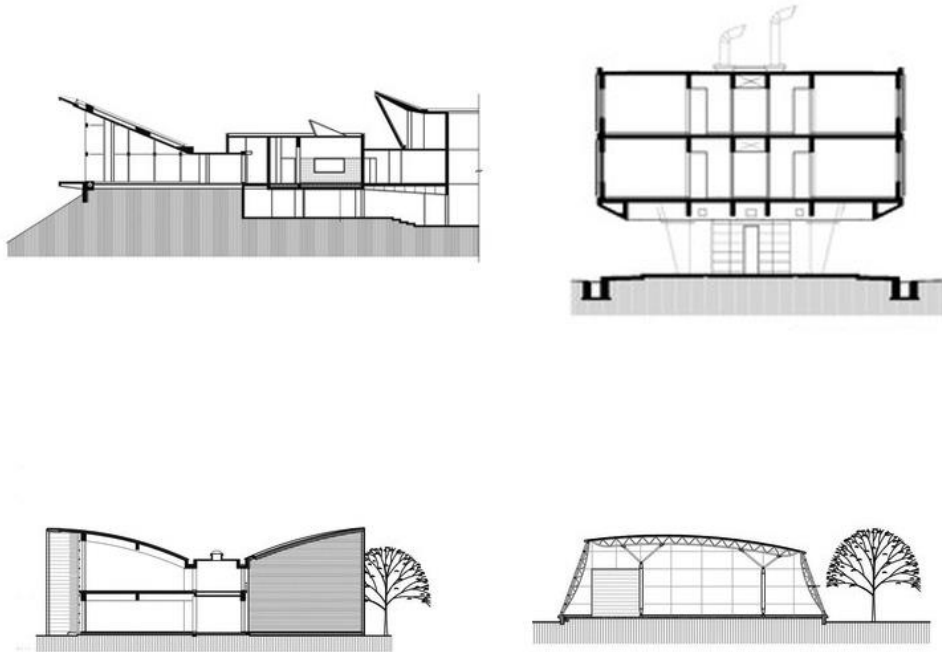


Figure 4.2.8: structure of the project.

(Source: Archdaily)

4.2.9 Design detailing

Efficiency, surroundings and Safety were the 3 vocation cards the corporate determined to push through field style, moving from words to observe through coaching and on-board operations and watching. This has established a sound business strategy within the new millennium as huge shipping disasters, polluting huge waterways, resulted in intensive environmental harm and dear legal proceeding.

4.3 Gennevilliers Training Center, Gennevilliers, France

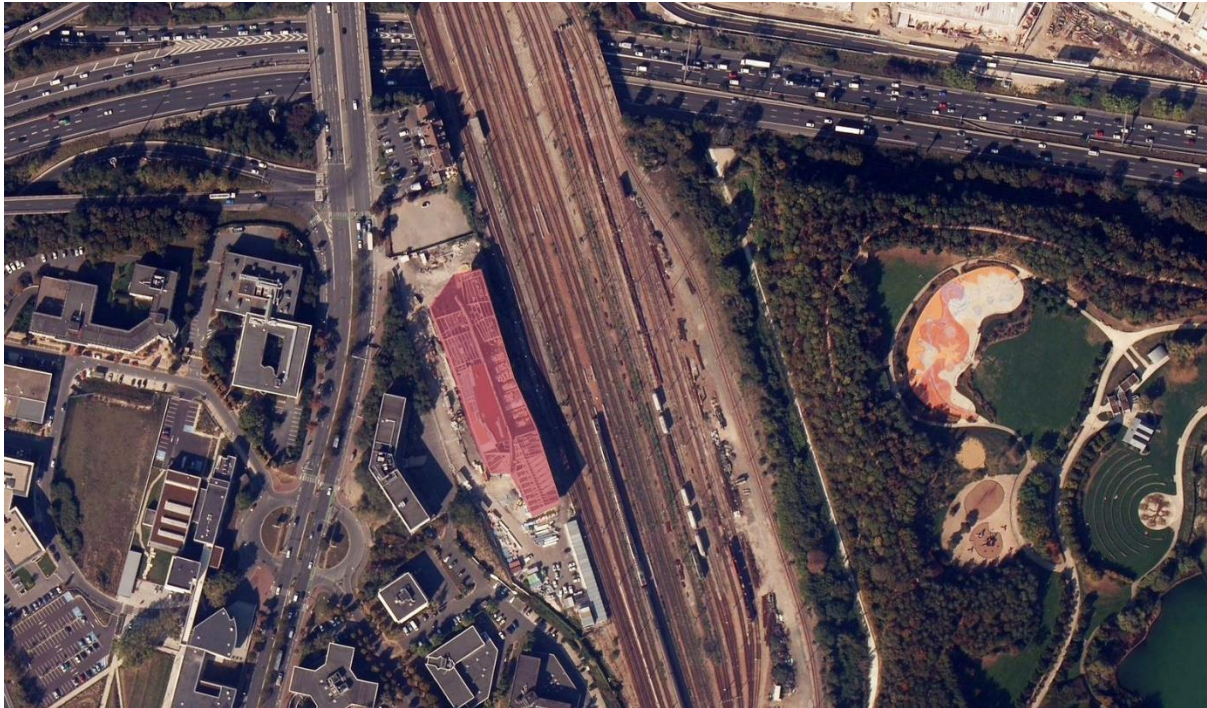


Figure 4.3.1: project in city scale (Source: Archdaily)

Gennevilliers Training Center is situated at Gennevilliers, France. The training center is designed by Atelier d'Architecture Brenac-Gonzalez in 2012. Total area of the project is 1.93 acres.

4.3.1 User behavior and requirements

The unique approach of this project is the northern end from front side is entirely made of glass so that the visitors can see what's happening in the inner side. This particular design feature ensures shows the center's professionalism. The entertainment area can be accessed via the doorway to the primary floor and conjointly from the central gangway resulting in the lecture rooms. There's a

soundproof wall running on the railway tracks to shield the center from noise. The spared area might also be transferred into something else in the future extension.

4.3.2 Form and Function

A first flight of stairs serves Associate in nursing intermediate level housing the cloakrooms, that open out onto a mezzanine dominating the double-height workshops. This landing additionally offers access to the resource center and therefore the library, that are set at a strategic crossroads. The second landing ends up in the executive offices, the recreation space, the sports hall and a few traditional rooms. The workshop wherever elevator maintenance is educated is that the institutional figurehead and is found at the northern tip of the “western block”.

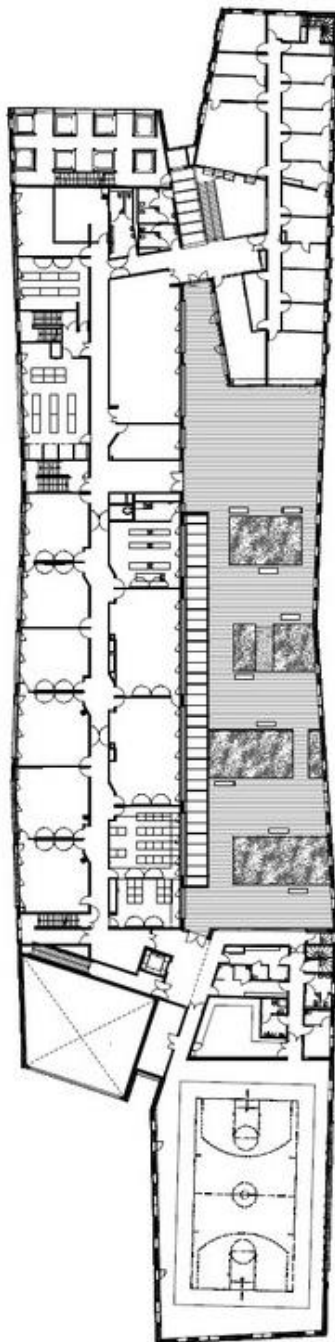


Figure 4.3.2: ground floor plan of the center. (Source: Archdaily)



Source: Archdaily

4.3.3 Horizontal and vertical circulation

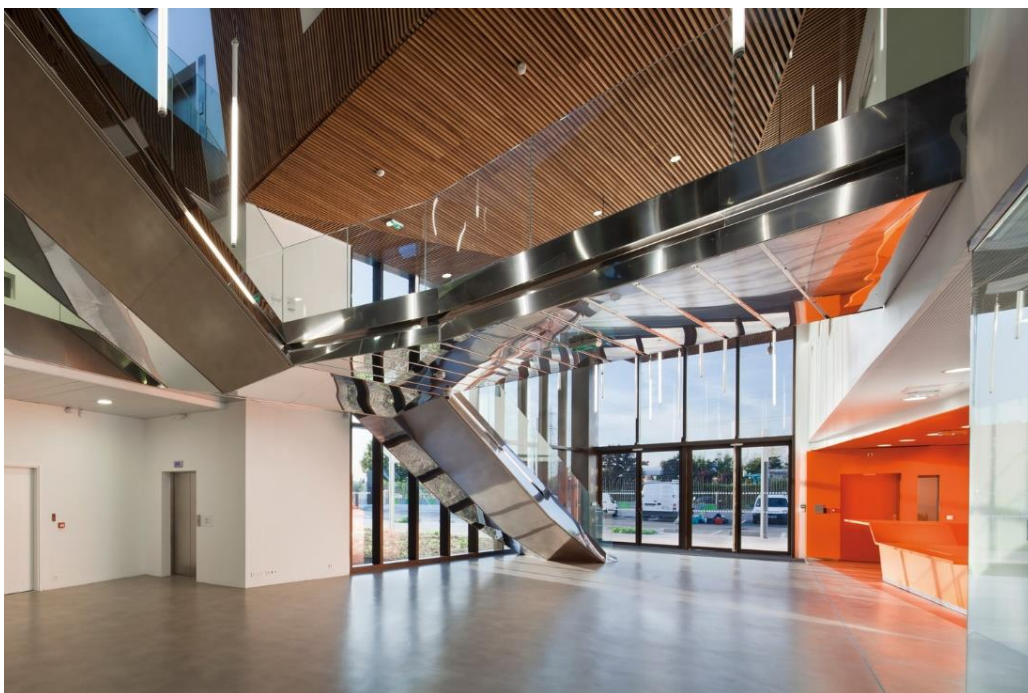


Figure 4.3.3

(Source: Archdaily)

4.3.4 Site Planning and Landscape detailing

The following center provides two different types of teaching: technical training based on woodwork, carpentry and elevator maintenance, and general education. Technical training takes place at the bottom of the building to represent symbolic basis of the center.

