

KOREAN EPZ, TECHNICAL UNIVERSITY, CHITTAGONG, BANGLADESH.

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First of all I would like to thank The Almighty for giving me the opportunity to experience such a discipline in life as Architecture, and for giving me the strength to have come this far. I truly believe that without His watchful gaze upon me I would have perished a long time ago. His blessings were all conveyed to me through my teachers- Dr Fuad H Mallick's support and Dr Zainab F Ali's constant guidance has given me the strength to bear this thesis project. The most beautiful thing that I must address is that through the last five years of my life, I had never been alone- my friends have always been there for me. However, there is one whose support and love I cannot trace to a beginning. It is my mother, Dr Sharmina Yeasmin. She taught me how to fight the battles in our lives and move forward. This is for you Maa.

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ABSTRACT

The purpose of education is to open one's eyes to the world that their ancestors have left them. Education is the only path towards freedom. The age in which we exist today consists of a massive density of knowledge. The traditional education has branched in all directions. We start our journey from school, then college, university, so on and so forth. University, or graduate schools form the road towards a profession. It links the educated to a specialist.

The Korean Export Promoting Zone, or KEPZ Technical University is an establishment that would train specialists in their required criteria. The establishment is a technical university that would train technicians and engineers. Such a facility is required to house heavy machinery, power sources, resources and technical labs. The class rooms are no longer the traditional rooms rather they take the form of machine labs. The university will be serving residential students and thus it also need to provide recreational facilities for its users.

The thesis project explores the design development of the KEPZ Technical University. From initial studies to the final master design, the seminar paper is a compilation of all the phases that was explored in the process.

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CHAPTER 1 PROJECT BACKGROUND

1.1 KEPZ Technical University

The World is revolving around economy and one of the governing factors that determine the economy of a country is its industries. The industry that placed South Korea in today's world economy is its electronic industries.

Korea, today is one of the leading electronics designing and producing countries in the world. The country's technology and efficiency is advancing at such rate that, today, it is one of the few competitors that can go head on with ruling markets such as China and Japan. World renown companies such as Samsung and LG have sprung from this minute country and made their mark in today's world economy.

Korean products govern a large portion of the Bangladeshi market. Their food products, building materials and electronic appliances contribute a lot to our daily life. The garment industry is one of our leading economic contributors and having conquered our electronic market Korea now tends to join our garments business.

The Korean EPZ in Chittagong covers an area of 100 acres that Korea obtained from the Bangladesh government in order to initiate a development project that would contribute both to the Korean and the Bangladeshi economy. The development is basically a data processing IT establishment. It consists of IT Parks, business centers, a health care facility and even an educational establishment.

The thesis project consists of designing this educational facility- an engineering university that would train IT professional, Electronic Engineers and Textile Engineers. The University would also accommodate a program for an expansion for Mechanical Engineering and Industry and Production Engineering.

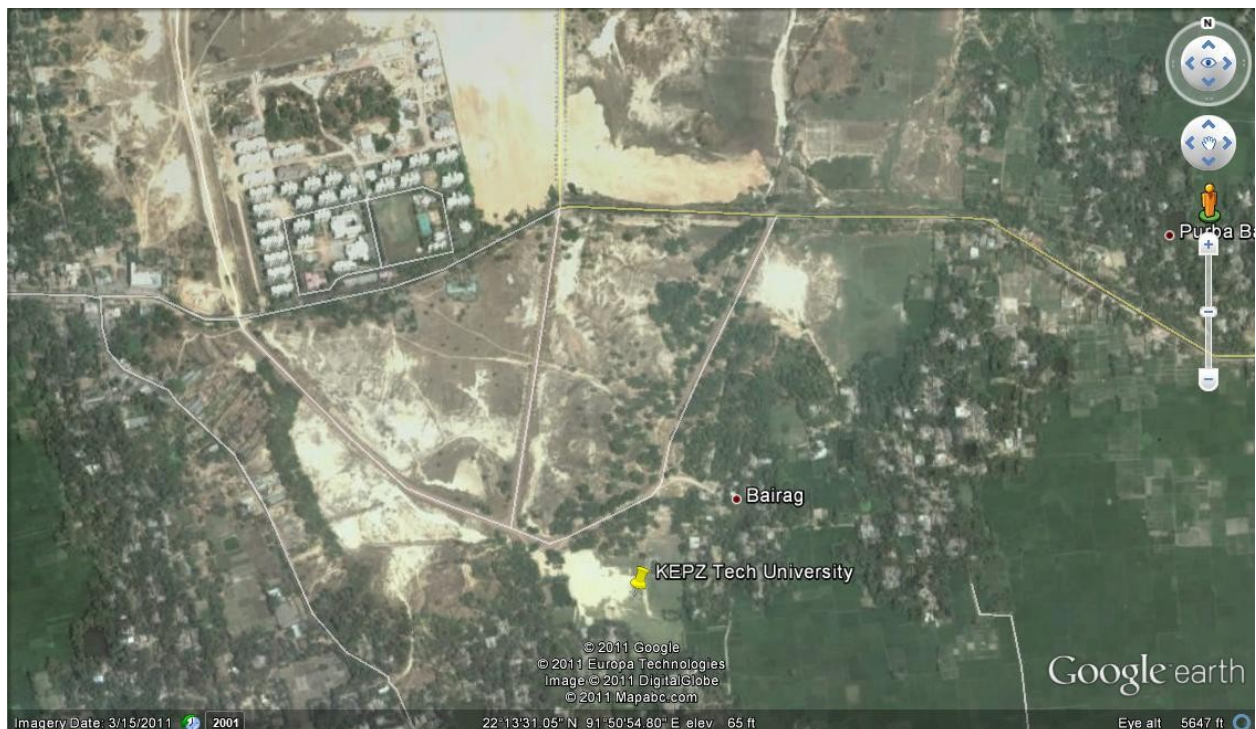
1.2 Key Aspects of the Project

The countries around the world are at a constant competition with each other. For a country like Bangladesh, it is very difficult to participate in this world class brawl. We can use all the help we can get to make an international place for ourselves.

