



**Campus design for Ahsanullah University of Science and
Technology**

Submitted by

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ABSTRACT

As the Whole world is going through technological transformation, a major shift in education system is predictable in near future. Institutions are changing the way of teaching. Not only adding hi tech gadget and facilities but also rethinking goals and priorities. A better student life experience has become a priority. Better campus life experience, importance of social interaction and networking. It is no longer only about getting lecture, attending exam inside a classroom. Learning throughout student life and waiting to apply the knowledge in a job. The initial concept is to create an environment, which will enable student to learn in a better way and apply their knowledge and skills in campus. Develop their network and get fully prepared for the future. Teachers will get along with students in interaction and gathering that is more informal, to be a part of their journey of learning. A future based model of a university campus is a combination of research institutes, incubators, accelerators, innovation centers, co-working spaces, start-up spaces. By incorporating these activities, a bridge between academic and corporate sector will develop. A campus without barrier. Students can get along with corporate employees, sharing knowledge and experience. Knowledge and skill development process will be following the present economy and market value. This partnership will minimize the barrier of traditional social structure. This campus experience will not only make the way of sharing knowledge easier, it will also change the value and influence of an educational institute in a neighborhood.

CHAPTER 01

INTRODUCTION

INTRODUCTION

"The University brings out all abilities, including incapability" (Chekhov, n.d.).

Tertiary level education is the most important time of a student's educational life. It is about not only the degrees and jobs afterwards but In fact, universities holds a responsibility of educating a generation. Building the backbone of a country. The idea of academic freedom is an important notion in the definition of university level education. Following the gradual developments process of the world, the journey of universities for providing formal education started in 1921 with Dhaka university in Dhaka ,Bangladesh (UGC-Handbook Universities of Bangladesh, 2009, p. xvii). Gradually it expanded to other divisions, then into cities of the country. Later on the increasing number of students and demands for higher education led to establish other universities beside public universities Advent of private universities in Bangladesh was in 1992 (UGC-Handbook Universities of Bangladesh, 2009, p. xx).On this current day private universities are important part of educational, social and cultural life of this country. Private universities are significant for providing higher education for the growing number of students. As the Whole world is going through technological transformation, a major shift in education system is predictable in near future. Institutions are changing the way of teaching. Not only adding hi tech gadget and facilities but also rethinking goals and priorities. A better student life experience has become a priority. Better campus life experience, importance of social interaction and networking. It is no longer only about getting lecture, attending exam inside a classroom. Learning throughout student life and waiting to apply the knowledge in a job. The initial concept is to create an

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PROJECT BRIEF

| | |
|-------------------|---|
| Project name | Ahsanullah University of Science and Technology |
| Location | Ashuliya model town, Savar |
| Project type | University Campus |
| Client | Ahsania Mission, AUST authority |
| Site are | 612455 sqft/ 14.08 acres |
| Level and contour | Flat land |
| Shape of the site | Irregular in shape |

BACKGROUND OF THE PROJECT

Ahsanullah University of Science and Technology is Government Approved Private University, founded by the Dhaka Ahsania Mission in 1995. It is one of the top Private Universities in this country. Ahsania Mission was established in 1958 by educationist and social reformer of undivided India, Khan Bahadur Ahsanullah, it is a non-profit voluntary organization. His vision was a better society, firstly, rich in moral and spiritual values that are universally acclaimed through ages and manifested in every sphere of life; secondly, access to resources. Though initially charity and welfare activities were the major focus of the Mission, it has expanded its arena of activities leaning towards sustainable development strategies with the passage of time. Ahsanullah University has plans to expand their capacity and adding up new department and institutes. A proposal has been developed based on a site located in Ashulia model town Savar. The initial plan is to shift few departments and institutes with establishing few more. Admin section including all the existing program and facilities. Second phase of development plan includes residential facilities

PROPOSED PROGRAMS

Administration:

VC's office

Treasurer's office

Register's office

Examination controller's office

Account's office

Faculty of engineering:

Department of biomedical engineering

Department of EEE

Department of CSE

Department of chemical engineering

Institute:

Institute of Material science and technology

Institute of Law and social justice

Institute of climate change and sustainable development

Others

Student and teachers center (TSC)

Library & Computer center

Workshop

Central store

Common room for boys and girls

Gymnasium

Playground (200' by 300')

Mosque

Shahid Minaar

Parking for 1000 cars

AIMS AND OBJECTIVES OF THE PROJECT

- Designing a campus which carries an experience of its user
- Designing facilities to serve the students, teachers and all users equally according to their comfort, which also encourage efficiency.
- A campus as a journey , exploring new places , learning new things
- Rethinking the idea of campus edges, reduce the sharp border with its surroundings, a completely accessible campus for all.
- A campus, which establish the idea of sharing knowledge without any barrier.

CHAPTER 02
LITERATURE REVIEW

LITERATURE REVIEW

In different parts of the world education system developed gradually based on their location, culture and social system. There are still many opinions about the very first system and location of evolving higher education yet many scholars agree that these practice started in different monasteries, madrasa and churches. The root of tertiary education was closely tie to religion. Basic form of education was religious norms, social values. All advanced civilizations have required higher education in order to train their ruling, priestly, military, and other service elites (Perkin, 2007). As mostly it started under religious command, the opportunity for mass people to get higher education was not that high. Different religion, different culture had their priorities for educating their people. These educational institutes played an important role of changing the structure of society and its political condition. This massive transformation shaped the present world as we see it now. Later on, this practice of tertiary level education kept developing and established a global structure. Creating opportunity for mass people to be a part of it, which caused fundamental changes of social barriers, class and status.

The word “university” is derived from the Latin term *universitas magistrorum et scholarium*, which roughly means “community of teachers and scholars” (Encyclopedia Britannica, 1911). Traditionally, a land on which a college or university and associated institutional buildings are assemble is a campus. Usually a university campus comprises of library, lecture halls, residence halls, student centers or dining halls, and park like

settings (Oxford English Dictionary, 2013). The oldest university, according to the Guinness Book of World Record, are Al-Karaouine mosque in Morocco. It was established in 859 AD by a woman named Fatima-al-Fihri and originally embraced traditional Islamic education. Subjects like grammar, math's, physics, chemistry, medicine and astronomy is added later (Ancient Colleges,n.d.). In Europe, it begun in mediaeval age and controlled by the churches over hundreds of year. Some consider that Nalanda, in Bihar, India is the oldest institute. It had 10,000 students from on that time all over Asia. The university taught many subjects including astronomy, medicine. It also accepted students from various interpretations of religion. This was a big contrast with the other institutes of the world of that time. The basic concept of university campus was student and teacher living and working at a same place. Based on geographic and social condition, changes took place in time. Administrative part was added later for proper management the institute and its function. Later on various part libraries, hall, dinning were added according to the need and social development. A complete new model of a university campus was developed. University of Paris, University of bologna, University of oxford, University of Cambridge, Al-Azhar University in Egypt these are considered as the oldest universities with a model campus.

Beside the curriculum, the campus itself played an important role for this transformation of education system. Gradually more space and programs were added in the campus model. This system became a vital point of transition of the society. The essence and impact of building architecture witnessed massive changes in time. Alongside academic learning, the importance of space for leering has started to be consider. Over time, the style and more importantly functions of a university campus have changed. Later on

different question arose, does a campus has a psychological impact on a student? Does that experience matters to student? What helps a student to develop personal and professional skills beside academics? These questions reintroduced the importance of a university campus and its impact on a student. Beside all the academic activities variables outside the classroom puts an impact of a student's educational journey throughout the time. The amount of time and energy students devote to these activities is defined as student involvement (Astin, 1999). A study report was developed based on campus life, which highlights the importance of a campus in academic life. Six essential principles or characteristics that capture the essence of both the social and academic dimensions of campus life by Ernest L. Boyer (1990)

Purposefulness, a college runs on two essential part, teaching learning. A purpose for a better and developed future. Development, which will cause by mutual effort of student and teachers sharing the same goal.

Openness, a college is a place without barrier, a place where freedom of expression is strictly protected.

Just, a college is a place with no differentiation, a place where every person is honored for his/her uniqueness and individuality.

Disciplined, a college campus has its own rules and regulations. These regulations were developed for common good based on common behavior guide and governance.

Caring, a college campus develops a tendency of care towards each other, a place where the well-being of each member is being supported and where service to others is encouraged.

Celebrative, a college campus is a place, which is a part of every celebration, the value and essence of the space is a vital part of every celebration of student life.

Campus ecology is another term related to the study of physical spaces in university campus. A space can have different impact on individuals. A space can be inspiring for a human being. A space can contain emotions, specific feelings. The environment of a place where learning and teaching is been done has to be different from other activity. Similarly, a place for hanging out with might have its specific quality. According to Banning, campus ecology refers to the study of the interrelationship between students and campus environment (Schuh & Jones, 2011). After the monograph on campus ecology published in 1978 by National Association of Student Personal Administrators (NASPA) which was edited by Banning, in 2001 Strange and Banning reconsidered the topic with their highly appreciated book, *Educating by Design: Creating Learning Environments That Work* (Harrington, 2014). This work reflects the theoretical assessment on campus environment. In section one of the two of this book, Strange and Banning present four types of environments present on university campuses: physical, aggregate, organized and constructed. Each environment has an impact on student behavior and should be considered in the educational experience. The physical environment consists of physical structures, spatial organization, outdoor spaces, accessibility, navigational flow, and cleanliness (Strange & Banning, 2001). A university campus should reflect a commitment to quality and be dedicated to the intellectual, psychological and social development of its students. An idea of a campus is a critical concept (Calvo-Sotelo, 2010). For sharing of knowledge, the interaction and other

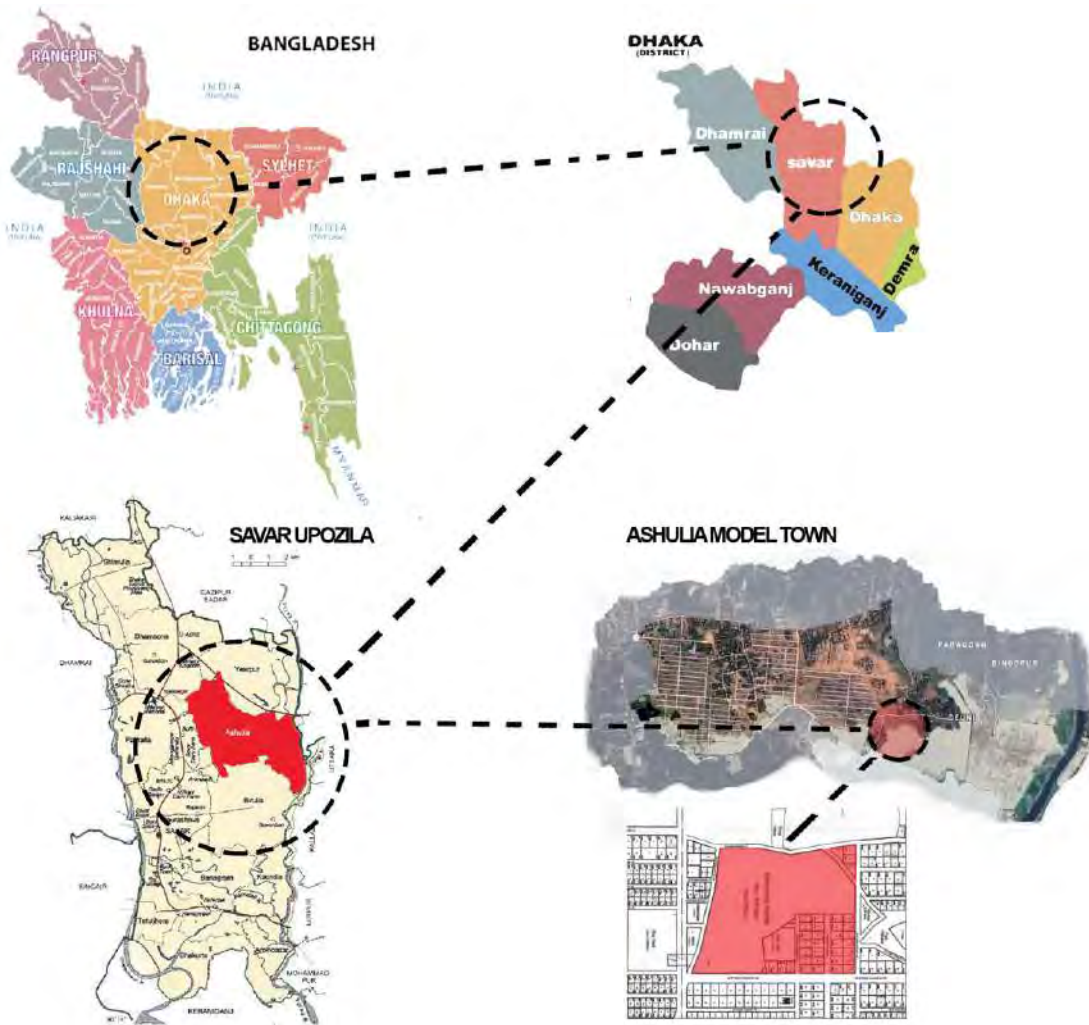
activities demands a specific environment. Which will not be just a space of brick and mortar, instead a place which creates positive vibe towards knowledge.

Following the example of developed world, Higher education did play an important role of changing the structure of social, political and economic condition. At the beginning, in a country like Bangladesh where literacy rate was low, higher education was not accessible for all. Even It is said that during the first hundred years under the British rule, very little was done to promote higher education in this land. However, the present scenario of Bangladeshi higher education is quite different. With a better economy, increased GDP, and achievement of the middle-income status, more people can afford higher education now. Beside government's initiative private sector has contributed to the development of educational sector of this country. Even though private universities has successfully came up with different features and program beside academics. Yet the curriculum and the system has not been revise for a long period. Observing the present world and its rapid development it is very important to allow that flexibility to adopt the change with its demand. Beside academic success, social networking and communication skills can be considered as a major element for success. In our country, the importance of physical space and its impact on a student has not been recognized properly. Land crisis and the growing demand of basic needs of increasing population has resulted in compromising the important features and impact of a campus in our education system. Public universities has huge campus yet lack of proper maintenance and planning it is not utilized mostly. Campus architecture has different styles in our country. The architecture of Dhaka University is a physical expression of colonial power. Highly influenced by Mughal

architecture. Campus like Jahangir nagar University, designed by architect Mazharul Islam shows the sensitivity about the surrounding and importance of the context. Design decision, material use, expression of spaces makes it a great example of architecture. At present activities defines the character of the spaces. As the Whole world is going through technological transformation, a major shift in knocking on the door. Institutions are changing their way of teaching. A better student life experience has become a priority. Better campus life experience, importance of social interaction and networking. It is no longer only about getting lecture, attending exam inside a classroom. Learning throughout student life and waiting to apply the knowledge in a job. The primary motives for making a public space in campus is often cited as for visual enhancement, environmental enhancement and image enhancement for the institution. From the user's perspective, the public space may create a different set of benefits, which may not have been intended (Aziz, Azhan Abdulah, et.al. 2012). Top universities has changed their focus from traditional structure to a flexible model of education system, which can be modified according to the student's preferences. It will enable student to learn in a better way and apply their knowledge and skills in campus. Develop their network and get fully prepared for the future. A future based model of a university campus is a combination of research institutes, incubators, accelerators, innovation centers, co-working spaces. Innovation Center is a community of industry entrepreneurs and academic researchers working in partnership to instigate breakthroughs: fusing the uncommon, taking risks, thinking big. (ID Center)

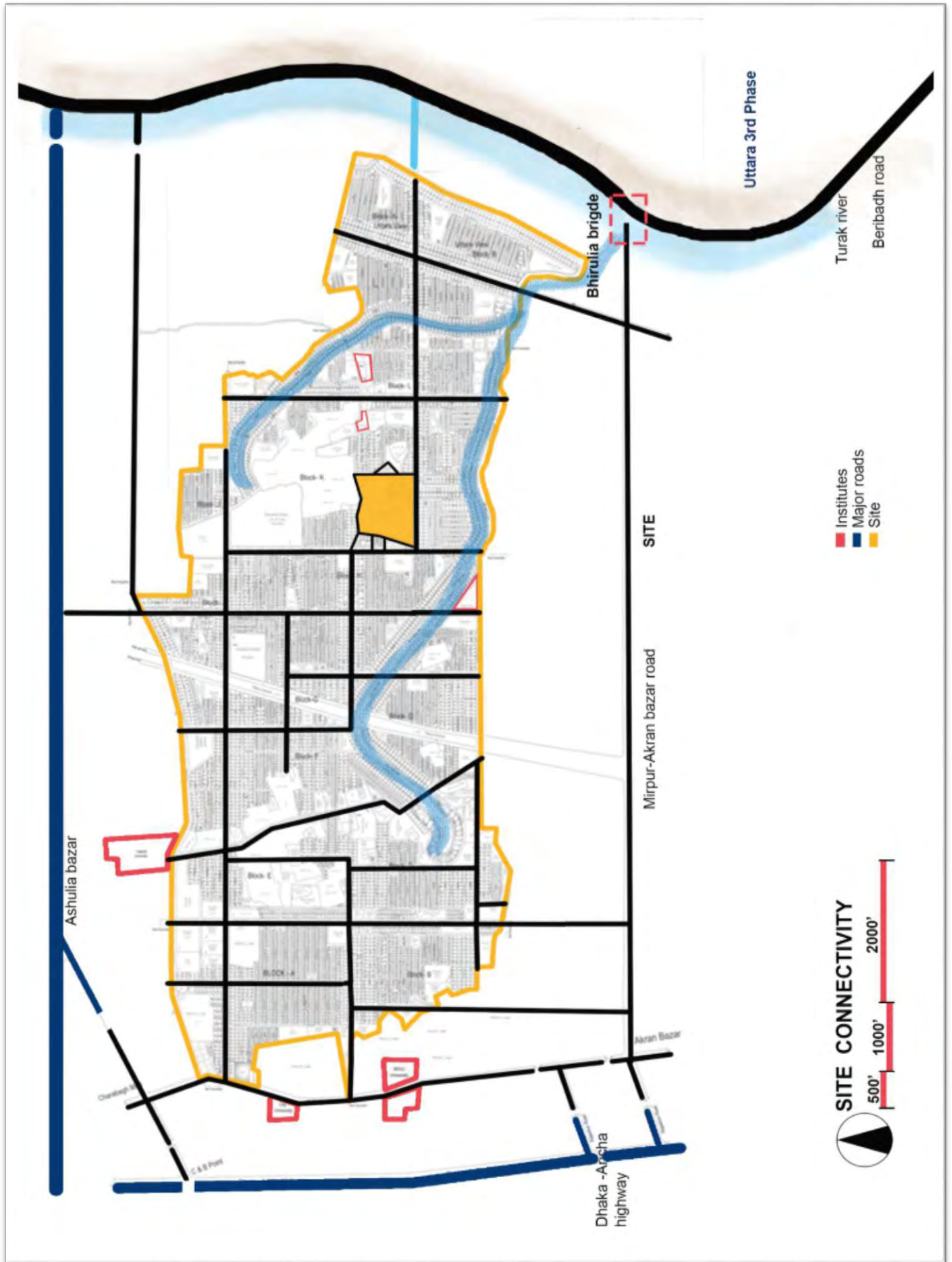
CHAPTER 03

SITE AND CONTEXTUAL ANALYSIS



SITE LOCATION

Situated at Ashuliya Model town, savar, Dhaka. Savar is located at 23.8583°N 90.2667°E . The site is 2 km from mirpur road. Neighborhood analysis: akran bazar road to the west and ashuliya bazar road to the north from the site. 14.08 acres of flat land with major roads surrounding it.