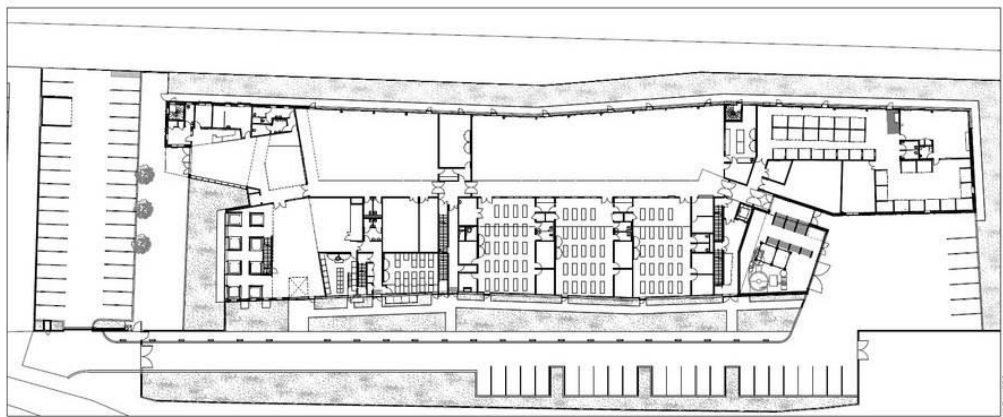


Figure 4.3.4: upper floor plan (Source: Archdaily)

4.3.5 Parking details and standards

Necessary open parkings were provided around three sides of the structure.

4.3.6 Utility planning

The primary target was to produce pleasant, well-lit, sensible and hospitable operating areas and have designed them with the Eudemonia of their users, i.e. body employees, academics

and students, in mind. Exploitation the massive lobby as a politician reception and exhibition hall allows us to gift a decent image of the establishment and of education as a full.



Figure 4.3.6 (Source: Archdaily)



4.3.7 Structural details

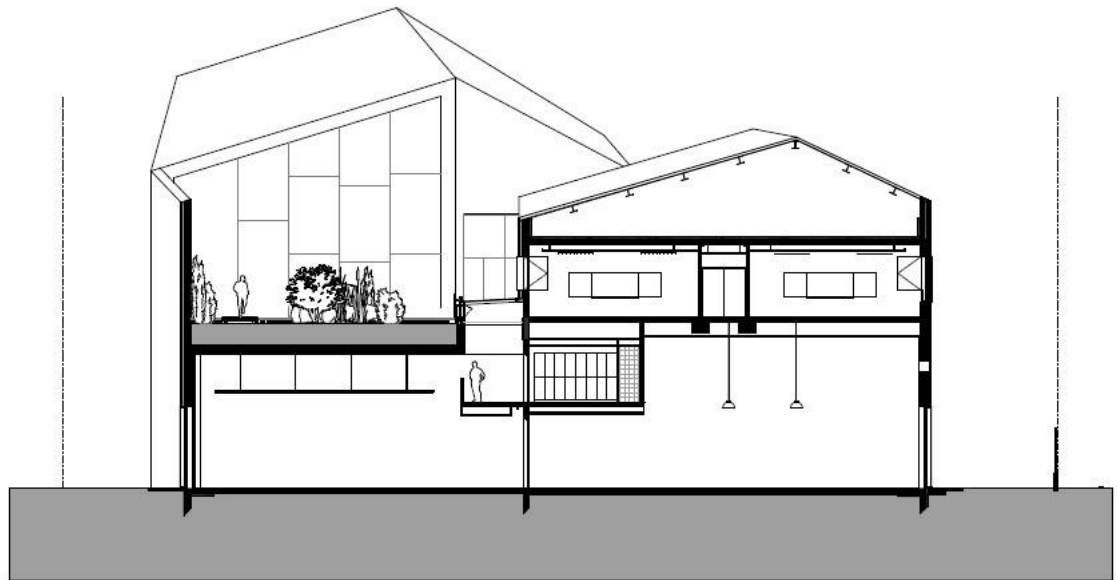


Figure 4.3.7: workshop section (Source: Archdaily)

4.3.8 Design detailing



Figure 4.3.8: section with surrounding (Source: Archdaily)

Chapter 5: Program Appraisal

The foundation of a detailed progress of functions that may lead the whole task work or configuration stages is known as program development. It is a system or structure that gives direction to help utilize spatial use, assets and manages users also. Program advancement gets from customer's prerequisites and some of the time orchestrated by the premise of requirements.

5.1 Program Derivation

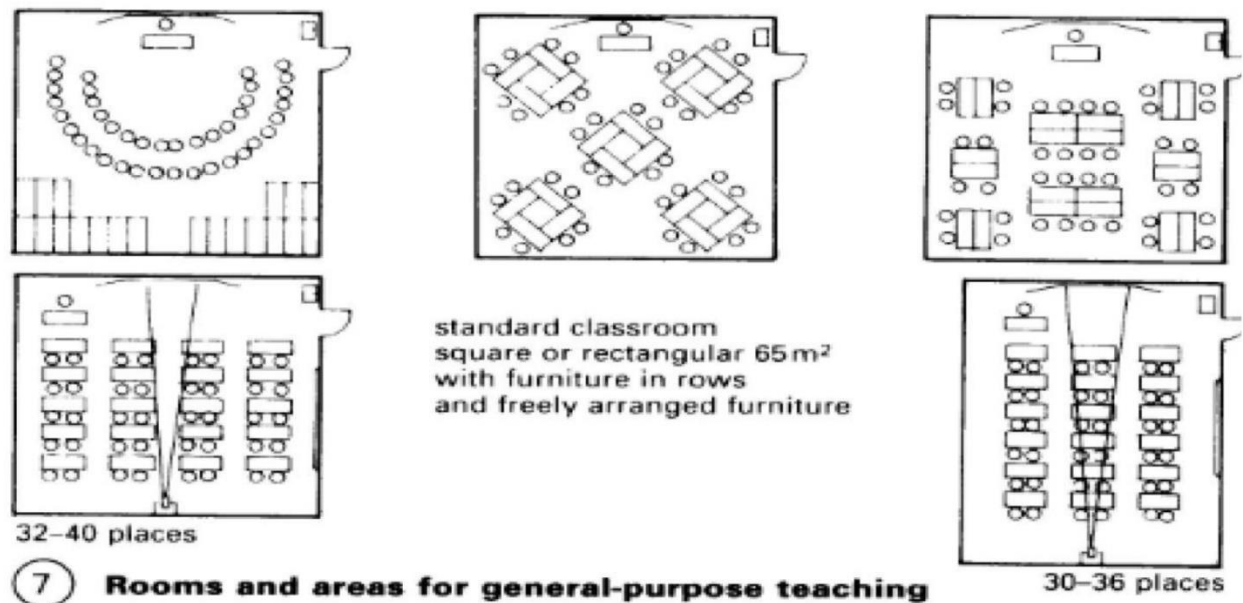
Technical training centers are designed to serve different kinds of people from different background. BITAC as a training center has a huge numbers of participants in contrast to the higher population of the country. Besides providing workshops for trainees, it will also hold necessary hostel and residential facilities. It will also provide office rooms for different types of 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 analylis will help the designer to derive spatial analysis along with proper space requirement for the project.

CLASSROOMS

Figure 5.2.1: Standard for classrooms.



Source: Timesaver standards for building types

WORKSHOP

Figure 5.2.2: Standard for workshops.

INDUSTRIAL BUILDINGS		
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).

Source: Architects' Handbook

WORKSHOPS

5.2.3: Standard for workshops.

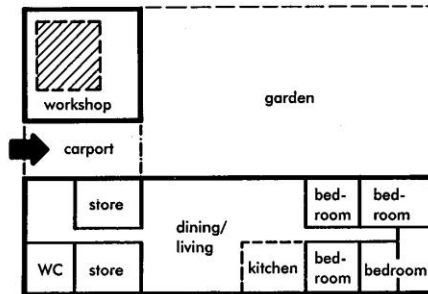
WORKSHOPS

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

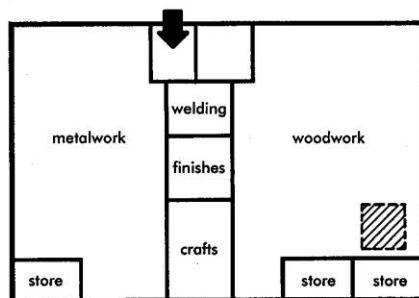
For most common locations, see **53–57**.

domestic



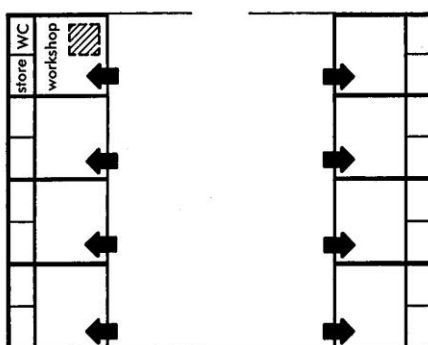
53 One or two people carrying on hobby or part-time occupation in home extension

educational institution



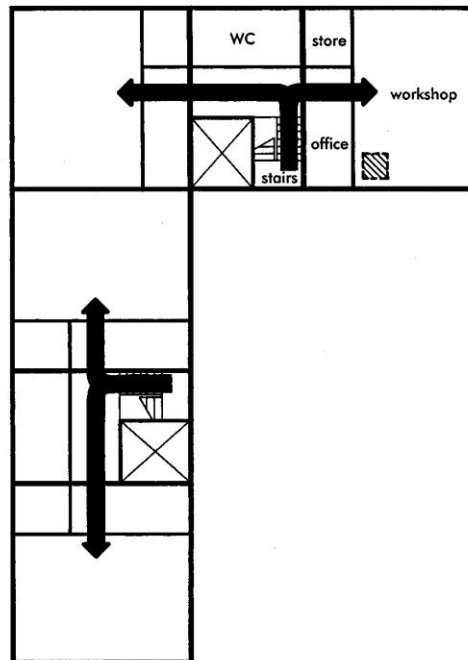
54 Repetitive provision for class or group of 20–40 people