The university will provide an opportunity for millions of students to study and work in an international environment. The students will be able to interact with Korean engineers and other professionals and get a wider perspective of the world that they are about to face.

1.3 Site

The site is situated in the Korean EPZ, Chittagong. Situated at the South of Patenga, after crossing the Karnaphali River, next to the KAFCO Fertilizer Factory. The University Site is situated at the southern most extreme of the KEPZ. It occupies an area of 11.4 acres. It is a relatively flat land with some undulations along its northern periphery. The site is open to the south and the west making way for the prevailing breeze.



Source: Google Earth

1.4 Reasons for Choosing the Site

Chittagong serves as the seaport of Bangladesh. The Chittagong EPZ or Export Promoting Zone has been active since the Independence of the country. This division of the country consists of industries, and establishments related to the import and export business of the country. The site for the KEPZ development was so chosen as to provide a close link with such establishment. The Technical University here will thus provide a close look at the economic backbone of the country. They will be closely related first hand to the industry sector and the business sector.

1.5 Given Program

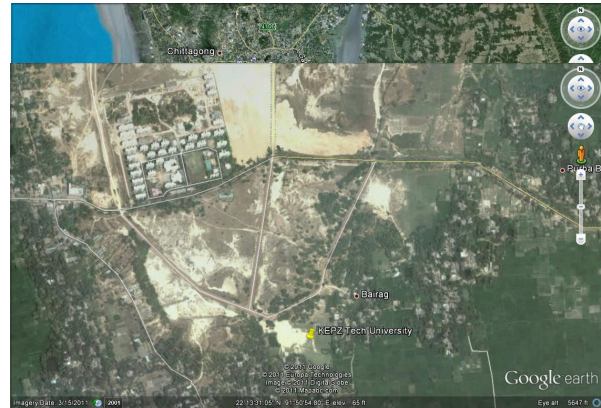
- Facility for 3000 technical students
- Sports plus gym complex
- Auditorium for 1500 students
- Library of 60000sft
- 60 Lecture Halls
- 15 Computer labs
- 15 Department Library
- Technical Labs as required
- Cafe

Source: GM Tauhid, Architect, Tanya Karim N R Khan Associates

CHAPTER 2 SITE STUDIES

2.1 Site Location

The Site sits at the south of the Chittagong city. It is approximately 30km from the main city and takes almost 45 mins to reach by road but the time halves if the ferry- road is taken across the Karnapluli river near south Patenga.



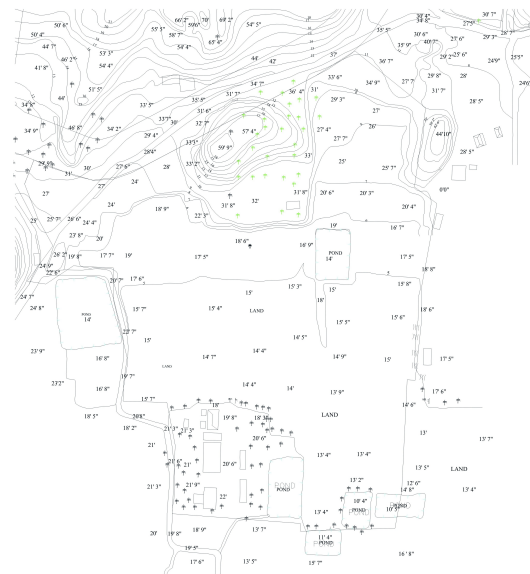
Source:

Image- Google Earth

CAD Drawing- KEPZ

2.2 Site Surroundings

The north elevation of the site is adorned with contours and the majority of the vegetation. Contours are expected to be in Chittagong the given site is relatively flat despite its location. The site gradually slopes down towards the south. This also helps rain water drain from the site. The north of the site presently occupies the KEPZ IT Sectors and KEPZ Golf course. To the East and the South are Farmlands and other low lying lands. And finally to the West is the KAFCO fertilizer factory lined at the coast of the Karnaphuli river.



with
but
to
the



Site: North Elevation



Site: West Elevation



Site: North- East Elevation



Site: Site together with its southernperiphery

Source- Author

2.3 Climatic Data, Chittagong

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, cloudy and wet.

Average Minimum Temperature

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
13.9	15.9	20.2	23.4	24.8	25.1	25	24.9	25	23.9	19.7	15.3	21.5 °C

57	60.6	68.4	74.1	76.6	77.2	77	76.8	77	75	67.5	59.5	70.7 °F
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Relative Humidity in % of Chittagong

9:00 AM	72	87	70	73	75	82	85	85	83	89	76	77
6:00 PM	65	63	77	73	77	84	86	86	81	81	73	69

Average Maximum Temperature

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
25.9	28	30.6	31.8	32.2	31.1	30.6	30.7	31.3	31	29.2	26.4	29.9 °C
78.6	82.4	87.1	89.2	90	88	87.1	87.3	88.3	87.7	84.6	79.5	85.8 °F

Mean Monthly Evaporation in mm of Chittagong

Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
1432.2	88.2	103.8	131.5	160.6	163.8	127.9	137.5	130	105.9	104.6	94.8	83.9	

Average Rainfall

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
6.7	14.8	53.6	116.3	246.7	603.7	718.9	552.9	284.4	242.5	58.8	10	2911mm
0.3	0.6	2.1	4.6	9.7	23.8	28.3	21.8	11.2	9.5	2.3	0.4	114.6in

Air Field

Wind field in the November to February period

Chittagong has 25% calm. period which means very windy weather

Wind field in the March to May period

The coastal areas of Chittagong have 15% calm (very windy due to exposure) with south east winds blowing almost parallel to the coast line.