SITE CONNECTIVITY



- Institutes
- Major roads
- Site

BACKGROUND OF THE SITE

Savar is situated at a distance of about 24 km to the north-west of Dhaka City on the Dhaka- Aricha highway. Savar Upazila has an area of 280.13 sq. km of which the Savar Pourashava is 16.67 sq. km. It consists of 9 wards and has a population of 1, 61,600 with a density of 9,694 persons per sq. km (Field survey, 2006). The high growth of Dhaka city and its functionalities it the population and the facilities Started spreading out. One of the first place to add up with the core economy of Dhaka city is Savar. Because of its, high flood free land, cheap land fee and top communication with the core Dhaka, Savar is highly preferred by the potential investors like manufacturing industries, real state, housing, Universities and other institutions. The development plan of Dhaka city includes the concept of satellite City and decentralization. Few government initiated project are Uttara city, Purbachal city etc. Beside government, there are private investors who has invested in modern city with facilities. Both government and private projects are going on. Mostly the process is not very fast due to political, social and other economic issues. Construction work of Uttara 3rd phase project, which was undertaken by 1999, would be completed by 2017 .Under the new project of Rajdhani Unnayan Kartripakkha (Rajuk), 20km from the Zero Point of Dhaka City, vast wetland just behind the botanical garden beside the Mirpur flood protection Embankment were filled up dividing each residential sector into multiple blocks. The third phase of the Uttara Residential Project had been undertaken by then-Awami League government in 1999.

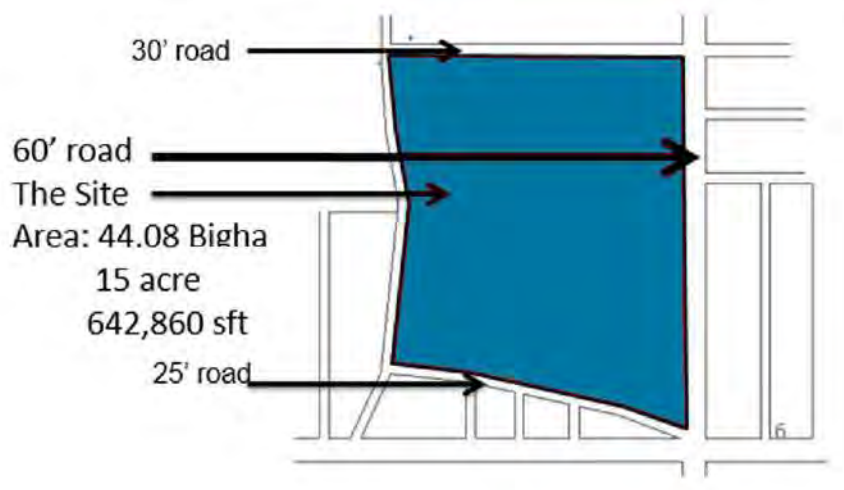
However, the project has not completed even after 17 years. According to Rajuk sources, only 24% of the town's space is allocated as residential plots, 11 % for high-rise apartments, 30.92 % for roads, 3.04 percent for physical and social infrastructure, 13 % for lakes, open space and parks, 5.89 % for commercial plots, 2 % for utility services, 1.67 % for educational institutions and 3 % for playgrounds. (Rahman, 2016)

ECONOMIC BACKGROUND

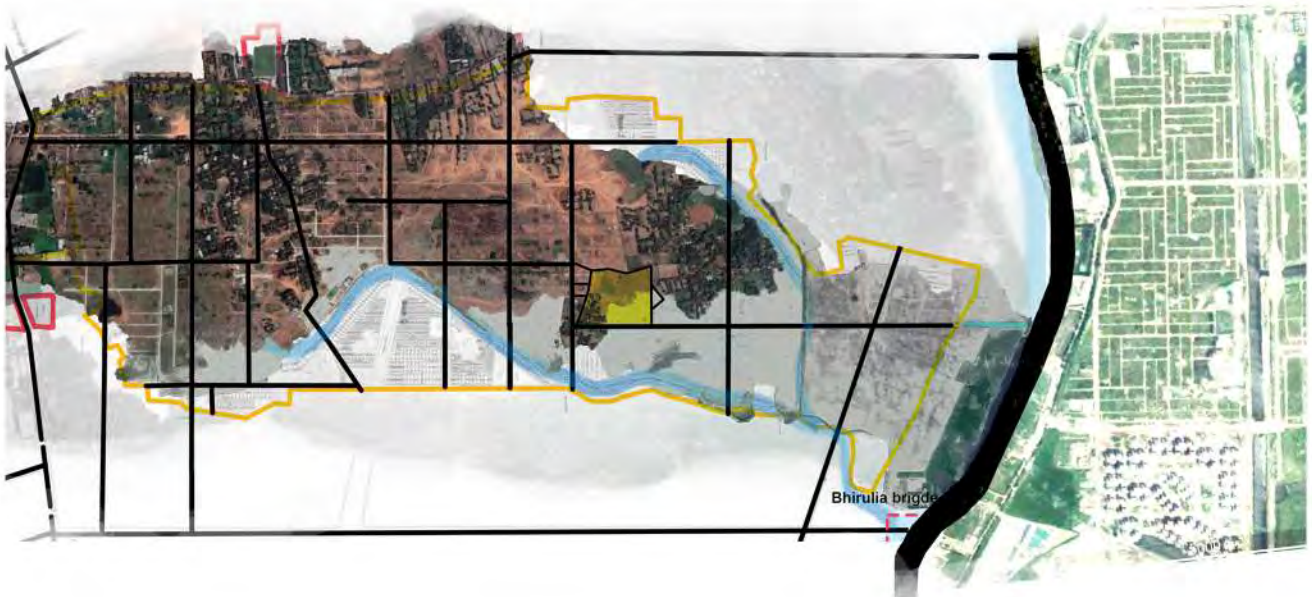
Agriculture and manufacturing are the two main economic sectors in Savar. There are 181 mixed fisheries, dairies and poultries Dairy, 5 hatcheries, 209 poultries, and 1319 fisheries. Bangladesh Export Processing zone is situated in this upazila. Vital part of manufacturing sector in Savar is textile. Savar upazila has now become a textile-based area and have all types of textile and clothing industries. This area is one of the densely populated industrial areas in Bangladesh. In this area, there are more than 300 textile factories and almost 90% inhabitants of Ashulia depend on these factories. Many are directly working there; many others are supplying raw materials or doing business in the supply chain. Many others are involved in businesses grown for the industries' presence over there. (Report of Detailed Area Plan of Group-E for DMDP, 2010)

SOCIO-CULTURAL BACKGROUND

As of the 2011 Bangladesh census, Savar Upazila had a population of 1,387,426. Males constituted 54.20% of the population, and females 45.80%. This Upazila's eighteen-up population was 207,401. Savar had an average literacy rate of 58.16% (7+ years), and the national average of 54.4% literate. Male literacy was 64% and female was 51%. The religious breakdown was Muslim 88.59%, Hindu 10.41%, Christian 0.93%, Buddhist 0.03% and others 0.04%, and ethnic minority group nationals numbered 319 including Buno, Garo, Chakma (Sangma), and Burman. The main occupations are Agriculture 24.34%, agricultural laborer 12.84%, wage laborer 4.44%, cattle breeding, forestry and fishing 1.90%, industry 1.37%, commerce 17.35%, service 20.68%, construction 1.66%, transport 3.96% and Others 11.46%. (Census Report 2001).



CLIMATIC FACTORS



Ashulia's climate is classified as tropical. When compared with winter, the summers have much more rainfall. According to Köppen and Geiger, this climate is classified as Aw. The average temperature in Ashulia is 25.8 °C. The rainfall here averages 208 mm.

Precipitation is the lowest in December, with an average of 6 mm. In July, the precipitation reaches its peak, with an average of 377 mm. At an average temperature of 28.9 °C, May is the hottest month of the year. At 18.8 °C on average, January is the coldest month of the year.

LOCATION : TROPICAL ZONE

CLIMATE : MILD-WINTER (October to March)
HOT HUMID (March to June)
HUMID, WARM RAINY MONSOON (June to October)

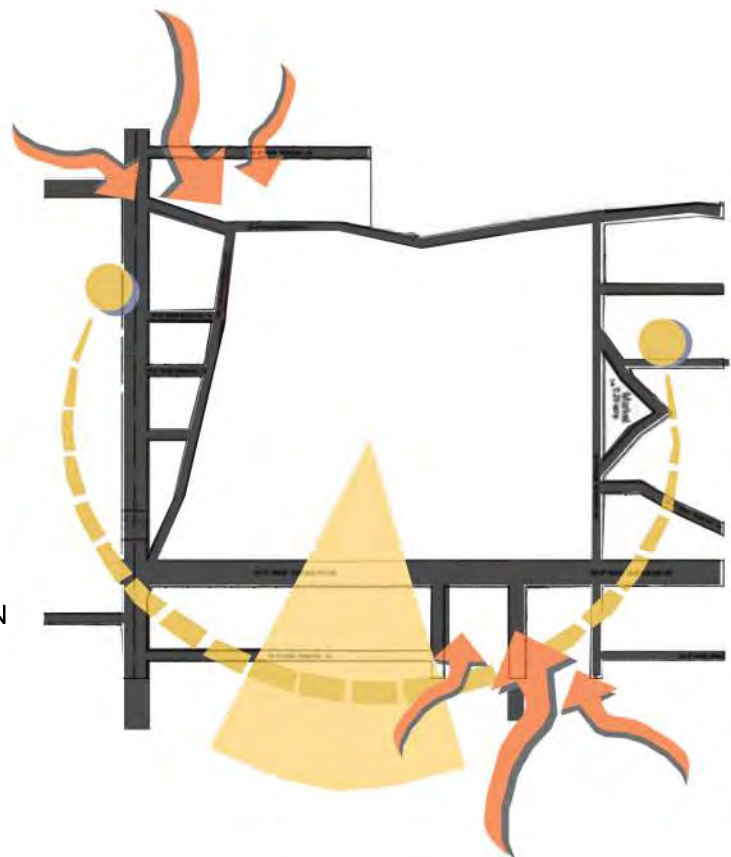
LATITUDE : 23.8583°N 90.2667°E

TEMPERATURE (Annual average) :

Maximum 36`c & Minimum 12.7`c

RAIN : Annual rainfall 2376mm

WINTER WIND



SUMMER WIND

CONTEXT ANALYSIS

ROAD AND CONNECTIONS FROM DHAKA CITY

Site can be reached through 4 vital points . From Mirpur through Beribad road , From Uttara through Beribad road , From Abdullahpur road through Ashulia , From Anwar jang road from savar.



Union wise percentage of road length by hierarchy

| Name of the union | Length of road (in km) (%) | | | |
|-------------------|-------------------------------|------------------|-----------------------|-------------------|
| | National Highway | Regional Highway | Local and other roads | Total |
| Savar Pourashava | 7.17 (17.14) | 0 (0.00) | 513.9 (16.39) | 521.07 (16.33) |
| Ashulia Union | 0 (0.00) | 2.88 (21.36) | 273.44 (8.72) | 276.32 (8.66) |

PRESENT SITE CONDITION

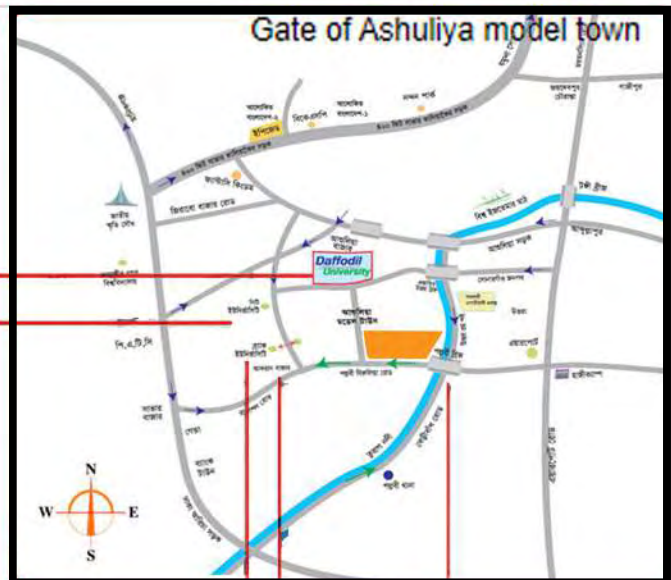


EXISTING STRUCTURE ON SITE

SITE SURROUNDINGS



Daffodil university



City university



BRAC university



Beri bad bridge



BRAC CDM

FUTURE DEVELOPMENT PLAN

Few development plan and project which could have an impact in the socio-economic factors of Ashulia. These planned development which will shape up the further growth of demand and facilities

