

Narayanganj Textile Institute

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

Architecture
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Declaration

It is hereby declared that

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

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Approval

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Abstract

The importance of the textile industry in the economy of Bangladesh is very high. The garments factoring sector earned \$19 billion in June 2012 which is one the improvised nation's biggest industries. Education is the process of facilitating knowledge and it is called backbone of any society and in Bangladesh, a developing country, education especially industry-oriented education is more essential to improve its position from inside and outside, nationally and internationally. However, Bangladesh is an agriculture-based country but textile industry emerged here as a blessing which contributing a big portion in GDP and textile education came into view as a crucial need. To produce qualified and updated textile product, textile education is inevitable as every day the textile technology and the methods are changing.

Keywords: Exports, importance of institute, economic growth

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List of Acronyms

GDP	Gross Domestic Product
RMG	Ready Made Garments
ETP	Effluent Treatment Plant
QC	Quality Control

Chapter 1:Introduction

1.1 Project brief and background

Textile and clothing sector plays a vital role in the growth of economy of Bangladesh; generation of more than 65% of the country's industrial employment and 81% of the export earnings. The industry employs about 5 million workers of whom 80% are women and has contributed to employment creation, poverty reduction as well as women empowerment. In Bangladesh, more than 81% of export earning comes from textile sector and contributes over 13% of GDP, 40% industrial value addition comes from the textile sector. Not only that, 150 lakh of peoples in support industries depend on this trade and many more. The domestic textile industry has made appreciable contribution to the rapid growth of Bangladesh RMG industry resulting in attraction of International RMG buyers.

As the population is growing and the standard of living is increasing in Bangladesh, the demand for textiles is increasing rapidly. Moreover, growth rate of RMG export will continue as Bangladesh has edge over other competitors due to low labor cost. This present an urgent need to dramatically increase capacities in spinning, weaving, knitting, dyeing, printing and finishing sub-sectors. This will require the adoption of the most modern and appropriate technology to ensure quality products at competitive prices to be competitive in the global market both in terms of cost and quality, also, production and export of high value added products for higher retention of foreign exchange through more emphasis on textile education and research.

Under the increasing demand, the textile engineering college, textile institute and textile vocational institutes have been established under the ministry and existing institutions are unable to meet the requirements of textile technology. As a result, they are going to be dependent on foreign technology in a sector. It is necessary to set up a new textile institute in

the country for the month of dependence on foreign technicians and to save foreign currency. In view of this, development project titled "Establishment of Narayanganj Textile Institute" has been taken. Related to the outcome of the project The Government's 7th Five Year Plan is in line with the national priorities, principles of development, planning and completion of the situation. If the project is imitated, the country will be able to meet the demand of textile technology and the employment opportunities for unemployed youth will be created.

1.2 Aim and Objectives of the Project

Government has seen the necessity of an textile institute in Narayanganj, Arai-hajar Union. Narayanganj has always been serving the textile sector. Even it is renown for garments industry and institutes. So the government of Bangladesh, Ministry of Textiles and Jute has decided to establish an textile institute in Narayanganj, Arai-hajar Union. A textile institute is not only an institution where the future textile engineers of the nation have the opportunities to enhance their capacities and knowledge, it is also a platform of relationships, and most importantly opens up the window exposing the possibilities of textile for that area it is located in. An institute is a place of higher aspirations (Jamie, 2014). Besides, one of the broader goals of this project is to contribute in a future education based development, unlike the gated neighboring institutes that surrounds the site. The prime challenge is to overcome the typical concept of isolation of individual projects and integrate spaces that will link the education system together and help build better human values.

The project on the selected site is best suited to accommodate the relevant functions of BTEC intended to accentuate the potential of textile field as to build a better Bangladesh through exporting quality products. The play of texture, color, weaving and knitting process of textiles

has the potential to echo the spaces with architectural vocabulary best suited for the entire compound.

Today the handicraft industry of Bangladesh look much well organized then it was a decade back. However some of the weaknesses for the textile sector development are lack of updated information on changing tastes and preferences of overseas buyers often restricts market access of potential products. Absence of properly equipped design centre, a long cherished demand of the handicraft exporting community, is also responsible for a great deal of the drawbacks in production, design, innovation and adaptation and so on. Low or no involvement of Technical person such as Textile Engineers, Fashion designers etc. In accordance of the discussion with the craft-peoples, some craft-exporters and BANGLACRAFT setting up of design development centre is urgently needed for producing new product and product diversification. Crafts men to be trained for better performance, innovation and technology to be provided for overall development of the sector in a design development institute. Some of the measures which can be taken to improve the quality of textile education but are not limited to the following : curriculum development in emerging technologies, faculty development, enhanced exposure of students to industries, building the feedback mechanisms in education system, greater autonomy to technical institutes, fostering/promotion of research aptitude in students, network between institutions, institute-industry interaction, accreditation of institutions, resource mobilization and continuing education programs.

The structure of textile education in Bangladesh has got considerably big in size though still there is big demand for textile educated people in the industry. Because of this huge demand private sector institutes has been mushroomed in last few years. Quantity seems to be the target than quality. If this trend continues in this educational sector, the outcomes of the system will not be able serve as per the expectation. Most of the private institutes don't have proper infra

structure for running such technical courses. Quality assurance of textile education should be the next priority agenda.

1.3 Project Summary

Name of the Project: Narayanganj Textile Institute

Implementer of the Project: Ministry of Textiles & Jute BAngladesh

Location: Duptra bazar, Araihaaz, Narayanganj

Site area available for the Project Development:

Proposed built-up area of the Project: 209,000 sqft

Proposed Program of the Project:

Include list of what types of facilities will be designed in the project, for example: administrative, recreational training, public gathering, residential etc.

Program for Narayanganj Textile Institute

Functional space		Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
A. Administrative facilities					
1	Dean	1	1	150	150
2	Accounts	1	4	500	500
3	Deputy Director	1	1	150	150
4	Admin	1	5	600	600
5	Teachers' lounge	2	30	1050	2100
6	Department of Fabric Engineering	1	6	500	500
7	Dept. of Wet Process	1	6	500	500
8	Dept. of Textile Machinery Design & Maintenance	1	4	500	500
9	Dept. of Industrial & Production Engineering	1	6	500	500
10	Dept. of Dyes & Chemical	1	4	500	500
11	Dept. of Yarn	1	4	500	500
12	Dept. of Knitting & Stitching	1	4	500	500
13	Dept. of Apparel Engineering	2	4	500	1000
14	Dept. of Fashion & Designing	1	4	500	500
15	Planning & Waste Management Engineering	1	3	400	400
16	FTCE (Textile Certification Engineering)	1	3	350	350
17	Medical Facilities	1	3	200	200
18	Faculty of Engineering Drawing	1	2	350	350
19	Head of Textile Engineering	1	1	180	180
20	FTCE	1	3	400	400
21	VC Assistant	1	1	100	100
22	VC	1	1	180	180
23	Prayer Room	1	25	450	450
Subtotal					11110

B. Academic facilities					
1	Classroom Type-A	10	60	1120	11200
2	Classroom Type-B	7	35	750	5250
3	Conference room	1	40	800	800
4	Video Conference Room	1	40	1200	1200
5	Female Common Room	1	30	750	750
6	Boys Common Room	1	30	750	750
7	Club Room	4	15	200	800
8	Seminar Room	1	30	900	900
9	IQAC	1	5	450	450

Subtotal 22100

C. Lab facilities					
1	Physics Lab	1	40	1000	1000
2	Chemistry Lab	1	40	1200	1200
3	Engineering Drawing Lab	1	30	900	900
4	Computer Lab/ACTM/ACAM/ACYM	1	25~30	900	900
5	Jute Lab	1	30	7200	7200
6	FSD Lab	1	30	2000	2000
7	EEE Lab	1	40	1200	1200
8	TTQC (Textile Testing and Quality Control)	1	30	1800	1800
9	Apparel Lab	1	40	3000	3000
10	Weaving Lab	1	30	2000	2000
11	Knitting Lab	1	30	4800	4800
12	Mechanics Lab	1	25	1200	1200
13	Wet Processing Lab	1	30	4000	4000
14	Spinning Shed	1	60	8000	8000
15	Eng. Office	1	30	500	500

Subtotal 39700

D. Commercial facilities					
1	Auditorium	1	80	7500	7500
2	Workshop	5	1*30	900	4500
3	Library	1	50	4500	4500
4	Mosque	1	50	7000	7000
5	Rain Water harvestmen	1			0

Subtotal 23500

E. Residential facilities					
1	Boys Hostel	1	200(BEDED)	40000	40000
2	Female Hostel	1	100(BEDED)	24200	24200
3	Principal Quarter	1	1	2100	2100
4	Officers Dormitory	1	20	10000	10000
5	Staff Dormitory	1	15	5300	5300

Subtotal 81600

Total 178010

Chapter 2: Literature Review

2.1 Importance of a Textile Institution

In Bangladesh, majority of the education are institution based. Before the primary school, a minute priliminary education is sometimes required to get into a good school. The student achieves this at home. The relationship between school and the students' home is quite close and the distance begins to increase as the student grows up. After primary is the secondary school and then the college. In our culture, it is at this stage that the students enjoy freedom at a broad scale. After this is the University. University can be government based or they can be privately owned institutions but the main objective is to educate the students so that they can compete with the global market. Study courses are derived and the system should be constructed internationally in the case of textile management system.

“When Art struggles, it succeeds; when revealing in its own successes, it as singularly fails.”

An author from Classics novels on textile, Owen Jones had mentioned that. To be added , Textile institute is needed when it comes to developing our textile industry. To increase our profit margin we need to educate people to compete with abroad in terms of product using. i.e. There are machineries which is used world wide.. And these are latest tech. But if do not know how to use them then we cannot teach the employees, thus we remain using old machineries which completely says we are behind from the abroad country. Since we are incoming a great amount of profit from this sector then it will be our privilege to get advance in technical terms too. One of the reason of our GDP growth being high from this textile is, our garments workers salary is significantly less. “So if the students get educated then they will charge more.” As an answer to that, it is to be said, “People are studying in other sectors. Graduating from different

subjects they also charge more. So shall we stop educating our students?” Answer will be definitely no. So the reasons being educating students are

- we should compete with other countries.
- communication should be more concise
- get effective use of the latest technology/machineries
- gather experience
- achieve inter-personal skills
- achieve vocational education

2.2 Education

During the early years of the country's independence, the job market in Bangladesh did not always require a graduate degree. A simple diploma would suffice, but today, due to globalization, it is mandatory for a student to earn such a degree. Specially someone working in the professional field. As a result, to accomodate the growing number of students to fullfill a work force required for a rapidly developing country, universities are rapidly forming a large part of the country.

Textile education initiated in Bangladesh more than hundred years ago during the British colonial rule in 1911 and it has been developed over the time since the industry demanded for the sustainable development in this sector, The number of vocational schools was 29 during 1911 to 1947 in the territory of Bangladesh. Weaving school was established in Narinda in 1921. Dhaka met skilledful personnel courses and especially artisan level courses which offered by textile technical institute . It was named East Bengal Textile Institute and started offering diploma courses in Textile Technology. Later, it was named East Pakistan Textile Institute in 1950. In 1978, the institute launched the 4 years bachelor degree program in Textile

Technology in affiliation with the University of Dhaka and was renamed as College of Textile Technology, which is now turned into first textile university of the country, 'Bangladesh University of Textiles'. Considering the importance of textile education and research, the government of Bangladesh took initiatives to upgrade the College of Textile Engineering & Technology to a university. For this purpose, "Bangladesh Textile University Act, 2010" (Act no. 49, 2010) was passed by the Bangladesh National Assembly and the Honorable President gave consent to the act on 5 October 2010.

2.3 Textile Education Market:

- **A decisive need for Bangladesh**

There are mainly three kinds of education group in our society which to mention, Social education, Spiritual education, and Vocational education. This vocational education focuses on both academic and practical skills that involves in textile industry. There are great benefits to achieve from an industry-focused learning like textile education is related and interwoven with that. Therefore, textile education plays an huge as well as important role in our country.

- **For national development**

According to Alam (2007), human capital theory has powerful influence on the analysis of labor market. Alam notes that investment in education and training produces benefit both to the individual and to society as a whole. So the return on investment for textile education will be a skilled workforce that will enable global competitiveness and economic growth, while the return of the individual will be a better career path, increased earning and a better quality of life. Hence, textile education is crucial for rapid economic growth, and essential if we wish to increase the productivity of our workforce by providing people with the skills they need to

anticipate fully in the economy and in society (Fagerlind & Saha, 1989). All countries, especially developing countries, need technical education like this.

- **For steady economic growth**

Economy of Bangladesh is growing well and to keep up this trend stable and focused investments and efforts in different segments of textile education is very important. To make the government dream true to increase annual export to US\$50 billion dollar by 2021, become a middle-income country by 2021 and a developed one by 2041, the quality and quantity expansion of textile education is must. Already textile education is playing an important role to enhance our economic growth.

- **For providing skilled manpower**

The demand of skilled manpower is growing fast since the technology for the Textile and RMG sector is changing rapidly and importance of productivity improvement becoming more significant. In many cases technology-based knowledge is not growing as it should be and most of the worker is uneducated. Our garment sector employs some 20,000 foreign nationals in various positions and the sector alone spends 5 billion dollars to hire skilled people from overseas to work.

- **Reduce employment problem**

Bangladesh, like other developing countries, suffers from unemployment problem. Unemployment rate in Bangladesh was approximately 47 percent in 2015, according to Economist Intelligence Unit (EIU), report, day by day this problem is increasing. To reduce this problem, textile education which includes textile engineering, diploma and vocational courses for students and different training for professionals and workers can play a major role in the textile sector to improve since there is great demand of it.

Chapter 3: Site Appraisal

Site analysis is the process of surveying the existing environment and how it will influence the building design, structure & layout of the site. Generally, at first the site visit comes in any design process. After the completion of a site visit, a detailed site analysis has to be done so to

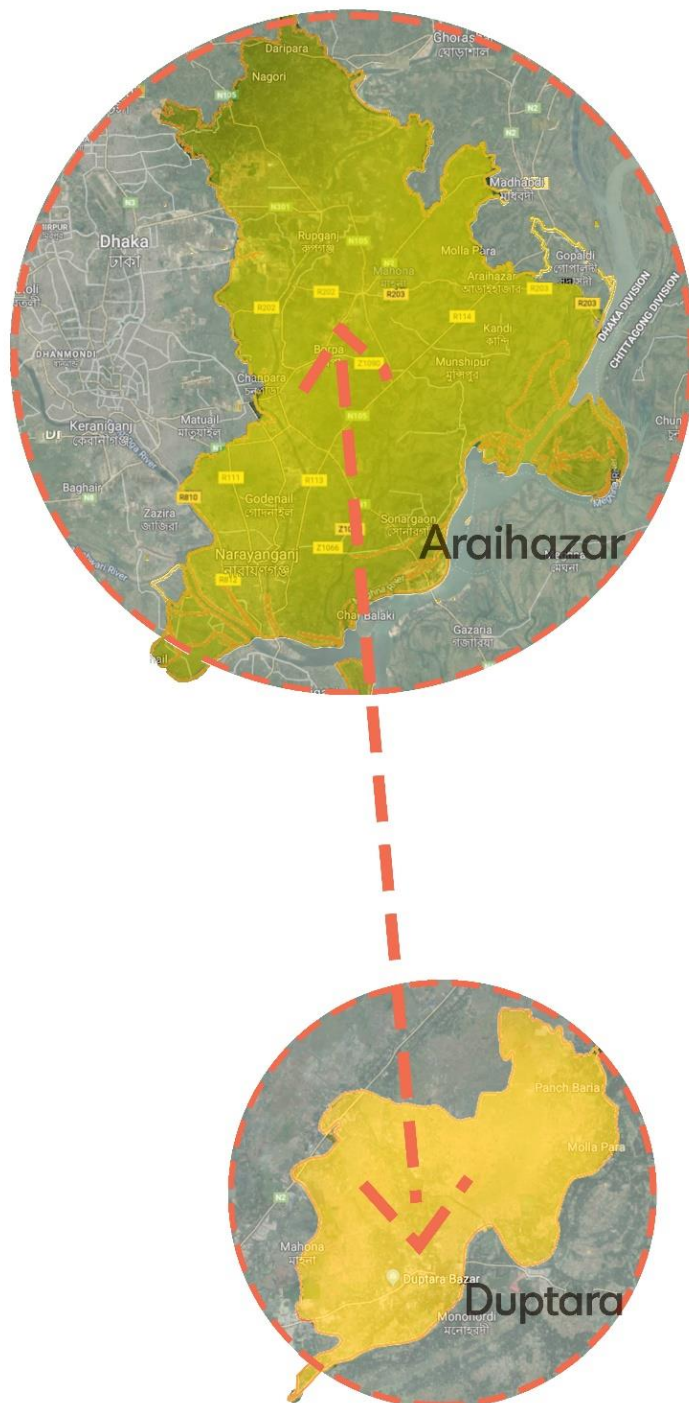


Figure 3. 1: Duptara in Araihaazar Zilla, Narayanganj.

grasp all the conditions of the site. These features, findings, completion are very important while in design period. However, the site is located at Duptara, Narayanganj is surrounded by bare cultivated lands and water bodies. To be mentioned, a high school and a convention for Duptara, Araihaazar people. Environmental consideration of the side includes the orientation of the sun, direction of seasonal & regular wind flow as well as the preparation rate of various is now known as one of the textile mill or industrial area in Bangladesh. Among this Industrailist approach to Narayanganj people are also living their life quite happily.