Wind field in the June to October period

This is the monsoon period in Bangladesh. The windiest region is Chittagong with 15% calm and prevailing wind parallel to the shore line. It is a south east wind with some southerlies. The wind field appears to be the same as that of the previous period.

Average Wind Velocity

km/h	3.3	4.5	5.6	7.6	8	8.4	9.3	8.2	6	3.9	2.8	2.6
mi/h	2.1	2.8	3.5	4.7	5	5.2	5.8	5.1	3.7	2.4	1.8	1.6

Sunshine Duration

Hours	9.4	9.7	9.3	9.5	8.1	4	4.1	4.3	5.9	6.5	9.6	8.5
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Day Length

Hours	11	11.5	12	12.7	13.2	13.4	13.3	12.9	12.3	11.7	11.2	10.9
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Sunshine as % of Day Length

85	84	78	75	61	30	31	33	48	56	86	78
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Source: CHITTAGONG data derived from GHCN 1. 371 months between 1947 and 1978

2.4 Positive And Negative Aspects Of The Site

POSITIVE ASPECTS OF THE SITE:

- The Site is situated at the heart of the sea port of Bangladesh providing the university students with a close relationship with the import and export culture of Bangladesh
- Isolation of the site contributes to the independency of the residential students
- The site is relatively flat but also consists a little contour promoting versatile formal ideas.
- The site is open to the south promoting the prevailing wind.
- The site is close to the Karnaphuli river that acts as a natural air filter.

- The Karnaphuli river also works as a river transportation system that brings the Chittagong city center closer to KPEZ

NEGATIVE ASPECTS OF THE SITE:

- Chittagong is one of the most warm places in Bangladesh
- By road the Site is approximately 30km from Chittagong city center
- The site is quite isolated from other settlements
- The road network connecting the site to the city are quite under developed

CHAPTER 3 LITERATURE REVIEW

3.1 Education

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 distense 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.

Universities can be government based, they can be privately owned, they can be residential or non residential. Which ever is the case, today the universities are required to educate their students so that they can compete with the global market. Study courses are derived and constructed internationally.

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 accommodate the growing number of students to fulfill a work force required for a rapidly developing country, universities are rapidly forming a large part of the country.

3.2 History

In England, Oxford(1133) and Cambridge(1209) and St Andrews(1412) in Scotland were the first Universities, but they were closely monitored by the church. The First university independent of the church would have to be the London University, now University College London(1824). Later in the 19th Century, a series of so called red brick universities sprang up in the provincial cities of UK.

Gradually, as the need for specialists grew with the development of the country, more universities were required. In the 1960s, a series of plate- glass universities were introduced to the system. This was again the sametime when the Polytechnic schools were introduced. The phase of study and education is always changing and so to facilitate them, the shape and system of the Universities are also constantly changing.

The early universities were often accommodated in existing buildings, that would sometimes contribute to poor planning. Today, universities are often designed with provisions of future expansions and they are designed to accommodate the changes that the future may bring.

3.3 Graduate School Types

The education that universities provide are designed to prepare students for their professional life. It teaches students to cope with situations that they would face in their real life. Some students prefer to enter their professional life as soon as they are finished with their Secondary school or college. However for the ones looking for higher studies, the Universities are their next step.

There are basically five different types of facilities that are required for higher studies or research:

- agriculture and horticulture
- art, design and performing arts
- general further education and tertiary
- sixth form colleges
- specialist designated institutions

Agriculture and Horticulture:

These are universities that train its students in the art of crops and food crops. These may also provide botanists an ideal facility to train and research.

Art, Design and Performing Arts:

These universities typically train performers, painters and sculptures. Basically, they deal with crafts persons. They may also train designers and sometimes may also accomodate architects.

General further education and Tertiary:

These schools tend to accomodate the ones for Business, Economics, Geology and other such experties.

Sixth form colleges:

The sixth form colleges are basically secondary schools or colleges. They accomodate students between the age of 16 to 18.

Specialist Designated Institutions:

These are Schools that are required to train specialists and professionals such as physicians and engineers.

3.4 Design Fundamentals

Certain fundamental characterestics are to be kept in mind during the entire design process:

- To make the design more economic and efficient, it is required to settle all the machine labs at the ground floor with double clear height space.
- All class rooms should be able to access natural northern light
- Majority of the spaces would have direct southern ventilation
- Buildings should be east-west oriented to facilitate natural ventilation and light.
- Classes and other spaces of activity should have a clear height of 12ft minimum to facilitate overhead ventilation, minimizing the need of air conditioning.
- 100% of the vegetation that will be disrupted by the construction process should be replaced.
- A sound barrier of vegetation and greens should be designed between the lab wing and the other parts of the university.

3.5 Project Specialized Description

The thesis project explores a design fit for a specialist designated institution. The facility will be equipped to train specialists in five different disciplines. It will strictly be a technical university, that is, it will accommodate engineering students.