small industrial estates



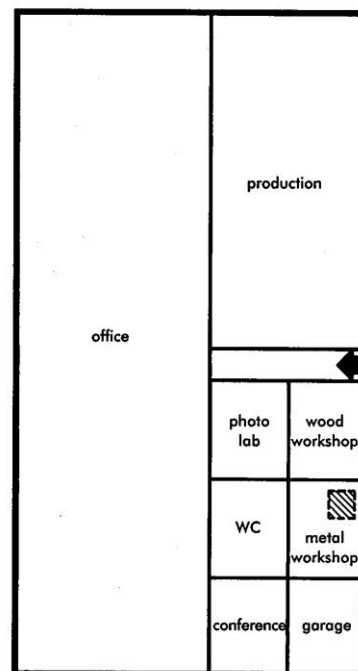
55 Group of non-specific units for range of very small businesses

rental unit



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

ancillary to large factory



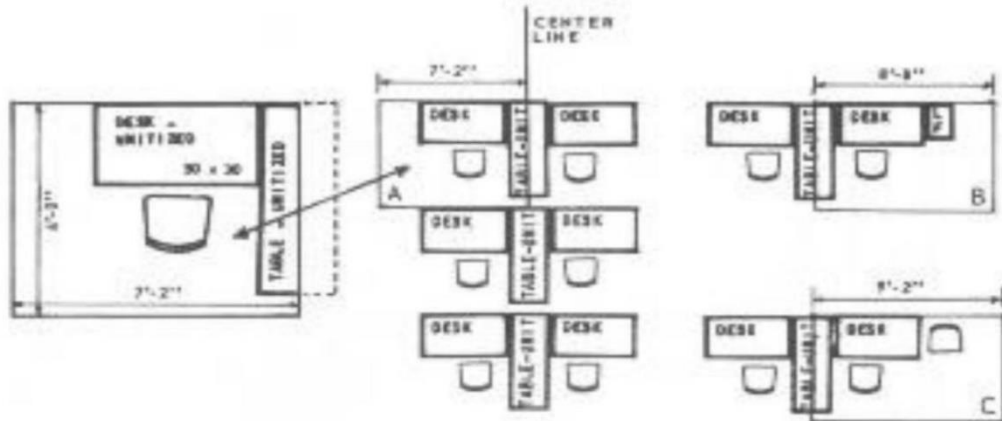
57 Specialist workshops for use by staff maintaining company's plant or building itself

Source: Architects' Handbook

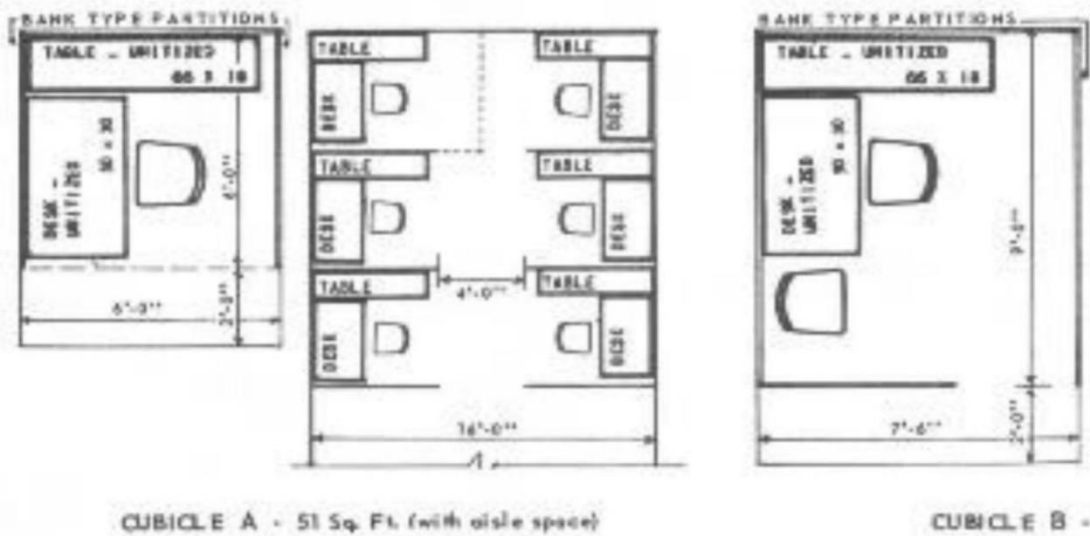
OFFICES

Figure 5.2.4: Standard for General office.

Commercial
OFFICES, GENERAL
Work Stations:



WORK STATION 14-A - 43 SQ. FT.
14-B - 52 SQ. FT. (with file cabinet)
14-C - 55 SQ. FT. (with new study)



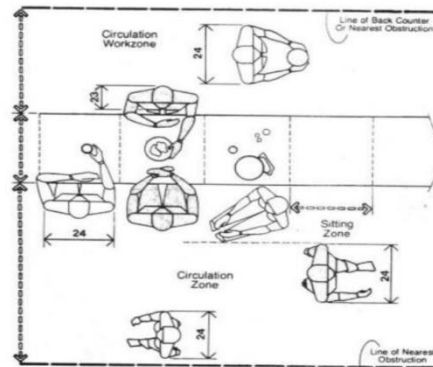
Source: Timesaver standards for building types

MULTIPURPOSE & CAFETERIA

Figure 5.2.5: Standard for 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	
	ft ²	m ²
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

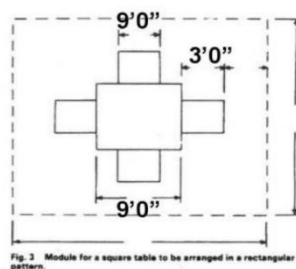
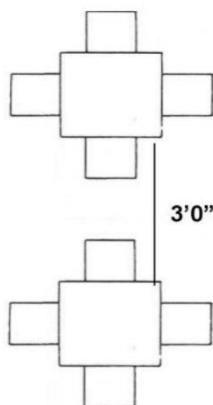


Fig. 3. Module for a square table to be arranged in a rectangular pattern.

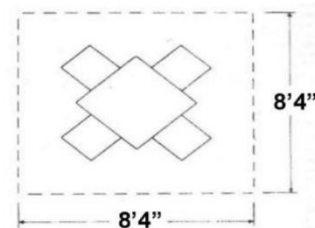


Fig. 4. Module for the square table to be arranged in a diagonal pattern.

Source: Timesaver standards for building types

HOSTELS

Figure 5.2.6: Standard for hostel blocks.

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	196
Kitchen-dining	90
Bedroom	140
Storage	20
Bathroom	35
Office	80

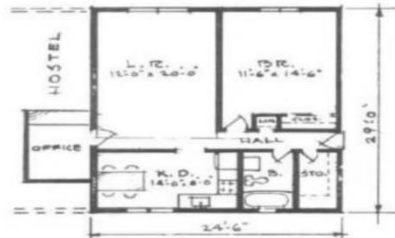


Fig. 11 Typical apartment layout. Note: This is an average-size apartment. More space and room is always desirable. This is one of many possible layouts.

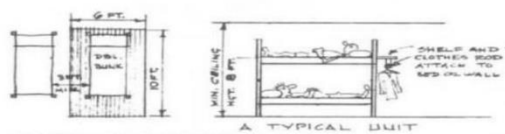


Fig. 9 Minimum area per double bunk, 60 sq ft.

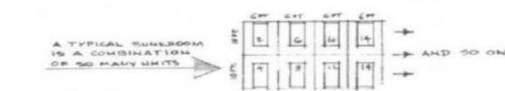


Fig. 9 A typical bunk room is a combination of many units.

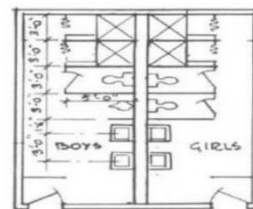


Fig. 10 Typical toilet layout. Note back-to-back placement of plumbing fixtures for economy; common plumbing wall for ease of plumbing access; washroom area separate from toilet area for better usage; water closets in separate compartment for privacy; screen of entrance door to shield interior.

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.

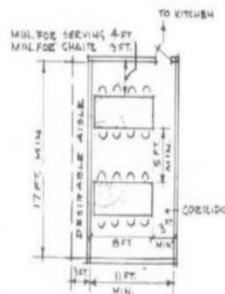


Fig. 4 Typical dining area for 16 people.

KITCHEN

* Add units together to form larger kitchens

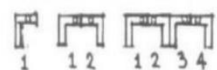


Fig. 3 Dining-common room. Typical layout for 30 people.

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.)

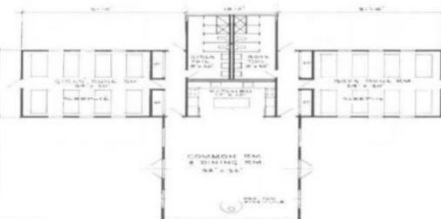


TABLE 2 Dining room (only) room area chart*

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	24
28	336	28
30	360	29

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

ROOM AREA CHART

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.