3.1 Site surroundings

Despite the industrial area, Duptara has a great environment to live in. Though the condition of Brhamaputra river is not that good now. The site really close from Brhamaputra river and Duptara bazar. There are a couple of Mills, Textile industries are there. And the rest of the area is cultivated lands. To be mentioned, there is significant field near the site. Precisely it is in the South-West side of the site. And a convention centre for Duptara people has been established a long back, which is also at the South side of the site and Brhamaputra river is in the East. The site area is 5 acre and it is a rectangle in shape. Last but not least, there are lots of water bodies

in this area and people earning from fisheries sector. And that is really appreciable.



Figure 3. 2: Surrounding elements of the site.

Moreover, we can say that this area is actually a industrial area. In spite of being a industrial area people are also busy doing other occupation as well especially agriculture. And people are living their life without boredom,

3.2 Historical Development of the Site

From the Hindu king ruler in Bangla this place was quite famous for Hindu people. Even in the Mughal period this was a place for Hindu people. Unfortunately, after British colonial period Hindu people started to left this place. And the number of Muslim people increased in this area in the time of Pakistan ruling time period. From then, this place was for trading purposes. If we look into it, Portugese Traders, they also helped here for agriculture. Now, if we talk about

Narayanganj in Liberation period, The events of the war of liberation were under Narayanganj district sector II in 1971. A number of people were killed in an unprovoked attack by the Pak army on the north Chasara of Narayanganj Sadar on March 25. On April 7, the Pak army brutally killed four innocent people at the Sirajddaula Club ground in Bandar Upazila. The freedom fighters of Narayanganj Sadar Baburail Pule (the position of the Razakars) killed and killed seven Razakars. On 29 November, the Pak army killed 139 civilians in the area of Buriganga in Narayanganj Sadar in the area of Dekirchchar. Massacre took place at Sanmanadi, Pirojpur and Chillarbagh in Sonargaon upazila.

Araihazar, the union it has such history on the liberation war timeline. History of the War of Liberation In 1971, Araihazar was under Sector 2. On August 7, the freedom fighters destroyed the Dargah Bridge to break contact with Dhaka. On August 8, they destroyed the pachukhi-Dhaka road bridge in Dhaka, and on August 25, freedom fighters arrested two razakars, including rifles, from the area of Arihazar. On August 8, the freedom fighters attacked the Arihazar police station and looted their weapons and killed Pak supporters, including the police station's ammunition. On 11 September, freedom fighters attacked the Pak army's bastion at Kamrangirchar and killed 5 Pak soldiers and 6 razakars. A freedom fighter was killed on 16 October when the Pak army attacked the camp of the freedom fighters of Agli village of Narsingdi Thana. In November, freedom fighters were confronted by the Pak army at Saughat of Golakandile under the leadership of freedom fighter Mokbul Hossain and on November 7, a number of freedom fighters were fighting in a bloody front elsewhere with the Pak army under Commander SM Shafi. The Pak army was killed and freedom fighter Kazi Manzoor Hossain (Manzur) was martyred. From the 14th of November, the Araihazar police station came under the purview of the freedom fighters.



Figure 3. 3: Site conditions in Mughal period.

Here to imagine there were a number of JAMINDAR BARI in Narayanganj. Then if we see the topological difference and built forms then pictures to be seen as comparative dialysis. Over the years Duptara, Araihaaz has been transformed a lot. Significantly bazar was there and also a few industry.

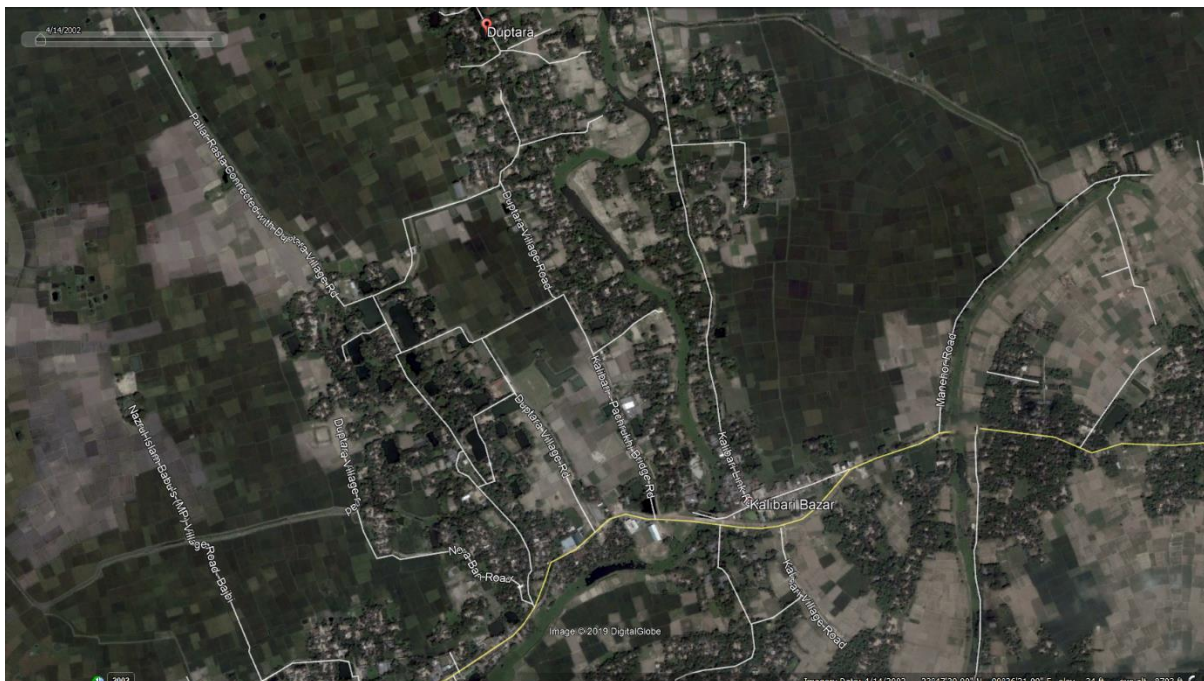


Figure 3. 4: Duptara bazar and Industrial condition in 1999

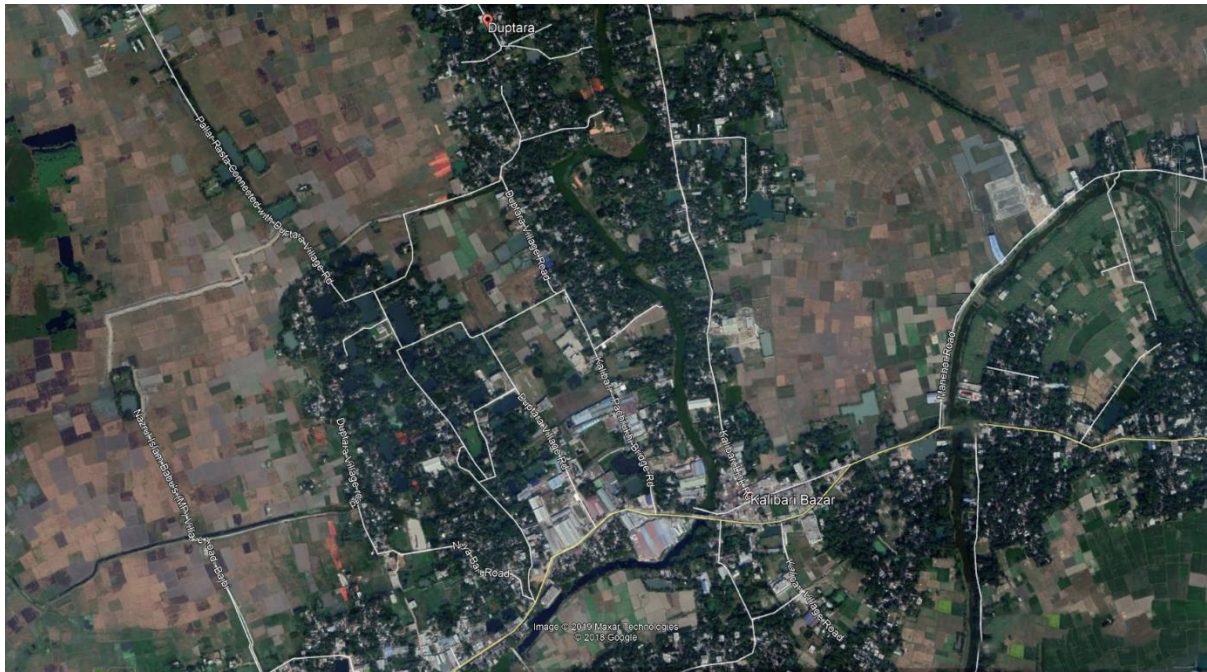


Figure 3. 5: Duptara bazar and Industrial condition in 2019

3.3 Geographical Characteristics of the Site

Geographically, it is in the north-east of Dhaka. The weather of this region is characterised by tropical monsoon climate with mean annual rainfall nearly 2540 mm in the north and east and 2540 mm to 3810 mm in the south and west. The dry and cool season is from November to March; pre-monsoon season is April-May which is very hot and sunny and the monsoon season is from June to October, which is warm, clouds and wet.

Araihaazar Upazila (narayanganj district) area 183.35 sq km, located in between 23°40' and 23°53' north latitudes and in between 90°35' and 90°45' east longitudes. It is bounded by narsingdi sadar upazila on the rth, homna upazila on the south, banchharampur upazila on the east and rupganj and sonargaon upazilas on the west.

Population Total 331566; male 171482, female 160084; Muslim 319854, Hindu 116553, Buddhist 22, Christian 28 and others 9.

Water bodies Main rivers: meghna and brahmaputra. Administration Araihaazar Thana was formed in 1921 and it was turned into an upazila in 1983.

3.4 Land-use Pattern of the Surroundings

Total area of Duptara Union is 3.6 sqkm. Most of the land here are cultivated land. People do agricultutre. Then, main occupation here is industrialist. Narayanganj is famous for industry. So there are lots of industry near the site as well. As er talked about from Duptara bazar to the site there is a main road that connects directly to the site. The built area is full of industrial building. Others, a few building are for house for rural people, One high school, Primary schools, Mosques and most importantly a convention centre. To mention there are lots of water bodies in there, Where local people do fishing. Also cultivated lands, people usually grow vegetables and some of them are interestingly two agriculture in one land process.



Figure 3. 6: Land-use map

However, the fields there, they are lively and significant. People use them mostly in all seasons. People's game change on the basis of season. But they do not stop using the field. The usage of their Brahmaputra river is also noticeable which they are not careful about and subconscious.

3.5 Accessibility and Connectivity

Firstly, from Araihaazar to Bulta there is a road under the Narayanganj junction flyover. From there have to take ride to Duptara bazar. From Duptara bazar that is a walking distance there. The site itself has two points to entr/exit. But these are on the same side. But from the field side, which is in the south of the side, Government is planning on make a road to the site. If it is not implemented then one road from the North and North-East corner these two points will be the accessibility point. But to the field and Brahmaputra river there is an approach to the site. From Brahmaputra river to the site there is a direct connection.

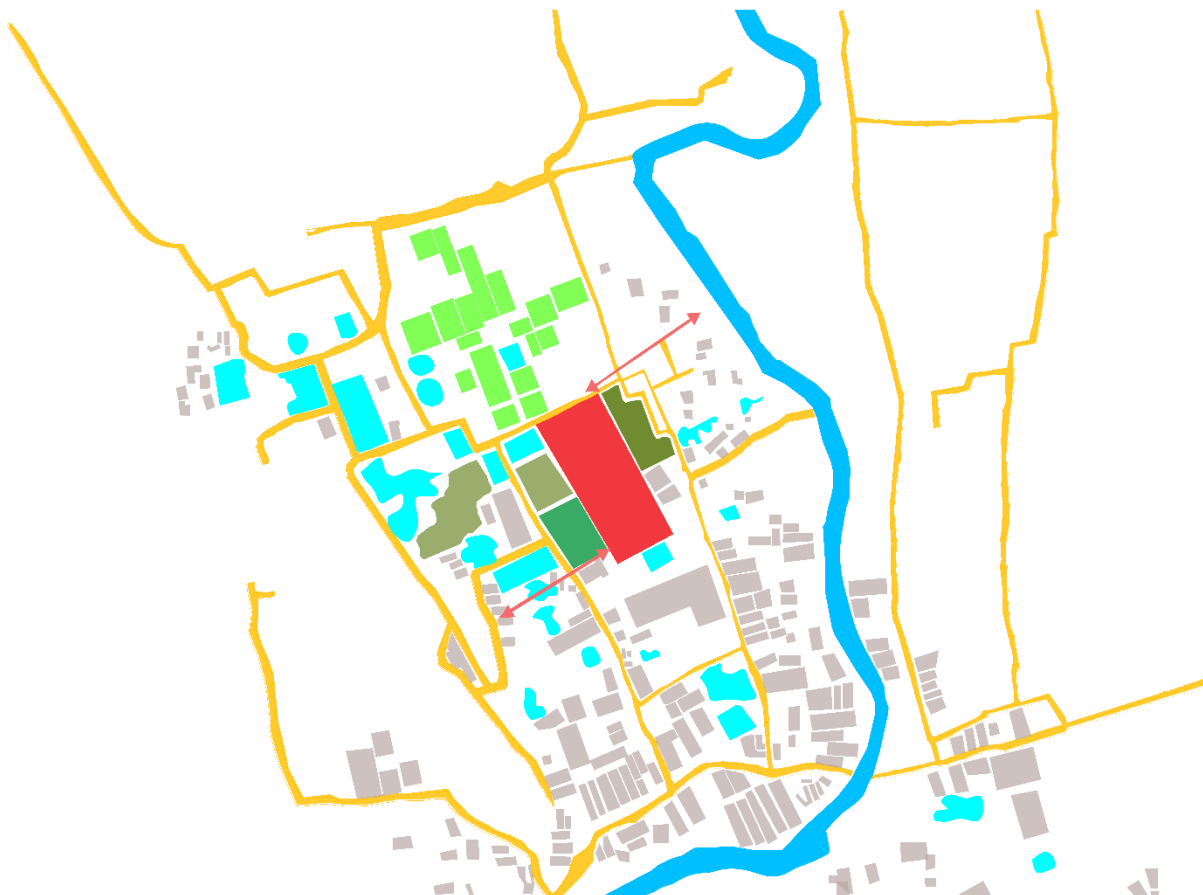


Figure 3. 7: Accessibility and connectivity through the site.

This site is situated in a place where people from Narayanganj and also people from Sylhet can come through. Because it's only 2.1 km distant from the Sylhet highway.

3.6 Climatic Conditions

Narayanganj has a tropical climate. The summers are much rainier than the winters in Narayanganj. The Köppen-Geiger climate classification is Aw. The average temperature in Narayanganj is 26.4 °C. The rainfall here averages 2004 mm.