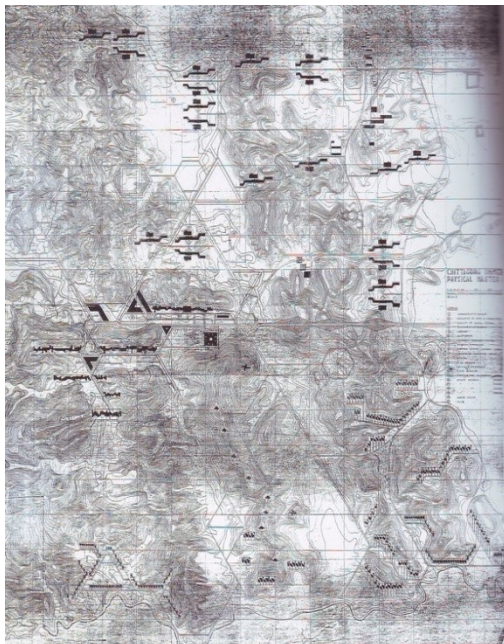
There will be students accommodation near the university campus and it is assumed that the facility will be for residential students. Thus, besides their required labs, it also houses a fully equipped sports complex and an auditorium. It is important for such a residential system to provide its occupants with recreational facilities. The University will also accommodate a large open playing field.

A large portion of the university houses the machine labs required to support its engineering departments. It has a separate class room wing and other departmental wings.

The country's education system is constantly changing, thus the design of this system has to be flexible enough to accommodate these changes. It has to have designated facilities for further expansion and has to be able to house its gradually growing number of students.

CHAPTER 4 CASE STUDIES

4.1 Architect Muzharul Islam



The **Chittagong University** is probably the most closely related case study for this thesis project. Closely related because it is located in the same geographic location as this project. It is a residential University located approximately twelve kilometres north from Chittagong city centre. The university is embedded in the countours of south eastern part of Bangladesh and is surrounded by green foliage which seems to be complimented by the red brick structures designed by Architect Muzharul Islam.

This is the project that inspired the intensive use of red bricks in this thesis. It also guided the idea of appreciation of contoured landscape. This is the very reason for the preservation of the contour in the KEPZ Technical University site.

The persuasion of a local contemporary architectural establishment has been inspired from this very project of Architect Muzharul Islam.

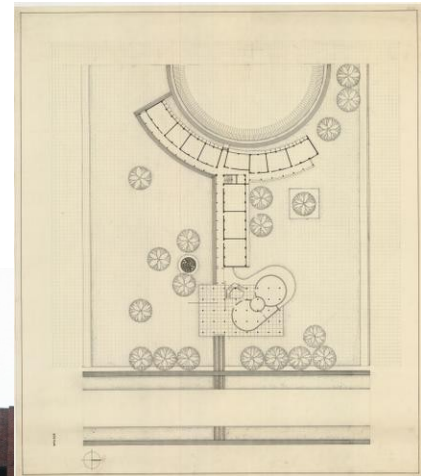
Source:

Image- Author

Master Plan- Muzharul Islam Archive, March 16th 2012, URL- www.muzharulislam.com/projects/chittagong_university.html

Architecture is also a response to the prevailing climate. Regional architecture may contribute to the local history and culture yet it is our duty to always address the regional climate. Bangladesh falls in the tropical region and with respect to such an environment the architects have discovered tropical architecture. With all the local aspects in mind, both environmental and cultural, architect Muzharul Islam has introduced us to the **Local Contemporary**. His sincere efforts can be clearly seen in the **Chittagong University**.

The Architect's achievement of realizing a close interaction between the site and the designed entity is prominent in **The Institute of Fine Arts**. The building is designed as a park and with elaborate landscaping it blends its indoors with the outdoors.



The facade treatment and fenestration of this building has greatly motivated the treatments in the KEPZ Tech. University. The thesis project has adopted all its wooden vertical louvres and window articulations from the ingenious of this work of art.

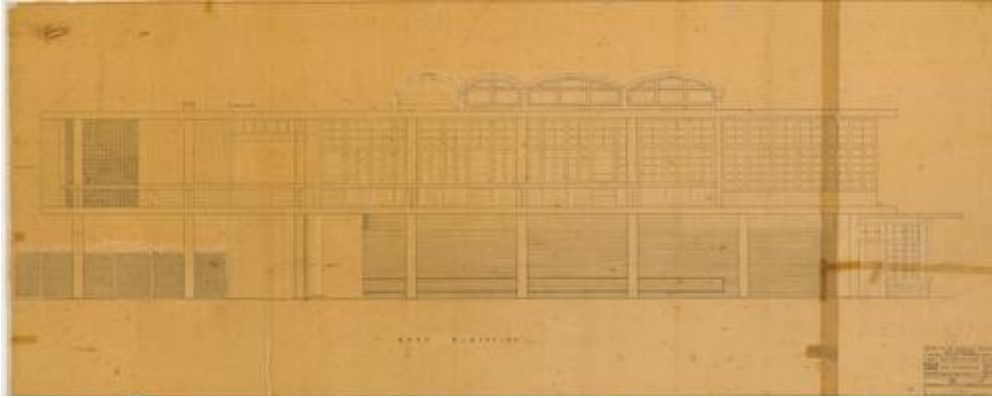


Fig. Institute of Fine Arts

Source:

Muzharul Islam Archive, March 16th 2012, URL- www.muzharulislam.com/projects/institute_of_fine_arts.html

4.2 Mill Owner's Association, Ahmedabad

Master Architect Le Corbusier has always been very strict while addressing the regional climate. The thesis project demands high climatic considerations and thus studying Le Corbusier's approach to design became a priority. The chosen project is the Mill Owner's



Association in Ahmedabad. The sun breakers of this building inspired the design for the East and West elevation treatment in the KEPZ Tech. University. Corbusier's design approach in this building for the stairs, semi indoor green spaces and ramp have all been great motivators.