TABLE 3 Schedule of Kitchen Fixtures (Minimum)

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

BUNK ROOMS

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 & 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 & KITCHENETTE	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	LOBBY	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	TOILET (MALE)	2	25	600	300
6	TOILET (FEMELE)	2	25	600	300
7	STORE ROOM	2		600	1200
				Subtotal	9500

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	ELECTRICAL, SOUND & PROJECTION	3		100	300
3	STORE	1		150	400
				Subtotal	5700

(Including
circulation)

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 (FEMELE)	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

(Including
circulation)

Training workshop					
	Functional space	Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
1	WORKSHOP				27000
	Workshop 1	1			
	Workshop 2	1			
	Workshop 3	1			
	Workshop 4	1			
	Workshop 5	1			
	Workshop 6	1			
	Workshop 7	1			
2	TOILET	2		600	1200

3	OFFICE ROOMS	4	2	200	800
4	Mini STORE	2		400	1600

Subtotal 30600

(Including
circulation)

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

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

Dining Building					
	Functional space	Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
4	DINING	1	90		3200
4	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	350
				Subtotal	10350

Parking facilities					
	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 sq ft

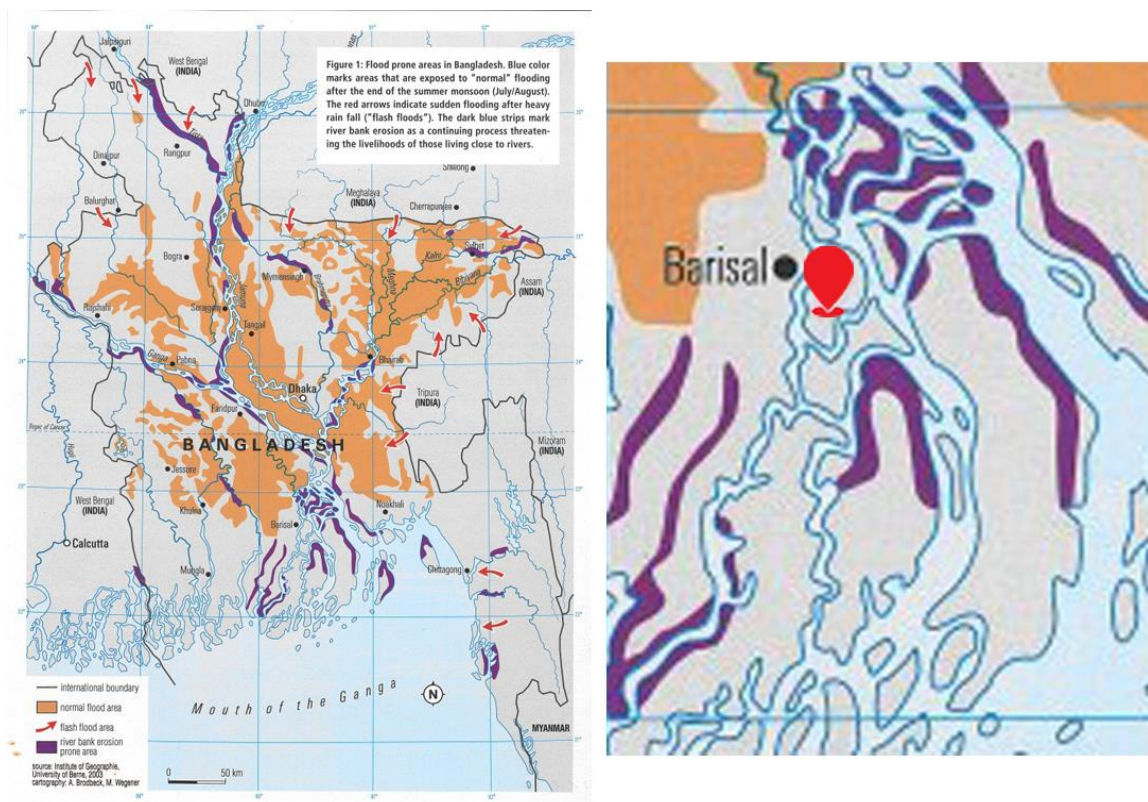
Chapter 6: Design Considerations

In this chapter, the decisions will be made by which the project will fulfill the need of the target users along with maintaining the client given requirements. The technical assistance center will help the people of Barisal to get a proper training on industrial machineries along with proper knowledge on the development of the products.

6.1 Flood Friendly Zone

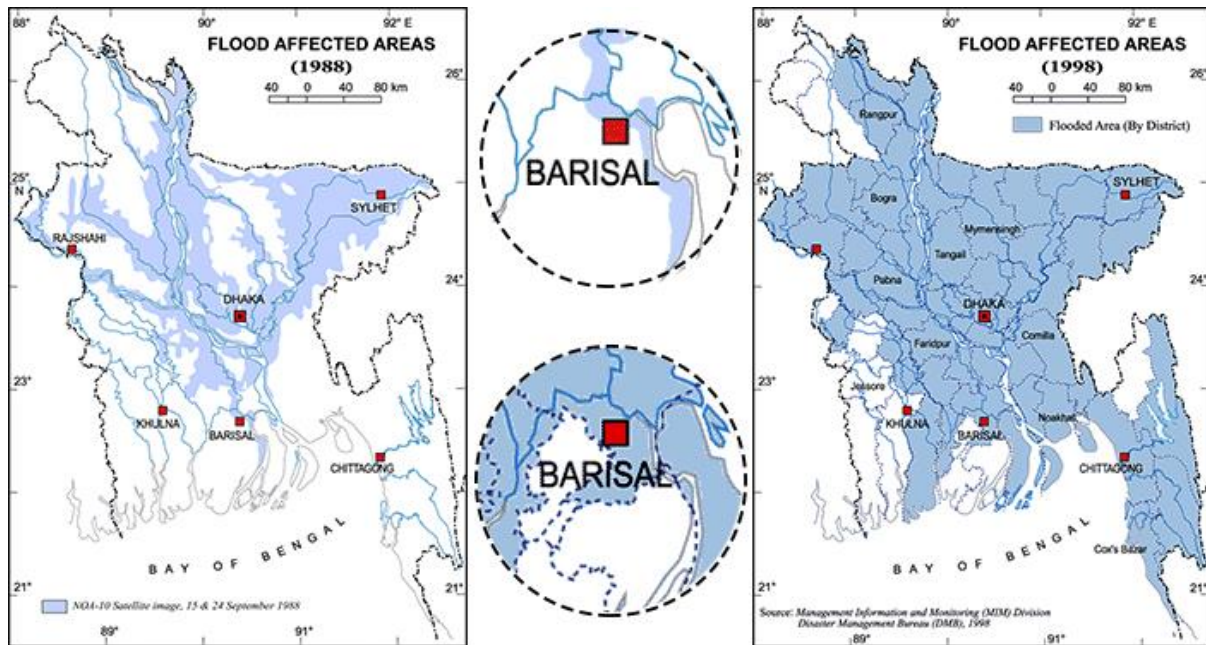
The site is situated beside Dhaka-Barisal highway which connects Barisal with another district. Because of the development of the highway the area was developed and land filled to make the area connected with the nearly situated bridge. From the flood map of Bangladesh it can be seen that this place has a lower risk of developing flash flood or normal flood.

Figure 6.1.1: Flood map



Source: Maps of Bangladesh, 2020

Figure 6.1.2: flood map of 1988 & 1998.



Source: Maps of Bangladesh, 2020

Furthermore, from the comparison of 1988 and 1998 flood map it can be seen that this area was flooded. After the bridge was completed in 2009 it was connected to the Barisal city which later strengthen its socio-economical structure with the other parts of the country. From these findings it will be suggested that the proposed plan of the project must contain some reflections related to the water reserving and drainage management. Besides that the plinths of the project can also be elevated as a design proposition to support the flood related problem of the future.

6.2 Contextual Homestead features

Every context has its own way of respecting the given environment. Depending on that the built environment of that area is created. By studying the nearby houses it is found that most of them has some unique things in them which respect the climatic and social setup of the adjacent community. This existing setups can be used in the design of the project to make it

more connected to the nearby areas of the site. The local pathways are filled with small trees which creates shading during summer. Besides that, traditional macha is very common among the people of the Barisal which creates an enclosed shaded pathway along with proper filtration of light. As our project features multiple different zones, it can follow this contextual findings in the time of designing the connected pathways between different functional blocks.

Figure 6.2.1: Local pathway and macha.



Source: 2019, Fariha Rashid's dissertation paper on SOS Children's Village, Brac Univeristy.

The rural homestead of the area also contains some design features which helps the houses to Minimize the construction and maintenance cost. This feature includes pitched roof, elevated plinth, modular windows and a front veranda. This traditional approach helps the houses to natural calamities along with providing a standard living solution. Most of the homesteads also contain ponds which helps the paddy field during the irrigation period. This ponds also works as a water reservoir of the area.

Figure 6.2.2: Local houses around the site.



Source: 2019, Fariha Rashid's dissertation paper on SOS Children's Village, Brac Univeristy.

6.3 Building Materials

The annual rainfall of the Barisal is medium in contrast to the other areas of the country. This states that the building must be designed with the materials which will be long lasting despite excessive rainfall. Brick wall without plaster would be a proper solution for this scenario. The plaster can add extra cost to the overall maintenance of the center. Besides that exposed brick wall has a sense of continuity which carries the thousand years of house construction in the subcontinent area. Furthermore as the complex contains workshop building for technical training, the building should reflect that technical features itself. The façade can be expressive in nature along with proper functional requirements.

6.4 Form Development

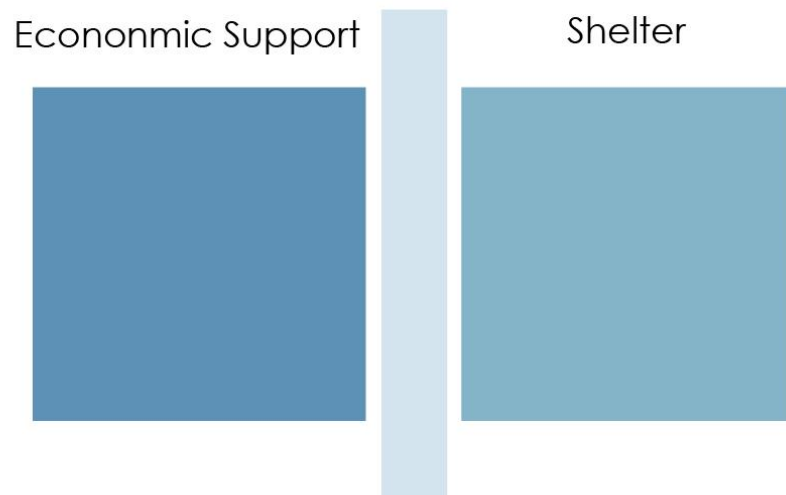
The site of the project is situated at a place which has been used for farming for a very long time. Before the establishment of the Barisal University most of the open spaces were used for rice production. Besides that the chosen site is also a paddy field. The site contains a waterbody along with some chunks farming lands containing aisles.

From the traditional perspective, the paddy field always worked as a source of income in our

Paddyfield = Economic Support

country. The family which owns a paddy field uses it as their main economic support along with creating a place for living. Between these two spaces there lies some sort of control which works as a separation of two different kinds of activities.

Figure 6.4.1: diagram 1.



The rural household system sustains through the existence of economic and shelter together. The project also contains training functions along with residential functions. The inspiration of traditional household can be taken into the project by placing these two types of functions into different part.