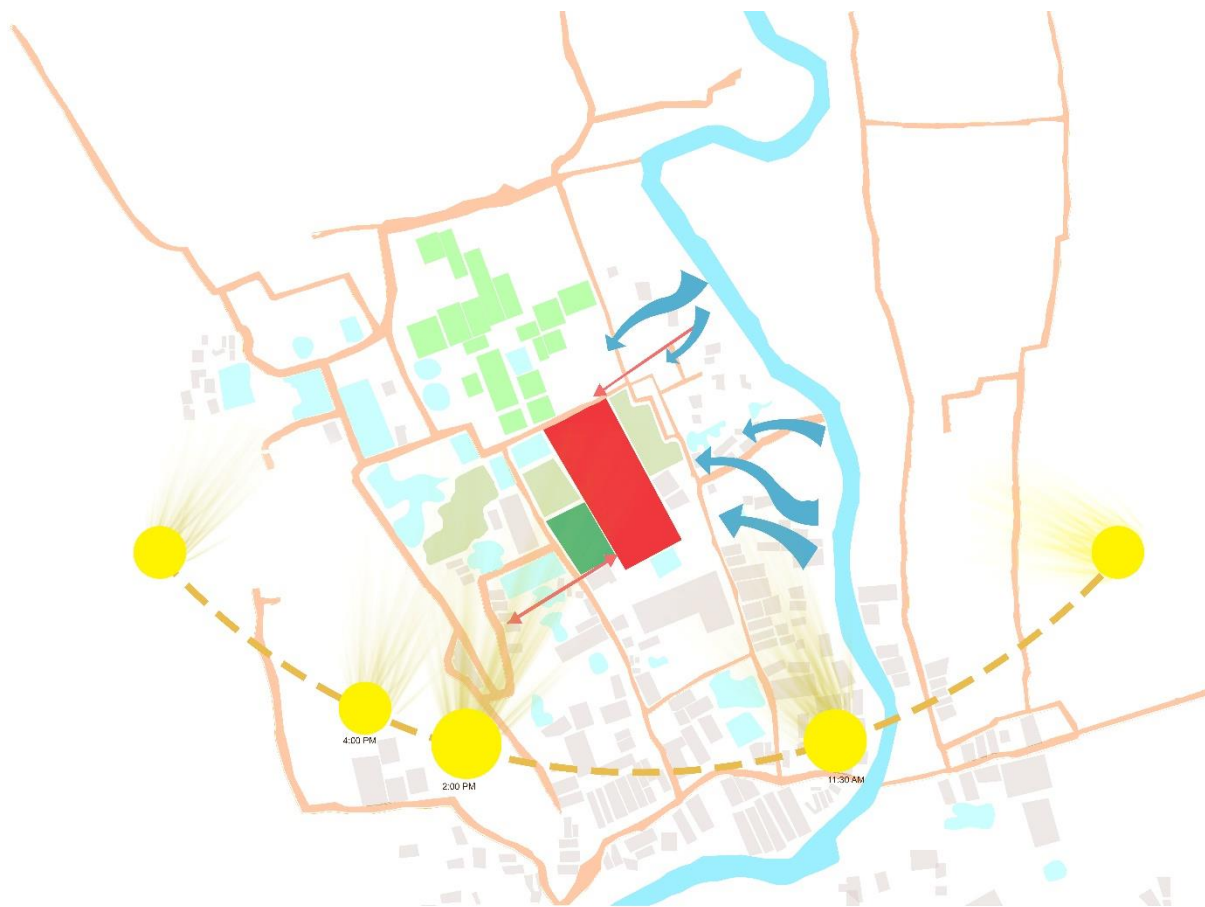


Figure 3. 8: Climatic condition, Sun projection to site according time and wind-flow from river.

Places from Sylhet has a direct link through the site. Although it's highway but survey showed that students are coming to the school which is near by the site they are coming through the high-way since a long time.

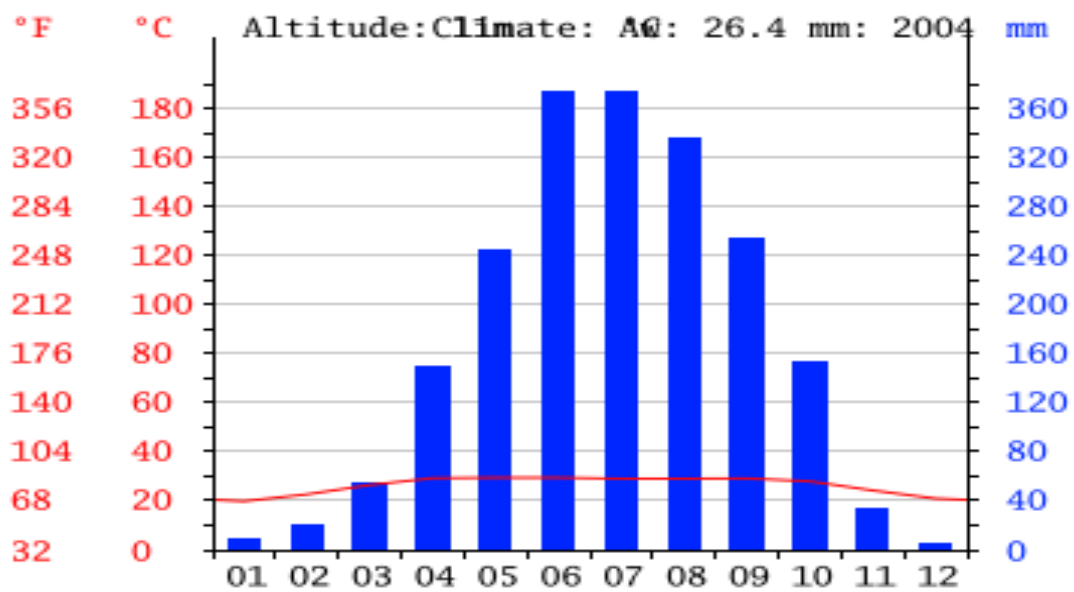


Figure 3. 9: Temperature according to time in the year.

The driest month is December, with 5 mm of rainfall. The greatest amount of precipitation occurs in July, with an average of 374 mm.

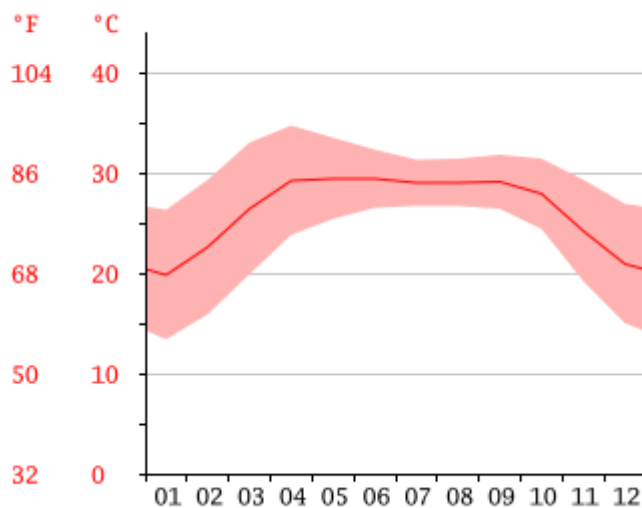


Figure 3. 10: Wind flow according to time in the year.

The warmest month of the year is May, with an average temperature of 29.4 °C. The lowest average temperatures in the year occur in January, when it is around 19.8 °C. The difference in

precipitation between the driest month and the wettest month is 369 mm. The variation in temperatures throughout the year is 9.6 °C.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	19.8	22.6	26.4	29.2	29.4	29.4	29	29	29.1	27.9	24.2	20.9
Min. Temperature (°C)	13.4	15.9	19.9	23.8	25.4	26.5	26.7	26.7	26.4	24.4	19.2	15
Max. Temperature (°C)	26.3	29.3	33	34.7	33.5	32.3	31.3	31.4	31.8	31.4	29.3	26.9
Avg. Temperature (°F)	67.6	72.7	79.5	84.6	84.9	84.9	84.2	84.2	84.4	82.2	75.6	69.6
Min. Temperature (°F)	56.1	60.6	67.8	74.8	77.7	79.7	80.1	80.1	79.5	75.9	66.6	59.0
Max. Temperature (°F)	79.3	84.7	91.4	94.5	92.3	90.1	88.3	88.5	89.2	88.5	84.7	80.4
Precipitation / Rainfall (mm)	9	20	54	149	245	373	374	335	253	153	34	5

Figure 3. 11: Average temperature of each months.

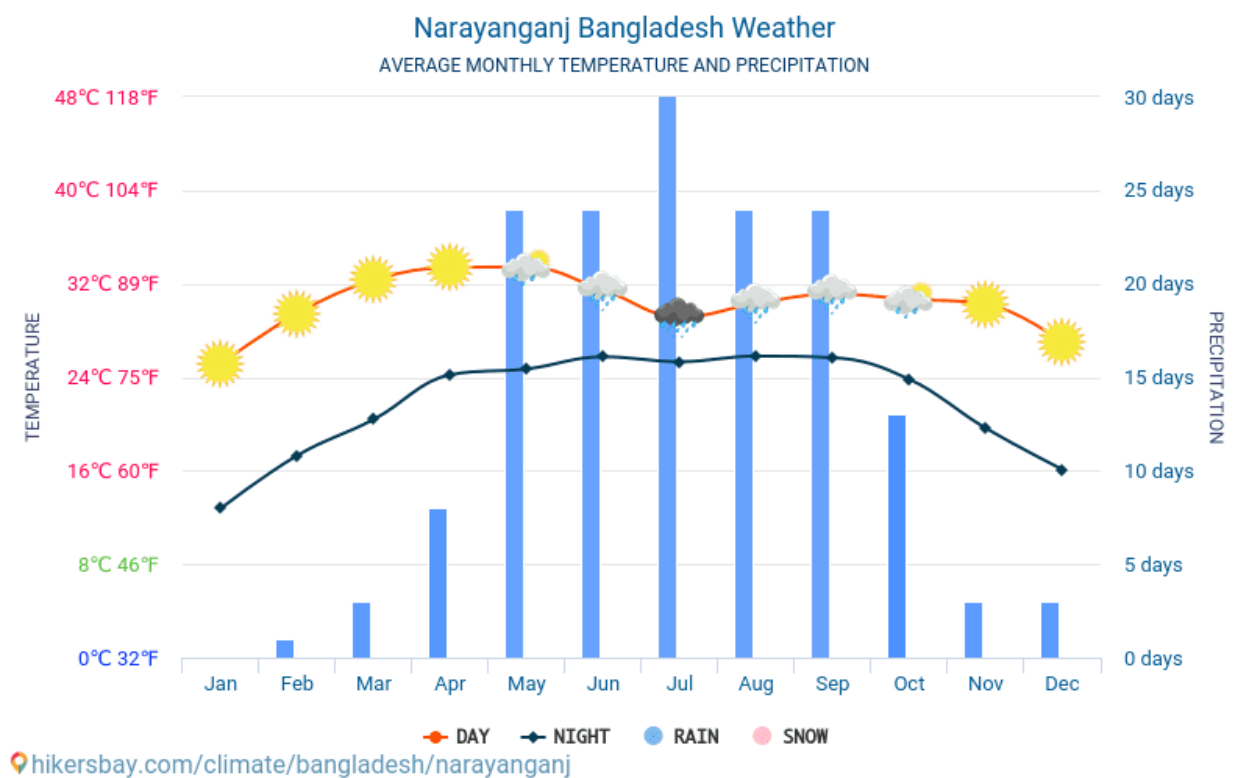
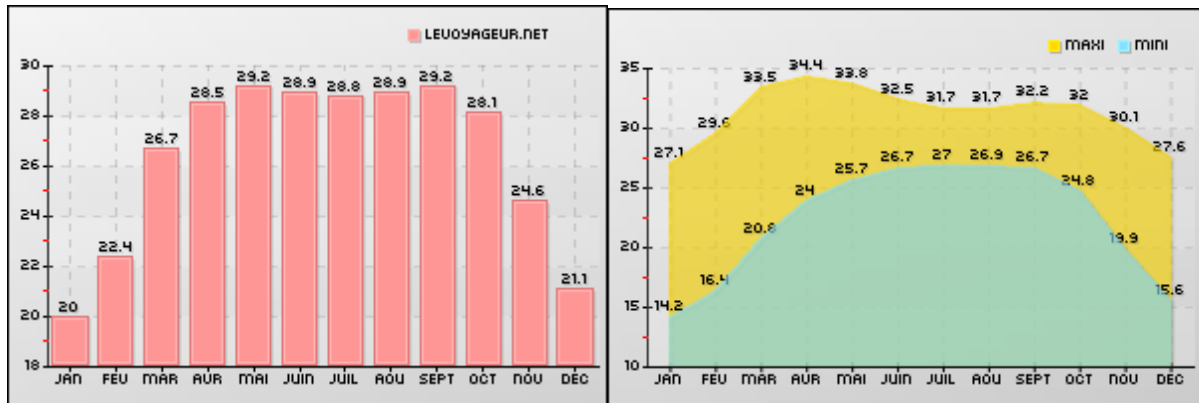


Figure 3. 12: Narayanganj Bangladesh weather



Average temperatures

Minimum and Maximum temperatures

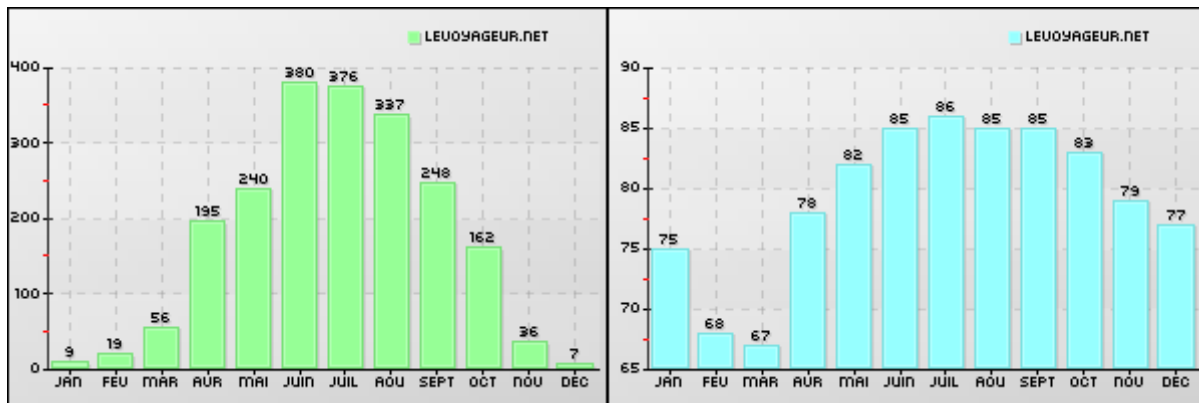


Figure 3. 13: Rainfall in mm(left) & Humidity(right)

3.7 Socio-Cultural and Economic Contexts

Since people were here Hindu from the Mughal era. So Hindu culture is quite reknown here. Interestingly, there Islam religion has a mix a Hiduism belief.

Upazila								
Municipality	Union	Mouza	Village	Population		Density (per sq km)	Literacy rate (%)	
				Urban	Rural		Urban	Rural
-	12	182	317	12532	319034	1808	56.7	36.6

Upazila Town				
Area (sq km)	Mouza	Population	Density (per sq km)	Literacy rate (%)
7.50	4	12532	1671	56.7

Figure 3. 14: land area of Duptara, Araihaazar

Literacy rate is above 50%. From the government of Awami league, since 2010 this has been declared that 2 consecutive school will be established. And Literacy is increasing day by day. So to be the positive side, there is a need of higher studies institute. To add on, Since this union is full textile industries, so there is nothing but a textile institute seestablishment would be a better idea.

3.8 Images of Existing Site Condition

Manufacturing is finite, but human intellect is infinite. Textile is all about manufacturing, and industries like pharmaceuticals are all about human intellect.

This brilliant quote has been said by Ajay Piramal. This is the Showcase that how a textile is important. And for a textile , to run a textile, textile institute is a must.