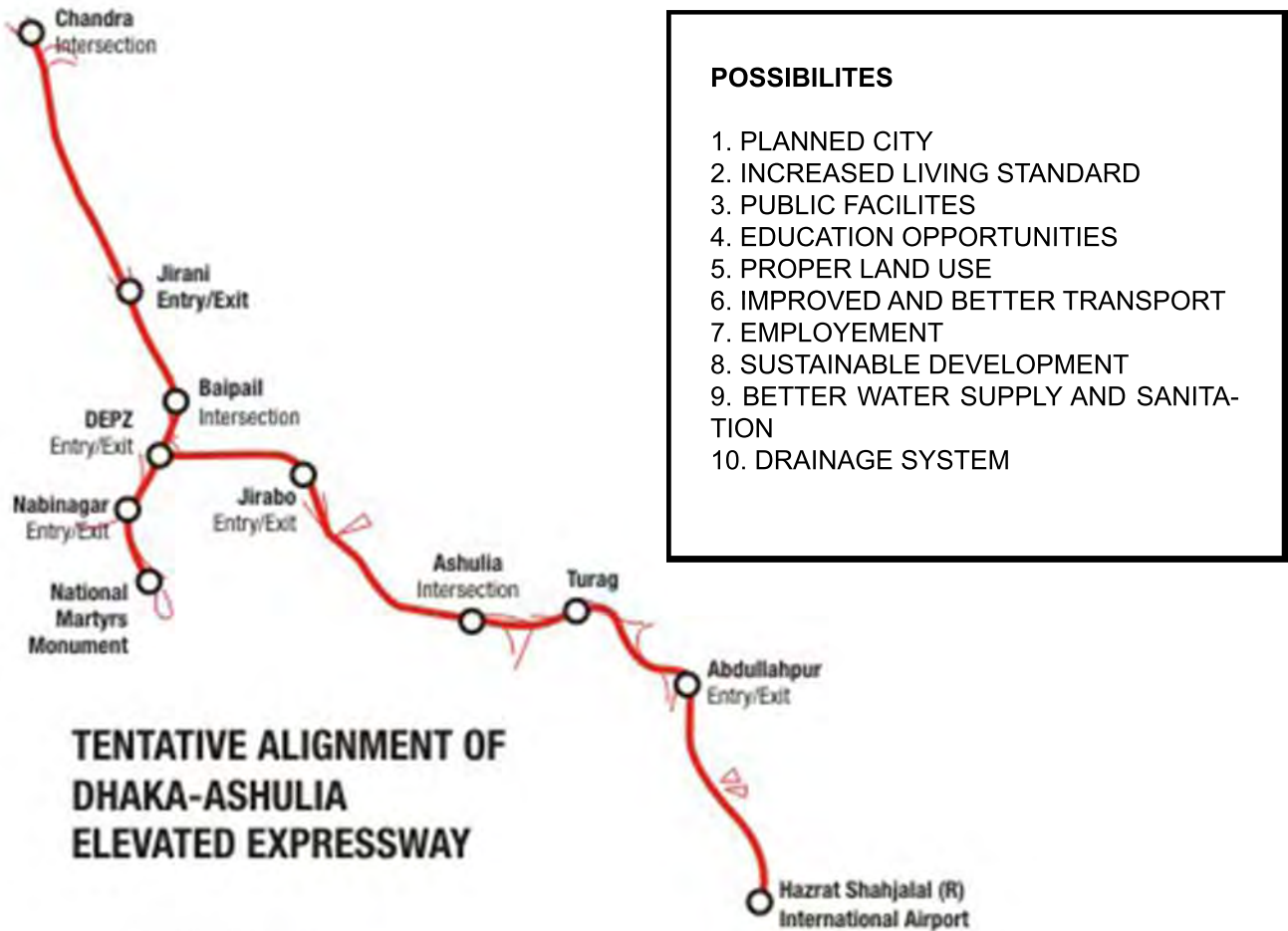
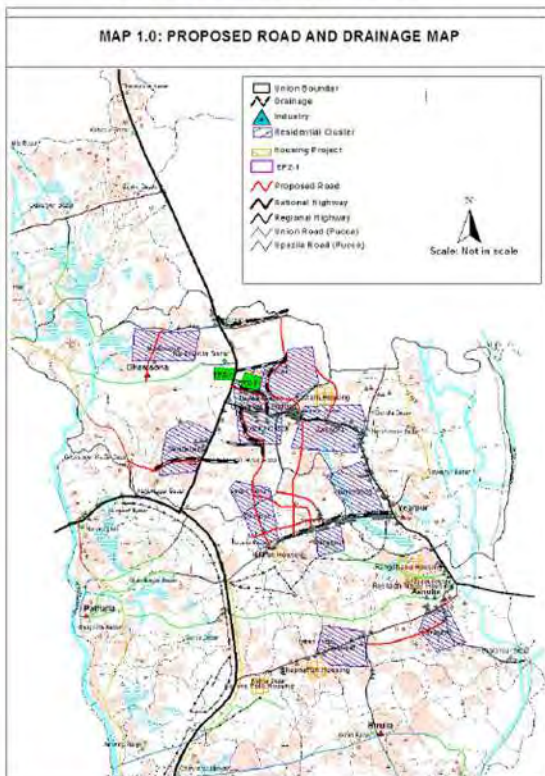


Figure 1: Map of Ashulia and Proposed Road and Drainage



DHAKA -ASHULIA EXPRESSWAY

Connecting Dhaka airport to Abdullahpur, Ashulia, DEPZ and Chandra on the North Bengal Highway. It will be an extension of the 26km Dhaka elevated expressway, linking the airport to the Dhaka-Chittagong Highway near Shanir Akhra

FUTURE DEVELOPMENT PLAN

1. INDUSTRIES
- 2..INSTITUES (UNIVERSITY, COLLEGE , SCHOOL)
3. SHOPPING MALL
- 4.COMMERCIAL ZONE
- 5.RESIDENTIAL ZONE
6. BETTER TRANSPORT SYSTEM

SWOT ANALYSIS

STRENGTH

- I) The site is located only 2 km from Mirpur . connected through beribadh highway
- II) The accessibility to the area is extremely good as major roads and secondary roads are surrounding the site.
- III) Planned city utilising the quality space and environment. Consists of natural amenities like green and surrounding water
- IV) Situated far away from highly densed Dhaka city center , Turag river working as a buffer .

WEAKNESS

- I) Infrastructure yet to be developed
- II) Flood retention zone
- III) Slow progress of development

OPPORTUNITY

- I) Using the freedom of desging and also being a part of an futuristic approach
- II) A properly desinged educational institute will help to set a standard for ideal campus
- III) Utilizing existing nature and surrounding
- IV) Utilising the freedom of desging pedestrian and public facilites for the locality inside the campus
- V) Because of its highly accessible location, it is expected to be easier for students and staff to come and go .
- VI) As the infrastructure is yet to be developed so there is an opportunity to plan every kinds of facilities according to the present or future need

THREATS

- I) Slow progress of city development , lack of proper monitoring of the authorites might hamper the whole vision
- II) Increase in footprint of new structures would be a signal of going on the same track of becoming a highly densed living space , which will decrease the value and quality of it
- III) The environment would be affected if the ratio of build area and green is not properly balanced.

CHAPTER 04

PROGRAM AND PROGRAM ANALYSIS

1. Total land area: 613324.8 SFT(14.08 acre)
2. Shape of the land : Squarish
3. Major road width : 60'
4. Floor area ratio (FAR)
Educational - 4.50
5. Maximum ground coverage (MGC) : 50 % (306662.4 sft)
6. Built Area: 4,72,000 sft

PROPOSED PROGRAM AND SPACE REQUIREMENT'S FOR AUST CAMPUS

| SL. No. | Name of the Offices/Departments/Institutes/Other Facilities | Maximum Numbers of Students (Assumed) | Area (Sft) |
|---------|---|--|------------|
| 1 | Administrative Office | (i) V.C's office | 2000 |
| | | (ii) Treasurer's office | 1938 |
| | | (iii) Registrar's office | 23013 |
| | | (iv) Controller of Exam's office | 2500 |
| | | (v) Engineering office | 1875 |
| 2 | Faculty of Engineering | (i) Dept of Biomedical Engineering | 1500 |
| | | (ii) Dept of CSE | 3000 |
| | | (iii) Dept of EEE | 3000 |
| | | (iv) Dept of Chemical Engineering | 1500 |
| 3 | Institutes | (i) Institutes of Material Science & Technology | 1000 |
| | | (ii) Institutes of Law & Social Justice | 1500 |
| | | (iii) Institutes of Climate Change & Sustainable Development | 1000 |
| 4 | Teachers-Students Centre (TSC) | | 35625 |
| 5 | Library and Computer Centre | | 4940 |
| 6 | Workshop | | 2000 |
| 7 | Central Store | | 3000 |
| 8 | Common Rooms for Boys and Girls | | 2500 |
| 9 | Gymnasium | | 2000 |
| 10 | Parking for 1000 Cars | | 200000 |
| 11 | Play Ground (200'x300') | | 60000 |
| 12 | Mosque | | 5000 |
| 13 | Shaheed Minar | | 15000 |
| | | | |

1. ADMINISTRATION

(i) Office of the Ho'ble Chairman, BOT -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|-------------------------------------|----|------------------|------------|---|
| | | | | sft | |
| 1 | Chairman, BOT, | | | 450 | Dinning Space, Meeting Space, TV, Multimedia & Video Conference system, Attached toilet |
| 2 | PS to the Chairman/ Board Secretary | | | 120 | Executive Table with PC Desk Sofa Set for Visitors |
| Sub Total (Usable Space) | | | | | 570 sft |
| Circulation = 25% of Usable Space | | | | | 142 sft |
| TOTAL | | | | | 712 sft |

(ii) V.C's office -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|----------------------------------|----|------------------|------------|---|
| | | | | sft | |
| 1 | VC chamber + Toilet | | | 500 | Dinning Space, Meeting Space, Sofa Set Space, Book Shelf Space, TV, Multimedia & Video Conference system, Attached toilet |
| 2 | Reception, PS and waiting lounge | | | 400 | 1Executive Table Wall Cabinet 1PC Desk Sofa Set for the Visitors |
| 3 | Syndicate/academic council room | | | 250 | Executive Table with PC Desk Sofa Set for Visitors |
| 4 | Publication & information office | | | 150 | Executive Table with PC Desk Sofa Set for Visitors |
| 5 | Common Toilets | | 200+100 | 300 | (Male + Female) |
| Sub Total (Usable Space) | | | | | 1600 sft |
| Circulation = 25% of Usable Space | | | | | 400 sft |
| TOTAL | | | | | 2000 sft |

(iii) Treasurer's office -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------|----|------------------|------------|---|
| | | | | sft | |
| 1 | Treasurer's chamber + Toilet | | | 350 | Dinning Space, Meeting Space, Multimedia & Video Conference system, Attached toilet |
| 2 | Director Accounts | | | 200 | Executive Table with PC Desk, Sofa Set for Visitors |
| 3 | Assistant directors | 2 | 100 | 200 | Executive Table with PC Desk |
| 4 | Accounts officer | | | 200 | Executive Table with PC Desk |
| 5 | Record room | | | 300 | Wall cabinet /rack |
| 6 | Common Toilets | | 200+100 | 300 | (Male + Female) |
| Sub Total (Usable Space) | | | | | 1550 sft |
| Circulation = 25% of Usable Space | | | | | 388 sft |
| TOTAL | | | | | 1938 sft |

(iv) Registrar's office -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------|----|------------------|------------|--|
| | | | | sft | |
| 1 | Registrar's chamber + Toilet | | | 350 | Executive Table Wall Cabinet PC Desk Sofa set |
| 2 | Deputy. Registrars' | 2 | 200 | 400 | Executive Table Cabinet PC Desk |
| 3 | Assistant Registrars' | 2 | 150 | 300 | Executive Table Wall Cabinet PC Desk File Cabinet |
| 4 | Accounts Officer | 2 | 100 | 200 | Executive Table Wall Cabinet PC Desk |
| 5 | Record Room | | | 300 | Wall cabinet /rack |
| 6 | Registration Counters, | 1 | | 200 | 2 Counter Table 2 PC Desk Rack + File Cabinet |
| 7 | Common Toilets | | 200+100 | 300 | (Male + Female) |
| Sub Total (Usable Space) | | | | | 1850 sft |
| Circulation = 25% of Usable Space | | | | | 463 sft |
| TOTAL | | | | | 2313 sft |

(v) Controller of Exam's office -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|-------------------------------------|----|------------------|------------|--|
| | | | | sft | |
| 1 | Controller's office + Toilet | | | 350 | Executive Table Wall Cabinet PC Desk Sofa set |
| 2 | Deputy. Controllers' | 2 | 200 | 400 | Executive Table Wall Cabinet PC Desk |
| 3 | Assistant Controllers' | 3 | 150 | 450 | 3 Executive table Wall Cabinet 3 PC Desk |
| 4 | Strong Room (for question printing) | | | 200 | PC Desk Rack + File Cabinet |
| 5 | Record Room | | | 500 | Rack + File Cabinet |
| 6 | Counters | 1 | | 200 | 2 Counter Table 2 PC Desk Rack + File Cabinet |
| 7 | Common Toilets | | 200+100 | 300 | (Male + Female) |
| Sub Total (Usable Space) | | | | | 2200 sft |
| Circulation = 25% of Usable Space | | | | | 550 sft |
| TOTAL | | | | | 2750 sft |

(vi) Proctor office -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|---|----|------------------|------------|--|
| | | | | sft | |
| 1 | Proctor | | | 200 | Executive Table Wall Cabinet PC Desk, Toilet |
| 2 | Assistant Proctor Assistant Proctor Executive | 2 | | 200 | 3 executive table Wall Cabinet 3 PC Desk |
| 3 | Meeting Room | | | 200 | Conference Table |
| 4 | Office, Waiting lounge | | | 200 | |
| 5 | Common Toilets | | 100+100 | 200 | Male+ Female |
| Sub Total (Usable Space) | | | | | 1000 sft |
| Circulation = 25% of Usable Space | | | | | 250sft |
| TOTAL | | | | | 1250 sft |

(vii) Admission office -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|--|----|------------------|------------|--|
| | | | | sft | |
| 1 | Deputy Director / Assistant Director | | | 150 | Executive Table Wall Cabinet PC Desk |
| 2 | Admission Officer (internal) Admission Officer (internal) Admission Officer(internal) Admission Officer(internal) | 4 | | 400 | 4Executive Table Wall Cabinet 4 PC Desk Counseling Corner |
| 3 | International Desk | | | 200 | Executive Table Wall Cabinet PC Desk |
| 4 | Common Toilets | | 100+100 | 200 | Male+ Female |
| Sub Total (Usable Space) | | | | | 950 sft |
| Circulation = 25% of Usable Space | | | | | 237 sft |
| TOTAL | | | | | 1187 sft |

(viii) Lobby, Reception and Information Desk -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|----------------------------------|--|----|------------------|------------|---|
| | | | | sft | |
| 1 | Lobby, Information Desk, Waiting Lounge, Attached Toilets for executive & Visitors (Male and Female) | | 50 ' x 40' | 2000 | All latest technology like audio-video and wifi support space |
| Sub Total (Usable Space) | | | | | 2000 sft |
| TOTAL | | | | | 2000 sft |

(ix) Meeting / Seminar Room For Trusty Board / Academic Council / Syndicate.

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|--|-----|------------------|------------|---|
| | | | | sft | |
| 1 | Meeting/ Seminar Room, attached separately for male and female | 100 | | 1000 | All latest technology like audio-video, wifi and video conference system support. |
| Sub Total (Usable Space) | | | | | 1000 sft |
| Circulation = 25% of Usable Space | | | | | 250 sft |
| TOTAL | | | | | 1250 sft |

2. FACULTY OF ARTS AND SCIENCE

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------------|----|------------------|-------------|---|
| | | | | sft | |
| 1 | Class rooms | | | | |
| 2 | Labs | | | | |
| 3 | Seminar room | | | | |
| 4 | Teacher's accommodation | 50 | | 5000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilets |
| | Heed | | | | |
| | Mathematics | | | | |
| | Physics | | | | |
| | Chemistry | | | | |
| | Statistics | | | | |
| | Economics | | | | |
| | Sociology | | | | |
| | Psychology | | | | |
| | English | | | | |
| | Accounting | | | | |
| | Bio- Chemistry | | | | |
| | Mathematics | | | | |
| 5 | Departmental office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilet |
| 6 | Store | | | 100 | |
| 7 | Toilets | | | 600 | (Male+ Female) |
| Sub Total (Usable Space) | | | | 5600 | |
| Circulation = 30% of Usable Space | | | | | |

TOTAL

3. FACULTY OF ENGINEERING

(i) Dept of Biomedical Engineering (Maximum 1500 Students) -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------------|----|------------------|------------|--|
| | | | | sft | |
| 1 | Class rooms | 10 | 30'x25' (each) | 7500 | General Style |
| 2 | Labs | 7 | 30'x25' (each) | 5250 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | 50 | | 5000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilet |
| 5 | Departmental office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilet |
| 6 | Store | | | 100 | |
| 7 | Toilets for Students | | 300+300 | 600 | (Male+ Female) |
| Sub Total (Usable Space) | | | | | 1950 sft |
| Circulation = 30% of Usable Space | | | | | 5985 sft |
| TOTAL | | | | | 25935 sft |

(ii) Dept of CSE (Maximum 3000 Students) -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------------|-----|------------------|------------|--|
| | | | | sft | |
| 1 | Class rooms | 15 | 30'x25' (each) | 11250 | General Style |
| 2 | Labs | 10 | 30'x25' (each) | 7500 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | 100 | | 10000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilet |
| 5 | Departmental office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilet |
| 6 | Store | | | 100 | |
| 7 | Toilets for Students | | 500+500 | 1000 | (Male+ Female) |
| Sub Total (Usable Space) | | | | | 30950 sft |
| Circulation = 30% of Usable Space | | | | | 9285 sft |
| TOTAL | | | | | 40235 sft |

(ii) Dept of EEE (Maximum 3000 Students) -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------------|-----|------------------|------------|--|
| | | | | sft | |
| 1 | Class rooms | 15 | 30'x25' (each) | 11250 | General Style |
| 2 | Labs | 10 | 30'x25' (each) | 7500 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | 100 | | 10000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilet |
| 5 | Departmental office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilets |
| 6 | Store | | | 100 | |
| 7 | Toilets for Students | | 500+500 | 1000 | (Male+ Female) |
| Sub Total (Usable Space) | | | | | 30950 sft |
| Circulation = 30% of Usable Space | | | | | 9285 sft |
| TOTAL | | | | | 40235 sft |

(iv) Dept of Chemical Engineering (Maximum 1500 Students) -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|------------------------------------|----|------------------|------------|---|
| | | | | sft | |
| 1 | Class rooms | 10 | 30'x25' (each) | 7500 | General Style |
| 2 | Labs | 10 | 30'x25' (each) | 7500 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | 50 | | 5000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilets |
| 5 | Departmental office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilets |
| 6 | Store | | | 100 | |
| 7 | Toilets for Students | | 300+300 | 600 | (Male+ Female) |
| Sub Total (Usable Space) | | | | | 30950 sft |
| Circulation = 30% of Usable Space | | | | | 9285 sft |
| TOTAL | | | | | 40235 sft |

□ Therefore, total space required for the teaching departments
= (25935+40235+40235+28730) = 135135 sft