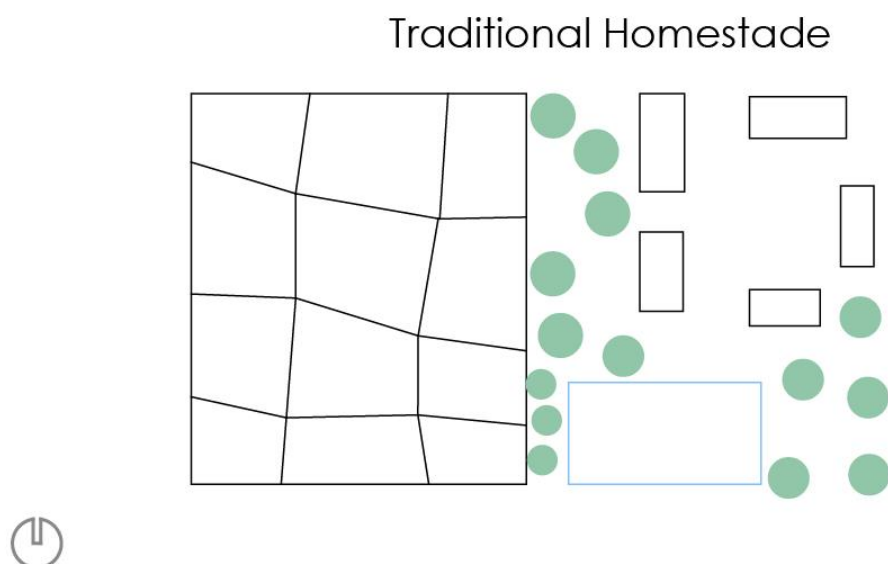
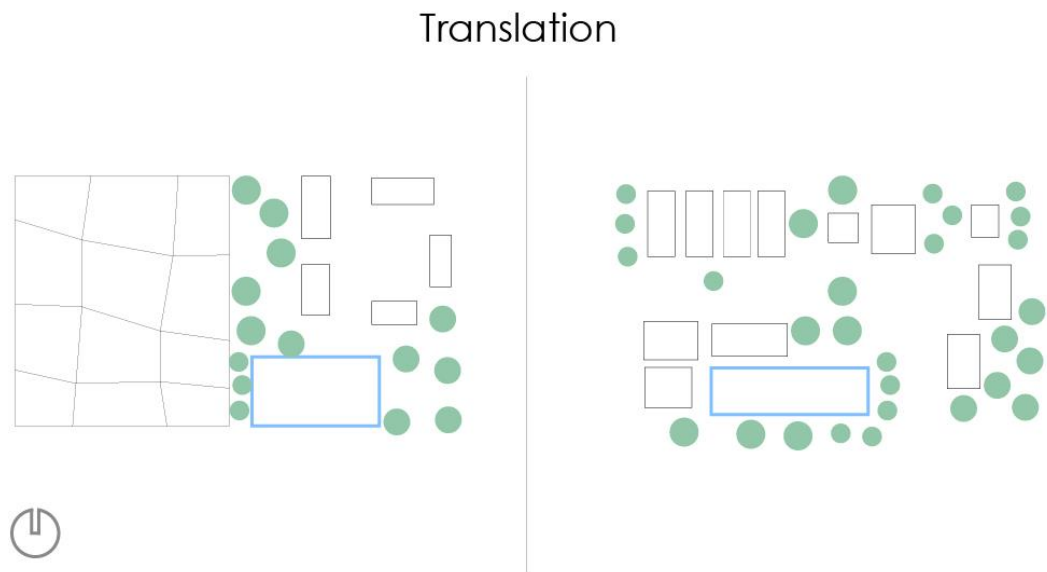


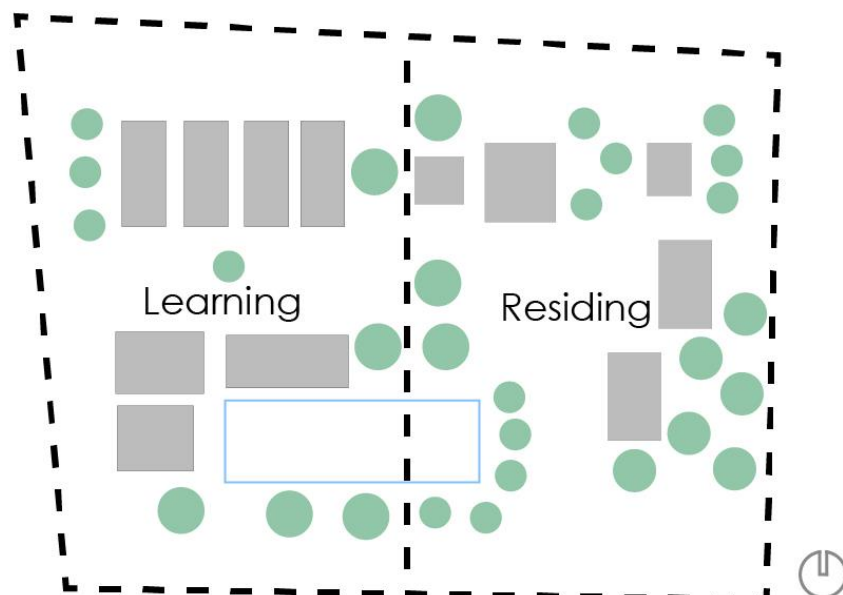
Figure 6.4.2: diagram 2.

Figure 6.4.3: diagram 3.



The site can be divided into two different zones Learning & Residing. The learning side is in the front side along with entry road as it will be accessible to the public most of the time.

Figure 6.4.4: diagram 4.



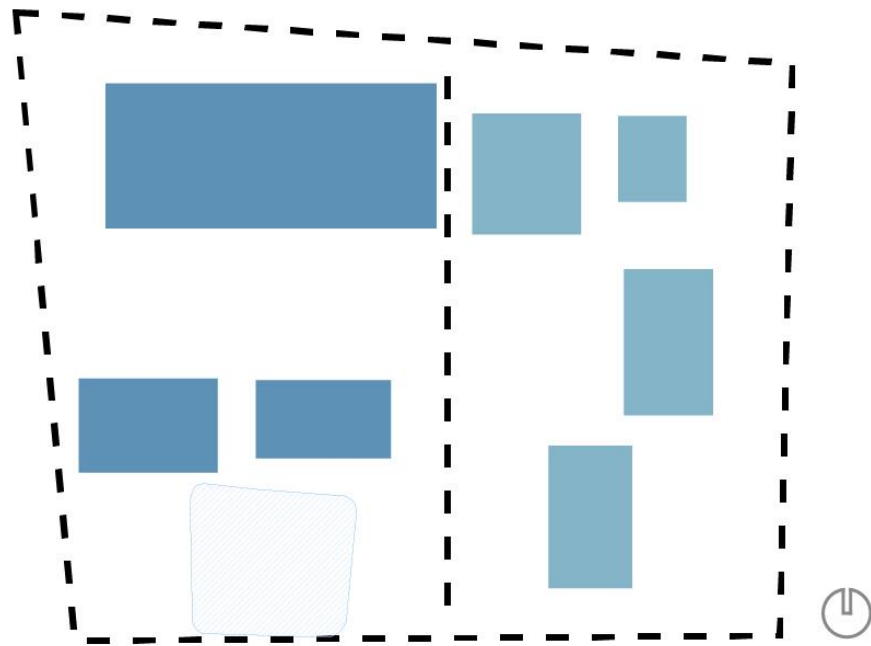
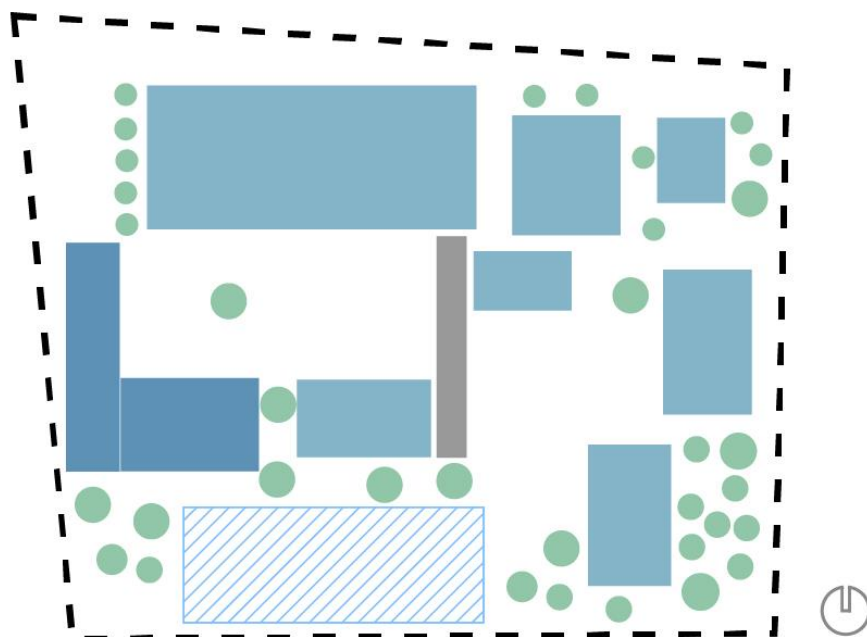


Figure 6.4.5: diagram 5

The different types of blocks can be placed into the site by placing them in a way so that two different types of courtyards can be created in the site. The front side will consist blocks related to the training facilities and offices.