Fig. Mill Owner's Association Building

4.3 Technical Facilities

Certain aspects of the program developed for the KEPZ Technical University demanded firsthand study of laboratories, equipments and requirement of spaces.

The following are the images of the **Mechanics Lab** of the **Institute of Textile Engineering**, Tejgaon, Dhaka.





Knitting, Weaving, Spinning and Yarn Lab- **Institute of Textile Engineering**, Tejgaon, Dhaka.



Wet Processing and Printing Lab- **Institute of Textile Engineering**, Tejgaon, Dhaka.



Machine Tools Lab, Dept Industry and Production Engineering, **BUET**



Reference:

- Muzharul Islam Architect
- Nurur Rahman Khan, *Muzharul Islam Selected Drawings*
- www.muzharulislam.com/projects/
- www.wikipedia.com/Millownersassociation/corbus_01120101
- *Technical Facilities*, Photo- Author

Chapter-5 PROGRAM AND DEVELOPMENT

The master plan of the university is designed for the ease of access of both the teachers and students alike. Teachers access the site from the north west entrance whereas the students are using the north east entrance. The department offices are stacked one on top of another for the ease of future expansion. The Department building, Administration, Central Library are all stacked in the **Classrooms wing**.

Classrooms Wing:

Administration	SFT
Lobby/ Waiting Space	400
Admission Form Collection/Distribution	200
Toilet	400
Open Cubicle Space/ Accounts	800
Executive Offices X4	600
Conference Room	400
Archive	300
Server Room	300
Officer's Lounge + Tea Room	300
Executive Wash Room	200
Total Area	4100

The administration wing is designed as such to provide students and outsiders with the ready information that they require. They can very easily access the admission forms area and the accounts for university fee payment and information. The Executive offices are situated at the back- restricting the students from directly accessing it.

Department Building	SFT
Lobby/ Waiting	200
Toilet	400
Dco	100
Archive	200
Conference Room	300
Lecturer's Office X8	1200
Total Area For 5 Dept Buildings	12000

The Department offices are stacked one on top of another so as to facilitate future expansions. They are in a close relationship with the class rooms and the Faculty entrance of the University.

Department Library	SFT
Reading Space	1200
Librarian's Office	150
Documentation	200
Storage	100
Total Area (5 Libraries)	8250

The Department Seminar library is also in a close relationship with the department building and the class room. It is so designed as to facilitate student access.

Central Librry	SFT
Reading Space	1500
Exterior Reading Space	200
Librarian's Office	150
Archive	200
Storage	100
Cyber Café	800
Total Area	2950

Apart from the seminar libraries the university consists of a central library. This facility will archive study material from all discipline including certain that are not from in the university curriculum. The centerl library is also closely related to the classrooms and the department building.

The class room wing accomodates the central library and all the lecture and theory labs. It is linked with the department building via bridge.

Class Room Wing	SFT
Lecture Room X12	7200
Toilet X2	500
Quality Control Lab/ Chemistry Lab	3300
Measurement/ Physics/ Circuit Lab	2000
Computer Lab	1000
Linux Lab	1000
Material Handling Lab	1000
Simulation Lab	1200
Drafting Lab	2000
Total Area	19200

Student's Wing:

The students' wing is designed as such so that it can be easily accessed by the students even on a weekend. The auditorium, sports complex, cafe, students' affairs building and nurse station are all part of the **Student's wing**.

The Cafe is divided into two. The main dining hall will accomodate 300 students in an enclosed space. It is situated between the auditorium and the sports complex. There is a tea serving space near the class room wing. Its purpose is to serve light snacks and tea to students and teachers alike.

Cafe	SFT
Dining Hall For 300 Students	3200
Toilet	500
Kitchen	1000
Pantry	500
Total Area	5200

Sports Complex	SFT
Lobby	300
Toilet	500
Ticket Counter	240
Indoor Basketball/ Multipurpose Hall	11880
Gym Reception	150
Locker Room/ Shower	3500
Gym	2000
Swimming Pool	5000
Total Area	23570

The university provides educational services to residential students. It is important for these students to indulge in some recreational activities. The sports complex houses an indoor basketball court/multi purpose hall, a fully equipped gym and a swimming pool. The facility will serve both male and female students.

Student Affairs Building	SFT
Lobby/ Information	200
Toilet	300
Workshop	200
Club Coordinator's Office X8	400
Student Affairs Director's Office	150
Meeting Room	150
Club Archive	150
Printing	200
Total Area	1750

The Students Affairs building houses all the student club facilities. It is in close relation with the auditorium and the main cafe. It houses the club meeting room and the student affairs directors office.

Auditorium	SFT
Lobby	400
Toilet	500
Meeting Room	200
Office X4	600
Ticket Counter	240
Auditorium	4500
Control Room/ Projection Room	200

Back Stage	150
Rehearsal Room	400
Make Up/ Dressing Room	600
Workshop	300
Total Area	8090

The Auditorium houses 500 students at a time and is situated at the very center of students activities. It is placed near the student's entrance of the university. It serves at certain university activities and also as a regular movie theatre for the residing students.

The Lab Wing:

The Lab wing is the largest part of the University. The entire foot print of the lab is 91300sft. It is designed around a courtyard. The entire lab wing is accommodated in the ground floor as they contain many heavy duty machinaries. It also has a clear height space of 24 ft to accomodate the large machines.