4. INSTITUTE

(i) Institutes of Material Science & Technology (Maximum 1000 Students) -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|---------------------------------|----|------------------|------------|--|
| | | | | sft | |
| 1 | Class rooms | 5 | 30'x25' (each) | 3750 | General Style |
| 2 | Labs | 4 | 30'x25' (each) | 3000 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | 30 | | 3000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilet |
| 5 | Institute office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilet |
| 6 | Technical room | | | 1500 | |
| 7 | Store | | | 500 | |
| 8 | Toilets | | 300+300 | 600 | (Male+ Female) |
| Sub Total (Usable Space) | | | | | 13450 sft |
| Circulation = 30% of Usable Space | | | | | 4035 sft |
| TOTAL | | | | | 17485 sft |

(ii) Institutes of Law & Social Justice (Maximum 1500 Students) -

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|---------------------------------|----|------------------|------------|--|
| | | | | sft | |
| 1 | Class rooms | 7 | 30'x25' (each) | 5250 | General Style |
| 2 | Labs | 1 | 30'x25' (each) | 750 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | 44 | | 44000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilet |
| 5 | Institute office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilet |
| 6 | Moot Court | | | 1000 | Detail In Standards |
| 7 | Store | | | 500 | |
| 8 | Toilets | | 300+300 | 600 | (Male+ Female) |
| Sub Total (Usable Space) | | | | | 13450 sft |
| Circulation = 30% of Usable Space | | | | | 4035 sft |
| TOTAL | | | | | 17485 sft |

**(iii) Institutes of Climate Change & Sustainable Development
(Maximum 1000 Students) -**

| Serial no: | Space description | No | Size of the Room | total area | Facilities |
|--|---------------------------------|----|------------------|------------------|--|
| | | | | sft | |
| 1 | Class rooms | 5 | 30'x25' (each) | 3750 | General Style |
| 2 | Labs | 2 | 30'x25' (each) | 1500 | |
| 3 | Seminar room | 1 | 20'x30' | 600 | Theater Style |
| 4 | Teacher's accommodation | | 15'x200' | 3000 | Head with attached toilet, Professors', Assoc Professors, Asst. Professor s', Lecturers' room with Common Toilet |
| 5 | Institute office/ waiting space | | | 500 | Executive Table Wall Cabinet PC Desk, Sofa Set, Common Toilet |
| 7 | Store | | | 500 | |
| 8 | Toilets | | 300+300 | 600 | (Male+ Female) |
| Sub Total (Usable Space) | | | | 10450 sft | |
| Circulation = 30% of Usable Space | | | | 3135 sft | |
| TOTAL | | | | 13585 sft | |

□ Therefore, total space required for the teaching Institutes
= (17485+16900+13585) = 47970 sft

5. TEACHERS STUDENT CENTER (TSC)

| Serial no: | Space description | No | Size of the Room | total area | |
|--|---------------------------------------|----|------------------|------------------|--|
| | | | | sft | |
| 1 | Multipurpose Hall (for 1000 students) | | | 10000 | |
| 2 | Cafe, Shops | | | 5000 | |
| 3 | Bank, ATM Booth | | | 4000 | |
| 4 | Health Centre | | | 3000 | |
| 5 | Safety and Security Office | | | 1000 | |
| 6 | Games Rooms | | | 2500 | |
| 7 | Exhibition space | | | 2000 | |
| 8 | Guest Rooms | | | 1000 | |
| Sub Total (Usable Space) | | | | 28500 sft | |
| Circulation = 25% of Usable Space | | | | 7125 sft | |
| TOTAL | | | | 35625 sft | |

Library and Computer Centre

| Serial no: | Space description | No | Size of the Space | total area | |
|--|-------------------|----|-------------------|-----------------|--|
| | | | | sft | |
| 1 | Offices | | | 1000 | |
| 2 | Reading Rooms | | | 1000 | |
| 3 | Computer Centre | | | 1000 | |
| 4 | Record Rooms | | | 300 | |
| 5 | Toilets | | 300+200 | 500 | |
| Sub Total (Usable Space) | | | | 3800 sft | |
| Circulation = 30% of Usable Space | | | | 1140 sft | |
| TOTAL | | | | 4940 sft | |

. Workshop

| Serial no: | Space description | No | | total area | |
|--------------|-------------------|----|--|-----------------|--|
| | | | | sft | |
| | | | | 2000 | |
| TOTAL | | | | 2000 sft | |

Central Store

| Serial no: | Space description | No | | total area | |
|--------------|-------------------|----|--|-----------------|--|
| | | | | sft | |
| | | | | 3000 | |
| TOTAL | | | | 3000 sft | |

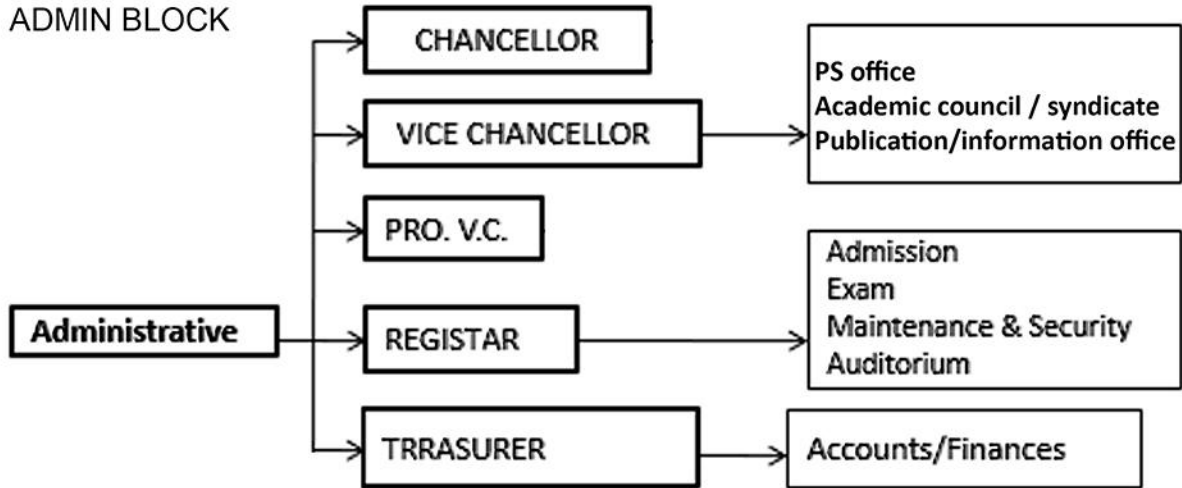
Common Rooms for Boys and Girls

| Serial no: | Space description | No | | total area | |
|--------------|-------------------|----|--|-----------------|--|
| | | | | sft | |
| | | | | 2500 | |
| TOTAL | | | | 2500 sft | |

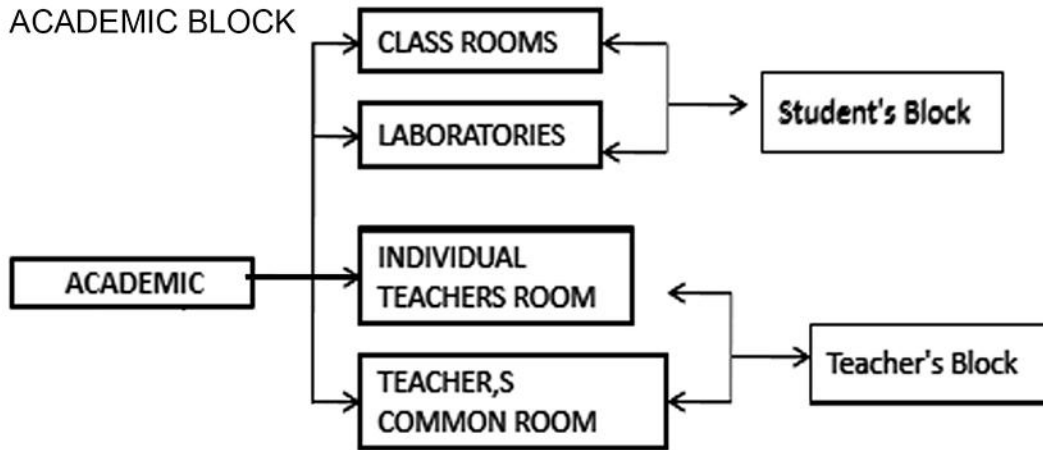
- Total area of Common rooms can be distributed by the numbers of academic blocks.

PROGRAM ANALYSIS

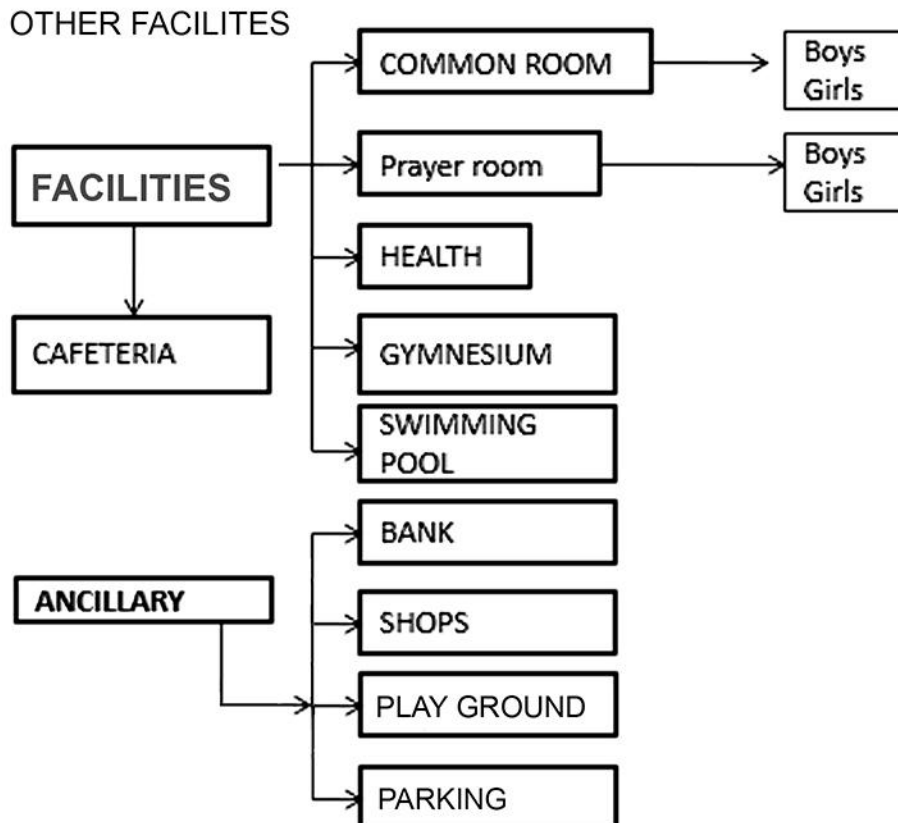
ADMIN BLOCK



ACADEMIC BLOCK



OTHER FACILITES



PROGRAM RATIONALE

ADMINISTRATIVE BLOCK

A total 31,338 sft program is proposed for the administrative block of the new campus of AUST. Which includes Vc's office , register's office , treasurer's office with all the facilities and specific departments. The initial proposal includes all the facilities of administration sector as it is in the present campus of AUST , the capacity is being considered no less than the existing building or even more. For every governing body, dedicated office is proposed including specific circulation space. Separate utility service . This proposal is based on the present condition and also to allow all the futuristic growth . 25% space is dedicated for the circulation for each sector. These program will be able to adopt any changes in future .

ACADEMIC BLOCK

A total 1,83,105 sft program is proposed for the academic block of the new campus of AUST. Which includes classrooms , labs , computer lab , seminar rooms , Teachers room , lounge , department common area , waiting zone , store , toilets and for proper circulation . All these facilities and functions were based on the present situation and futuristic growth. As class rooms are the vital part of a university campus , most of them are proposed to be sufficient to accommodate student and function properly . Proper light and ventilation will be ensured. Lab and seminar rooms with properly equipped elements , modern and user friendly environment . and specific departments. Beside classrooms the environment of the department has to be inspiring for a student . An atmosphere where student and teacher can work together to share knowledge . Proper circulation inside the departments and connection with other program is very important . Access from different part of the university has to be properly planned .

COMMON FACILITIES (TSC)

Beside academic and administrative side common facilities of a university campus is essential. It defines the atmosphere and surrounding in which both student and teacher deal with . Multi-purpose hall, cafeteria, amphitheater, open spaces, common rooms, gaming zone, gymnasium lounge etc . These spaces are for interaction between students , teachers , staff . For maintaining the proper mental balance, there is no alternative of these elements in a university campus . AUST new campus design includes most of these facilities for betterment . The initial concept of an ideal campus lies within these facilities

LIBRARY

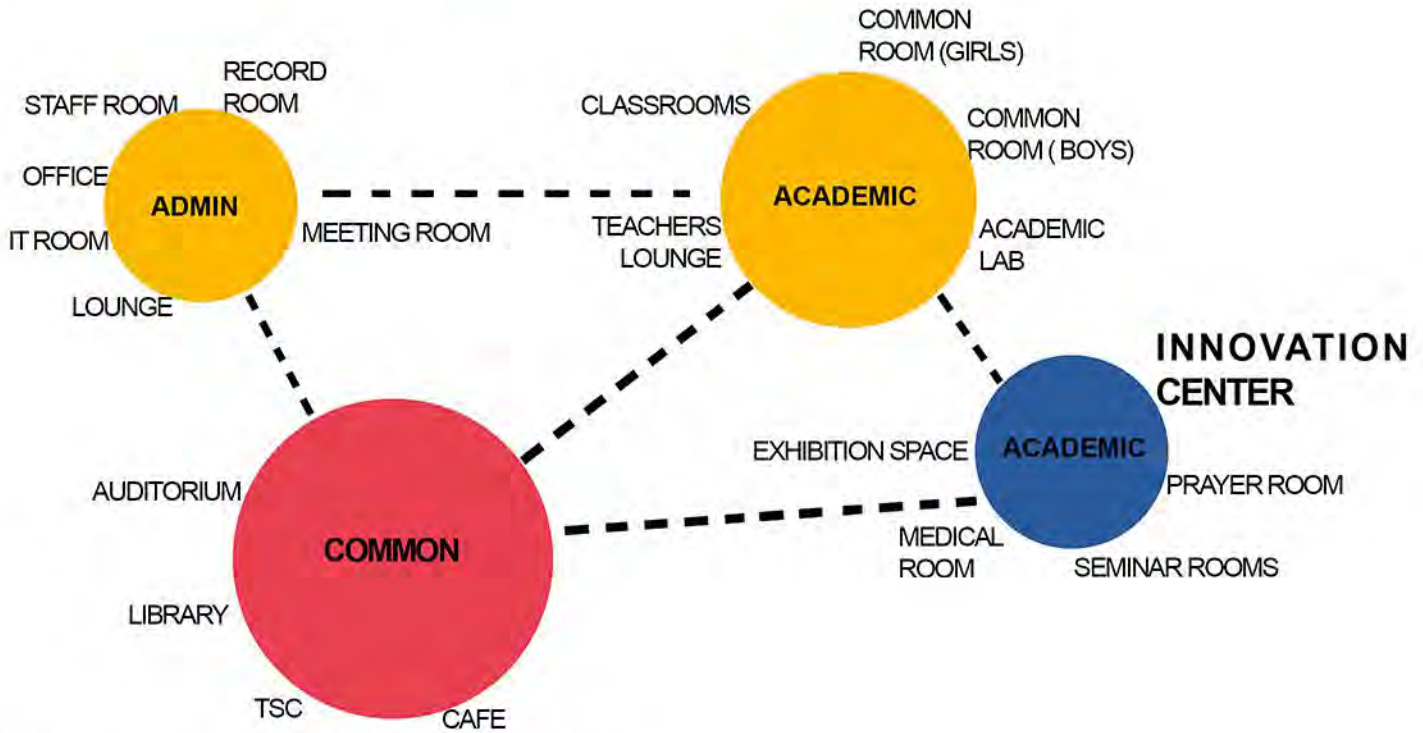
Library should be considered as the core of the university . A place where students teachers staff comes to acquire knowledge . Proper management and facilities is very important for a library . The library space has its own merits .It should be peaceful , calm which will encourage a student to concentrate on his study . It should be properly ventilated and other features