Figure 6.4.6: diagram 6



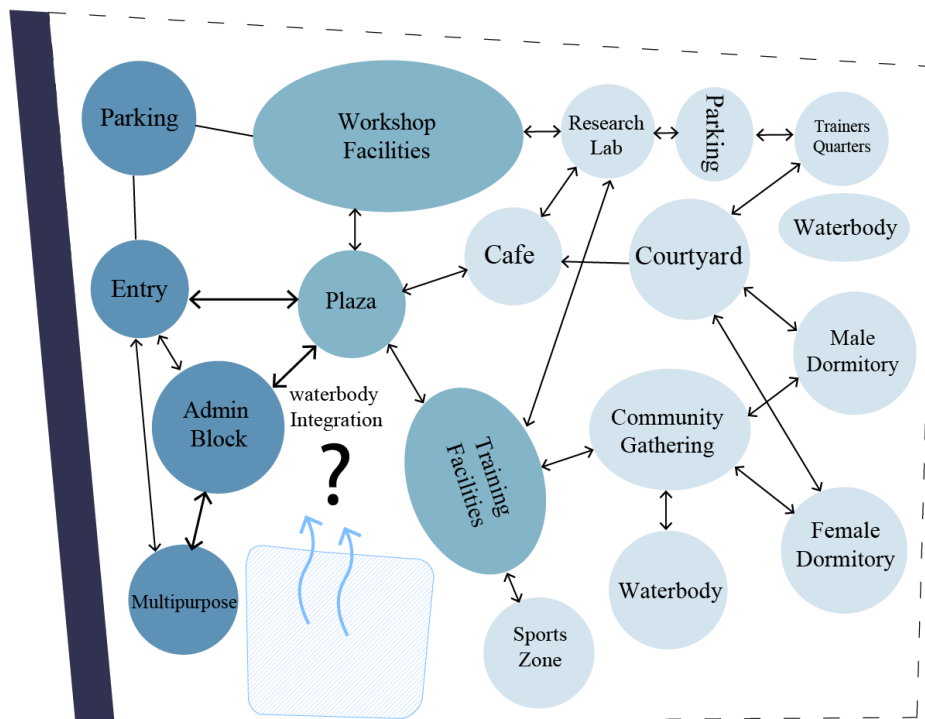
Source: Author.

Figure 6.4.7: site with aisle line.

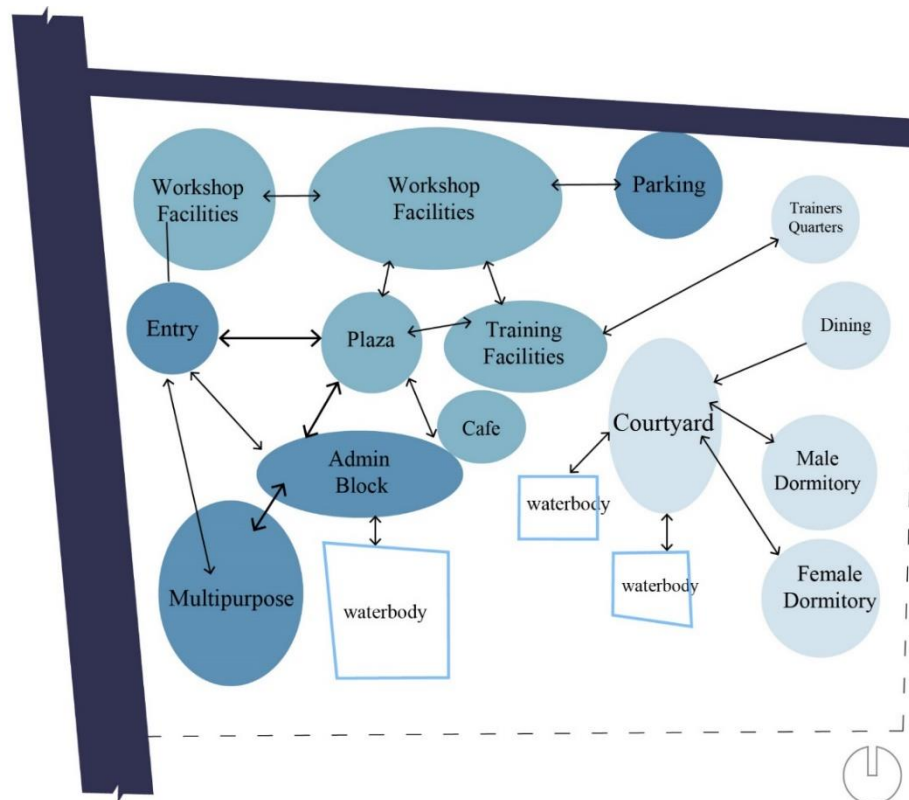


Source: Author after google earth

After placing the masses into the site the following aisles can be traced from the existing site.



As the site was a paddy field, these diagonal lines were used for movement. These existing movements were then interpreted into the functional zoning along with proper environmental placement of the functions.



Furthermore the functional zonings were created in a way so that multiple waterbodies can be formed throughout the project to create that paddy field like spaces. As well as these different waterbodies will work as water reservoirs during the particular time of the year when rainfall is much in number.

Chapter 7: Design Suggestions

After going through the site study it was concluded that a contextual understanding can be a great help for the site as it was a part of rural landscape. The project should address that nature into the design with proper architectural solutions.

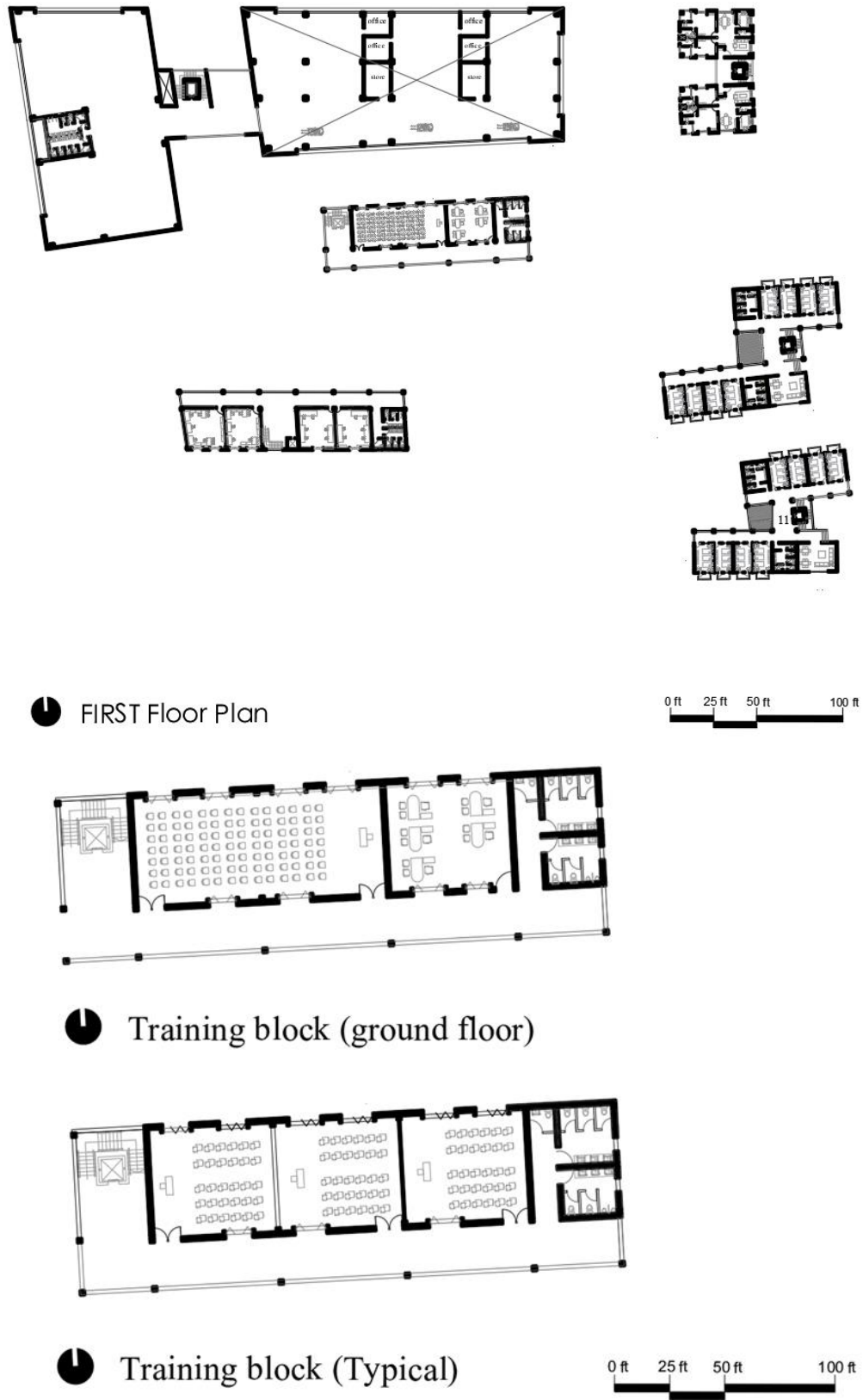
7.1 plans

In the first phase the planning was started to create conceptualized spaces along with proper proposed spaces. The proposed blocks were placed into the site by keeping the area in mind. The suggestions of the design was made as much as contextual with keeping that in mind that the project reflects innovation which supports it's true nature.