Lab Wing	SFT
Wet Processing/ Printing Lab	8000
Sewing/ Weaving/ Knitting/ Yearn Lab	9500
Jute Processing Lab	5000
Generator/ Transformer Lab	4800
Marine Structure Lab	6000
Fluid Mechanics And Machinery Lab	6000
Machine Tools Lab	6000
Heat Transfer Lab	3000
Boiler And Steam Lab	6000
Boi- Medical Lab	2000
Heat Engine Lab	6000
Fuel Testing Lab	15000
Refrigeration And Air Conditioning Lab	3000
Applied Mechanics Lab	3000
Model Lab	3000
Material Testing Lab	4000
Toilet	1000
Total Area	91300

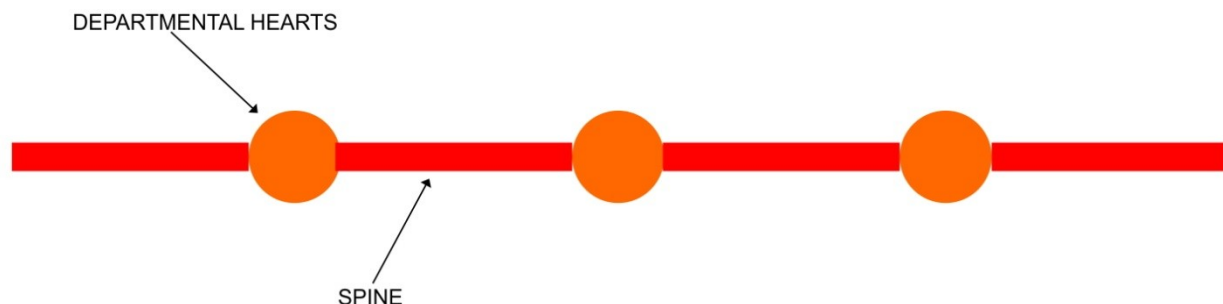
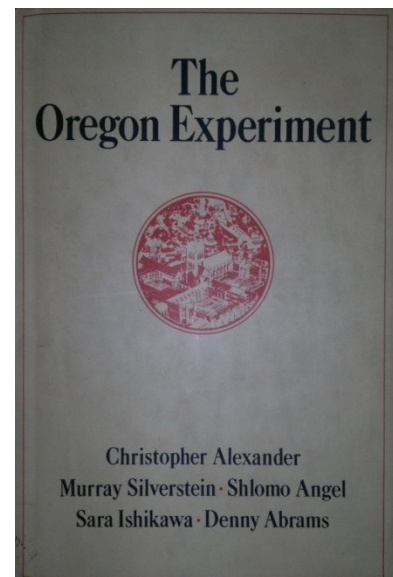
The entire university program comprises of 123160sft in total. The program was developed studying spaces required for crucial engineering academic activities. Initiation of the program development was by adding a 12ft service road for the lab wing. The Department building and the class room wing are situated in the northwest corner of the site near the faculty entrance. The auditorium, cafe and the sports complex are at the north east of the site near the students' entrance. The south of the site accommodates the Lab wing. The Machines lab in the Lab Wing are separated from the rest of the project via intense landscaping. This will act as a sound barrier preventing the loud noise generated in these labs from diffusing to its neighbors. The service road runs around the periphery of the site feeding the labs and the other services.

CHAPTER-6 DEVELOPMENT PHASE

6.1 Concept And Idea

For a student, the graduation phase is a transition from being a student to his/her profession. It is a bridge that links both these aspects of their lives. The idea behind this thesis project is to establish a bridge, in other words, to explore the possibilities of link or bond.

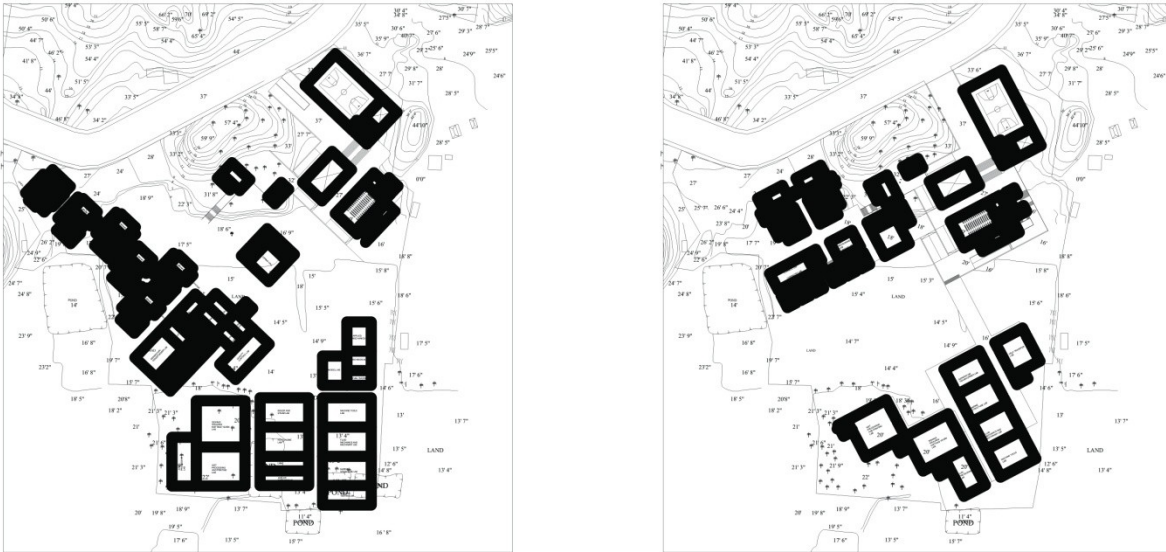
The design approach was to rethink a spine or an axis that is buffered by nodes or junction. The appropriate term for these junction is "departmental hearts"- a notion derived from The Oregon Experiment by Christopher Alexander. Therefore if we were to look at a concept model for this thesis project it would be a tube connected with the departmental hearts.