CAFETERIA

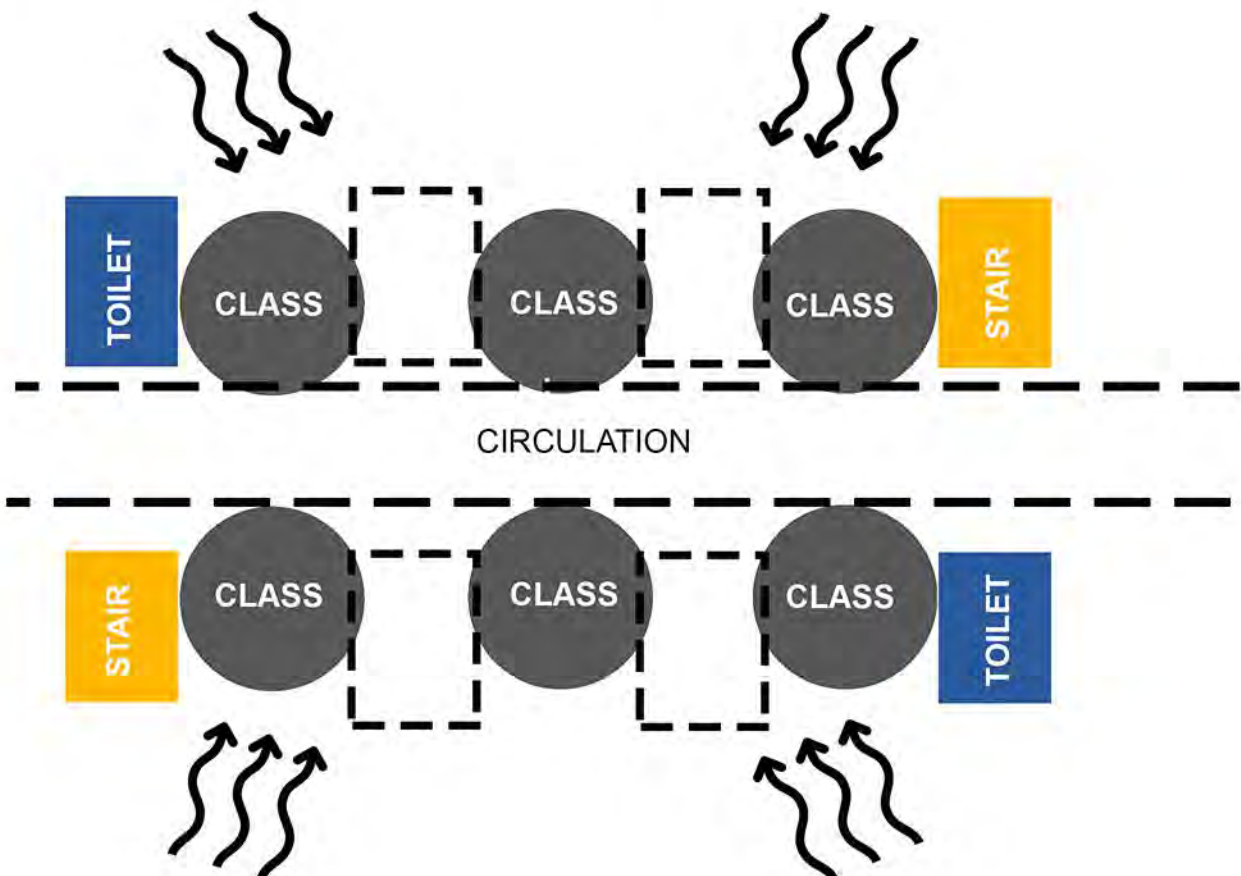
This is a place where all the people gather and have a good time with their friends . The core of a campus . It should be large enough to accommodate the number of students . Beside good open spaces , good circulation a good kitchen is also important . providing good food should be the major priority of an in house cafe of a university campus . This place helps the student to communicate with a large number of people at a same time

FUNCTIONAL ACCESSIBILITY

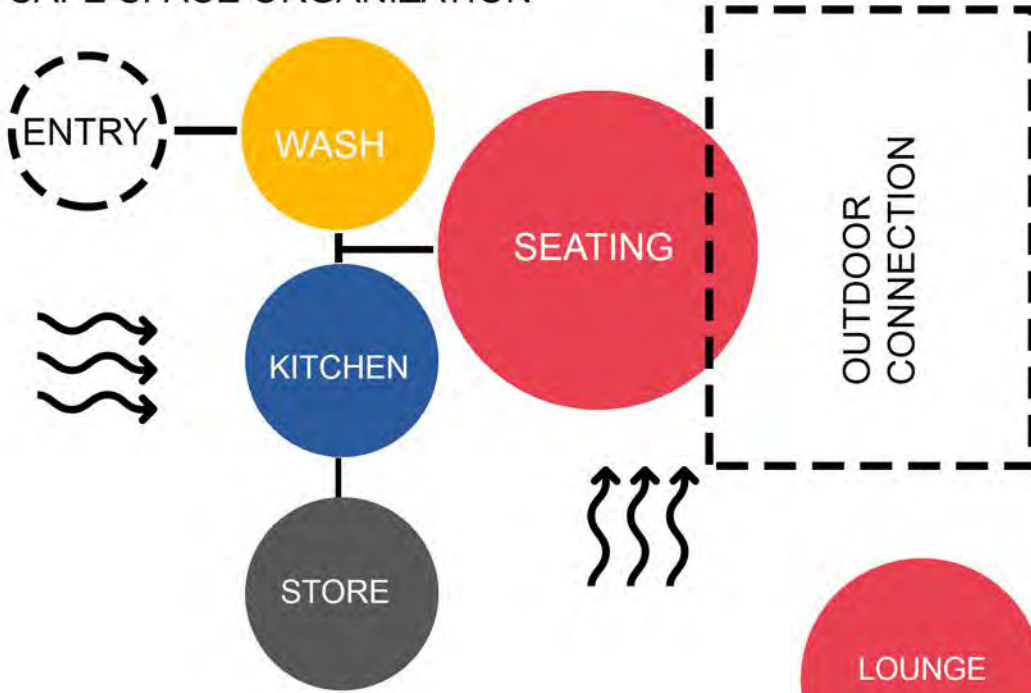
● RESTRICTED
 ● ACCESSIBLE
 ● PUBLIC



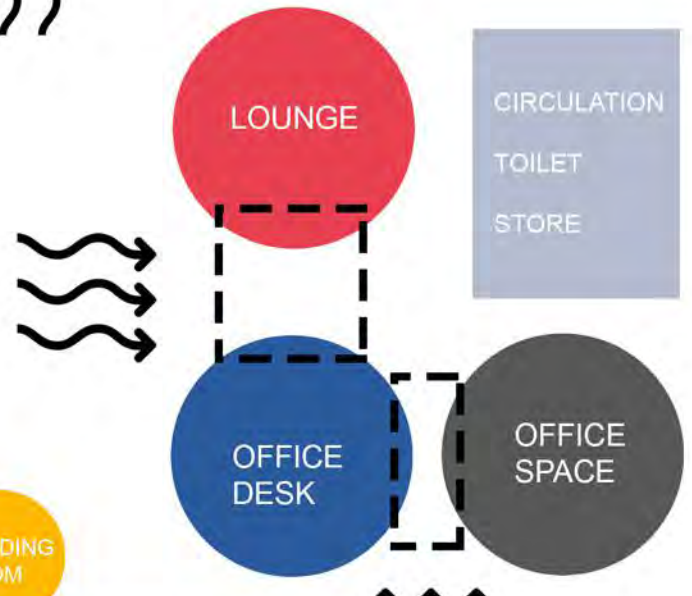
ORGANIZATIONS OF CLASSROOMS



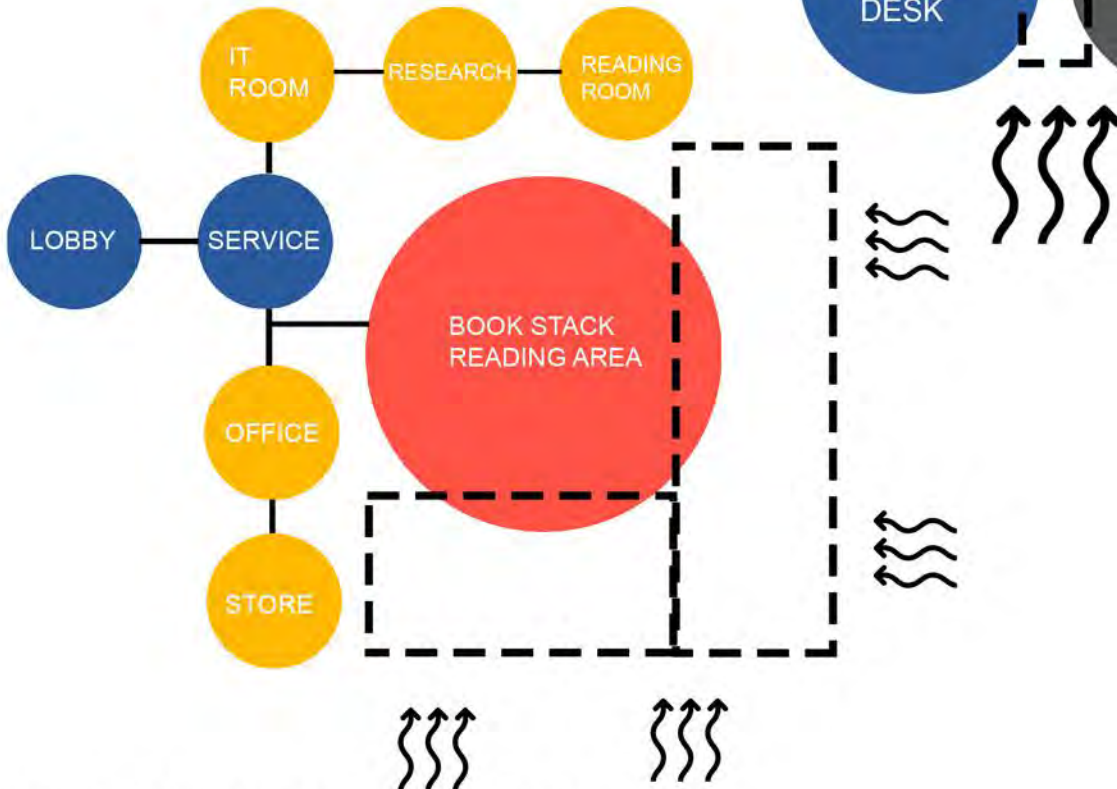
CAFE SPACE ORGANIZATION



OFFICE SPACE ORGANIZATION



LIBRARY SPACE ORGANIZATION



COMPARATIVE PROGRAM ANALYSIS

| PROGRAMS | AUST | EWU | DIU | STANDARD | PROPOSED |
|------------------------------|----------------|------------------|---------------|---|------------------------|
| V.C.'s office | 2100 sft | 3880 sft | 1344 sft | 215-260 sft | 2000 sft |
| Pro V.C.'s office | 700 sft | 3000 sft | 1080 sft | 215 sft | 1000 sft |
| Treasurer's office | 400 sft | 850 sft | | 160 sft | 1938 sft |
| Register's offic | 3180 sft | 3650 sft | 1930 sft | 20.24-21.50 sft | 2313 sft |
| Support service office | 1500 sft | 2100 sft | | | 1550 sft |
| Exam control Office | 2200 sft | 4000 sft | | | 2750 sft |
| Accounts office | 1200 sft | 2100 sft | 1300 sft | 60 sft /per | 1500 sft |
| Dean's room | | 450 sft | 620 sft | | |
| Head of the department | 180 Sft | 260 Sft | 415 Sft | | |
| Professor room | 130 sft | | 180 sft | 215-260 sft | 3000 sft for 30 person |
| Assoc. Prof. Rooms | 100 sft | 240 sft | 135 sft | | |
| Lecturer room | 90 sft | 220sft/ 2 person | 120 sft | | |
| Guest Faculty | 24 sft/ per | 340sft/ 4 person | | | |
| Staff room | 24 sft/ per | 80 sft | | | |
| Seminar room | 20-24 sft /per | 550 sft | 26 sft /per | | 500 sft |
| Office space | 360 sft | | 950 sft/3 per | | 600 sft |
| Class room | 2500 Sft | 632 , 800 sft | 23 sft /st | 15 sft/per | 750 sft |
| Lecture Gallery | 760 sft | 1460sft | | | 600 sft |
| Computer lab | 22sft/pc | 480sft/20pc | | 23sft/per | 750 sft |
| Electrical Machine Lab | 658 sft/room | 1500sft | | | 1500sft |
| Pharmacy Lab | | 850 sft | | | |
| Dept. library | 630 sft | | | | |
| University Library | 9000 sft | 10500 sft | | 10.76-12.9 sft/200 book. Reading space 26 sft/per | 4940 sft |
| Prayer space | 2500 sft | 1600 sft | | 9.14 sft /per | 5000 sft |
| Boy's common room | 2400 sft | 2250 sft | | | 2500 sft |
| Girl's common room | 2340 sft | 2500 sft | | | 2500 sft |
| Cafeteria | 6513 sft | | 11250sft | | 5000 sft |
| Medical center | 1000 sft | | 660 sft | | 3000 sft |
| Multipurpose hall/Auditorium | 5468sft | | 15990 sft | | 10000 sft |

CHAPTER 05
CASE STUDIES

CASE STUDIES

NO.1 INDIAN INSTITUTE OF MANAGEMENT (IIM), AHMEDABAD, INDIA

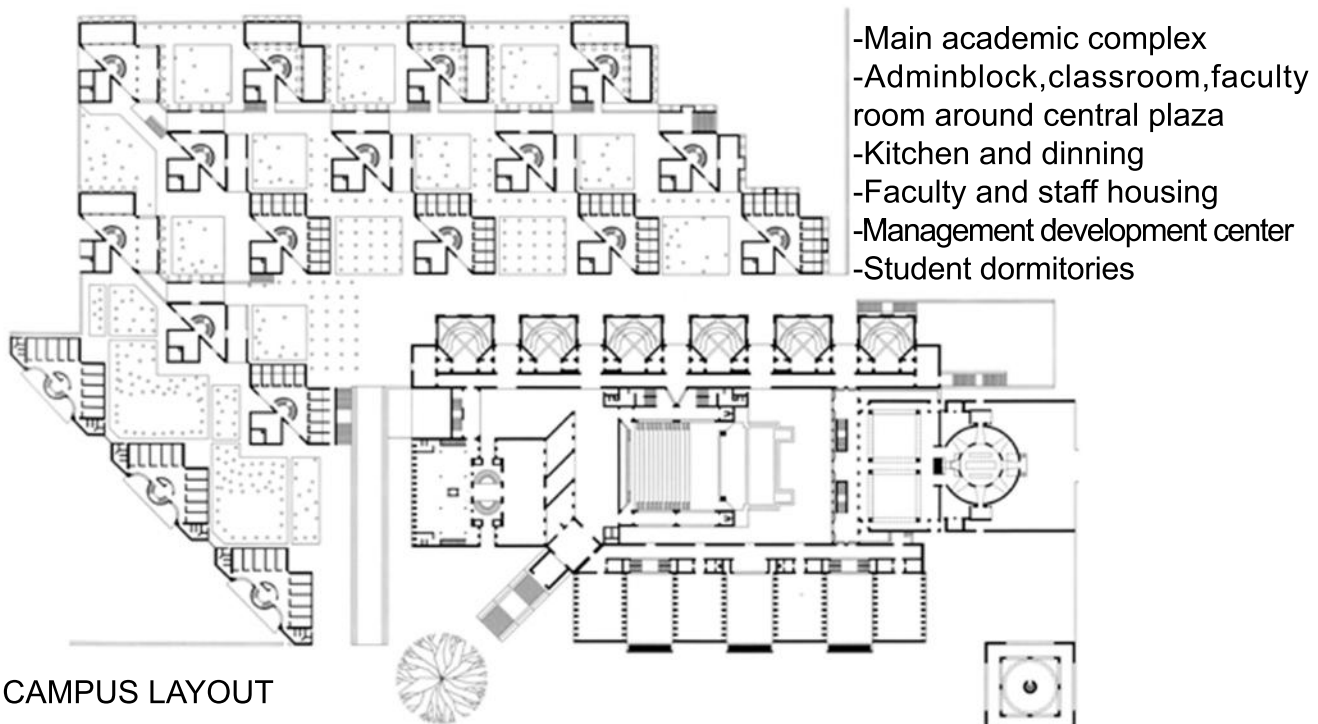
Established : 1961 Architect : Louis Kahn Type : Public business school

Funded by : Government of India (MHRD) Government of Gujarat and Ford Foundation

INTRODUCTION

The Indian Institute of Management (IIM) was one of the few commissions that Kahn made outside the United States. It began in 1962 and that same year the architect was commissioned to Dhaka for national assembly building of Bangladesh. The magnitude of the project, red tape, climate, time difference, timing, cultural differences and many other topics, led to that work started before Kahn finished his designs. The site was a flat farm land near a village 8 km to the west of ahmedabad, it had no urban context. The implementation of this program required different types of buildings, a school, dormitories for students and housing for teachers and service. In this arid area of the country and in an area of 26 hectares fairly flat, Kahn outlined a map of inherent scale and geometric forms and related to the institutional hierarchy of the various buildings and programs

COMPONENTS OF CAMPUS



CAMPUS LAYOUT

- Detached entries for institution and residential complex. Separate service entry.
- Institutional complex were taken as the focal point of the masterplan
- Residential areas were planned in Hierarchical pattern.
- School building was planned around a court.
- School building and students dormitories had been placed diagonally to take advantage of winds from southwest.

CONCEPT

Kahn conceived the IIM as a mixture of austerity and majesty, including spaces for informal interaction and achieving a balance between modernism and tradition, which captured the timeless spirit of India. The grid was oriented in a way to allow the natural ventilation of the buildings. He used his philosophy of giving a monestric and formal look to the building, "Fortress in bricks".



DESIGN FEATURES

- Large openings or void in walls (circular and segmental arch)
- Exposed concrete ties
- Very less use of glass in windows .
- Interplay of light and shadow in corridors
- Diagonal system of placing the blocks

MATERIALS USED

It is basically a building made of brick, traditional Indian materials. In some walls and brick facades combined with concrete, resulting in a mixed construction and ornamental. Distinctive features of these buildings include the many square arches and brick structures on the walls with carved circles.