Image 1:

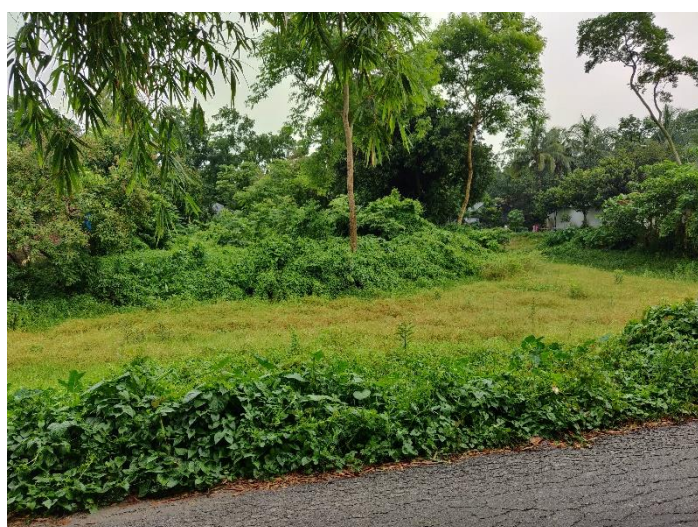


Image:2



Image :3



Chapter 4: Case Study Appraisal

Case studies are used exploratory research which helps generate new ideas. They are important way of illustrating theories and method that involves an up-close, in-depth a detailed investigation of a subject of study and its related contextual position. To produce following a form of research, I chose 3 projects in bringing the understanding of a complex issue or object. Thie contextual analysis revolves around a limited but well enough number of functions and spaces or conditions and how they relate. It has been defined as an empirical inquiry that examines a contemporary phenomenon within the context of its real life. However, some spme of them have disagreed with this research method arguing that the study of a small number of cases does not offer enough ground of reliability, practicality and and deep generality of findings which is not true. But to know more and detailed of functions, form derivations and user interface and behavior case study helps us immensely. These 3 projects are:

Local:

- BUTEX (Bangladesh University of Textile)

Others:

- NIFT (National Institute of Fashion and Technology)
- Textile Academy NRW

It has been defined as an empirical inquiry that examines a contemporary phenomenon within the context of its real life. However case studying these project will make considerate to look upto programs, functions and spaces. And also to bring out the problems and a solution for them as well.

4.1 BUTEX (Bangladesh University of Textiles)

Project Introduction

Location: Tejgaon, Dhaka

Site areat: 11.89 acres

Client: Ministry of Textile and Jute, Bangladesh

Program: Admin, academy, laboratory, library, workshop, hostel,

Bangladesh University of textiles is the public university and one the leading textile universities in Bangladesh. Though the university was established on 22nd December, 2010 by an ordinance of Education Ministry, it has a long glorious history. The descriptions of others are:

1. **Environment and micro climate:** Location of BUTEX is in Tejgaon, Dhaa. So the climatic condition is pretty much in industrial zone. Humid level is high and its in absolute congested position. There are a numbers of rickshaw stand and garage near the



Figure 4.1. 1: Area of BUTEX

institute. Tejgaon is usually known as industrial area and near there is Hatirjheel. And some of industrial factories along with slums are situated near the institute.

2. **User behavior and requirements:** The academic building is an E shaped building. It is basically an administrative plus academic building block. Especially I have to see the requirements and square footage of the programs and detail section of the departments. Also the laboratory which are segregated from the main academic block. And reason being the machineries needs loads of pressure on the ground technically, which is slab and plinth. So, it is quite tough to have more live load on the slab. Lastly, if we talk about the residential blocks which are totally separated from the Academic area. Even the road on the above picture shows, it has divided the residential zone and academic zone.



Figure 4.1.2: Major functions of BUTEX

3. **Utility and space enhancement:** Particularly to be noted the open from the mass, shaded corridor from the field which connects to the laboratory building as well is well

the hub for the students. That is time for gossip, leisure time, and other different ideas' hub. This place is one of the hub for the students. So achieving some places in design would be definitely enrich design solutions.

4. **Form and Function:** Analyzing form towards function is a must important thing in relative to study the BUTEX institute. Academic building is in the front and then the academic come administrative building are here to serve these purpose in a minimal space. How the form is situated in respect to the function or the form derivation in order to consider other considerations as in climatic changes, site surroundings etc. So clearly, the field is a in the middle of the institute which helps to combined by the students and

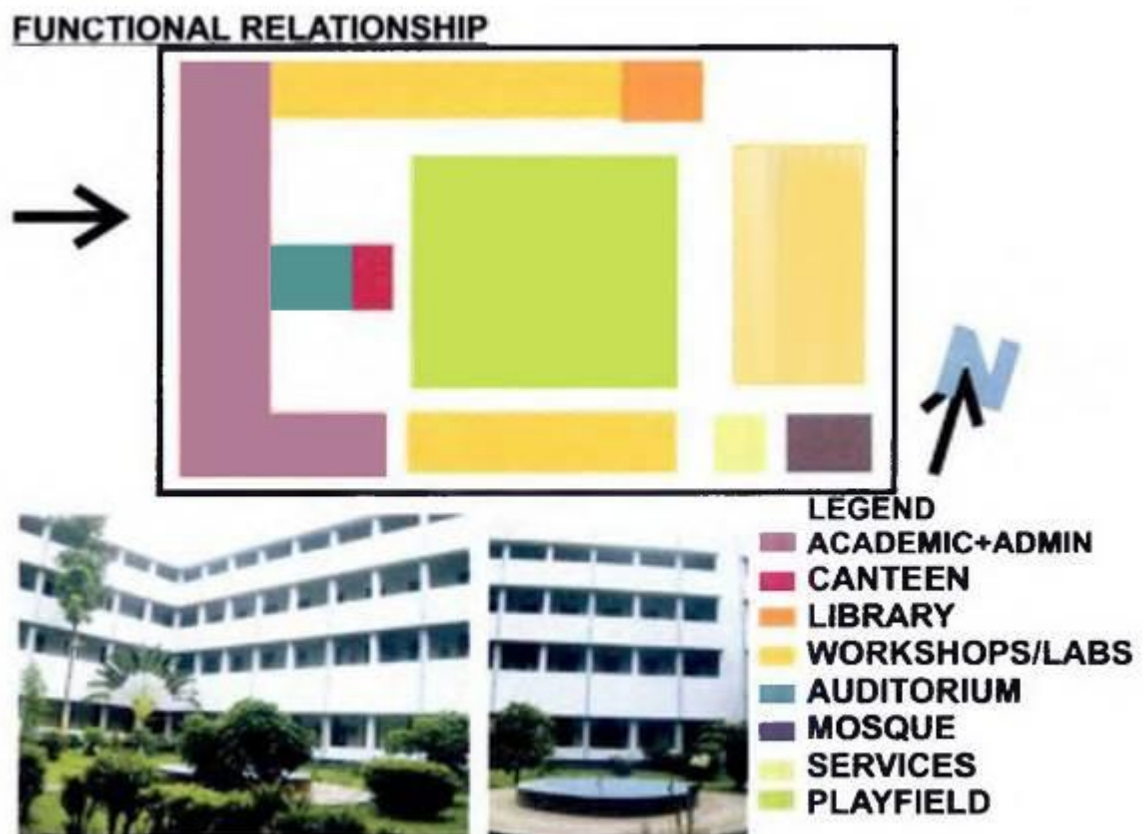


Figure 4.1.3: Zoning diagram of BUTEX

teachers. Then the residential block in ine the other unit of the institute's land. It actually. It is a in a good way that the designer tried to segregate the residential zone totally different way, so that the there is segregation between public functions and

private function. Moreover, to be noted, the laboratories are also in a different block from the academic building to separate these functions and also not to interconnect lab with admin area. Because functions of them are totally opposite. Multi-purpose hall is in the middle of the academic section. The middle rectangle block is the multipurpose hall which goes upto 3rd floor whereas the academic and admin block is 4th storied. The Auditorium/Multi-purpose block has just punched through entered the academic building which creates a barrier to the other wing of the block. Thus the laboratories have created the space by being surrounded the field. And the library is opposite of the labs and canteen section.

5. Horizontal and Vertical circulation: In particular, circulation routes are the pathways people take through and around buildings or urban places. Circulation is often thought of as the 'space between the spaces', having a connective function, but it can be much more than that. It is the concept that captures the experience of moving our bodies around a building, three-dimensionally and through time. Therefore circulation is always important for the user. Cause circulation guides through the building to the people. It also restricts people to enter in particular places where privacy is much needed. Horizontal circulation mainly through corridor and Vertical circulation there are stairs. There is no elevator here to be mentioned. Things to notice while studying circulation:

- Direction of movement
- Types of use: public or private, The stair in the wings are used a lot. Whereas the stair in middle is mainly used by faculties.
- Frequency of use: mainly used the wings stair and for library that's one library stair. And for workshop there is one stair which also connects with library/labs

- Time of use: mainly in the class hour. So from morning-da-evening these times they are being used.

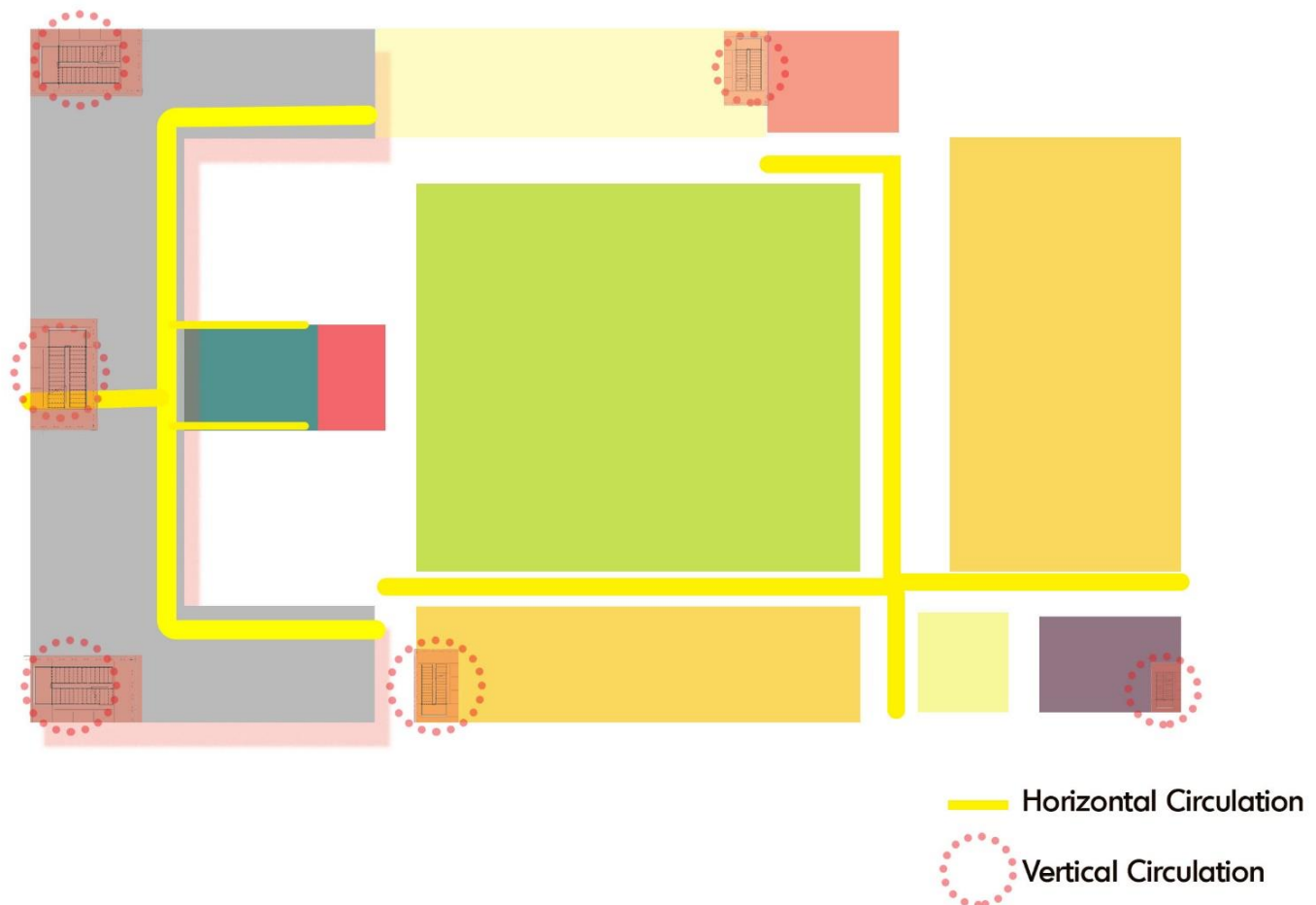


Figure 4.1.4: Vertical & Horizontal circulation of BUTEX

6. Site planning and landscape detailing: Apart from functional flow, circulation, there is landscape part where the field has been considered. But there is no proper landscape detailing here. Site surroundings and other materials are left on future proposal. The field of BUTEX is pretty famous among the student generof the field to the importance

of it shows how the field has been properly placed. It is surrounded by academic buildings, library, laboratories, mosque and lastly canteen.

However there is landscape on the residential side. Also there is a field of small size is present there. Around the field there are some sitting arrangements and leisure places which are considered as landscape.

7. **Structural details:** The structure of the building is simply beam column structure type. The grid of the column is 28'x32'. The depth of the beam is 2'. Height of the floors are 15' from the 1st to 4th floor.

Structure of the multipurpose hall is waffle slab and the column is 2'x6' which takes the span to 70'~80'.

Laboratory section has the same grid system as well. It is also 28'x32'. And the height of the laboratory floors are 15' each.



Figure 4.1.5: Structural (Beam-Column) details of BUTEX

8. **Design Detailing:** Dyeing and Wet processing unit section are totally apart from the laboratory section. It is mainly in the open area and above it there is no infrastructure. So that the sunlight can come directly. Also the laboratories which doesn't need any requirement like WPE and DYEING, those labs are in together. As their function requires the same sunlight and same treatment.

9. Socio-economic profile of the user: Generally students from various income family range are admitted here. Since this is a public University so a various people from various income family can be seen here.

10. Parking details and standard: There are in total 15 car parking's place is allocated. And there is cycle garage as well as a bike parking lot is available. In the cycle garage bikes are also parked usually. So at least 20-30 parking is there available.

4.2 NIFT (National Institute of Fashion and Technology):

Project Introduction

Architect: Stein, Doshi & Bhalla

Location: Huaz Khas, New Delhi

Client: Ministry of Textiles gvt. Of India

Site area: 3 Acres

As institute for fashion education to encourage the fast growth in garment industry and to provide education clothing design as a service to the ready made garments industry. Set up in 1986, NIFT is the pioneering institute of fashion education in the India and has been in the forefront of providing professional human resource to the textile and apparel industry. It was made a statutory institute in 2006 by an Act of the Indian Parliament with the President of India as 'Visitor' and has full-fledged campuses all across the country. Over the years NIFT has also been working as a knowledge service provider to the Union and State governments in the area of design development and positioning of handlooms and handicrafts.

1. Environment and micro climate: The institute is situated in the Hauz Khas institutional zone. It lies on the way to Asian games village from green park, Access is from North east and south west side of the campus. Site is irregular in shape is surrounded by classical institute. Humid level is high. So local material has been used. It is surrounded by Hauz Khas apartments, spastic society building.

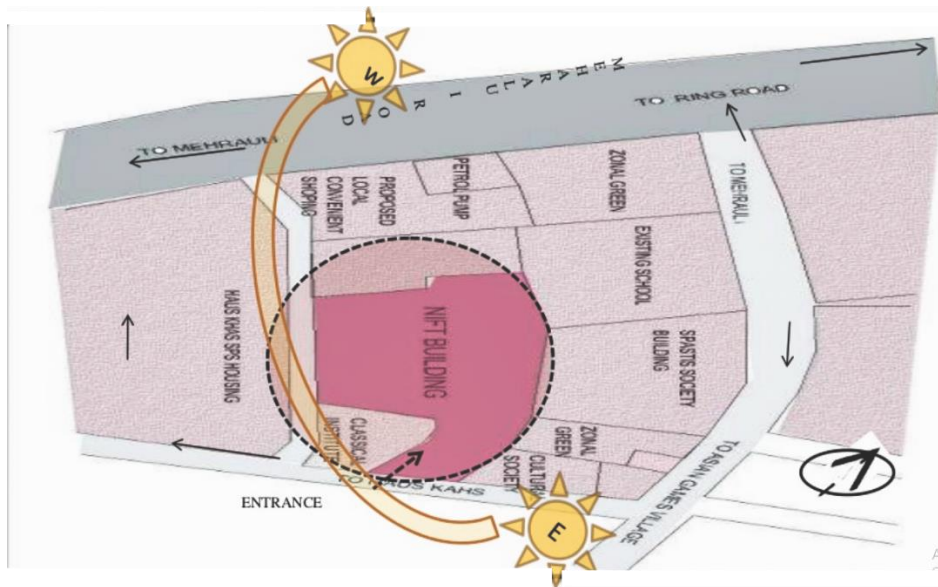


4.2.1: Environmental situation and location of NIFT

2. User behavior and requirements: The building covers almost entire site leaving very less green area. The plan follows the site boundary with a setback of 52'6" maintaining its character. Academic clusters have been grouped together to form units comprising classroom. So the allocated is sufficient for working.