Figure 7.1.1: Ground floor plan

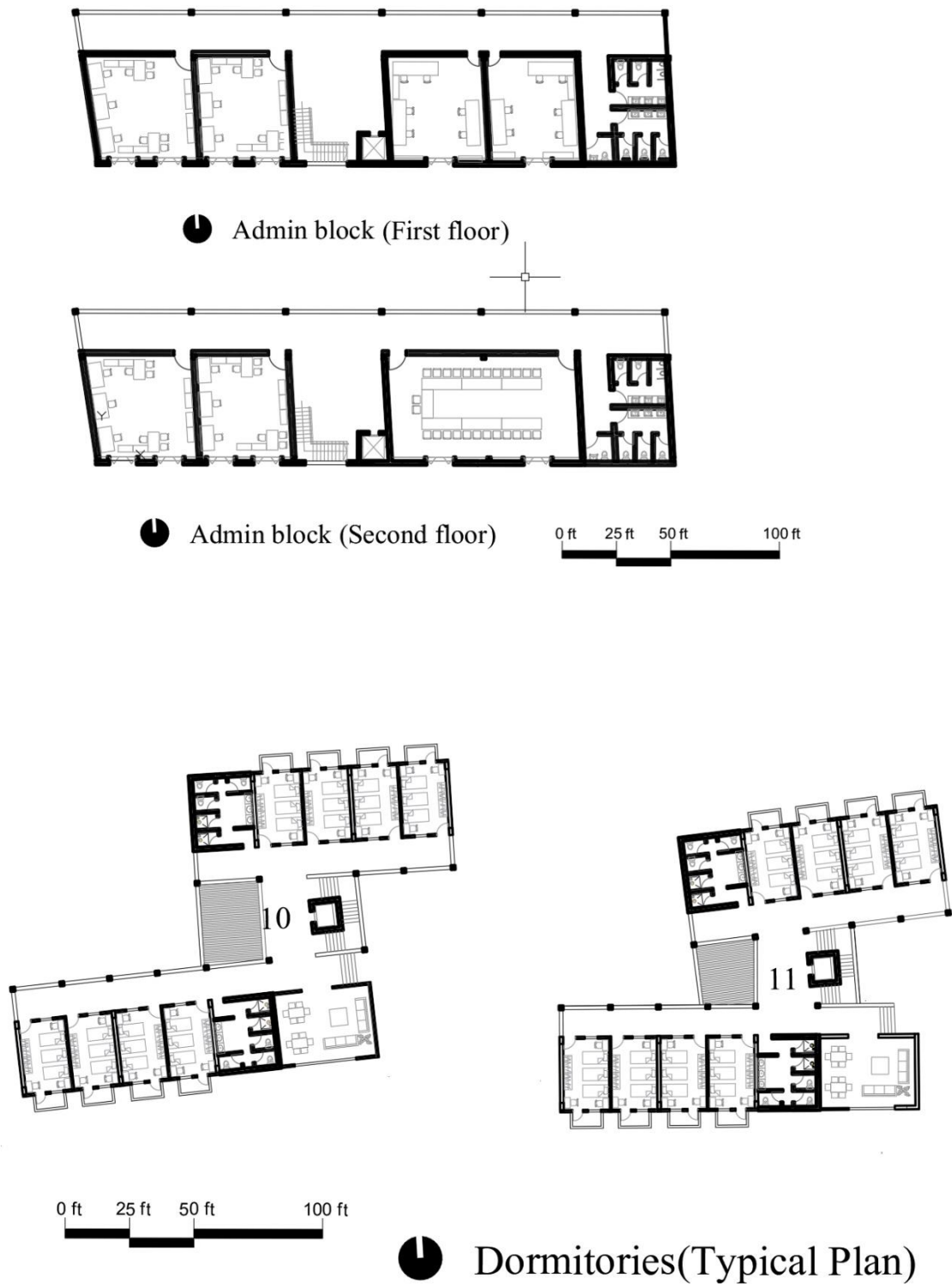


Figure 7.1.2: First floor plan & detail plan



Source: Author.

Figure 7.1.3: Detail plan

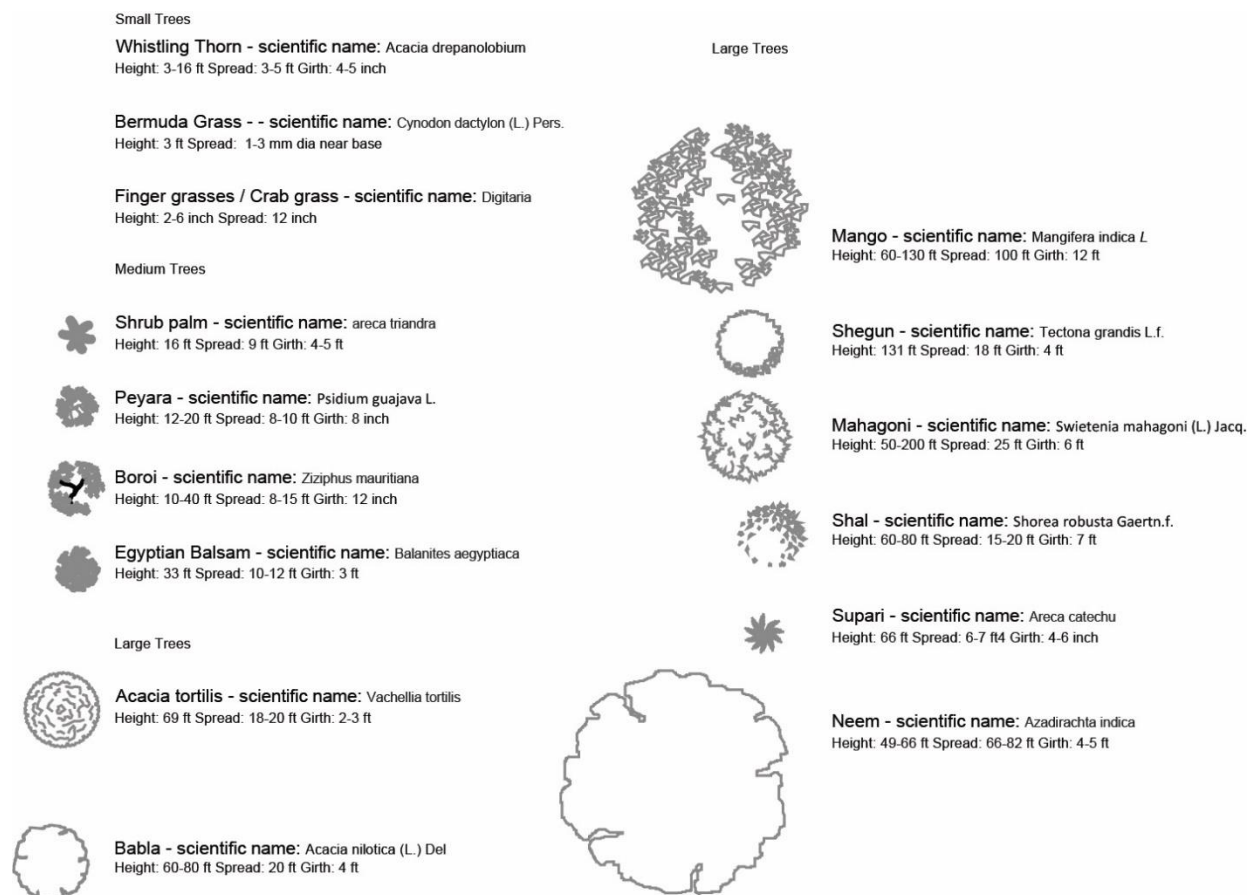


Source: Author.

7.2 Landscape Considerations

Throughout the process it was kept in mind to bring out that true landscape nature of the existing place. To support the landscape plan different types of names of local trees were gathered. The trees were divided into three different parts: large, medium and small.

Figure 7.2.1: tree detail



Source: Author.

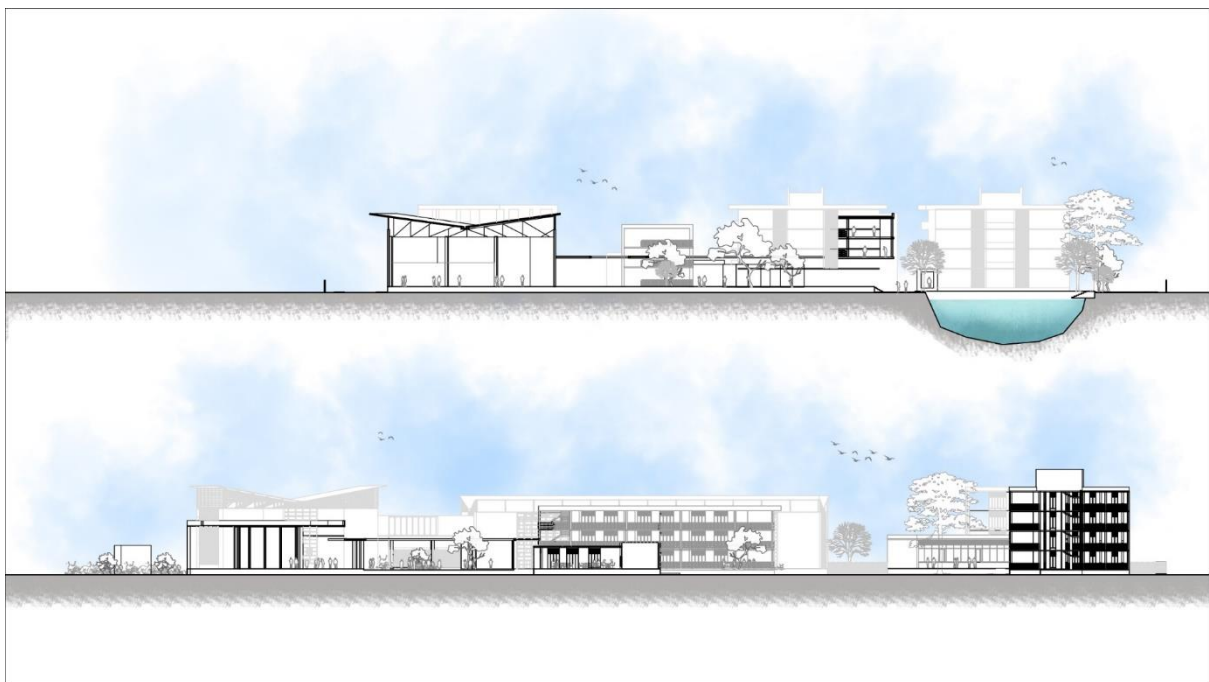
7.3 Sections & elevations

Figure 7.3.1: Elevations



Source: Author.