COMPONENTS OF CAMPUS

- Main academic complex
- Adminblock, classroom ,faculty room around central plaza
- Kitchen and dinning
- Faculty and staff housing
- Management development center
- Student dormitories

LIBRARY BLOCK

The library is named after the institute's founder, DR. Vikram Sarabhai, world renowned physicist and founder director and was set up in 1962. The Library building is five storied structure with rectangular plan. It is approached by a broad imposing flight of steps from the parking lot. The design has been conceived to entail movement from the active spaces to most private and quite carrels at the farthest reaches.

First Floor : Librarian room, Checking area, Reading area, Students Carrels

Second floor : Accommodate triple height reading hall and conference hall

Third floor : Accommodates bound volumes of journals. □ Fourth Floor: Has bound Volumes of old books and journals.



Figure: 4.3.1 Library Photographs: Dave Morris

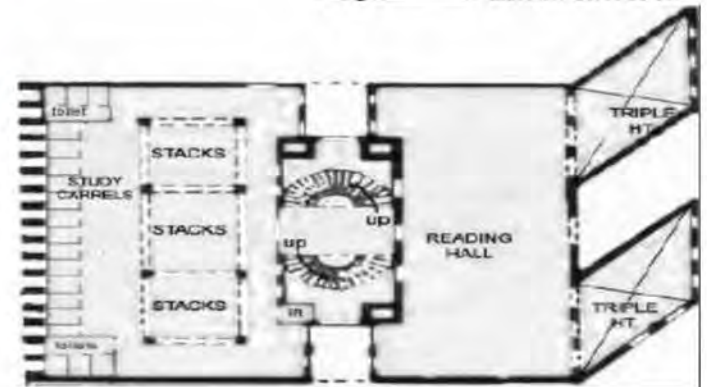
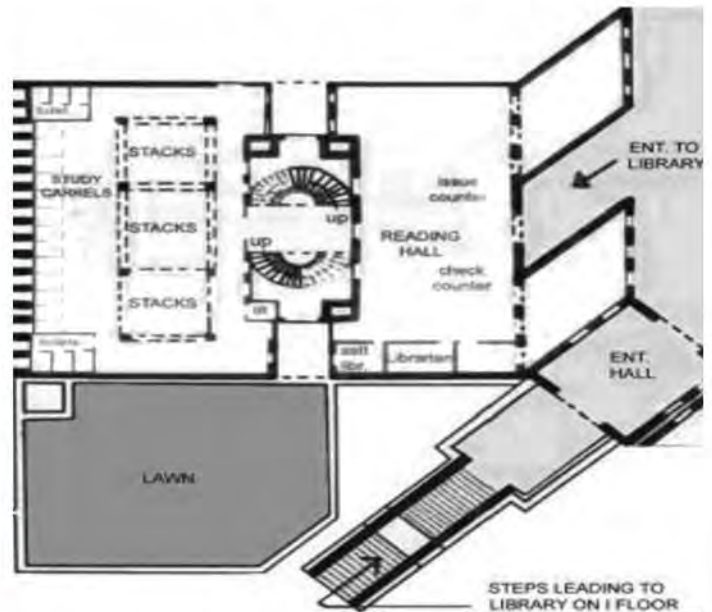


Figure: 4.3.2 Plan Layout source : Archdaily.com

Faculty Block:

-Faculty block is on the right side of the main entrance.

-It is four storied building with four blocks.

-All the openings are designed to overlook the adjacent and landscape garden and Louis Kahn plaza.

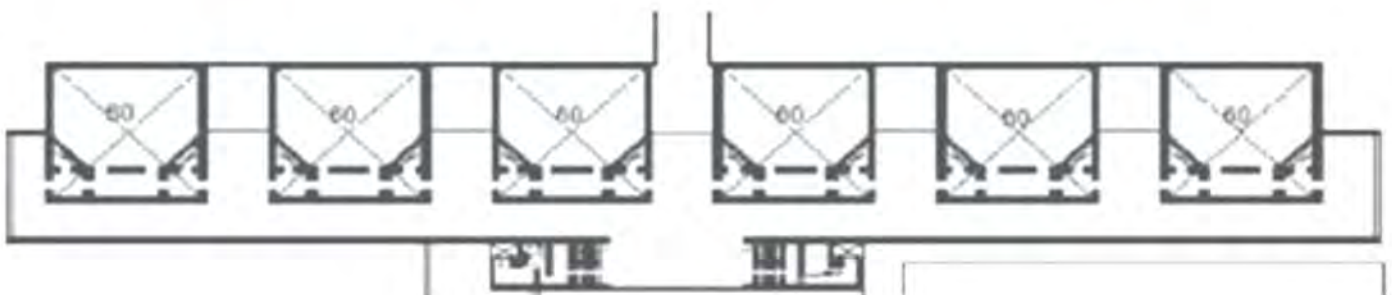
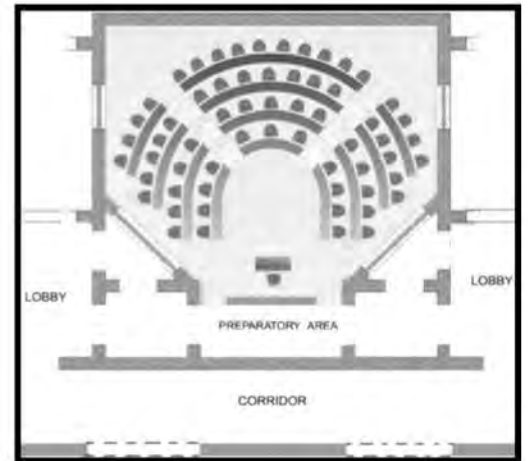


Figure: 4.3.3 Photographs: Dave Morris (Archdaily.com)

ADADEMIC BLOCK

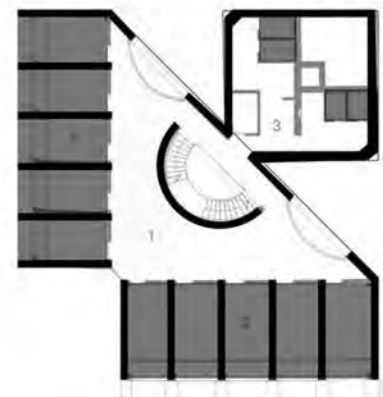
CLASS ROOMS

- The shape of classrooms are hexagonal.
- The design of classroom is based on the seminar type interaction Between the students and the faculty.
- Windows are high to get glare free light

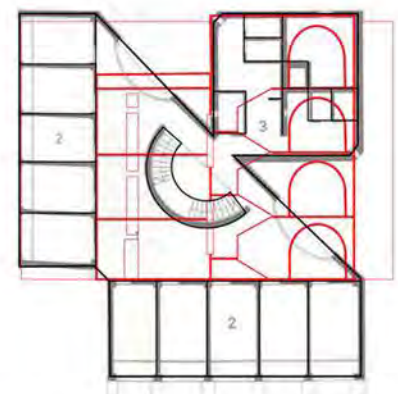


DORMITORIES

- The shape of each dormitory block is square with two residential wings, triangular lounge and a service area.
- The position of the staircase and washroom are meant to protect the living room from sun and glare without obstructing and the breeze and ventilation.
- In most of the blocks the ground floor is used as bank etc.
- Placed one behind the other to obtain much needed breeze and cross ventilation



Dormitory Unique vs. Repetitive



Dormitory Plan vs. Section

Figure: 5.1.1

Figure: 5.1.1

Figure: 5.4.1-5.4.4(Plan layout source:Archdaily) 5.4.5 Source: photo.cichitecture.com , Figure: 5.4.6 Photo:Arnaut fonck source:Archdaily.com

FINDINGS

-The concept of the central space is to provide a grand common space where students from different disciplines can gather and meet each other. This will promote social mixing and interaction and thereby communication. The central space will be the heart of all campus activities from where one can visually almost all of disciplinary structure.

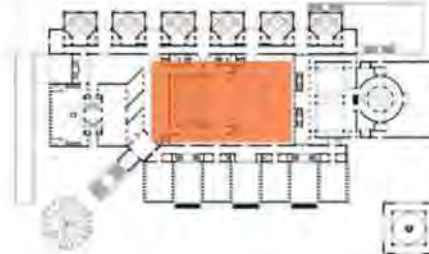


Figure : 5.5.1

source : Archdaily

-Less vehicular path more pedestrian inside the whole campus. Easy circulation between inside space and outward.

-Library as a core of the university campus. Creating a different environment for the users for more comfort and concentration.



Figure : 5.5.2

source : Archdaily

-Emphasizing spaces outside classroom. Courtyards, walkways, corridors became centers for learning. Rethinking of the educational practice

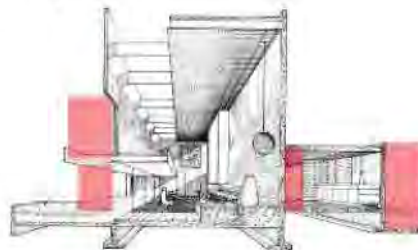


Figure : 5.5.3

source : Archdaily

-Major connections of the campus were done by using corridors with a playful environment of light and shadows .

-The special social conditions and site determined the organization and layout of. With the location given to the three main parts of the whole school, the residence of students and teachers houses managed to maximize the airflow and thereby improve ventilation.



Figure : 5.5.4

source : Archdaily

-Considerations of climatic factors . Design decisions based on local traditional way of ventilation and lighting , using local materials (brick and concrete) .

CASE STUDIES

NO.2 JAHANGIR NAGAR UNIVERSITY

Established: 1970

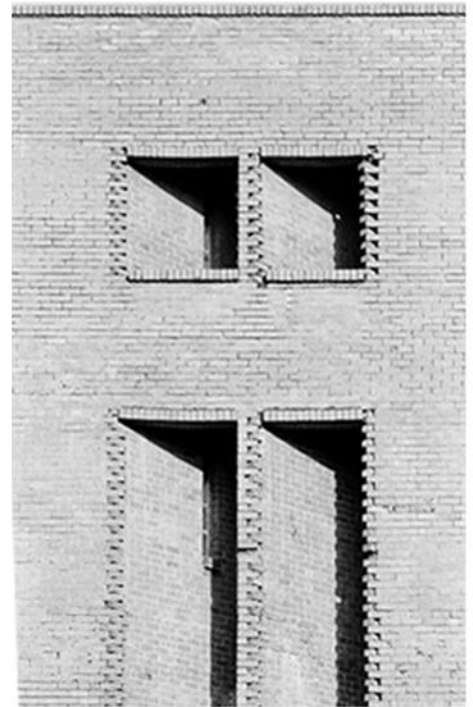
Architect: Muzharul Islam

Location: Savar, Dhamri Dhaka

(by the side of Dhaka-Aricha highway approximately 40-50km north of Dhaka)

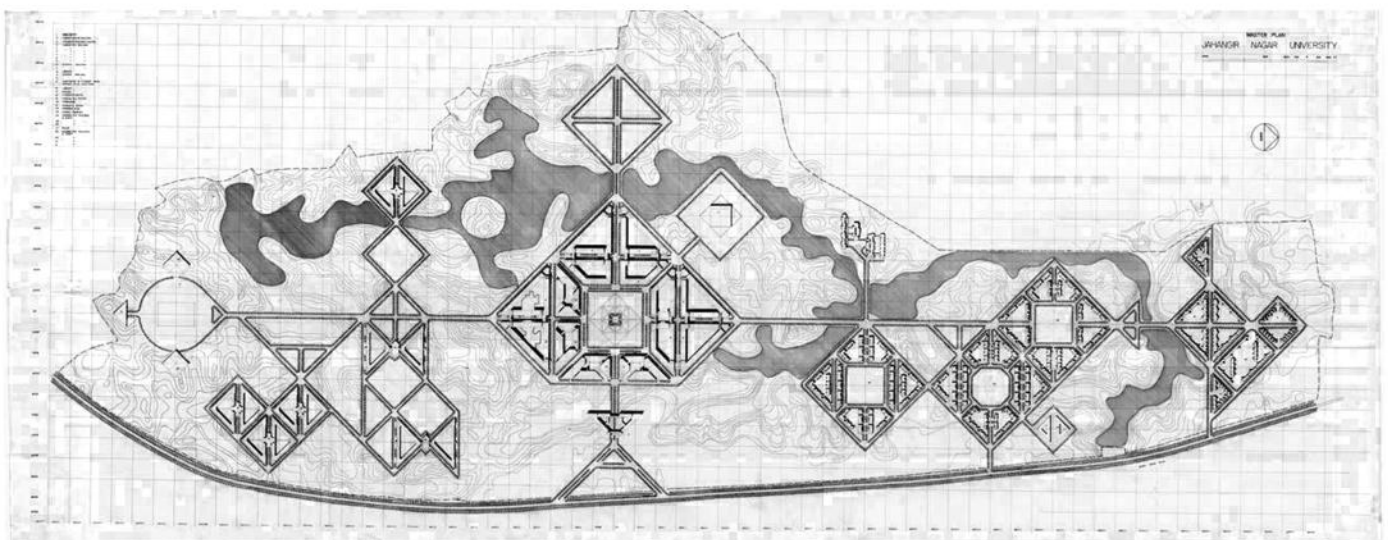
Project Type: Public University (750 acres land)

Funded by: Government of Bangladesh



INTRODUCTION

Architect Muzharul Islam was appointed to work on the master plan of Jahangirnagar University. He started working on the master plan of in 1967. He continued to work in this project till 1970 at which point the major portion of the master plan still remains unrealized. This masterplan shows a strong composition of angular lines and tilted squares which signifies the order in a continuous harmony with the site. The clustered red brick masses with their wonderful brick details, their interplay with the lush green foliage's, the wonderful internal courts all create a complementary dialogue of built form and nature. His idea to Overlay a geometric order on the nature which would not disrupt it but rather enhance the beauty of nature is a portrayal of his sensitivity towards the nature.



master plan

COMPONENTS OF CAMPUS

- Academic buildings (34 departments under six faculties)
- Administration buildings
- TSC
- Teachers and officers housing
- Staff housing
- Cafeteria
- Auditorium
- Senate
- Library
- Shahid minar
- Gymnasium and swimming pool
- Bank



CAMPUS LAYOUT

- 3 entrance point from the Dhaka - Aricha road, east side of the site .
- The zoning of the master plan includes administrative and teaching buildings in the center, with student dormitories located at one end and faculty and staff residence at the other.
- The master plan is a composition of angular lines and tilted squares .
- Master plan was developed without disturbing the natural topography of the site. Incorporating the water bodies and green in the design
- The initial idea of the master plan was to provide full residential accommodation for teachers and students of a projected fixed number .With all the facilities of extra circular activities .
- The tilted square motif emerged out of the dual considerations of using the building volumes to create spatial enclosures, and of giving each building the same degree of sun exposure and natural ventilation.

CONCEPT

The plan of Jahangirnagar University reflect the effort to propose an alternative city, to move away from the conventional morphology of city and country. Islam believes the distinction between the two reflects a social disparity that should not be perpetuated. At the same time he proposes that traditional climatic-environmental responses should be joined with the new world of science of technology. Although both the Jahangirnagar plans incorporate a certain sense of collectivity and “urban” order through the formation of communal spatial enclosures, continuous facades, and some sort of street, they also respond to the essence of dwelling in the hot-humid delta; the buildings are arrayed in the geometric plan to be receptacles for “light, green and air”.



DESIGN FEATURES

- The tilted square motif emerged out of the dual considerations of using the building volumes to create spatial enclosures, and of giving each building the same degree of sun exposure and natural ventilation.
- Design according to the topography of the site and climate .
- Using the basic features of modernism -geometric forms, no ornamentation
- Playful environment with light and shadows
- A fortress of red brick surrounded by green

MATERIALS USED

Exposed brick, traditional local materials. In some walls and brick facades combined with concrete, resulting in a mixed construction and ornamental. Special brick bonds for less wastage. Aesthetically rich.