3. Form and Function: Building is aligned with the long sides along NW and SE axis, facilitating good exposure to the sun and breeze, at times causing glare. Different blocks of building complex are placed according to the site lines. All the peripheral building lines are parallel to the site lines. Openings for light and ventilation have been sacrificed for aesthetic considerations than climatic comfort. Access is from the Mehruli road which AIIMS to the Qutub minar. It can also be accessed from Khel Gaon Marg. The site has basically divided into

three basic zones. Academic block are similar in plan and in function also, occupies the left portion of the site. Admin block along with canteen and library in in the right hand side. The Hostel block is placed right at the back of the site.

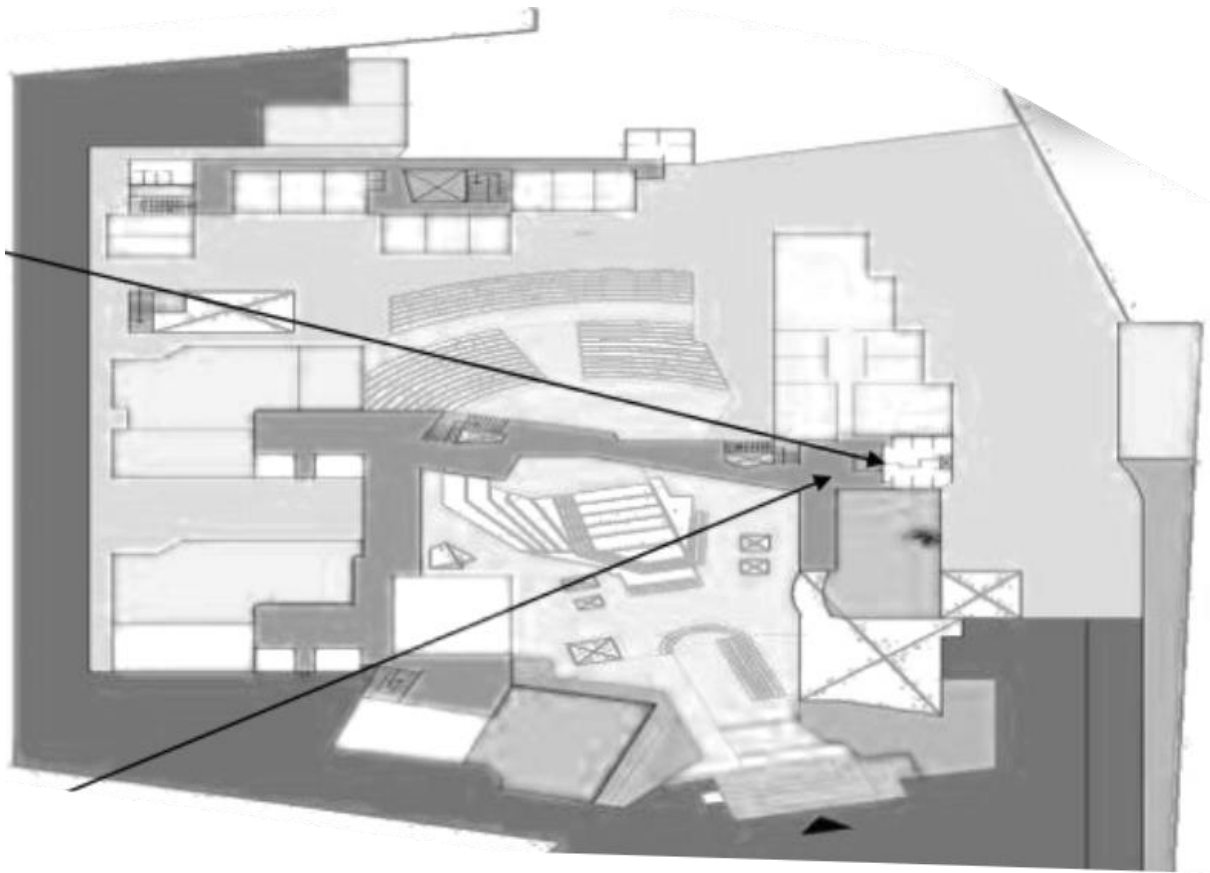


4.2.2: Building formation by natural ventilation

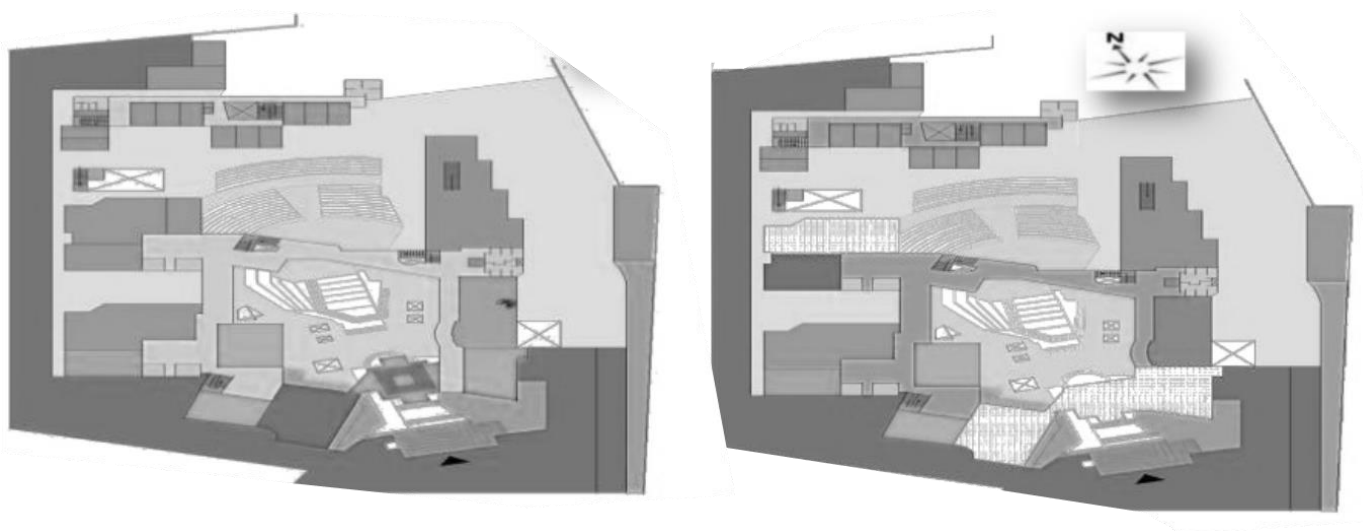
Academic block: The whole complex forms a vibrant composition. The academic blocks are connected through different systems of circulation overlooking the center court. Academic facilities have been provided in the areas joined together in the form of a cluster. The cluster comprises of lobby, lecture room, labs and toilets.



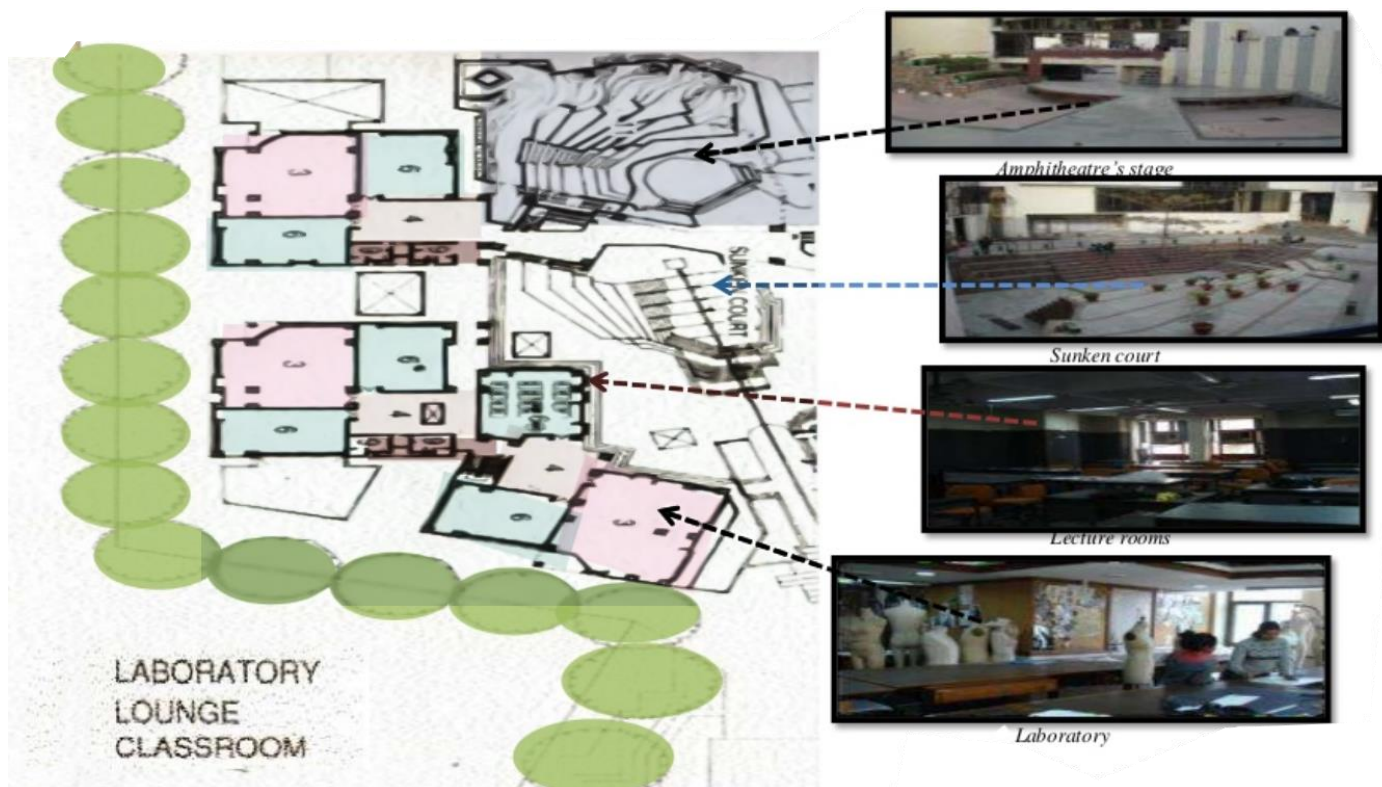
4.2.3: ground floor plan linked to landscape and public function



4.2.4: First floor plan



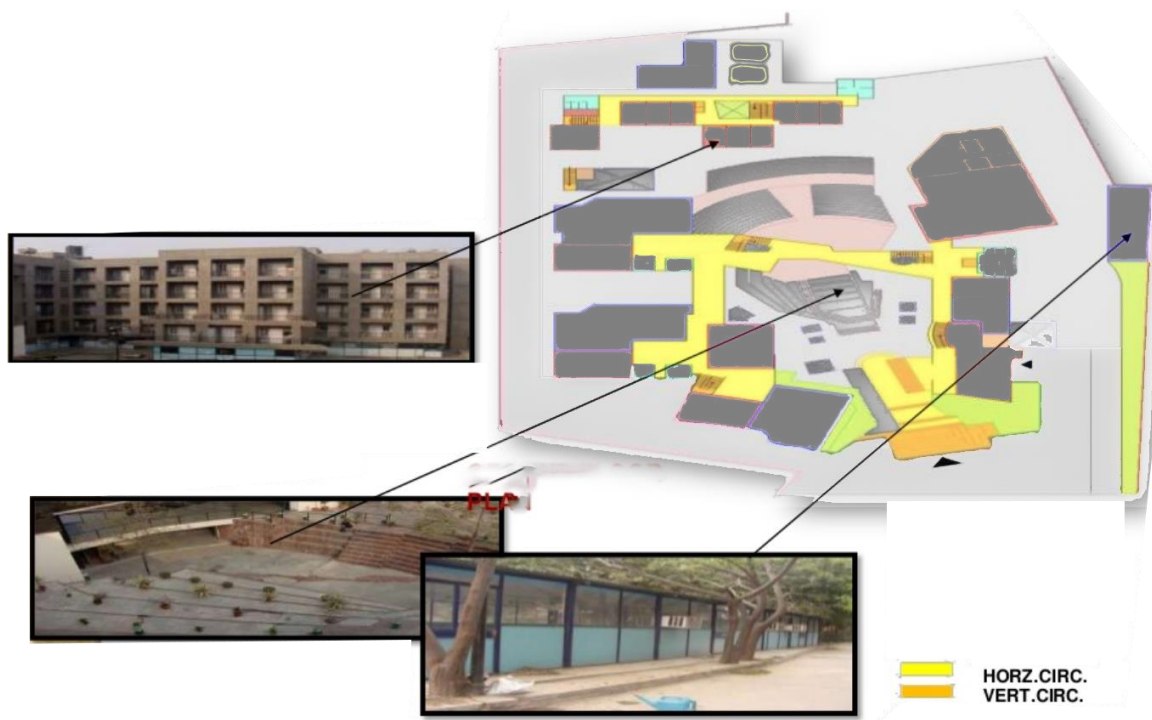
4.2.5: 2nd and 3rd floor plan consecutively



4.2.6: Master plan in relation with public spaces and laboratory, lounge and classroom

4. Horizontal and Vertical circulation: Different blocks require different circulation system. Usually, the vertical circulation is stair. There is a core which includes lift and that is only one. Others 7 stairs are present throughout the project. The horizontal circulation patterns consider linear in shape which surrounded by the form and it looks like a rectangular shape. In academic building there is corridor in one side and in laboratory cum workshop cum classroom block's function has been separated by circulation corridor. The front court separated from amphitheater by terrace academic wing.

- Types of use: Mainly the usage of vertical circulation is stair since there isn't much lift. Lift core is used in admin block and public people usually use it.
- Frequency: mainly in the class time they are used. And hostels in the night/evening.