6.2 Bubble Diagram As Per Program Requirement

The second step was to develop a bubble diagram that the thesis program demanded. This is the step that also eased the development of the zoning of the KEPZ Tech. University. It showed

the overall system existence and how each function related to another. The University program



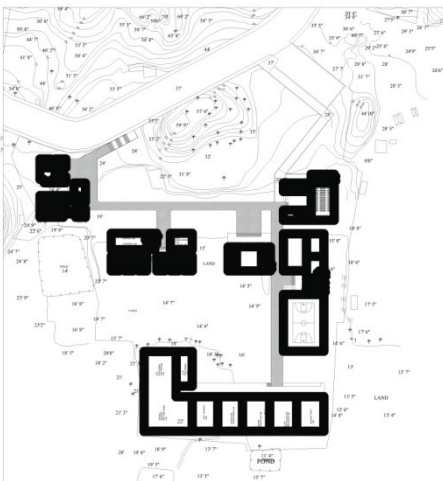
demanded a laboratory and class room share policy between the different departments. This is quite clearly visible in the following bubble diagram.

6.3 Phase- I, Schematic Arrangement



Phase I explores the schematic plan. It secures function with its required ground coverage and reveals itself in respect to the site. Here we can see that the zoning of the project is already coming in perspective. The red blocks are the machine labs that have been moved to the south of the site away from the other functions; the green block is the auditorium; yellow blocks refer to the sports complex and student affairs building; the green and orange blocks are the admin and class rooms wing and in the center are the cafe and central library.

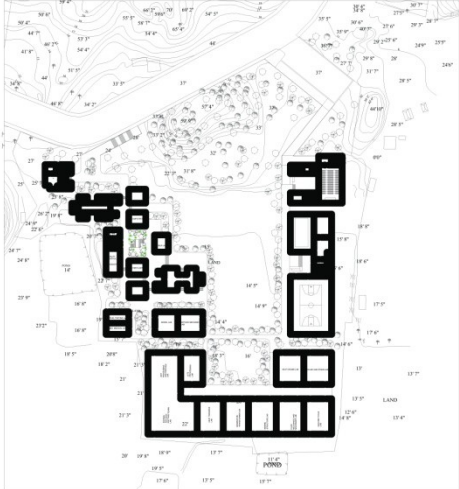
6.4 Phase- II, Functional Arrangements



At this stage the functions are more prominently zoned. It was at this phase that the buildings were moved away from the contours giving it more breathing space. Here students buildings are shifted to the east of the site, labs on the south and the classrooms and admin wings to the west.



6.5 Phase- III, Functional Linkage And Bridges



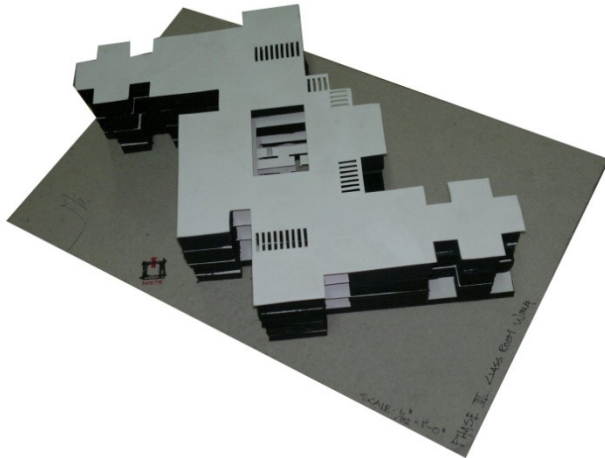
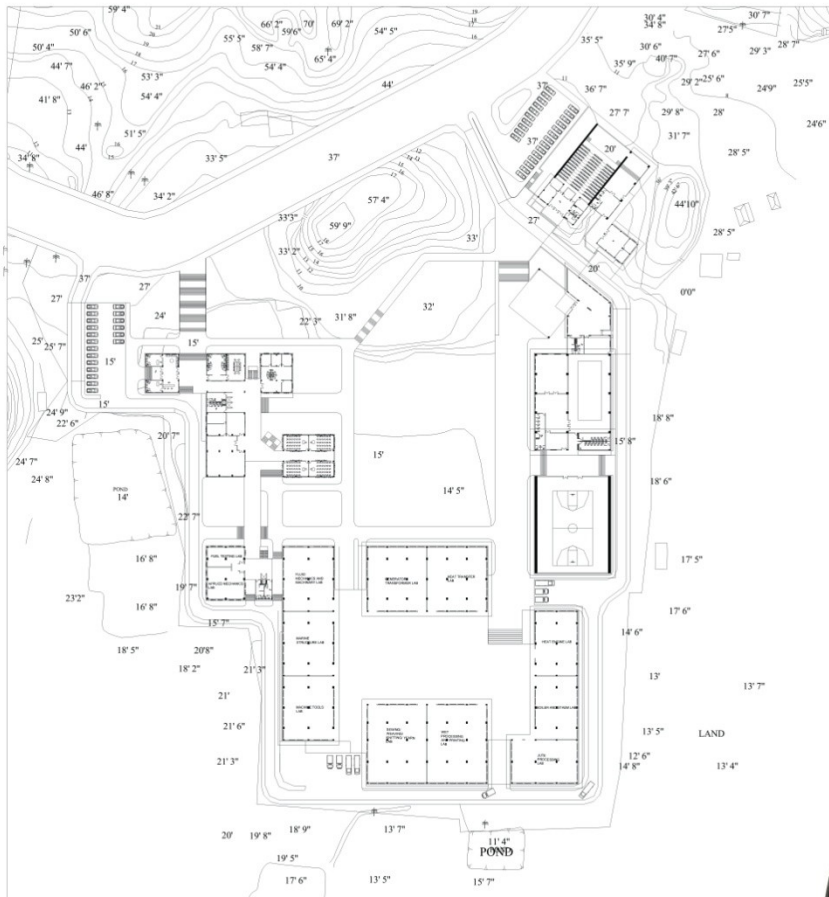