DESIGN CONSIDERATIONS

- To find out a strong geometric order to unify the whole campus but also to give flexibility and adaptation for future growth and expansion.
- To respect the beautiful natural landscape of some urban setting and at the same time incorporate the urvan environment with a strong planning principle.
- The system and order to be derived must conform with the local climate and site characteristic and constraints



Figure : 5.9.1



Figure : 5.9.2



Figure : 5.9.3

source : estudio

DORMITORIES

- Diagonal orientation of the mass , no surface to absorb direct sunlight
- Proper natural ventilation
- Rooms on the body and stair and toilets are on the edges
- Dinning facilites in the center of the dormitories
- Rooms connected with corridors maintaiing privacy of the rooms

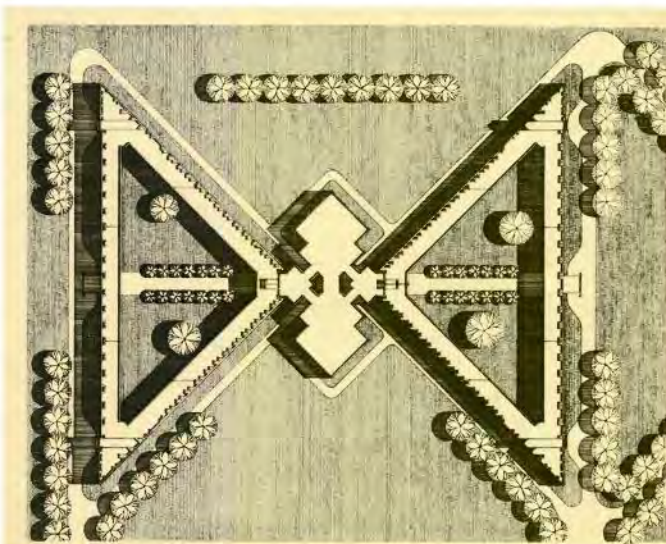


Figure : 5.9.1

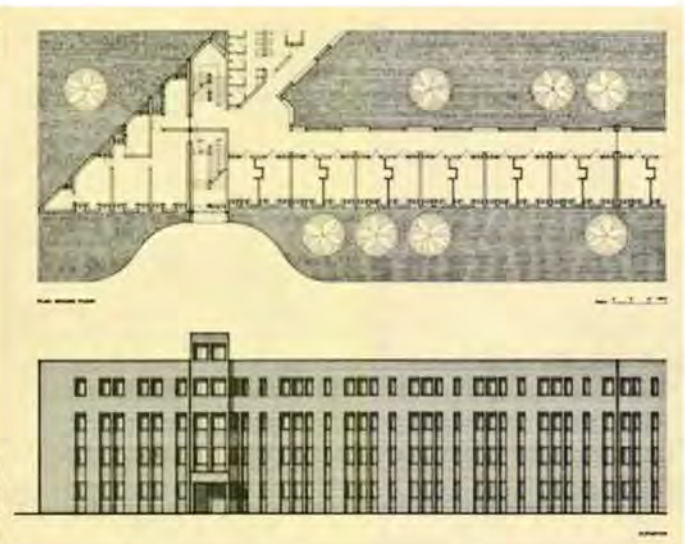
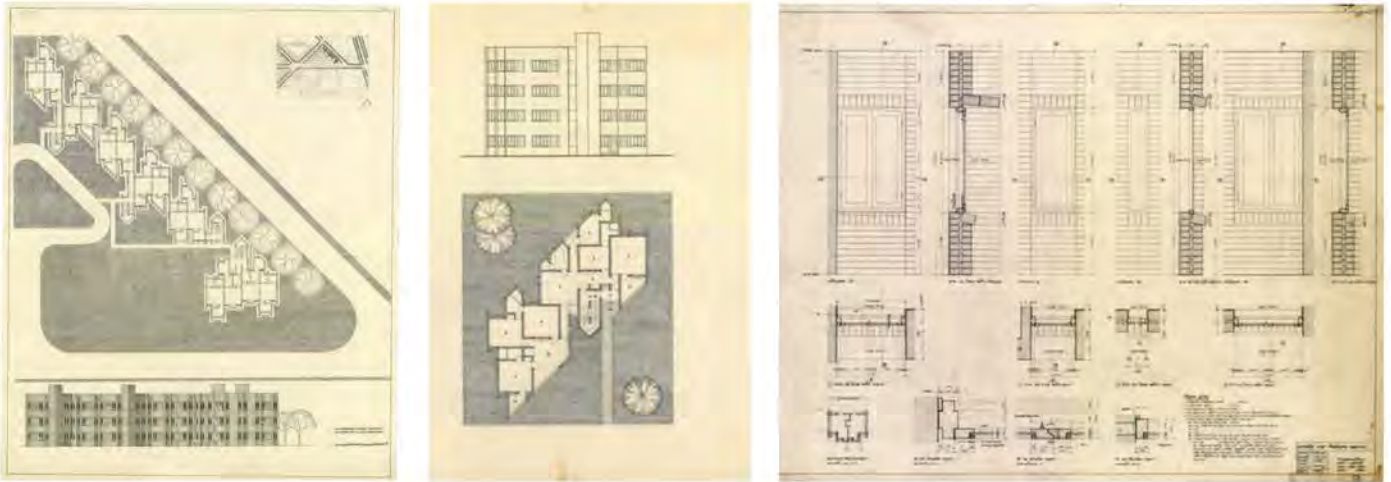


Figure : 5.9.2

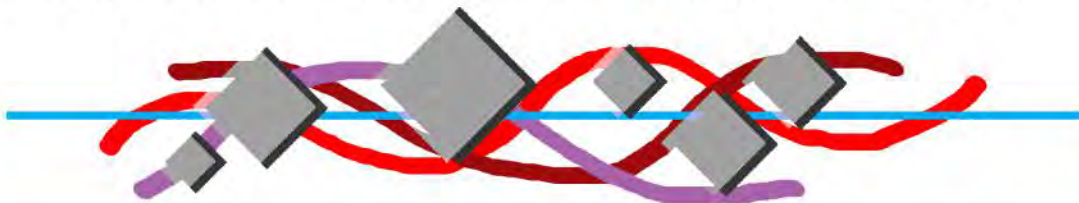
source : Mazharul islam archieve

DESIGN DETAILS

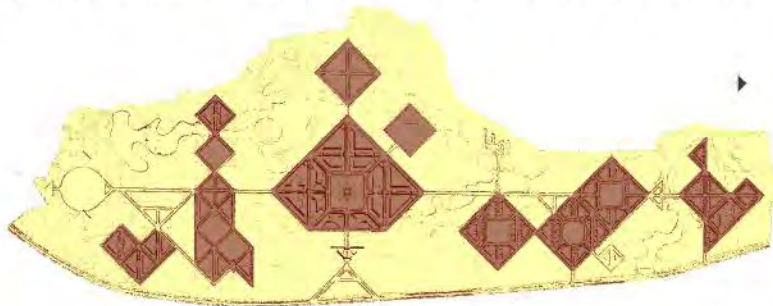


FINDINGS

- High influence of nature and context in the design. Every design decision reflects the sensitivity towards the site and context . The connection of the buildings inside the campus

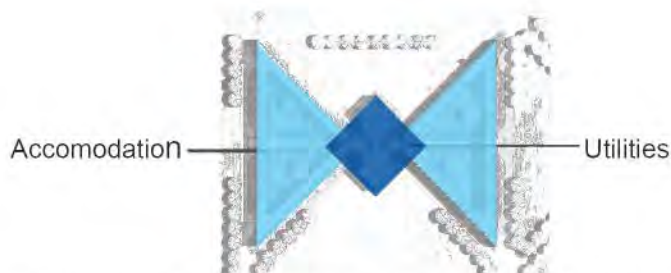


-Flexible enough to adopt the future growth , no boundaries for development in different phases.



- Incorporating natural element and enhancing the beauty with it rather than disturbing it

- Functions properly solved in pure geometric forms, eye soothing structures . A designed evolved from the site



- Idea of a university campus far away from the chaos of the capital, surrounded with green nature

-The design reflects the history of the site , Containing cultural and social value inside the campus

-Using local materials and technologies .

CHAPTER 06

DESIGN CONSIDERATIONS

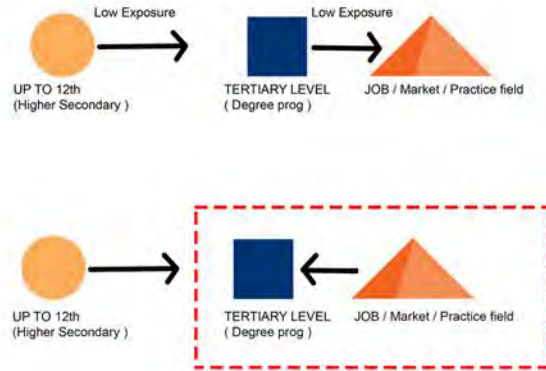


Figure 6.2.1

One of the major reason of our system is low exposure. Students studying upto 12th has no clear idae about degree program, how it works, what they might want to study. Due to social and cultural pressure the subject is being fixed for the students . Same thing happens in the second phase of their student life. No exposure of the job market , practice field. Due to system or curriculum students are always detached from the practical experince . The result shows up in the job market . Un-employment , lack of skill, lack of experince.

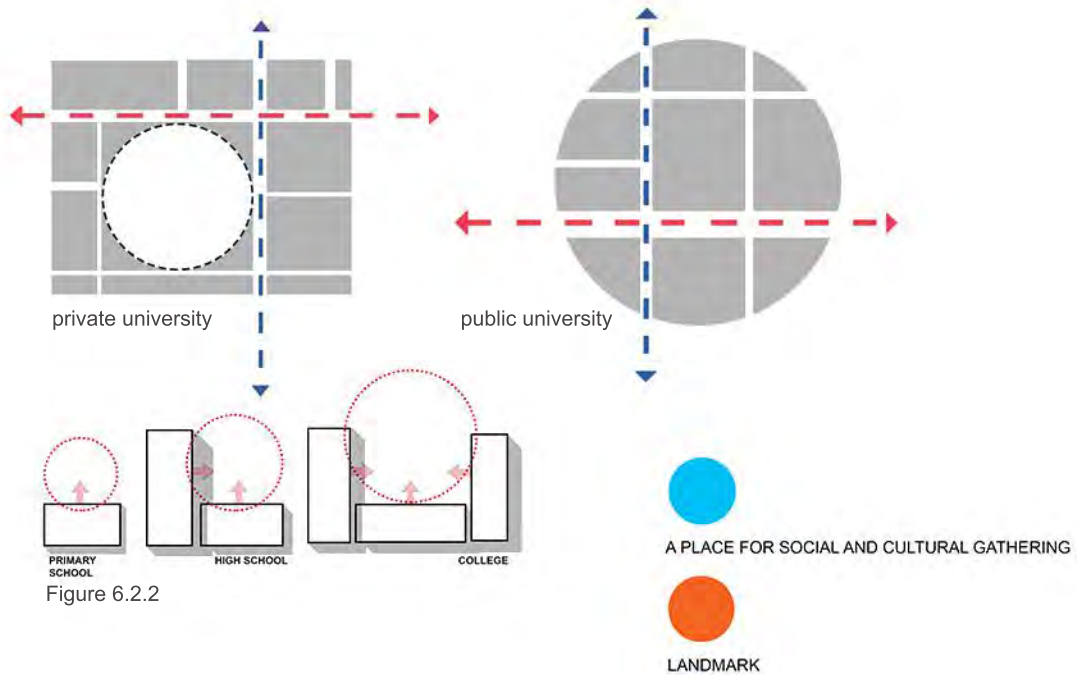


Figure 6.2.2

A vital difference between public and private university campus characteristic is the accessibility of public. In our country educational institutes used to be the landmark of the neighborhood. A campus including a field which is the place for social and cultural gather of that neighborhood.

The Initial idea is to increase the exposure between these two sectors. Making a bridge between tertiary level academics and professionals from the job market. Re-viving the characteristics of an education institute and its value in a neighborhood

CONCEPT

DESIGNING AN INNOVATION CAMPUS

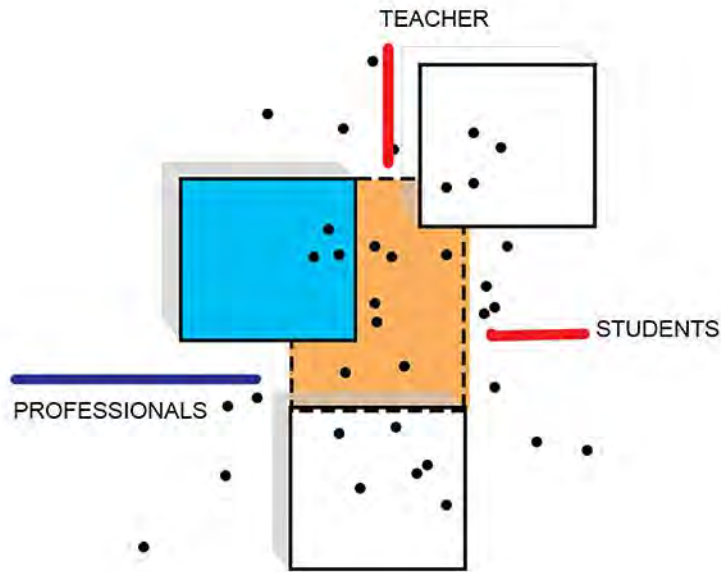


Figure 6.3.1

An Innovation Center is a community of industry entrepreneurs and academic researchers working in partnership to instigate breakthroughs: fusing the uncommon, taking risks, thinking big (ID Center). Inside a university campus it work in collaboration with students , teachers and professionals from different field of work. A common platform for everyone to share their ideas , get the practical experience of working with the professionals. Activities of an innovation center will be - workshop, lecture session , training , Lab work . An innovation campus contains several inni vation lab.

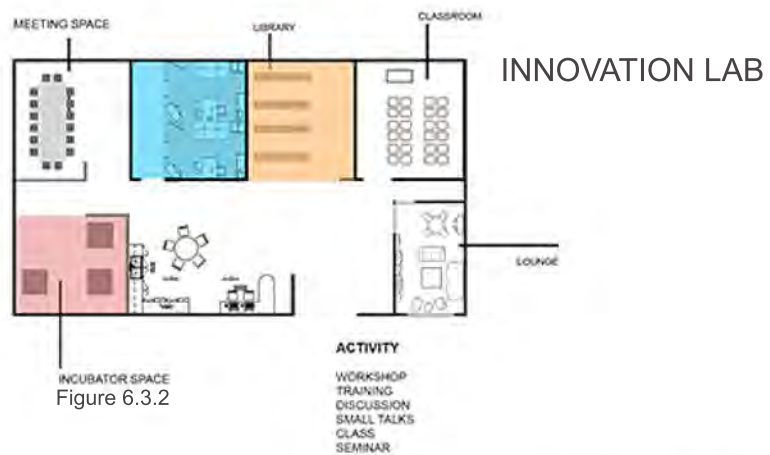


Figure 6.3.2

INNOVATION CAMPUS

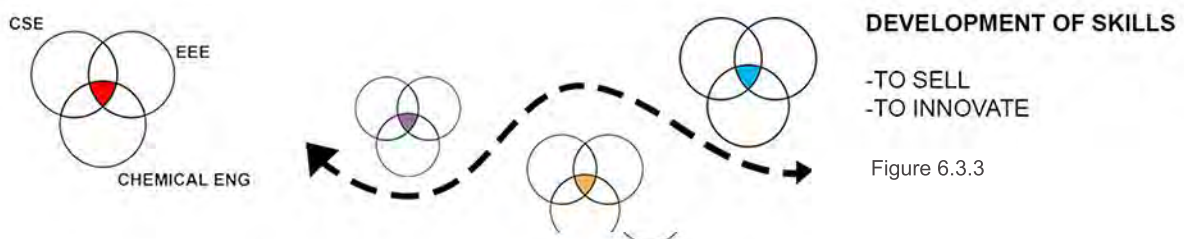


Figure 6.3.3



Figure 6.4.1

Initial idea was to design an Innovation campus which includes innovation labs. All the innovation labs can be connected through a path or a large connecting space. Connecting a path between two commercial zones through the campus. Three academic sectors defining the path. A specific amount of land has been kept for next phase of development which includes residential area. a vehicular road serving both the residential area and the academic area. a Large space including all the common facilities including TSC , auditorium , cafe and library . All the edges of the site were treated to make it usable by the locals. Two open fields which can be used by the students and also the locals when the field is not in any use. A chain of green surrounding the site