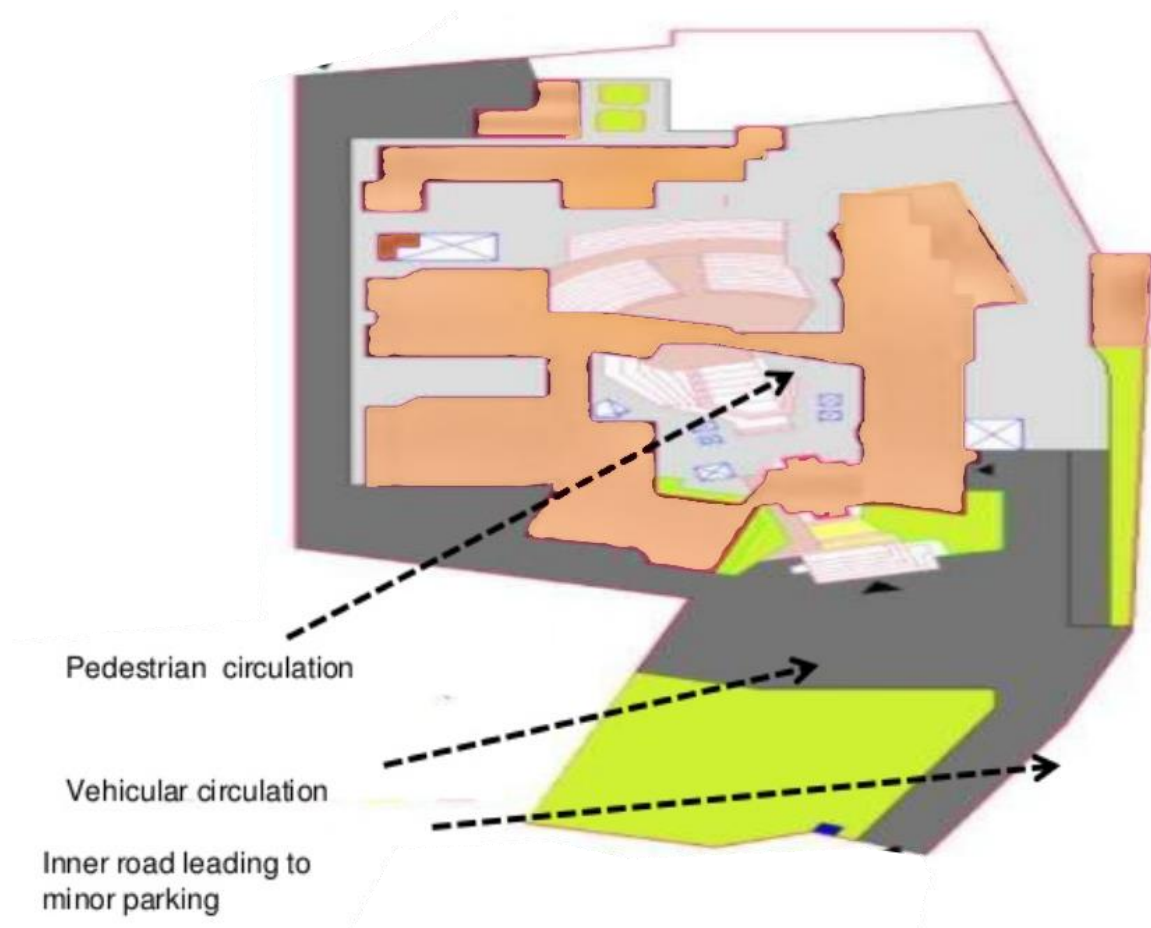


4.2.7: Vertical circulation and Horizontal circulation of NIFT

5. Site planning and Landscape detailing: Flat land with artificial contours. Proper segregation of functions as building blocks are placed in certain set of zones which is determined by function. Also the planning resolves two courts. Although apart from the zonal green there is not any substantial green area to be landscaped environment. Two types of circulation, pedestrian and vehicular, Inner road leads to main car park. Entry in two sides, front and back.

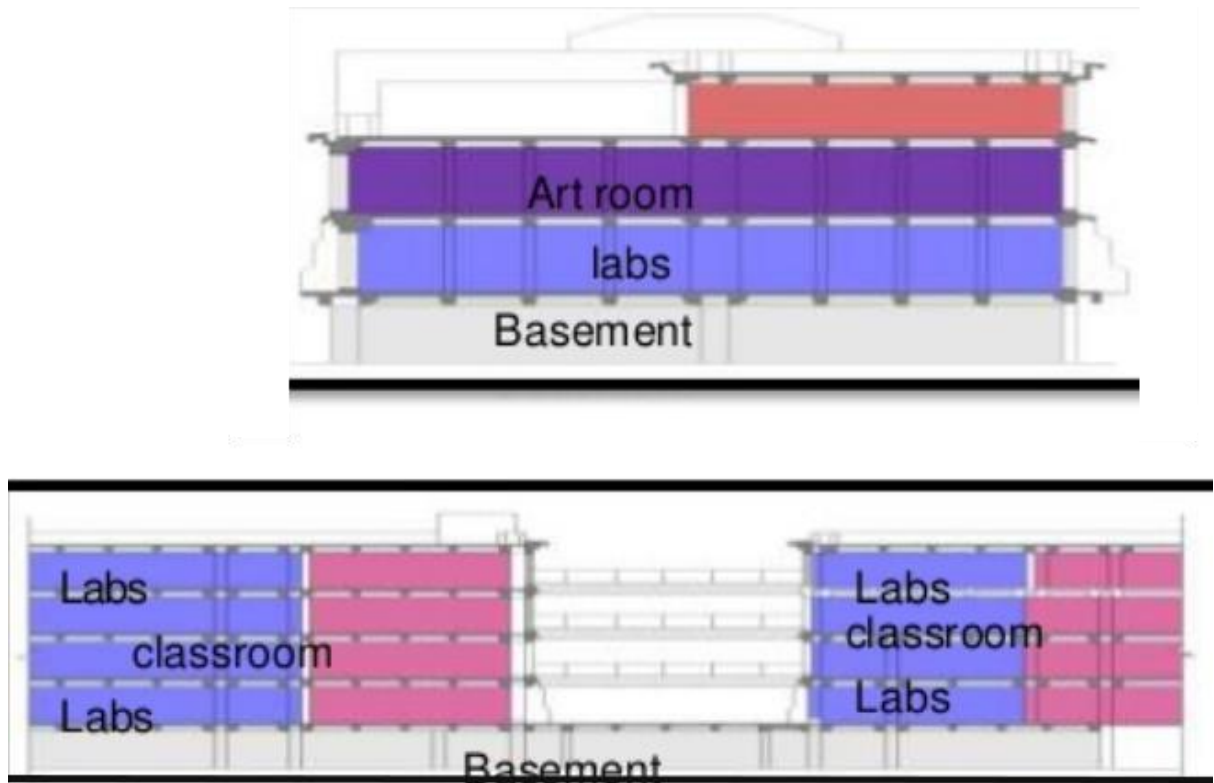


4.2.8: Pictures landscape



4.2.9: Site planning and landscape circulation

6. **Structural details:** This complex is based on frame structure-square module has been followed up. The roofing is done with waffle slab(5'x5') thus the column free space of 74 sqft. The external thickness as adequate sun protection for the windows, providing insulation.



4.2.10: Structural diagram of NIFT

- 7. Parking details and standards:** Parking has been allocated in NIFT. Vehicular entrances have been through the site. Which leads to the parking. There are 150 car parking for teachers and students and guests. There is also cycle parking. But recently parking has extended to the

4.3 Textile Academy NRW

Project Introduction

Location: Mönchengladbach, Germany

Area: 3.2 acres.

Architect: Slapa Oberholz Pszczulny

Client: Textilakademie NRW GmbH

The construction of the North Rhine-Westphalia Textile Academy will create a new seat of learning for the textile and clothing industry in the German-speaking world. Designed by sop | architekten, it will ensure the Academy a presence on the Niederrhein University of Applied Sciences campus that reflects its standing in the sector.

1. **Environment and micro climate:** The Textile Academy NRW in Mönchengladbach



Figure 4.3 1: Environmental situation of institute.



speaking area. Together with the Niederrhein University of Applied Sciences, the associations of the Rhenish and Northwest German textile and clothing industry are thus concentrating vocational training at one location. It is mostly cold winter region. So the climate and materials are different.

2. **User behavior and requirements:** If the teaching building appears as a fabric-like structure in daylight, its effect becomes even more interesting in the dark. The brightly lit windows then shine through the fabric and make the underlying building structure recognizable. The differently sized window areas are distributed irregularly across the façade, creating additional tension.
3. **Form and Function:** The architecture of the building transports the teaching content of the academy to the exterior, making the various use of textiles tangible from afar. The 3-storey building is surrounded by a textile façade. Like the drapery of a curtain, the silvery shimmering fabric undulates around the angular concrete cube. The slightly transparent, seemingly mobile membrane forms the greatest possible contrast to the strict geometry of the underlying cube.

If the teaching building appears as a fabric-like structure in daylight, its effect becomes even more interesting in the dark. The brightly lit windows then shine through the fabric and make the underlying building structure recognizable. The differently sized window areas are distributed irregularly across the façade, creating additional tension. The entrance area, which is recessed in the surrounding tissue, is characterized by a generous glass façade.

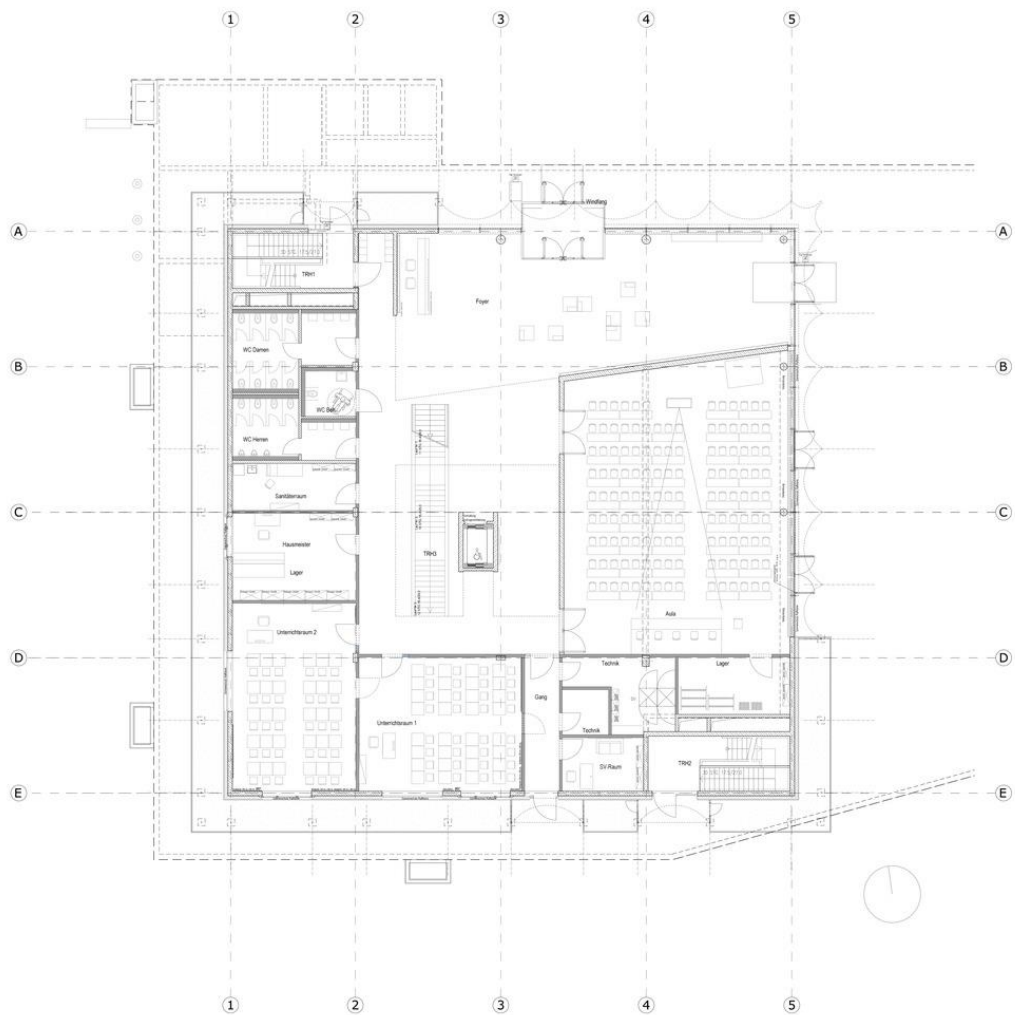


Figure 4.3 2: ground floor plan textile Academy NRW

Inside the building there are flexibly divisible classrooms, a central atrium, an auditorium, and the administration of the Academy. The interior designers of slapa oberholz pszczulny have realized a withdrawn appearance defined by face concrete and

contrasting black elements. Mobile seating furniture of various bright colours, also designed by sop architekten, contrast strongly with this ambiance, placed across the whole building.

4. **Horizontal and Vertical circulation:** Horizontal circulation has been throughout the corridor which across classrooms, auditorium, laboratories and admin also. But the portioning of the wall divides the admin academic into two pieces. This project is reknown for its vertical circulation which has a very aesthetically pleasing. Moreover, forms and spaces blend with this central vertical system. For disable people there is also a lift along with service lift. Since service part is underground so it separates these two functions of the lift and has privacy.



Figure 4.3 3Vertical and horizontal circulation.



Figure 4.3 4: Stair and core in the middle of the form which holds all up.



Figure 4.3 5: Section of textile academy NRW



Figure 4.3 6: Circulation vertically and horizontally.

5. **Structural details:** The building is in beam column structure. Central stair is the attraction of the Material used for structural purpose is concrete. There is fenestration installed in this project which is fabric of textile. This is fantastically done by the designer. These fabrics are installed with steel, just to have tension on fabric. The structure's architecture will project the Academy's teaching programme beyond its walls, providing a public showcase for the many and varied uses of textiles. The three-storey building will be cloaked in a textile façade, a shimmering silver fabric that will envelop the angular concrete cube like a wave. Slightly transparent and suggestive of movement, this skin will come in stark contrast to the strong geometry of the cube behind it. Inside, the building will house modular teaching rooms, a central atrium, an auditorium and the Academy's administrative offices.



Figure 4.3 7: Curtain fabric installed with steel structure.

6. **Design detailing:** For the weather and climate façade's has been taken care fenestration with textile fabric. To install them steel structure has been introduced . As the structure is in concrete to blend with that types of materials like fabric and steel has blended.



Figure 4.3 8 Fabric fenestration installed with wall

Chapter 5: Program Appraisal

Form understanding the ideology such functions are proposed to capture the essence of the development in textile sector and to create desired built environment. Program evaluation is a valuable tool for program managers who are seeking to strengthen the quality of their programs and improve outcomes for the youth they serve.

5.1 Proposed Program

Ministry of Textiles and Jute has proposed some initial list of programs. The programs have been indorsed through various standards, requirements and guidelines. The program list has been classified into six major categories which are described below. All the sqft of the program have been excluded toilets and circulation which will be added later on.

- Academic facilities- 48400 sqft
- Administrative facilities-
- Laboratory facilities
- Workshop
- Library
- Spinning shed
- Dyeing shed
- Weaving shed
- Boys hostel
- Female hostel
- Principal quarte
- Officer dormitory
- Staff dormitory
- Cycle garage

1. **Administrative Facilities:** The admin section has office rooms for dept. head and professors along with assistant professor. Usually in a big room there in room of 150 sft and a circulation corridor and 3-4 cubicles in each dept. room. The total sqft was provided was 20,000 sqft but Contemporary practice shows that approx. 12,000 sft is good enough for these functions. No specific reason for the justification of the huge amount of sqft using whereas studying program and case study shows 11,110 sft would be good enough.

Functional space		Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
A. Administrative facilities					
1	Dean	1	1	150	150
2	Accounts	1	4	500	500
3	Deputy Director	1	1	150	150
4	Admin	1	5	600	600
5	Teachers' lounge	2	30	1050	2100
6	Department of Fabric Engineering	1	6	500	500
7	Dept. of Wet Process	1	6	500	500
8	Dept. of Textile Machinery Design & Maintenance	1	4	500	500
9	Dept. of Industrial & Production Engineering	1	6	500	500
10	Dept. of Dyes & Chemical	1	4	500	500
11	Dept. of Yarn	1	4	500	500
12	Dept. of Knitting & Sticking	1	4	500	500
13	Dept. of Apparel Engineering	2	4	500	1000
14	Dept. of Fashion & Designing	1	4	500	500
15	Planning & Waste Management Engineering	1	3	400	400
16	FTCE (Textile Certification Engineering)	1	3	350	350
17	Medical Facilities	1	3	200	200
18	Faculty of Engineering Drawing	1	2	350	350
19	Head of Textile Engineering	1	1	180	180
20	FTCE	1	3	400	400
21	VC Assistant	1	1	100	100
22	VC	1	1	180	180
23	Prayer Room	1	25	450	450
				Subtotal	11110

2. **Academic Facilities:** The academic facilities consists of classrooms and seminar rooms only. However, studying from contemporary practice which shows that minimum sqft of these functions would be 22,100 sqft. Whereas the requirement was 28,000 sft approx.. Now apart from classrooms other amenities have been provided as well within this square footage. Along with conference room , video conference room plus IQAC and other facilities have been provided. Others video conference room also has been provided

Functional space		Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
B. Academic facilities					
1	Classroom Type-A	10	60	1120	11200
2	Classroom Type-B	7	35	750	5250
3	Conference room	1	40	800	800
4	Video Conference Room	1	40	1200	1200
5	Female Common Room	1	30	750	750
6	Boys Common Room	1	30	750	750
7	Club Room	4	15	200	800
8	Seminar Room	1	30	900	900
9	IQAC	1	5	450	450
Subtotal					22100

3. **Residential Facilities:** Residential facilities includes Boys hostel, Female hostel, Principal's quarter, Officer dormitory & Staff dormitory.