Fig. Model of Classroom Wing

At this stage, the exploration of the forms gradually begin to take place. The functions are linked with bridges and the circulations are enhanced. It is also where designs of shading devices are also explored.

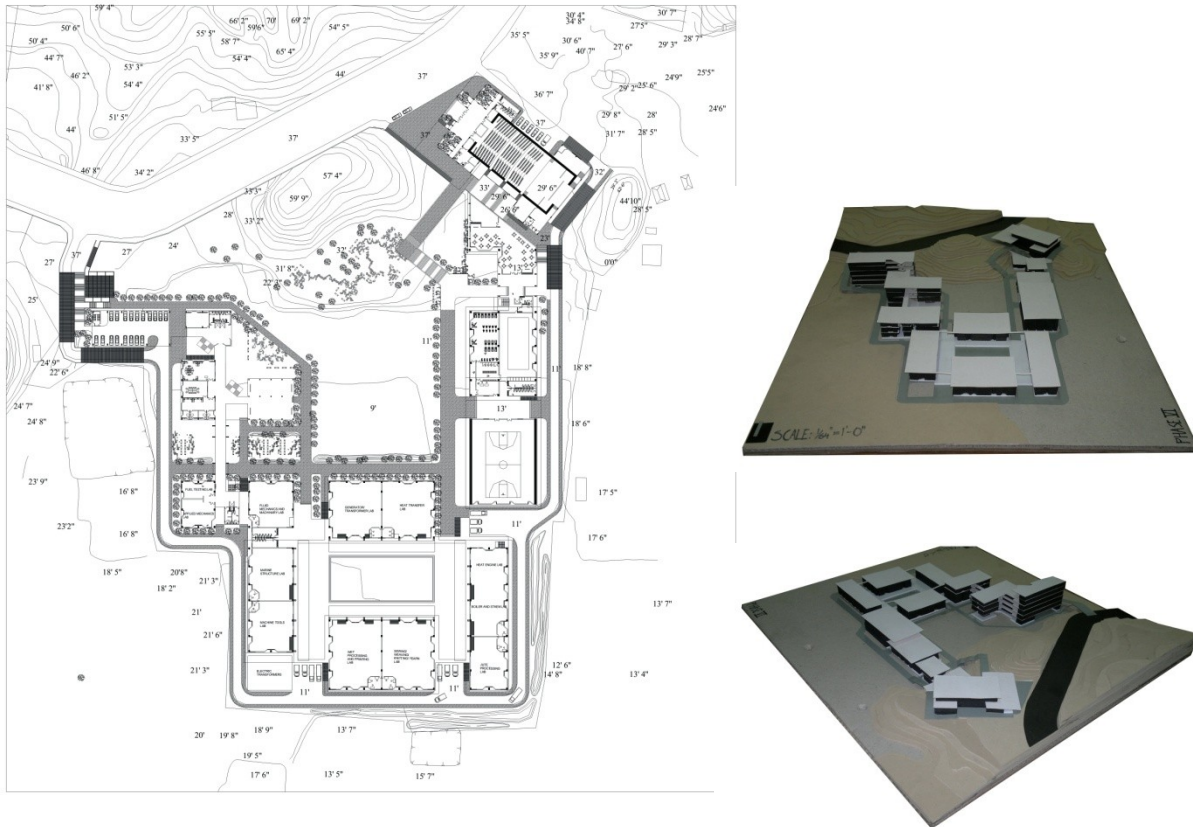
6.6 Phase- IV, Structural Solutions



Ever so gradually, the forms are taking their shape, it is at this stage that the structural solutions of the building are finalized.



6.7 Phase- V, Finalizing Form And Zoning



It is at this stage that the masterplan of the KEPZ Technical University is realized. Forms are still on a developing stage together with its shading devices and climatic considerations.

6.8 Phase- VI, Final Submission

The final submission consisted of detail drawings of the Thesis project. It included plans, sections and elevations of the designed KEPZ Technical University. It also included specifications of concept, studied projects and sketches. The final submission also included sketches of detail studies, perspectives and sustainability issues.

The KEPZ Technical University is a completely functional project. The aim of this thesis design project was to accommodate all the five engineering departments together with the facilities' additional functions in a way so that they would coexist in harmony. Care has been taken so that these functions would not collide with each other. The master plan has been achieved with respect to the facility's usage and the regional climate. The climate of Chittagong is relatively warm and thus keeping issues of sustainability in mind, 80% of the structures here naturally ventilated; Solar cells are used to provide energy for about 35% of the artificial lighting; cleaning the exhaust air from the machine labs and recycling heat produced by them were given strict priority.

The KEPZ Technical University is designed as a factory. Its purpose is to provide its students with a professional environment as well as a campus. The spaces should inspire and encourage the students in a future in machinery and engineering.

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