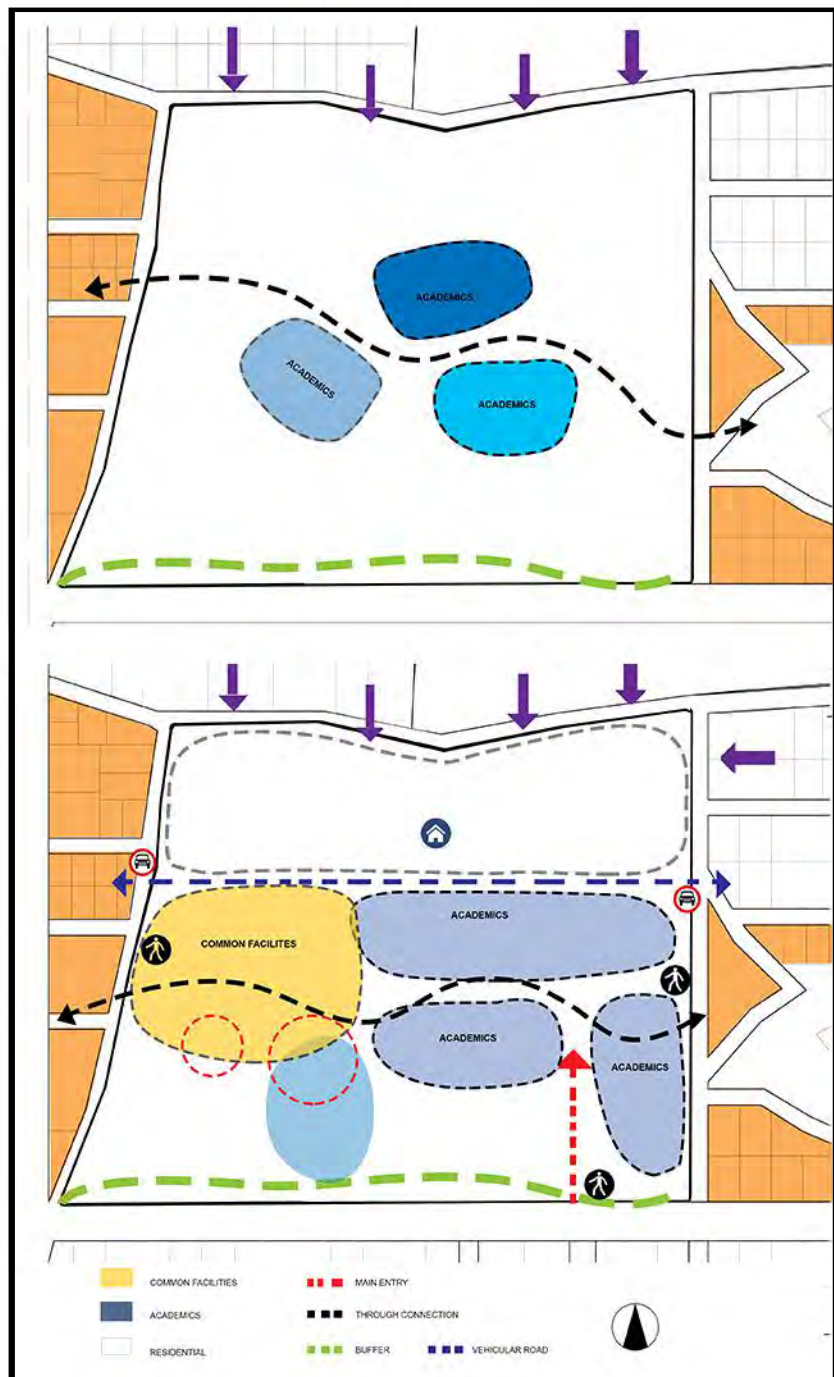


Figure 6.4.2

DESIGN CONSIDERATIONS

EDGE TREATMENT

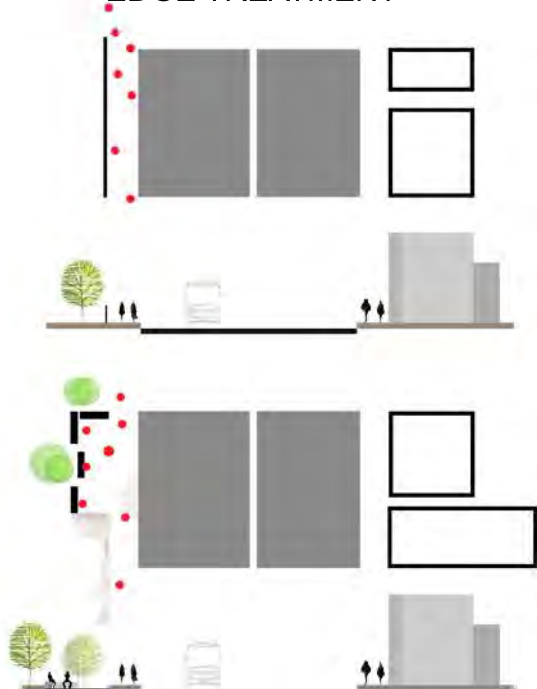


Figure 6.6.1

Treatment of the boundaries. Incorporating facilities for the passerby. Creating an invisible barrier

NATURAL VENTILATION

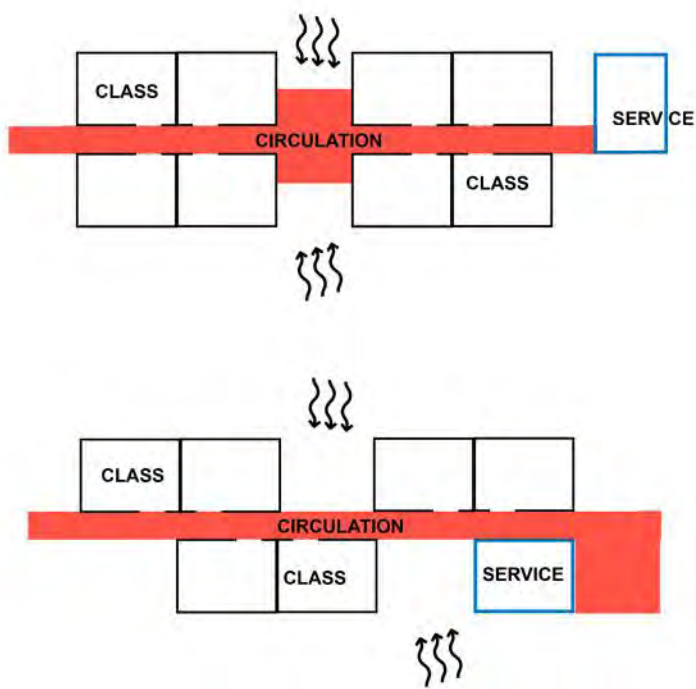


Figure 6.6.2

Ensuring maximum natural ventilation for the academic classrooms, and all other admin functions . Playfull spaces intersecting each other . Transitional spaces for different activities

INTERACTION

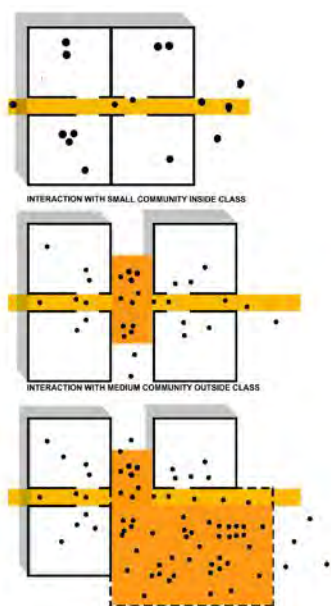


Figure 6.6.3

Variation of spaces for different level interaction inside campus. Interaction with the large community
Habit of large gatherings develops the sense of Unity.

JOURNEY

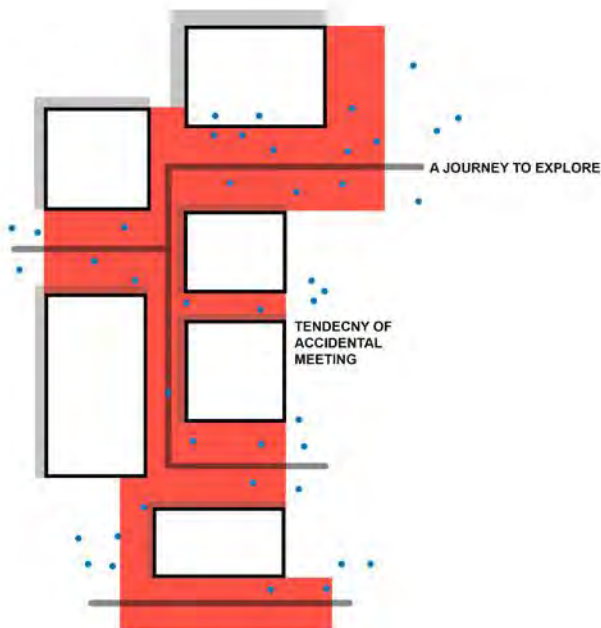


Figure 6.6.4

A journey inside the campus. Exploring new places. Possibility of accidentally meeting people in the way A pathway connecting the whole site

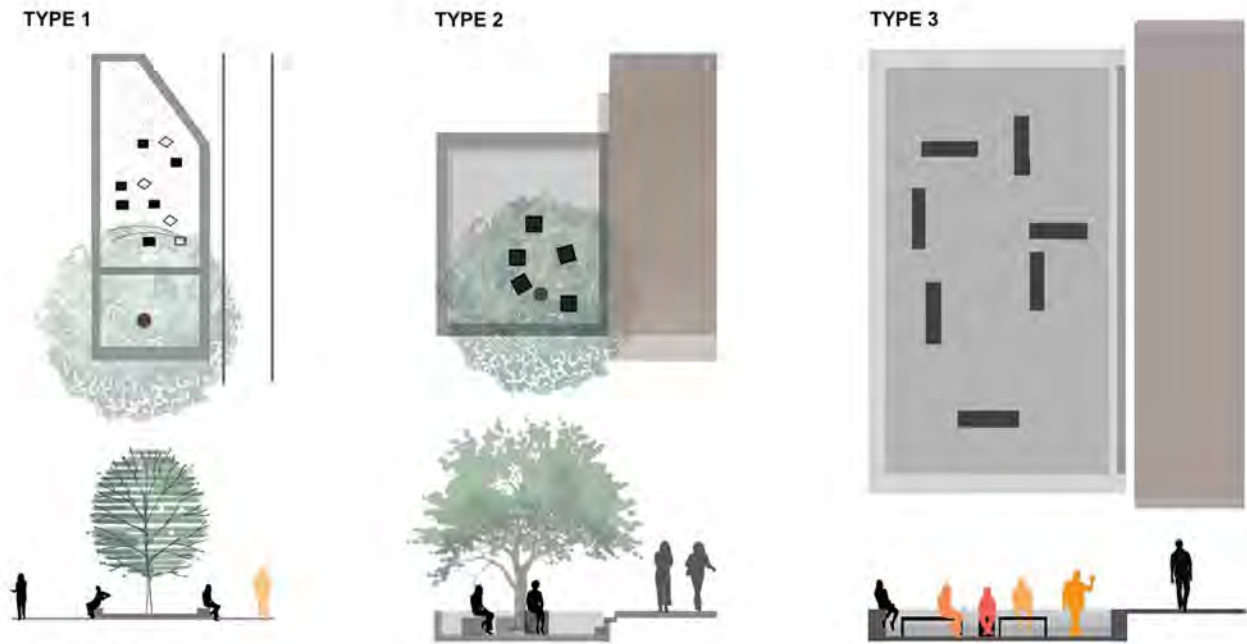


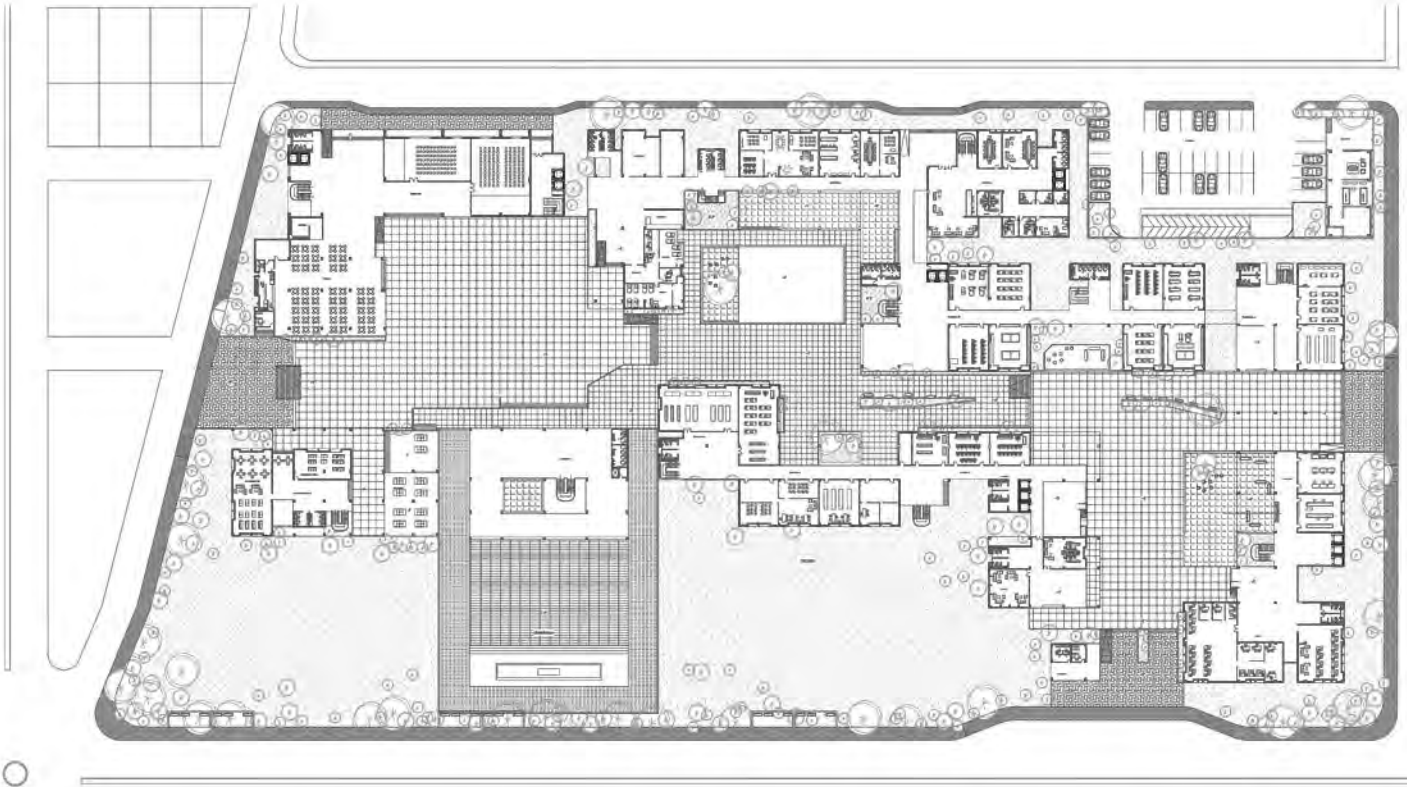
Figure 6.6.1

Sitting areas. Creating a transitional spaces for the passerby. variation of the sitting arrangement according to its surrounding

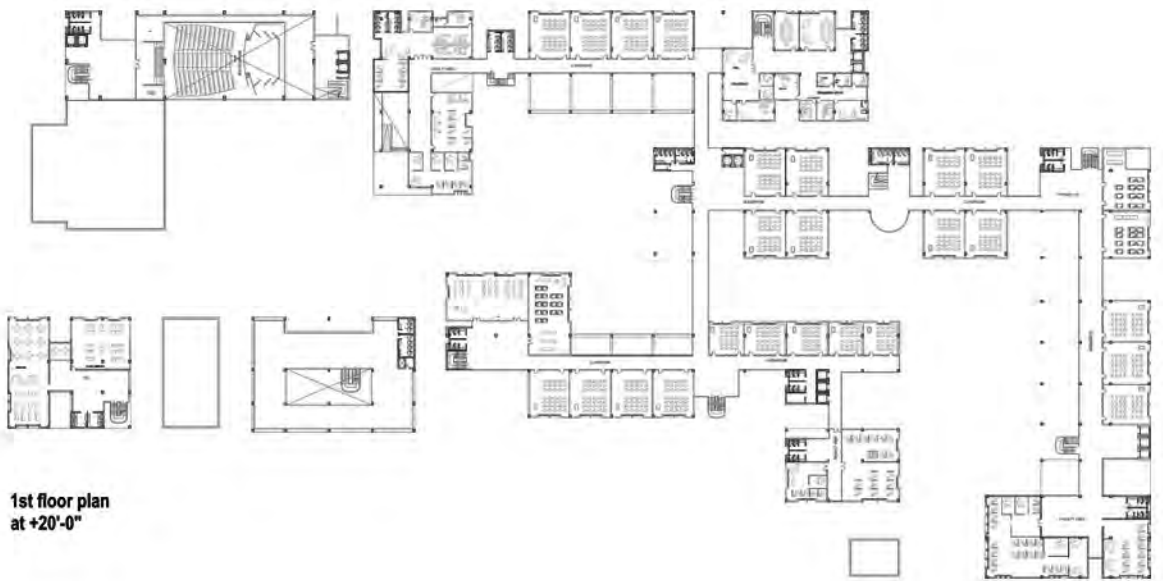
Healing spaces. Sitting for small group or individuals. A place to relax. A space not intersect by any circulation path. A calm space to release

s t r e s s .

Outdoor class. A place for informal class, workshop, medium level group gathering for both students and teachers. Segregated from the main circulation level.



Ground floor plan



1st floor plan
at +20'-0"

1st floor plan



**2nd floor plan
at +32'-0"**

Second floor plan



**3rd floor plan
at +44'-0"**

Second floor plan



**4TH floor plan
at +56'-0"**

4th floor plan



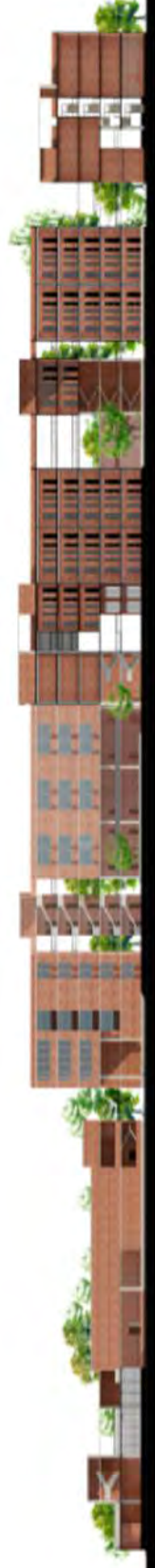
WEST ELEVATION



NORTH ELEVATION



SECTION AA
SCALE : 1/16" = 1'-0"



SECTION BB
SCALE : 1/16" = 1'-0" A







a university campus has to be an experience for its user. A place where knowledge is shared, applied, experimented. A place where anyone can take part in the learning process. There should not be any specific border for the knowledge sharing process. A campus can be a learning center as a whole. An educational institute with its activities not only help students to learn in a better way but also justify the value of knowledge. A campus not only has impact on its user inside it but also the surroundings. It creates the essence of a sacred space, open for all. A place can map out the future of its surroundings.

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