Requirement for boys hostel was 48,000 sqft. And standards shows that boys hostel for 200 bed in enough in 40,000 sqft. Female hostel of 100 bed requires 24,000 sqft in general is quite a good number for 100 bedded female hostel. Principal is 2100 sqft. Principal with his family will get an quarter of 2100 sqft is conventional.

	Functional space	Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
E.	Residential facilities				
1	Boys Hostel	1	200(BEDED)	40000	40000
2	Female Hostel	1	100(BEDED)	24200	24200
3	Principal Quarter	1	1	2100	2100
4	Officers Dormitory	1	20	10000	10000
5	Staff Dormitory	1	15	5300	5300
				Subtotal	81600

4. **Lab Facilities:** The proposed program had a requirement of spinning, weaving and dyeing shed. But these are shed system of allotment of the facilities wont show the emphasis on its facilitate systems. To enhance these facilities new laboratories has been added in order to provide them more bookish knowledge along with their vocational knowledge. Lab like physics lab, chemistry lab has been provided.

	Functional space	Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
C.	Lab facilities				
1	Physics Pab	1	40	1000	1000
2	Chemistry Lab	1	40	1200	1200
3	Engineering Drawing Lab	1	30	900	900
4	Computer Lab/ACTM/ACAM/ACYM	1	25~30	900	900
5	Jute Lab	1	30	7200	7200
6	FSD Lab	1	30	2000	2000
7	EEE Lab	1	40	1200	1200
8	TTQC (Textile Testing and Quality Control)	1	30	1800	1800
9	Apparel Lab	1	40	3000	3000
10	Weaving Lab	1	30	2000	2000
11	Knitting Lab	1	30	4800	4800
12	Mechanics Lab	1	25	1200	1200
13	Wet Processing Lab	1	30	4000	4000
14	Spinning Shed	1	60	8000	8000
15	Eng. Office	1	30	500	500
				Subtotal	39700

5. **Commercial Facilities:** Many of commercial spaces has been introduced to the project. The proposal was for Mosque, Library, Workshop and Rain water harvestment was proposed by the client. Additionally, Auditorium for 80~90 people which is 7500 sqft has been provided in this project. Mosque's sqft is 7000 sqft. And rain water harvestmen system will be reservoir with water body.

	Functional space	Number of units	Number of users	Area per unit (in sft)	Total area (in sft)
D.	Commercial facilities				
1	Auditorium	1	80	7500	7500
2	Workshop	5	1*30	900	4500
3	Library	1	50	4500	4500
4	Mosque	1	50	7000	7000
5	Rain Water harvestment	1			0
Subtotal					23500

6. **Dining Facilities:** Dining facilities includes dining halls for administrative personnel and also canteen for students. Each dormitory should have its own dining hall. The kitchen is 1/3rd of the dining hall. And will be approx. 5000 sqft.

Chapter 6: Design Considerations

With the aim of formulated design ideas some considerations have to be summoned up to bring to the attention of the designers in applying the universal accessibility design principles and requirements to buildings and facilities. They can also be used to identify barriers in existing buildings. Design considerations are categorized into sub groups. The respective best practices section for key issues in each sub-group has been indicated. In order to academic principles and theories some consideration have incorporated functional finding and program management is to discuss.

6.1 Waste management from Chemical Lab

Waste management is a common issue from chemical lab and apparel lab. Chemical lab produces lots of chemical waste and Apparel lab produces color waste. To manage them design decisions can be changed to prioritize them. It is recommended that building projects and community facilities, especially those frequently accessed by the public or intended for international visitors, should take into account the content of these considerations from the inception design stage. Things to apply while designing:

- Develop access strategy at an early stage of design
- Facility should be accessible to the widest spectrum of users
- All the accessible waste line should be connected and non visualize to be connected to a major exit through rain water harvestmen.

6.2 Wet Processing Lab under direct sunlight

Wet processing lab is a laboratory where products have been made have been sent to printing, dry up the cloth, reduce chemicals from yarn and fabric. Wet processing unit's direct sunlight is a

main consideration because without sunlight the chemical tend to be more strong. Sunlight basically heats up the yarn and fabric. And also it keeps the lab bacteria free which helps the cloth to be more chemical less.

However, by printing, sticker print, modular paint , color brush paint etc are important in order to dry up the fabric. As naturally the fabric dries up its better for the fabric. It also reduces bacteria the most than any other process. Then again printing section is under half the Wet processing unit and Apparel section as well. So, these functions has to consider while designing the project.

6.3 Public spaces integrated with Duptara Community

From the case study we can see that there is a public field in duptara, near high school. So the places which will be considered as public function can be integrated with the field. Also the height profile of the area is not more than 4 storey. While designing tis height profile which has to be merged with the area has to be considered.

Chapter 7: Design Suggestions

The layout of the design has been divided into three main segments. There is only one primary entry to the establishment, along the main road, facing north-west. Upon entry, we find ourselves in the first segment, the public area of the institution, which includes; the administration building, that is connected to the admin, the workshops, and the mainly auditorium. The administration building has been placed in the public area as it puts it in a position of control, and as it goes for the workshops and the auditorium, they are placed here as they are expected to have visitors from outside the institute, specifically the auditorium, which is meant to be rentable to _____ and laymen. As we move further into the plot, we enter the mid-section of the plan, the semi-public area. This segment consists of the classrooms, laboratory, the canteen, and several rooms dedicated to recreational activities. Having these spaces in this segment gives them a serene working atmosphere that inspires productivity while also making them easily accessible, as they are close to the main entrance. There is an overlap between the public and semi-public segments, which is home to the plaza. The plaza is encased by classrooms, the laboratories, and the galleries. The purpose of the plaza is to further add to the ambience of the campus. At the south-east end of the plot is the private section of the layout which houses the three dormitories for the female students, male students, and the staff and admin members. Right along the canteen building is an irrigation, which creates a buffer between the semi-public segment and private segment, thus creating further visual separation from the private segment and fortifying its privacy, and creating an open space within the institution. Each building in all these segments are connected by a central walkway. Other than that, there is also an amphitheater at the south-west side of the establishment, right along a field, which is completely open to the public, and is accessible from within the boundary of the establishment.

7.1 Ideas & Concept Generation

Garments have always played a significant role in the growth of Bangladesh over time, and when it comes to fabrics, a brief glance at the history of Bangladesh shows that after muslin, the Jamdani fabric has played the most noteworthy role as a potent source of revenue, and a symbolic representative of Bengali culture. We can also find that jamdani is deeply woven into the local culture of Narayanganj which has its own significant pattern and especial fabric design



FIGURE 7. 1 : Relative origin to Narayanganj & Textile



FIGURE 7. 2 : Jamdani relations with Narayanganj & Textile History

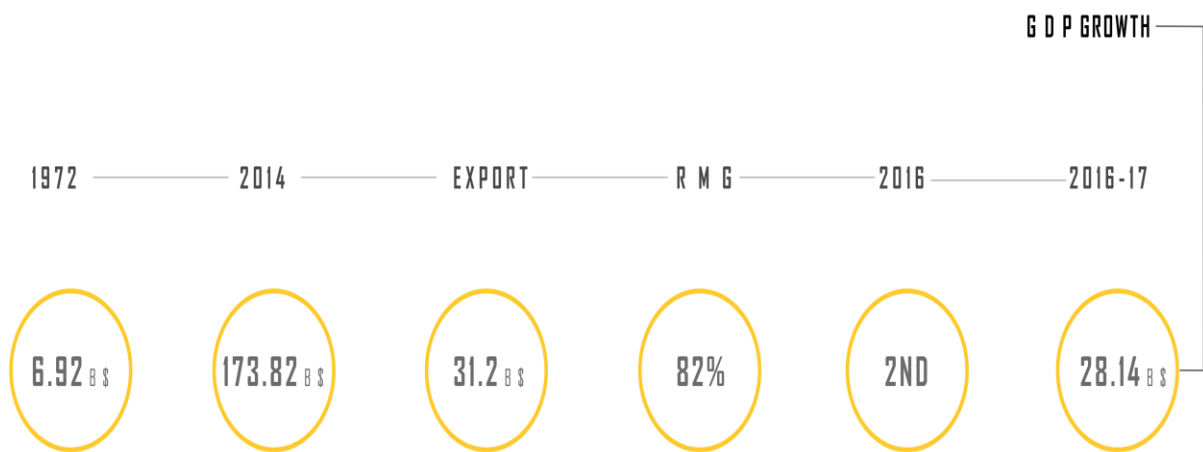


FIGURE 7. 3 : Textiles Contribution In our Country through out the years



FIGURE 7. 4 : Reason Bieng, Textile Institute is Needed

NATURAL MOTIFS



FIGURE 7. 5: Naturak Motifs

SITE SECTION



FIGURE 7. 6 : Site Section Through School To River

FUNCTIONAL DERIVATION

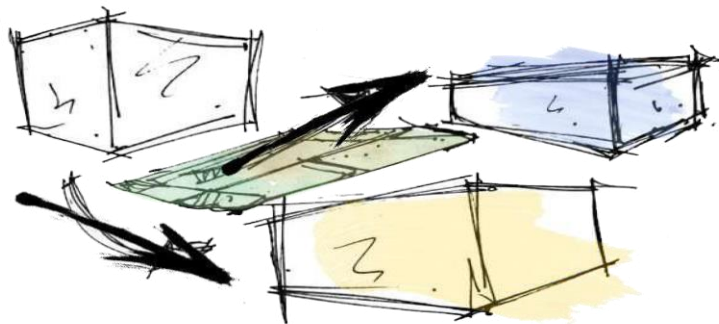


FIGURE 7. 7 : Functonal Derivation Including their Courtyard and private Spaces in it.

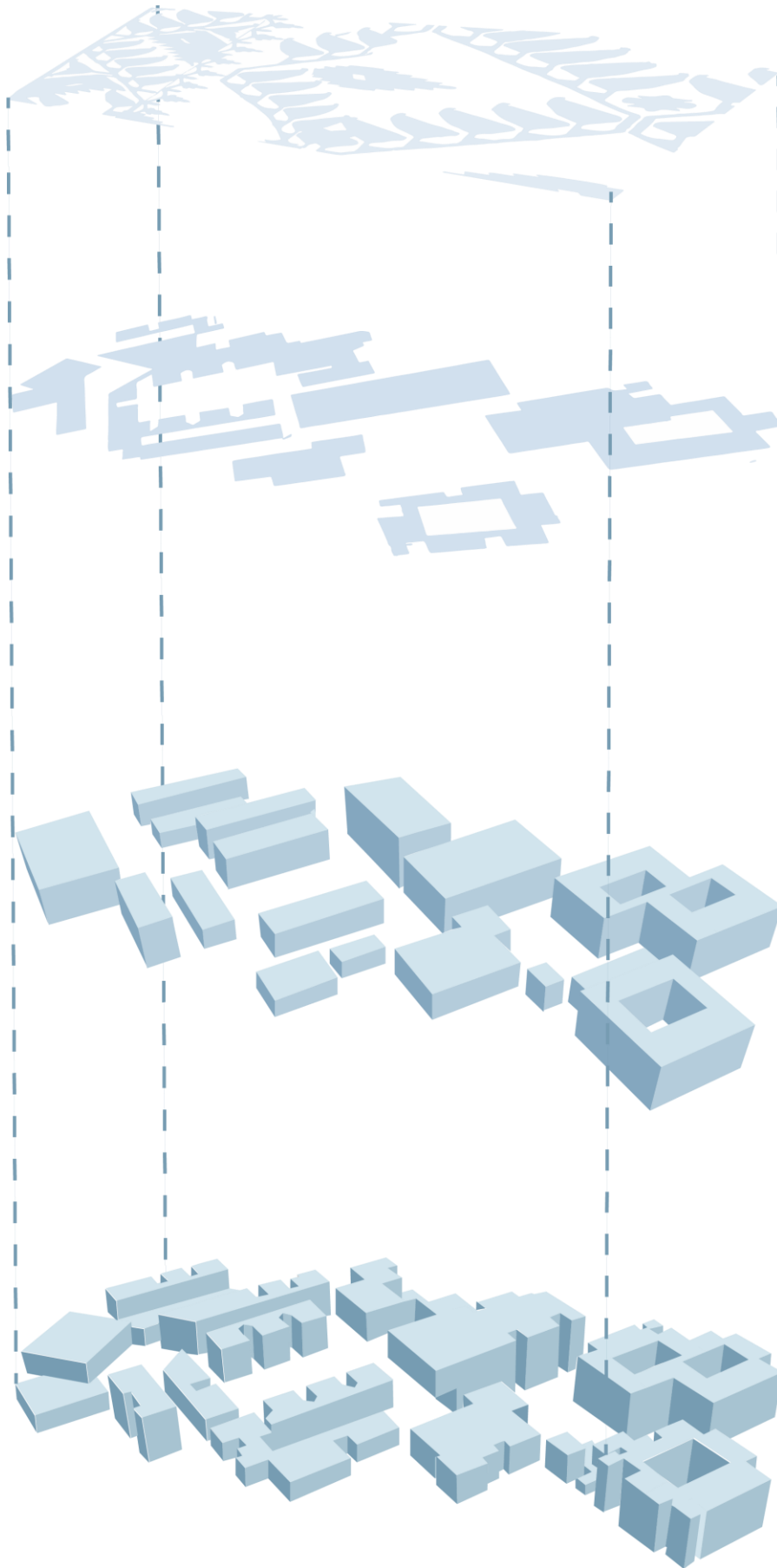


FIGURE 7. 8 :Form Derivation. Jamdani Pattern



FIGURE 7. 9 :Zoning Diagram Through Site



FIGURE 7. 10 : Massing Through Conceptual Form Derivation

ZONAL COURTYARD

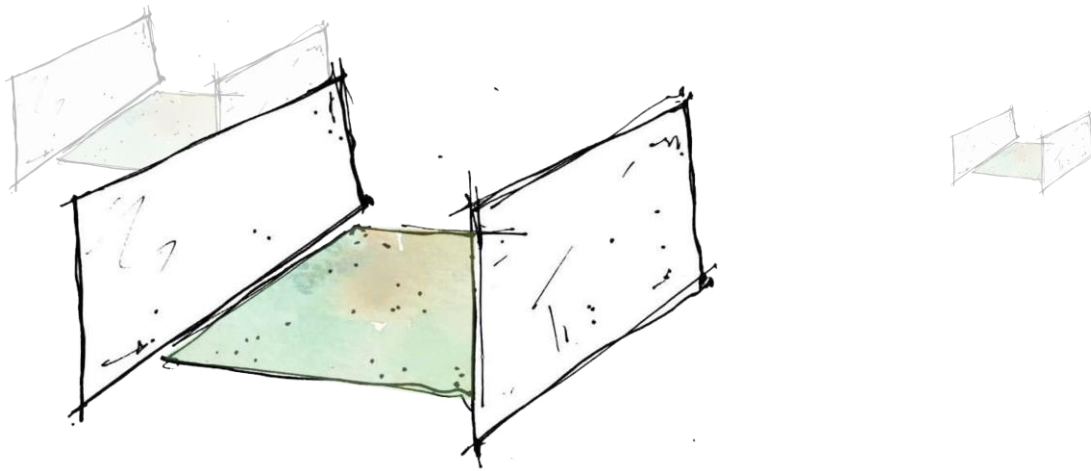


FIGURE 7. 11 : Private interactive Spaces Between Them

Looking at the significance of jamdani in the area where the plot is situated, and considering that the institution is focused around textile, it was apropos to start the designing process from the abstraction of patterns found in the jamdani fabric. Courtyards have been planted within every building, and the major spaces, such as the courtyard near the entrance and the plaza, have been connected by a datum. This was done to create an airy, spacious aura within the establishment, to match with the mellow, unobtrusive quality of the surroundings.