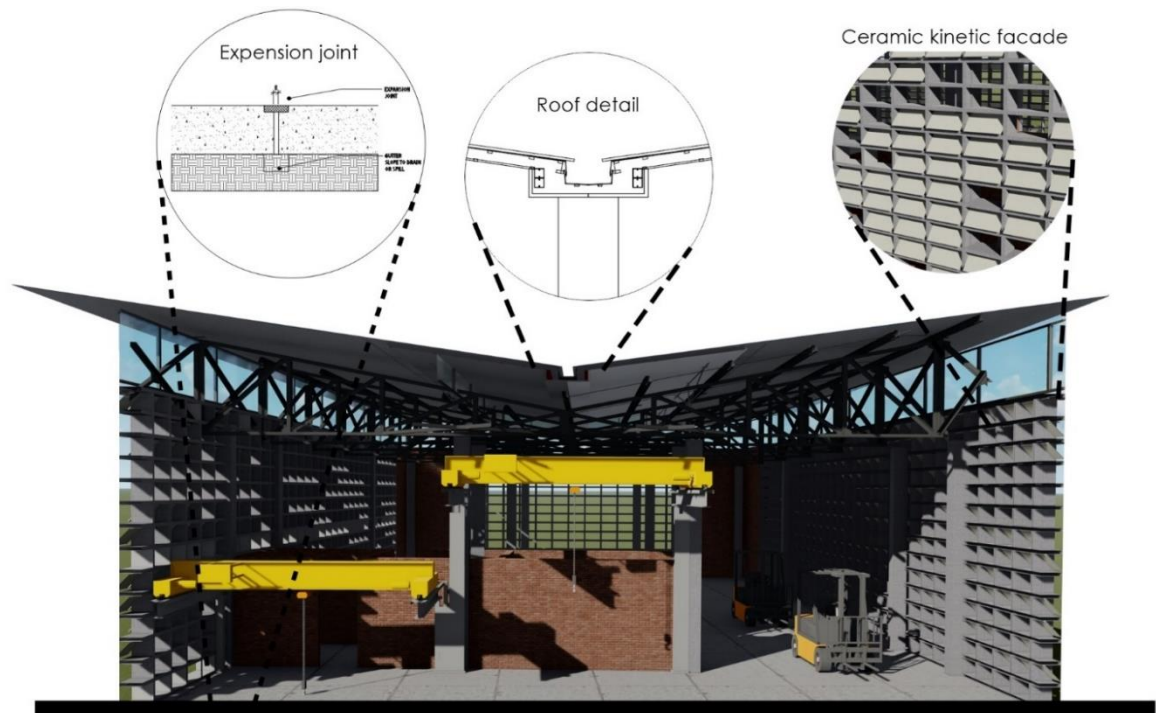
Figure 7.3.2: Sections



Source: Author.

7.4 Details & Perspectives

Figure 7.4.1: Workshop detail.



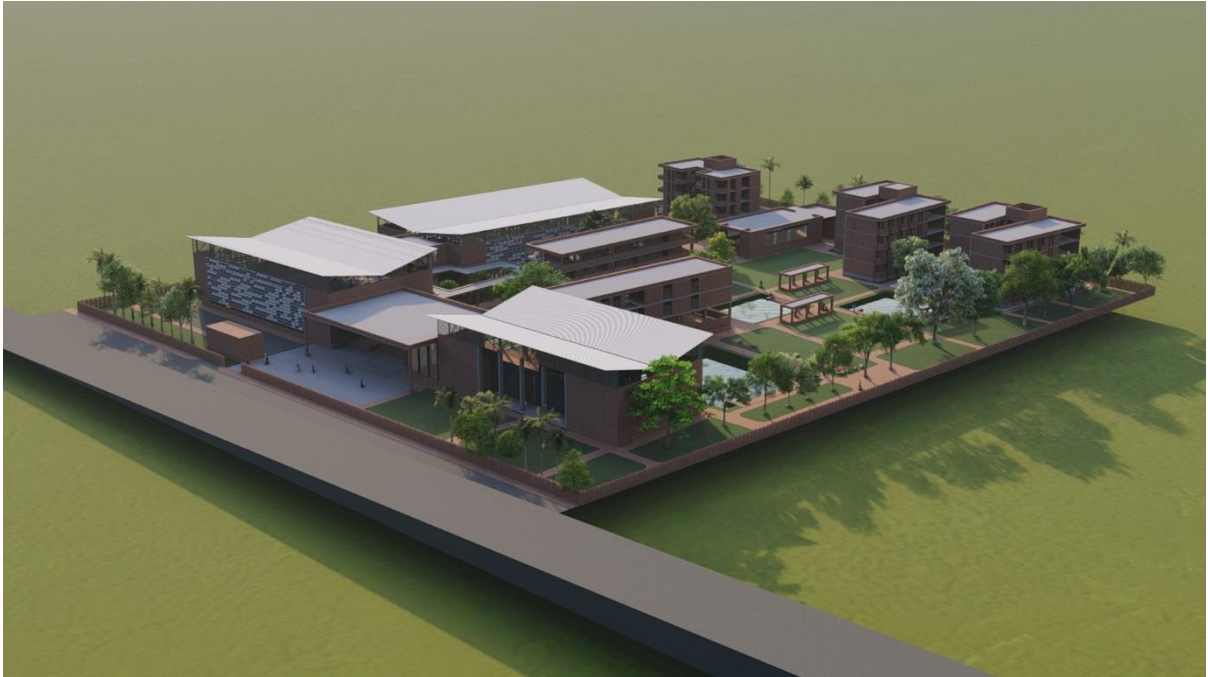
sSource: Author.

Figure 7.4.2: Perspectives.



Source: Author.

Figure 7.4.3: Perspectives.



Source: Author.

Figure 7.4.4: Perspectives.



Source: Author.

Figure 7.4.5: Perspectives



Source: Author.

References

Note: The style of quotations, footnotes, and bibliographic references may be prescribed by your department. If your department does not prescribe a style or specify a style manual, choose one and be consistent. Further information is available on the web site of the Ayesha Abed Library (<http://library.bracu.ac.bd/style-guides-and-resources>).

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Appendix A.

বাংলাদেশ শিল্প কারিগরি সহায়তা কেন্দ্র (বিটাক)

তেজগাঁও শিল্প এলাকা

ঢাকা ১২০৮।

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 শিফ্ট এরিয়া আনুমানিক $২০ ফুট \times ৩০ ফুট = ৬০০$ 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 শিফ্ট এরিয়া আনুমানিক $৩০ ফুট \times ১৫ ফুট = ৪৫০$ বর্গফুট বা ৫০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৩য় তলা ভিত্তি বিশিষ্ট ১ তলা ভবন বাহার মধ্যে ৩ জন করে মোট ৬ জন নিরাপত্তা গ্রহণী ও ১ জন গাড়ীচালক থাকার জন্য ২টি কক্ষ ও ১টি কক্ষ ছোট আকারে বাহার মধ্যে বার্না ঘর সহ ১টি কমন বার্থরুম ও টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

প্রশাসনিক ভবনঃ-

প্রস্তাবিত ভবনের শিফ্ট এরিয়া ৪০০০ হতে ৬০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৪ তলা ভিত্তি বিশিষ্ট দুইয়ের বা তিনতর তলা একটি ভবন। বাহার মধ্যে দ্বিতীয় তলা অফিস প্রধানের ১টি কক্ষ (এট্যাচ টয়লেট সহ), প্রশাসন অফিসার, হিসাব রক্ষক, ত্রয় কর্মকর্তার, ট্রোর 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 শিফ্ট এরিয়া $১০০ ফুট \times ৪০ ফুট = ৪০০০$ বর্গফুট হতে ৬০০০ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৪ তলা ভিত্তি বিশিষ্ট দুইয়ের বা তিনতর তলা বিশিষ্ট একটি ভবন। বাহার মধ্যে ১ম তলায় প্রধান প্রশিক্ষণ প্রকৌশলীর ১টি রুম (এট্যাচ টয়লেট সহ), কর্মচারীদের জন্য একটি $৩০ ফুট \times ১৫ ফুট = ৪৫০$ বর্গফুট ১টি কক্ষ, সকল প্রশিক্ষকের জন্য ১টি কমনরুম / ওয়েটিংরুমের সুবিধা রেখে এবং দ্বিতীয় তলায় তাত্ত্বিক প্রশিক্ষকের জন্য ৬টি ক্লাসরুম ও ১টি ওরিয়েন্টেশন রুম। মেয়েদের জন্য আলাদা টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

প্রশিক্ষণ ওর্ডারসপঃ-

প্রস্তাবিত ভবনের শিফ্ট এরিয়া $২৭০০০ - ৩০০০০$ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ২য় তলা ভিত্তি বিশিষ্ট ১ তলা ওয়ার্কসপভবন। বাহার মধ্যে যথেষ্ট আলো, বাতাসের ভেন্টিলেশন, নিচতলা/খাউন্ড ফ্লোর ওভারহেড ক্রেন স্থাপনের এর সুবিধা, ১ জন নির্বাহী ও ১ জন সহকারী প্রকৌশলীর বসার কক্ষ (এট্যাচ টয়লেট)। ১ টি টুলস ও যন্ত্রপাতি রাখার জন্য মিনি ট্রোর, কর্মচারীদের টয়লেট এর সুবিধা রেখে প্রয়োজন মত নক্সা প্রণয়ন।

হোস্টেল ভবন (মারী)ঃ-

প্রস্তাবিত ভবনের শিফ্ট এরিয়া আনুমানিক $১০০ ফুট \times ৬০ ফুট = ৬০০০$ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৫ তলা ভিত্তি 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, বার্নাঘর, টিভি রুম ও অডিটোরিয়াম। উল্লেখ্য যে, ইতোপূর্বে বিটাক চট্টগ্রাম, খুলনা ও বগুড়া কেন্দ্রের জন্য প্রণীত মহিলা হোস্টেলের নক্সা অনুসারে।

হোস্টেল ভবন (পুরুষ)ঃ-

প্রস্তাবিত ভবনের শিফ্ট এরিয়া আনুমানিক $১০০ ফুট \times ৬০ ফুট = ৬০০০$ বর্গফুট এর মধ্যে সীমাবদ্ধ রেখে ৬য় তলা ভিত্তি বিশিষ্ট ৪য় তলা হোস্টেল ভবন। বাহার মধ্যে প্রতি রুমে ৪ জন করে থাকার সুবিধা রেখে কক্ষ তৈরী করা যেতে পারে। প্রতি ফ্লোরে গোসলখানা টয়লেট থাকবে। নিচ তলায় ডাইনিং রুম, বার্নাঘর, টিভি রুম ও অডিটোরিয়াম।

কর্মকর্তা/কর্মচারীদের জন্য আবাসিক ভবনঃ

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

পাঞ্জাখানাঃ

আবাসিক ছাত্র/ছাত্রীদের ও কর্মকর্তা কর্মচারীদের নামাজ পড়ার জন্য একটি ছোট আকারের পাঞ্জাখানা (অল্প কবচ সুবিধাসহ) ভবন নির্মাণ এর নক্সা প্রণয়ন।

বিষয়ঃ ৩ (তিন) একর কুমির উপর সীমাবদ্ধ রেখে প্রস্তাবিত ভবনের নক্সা প্রণয়ন স্থাপত্য অধিদপ্তরের বিধি অনুযায়ী ৩ (তিন)টি বিটাকের জন্য (শংখুর্ক লে.আউট অনুযায়ী) একেই 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