7.2 Plan



FIGURE 7. 12: Master Plan of the Campus



FIGURE 7. 13: *Plan at 1/4"*

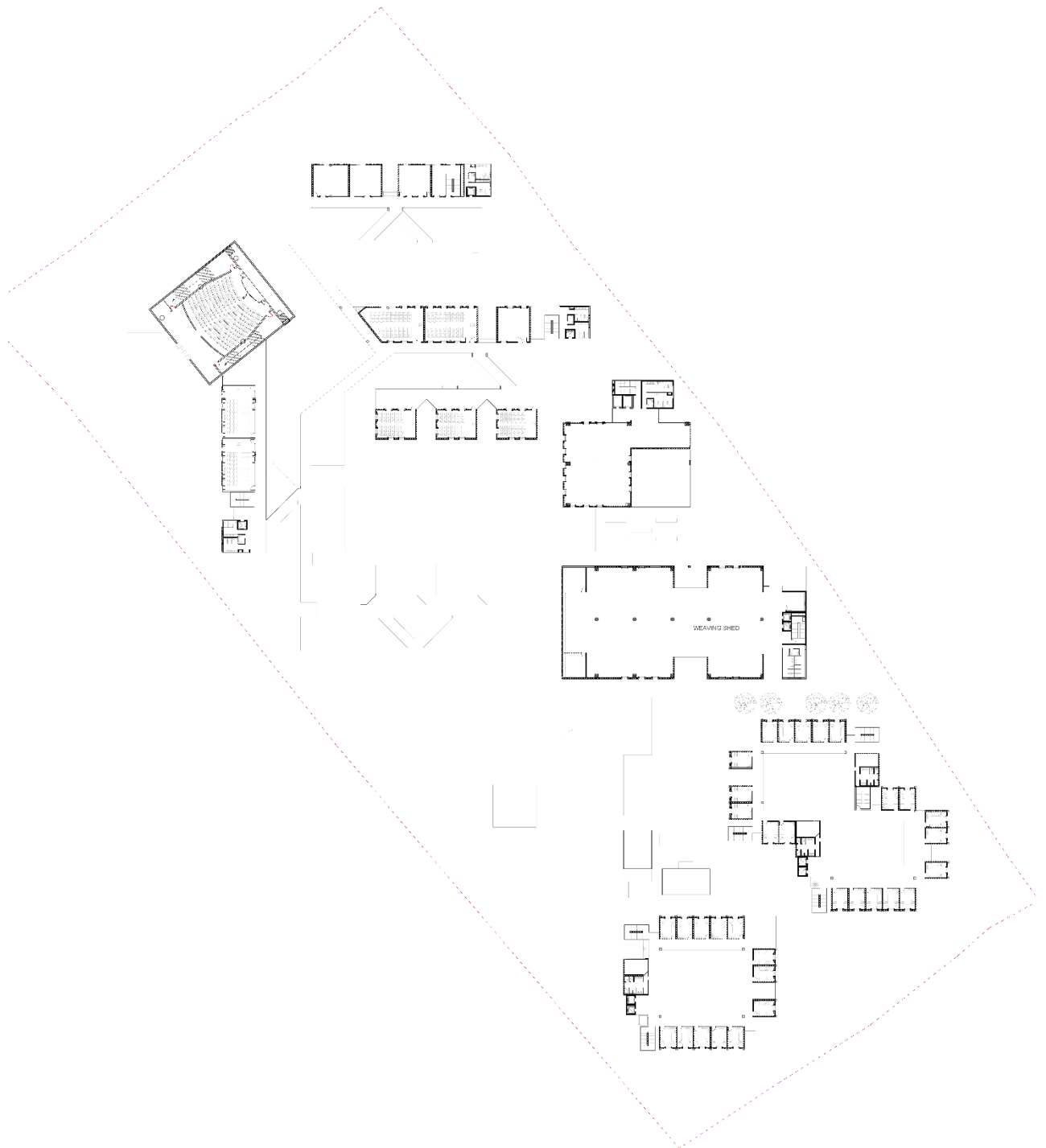


FIGURE 7. 14: Plan at 36'

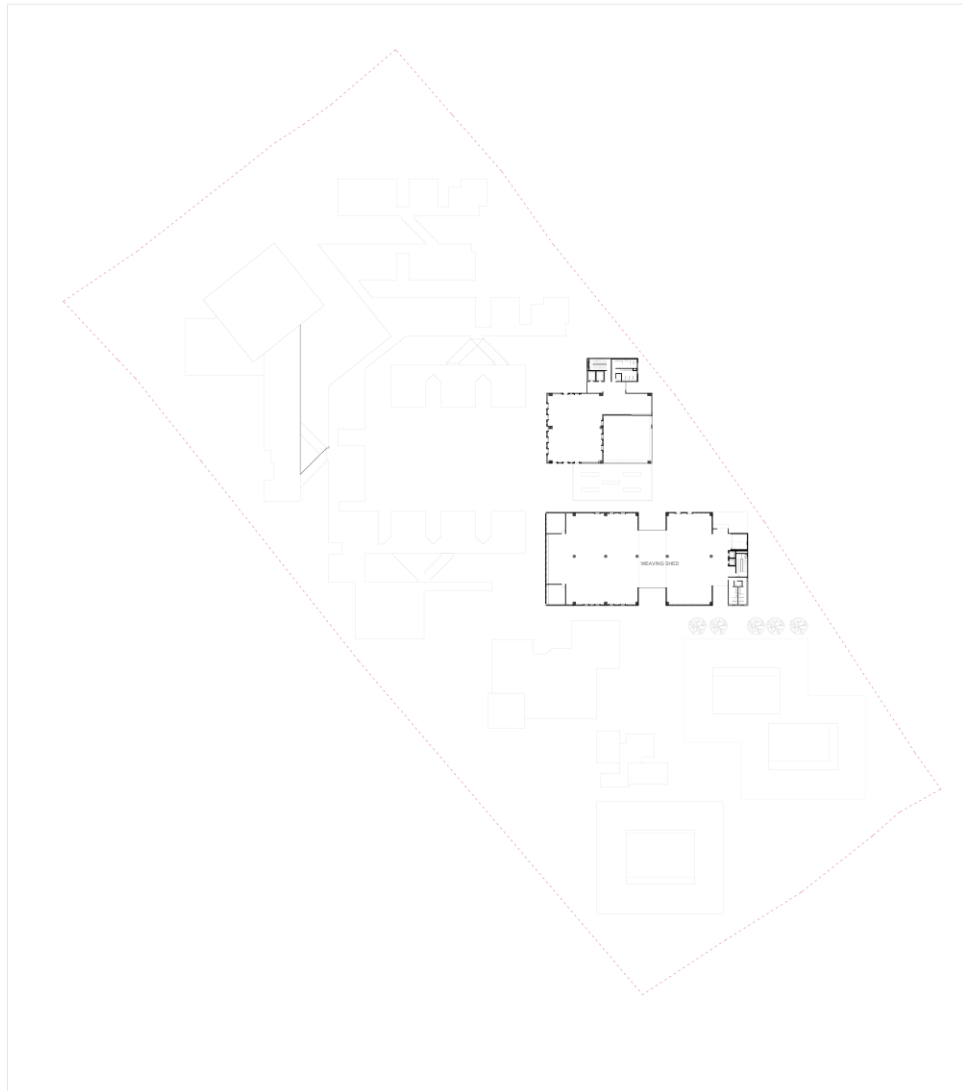


FIGURE 7. 15: Plan at 50'

7.3 Section

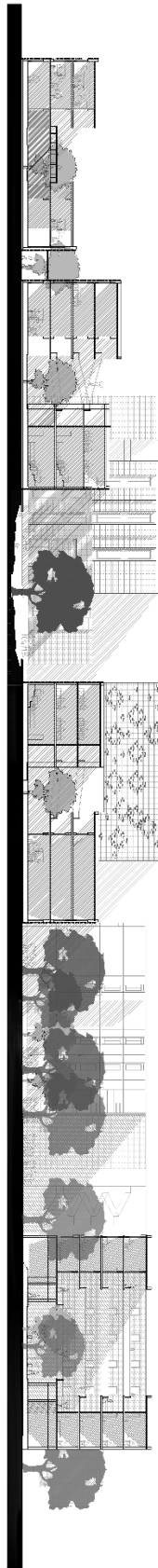


Figure 7.16 1: Section AA'

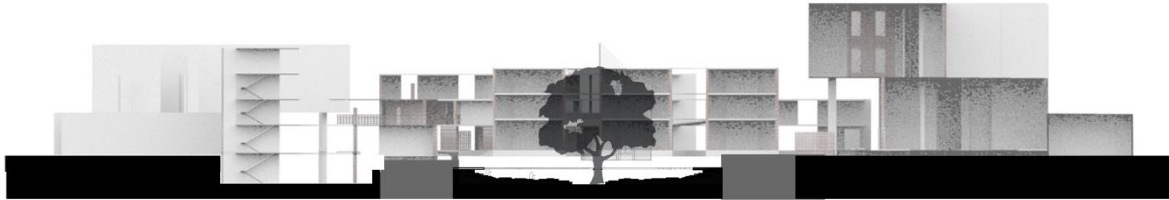


Figure 7. 17: Section BB'

7.3 Gallery Classroom

Gallery classroom has tentatively more learning curve than normal classrooms. Rather one sided lecturing processing is not good therefore, view angle also matters a lot in these circumstances. Multi-media projecting classes needs different level where student can seat but in a systematic way. Moreover, Gallery classrooms need sufficient number of allocacy in order to having a learning environment.

Video conferences room are one of the main function in doing smart classrooms which is important for textile students. Textile atmosphere should be more colorful than its life. Because it always changes its circumference environment on its own.



Figure 7.18: Gallery Classroom Sectional Perspective towards the academic block



Figure 7.19: Blocks between courtyards

7.4 Elevation

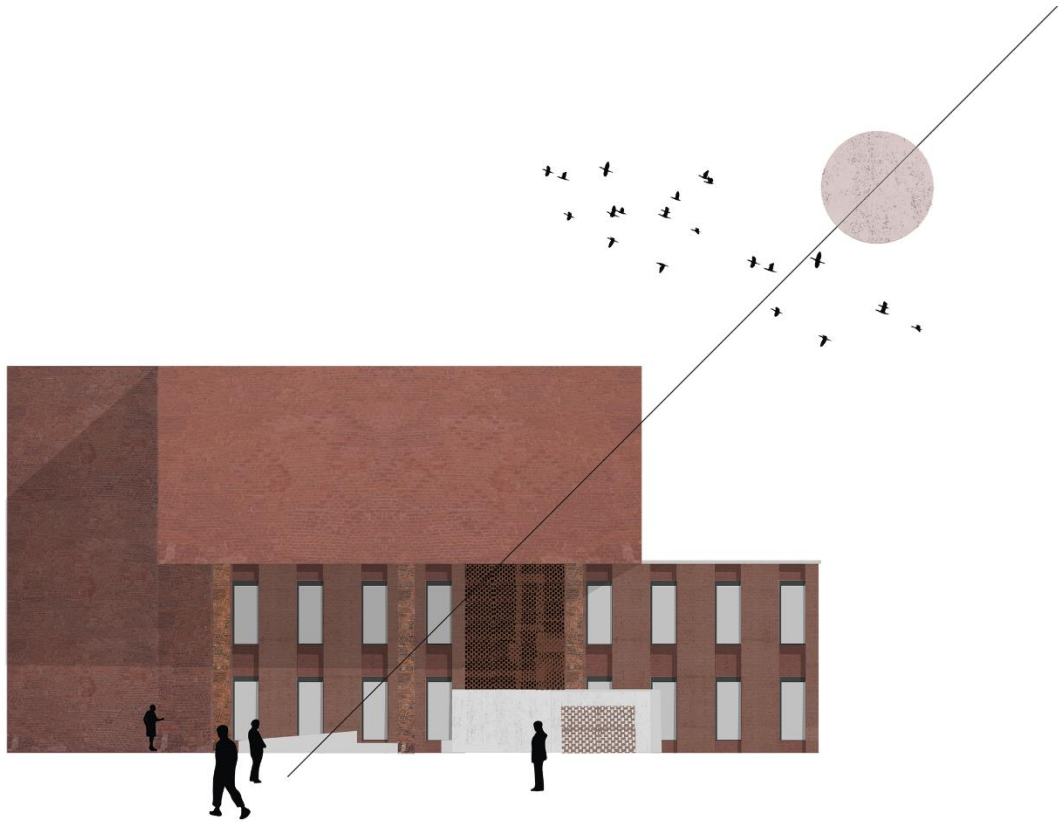


Figure 7. 20: Deying Lab west Elevation

7.5 Perspective



Figure 7. 21: Perspective 1 from towards plaza



Figure 7. 22: Perspective from roadside



Figure 7. 23: Academic blocks with jmdani pattern elevation

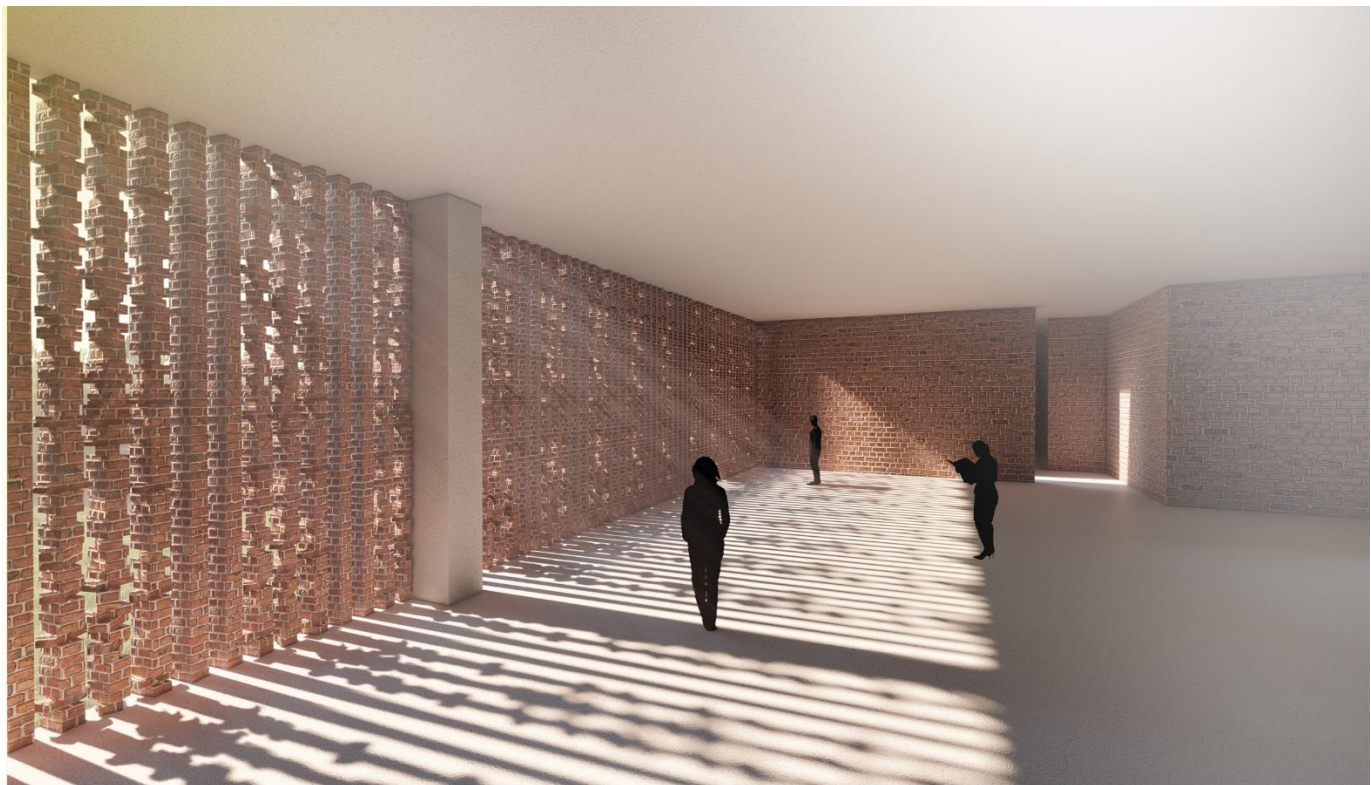


Figure 7. 24: Perspective from library and Laboratory facade

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Appendix A.

Apparel lab: Apparel lab is where the cloth has been finalized after yarn and knitting.

Wet processing unit: Direct sunlight for wet processing unit is necessary. To moisture the chemical and to reduce the hardness of the material natural sunlight is preferable.

TTQC: textile quality control is the last finishing term of a product to be launched. Mainly The packaging system is a great part of it.

ETP: Effluent treatment plant is one the major needs for now to us. Because without having it we will destroy our Nature in result, Brahmaputra river is dead beside the site of this project.